EXCEL 2016 CHAPTER-1- GETTING STARTED WITH EXCEL

Introduction

Excel is a **spreadsheet program** that allows you to **store**, **organize**, and **analyze information**. While you may believe Excel is only used by certain people to process complicated data, anyone can learn how to take advantage of the program's **powerful features**. Whether you're keeping a budget, organizing a training log, or creating an invoice, Excel makes it easy to work with different types of data.

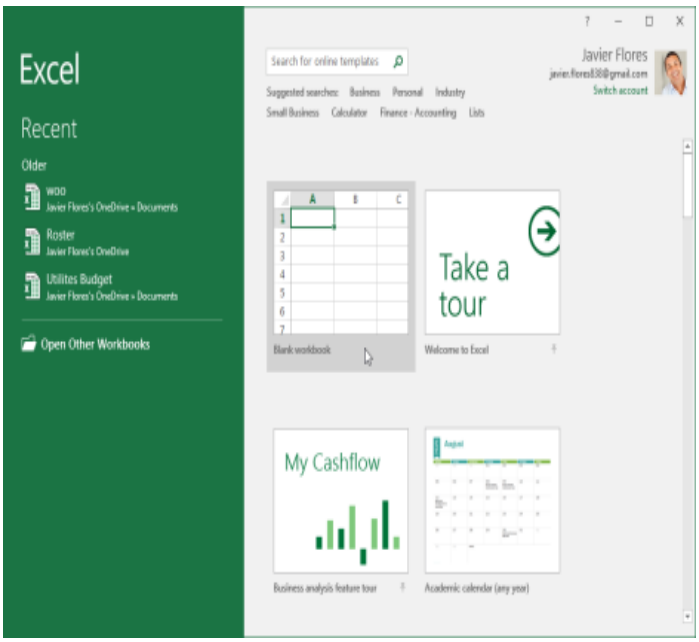
Getting to know Excel

If you've previously used Excel 2010 or Excel 2013, then Excel 2016 should feel familiar. If you are new to Excel or have more experience with older versions, you should first take some time to become familiar with the **Excel interface**.

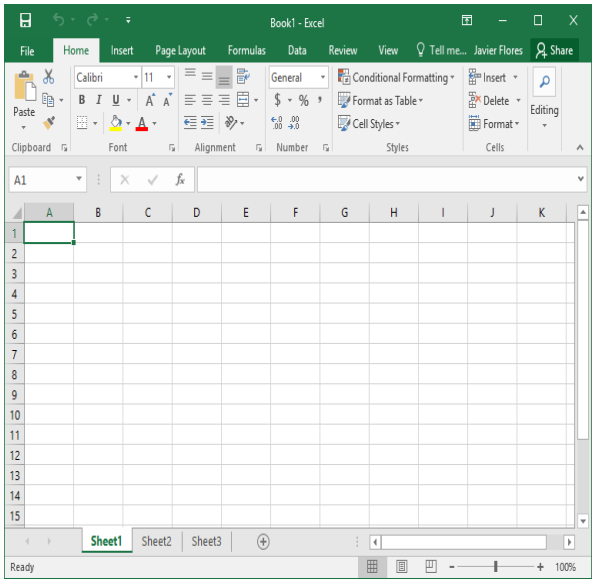
The Excel interface

When you open Excel 2016 for the first time, the **Excel Start Screen** will appear. From here, you'll be able to create a **new workbook**, choose a **template**, and access your **recently edited workbooks**.

1. From the **Excel Start Screen**, locate and select **Blank workbook** to access the Excel interface.



2. Click the buttons in the interactive below to become familiar with the Excel interface.

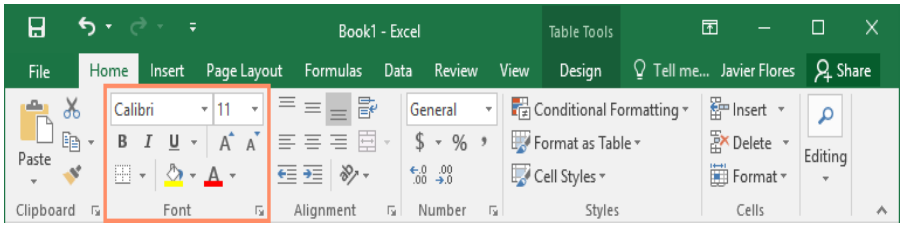


Working with the Excel environment

The **Ribbon** and **Quick Access Toolbar** are where you will find the commands to perform common tasks in Excel. The **Backstage view** gives you various options for saving, opening a file, printing, and sharing your document.

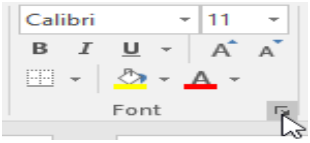
The Ribbon

Excel 2016 uses a **tabbed Ribbon system** instead of traditional menus. **The Ribbon** contains **multiple tabs**, each with several **groups of commands**. You will use these tabs to perform the most **common tasks** in Excel.

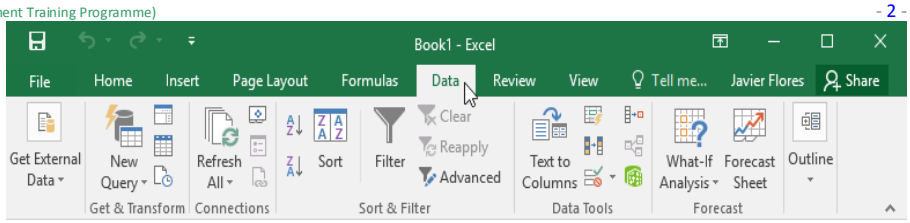


1. Each tab will have one or more groups.

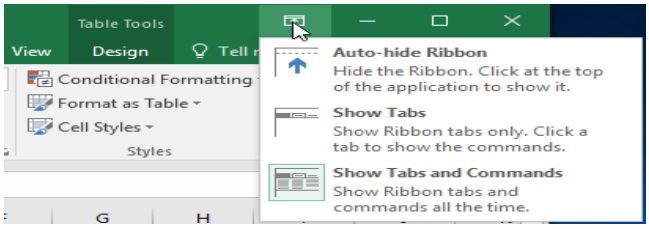
2. Some groups will have an arrow you can click for more options.



3. Click a tab to see more commands.

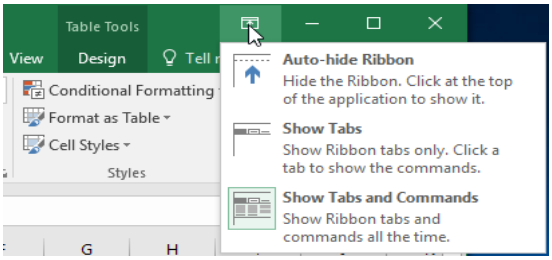


4. You can adjust how the Ribbon is displayed with the Ribbon Display Options.



Certain programs, such as **Adobe Acrobat Reader**, may install additional tabs to the Ribbon. These tabs are called **add-ins**.

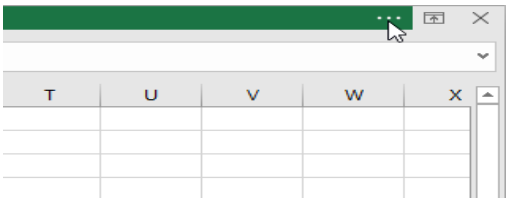
To change the Ribbon Display Options:



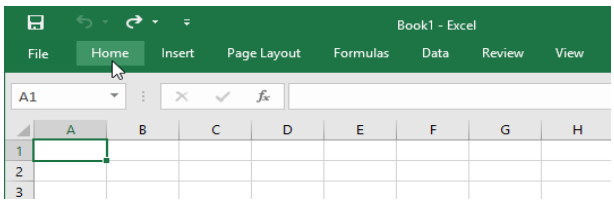
The Ribbon is designed to respond to your current task, but you can choose to **minimize** it if you find that it takes up too much screen space. Click the **Ribbon Display Options** arrow in the upper-right corner of the Ribbon to display the drop-down menu.

There are three modes in the Ribbon Display Options menu:

Auto-hide Ribbon: Auto-hide displays your workbook in full-screen mode and completely hides the Ribbon. To **show the Ribbon**, click the **Expand Ribbon** command at the top of screen.



Show Tabs: This option hides all command groups when they're not in use, but **tabs** will remain visible. To **show the Ribbon**, simply click a tab.



Show Tabs and Commands: This option maximizes the Ribbon. All of the tabs and commands will be visible. This option is selected by default when you open Excel for the first time.

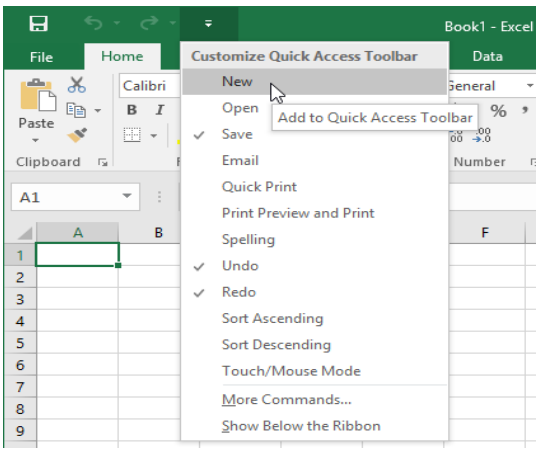
The Quick Access Toolbar

Located just above the Ribbon, the **Quick Access Toolbar** lets you access common commands no matter which tab is selected. By default, it includes the **Save**, **Undo**, and **Repeat** commands. You can add other commands depending on your preference.

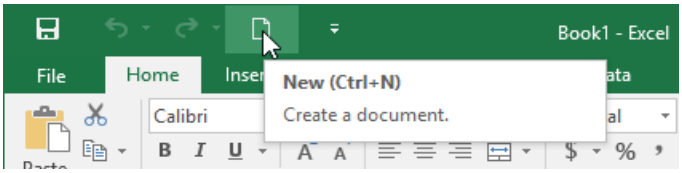
To add commands to the Quick Access Toolbar:

1. Click the **drop-down arrow** to the right of the **Quick Access Toolbar**.

Select the **command** you want to add from the drop-down menu. To choose from more commands, select **More Commands**.

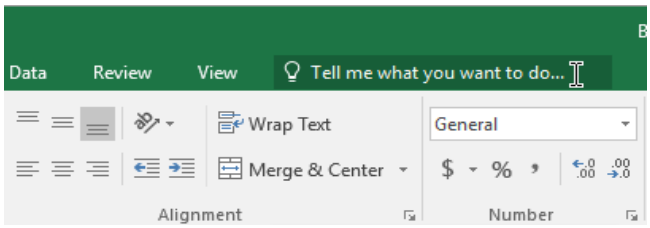


2. The command will be **added** to the Quick Access Toolbar.

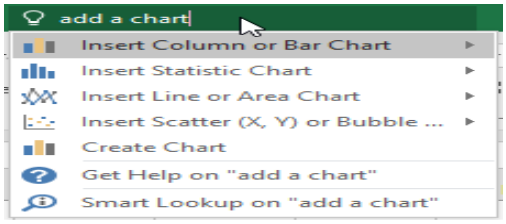


How to use Tell me:

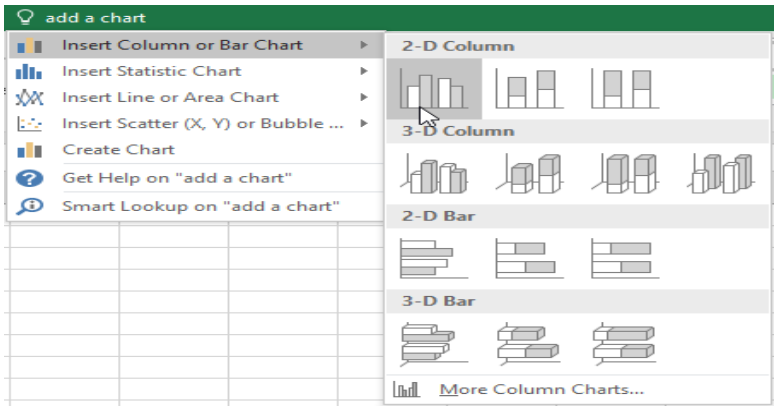
1. The **Tell me** box works like a search bar to help you quickly find tools or commands you want to use.



2. Type in your own words what you want to do.

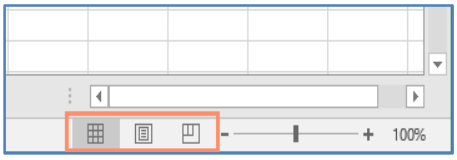


3. The results will give you a few relevant options. To use one, click it like you would a command on the Ribbon.

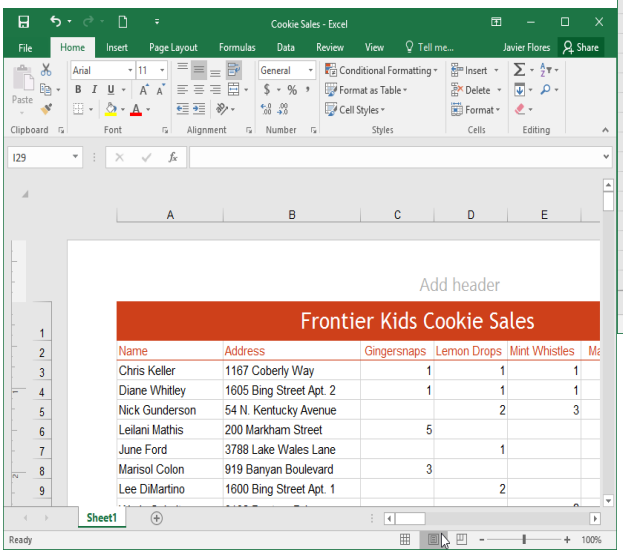


Worksheet views

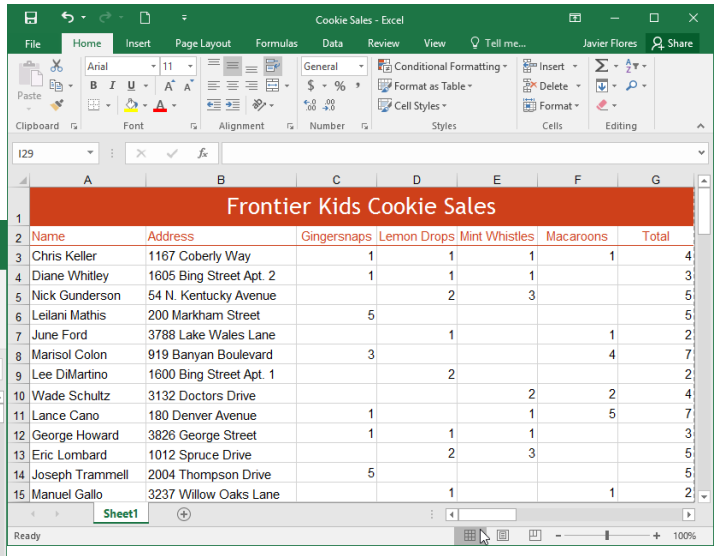
Excel 2016 has a variety of viewing options that change how your workbook is displayed. These views can be useful for various tasks, especially if you're planning to **print** the spreadsheet. To **change worksheet views**, locate the commands in the bottom-right corner of the Excel window and select **Normal view**, **Page Layout view**, or **Page Break view**.



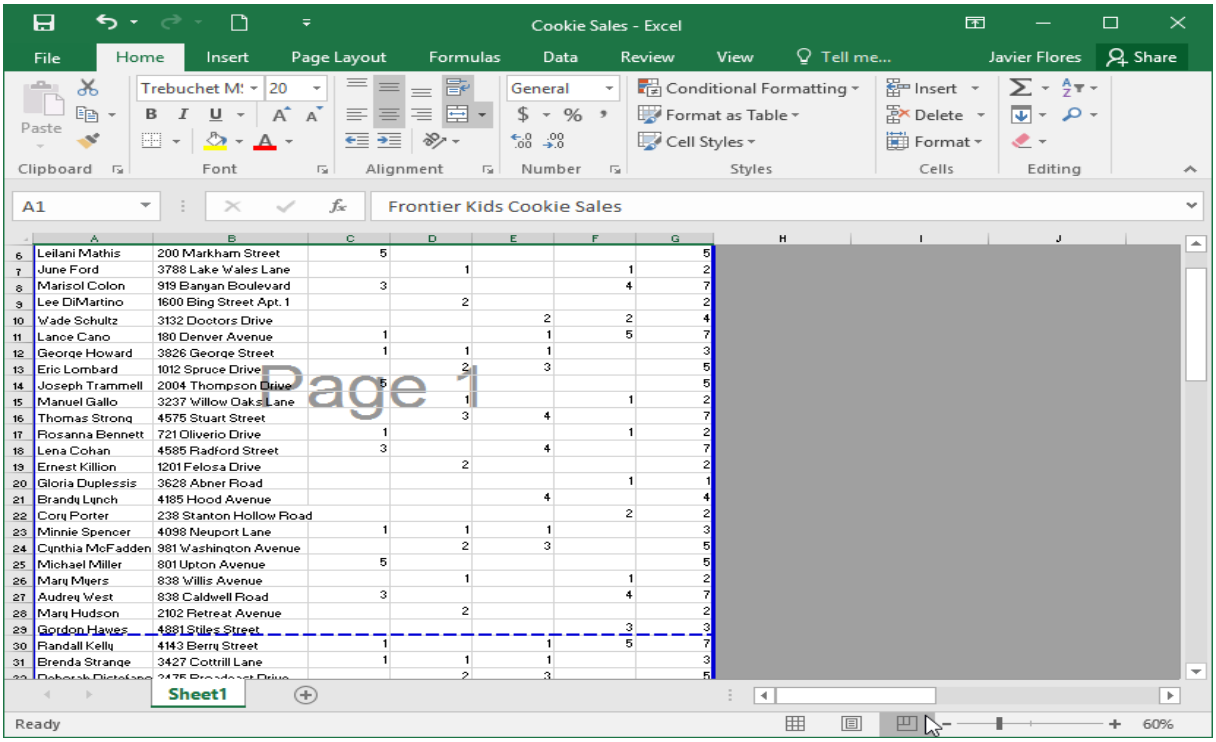
Page Layout view displays how your worksheets will appear when printed. You can also add headers and footers in this view.



Normal view is the default view for all worksheets in Excel.

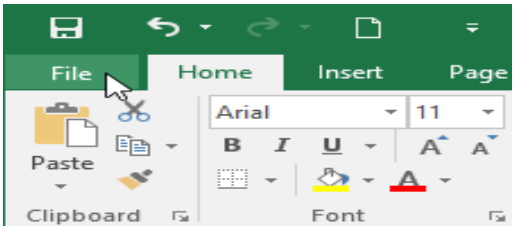


Page Break view allows you to change the location of page breaks, which is especially helpful when printing a lot of data from Excel.



Backstage view

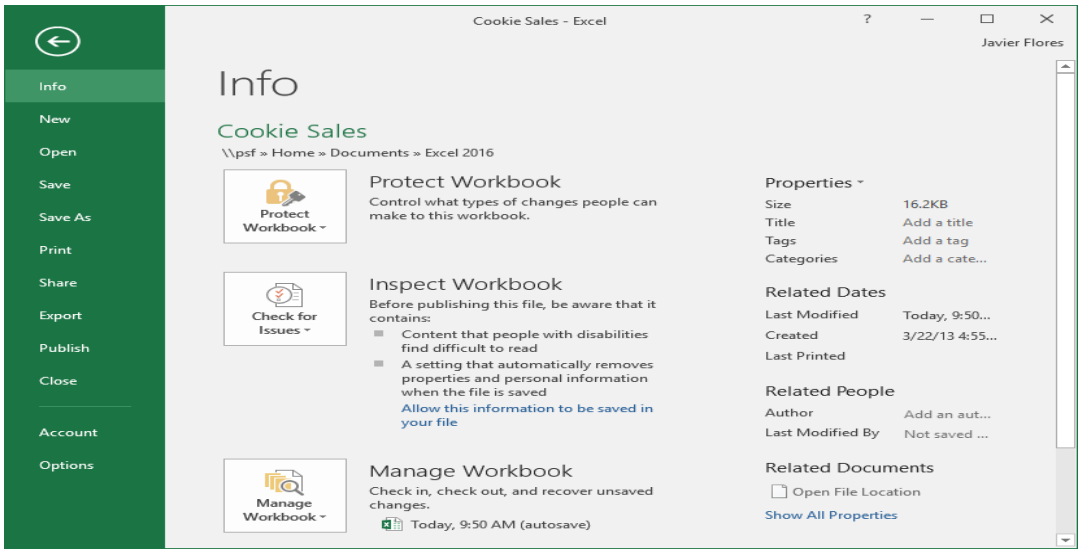
Backstage view gives you various options for saving, opening a file, printing, and sharing your workbooks.



To access Backstage view:

1. Click the **File** tab on the **Ribbon**. **Backstage view** will appear.

2. Click the buttons in the interactive below to learn more about using Backstage view.



CHAPTER-2- UNDERSTANDING ONEDRIVE

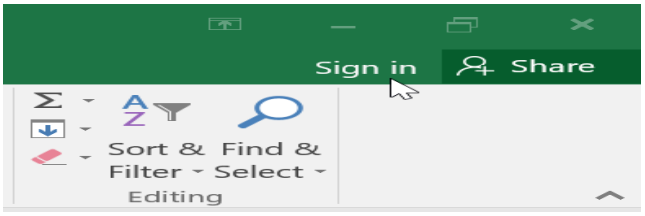
Introduction

Many of the features in Office are geared toward saving and sharing files online. **OneDrive** is Microsoft's online storage space you can use to save, edit, and share your documents and other files. You can access OneDrive from your computer, smartphone, or any of the devices you use.

To get started with OneDrive, all you need to do is set up a free **Microsoft account**, if you don't already have one.

If you don't already have a Microsoft account, you can go to the **Creating a Microsoft Account** lesson in our Microsoft Account tutorial.

Once you have a Microsoft account, you'll be able to sign in to Office. Just click **Sign** in the upper-right corner of the Excel window.



Benefits of using OneDrive

Once you're signed in to your Microsoft account, here are a few of the things you'll be able to do with OneDrive:

Access your files anywhere: When you save your files to OneDrive, you'll be able to access them from any computer, tablet, or smartphone that has an Internet connection. You'll also be able to create new documents from OneDrive.

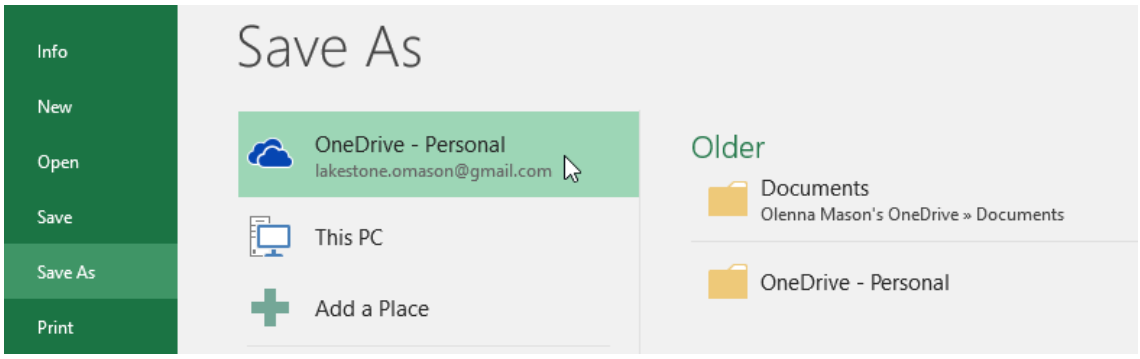
Back up your files: Saving files to OneDrive gives them an extra layer of protection. Even if something happens to your computer, OneDrive will keep your files safe and accessible.

Share files: It's easy to share your OneDrive files with friends and coworkers. You can choose whether they can edit or simply read files. This option is great for collaboration because multiple people can edit a document at the same time (this is also known as co-authoring).

Saving and opening files

When you're signed in to your Microsoft account, OneDrive will appear as an option whenever you save or open a file. You still have the option of saving files to your computer. However, saving files to your OneDrive allows you to access them from any other computer, and it also allows you to share files with friends and coworkers.

For example, when you click **Save As**, you can select either OneDrive or This PC as the save location.



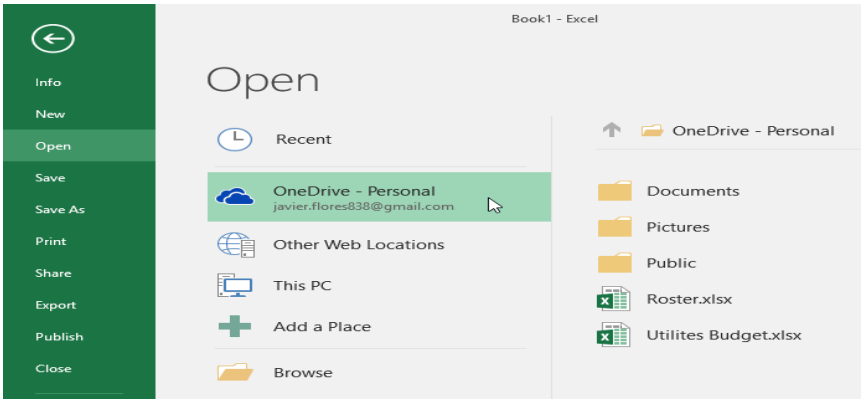
CHAPTER-3- CREATING AND OPENING WORKBOOKS

Introduction

Excel files are called **workbooks**. Whenever you start a new project in Excel, you'll need to **create a new workbook**. There are several ways to start working with a workbook in Excel. You can choose to **create a new workbook**—either with a **blank workbook** or a predesigned **template**—or **open an existing** workbook.

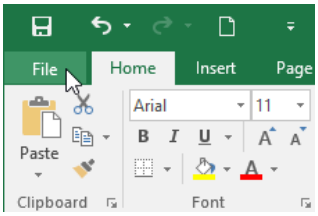
About OneDrive

Whenever you're opening or saving a workbook, you'll have the option of using your **OneDrive**, which is the online file storage service included with your Microsoft account. To enable this option, you'll need to **sign in** to Office

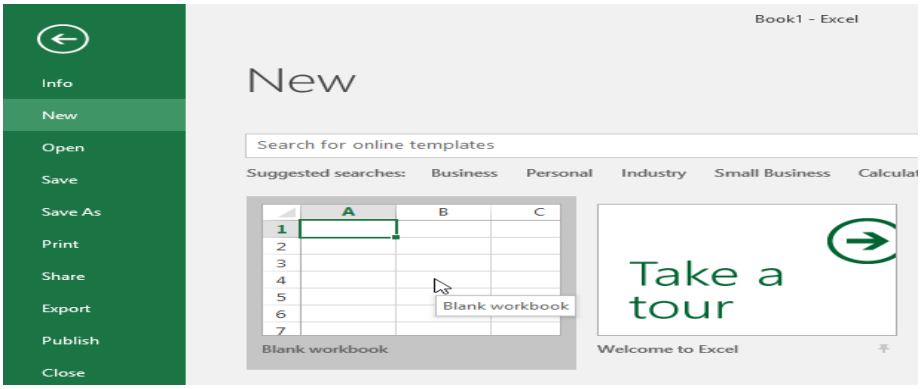


To create a new blank workbook:

1.Select the **File** tab. **Backstage view** will appear.



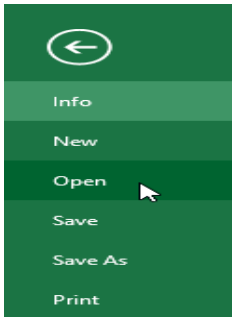
2.Select **New**, then click **Blank workbook**.



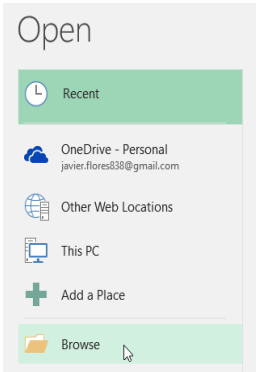
To open an existing workbook:

In addition to creating new workbooks, you'll often need to open a workbook that was previously saved.

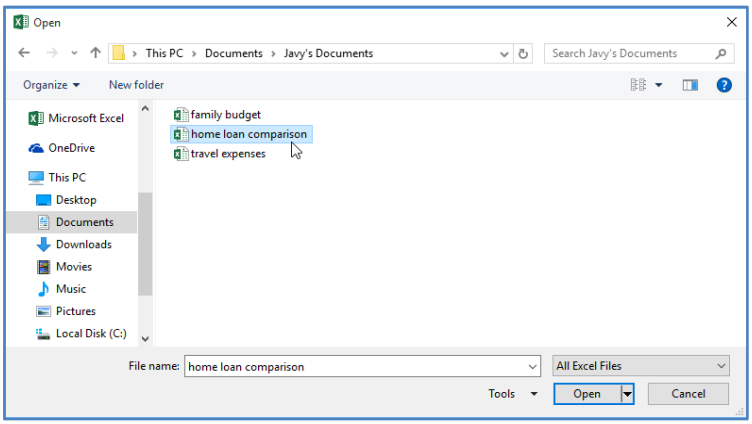
1.Navigate to **Backstage view**, then click **Open**.



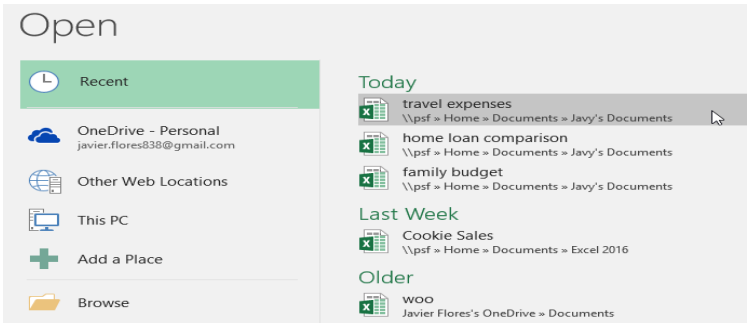
2.Select **Computer**, then click **Browse**. Alternatively, you can choose **OneDrive** to open files stored on your **OneDrive**.



3.The **Open** dialog box will appear. Locate and select your **workbook,** then click **Open**.



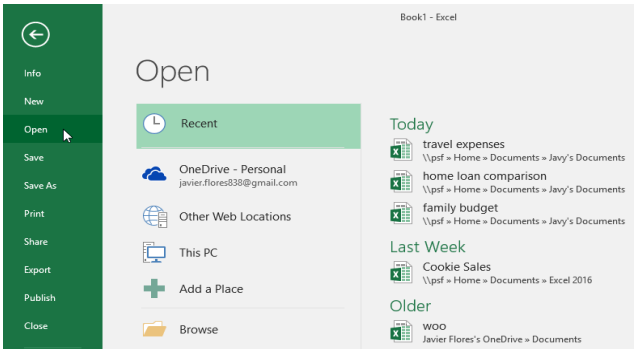
4.If you've opened the desired workbook recently, you can browse your **Recent Workbooks** rather than search for the file.



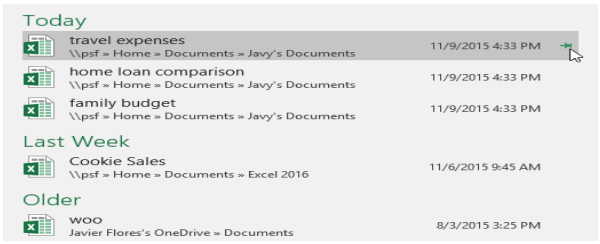
To pin a workbook:

If you frequently work with the **same workbook**, you can **pin it** to Backstage view for faster access.

1.Navigate to **Backstage view**, then click **Open**. Your **recently edited workbooks** will appear.



2.Hover the mouse over the **workbook** you want to pin. A **pushpin icon** will appear next to the workbook. Click the **pushpin icon**.



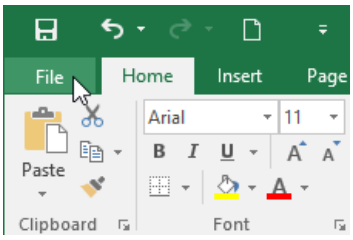
3.The workbook will stay in Recent Workbooks. To **unpin** a workbook, simply click the pushpin icon again.

Using templates

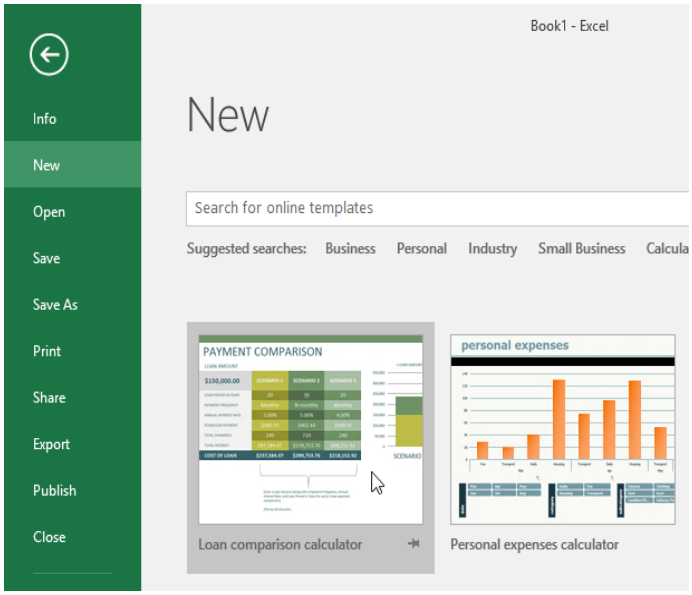
A **template** is a **predesigned spreadsheet** you can use to create a new workbook quickly. Templates often include **custom formatting** and **predefined formulas**, so they can save you a lot of time and effort when starting a new project.

To create a new workbook from a template:

1.Click the **File** tab to access **Backstage view**.

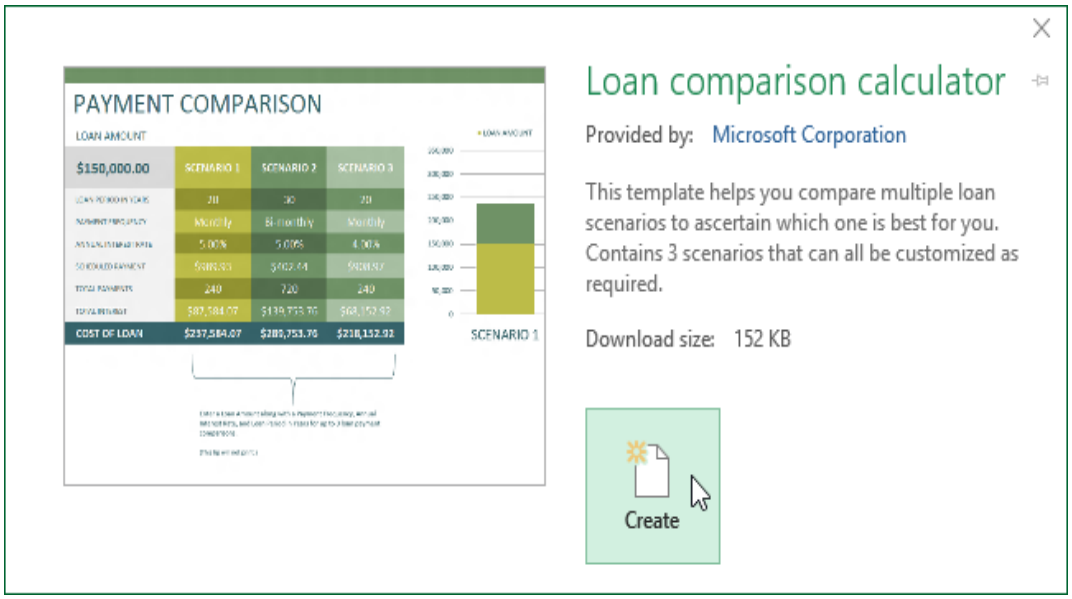


2.Select a **template** to review it.



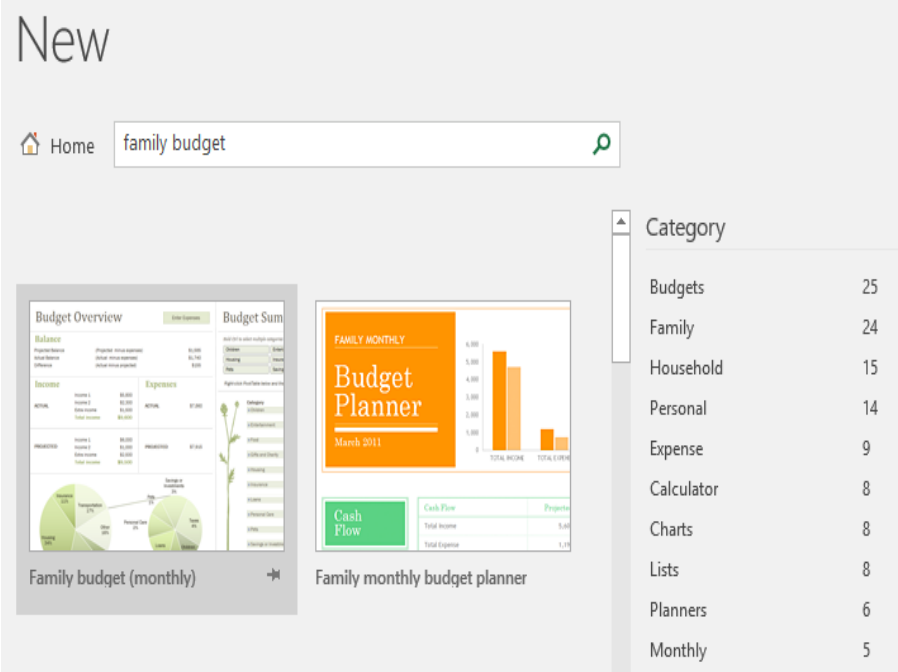
A **preview** of the template will appear, along with **additional information** on how the template can be used.

3.Click **Create** to use the selected template.



A new workbook will appear with the **selected template**.

4.You can also browse templates by **category** or use the **search bar** to find something more specific.

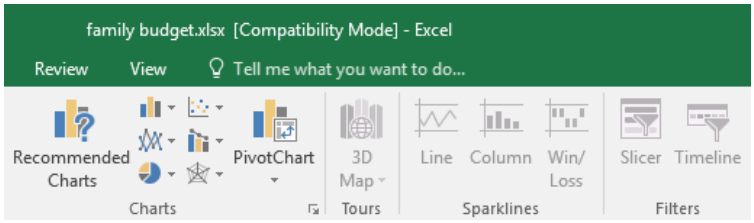


Compatibility Mode

Sometimes you may need to work with workbooks that were created in earlier versions of Microsoft Excel, such as Excel 2003 or Excel 2000. When you open these types of workbooks, they will appear in **Compatibility Mode**.

Compatibility Mode **disables** certain features, so you'll only be able to access commands found in the program that was used to create the workbook. For example, if you open a workbook created in Excel 2003, you can only use tabs and commands found in Excel 2003.

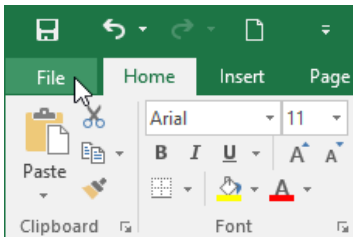
In the image below, you can see that the workbook is in Compatibility Mode, which is indicated at the top of the window to the right of the file name. This will disable some Excel 2016 features, and they will be grayed out on the Ribbon.



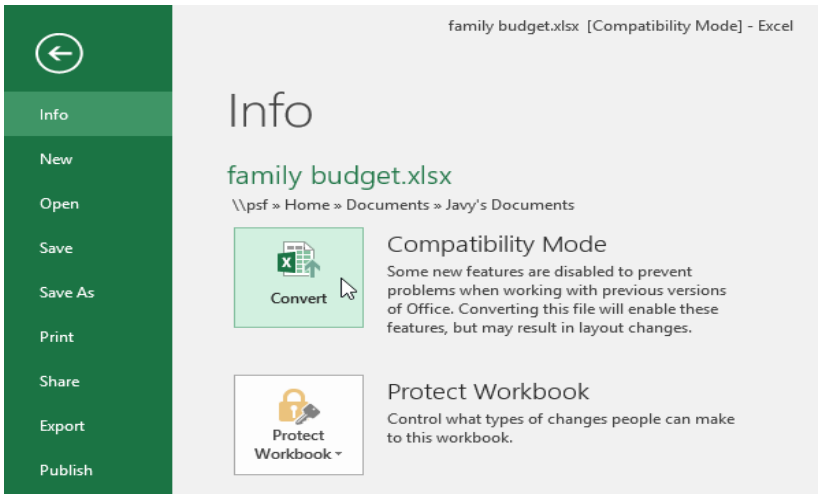
In order to exit Compatibility Mode, you'll need to **convert** the workbook to the current version type. However, if you're collaborating with others who only have access to an earlier version of Excel, it's best to leave the workbook in Compatibility Mode so the format will not change.

To convert a workbook:

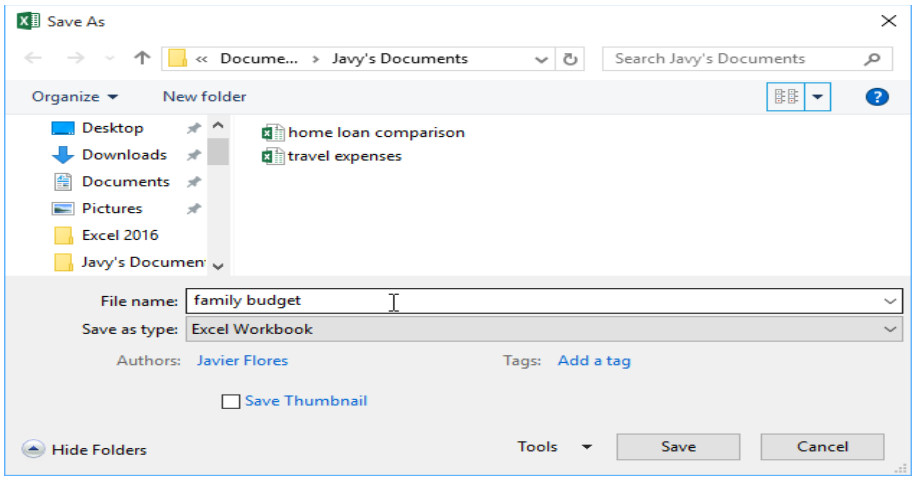
If you want access to all of the Excel 2016 features, you can **convert** the workbook to the 2016 file format.
Note that converting a file may cause some changes to the **original layout** of the workbook.
1.Click the **File** tab to access Backstage view.



2.Locate and select **Convert** command.



3.The **Save As** dialog box will appear. Select the **location** where you want to save the workbook, enter a **file name** for the workbook, and click **Save**.



The workbook will be converted to the newest file type.

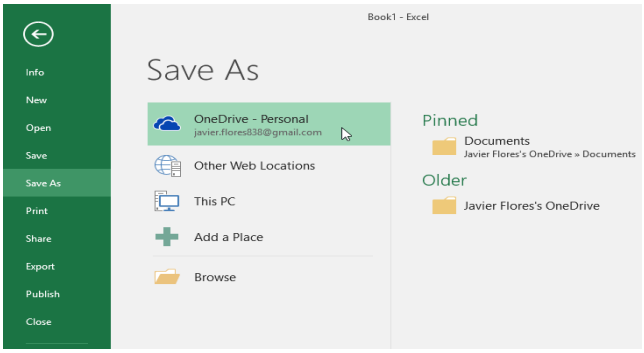
CHAPTER-4- SAVING AND SHARING WORKBOOKS

Introduction

Whenever you create a new workbook in Excel, you'll need to know how to **save** it in order to access and edit it later. As with previous versions of Excel, you can save files **locally** to your computer. But unlike older versions, Excel 2016 also lets you save a workbook to **the cloud** using **OneDrive**. You can also **export** and **share** workbooks with others directly from Excel.

About OneDrive

Whenever you're opening or saving a workbook, you'll have the option of using your **OneDrive**, which is the online file storage service included with your Microsoft account. To enable this option, you'll need to **sign in** to Office.



Save and Save As

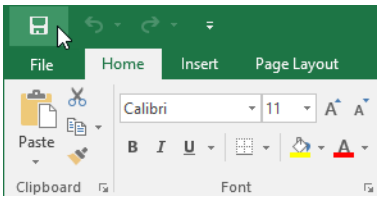
Excel offers two ways to save a file: **Save** and **Save As**. These options work in similar ways, with a few important differences:

Save: When you create or edit a workbook, you'll use the **Save** command to save your changes. You'll use this command most of the time. When you save a file, you'll only need to choose a file name and location the first time. After that, you can just click the Save command to save it with the same name and location.

Save As: You'll use this command to create a **copy** of a workbook while keeping the original. When you use Save As, you'll need to choose a different name and/or location for the copied version.

To save a workbook:

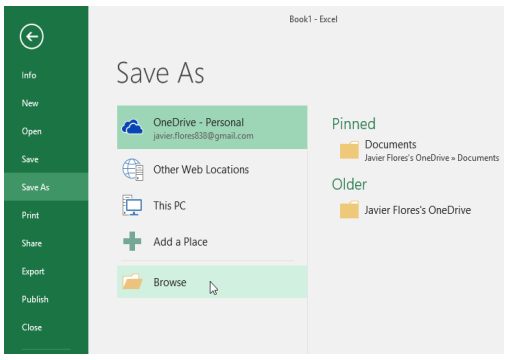
It's important to **save your workbook** whenever you start a new project or make changes to an existing one. Saving early and often can prevent your work from being lost. You'll also need to pay close attention to **where you save** the workbook so it will be easy to find later.



1.Locate and select the **Save** command on the **Quick Access Toolbar**.

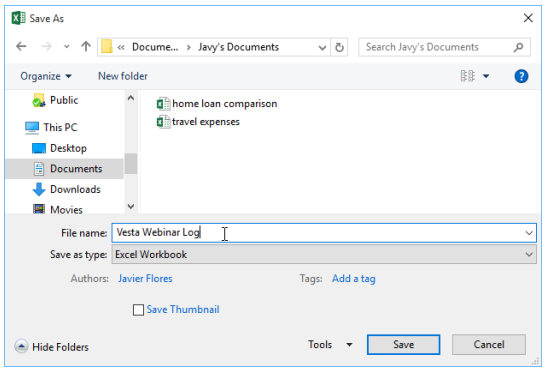
If you're saving the file for the first time, the **Save As** pane will appear in **Backstage view**.

2.You'll then need to choose **where to save** the file and give it a **file name**. To save the workbook to your computer, select **Computer**, then click **Browse**. Alternatively, you can click **OneDrive** to save the file to your OneDrive.



The **Save As** dialog box will appear. Select the **location** where you want to save the workbook.

3.Enter a **file name** for the workbook, then click **Save**.

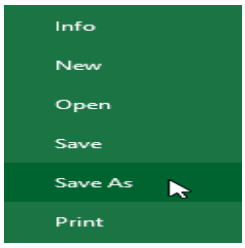


The workbook will be **saved**. You can click the **Save** command again to save your changes as you modify the workbook.

You can also access the **Save** command by pressing **Ctrl+S** on your keyboard.

Using Save As to make a copy

If you want to save a **different version** of a workbook while keeping the original, you can create a **copy**. For example, if you have a file named **Sales Data**, you could save it as **Sales Data 2** so you'll be able to edit the new file and still refer back to the original version.

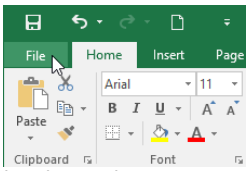


To do this, you'll click the **Save As** command in Backstage view. Just like when saving a file for the first time, you'll need to choose **where to save** the file and give it a new **file name**.

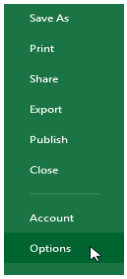
To change the default save location:

If you don't want to use OneDrive**,** you may be frustrated that OneDrive is selected as the default location when saving. If you find it inconvenient to select **Computer** each time, you can change the **default save location** so **Computer** is selected by default.

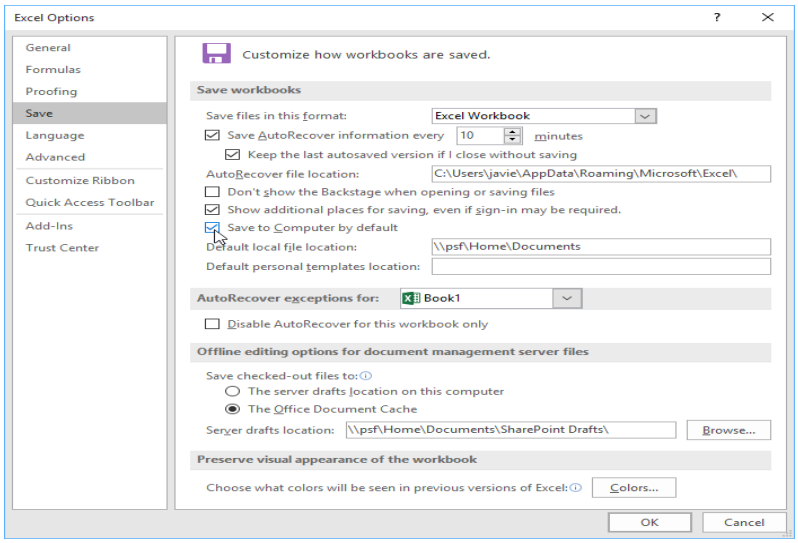
1.Click the **File** tab to access **Backstage view**.



2.Click **Options**.



3.The **Excel Options** dialog box will appear. Select **Save**, **check the box** next to **Save to Computer by default**, then click **OK**. The default save location will be changed.



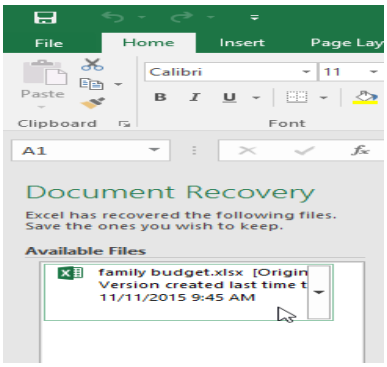
AutoRecover

Excel automatically saves your workbooks to a temporary folder while you are working on them. If you forget to save your changes or if Excel crashes, you can restore the file using **AutoRecover**.

To use AutoRecover:

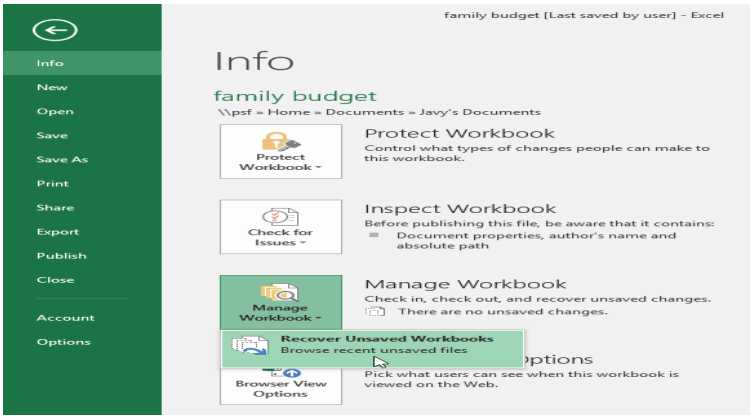
Open Excel. If **autosaved versions** of a file are found, the **Document Recovery** pane will appear.

1.Click to **open** an available file. The workbook will be **recovered**.



By default, Excel auto saves every 10 minutes. If you are editing a workbook for less than 10 minutes, Excel may not create an auto saved version.

2.If you don't see the file you need, you can browse all auto saved files from **Backstage view**. Just select the **File** tab, click **Manage Versions,** then choose **Recover Unsaved Workbooks**.

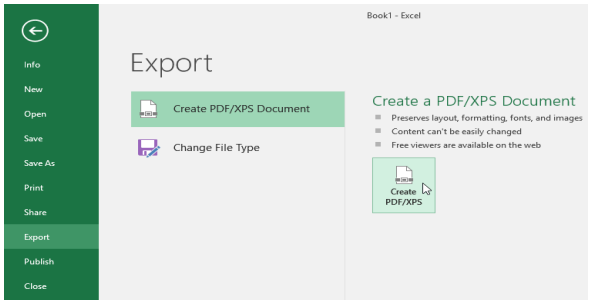


Exporting workbooks

By default, Excel workbooks are saved in the **.xlsx** file type. However, there may be times when you need to use **another file type,** such as a **PDF** or **Excel 97-2003 workbook**. It's easy to **export** your workbook from Excel to a variety of file types.

To export a workbook as a PDF file:

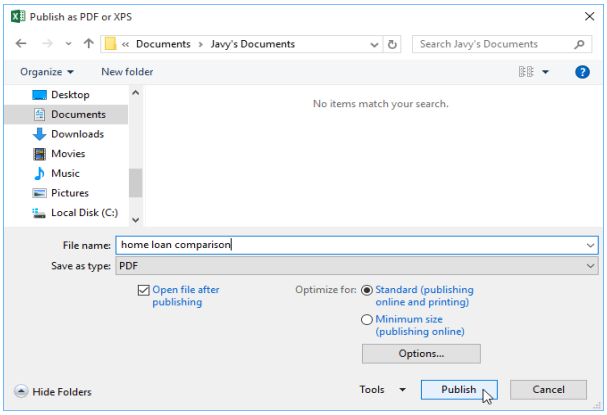
Exporting your workbook as an **Adobe Acrobat document**, commonly known as a **PDF file**, can be especially useful if you're sharing a workbook with someone who does not have Excel. A PDF will make it possible for recipients to view but not edit the content of your workbook.



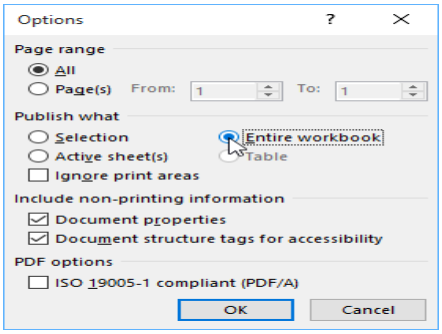
1.Click the **File** tab to access **Backstage view**.

Click **Export**, then select **Create PDF/XPS**.

2.The **Save As** dialog box will appear. Select the **location** where you want to export the workbook, enter a **file name**, then click **Publish**.

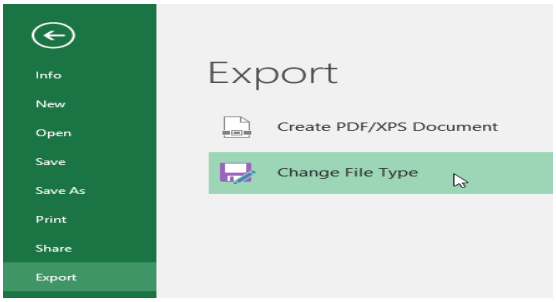


3.By default, Excel will only export the **active worksheet**. If you have multiple worksheets and want to save all of them in the same PDF file, click **Options** in the **Save As** dialog box. The **Options** dialog box will appear. Select **Entire workbook**, then click **OK**.



To export a workbook to other file types:

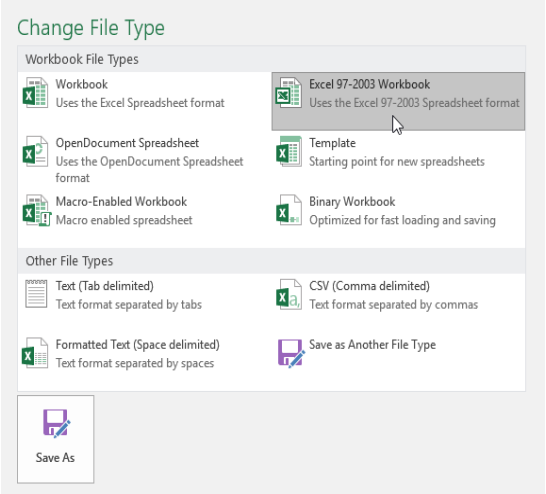
You may also find it helpful to export your workbook to other file types, such as an **Excel 97-2003 workbook** if you need to share with people using an older version of Excel, or a **.CSV file** if you need a **plain-text version** of your workbook.



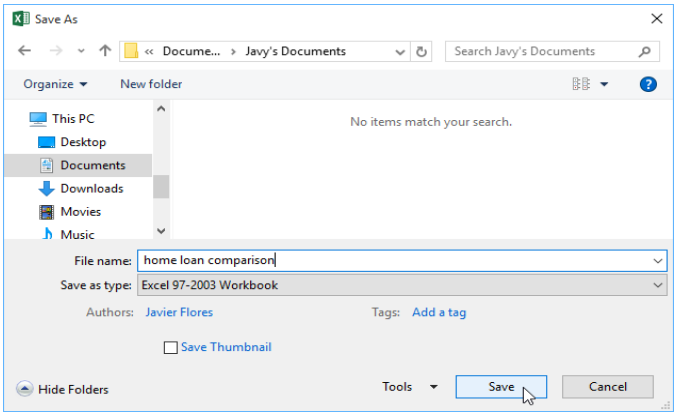
1.Click the **File** tab to access **Backstage view**.

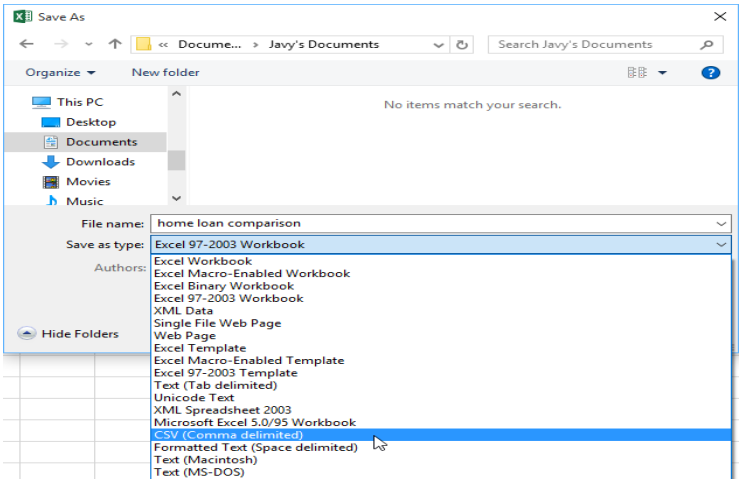
Click **Export**, then select **Change File Type**.

2.Select a common **file type**, then click **Save As**.



3.The **Save As** dialog box will appear. Select the **location** where you want to export the workbook, enter a **file name**, then click **Save**.





4.You can also use the **Save as type:** drop-down menu in the **Save As** dialog box to save workbooks in a variety of file types.

Sharing workbooks

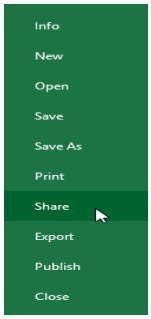
Excel makes it easy to **share and collaborate** on workbooks using **OneDrive**. In the past, if you wanted to share a file with someone you could send it as an email attachment. While convenient, this system also creates **multiple versions** of the same file, which can be difficult to organize.

When you share a workbook from Excel, you're actually giving others access to the **exact same file**. This lets you and the people you share with **edit the same workbook** without having to keep track of multiple versions.

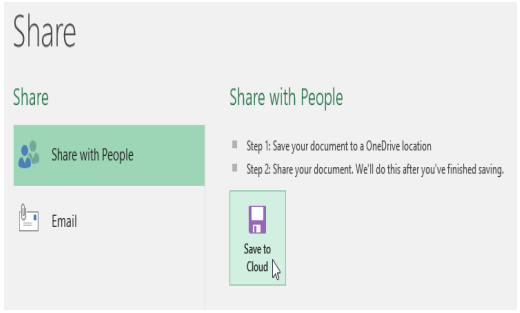
In order to share a workbook, it must first be **saved to your OneDrive**.

To share a workbook:

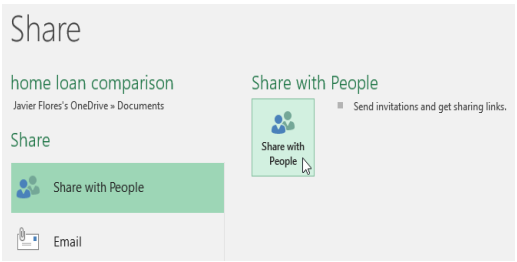
1.Click the **File** tab to access **Backstage view**, then click **Share**.



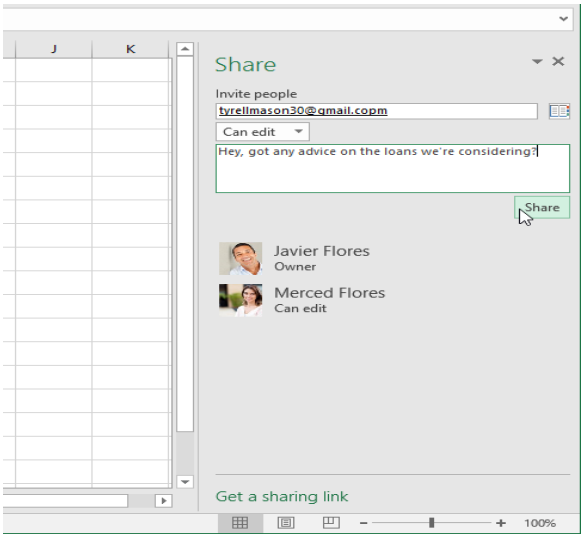
2.The **Share** pane will appear. If you have not already done so, you will be prompted to save your document to **OneDrive**. Note that you may need to navigate back to the Share pane after saving.



3.On the **Share** pane, if your document is saved to OneDrive, click the **Share with People** button.



4.Excel will return to Normal view and open the **Share** panel on the right side of the window. From here, you can invite people to share your document, see a list of who has access to the document, and set whether they can edit or only view the document.



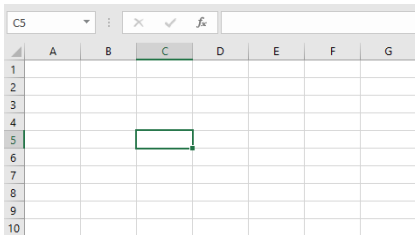
CHAPTER-5- CELL BASICS

Introduction

Whenever you work with Excel, you'll enter information—or **content**—into **cells**. Cells are the basic building blocks of a worksheet. You'll need to learn the basics of **cells** and **cell content** to calculate, analyze, and organize data in Excel.

Understanding cells

Every worksheet is made up of thousands of rectangles, which are called **cells**. A cell is the **intersection** of a **row** and a **column**—in other words, where a row and column meet.

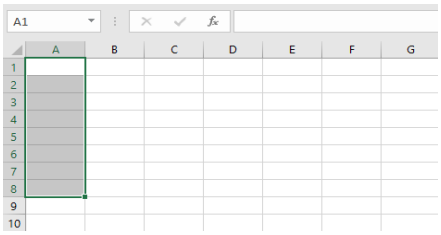


Columns are identified by **letters (A, B, C)**, while rows are identified by **numbers (1, 2, 3)**. Each cell has its own **name**—or **cell address**—based on its column and row. In the example below, the selected cell intersects **column C** and **row 5**, so the cell address is **C5**.

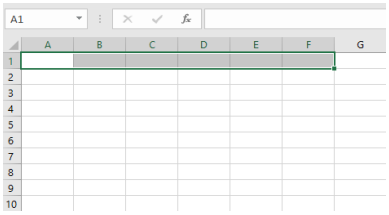
Note that the cell address also appears in the **Name box** in the top-left corner, and that a cell's **column** and **row headings** are **highlighted** when the cell is selected.

You can also select **multiple cells** at the same time. A group of cells is known as a **cell range**. Rather than a single cell address, you will refer to a cell range using the cell addresses of the **first** and **last** cells in the cell range, separated by a **colon**. For example, a cell range that included cells A1, A2, A3, A4, and A5 would be written as **A1:A5**. Take a look at the different cell ranges below:

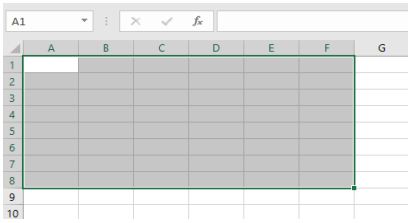
1.Cell range **A1:A8**



2.Cell range **A1:F1**



3.Cell range **A1:F8**



If the columns in your spreadsheet are labeled with numbers instead of letters, you'll need to change the default **reference style** for Excel.

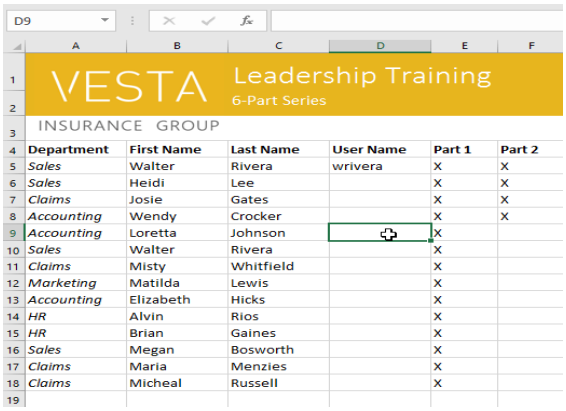
To select a cell:

To input or edit cell content, you'll first need to **select** the cell.

Click a **cell** to select it. In our example, we'll select cell **D9**.

A **border** will appear around the selected cell, and the **column heading** and **row heading** will be highlighted. The cell will remain selected until you click another cell in the worksheet.

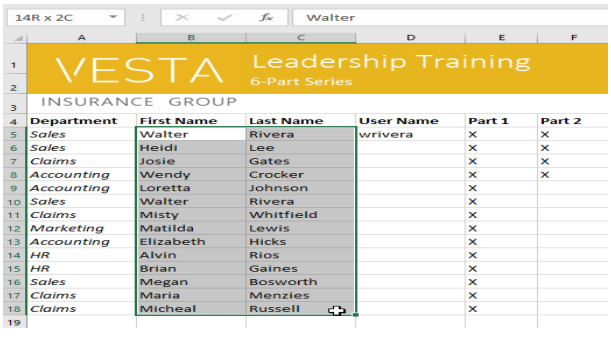
You can also select cells using the **arrow keys** on your keyboard.



Department	First Name	Last Name	User Name	Part 1	Part 2
Sales	Walter	Rivera	wrivera	X	X
Sales	Heidi	Lee		X	X
Claims	Josie	Gates		X	X
Accounting	Wendy	Crocker		X	X
Accounting	Loretta	Johnson		X	
Sales	Walter	Rivera		X	
Claims	Misty	Whitfield		X	
Marketing	Matilda	Lewis		X	
Accounting	Elizabeth	Hicks		X	
HR	Alvin	Rios		X	
HR	Brian	Gaines		X	
Sales	Megan	Bosworth		X	
Claims	Maria	Menzies		X	
Claims	Micheal	Russell		X	

To select a cell range:

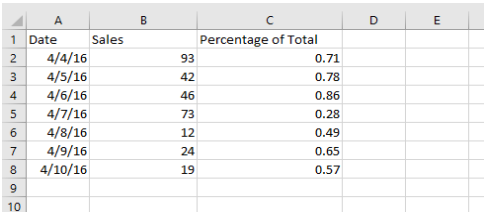
Sometimes you may want to select a larger group of cells, or a **cell range**.
Click and drag the mouse until all of the **adjoining cells** you want to select are **highlighted**. In our example, we'll select the cell range **B5:C18**.
Release the mouse to **select** the desired cell range. The cells will remain selected until you click another cell in the worksheet.



Department	First Name	Last Name	User Name	Part 1	Part 2
Sales	Walter	Rivera	wrivera	X	X
Sales	Heidi	Lee		X	X
Claims	Josie	Gates		X	X
Accounting	Wendy	Crocker		X	X
Accounting	Loretta	Johnson		X	
Sales	Walter	Rivera		X	
Claims	Misty	Whitfield		X	
Marketing	Matilda	Lewis		X	
Accounting	Elizabeth	Hicks		X	
HR	Alvin	Rios		X	
HR	Brian	Gaines		X	
Sales	Megan	Bosworth		X	
Claims	Maria	Menzies		X	
Claims	Micheal	Russell		X	

Cell content

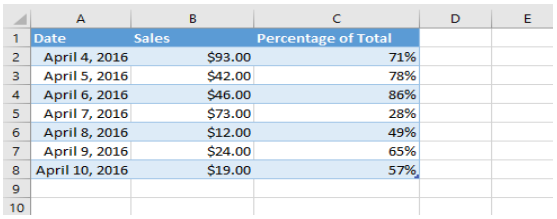
Any information you enter into a spreadsheet will be stored in a cell. Each cell can contain different types of **content**, including **text**, **formatting**, **formulas**, and **functions**.



	A	B	C	D	E
1	Date	Sales	Percentage of Total		
2	4/4/16	93	0.71		
3	4/5/16	42	0.78		
4	4/6/16	46	0.86		
5	4/7/16	73	0.28		
6	4/8/16	12	0.49		
7	4/9/16	24	0.65		
8	4/10/16	19	0.57		
9					
10					

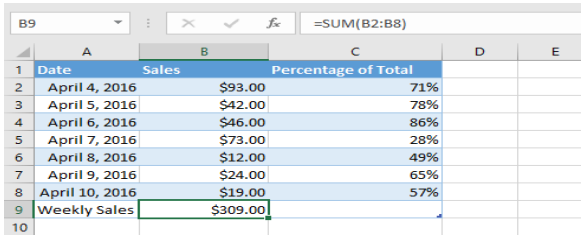
1.Text: Cells can contain **text**, such as letters, numbers, and dates.

2.Formatting attributes: Cells can contain **formatting attributes** that change the way letters, numbers, and dates are displayed. For example, percentages can appear as 0.15 or 15%. You can even change a cell's **text** or **background color**.



	A	B	C	D	E
1	Date	Sales	Percentage of Total		
2	April 4, 2016	$93.00	71%		
3	April 5, 2016	$42.00	78%		
4	April 6, 2016	$46.00	86%		
5	April 7, 2016	$73.00	28%		
6	April 8, 2016	$12.00	49%		
7	April 9, 2016	$24.00	65%		
8	April 10, 2016	$19.00	57%		
9					
10					

3.Formulas and functions: Cells can contain **formulas** and **functions** that calculate cell values. In our example, **SUM(B2:B8)** adds the value of each cell in the cell range B2:B8 and displays the total in cell B9.

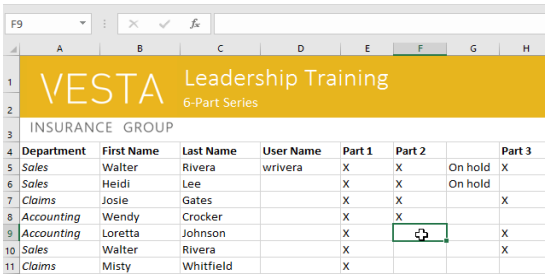


B9 =SUM(B2:B8)

	A	B	C	D	E
1	Date	Sales	Percentage of Total		
2	April 4, 2016	$93.00	71%		
3	April 5, 2016	$42.00	78%		
4	April 6, 2016	$46.00	86%		
5	April 7, 2016	$73.00	28%		
6	April 8, 2016	$12.00	49%		
7	April 9, 2016	$24.00	65%		
8	April 10, 2016	$19.00	57%		
9	Weekly Sales	$309.00			
10					

To insert content:

1.Click a **cell** to select it. In our example, we'll select cell **F9**.



F9

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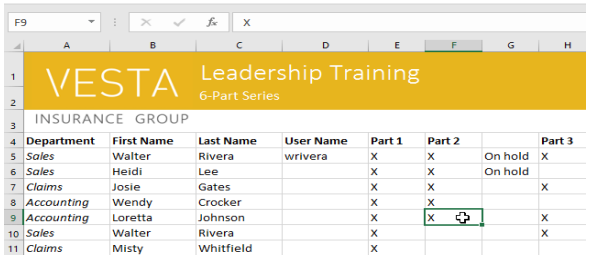
INSURANCE GROUP

Department	First Name	Last Name	User Name	Part 1	Part 2		Part 3
Sales	Walter	Rivera	wrivera	X	X	On hold	X
Sales	Heidi	Lee		X	X	On hold	
Claims	Josie	Gates		X	X		X
Accounting	Wendy	Crocker		X	X		
Accounting	Loretta	Johnson		X			X
Sales	Walter	Rivera		X			X
Claims	Misty	Whitfield		X			

2.Type something into the selected cell, then press **Enter** on your keyboard. The content will appear in the **cell** and the **formula bar**. You can also input and edit cell content in the formula bar.



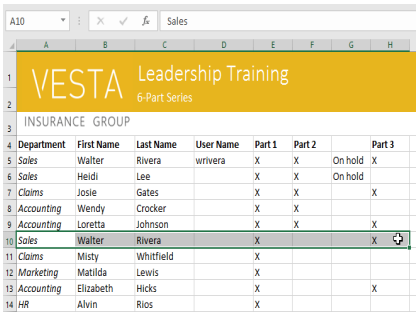
F9 X

VESTA Leadership Training 6-Part Series
INSURANCE GROUP

Department	First Name	Last Name	User Name	Part 1	Part 2		Part 3
Sales	Walter	Rivera	wrivera	X	X	On hold	X
Sales	Heidi	Lee		X	X	On hold	
Claims	Josie	Gates		X	X		X
Accounting	Wendy	Crocker		X	X		
Accounting	Loretta	Johnson		X	X		X
Sales	Walter	Rivera		X			X
Claims	Misty	Whitfield		X			

To delete (or clear) cell content:

1.Select the **cell(s)** with content you want to delete. In our example, we'll select the cell range **A10:H10**.

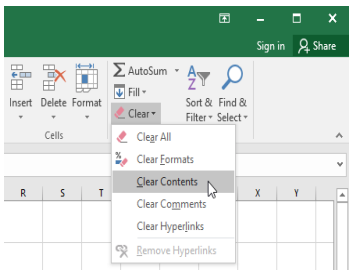


A10 Sales

VESTA Leadership Training 6-Part Series
INSURANCE GROUP

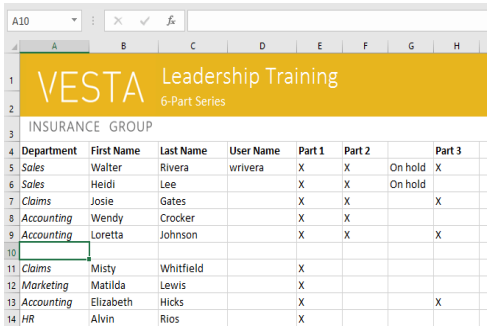
Department	First Name	Last Name	User Name	Part 1	Part 2		Part 3
Sales	Walter	Rivera	wrivera	X	X	On hold	X
Sales	Heidi	Lee		X	X	On hold	
Claims	Josie	Gates		X	X		X
Accounting	Wendy	Crocker		X	X		
Accounting	Loretta	Johnson		X	X		X
Sales	Walter	Rivera		X			X
Claims	Misty	Whitfield		X			
Marketing	Matilda	Lewis		X			
Accounting	Elizabeth	Hicks		X			X
HR	Alvin	Rios		X			

2.Select the **Clear** command on the **Home** tab, then click **Clear Contents**.



Sign in Share
Insert Delete Format AutoSum Fill Clear Sort & Filter Find & Select
Cells
Clear All
Clear Formats
Clear Contents
Clear Comments
Clear Hyperlinks
Remove Hyperlinks

3.The cell contents will be deleted.



A10

VESTA Leadership Training 6-Part Series
INSURANCE GROUP

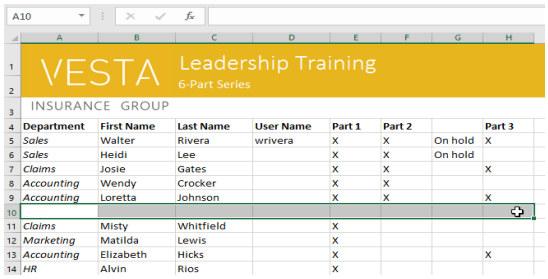
Department	First Name	Last Name	User Name	Part 1	Part 2		Part 3
Sales	Walter	Rivera	wrivera	X	X	On hold	X
Sales	Heidi	Lee		X	X	On hold	
Claims	Josie	Gates		X	X		X
Accounting	Wendy	Crocker		X	X		
Accounting	Loretta	Johnson		X	X		X
Claims	Misty	Whitfield		X			
Marketing	Matilda	Lewis		X			
Accounting	Elizabeth	Hicks		X			X
HR	Alvin	Rios		X			

You can also use the **Delete** key on your keyboard to delete content from **multiple cells** at once. The **Backspace** key will only delete content from one cell at a time.

To delete cells:

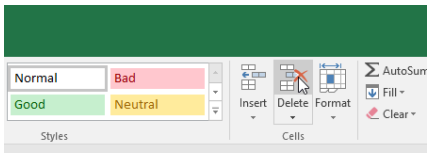
There is an important difference between deleting the content of a cell and **deleting the cell itself**. If you delete the entire cell, the cells below it will **shift to fill in the gaps** and **replace the deleted cells**.

1.Select the **cell(s)** you want to delete. In our example, we'll select **A10:H10**.

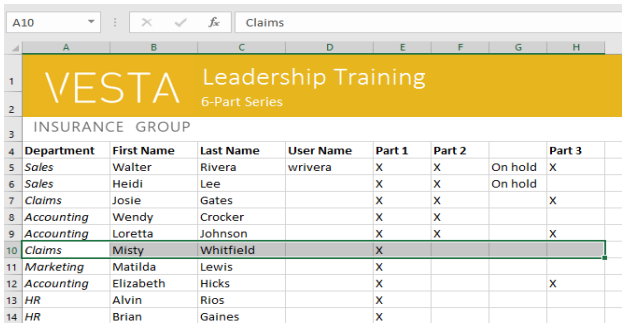


Department	First Name	Last Name	User Name	Part 1	Part 2		Part 3
Sales	Walter	Rivera	wrivera	X	X	On hold	X
Sales	Heidi	Lee		X	X	On hold	
Claims	Josie	Gates		X	X		X
Accounting	Wendy	Crocker		X	X		
Accounting	Loretta	Johnson		X	X		X
Claims	Misty	Whitfield		X			
Marketing	Matilda	Lewis		X			
Accounting	Elizabeth	Hicks		X			X
HR	Alvin	Rios		X			

2.Select the **Delete** command from the **Home** tab on the **Ribbon**.



3.The cells below will **shift up** and **fill in the gaps**.

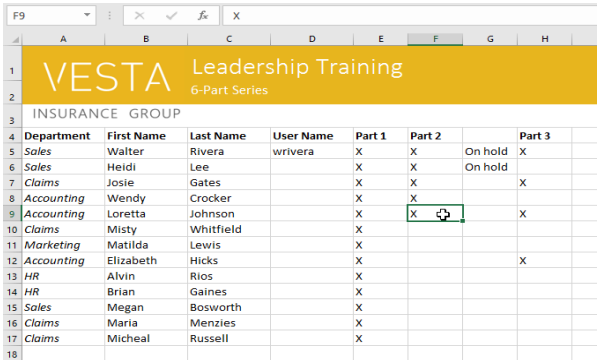


Department	First Name	Last Name	User Name	Part 1	Part 2		Part 3
Sales	Walter	Rivera	wrivera	X	X	On hold	X
Sales	Heidi	Lee		X	X	On hold	
Claims	Josie	Gates		X	X		X
Accounting	Wendy	Crocker		X	X		
Accounting	Loretta	Johnson		X	X		X
Claims	Misty	Whitfield		X			
Marketing	Matilda	Lewis		X			
Accounting	Elizabeth	Hicks		X			X
HR	Alvin	Rios		X			
HR	Brian	Gaines		X			

To copy and paste cell content:

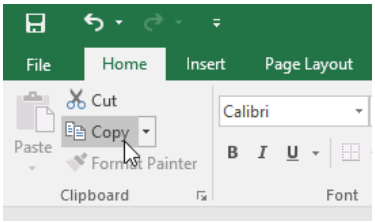
Excel allows you to **copy** content that is already entered into your spreadsheet and **paste** that content to other cells, which can save you time and effort.

1.Select the **cell(s)** you want to **copy**. In our example, we'll select **F9**.

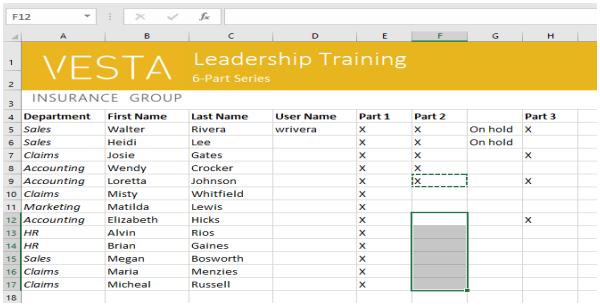


Department	First Name	Last Name	User Name	Part 1	Part 2		Part 3
Sales	Walter	Rivera	wrivera	X	X	On hold	X
Sales	Heidi	Lee		X	X	On hold	
Claims	Josie	Gates		X	X		X
Accounting	Wendy	Crocker		X	X		
Accounting	Loretta	Johnson		X	X		X
Claims	Misty	Whitfield		X			
Marketing	Matilda	Lewis		X			
Accounting	Elizabeth	Hicks		X			X
HR	Alvin	Rios		X			
HR	Brian	Gaines		X			
Sales	Megan	Bosworth		X			
Claims	Maria	Menzies		X			
Claims	Micheal	Russell		X			

2.Click the **Copy** command on the **Home** tab, or press **Ctrl+C** on your keyboard.

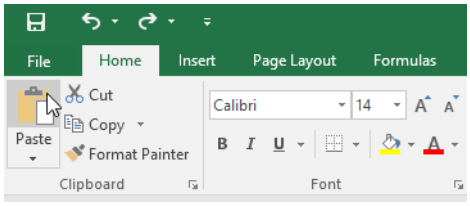


3.Select the **cell(s)** where you want to **paste** the content. In our example, we'll select **F12:F17**. The copied cell(s) will have a **dashed box** around them.

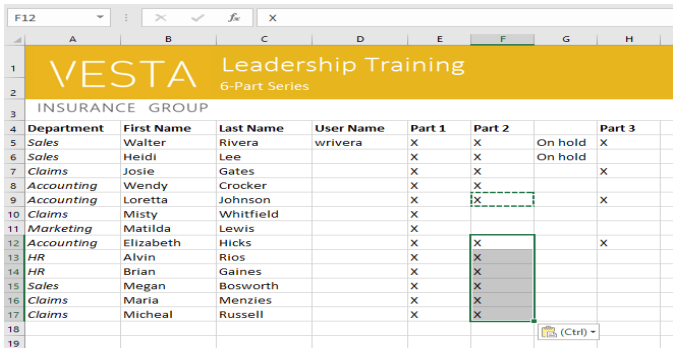


Department	First Name	Last Name	User Name	Part 1	Part 2		Part 3
Sales	Walter	Rivera	wrivera	X	X	On hold	X
Sales	Heidi	Lee		X	X	On hold	
Claims	Josie	Gates		X	X		X
Accounting	Wendy	Crocker		X	X		
Accounting	Loretta	Johnson		X	X		X
Claims	Misty	Whitfield		X			
Marketing	Matilda	Lewis		X			
Accounting	Elizabeth	Hicks		X			X
HR	Alvin	Rios		X			
HR	Brian	Gaines		X			
Sales	Megan	Bosworth		X			
Claims	Maria	Menzies		X			
Claims	Micheal	Russell		X			

4.Click the **Paste** command on the **Home** tab, or press **Ctrl+V** on your keyboard.



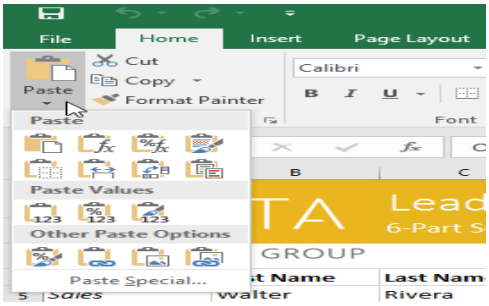
5.The content will be **pasted** into the selected cells.



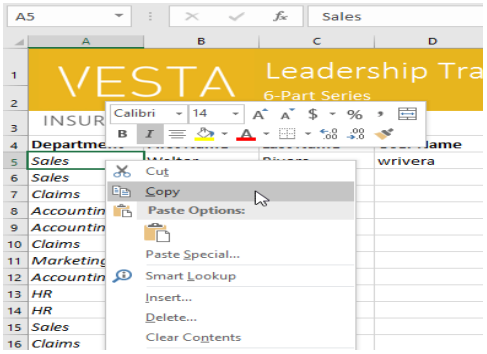
Department	First Name	Last Name	User Name	Part 1	Part 2		Part 3
Sales	Walter	Rivera	wrivera	X	X	On hold	X
Sales	Heidi	Lee		X	X	On hold	
Claims	Josie	Gates		X	X		X
Accounting	Wendy	Crocker		X	X		
Accounting	Loretta	Johnson		X	X		X
Claims	Misty	Whitfield		X			
Marketing	Matilda	Lewis		X			
Accounting	Elizabeth	Hicks		X	X		X
HR	Alvin	Rios		X	X		
HR	Brian	Gaines		X	X		
Sales	Megan	Bosworth		X	X		
Claims	Maria	Menzies		X	X		
Claims	Micheal	Russell		X	X		

To access more paste options:

1.You can also access **additional paste options**, which are especially convenient when working with cells that contain **formulas** or **formatting**. Just click the **drop-down arrow** on the **Paste** command to see these options.



2.Instead of choosing commands from the Ribbon, you can access commands quickly by **right-clicking**. Simply select the **cell(s)** you want to **format**, then right-click the mouse. A **drop-down menu** will appear, where you'll find several **commands** that are also located on the Ribbon.

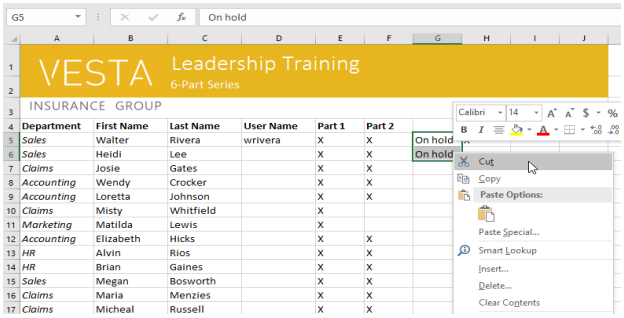


To cut and paste cell content:

Unlike copying and pasting, which **duplicates** cell content, **cutting** allows you to **move** content between cells.

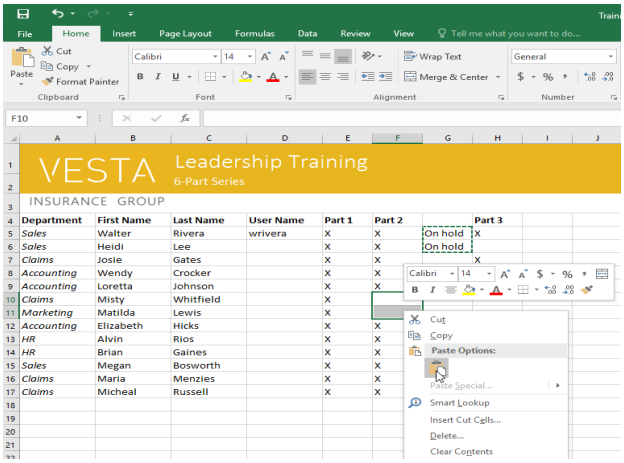
1.Select the **cell(s)** you want to **cut**. In our example, we'll select **G5:G6**.

Right-click the mouse and select the **Cut** command. Alternatively, you can use the command on the **Home** tab, or press **Ctrl+X** on your keyboard.

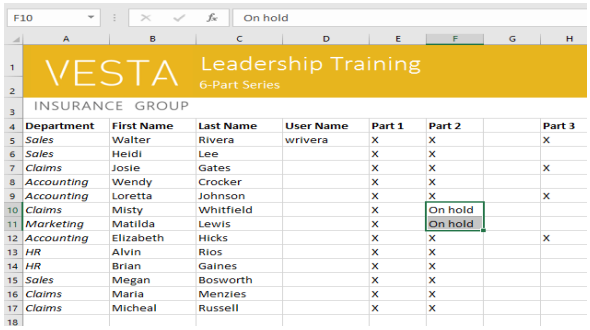


Select the cells where you want to **paste** the content. In our example, we'll select **F10:F11**. The cut cells will now have a **dashed box** around them.

2.Right-click the mouse and select the **Paste** command. Alternatively, you can use the command on the **Home** tab, or press **Ctrl+V** on your keyboard.

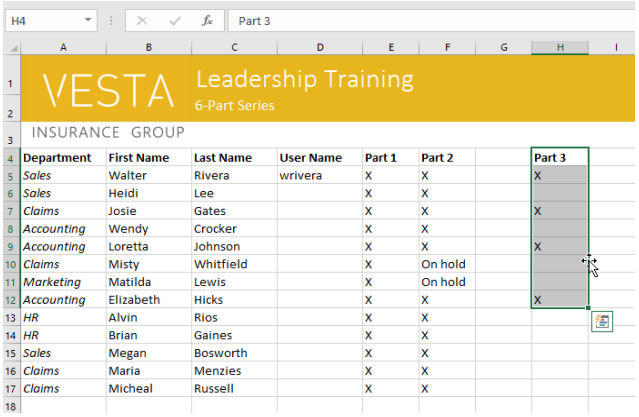


3.The cut content will be **removed** from the original cells and **pasted** into the selected cells.

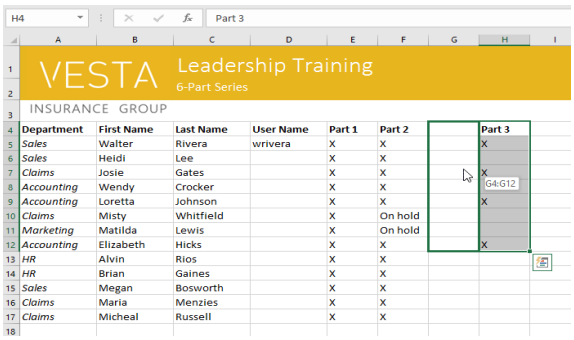


To drag and drop cells:

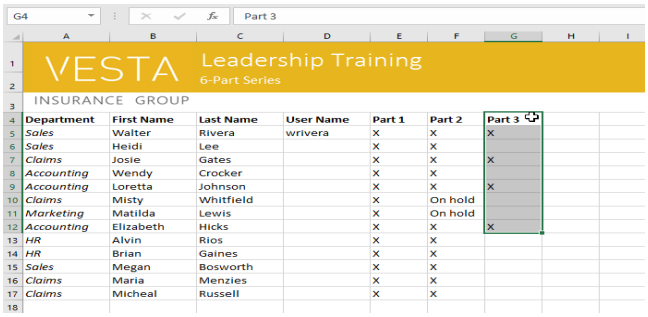
Instead of cutting, copying, and pasting, you can **drag and drop** cells to move their contents.
1.Select the **cell(s)** you want to **move**. In our example, we'll select **H4:H12**.
Hover the mouse over the **border** of the selected cell(s) until the mouse changes to a **pointer with four arrows**.



2.Click and drag the cells to the **desired location**. In our example, we'll move them to **G4:G12**.



3.Release the mouse. The cells will be **dropped** in the selected location.

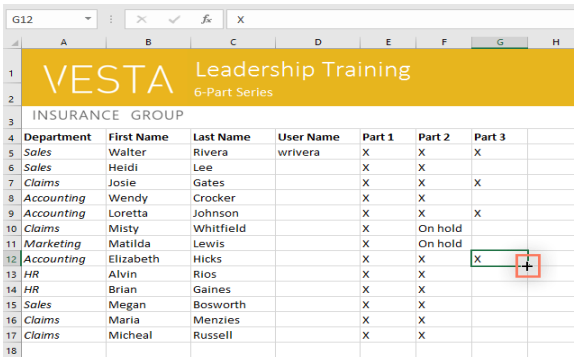


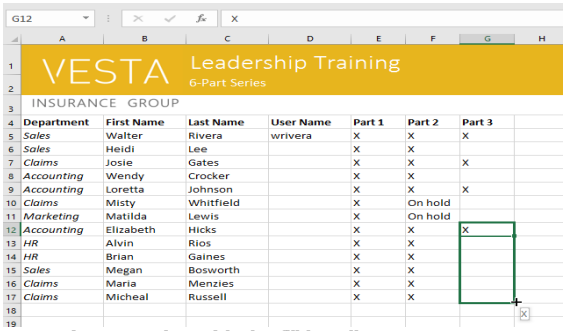
To use the fill handle:

If you're copying cell content to adjacent cells in the same row or column, the **fill handle** is a good alternative to the copy and paste commands.

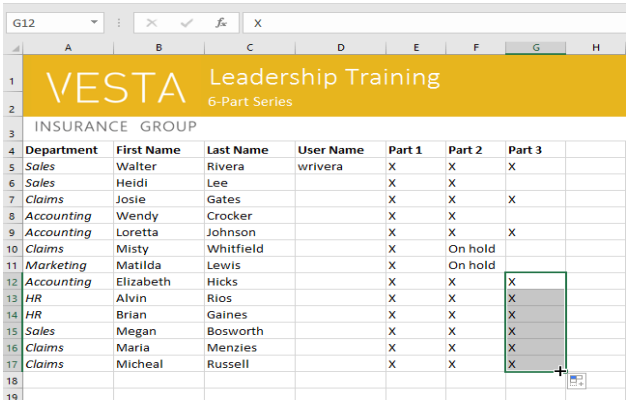
1.Select the **cell(s)** containing the content you want to use, then hover the mouse over the lower-right corner of the cell so the **fill handle** appears.

2.Click and drag the **fill handle** until all of the cells you want to fill are selected. In our example, we'll select **G13:G17**.





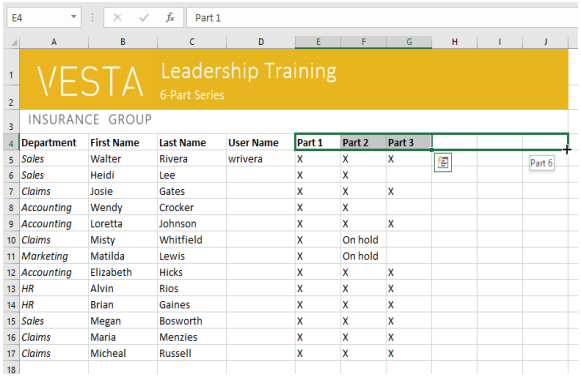
3.Release the mouse to **fill** the selected cells.



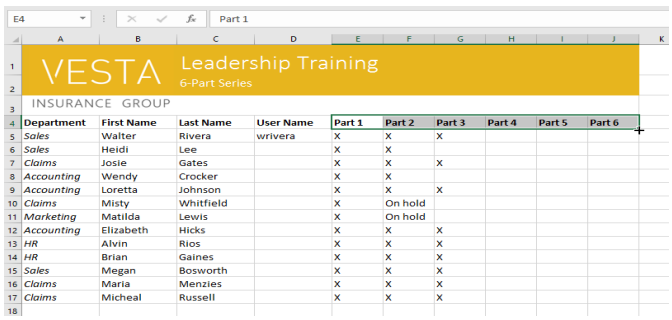
To continue a series with the fill handle:

The fill handle can also be used to **continue a series**. Whenever the content of a row or column follows a sequential order, like **numbers (1, 2, 3)** or **days (Monday, Tuesday, Wednesday)**, the fill handle can guess what should come next in the series. In most cases, you will need to select **multiple cells** before using the fill handle to help Excel determine the series order. Let's take a look at an example:

1.Select the cell range that contains the series you want to continue. In our example, we'll select **E4:G4**.



2.Release the mouse. If Excel understood the series, it will be continued in the selected cells. In our example, Excel added **Part 4**, **Part 5**, and **Part 6** to **H4:J4**.



CHAPTER-6- MODIFYING COLUMNS, ROWS, AND CELLS

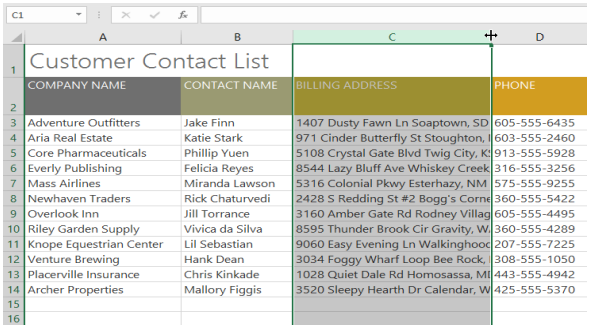
Introduction

By default, every row and column of a new workbook is set to the same **height** and **width**. Excel allows you to modify column width and row height in different ways, including **wrapping text** and **merging cells**.

To modify column width:

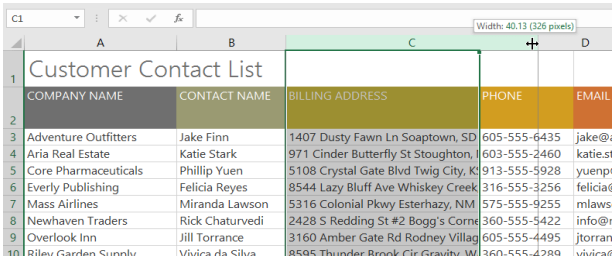
In our example below, column C is too narrow to display all of the content in these cells. We can make all of this content visible by changing the **width** of column C.

1.Position the mouse over the **column line** in the **column heading** so the cursor becomes a **double arrow**.



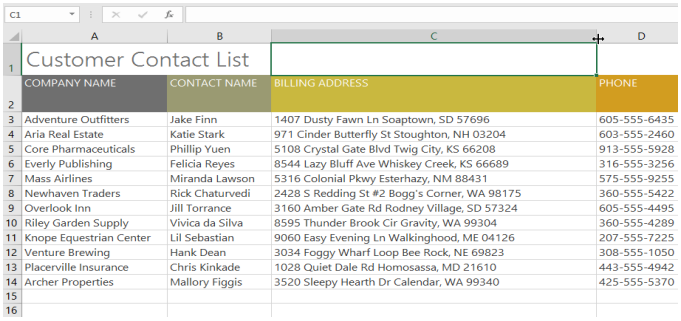
	A	B	C	D
1	Customer Contact List			
2	COMPANY NAME	CONTACT NAME	BILLING ADDRESS	PHONE
3	Adventure Outfitters	Jake Finn	1407 Dusty Fawn Ln Soaptown, SD	605-555-6435
4	Aria Real Estate	Katie Stark	971 Cinder Butterfly St Stoughton, I	603-555-2460
5	Core Pharmaceuticals	Phillip Yuen	5108 Crystal Gate Blvd Twig City, K	913-555-5928
6	Everly Publishing	Felicia Reyes	8544 Lazy Bluff Ave Whiskey Creek	316-555-3256
7	Mass Airlines	Miranda Lawson	5316 Colonial Pkwy Esterhazy, NM	575-555-9255
8	Newhaven Traders	Rick Chaturvedi	2428 S Redding St #2 Bogg's Corne	360-555-5422
9	Overlook Inn	Jill Torrance	3160 Amber Gate Rd Rodney Villag	605-555-4495
10	Riley Garden Supply	Vivica da Silva	8595 Thunder Brook Cir Gravity, W	360-555-4289
11	Knope Equestrian Center	Lil Sebastian	9060 Easy Evening Ln Walkinghooc	207-555-7225
12	Venture Brewing	Hank Dean	3034 Foggy Wharf Loop Bee Rock,	308-555-1050
13	Placerville Insurance	Chris Kinkade	1028 Quiet Dale Rd Homosassa, MI	443-555-4942
14	Archer Properties	Mallory Figgis	3520 Sleepy Hearth Dr Calendar, W	425-555-5370

2.Click and drag the mouse to **increase** or **decrease** the column width.



	A	B	C	D
1	Customer Contact List			
2	COMPANY NAME	CONTACT NAME	BILLING ADDRESS	PHONE
3	Adventure Outfitters	Jake Finn	1407 Dusty Fawn Ln Soaptown, SD	605-555-6435
4	Aria Real Estate	Katie Stark	971 Cinder Butterfly St Stoughton, I	603-555-2460
5	Core Pharmaceuticals	Phillip Yuen	5108 Crystal Gate Blvd Twig City, K	913-555-5928
6	Everly Publishing	Felicia Reyes	8544 Lazy Bluff Ave Whiskey Creek	316-555-3256
7	Mass Airlines	Miranda Lawson	5316 Colonial Pkwy Esterhazy, NM	575-555-9255
8	Newhaven Traders	Rick Chaturvedi	2428 S Redding St #2 Bogg's Corne	360-555-5422
9	Overlook Inn	Jill Torrance	3160 Amber Gate Rd Rodney Villag	605-555-4495
10	Riley Garden Supply	Vivica da Silva	8595 Thunder Brook Cir Gravity, W	360-555-4289

3.Release the mouse. The **column width** will be changed.



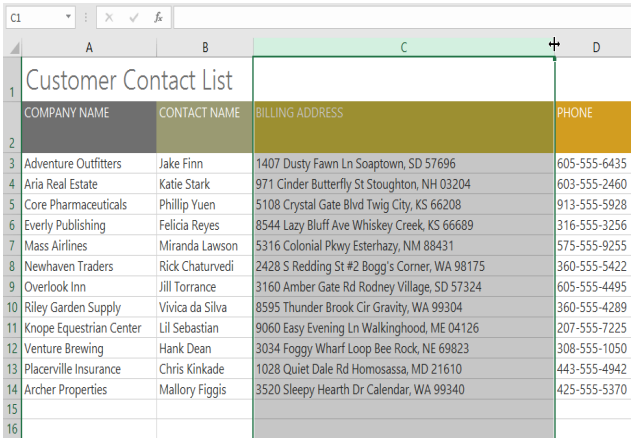
	A	B	C	D
1	Customer Contact List			
2	COMPANY NAME	CONTACT NAME	BILLING ADDRESS	PHONE
3	Adventure Outfitters	Jake Finn	1407 Dusty Fawn Ln Soaptown, SD 57696	605-555-6435
4	Aria Real Estate	Katie Stark	971 Cinder Butterfly St Stoughton, NH 03204	603-555-2460
5	Core Pharmaceuticals	Phillip Yuen	5108 Crystal Gate Blvd Twig City, KS 66208	913-555-5928
6	Everly Publishing	Felicia Reyes	8544 Lazy Bluff Ave Whiskey Creek, KS 66689	316-555-3256
7	Mass Airlines	Miranda Lawson	5316 Colonial Pkwy Esterhazy, NM 88431	575-555-9255
8	Newhaven Traders	Rick Chaturvedi	2428 S Redding St #2 Bogg's Corner, WA 98175	360-555-5422
9	Overlook Inn	Jill Torrance	3160 Amber Gate Rd Rodney Village, SD 57324	605-555-4495
10	Riley Garden Supply	Vivica da Silva	8595 Thunder Brook Cir Gravity, WA 99304	360-555-4289
11	Knope Equestrian Center	Lil Sebastian	9060 Easy Evening Ln Walkinghood, ME 04126	207-555-7225
12	Venture Brewing	Hank Dean	3034 Foggy Wharf Loop Bee Rock, NE 69823	308-555-1050
13	Placerville Insurance	Chris Kinkade	1028 Quiet Dale Rd Homosassa, MD 21610	443-555-4942
14	Archer Properties	Mallory Figgis	3520 Sleepy Hearth Dr Calendar, WA 99340	425-555-5370

With numerical data, the cell will display **pound signs** (#######) if the column is too narrow. Simply **increase the column width** to make the data visible.

To AutoFit column width:

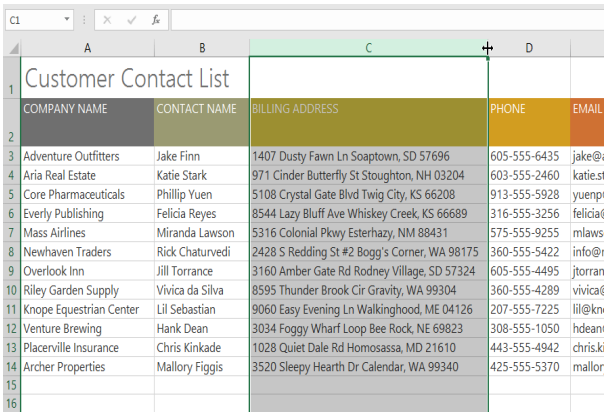
The **AutoFit** feature will allow you to set a column's width to fit its content **automatically**.

1.Position the mouse over the **column line** in the **column heading** so the cursor becomes a **double arrow**.



	A	B	C	D
1	Customer Contact List			
2	COMPANY NAME	CONTACT NAME	BILLING ADDRESS	PHONE
3	Adventure Outfitters	Jake Finn	1407 Dusty Fawn Ln Soaptown, SD 57696	605-555-6435
4	Aria Real Estate	Katie Stark	971 Cinder Butterfly St Stoughton, NH 03204	603-555-2460
5	Core Pharmaceuticals	Phillip Yuen	5108 Crystal Gate Blvd Twig City, KS 66208	913-555-5928
6	Everly Publishing	Felicia Reyes	8544 Lazy Bluff Ave Whiskey Creek, KS 66689	316-555-3256
7	Mass Airlines	Miranda Lawson	5316 Colonial Pkwy Esterhazy, NM 88431	575-555-9255
8	Newhaven Traders	Rick Chaturvedi	2428 S Redding St #2 Bogg's Corner, WA 98175	360-555-5422
9	Overlook Inn	Jill Torrance	3160 Amber Gate Rd Rodney Village, SD 57324	605-555-4495
10	Riley Garden Supply	Vivica da Silva	8595 Thunder Brook Cir Gravity, WA 99304	360-555-4289
11	Knope Equestrian Center	Lil Sebastian	9060 Easy Evening Ln Walkinghood, ME 04126	207-555-7225
12	Venture Brewing	Hank Dean	3034 Foggy Wharf Loop Bee Rock, NE 69823	308-555-1050
13	Placerville Insurance	Chris Kinkade	1028 Quiet Dale Rd Homosassa, MD 21610	443-555-4942
14	Archer Properties	Mallory Figgis	3520 Sleepy Hearth Dr Calendar, WA 99340	425-555-5370

2.Double-click the mouse. The **column width** will be changed automatically to fit the content.



	A	B	C	D
1	Customer Contact List			
2	COMPANY NAME	CONTACT NAME	BILLING ADDRESS	PHONE
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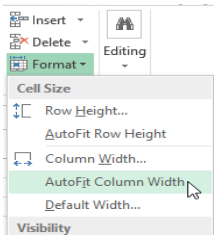
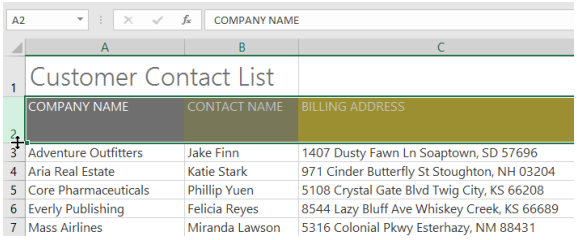
5	Core Pharmaceuticals	Phillip Yuen	5108 Crystal Gate Blvd Twig City, KS 66208	913-555-5928
6	Everly Publishing	Felicia Reyes	8544 Lazy Bluff Ave Whiskey Creek, KS 66689	316-555-3256
7	Mass Airlines	Miranda Lawson	5316 Colonial Pkwy Esterhazy, NM 88431	575-555-9255
8	Newhaven Traders	Rick Chaturvedi	2428 S Redding St #2 Bogg's Corner, WA 98175	360-555-5422
9	Overlook Inn	Jill Torrance	3160 Amber Gate Rd Rodney Village, SD 57324	605-555-4495
10	Riley Garden Supply	Vivica da Silva	8595 Thunder Brook Cir Gravity, WA 99304	360-555-4289
11	Knope Equestrian Center	Lil Sebastian	9060 Easy Evening Ln Walkinghood, ME 04126	207-555-7225
12	Venture Brewing	Hank Dean	3034 Foggy Wharf Loop Bee Rock, NE 69823	308-555-1050
13	Placerville Insurance	Chris Kinkade	1028 Quiet Dale Rd Homosassa, MD 21610	443-555-4942
14	Archer Properties	Mallory Figgis	3520 Sleepy Hearth Dr Calendar, WA 99340	425-555-5370

3.You can also AutoFit the width for several columns at the same time. Simply select the columns you want to AutoFit, then select the **AutoFit Column Width** command from the **Format** drop-down menu on the **Home** tab. This method can also be used for **row height**.

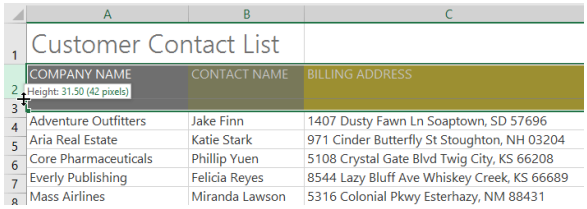


To modify row height:

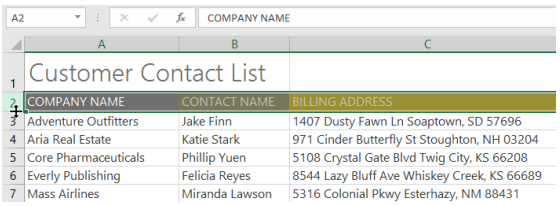
1.Position the **cursor** over the **row line** so the cursor becomes a **double arrow**.



2.Click and drag the mouse to **increase** or **decrease** the row height.



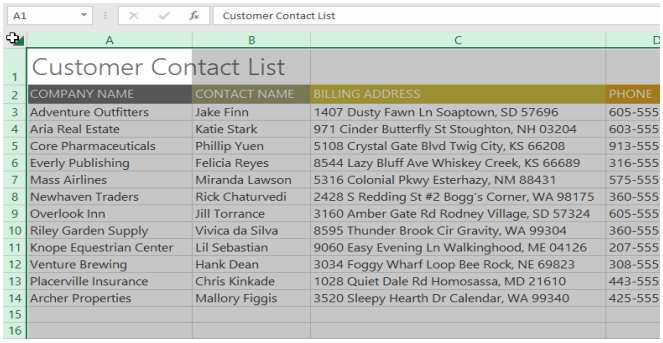
3.Release the mouse. The **height** of the selected row will be changed.



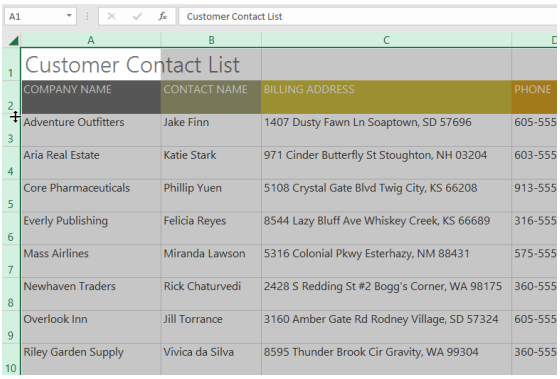
To modify all rows or columns:

Instead of resizing rows and columns individually, you can modify the height and width of every row and column at the same time. This method allows you to set a **uniform size** for every row and column in your worksheet. In our example, we will set a **uniform row height**.

1.Locate and click the **Select All** button just below the **name box** to select every cell in the worksheet.



2.Click and drag the mouse to **increase** or **decrease** the row height, then release the mouse when you are satisfied. The row height will be changed for the entire worksheet.



Position the mouse over a **row line** so the cursor becomes a **double arrow**.

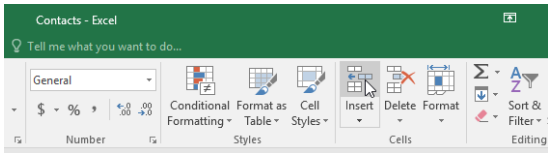
Inserting, deleting, moving, and hiding

After you've been working with a workbook for a while, you may find that you want to **insert new** columns or rows, **delete** certain rows or columns, **move** them to a different location in the worksheet, or even **hide** them.

To insert rows:

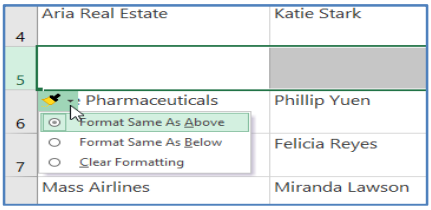
1.Select the **row heading** below where you want the new row to appear. In this example, we want to insert a row between rows 4 and 5, so we'll select **row 5**.

2.Click the **Insert** command on the **Home** tab.



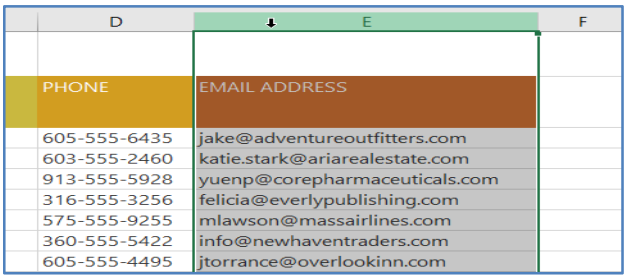
3.The **new row** will appear **above** the selected row.

4.When inserting new rows, columns, or cells, you will see a **paintbrush icon** next to the inserted cells. This button allows you to choose how Excel formats these cells. By default, Excel formats inserted rows with the same formatting as the cells in the row above. To access more options, hover your mouse over the icon, then click the **drop-down arrow**.

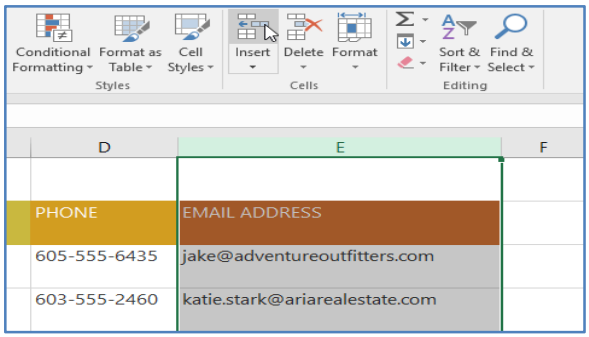


To insert columns:

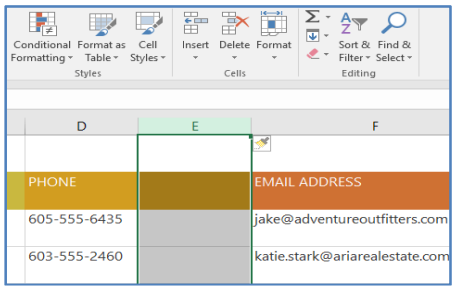
1.Select the **column heading** to the right of where you want the new column to appear. For example, if you want to insert a column between columns D and E, select **column E**.



2.Click the **Insert** command on the **Home** tab.



3.The **new column** will appear **to the left** of the selected column.

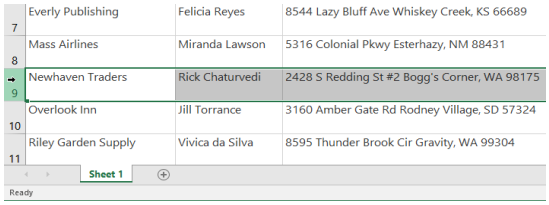


When inserting rows and columns, make sure you select the entire row or column by clicking the **heading.** If you select only a cell in the row or column, the **Insert**command will only insert a new cell.

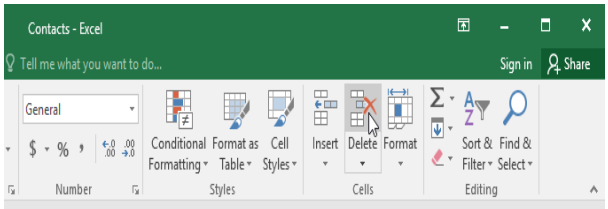
To delete a row or column:

It's easy to delete a row or column that you no longer need. In our example we'll delete a row, but you can delete a column the same way.

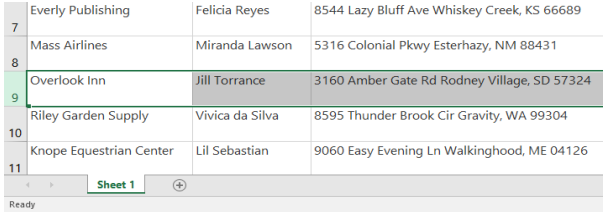
1.Select the **row** you want to delete. In our example, we'll select **row 9**.



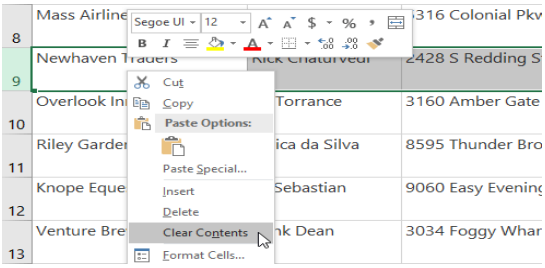
2.Click the **Delete** command on the **Home** tab.



3.The **selected row** will be deleted, and those around it will **shift**. In our example, **row 10** has moved up, so it's now **row 9**.



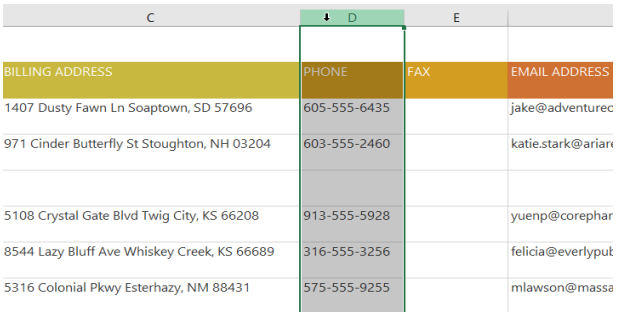
4.It's important to understand the difference between **deleting** a row or column and simply **clearing its contents**. If you want to remove the **content** from a row or column without causing others to shift, **right-click a heading**, then select **Clear Contents** from the drop-down menu.



To move a row or column:

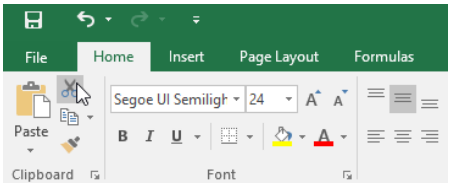
Sometimes you may want to **move** a column or row to rearrange the content of your worksheet. In our example we'll move a column, but you can move a row in the same way.

1.Select the desired **column heading** for the column you want to move.

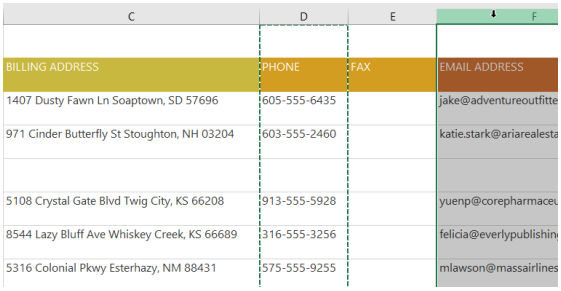


BILLING ADDRESS	PHONE	FAX	EMAIL ADDRESS
1407 Dusty Fawn Ln Soaptown, SD 57696	605-555-6435		jake@adventurec
971 Cinder Butterfly St Stoughton, NH 03204	603-555-2460		katie.stark@ariar
5108 Crystal Gate Blvd Twig City, KS 66208	913-555-5928		yuenp@corephar
8544 Lazy Bluff Ave Whiskey Creek, KS 66689	316-555-3256		felicia@everlypub
5316 Colonial Pkwy Esterhazy, NM 88431	575-555-9255		mlawson@massa

2.Click the **Cut** command on the **Home** tab, or press **Ctrl+X** on your keyboard.

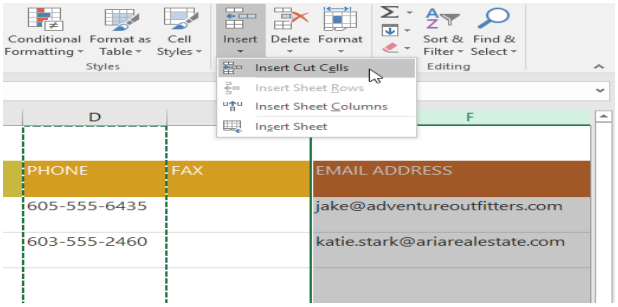


3.Select the **column heading** to the right of where you want to move the column. For example, if you want to move a column between columns E and F, select **column F**.

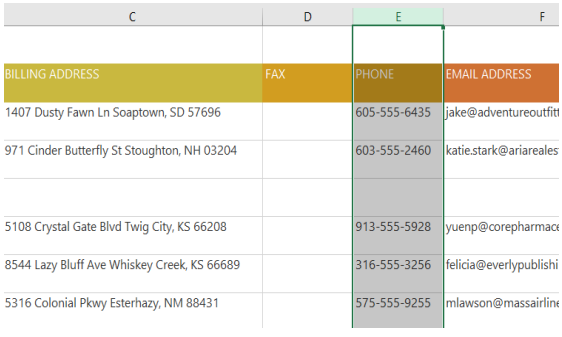


BILLING ADDRESS	PHONE	FAX	EMAIL ADDRESS
1407 Dusty Fawn Ln Soaptown, SD 57696	605-555-6435		jake@adventureoutfitte
971 Cinder Butterfly St Stoughton, NH 03204	603-555-2460		katie.stark@ariarealesta
5108 Crystal Gate Blvd Twig City, KS 66208	913-555-5928		yuenp@corepharmaceu
8544 Lazy Bluff Ave Whiskey Creek, KS 66689	316-555-3256		felicia@everlypublishin
5316 Colonial Pkwy Esterhazy, NM 88431	575-555-9255		mlawson@massairlines

4.Click the **Insert** command on the **Home** tab, then select **Insert Cut Cells** from the drop-down menu.



5.The column will be **moved** to the selected location, and the columns around it will shift.



BILLING ADDRESS	FAX	PHONE	EMAIL ADDRESS
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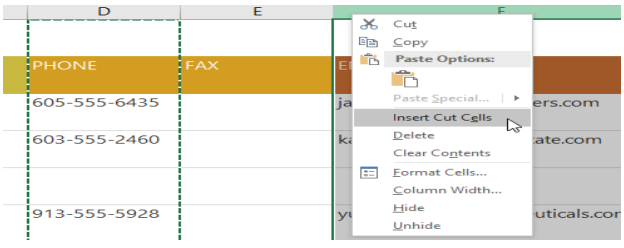
8544 Lazy Bluff Ave Whiskey Creek, KS 66689		316-555-3256	felicia@everlypublishi
5316 Colonial Pkwy Esterhazy, NM 88431		575-555-9255	mlawson@massairline

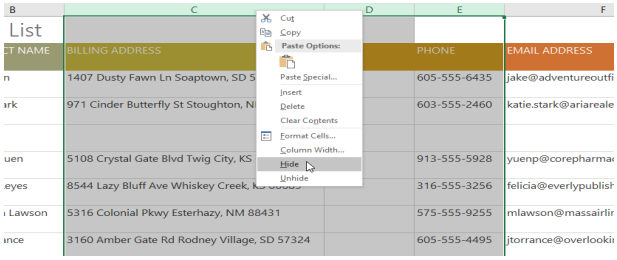
6.You can also access the **Cut** and **Insert** commands by right-clicking the mouse and selecting the **desired commands** from the drop-down menu.



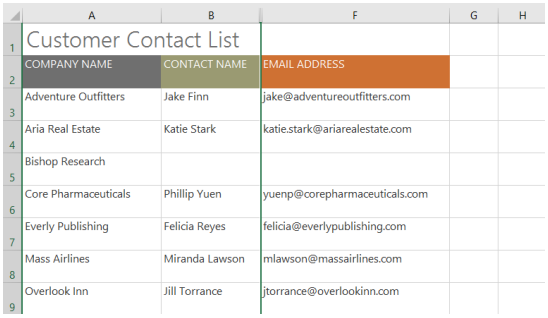
To hide and unhide a row or column:

At times, you may want to **compare** certain rows or columns without changing the organization of your worksheet. To do this, Excel allows you to **hide** rows and columns as needed. In our example we'll hide a few columns, but you can hide rows in the same way.

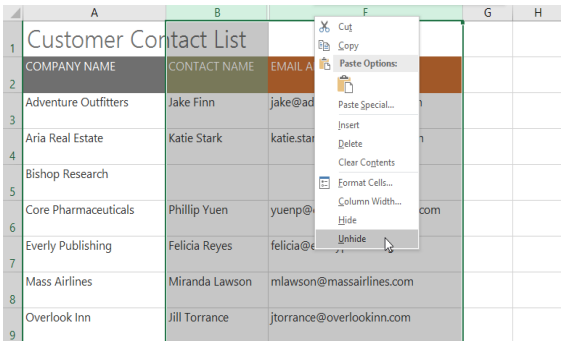
1.Select the **columns** you want to **hide**, right-click the mouse, then select **Hide**from the **formatting** menu. In our example, we'll hide columns C, D, and E.



2.The columns will be **hidden**. The **green column line** indicates the location of the hidden columns.



3.To **unhide** the columns, select the columns on **both sides** of the hidden columns. In our example, we'll select columns **B** and **F**. Then right-click the mouse and select **Unhide** from the **formatting** menu.



4.The hidden columns will reappear.

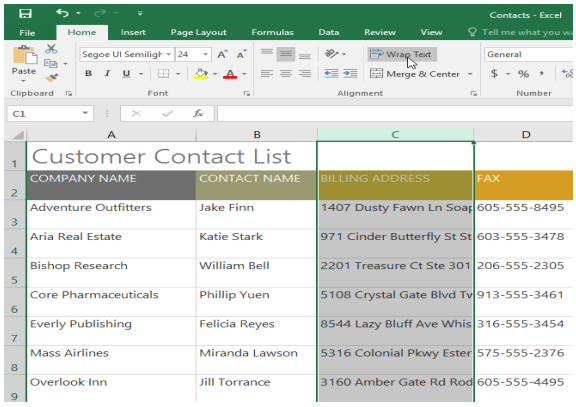
Wrapping text and merging cells

Whenever you have too much cell content to be displayed in a single cell, you may decide to **wrap the text** or **merge** the cell rather than resize a column. Wrapping the text will automatically modify a cell's **row height**, allowing cell contents to be displayed **on multiple lines**. Merging allows you to combine a cell with adjacent empty cells to create **one large cell**.

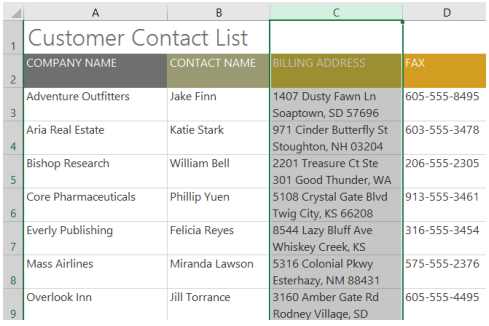
To wrap text in cells:

1.Select the cells you want to wrap. In this example, we'll select the cells in **column C**.

Click the **Wrap Text** command on the **Home** tab.

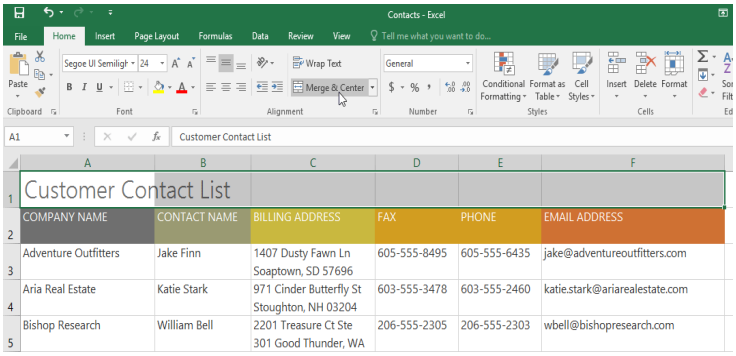


2.The text in the selected cells will be **wrapped**.

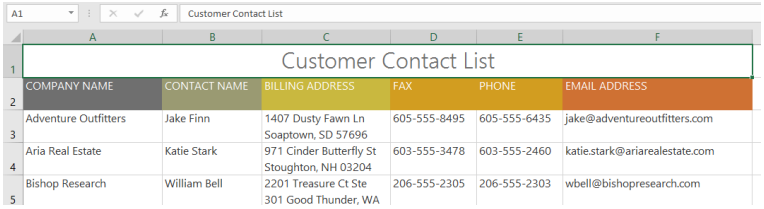


To merge cells using the Merge & Center command:

1. Select the **cell range** you want to merge. In our example, we'll select **A1:F1**.
Click the **Merge & Center** command on the **Home** tab. In our example, we'll select the cell range **A1:F1**.

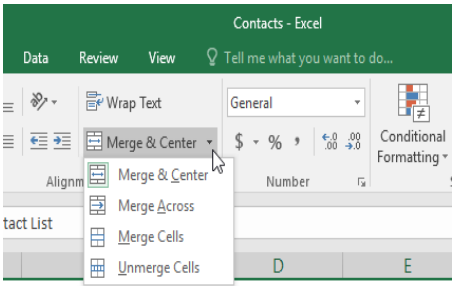


2.The selected cells will be **merged**, and the text will be **centered**.



To access more merge options:

If you click the drop-down arrow next to the **Merge & Center** command on the **Home** tab, the **Merge** drop-down menu will appear.



From here, you can choose to:

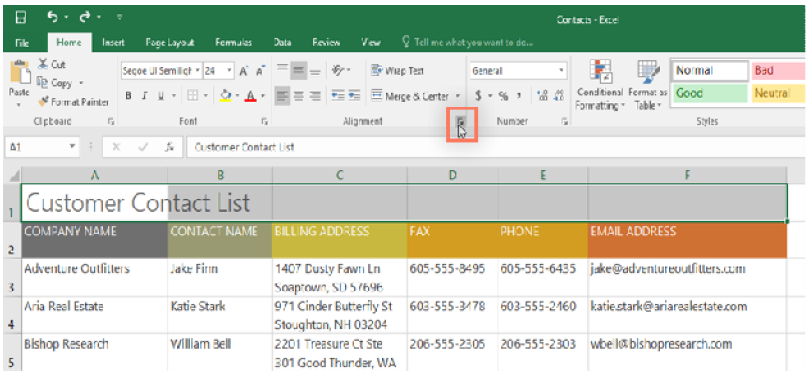
Merge & Center: merges the selected cells into **one cell** and **centers** the text
Merge Across: merges the selected cells into **larger cells** while keeping each **row** separate
Merge Cells: merges the selected cells into one cell but **does not center** the text
Unmerge Cells: unmerges selected cells
You'll want to be careful when using this feature. If you merge multiple cells that all contain data, Excel will keep only the contents of the upper-left cell and discard everything else.

To center across selection:

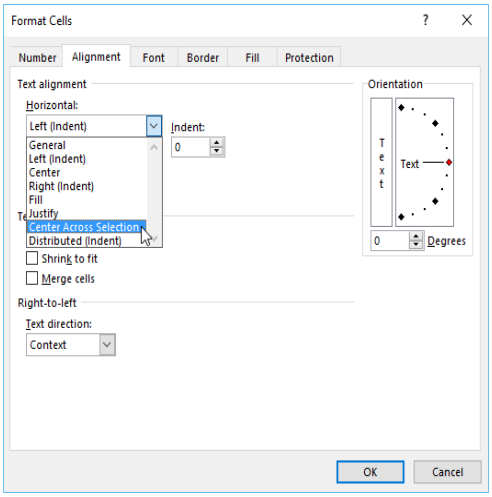
Merging can be useful for organizing your data, but it can also create problems later on. For example, it can be difficult to move, copy, and paste content from merged cells. A good alternative to merging is **Center Across Selection**, which creates a similar effect without actually combining cells.

Select the desired cell range. In our example, we'll select **A1:F1**. **Note**: If you already merged these cells, you should **unmerge them** before continuing to step 2.

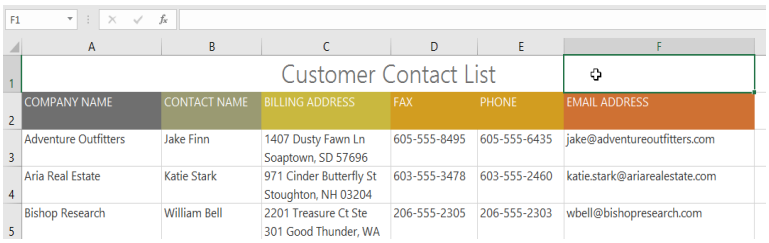
1.Click the **small arrow** in the lower-right corner of the **Alignment** group on the **Home** tab.



2.A dialog box will appear. Locate and select the **Horizontal** drop-down menu, select **Center Across Selection**, then click **OK**.



3.The content will be centered across the selected cell range. As you can see, this creates the same visual result as merging and centering, but it preserves each cell within A1:F1.



CHAPTER-7- FORMATTING CELLS

Introduction

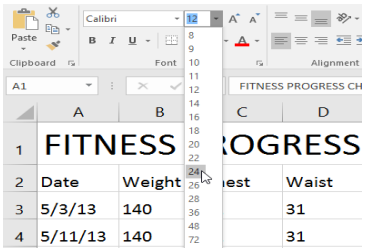
All cell content uses the same **formatting** by default, which can make it difficult to read a workbook with a lot of information. Basic formatting can customize the **look and feel** of your workbook, allowing you to draw attention to specific sections and making your content easier to view and understand.

To change the font size:

1.Select the **cell(s)** you want to modify.

	A	B	C	D
1	FITNESS PROGRESS CHART			
2	Date	Weight	Chest	Waist
3	5/3/13	140	32	31
4	5/11/13	140	32	31

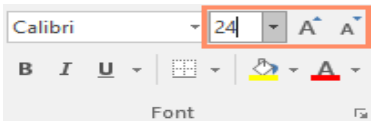
2.On the **Home** tab, click the **drop-down arrow** next to the **Font Size** command, then select the desired **font size**. In our example, we will choose **24** to make the text **larger**.



3.The text will change to the **selected font size**.

	A	B	C	D	E	F
1	FITNESS PROGRESS CHART					
2	Date	Weight	Chest	Waist	Hips	Forearm
3	5/3/13	140	32	31	40	11.5
4	5/11/13	140	32	31	39.5	11.5

4.you can also use the **Increase Font Size** and **Decrease Font Size** commands or enter a **custom font size** using your keyboard.



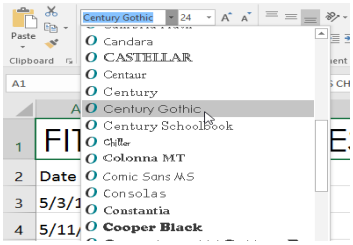
To change the font:

By default, the font of each new workbook is set to Calibri. However, Excel provides many other fonts you can use to customize your cell text. In the example below, we'll format our **title cell** to help distinguish it from the rest of the worksheet.

1.Select the **cell(s)** you want to modify.

	A	B	C	D
1	FITNESS PROGRESS			
2	Date	Weight	Chest	Waist
3	5/3/13	140	32	31
4	5/11/13	140	32	31

2.On the **Home** tab, click the **drop-down arrow** next to the **Font** command, then select the desired **font**. In our example, we'll choose **Century Gothic**.



3.The text will change to the **selected font**.

	A	B	C	D
1	FITNESS PROGRE			
2	Date	Weight	Chest	Waist
3	5/3/13	140	32	31
4	5/11/13	140	32	31

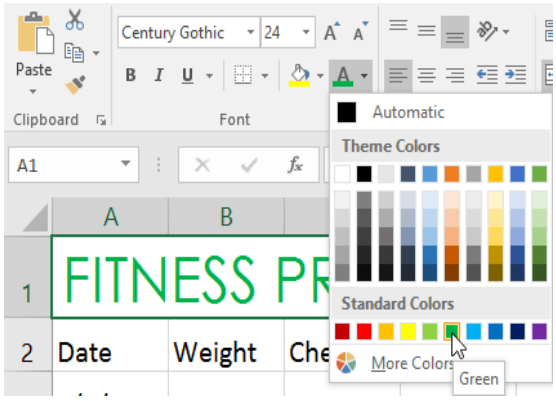
When creating a workbook in the workplace, you'll want to select a font that is easy to read. Along with Calibri, standard reading fonts include Cambria, Times New Roman, and Arial.

To change the font color:

1.Select the **cell(s)** you want to modify.

	A	B	C	D	E
1	FITNESS PROGRESS				
2	Date	Weight	Chest	Waist	Hips
3	5/3/13	140	32	31	40
4	5/11/13	140	32	31	39.5

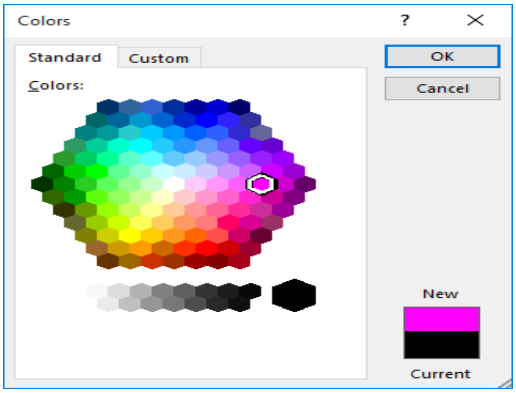
2.On the Home tab, click the drop-down arrow next to the Font Color command, then select the desired font color. In our example, we'll choose Green.



3.The text will change to the **selected font color**.

	A	B	C	D	E
1	FITNESS PROGRESS				
2	Date	Weight	Chest	Waist	Hips
3	5/3/13	140	32	31	40
4	5/11/13	140	32	31	39.5

4.Select **More Colors** at the bottom of the menu to access additional color options. We've changed the font color to a bright pink.

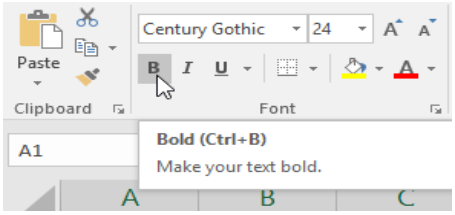


To use the Bold, Italic, and Underline commands:

1.Select the **cell(s)** you want to modify.

	A	B	C	D	E
1	FITNESS PROGRESS				
2	Date	Weight	Chest	Waist	Hips
3	5/3/13	140	32	31	40
4	5/11/13	140	32	31	39.5

2.Click the Bold (**B**), Italic (*I*), or Underline (U) command on the **Home** tab.
In our example, we'll make the selected cells **bold**.



3.The **selected style** will be applied to the text.

	A	B	C	D	E
1	FITNESS PROGRESS				
2	Date	Weight	Chest	Waist	Hips
3	5/3/13	140	32	31	40
4	5/11/13	140	32	31	39.5

You can also press **Ctrl+B** on your keyboard to make selected text **bold**, **Ctrl+I** to apply **italics**, and **Ctrl+U** to apply an **underline**.

Cell borders and fill colors

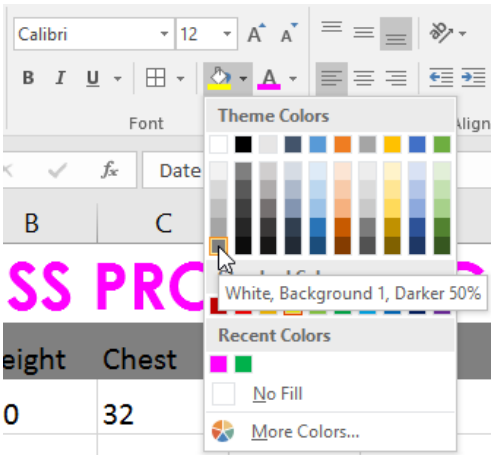
Cell borders and **fill colors** allow you to create clear and defined boundaries for different sections of your worksheet. Below, we'll add cell borders and fill color to our **header cells** to help distinguish them from the rest of the worksheet.

To add a fill color:

1.Select the **cell(s)** you want to modify.

	A	B	C	D	E	F	G	H	I
1	FITNESS PROGRESS CHART								
2	Date	Weight	Chest	Waist	Hips	Forearm	Estimated Lean Body	Estimated Body Fat	Estimated Body Fat %
3	5/3/13	140	32	31	40	11.5	103.8	36.2	0.259
4	5/11/13	140	32	31	39.5	11.5	103.9	36.1	0.258
5	5/19/13	139	32	31	39.5	11.5	103.2	35.8	0.258
6	5/26/13	138	31	30	39	11	103.4	35.6	0.256
7	6/1/13	138	31	30	39	11	103.4	35.6	0.256

2.On the **Home** tab, click the **drop-down arrow** next to the **Fill Color** command, then select the **fill color** you want to use. In our example, we'll choose a dark gray.

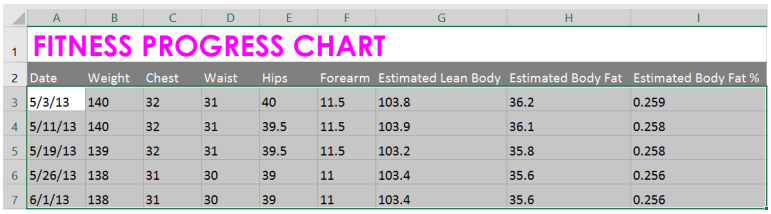


3.The **selected fill color** will appear in the selected cells. We've also changed the **font color** to **white** to make it more readable with this dark fill color.

	A	B	C	D	E	F	G	H	I
1	FITNESS PROGRESS CHART								
2	Date	Weight	Chest	Waist	Hips	Forearm	Estimated Lean Body	Estimated Body Fat	Estimated Body Fat %
3	5/3/13	140	32	31	40	11.5	103.8	36.2	0.259
4	5/11/13	140	32	31	39.5	11.5	103.9	36.1	0.258
5	5/19/13	139	32	31	39.5	11.5	103.2	35.8	0.258
6	5/26/13	138	31	30	39	11	103.4	35.6	0.256
7	6/1/13	138	31	30	39	11	103.4	35.6	0.256

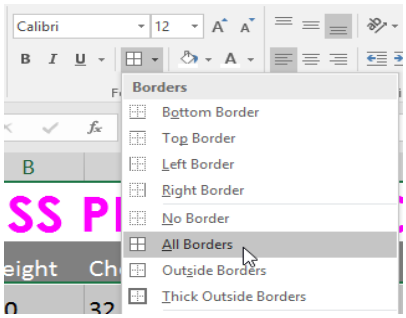
To add a border:

1.Select the **cell(s)** you want to modify.



	A	B	C	D	E	F	G	H	I
1	FITNESS PROGRESS CHART								
2	Date	Weight	Chest	Waist	Hips	Forearm	Estimated Lean Body	Estimated Body Fat	Estimated Body Fat %
3	5/3/13	140	32	31	40	11.5	103.8	36.2	0.259
4	5/11/13	140	32	31	39.5	11.5	103.9	36.1	0.258
5	5/19/13	139	32	31	39.5	11.5	103.2	35.8	0.258
6	5/26/13	138	31	30	39	11	103.4	35.6	0.256
7	6/1/13	138	31	30	39	11	103.4	35.6	0.256

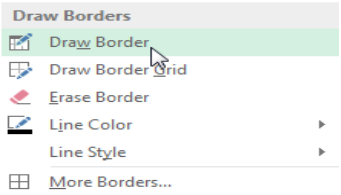
2.On the **Home** tab, click the **drop-down arrow** next to the **Borders** command, then select the **border style** you want to use. In our example, we'll choose to display **All Borders**.



3.The **selected border style** will appear.

	A	B	C	D	E	F	G	H	I
1	FITNESS PROGRESS CHART								
2	Date	Weight	Chest	Waist	Hips	Forearm	Estimated Lean Body	Estimated Body Fat	Estimated Body Fat %
3	5/3/13	140	32	31	40	11.5	103.8	36.2	0.259
4	5/11/13	140	32	31	39.5	11.5	103.9	36.1	0.258
5	5/19/13	139	32	31	39.5	11.5	103.2	35.8	0.258
6	5/26/13	138	31	30	39	11	103.4	35.6	0.256
7	6/1/13	138	31	30	39	11	103.4	35.6	0.256

4.You can draw borders and change the **line style** and **color** of borders with the **Draw Borders** tools at the bottom of the Borders drop-down menu.



Cell styles

Instead of formatting cells manually, you can use Excel's **predesigned cell styles**. Cell styles are a quick way to include professional formatting for different parts of your workbook, such as **titles** and **headers**.

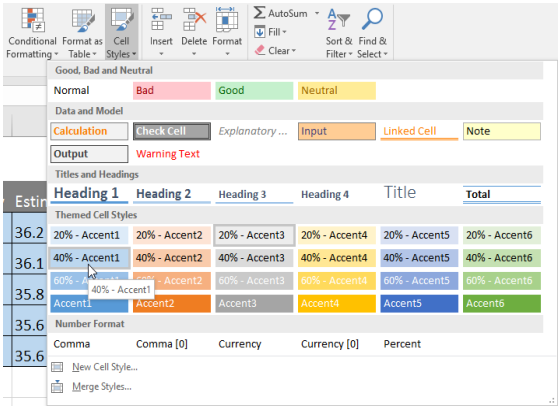
To apply a cell style:

In our example, we'll apply a new cell style to our existing **title** and **header cells**.

1.Select the **cell(s)** you want to modify.

	A	B	C	D	E	F	G	H	I
1	FITNESS PROGRESS CHART								
2	Date	Weight	Chest	Waist	Hips	Forearm	Estimated Lean Body	Estimated Body Fat	Estimated Body Fat %
3	5/3/13	140	32	31	40	11.5	103.8	36.2	0.259
4	5/11/13	140	32	31	39.5	11.5	103.9	36.1	0.258
5	5/19/13	139	32	31	39.5	11.5	103.2	35.8	0.258
6	5/26/13	138	31	30	39	11	103.4	35.6	0.256
7	6/1/13	138	31	30	39	11	103.4	35.6	0.256

2.Click the **Cell Styles** command on the **Home** tab, then choose the **desired style** from the drop-down menu.



3.The **selected cell style** will appear.

	A	B	C	D	E	F	G	H	I
1	FITNESS PROGRESS CHART								
2	Date	Weight	Chest	Waist	Hips	Forearm	Estimated Lean Body	Estimated Body Fat	Estimated Body Fat %
3	5/3/13	140	32	31	40	11.5	103.8	36.2	0.259
4	5/11/13	140	32	31	39.5	11.5	103.9	36.1	0.258
5	5/19/13	139	32	31	39.5	11.5	103.2	35.8	0.258
6	5/26/13	138	31	30	39	11	103.4	35.6	0.256
7	6/1/13	138	31	30	39	11	103.4	35.6	0.256

Applying a cell style will **replace** any existing cell formatting except for text alignment. You may not want to use cell styles if you've already added a lot of formatting to your workbook.

Text alignment

By default, any text entered into your worksheet will be aligned to the bottom-left of a cell, while any numbers will be aligned to the bottom-right. Changing the **alignment** of your cell content allows you to choose how the content is displayed in any cell, which can make your cell content easier to read.

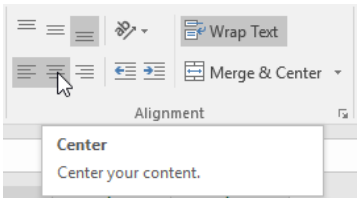
To change horizontal text alignment:

In our example below, we'll modify the alignment of our **title** cell to create a more polished look and further distinguish it from the rest of the worksheet.

1.Select the **cell(s)** you want to modify.

	A	B	C	D	E	F	G	H	I
1	FITNESS PROGRESS CHART								
2	Date	Weight	Chest	Waist	Hips	Forearm	Estimated Lean Body	Estimated Body Fat	Estimated Body Fat %
3	5/3/13	140	32	31	40	11.5	103.8	36.2	0.259
4	5/11/13	140	32	31	39.5	11.5	103.9	36.1	0.258
5	5/19/13	139	32	31	39.5	11.5	103.2	35.8	0.258
6	5/26/13	138	31	30	39	11	103.4	35.6	0.256
7	6/1/13	138	31	30	39	11	103.4	35.6	0.256

2.Select one of the three **horizontal alignment** commands on the **Home** tab. In our example, we'll choose **Center Align**.



3.The text will **realign**.

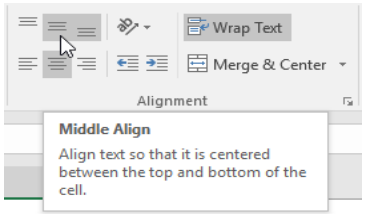
	A	B	C	D	E	F	G	H	I
1	FITNESS PROGRESS CHART								
2	Date	Weight	Chest	Waist	Hips	Forearm	Estimated Lean Body	Estimated Body Fat	Estimated Body Fat %
3	5/3/13	140	32	31	40	11.5	103.8	36.2	0.259
4	5/11/13	140	32	31	39.5	11.5	103.9	36.1	0.258
5	5/19/13	139	32	31	39.5	11.5	103.2	35.8	0.258
6	5/26/13	138	31	30	39	11	103.4	35.6	0.256
7	6/1/13	138	31	30	39	11	103.4	35.6	0.256

To change vertical text alignment:

1.Select the **cell(s)** you want to modify.

	A	B	C	D	E	F	G	H	I
1	FITNESS PROGRESS CHART								
2	Date	Weight	Chest	Waist	Hips	Forearm	Estimated Lean Body	Estimated Body Fat	Estimated Body Fat %
3	5/3/13	140	32	31	40	11.5	103.8	36.2	0.259
4	5/11/13	140	32	31	39.5	11.5	103.9	36.1	0.258
5	5/19/13	139	32	31	39.5	11.5	103.2	35.8	0.258
6	5/26/13	138	31	30	39	11	103.4	35.6	0.256
7	6/1/13	138	31	30	39	11	103.4	35.6	0.256

2.Select one of the three **vertical alignment** commands on the **Home** tab.
In our example, we'll choose **Middle Align**.



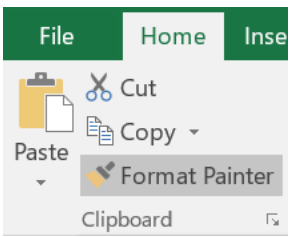
3.The text will **realign**.

	A	B	C	D	E	F	G	H	I
1	FITNESS PROGRESS CHART								
2	Date	Weight	Chest	Waist	Hips	Forearm	Estimated Lean Body	Estimated Body Fat	Estimated Body Fat %
3	5/3/13	140	32	31	40	11.5	103.8	36.2	0.259
4	5/11/13	140	32	31	39.5	11.5	103.9	36.1	0.258
5	5/19/13	139	32	31	39.5	11.5	103.2	35.8	0.258
6	5/26/13	138	31	30	39	11	103.4	35.6	0.256
7	6/1/13	138	31	30	39	11	103.4	35.6	0.256

You can apply **both** vertical and horizontal alignment settings to any cell.

Format Painter

If you want to copy formatting from one cell to another, you can use the **Format Painter** command on the **Home** tab. When you click the Format Painter, it will copy all of the formatting from the selected cell. You can then **click and drag** over any cells you want to paste the formatting to.



CHAPTER-8- UNDERSTANDING NUMBER FORMATS

What are number formats?

Whenever you're working with a spreadsheet, it's a good idea to use appropriate **number formats** for your data. Number formats tell your spreadsheet exactly what type of data you're using, like percentages (%), currency ($), times, dates, and so on.

Why use number formats?

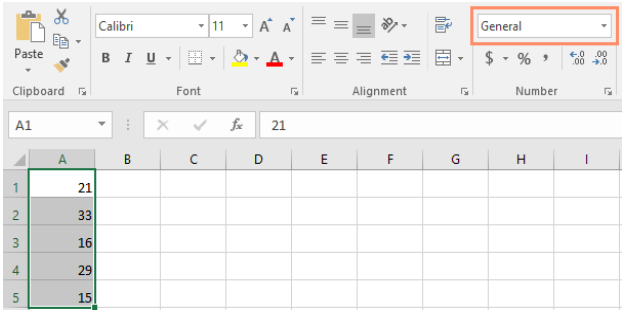
Number formats don't just make your spreadsheet easier to read—they also make it easier to use. When you apply a number format, you're telling your spreadsheet exactly **what types of values** are stored in a cell. For example, the **date** format tells the spreadsheet that you're entering **specific calendar dates**. This allows the spreadsheet to better understand your data, which can help ensure that your data remains consistent and that your formulas are calculated correctly.

If you don't need to use a specific number format, the spreadsheet will usually apply the **general** number format by default. However, the general format may apply some small formatting changes to your data.

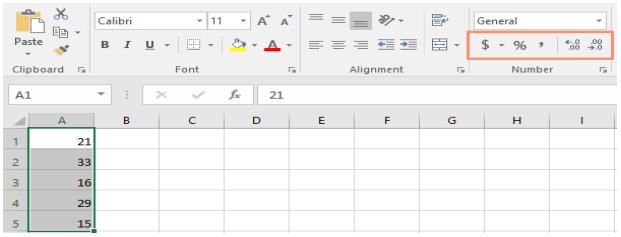
Applying number formats

Just like other types of formatting, such as changing the font color, you'll apply number formats by selecting cells and choosing the desired formatting option. There are two main ways to choose a number format:

1.Go to the **Home** tab, click the **Number Format** drop-down menu in the **Number** group, and select the desired format.

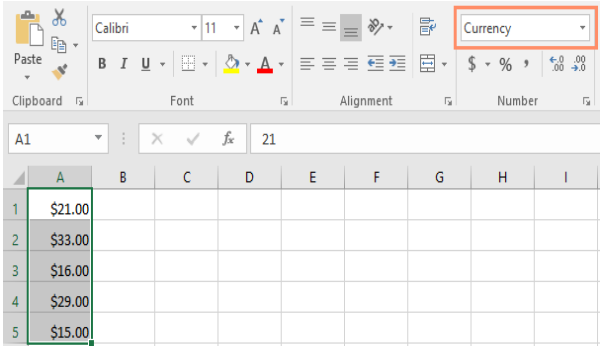


2.You can also click one of the quick number-formatting commands below the drop-down menu.

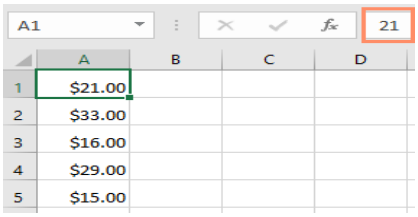


3.You can also select the desired cells and press **Ctrl+1** on your keyboard to access more number-formatting options.

In this example, we've applied the **Currency** number format, which adds currency symbols ($) and displays two decimal places for any numerical values.

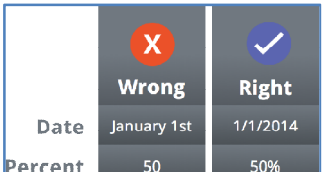


4.If you select any cells with number formatting, you can see the **actual value** of the cell in the formula bar. The spreadsheet will use this value for formulas and other calculations.



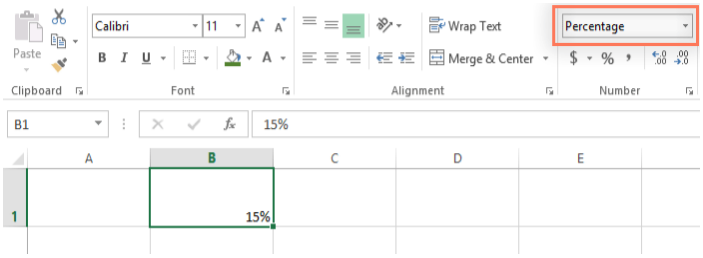
Using number formats correctly

There's more to number formatting than selecting cells and applying a format. Spreadsheets can actually apply a lot of number formatting **automatically** based on the way you enter data. This means you'll need to enter data in a way the program can understand, and then ensure that those cells are using the proper number format. For example, the image below shows how to use number formats correctly for dates, percentages, and times:



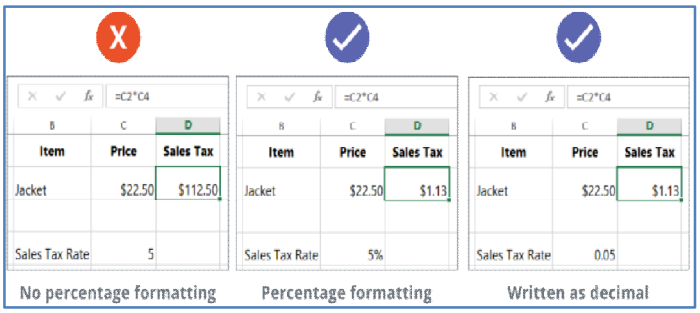
Now that you know more about how number formats work, we'll look at a few different number formats in action.

Percentage formats



One of the most helpful number formats is the **percentage** (%) format. It displays values as percentages, such as **20%** or **55%**. This is especially helpful when calculating things like the cost of sales tax or a tip. When you type a percent sign (%) after a number, the percentage number format will be applied to that cell **automatically**.

As you may remember from math class, a percentage can also be written as a **decimal**. So 15% is the same thing as 0.15, 7.5% is 0.075, 20% is 0.20, 55% is 0.55, and so on. You can review **this lesson** from our **Math tutorials** to learn more about converting percentages to decimals.

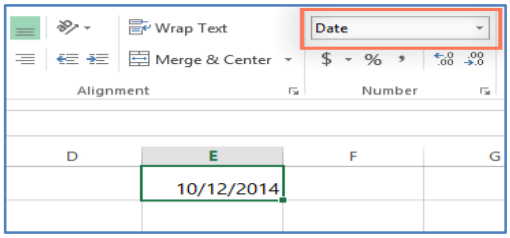


There are many times when percentage formatting will be useful. For example, in the images below, notice how the **sales tax rate** is formatted differently for each spreadsheet (5, 5%, and 0.05):

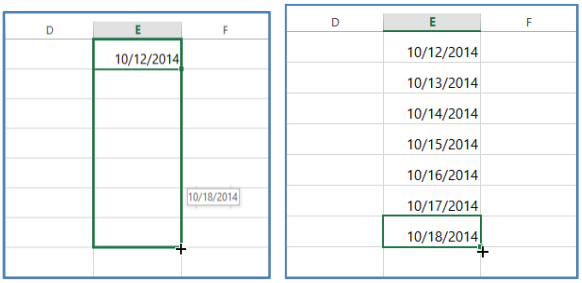
As you can see, the calculation in the spreadsheet on the left didn't work correctly. Without the percentage number format, our spreadsheet thinks we want to multiply $22.50 by 5, not 5%. And while the spreadsheet on the right still works without percentage formatting, the spreadsheet in the middle is easier to read.

Date formats

Whenever you're working with **dates**, you'll want to use a date format to tell the spreadsheet that you're referring to **specific calendar dates**, such as July 15, 2014. Date formats also allow you to work with a powerful set of date functions that use time and date information to calculate an answer.

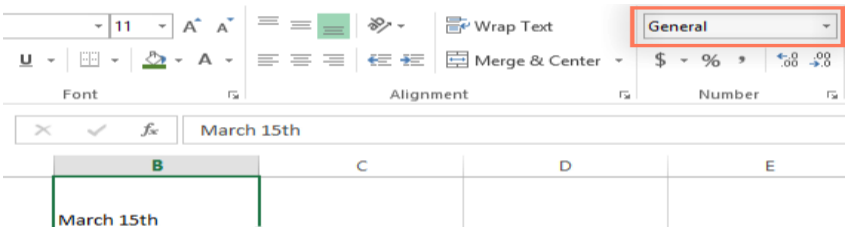


Spreadsheets don't understand information the same way a person would. For instance, if you type **October** into a cell, the spreadsheet won't know you're entering a date so it will treat it like any other text. Instead, when you enter a date, you'll need to use a **specific format** your spreadsheet understands, such as **month/day/year** (or **day/month/year** depending on which country you're in). In the example below, we'll type **10/12/2014** for October 12, 2014. Our spreadsheet will then automatically apply the date number format for the cell.



Now that we have our date correctly formatted, we can do many different things with this data. For example, we could use the fill handle to continue the dates through the column, so a different day appears in each cell:

If the date formatting isn't applied automatically, it means the spreadsheet did not understand the data you entered. In the example below, we've typed **March 15th**. The spreadsheet did not understand that we were referring to a date, so this cell is still using the **general** number format.



On the other hand, if we type **March 15** (without the "th"), the spreadsheet **will** recognize it as a date. Because it doesn't include a year, the spreadsheet will automatically add the current year so the date will have all of the necessary information. We could also type the date several other ways, such as **3/15**, **3/15/2014**, or **March 15 2014**, and the spreadsheet would still recognize it as a date.

Try entering the dates below into a spreadsheet and see if the date format is applied automatically:

10/12

October

October 12

October 2016

10/12/2016

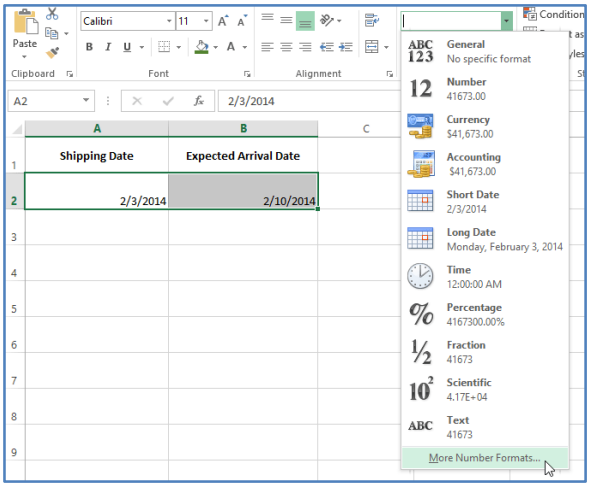
October 12, 2016

2016

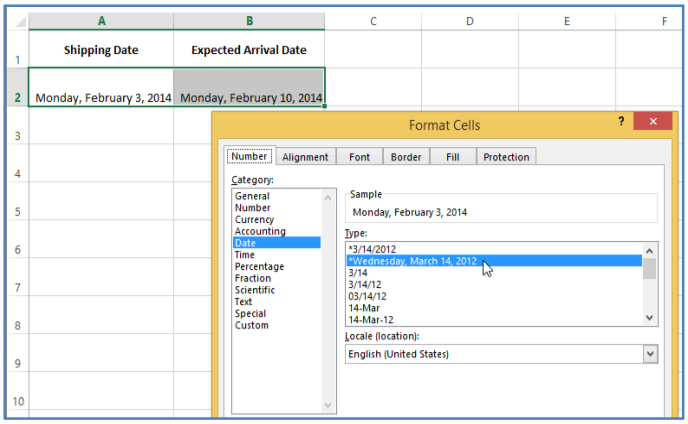
October 12th

Other date formatting options

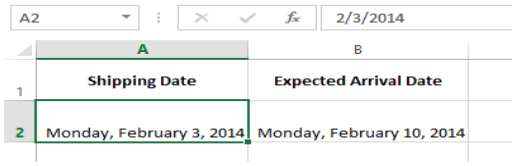
1.To access other date formatting options, select the **Number Format** drop-down menu and choose **More Number Formats**. These are options to display the date differently, like including the day of the week or omitting the year.



2.The **Format Cells** dialog box will appear. From here, you can choose the desired date formatting option.



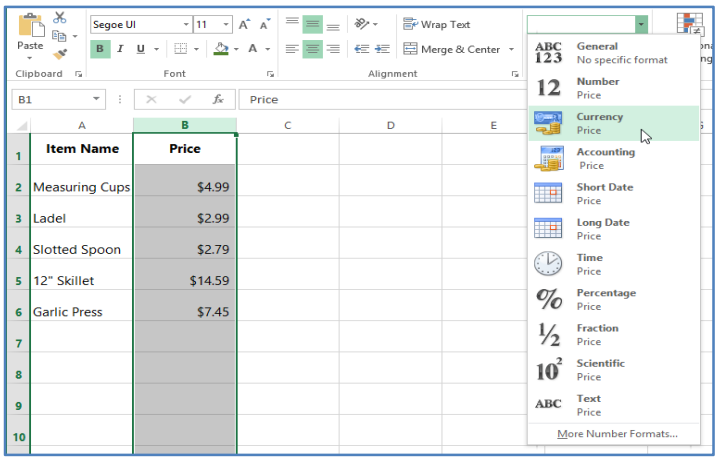
3.As you can see in the formula bar, a custom date format doesn't change the actual date in our cell—it just changes the way it's displayed.



Number formatting tips

Here are a few tips for getting the best results with number formatting:

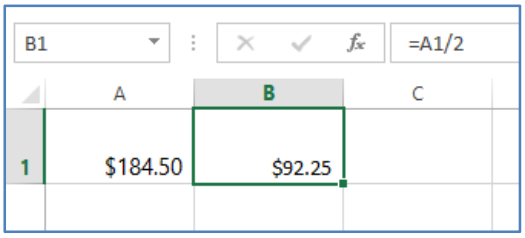
Apply number formatting to an entire column: If you're planning to use one column for a certain type of data, like dates or percentages, you may find it easiest to select the entire column by clicking the column letter and applying the desired number formatting. This way, any data you add to this column in the future will already have the correct number format. Note that the header row usually won't be affected by number formatting.



Double-check your values after applying number formatting: If you apply number formatting to existing data, you may have unexpected results. For example, applying **percentage** (%) formatting to a cell with a value of 5 will give you 500%, not 5%. In this case, you'd need to retype the values correctly in each cell.

	A	B
1	**Percentage of Total**	
2	500%	
3	7300%	
4	1200%	
5	550%	
6	1200%	

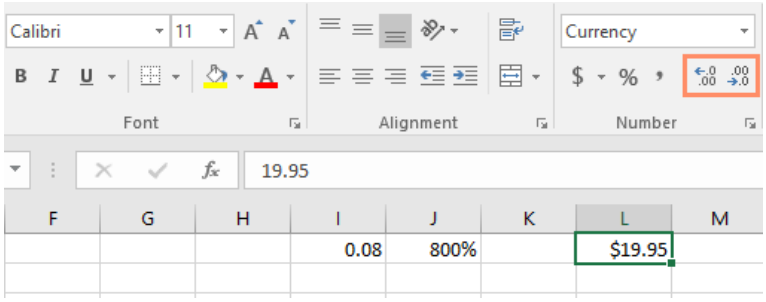
If you reference a cell with number formatting in a formula, the spreadsheet may automatically apply the same number formatting to the new cell. For example, if you use a value with currency formatting in a formula, the calculated value will also use the currency number format.



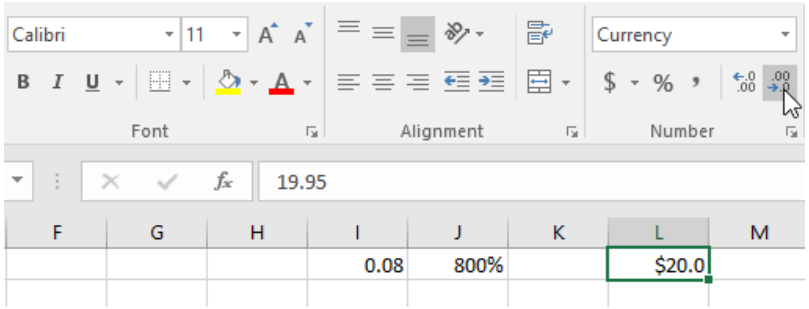
If you want your data to appear **exactly as entered**, you'll need to use the **text** number format. This format is especially good for numbers you don't want to perform calculations with, such as phone numbers, zip codes, or numbers that begin with 0, like **02415**. For best results, you may want to apply the text number format before entering data into these cells.

Increase and Decrease Decimal

The **Increase Decimal** and **Decrease Decimal** commands allow you to control how many decimal places are displayed in a cell. These commands don't change the value of the cell; instead, they display the value to a set number of decimal places.



Decreasing the decimal will display the value rounded to that decimal place, but the actual value in the cell will still be displayed in the formula bar.



The **Increase/Decrease Decimal** commands don't work with some number formats, like **Date** and **Fraction**.

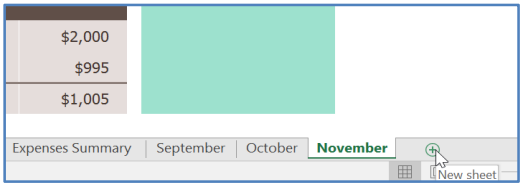
CHPTER-9- WORKING WITH MULTIPLE WORKSHEETS

Introduction

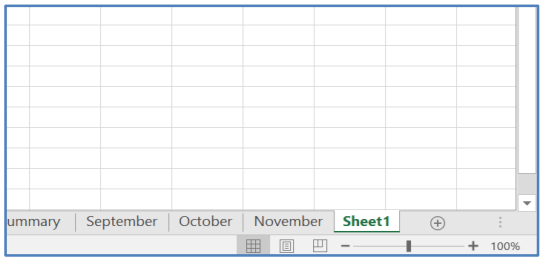
Every workbook contains at least one **worksheet** by default. When working with a large amount of data, you can create **multiple worksheets** to help organize your workbook and make it easier to find content. You can also **group** worksheets to quickly add information to multiple worksheets at the same time.

To insert a new worksheet:

1.Locate and select the **New sheet** button near the bottom-right corner of the Excel window.



2.A **new blank worksheet** will appear.

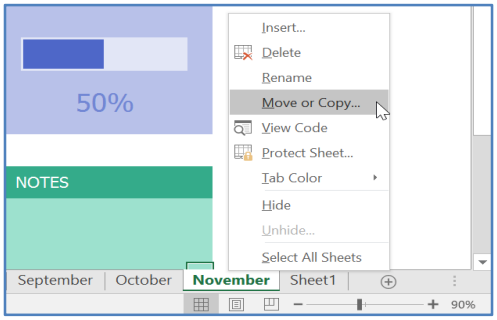


By default, any new workbook you create in Excel will contain one worksheet, called **Sheet1**. To change the **default number** of worksheets, navigate to **Backstage view**, click **Options**, then choose the desired number of worksheets to include in each new workbook.

To copy a worksheet:

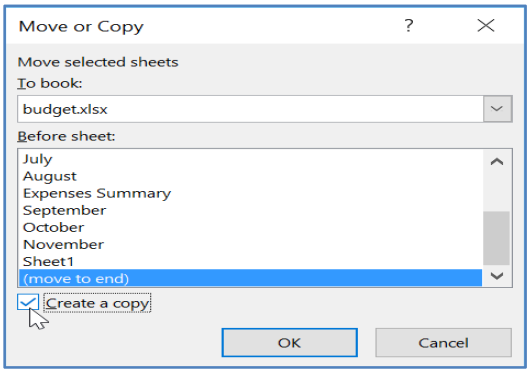
1.If you need to **duplicate** the content of one worksheet to another, Excel allows you to **copy** an existing worksheet.

Right-click the worksheet you want to copy, then select **Move or Copy** from the worksheet menu.

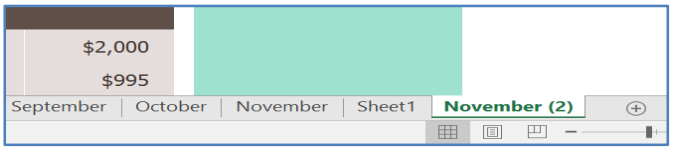


2.The **Move or Copy** dialog box will appear. Choose where the sheet will appear in the **Before sheet:** field. In our example, we'll choose **(move to end)** to place the worksheet to the right of the existing worksheet.

Check the box next to **Create a copy**, then click **OK**.



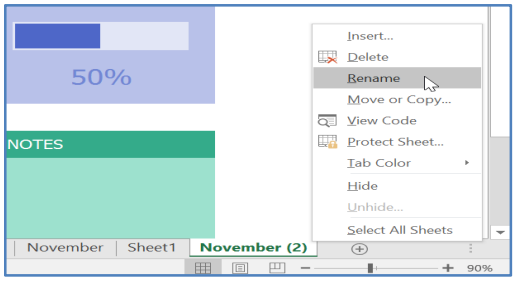
3.The worksheet will be **copied**. It will have the same title as the original worksheet, as well as a **version number**. In our example, we copied the **November** worksheet, so our new worksheet is named **November (2)**. All content from the November worksheet has also been copied to the new worksheet.



You can also copy a worksheet to an entirely different **workbook**. You can select any workbook that is currently open from the **To book:** drop-down menu.

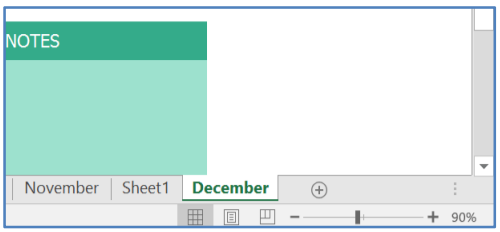
To rename a worksheet:

1.Right-click the **worksheet** you want to rename, then select **Rename** from the worksheet menu.



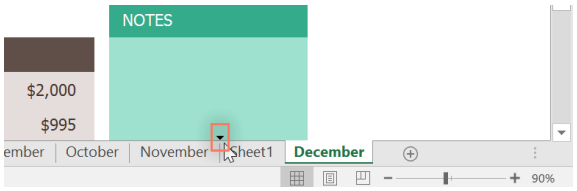
2. Type the desired name **for the worksheet.**

Click anywhere outside the worksheet tab, or press **Enter** on your keyboard. The worksheet will be **renamed**.

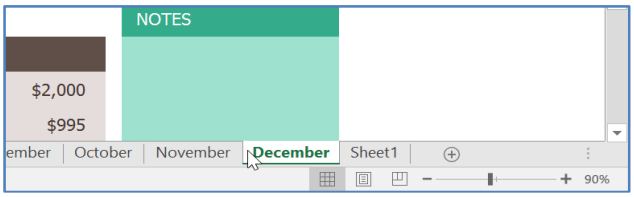


To move a worksheet:

1.Click and drag the worksheet you want to move until a **small black arrow** appears above the desired location.



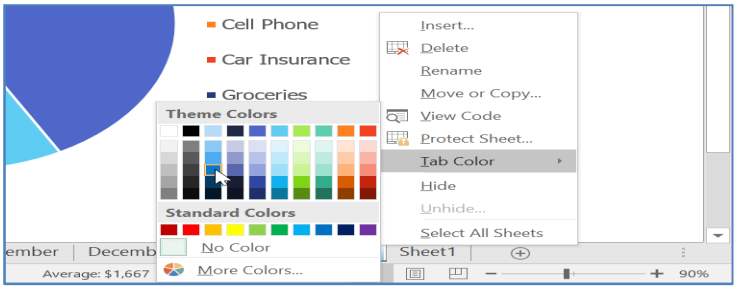
2.Release the mouse. The worksheet will be moved.



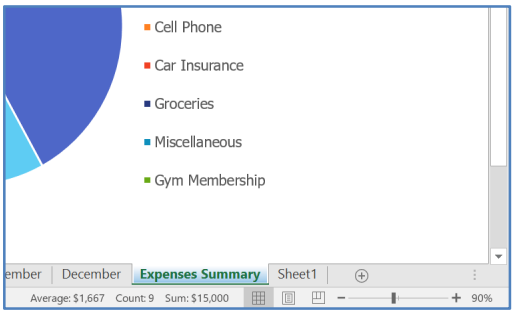
To change the worksheet tab color:

Right-click the desired worksheet tab, and hover the mouse over **Tab Color**. The **Color** menu will appear.

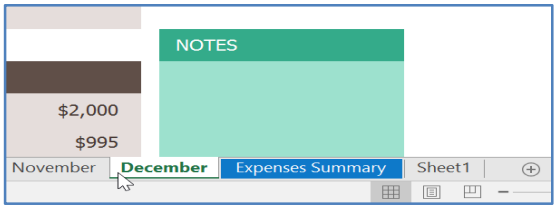
1.Select the desired **color**.



2.The worksheet tab color will be **changed**.

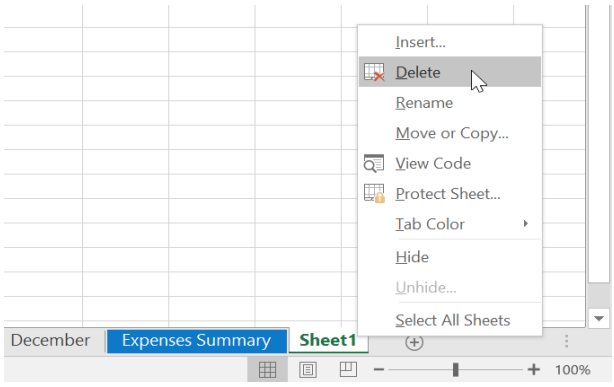


3.The worksheet tab color is considerably **less noticeable** when the worksheet is selected. Select another worksheet to see how the color will appear when the worksheet is not selected.

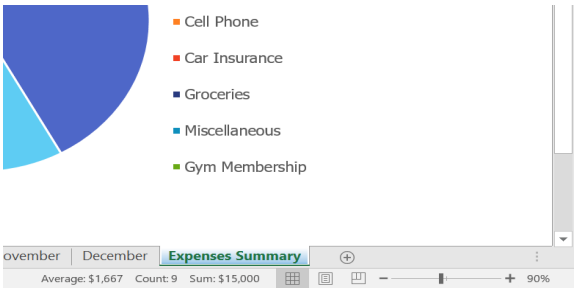


To delete a worksheet:

1.Right-click the **worksheet** you want to delete, then select **Delete** from the worksheet menu.



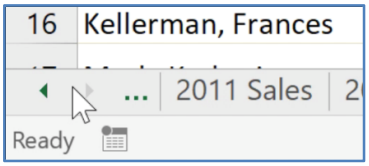
2. The worksheet will be **deleted** from your workbook.



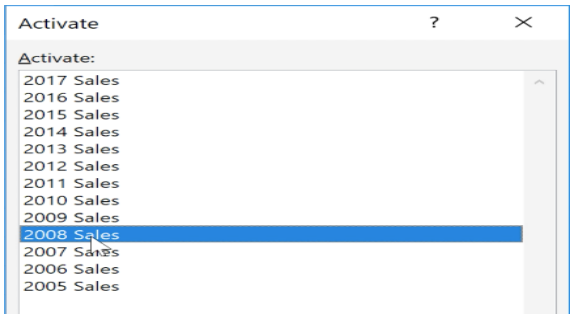
If you want to prevent specific worksheets from being edited or deleted, you can **protect them** by right-clicking the desired worksheet and selecting **Protect Sheet** from the worksheet menu.

Switching between worksheets

1.If you want to view a different worksheet, you can simply **click the tab** to switch to that worksheet. However, with larger workbooks this can sometimes become tedious, as it may require scrolling through all of the tabs to find the one you want. Instead, you can simply **right-click** the scroll arrows in the lower-left corner, as shown below.



2.A dialog box will appear with a list of all of the sheets in your workbook. You can then **double-click** the sheet you want to jump to.

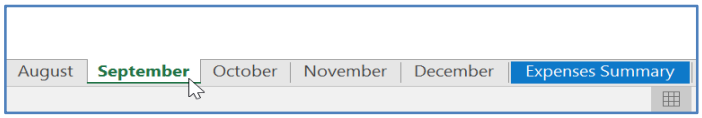


Grouping and ungrouping worksheets

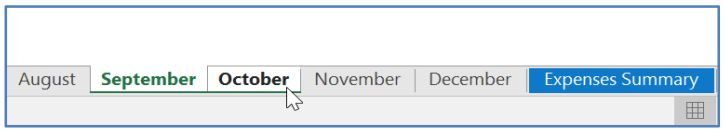
You can work with each worksheet **individually**, or you can work with multiple worksheets at the same time. Worksheets can be combined together into a **group**. Any changes made to one worksheet in a group will be made to **every worksheet** in the group.

To group worksheets:

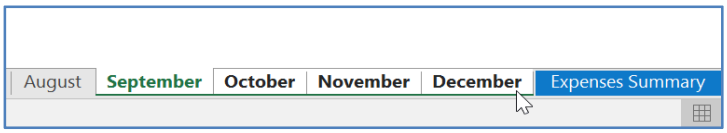
Select the **first worksheet** you want to include in the **worksheet group**.



Press and hold the **Ctrl** key on your keyboard. Select the **next worksheet** you want in the group.

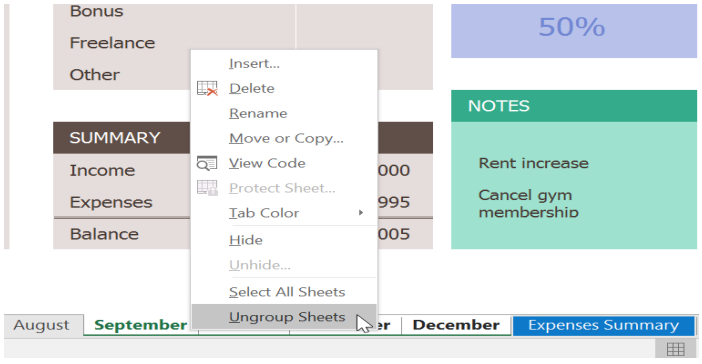


Continue to select worksheets until all of the worksheets you want to group are selected, then release the **Ctrl** key. The worksheets are now **grouped**.

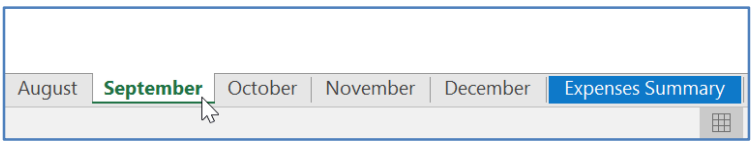


To ungroup worksheets:

Right-click a worksheet in the group, then select **Ungroup Sheets** from the worksheet menu.



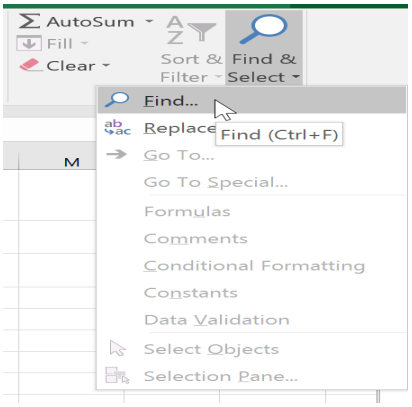
The worksheets will be **ungrouped**. Alternatively, you can simply click any worksheet not included in the group to **ungroup all worksheets**.



CHAPTER-10-USING FIND & REPLACE

Introduction

When working with a lot of data in Excel, it can be difficult and time consuming to locate specific information. You can easily search your workbook using the **Find** feature, which also allows you to modify content using the **Replace** feature.



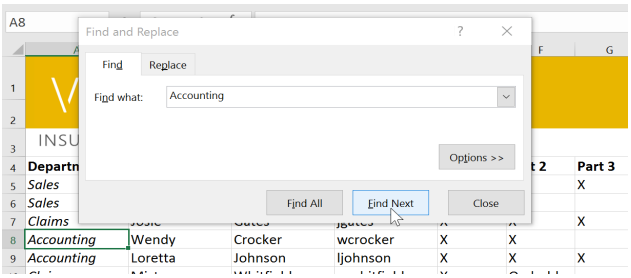
To find content:

In our example, we'll use the Find command to locate a specific department in this list.

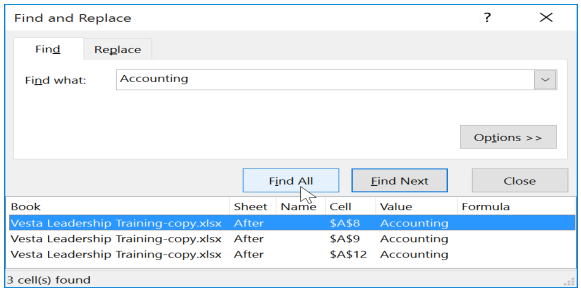
1.From the **Home** tab, click the **Find and Select** command, then select **Find** from the drop-down menu.

The **Find and Replace** dialog box will appear. Enter the **content** you want to find. In our example, we'll type the department's name.

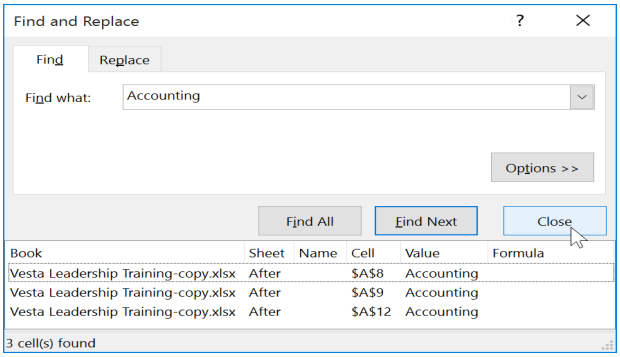
2.Click **Find Next**. If the content is found, the cell containing that content will be **selected**.



3.Click **Find Next** to find further instances or **Find All** to see every instance of the search term.

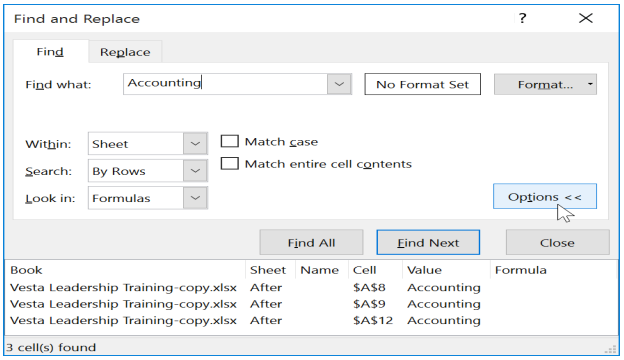


4.When you are finished, click **Close** to exit the Find and Replace dialog box.



You can also access the Find command by pressing **Ctrl+F** on your keyboard.

5.Click **Options** to see advanced search criteria in the Find and Replace dialog box.

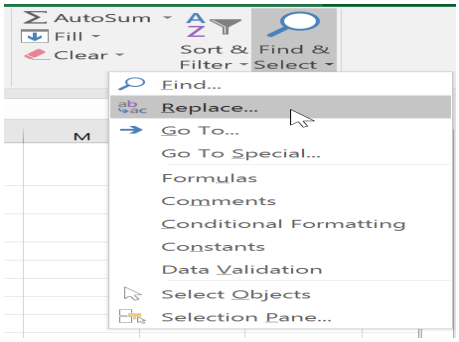


To replace cell content:

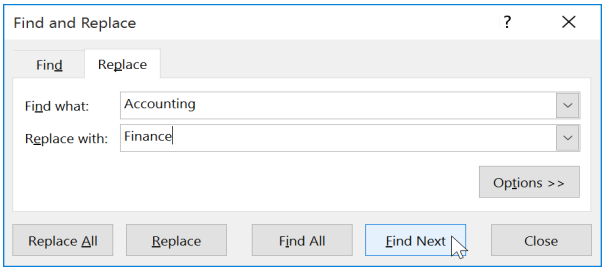
At times, you may discover that you've repeatedly made a mistake throughout your workbook (such as misspelling someone's name) or that you need to exchange a particular word or phrase for another. You can use Excel's **Find and Replace** feature to make quick revisions. In our example, we'll use Find and Replace to correct a list of department names.

From the **Home** tab, click the **Find and Select** command, then select **Replace** from the drop-down menu.

The **Find and Replace** dialog box will appear. Type the text you want to find in the **Find what:** field.



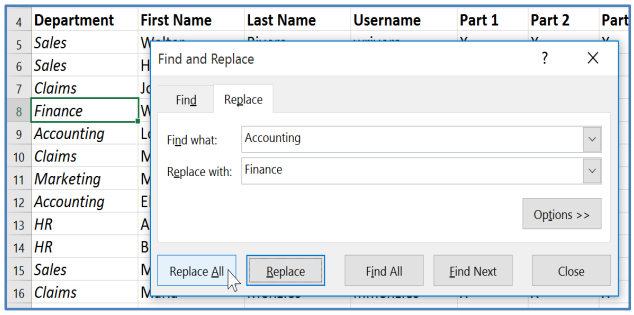
Type the text you want to replace it with in the **Replace with:** field, then click **Find Next**.



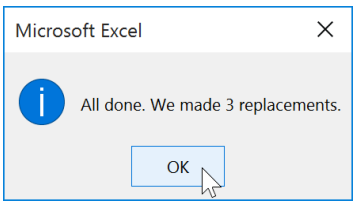
If the content is found, the cell containing that content will be **selected**.

Review the text to make sure you want to replace it.

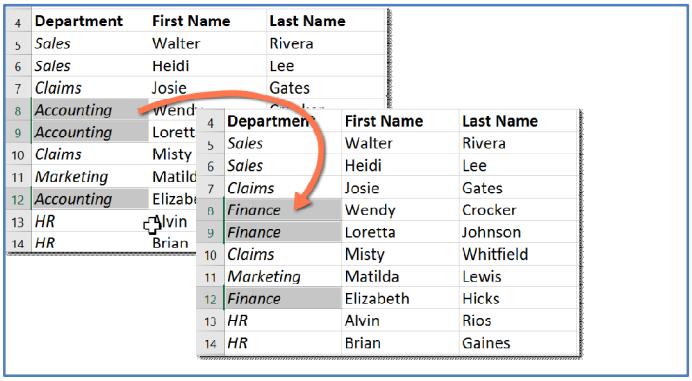
If you want to replace it, select one of the **replace** options**.** Choosing **Replace** will replace individual instances, while **Replace All** will replace every instance of the text throughout the workbook. In our example, we'll choose this option to save time.



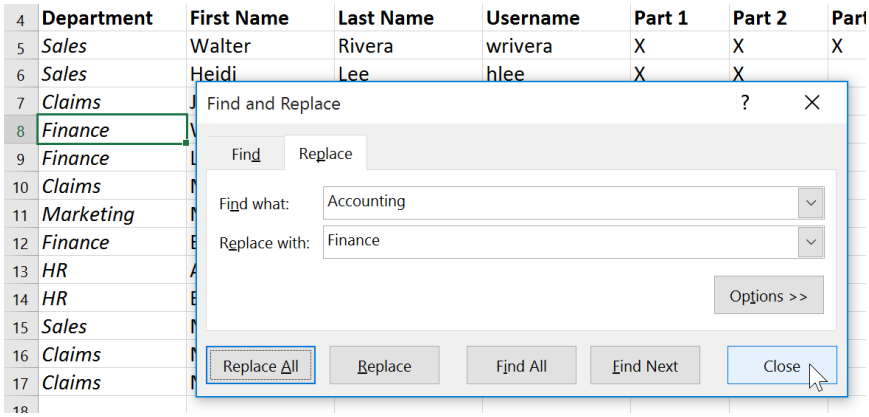
A dialog box will appear, confirming the number of replacements made. Click **OK** to continue.



The selected cell content will be **replaced**.



When you are finished, click Close to exit the Find and Replace dialog box.



Generally, it's best to avoid using **Replace All** because it doesn't give you the option of skipping anything you don't want to change. You should only use this option if you're absolutely sure it won't replace anything you didn't intend it to.

CHAPTER-11- CHECKING SPELLING

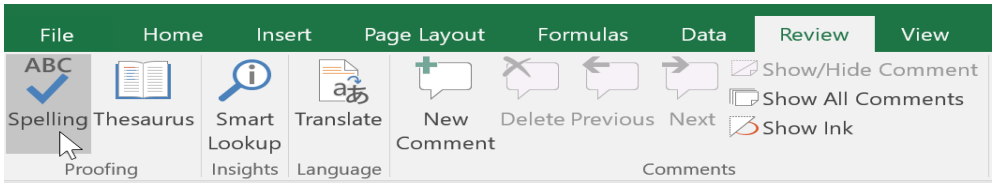
Introduction

Before sharing a workbook, you'll want to make sure it doesn't include any spelling errors. Fortunately, Excel includes a **Spell Check** tool you can use to make sure everything in your workbook is spelled correctly.

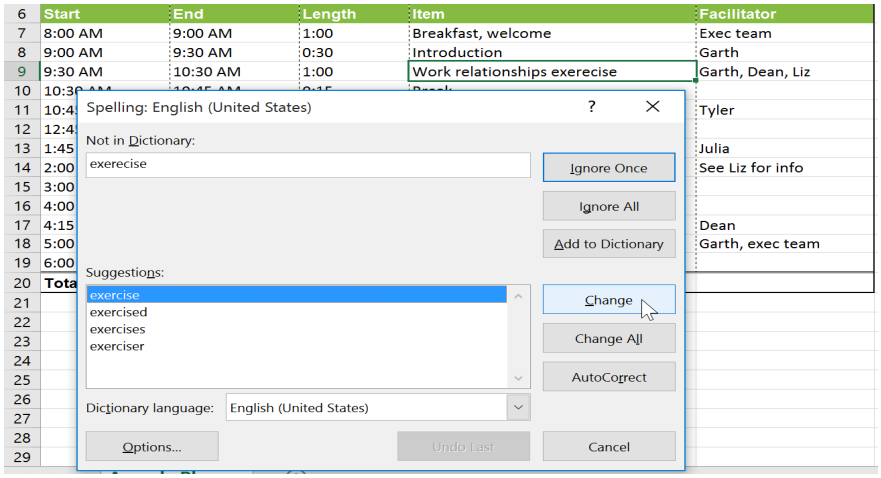
If you've used the Spell Check feature in Microsoft Word, just be aware that the Spell Check tool in Excel, while helpful, is not as powerful. For example, it won't check for grammar issues or check spelling as you type.

To use Spell Check:

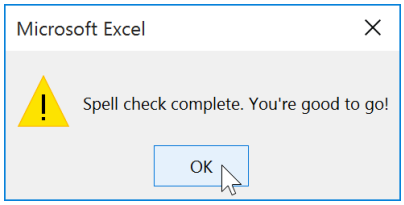
From the **Review** tab, click the **Spelling** command.



The **Spelling** dialog box will appear. For each spelling error in your worksheet, Spell Check will try to offer **suggestions** for the correct spelling. Choose a suggestion, then click **Change** to correct the error.



A dialog box will appear after reviewing all spelling errors. Click **OK** to close Spell Check.



If there are no appropriate suggestions, you can also enter the correct spelling manually.

Ignoring spelling "errors"

Spell Check **isn't always correct**. It will sometimes mark certain words as incorrect even if they're spelled correctly. This often happens with names, which may not be in the dictionary. You can choose **not** to change a spelling "error" using one of the following three options:

Ignore Once: This will skip the word without changing it.

Ignore All: This will skip the word without changing it and also skip all other instances of the word in your worksheet.

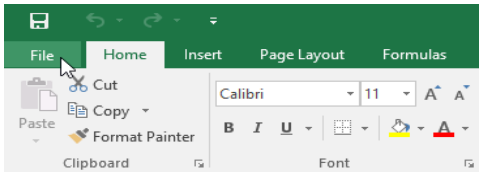
Add: This adds the word to the dictionary so it will never appear as an error again. Make sure the word is spelled correctly before choosing this option.

CHAPTER-12- PAGE LAYOUT AND PRINTING

Introduction

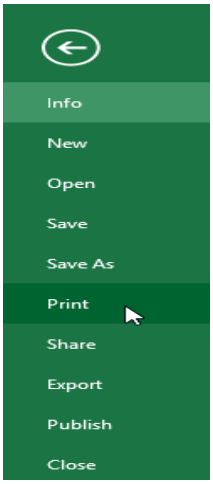
There may be times when you want to **print a workbook** to view and share your data **offline**. Once you've chosen your **page layout** settings, it's easy to preview and print a workbook from Excel using the **Print** pane.

To access the Print pane:

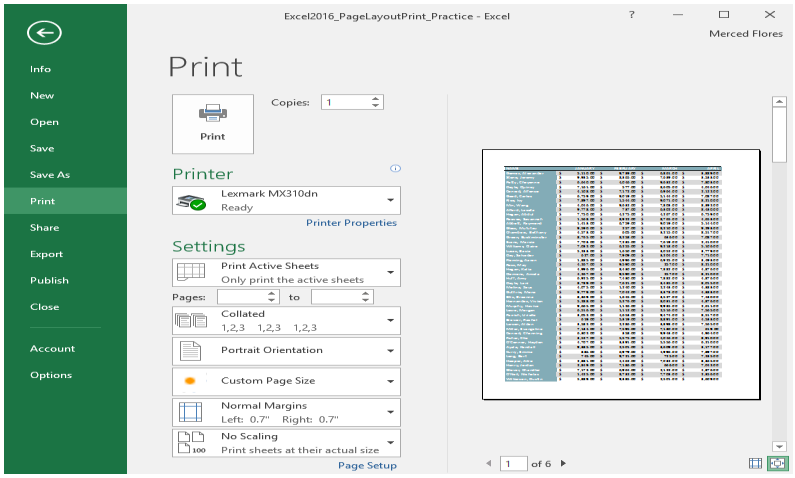


1.Select the **File** tab. **Backstage view** will appear.

2.Select **Print**. The **Print** pane will appear.



3.Click the buttons in the interactive below to learn more about using the Print pane.

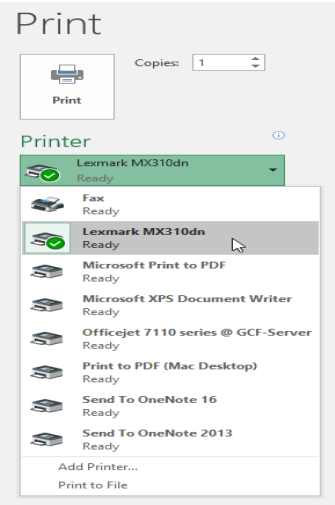


Show Margins / Zoom to Page

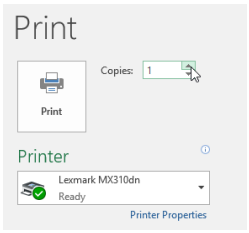
The Zoom to Page button on the right will zoom in and out in the Preview pane.
The Show Margins button on the left will show t

To print a workbook:

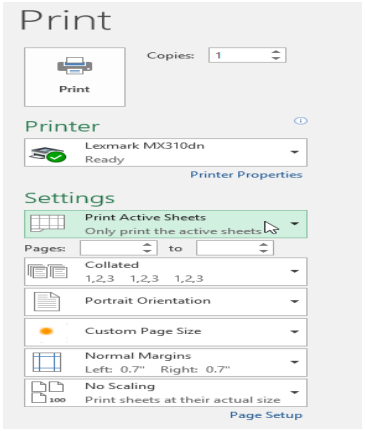
1.Navigate to the **Print** pane, then select the desired **printer**.



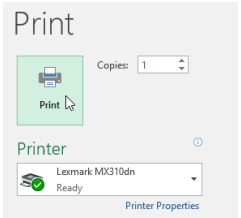
2.Enter the number of **copies** you want to print.



3.Select any additional **settings** if needed (see above interactive).



4.Click **Print**.



Choosing a print area

Before you print an Excel workbook, it's important to decide exactly what information you want to print. For example, if you have multiple worksheets in your workbook, you will need to decide if you want to print the **entire workbook** or only **active worksheets**. There may also be times when you want to print only a **selection** of content from your workbook.

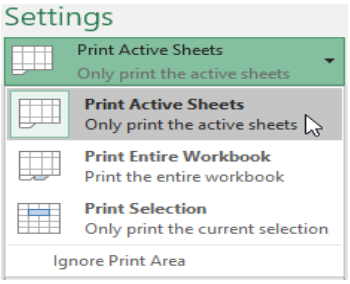
To print active sheets:

Worksheets are considered active when **selected**.

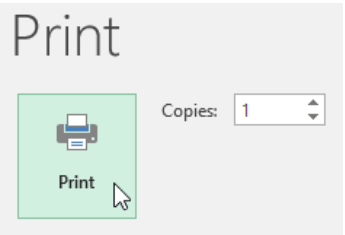
Select the **worksheet** you want to print. To print **multiple worksheets**, click the first worksheet, hold the **Ctrl** key on your keyboard, then click any other worksheets you want to select.

Navigate to the Print **pane.**

1.Select **Print Active Sheets** from the **Print Range** drop-down menu.



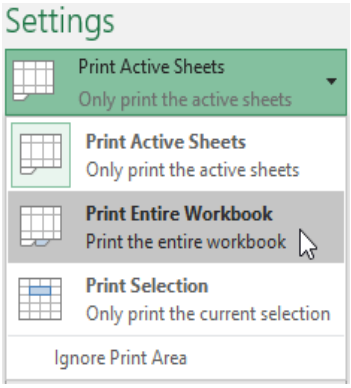
2.Click the **Print** button.



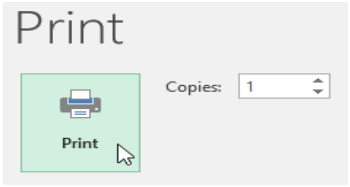
To print the entire workbook:

Navigate to the Print **pane.**

1.Select **Print Entire Workbook** from the **Print Range** drop-down menu.



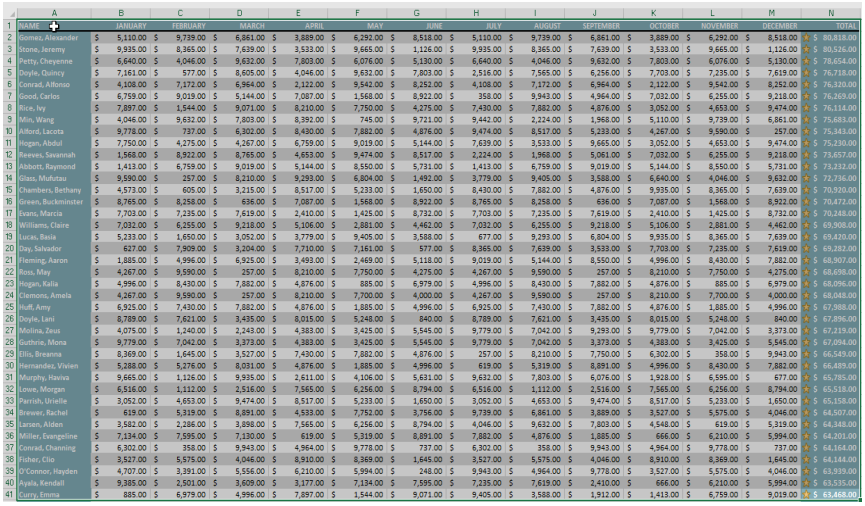
2.Click the **Print** button.



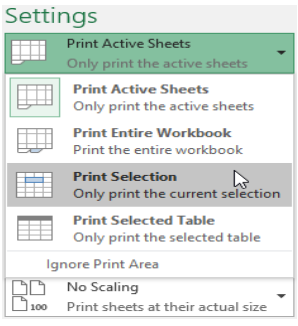
To print a selection:

In our example, we'll print the records for the top 40 salespeople on the Central worksheet.

1.Select the **cells** you want to print.

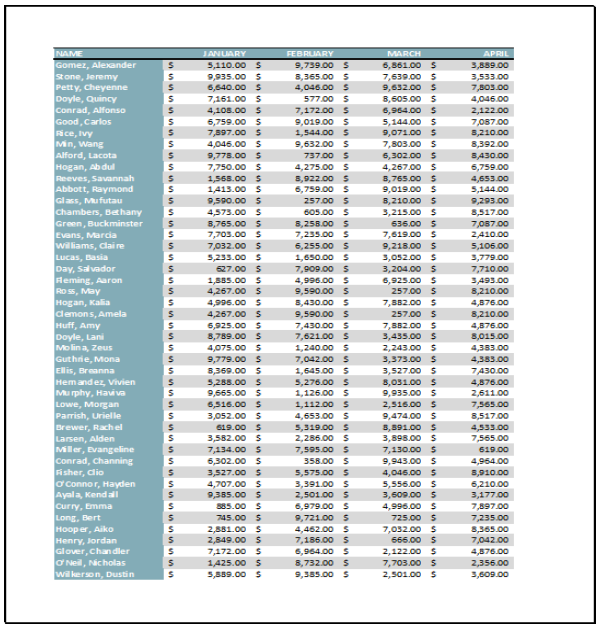


2.Select **Print Selection** from the **Print Range** drop-down menu.



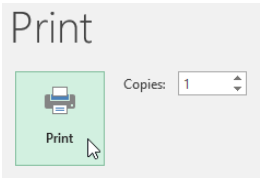
Navigate to the **Print** pane.

3.A **preview** of your selection will appear in the **Preview** pane.

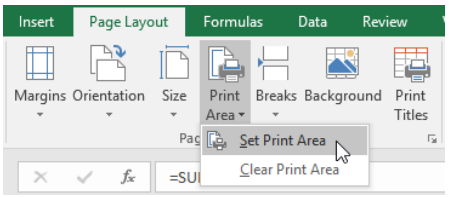


NAME	JANUARY	FEBRUARY	MARCH	APRIL
Gomez, Alexander	$ 5,110.00	$ 9,739.00	$ 6,861.00	$ 3,889.00
Stone, Jeremy	$ 9,935.00	$ 8,365.00	$ 7,639.00	$ 3,533.00
Petty, Cheyenne	$ 6,640.00	$ 4,046.00	$ 9,632.00	$ 7,803.00
Doyle, Quincy	$ 7,161.00	$ 577.00	$ 8,605.00	$ 4,046.00
Conrad, Alfonso	$ 4,108.00	$ 7,172.00	$ 6,964.00	$ 2,122.00
Good, Carlos	$ 6,759.00	$ 9,019.00	$ 5,144.00	$ 7,087.00
Rice, Ivy	$ 7,897.00	$ 1,544.00	$ 9,071.00	$ 8,210.00
Min, Wang	$ 4,046.00	$ 9,632.00	$ 7,803.00	$ 8,392.00
Alford, Lacota	$ 9,778.00	$ 737.00	$ 6,302.00	$ 8,430.00
Hogan, Abdul	$ 7,750.00	$ 4,275.00	$ 4,267.00	$ 6,759.00
Reeves, Savannah	$ 1,568.00	$ 8,922.00	$ 8,765.00	$ 4,653.00
Abbott, Raymond	$ 1,413.00	$ 6,759.00	$ 9,019.00	$ 5,144.00
Glass, Mufutau	$ 9,590.00	$ 257.00	$ 8,210.00	$ 9,293.00
Chambers, Bethany	$ 4,573.00	$ 605.00	$ 3,215.00	$ 8,517.00
Green, Buckminster	$ 8,765.00	$ 8,258.00	$ 636.00	$ 7,087.00
Evans, Marcia	$ 7,703.00	$ 7,235.00	$ 7,619.00	$ 2,410.00
Williams, Claire	$ 7,032.00	$ 6,255.00	$ 9,218.00	$ 5,106.00
Lucas, Basia	$ 5,233.00	$ 1,650.00	$ 3,052.00	$ 3,779.00
Day, Salvador	$ 627.00	$ 7,909.00	$ 3,204.00	$ 7,710.00
Fleming, Aaron	$ 1,885.00	$ 4,996.00	$ 6,925.00	$ 3,493.00
Ross, May	$ 4,267.00	$ 9,590.00	$ 257.00	$ 8,210.00
Hogan, Kalia	$ 4,996.00	$ 8,430.00	$ 7,882.00	$ 4,876.00
Clemons, Amela	$ 4,267.00	$ 9,590.00	$ 257.00	$ 8,210.00
Huff, Amy	$ 6,925.00	$ 7,430.00	$ 7,882.00	$ 4,876.00
Doyle, Lani	$ 8,789.00	$ 7,621.00	$ 3,435.00	$ 8,015.00
Molina, Zeus	$ 4,075.00	$ 1,240.00	$ 2,243.00	$ 4,383.00
Guthrie, Mona	$ 9,779.00	$ 7,042.00	$ 3,373.00	$ 4,383.00
Ellis, Breanna	$ 8,369.00	$ 1,645.00	$ 3,527.00	$ 7,430.00
Hernandez, Vivien	$ 5,288.00	$ 5,276.00	$ 8,031.00	$ 4,876.00
Murphy, Haviva	$ 9,665.00	$ 1,126.00	$ 9,935.00	$ 2,611.00
Lowe, Morgan	$ 6,516.00	$ 1,112.00	$ 2,516.00	$ 7,565.00
Parrish, Urielle	$ 3,052.00	$ 4,653.00	$ 9,474.00	$ 8,517.00
Brewer, Rachel	$ 619.00	$ 5,319.00	$ 8,891.00	$ 4,533.00
Larsen, Alden	$ 3,582.00	$ 2,286.00	$ 3,898.00	$ 7,565.00
Miller, Evangeline	$ 7,134.00	$ 7,595.00	$ 7,130.00	$ 619.00
Conrad, Channing	$ 6,302.00	$ 358.00	$ 9,943.00	$ 4,964.00
Fisher, Clio	$ 3,527.00	$ 5,575.00	$ 4,046.00	$ 8,910.00
O'Connor, Hayden	$ 4,707.00	$ 3,391.00	$ 5,556.00	$ 6,210.00
Ayala, Kendall	$ 9,385.00	$ 2,501.00	$ 3,609.00	$ 3,177.00
Curry, Emma	$ 885.00	$ 6,979.00	$ 4,996.00	$ 7,897.00
Long, Bert	$ 745.00	$ 9,721.00	$ 725.00	$ 7,235.00
Hooper, Aiko	$ 2,881.00	$ 4,462.00	$ 7,032.00	$ 8,565.00
Henry, Jordan	$ 2,849.00	$ 7,186.00	$ 666.00	$ 7,042.00
Glover, Chandler	$ 7,172.00	$ 6,964.00	$ 2,122.00	$ 4,876.00
O'Neil, Nicholas	$ 1,425.00	$ 8,732.00	$ 7,703.00	$ 2,356.00
Wilkerson, Dustin	$ 5,889.00	$ 9,385.00	$ 2,501.00	$ 3,609.00

4.Click the **Print** button to print the selection.



if you prefer, you can also set the **print area** in advance so you'll be able to visualize which cells will be printed as you work in Excel. Simply **select** the cells you want to print, click the **Page Layout** tab, select the **Print Area** command, then choose **Set Print Area**. Keep in mind that if you ever need to print the entire workbook, you'll need to clear the print area.



Adjusting content

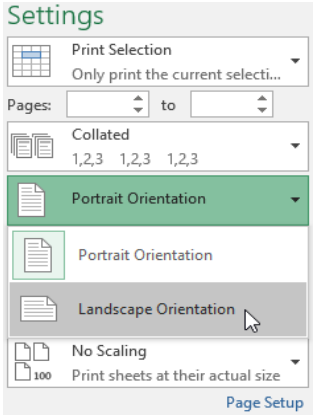
On occasion, you may need to make **small adjustments** from the Print pane to fit your workbook content neatly onto a printed page. The Print pane includes several tools to help fit and scale your content, such as **scaling** and **page margins**.

To change page orientation:

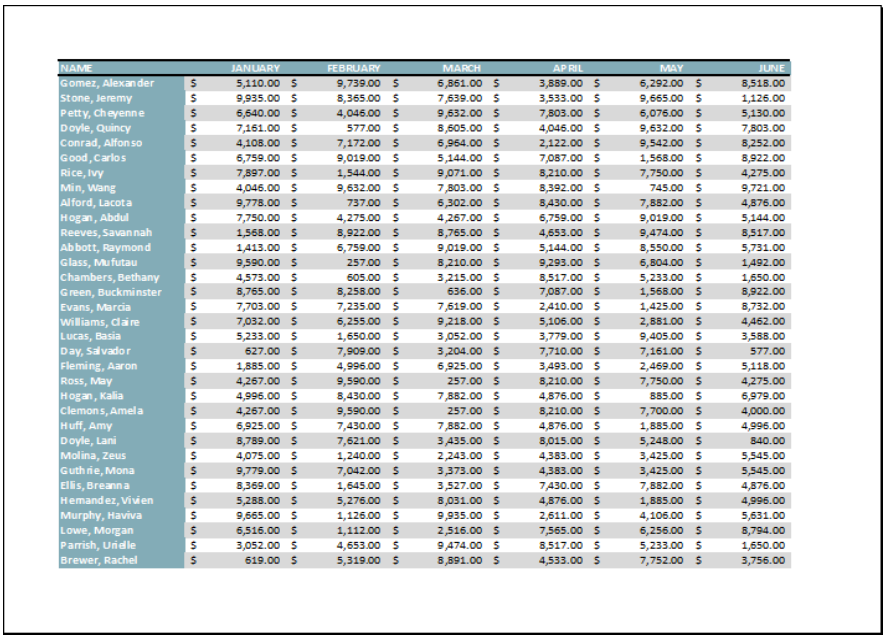
Excel offers two page orientation options: **landscape** and **portrait**. **Landscape** orients the page **horizontally**, while **portrait** orients the page **vertically**. In our example, we'll set the page orientation to landscape.

Navigate to the **Print** pane.

1.Select the desired orientation from the **Page Orientation** drop-down menu. In our example, we'll select **Landscape Orientation**.



2.The new page orientation will be displayed in the Preview pane.

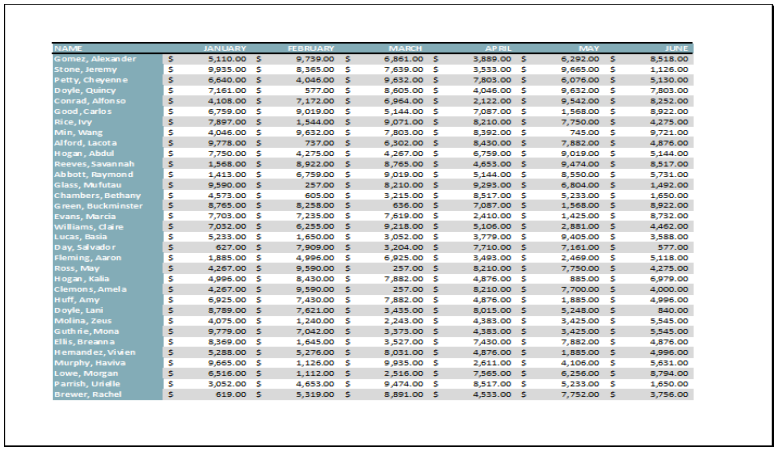


NAME	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE
Gomez, Alexander	$ 5,110.00	$ 9,739.00	$ 6,861.00	$ 3,889.00	$ 6,292.00	$ 8,518.00
Stone, Jeremy	$ 9,935.00	$ 8,365.00	$ 7,639.00	$ 3,533.00	$ 9,665.00	$ 1,126.00
Petty, Cheyenne	$ 6,640.00	$ 4,046.00	$ 9,632.00	$ 7,803.00	$ 6,076.00	$ 5,130.00
Doyle, Quincy	$ 7,161.00	$ 577.00	$ 8,605.00	$ 4,046.00	$ 9,632.00	$ 7,803.00
Conrad, Alfonso	$ 4,108.00	$ 7,172.00	$ 6,964.00	$ 2,122.00	$ 9,542.00	$ 8,252.00
Good, Carlos	$ 6,759.00	$ 9,019.00	$ 5,144.00	$ 7,087.00	$ 1,568.00	$ 8,922.00
Rice, Ivy	$ 7,897.00	$ 1,544.00	$ 9,071.00	$ 8,210.00	$ 7,750.00	$ 4,275.00
Min, Wang	$ 4,046.00	$ 9,632.00	$ 7,803.00	$ 8,392.00	$ 745.00	$ 9,721.00
Alford, Lacota	$ 9,778.00	$ 737.00	$ 6,302.00	$ 8,430.00	$ 7,882.00	$ 4,876.00
Hogan, Abdul	$ 7,750.00	$ 4,275.00	$ 4,267.00	$ 6,759.00	$ 9,019.00	$ 5,144.00
Reeves, Savannah	$ 1,568.00	$ 8,922.00	$ 8,765.00	$ 4,653.00	$ 9,474.00	$ 8,517.00
Abbott, Raymond	$ 1,413.00	$ 6,759.00	$ 9,019.00	$ 5,144.00	$ 8,550.00	$ 5,731.00
Glass, Mufutau	$ 9,590.00	$ 257.00	$ 8,210.00	$ 9,293.00	$ 6,804.00	$ 1,492.00
Chambers, Bethany	$ 4,573.00	$ 605.00	$ 3,215.00	$ 8,517.00	$ 5,233.00	$ 1,650.00
Green, Buckminster	$ 8,765.00	$ 8,258.00	$ 636.00	$ 7,087.00	$ 1,568.00	$ 8,922.00
Evans, Marcia	$ 7,703.00	$ 7,235.00	$ 7,619.00	$ 2,410.00	$ 1,425.00	$ 8,732.00
Williams, Claire	$ 7,032.00	$ 6,255.00	$ 9,218.00	$ 5,106.00	$ 2,881.00	$ 4,462.00
Lucas, Basia	$ 5,233.00	$ 1,650.00	$ 3,052.00	$ 3,779.00	$ 9,405.00	$ 3,588.00
Day, Salvador	$ 627.00	$ 7,909.00	$ 3,204.00	$ 7,710.00	$ 7,161.00	$ 577.00
Fleming, Aaron	$ 1,885.00	$ 4,996.00	$ 6,925.00	$ 3,493.00	$ 2,469.00	$ 5,118.00
Ross, May	$ 4,267.00	$ 9,590.00	$ 257.00	$ 8,210.00	$ 7,750.00	$ 4,275.00
Hogan, Kalia	$ 4,996.00	$ 8,430.00	$ 7,882.00	$ 4,876.00	$ 885.00	$ 6,979.00
Clemons, Amela	$ 4,267.00	$ 9,590.00	$ 257.00	$ 8,210.00	$ 7,700.00	$ 4,000.00
Huff, Amy	$ 6,925.00	$ 7,430.00	$ 7,882.00	$ 4,876.00	$ 1,885.00	$ 4,996.00
Doyle, Lani	$ 8,789.00	$ 7,621.00	$ 3,435.00	$ 8,015.00	$ 5,248.00	$ 840.00
Molina, Zeus	$ 4,075.00	$ 1,240.00	$ 2,243.00	$ 4,383.00	$ 3,425.00	$ 5,545.00
Guthrie, Mona	$ 9,779.00	$ 7,042.00	$ 3,373.00	$ 4,383.00	$ 3,425.00	$ 5,545.00
Ellis, Breanna	$ 8,369.00	$ 1,645.00	$ 3,527.00	$ 7,430.00	$ 7,882.00	$ 4,876.00
Hernandez, Vivien	$ 5,288.00	$ 5,276.00	$ 8,031.00	$ 4,876.00	$ 1,885.00	$ 4,996.00
Murphy, Haviva	$ 9,665.00	$ 1,126.00	$ 9,935.00	$ 2,611.00	$ 4,106.00	$ 5,631.00
Lowe, Morgan	$ 6,516.00	$ 1,112.00	$ 2,516.00	$ 7,565.00	$ 6,256.00	$ 8,794.00
Parrish, Urielle	$ 3,052.00	$ 4,653.00	$ 9,474.00	$ 8,517.00	$ 5,233.00	$ 1,650.00
Brewer, Rachel	$ 619.00	$ 5,319.00	$ 8,891.00	$ 4,533.00	$ 7,752.00	$ 3,756.00

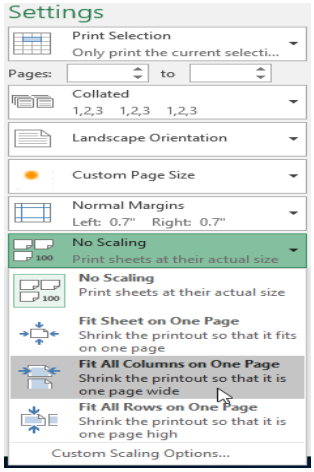
To fit content before printing:

If some of your content is being cut off by the printer, you can use **scaling** to fit your workbook to the page automatically.

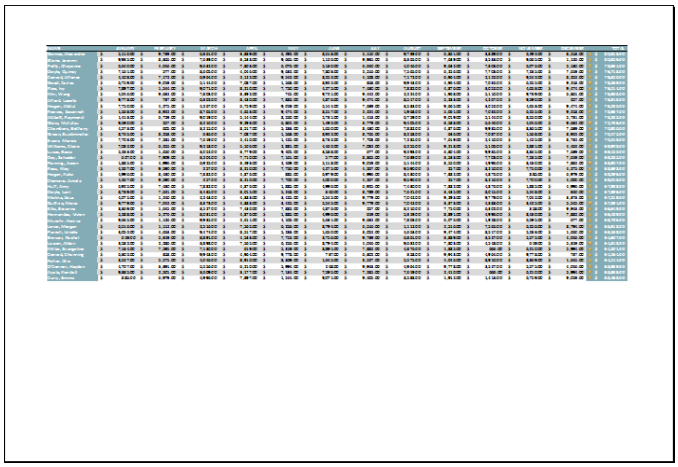
1.Navigate to the **Print** pane. In our example, we can see in the Preview pane that our content will be cut off when printed.



2.Select the desired option from the **Scaling** drop-down menu. In our example, we'll select **Fit All Columns on One Page**.



3.The worksheet will be **condensed** to fit onto a single page.

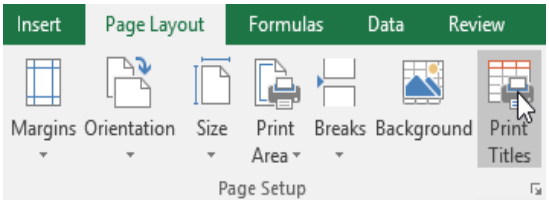


Keep in mind that worksheets will become more **difficult to read** as they are scaled down, so you may not want to use this option when printing a worksheet with a lot of information. In our example, we'll change the scaling setting back to **No Scaling**.

To include Print Titles:

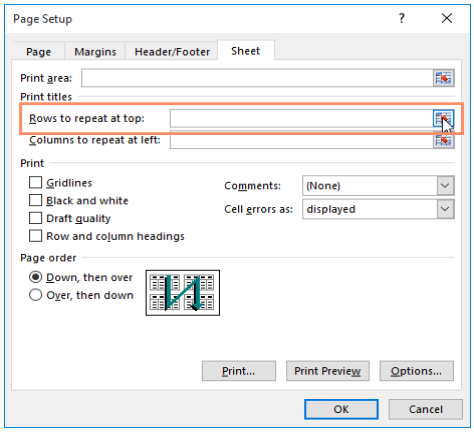
your worksheet uses **title headings**, it's important to include these headings on each page of your printed worksheet. It would be difficult to read a printed workbook if the title headings appeared only on the first page. The **Print Titles** command allows you to select specific rows and columns to appear on each page.

1.Click the **Page Layout** tab on the **Ribbon**, then select the **Print Titles**command.

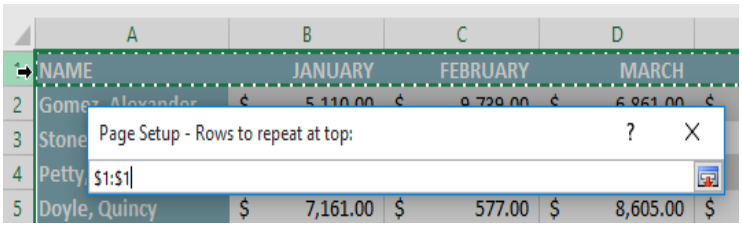


The **Page Setup** dialog box will appear. From here, you can choose **rows** or **columns** to repeat on each page. In our example, we'll repeat a row first.

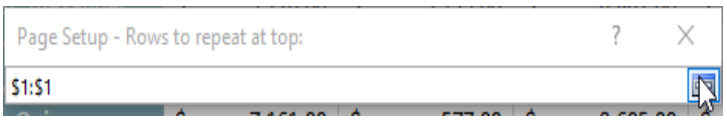
2.Click the **Collapse Dialog** button next to the **Rows to repeat at top:** field.



3.The cursor will become a small **selection arrow,** and the **Page Setup** dialog box will be collapsed. Select the **row(s)** you want to repeat at the top of each printed page. In our example, we'll select row 1.

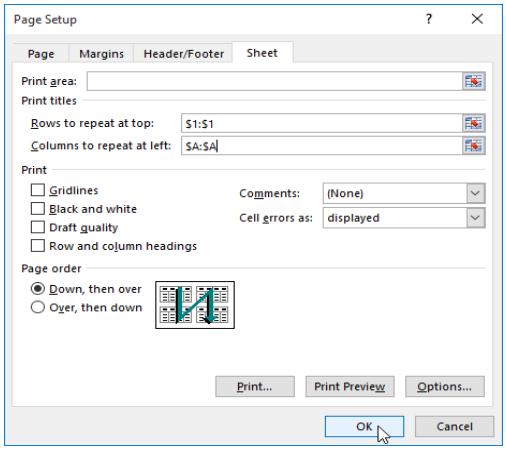


4.Row 1 will be added to the **Rows to repeat at top:** field. Click the **Collapse Dialog** button again.

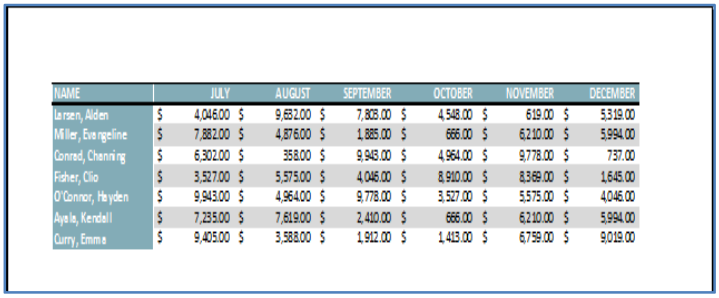


5.The **Page Setup** dialog box will expand. To repeat a column as well, use the same process shown in steps 4 and 5. In our example, we've selected to repeat row 1 and column A.

When you're satisfied with your selections, click **OK**.



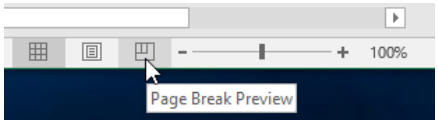
6.In our example, row 1 appears at the top of every page, and column A appears at the left of every page.



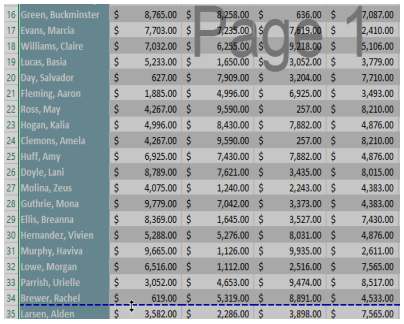
NAME	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Larsen, Alden	$ 4,046.00	$ 9,652.00	$ 7,805.00	$ 4,548.00	$ 619.00	$ 5,319.00
Miller, Evangeline	$ 7,882.00	$ 4,876.00	$ 1,885.00	$ 666.00	$ 6,210.00	$ 5,994.00
Conrad, Channing	$ 6,302.00	$ 358.00	$ 9,943.00	$ 4,964.00	$ 9,778.00	$ 737.00
Fisher, Clio	$ 3,527.00	$ 5,575.00	$ 4,046.00	$ 8,910.00	$ 8,369.00	$ 1,645.00
O'Connor, Hayden	$ 9,943.00	$ 4,964.00	$ 9,778.00	$ 3,527.00	$ 5,575.00	$ 4,046.00
Ayala, Kendall	$ 7,235.00	$ 7,819.00	$ 2,410.00	$ 666.00	$ 6,210.00	$ 5,994.00
Curry, Emma	$ 9,405.00	$ 3,588.00	$ 1,912.00	$ 1,413.00	$ 6,759.00	$ 9,019.00

To adjust page breaks:

1.Click the **Page Break Preview** command to change to Page Break view.

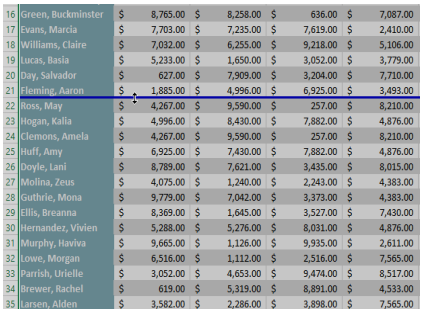


2.Vertical and horizontal **blue dotted lines** denote the page breaks. Click and drag one of these lines to adjust that page break.



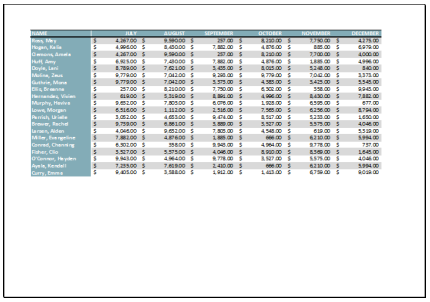
Green, Buckminster	$ 8,765.00	$ 8,258.00	$ 636.00	$ 7,087.00
Evans, Marcia	$ 7,703.00	$ 7,235.00	$ 7,619.00	$ 2,410.00
Williams, Claire	$ 7,032.00	$ 6,255.00	$ 9,218.00	$ 5,106.00
Lucas, Basia	$ 5,233.00	$ 1,650.00	$ 3,052.00	$ 3,779.00
Day, Salvador	$ 627.00	$ 7,909.00	$ 3,204.00	$ 7,710.00
Fleming, Aaron	$ 1,885.00	$ 4,996.00	$ 6,925.00	$ 3,493.00
Ross, May	$ 4,267.00	$ 9,590.00	$ 257.00	$ 8,210.00
Hogan, Kalia	$ 4,996.00	$ 8,430.00	$ 7,882.00	$ 4,876.00
Clemons, Amela	$ 4,267.00	$ 9,590.00	$ 257.00	$ 8,210.00
Huff, Amy	$ 6,925.00	$ 7,430.00	$ 7,882.00	$ 4,876.00
Doyle, Lani	$ 8,789.00	$ 7,621.00	$ 3,435.00	$ 8,015.00
Molina, Zeus	$ 4,075.00	$ 1,240.00	$ 2,243.00	$ 4,383.00
Guthrie, Mona	$ 9,779.00	$ 7,042.00	$ 3,373.00	$ 4,383.00
Ellis, Breanna	$ 8,369.00	$ 1,645.00	$ 3,527.00	$ 7,430.00
Hernandez, Vivien	$ 5,288.00	$ 5,276.00	$ 8,031.00	$ 4,876.00
Murphy, Haviva	$ 9,665.00	$ 1,126.00	$ 9,935.00	$ 2,611.00
Lowe, Morgan	$ 6,516.00	$ 1,112.00	$ 2,516.00	$ 7,565.00
Parrish, Urielle	$ 3,052.00	$ 4,653.00	$ 9,474.00	$ 8,517.00
Brewer, Rachel	$ 619.00	$ 5,319.00	$ 8,891.00	$ 4,533.00
Larsen, Alden	$ 3,582.00	$ 2,286.00	$ 3,898.00	$ 7,565.00

3.In our example, we've set the horizontal page break between rows 21 and 22.



Green, Buckminster	$ 8,765.00	$ 8,258.00	$ 636.00	$ 7,087.00
Evans, Marcia	$ 7,703.00	$ 7,235.00	$ 7,619.00	$ 2,410.00
Williams, Claire	$ 7,032.00	$ 6,255.00	$ 9,218.00	$ 5,106.00
Lucas, Basia	$ 5,233.00	$ 1,650.00	$ 3,052.00	$ 3,779.00
Day, Salvador	$ 627.00	$ 7,909.00	$ 3,204.00	$ 7,710.00
Fleming, Aaron	$ 1,885.00	$ 4,996.00	$ 6,925.00	$ 3,493.00
Ross, May	$ 4,267.00	$ 9,590.00	$ 257.00	$ 8,210.00
Hogan, Kalia	$ 4,996.00	$ 8,430.00	$ 7,882.00	$ 4,876.00
Clemons, Amela	$ 4,267.00	$ 9,590.00	$ 257.00	$ 8,210.00
Huff, Amy	$ 6,925.00	$ 7,430.00	$ 7,882.00	$ 4,876.00
Doyle, Lani	$ 8,789.00	$ 7,621.00	$ 3,435.00	$ 8,015.00
Molina, Zeus	$ 4,075.00	$ 1,240.00	$ 2,243.00	$ 4,383.00
Guthrie, Mona	$ 9,779.00	$ 7,042.00	$ 3,373.00	$ 4,383.00
Ellis, Breanna	$ 8,369.00	$ 1,645.00	$ 3,527.00	$ 7,430.00
Hernandez, Vivien	$ 5,288.00	$ 5,276.00	$ 8,031.00	$ 4,876.00
Murphy, Haviva	$ 9,665.00	$ 1,126.00	$ 9,935.00	$ 2,611.00
Lowe, Morgan	$ 6,516.00	$ 1,112.00	$ 2,516.00	$ 7,565.00
Parrish, Urielle	$ 3,052.00	$ 4,653.00	$ 9,474.00	$ 8,517.00
Brewer, Rachel	$ 619.00	$ 5,319.00	$ 8,891.00	$ 4,533.00
Larsen, Alden	$ 3,582.00	$ 2,286.00	$ 3,898.00	$ 7,565.00

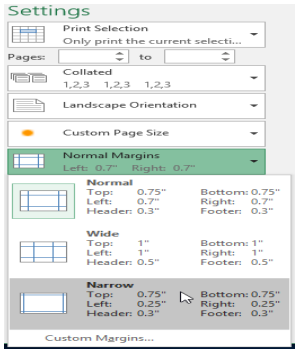
4.In our example, all the pages now show the same number of rows due to the change in the page break.



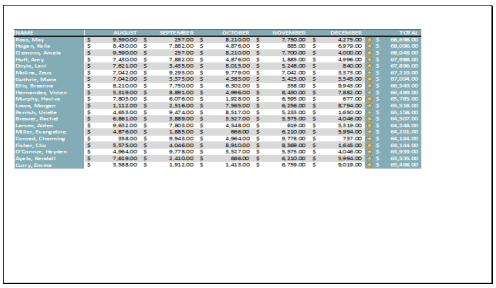
To modify margins in the Preview pane:

A **margin** is the space between your content and the edge of the page. Sometimes you may need to **adjust** the margins to make your data fit more comfortably. You can modify page margins from the **Print** pane.

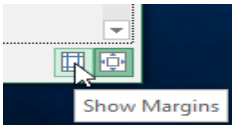
1.Select the desired margin size from the **Page Margins** drop-down menu. In our example, we'll select **Narrow Margins**.



2.The new page margins will be displayed in the Preview pane.



3.You can adjust the margins manually by clicking the **Show Margins** button in the lower-right corner, then dragging the **margin markers** in the **Preview** pane.



CHAPTER-13- INTRO TO FORMULAS

Introduction

One of the most powerful features in Excel is the ability to **calculate** numerical information using **formulas**. Just like a calculator, Excel can add, subtract, multiply, and divide. In this lesson, we'll show you how to use **cell references** to create simple formulas.

Mathematical operators

Excel uses standard operators for formulas, such as a **plus sign** for addition (+), a **minus sign** for subtraction (-), an **asterisk** for multiplication (*), a **forward slash** for division (/), and a **caret** (^) for exponents.

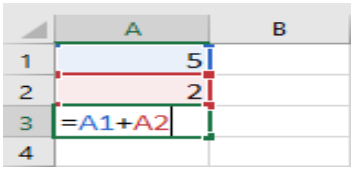
Addition	+
Subtraction	-
Multiplication	*
Division	/
Exponents	^

All formulas in Excel must begin with an **equals sign** (=). This is because the cell contains, or is equal to, the formula and the value it calculates.

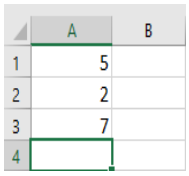
Understanding cell references

While you can create simple formulas in Excel using numbers (for example, **=2+2** or **=5*5**), most of the time you will use **cell addresses** to create a formula. This is known as making a **cell reference**. Using cell references will ensure that your formulas are always accurate because you can change the value of referenced cells without having to rewrite the formula.

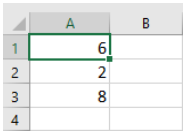
1.In the formula below, cell A3 adds the values of cells A1 and A2 by making cell references:



2.When you press Enter, the formula calculates and displays the answer in cell A3:



3.If the values in the referenced cells change, the formula automatically recalculates:

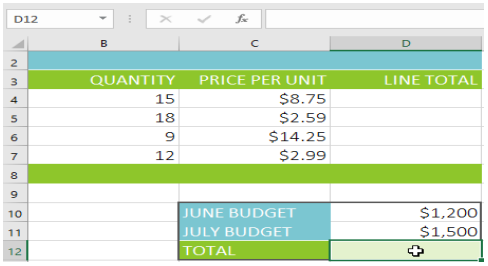


4.By combining a mathematical operator with cell references, you can create a variety of simple formulas in Excel. Formulas can also include a combination of cell references and numbers, as in the examples below:

=A1+A2	Adds cells A1 and A2
=C4-3	Subtracts 3 from cell C4
=E7/J4	Divides cell E7 by J4
=N10*1.05	Multiplies cell N10 by 1.05
=R5^2	Finds the square of cell R5

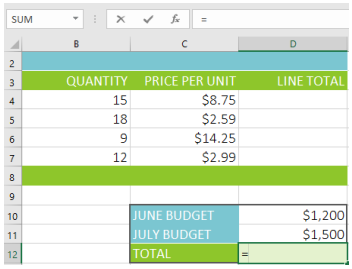
To create a formula:

In our example below, we'll use a simple formula and cell references to calculate a budget.



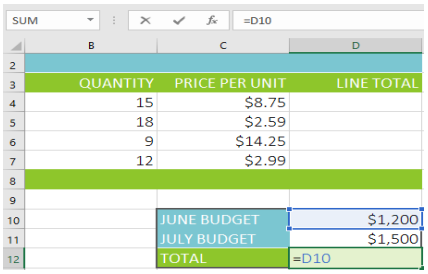
1.Select the **cell** that will contain the formula. In our example, we'll select cell **D12**.

2.Type the **equals sign (=)**. Notice how it appears in both the **cell** and the **formula bar**.

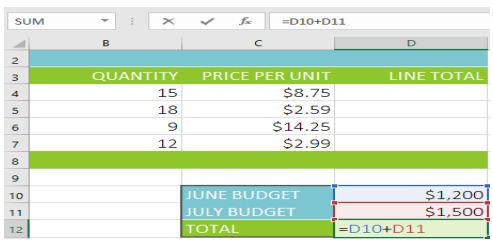


3.Type the **cell address** of the cell you want to reference first in the formula: cell **D10** in our example. A **blue border** will appear around the referenced cell.

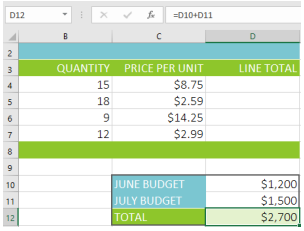
Type the **mathematical operator** you want to use. In our example, we'll type the **addition sign** (+).



4.Type the **cell address** of the cell you want to reference second in the formula: cell **D11** in our example. A **red border** will appear around the referenced cell.

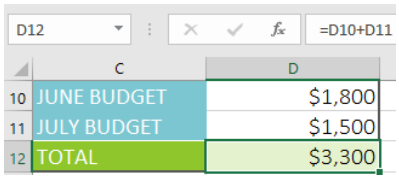


5.Press **Enter** on your keyboard. The formula will be **calculated**, and the **value**will be displayed in the cell. If you select the cell again, notice that the cell displays the result, while the formula bar displays the formula.



if the result of a formula is too large to be displayed in a cell, it may appear as **pound signs** (#######) instead of a value. This means the column is not wide enough to display the cell content. Simply **increase the column width** to show the cell content.

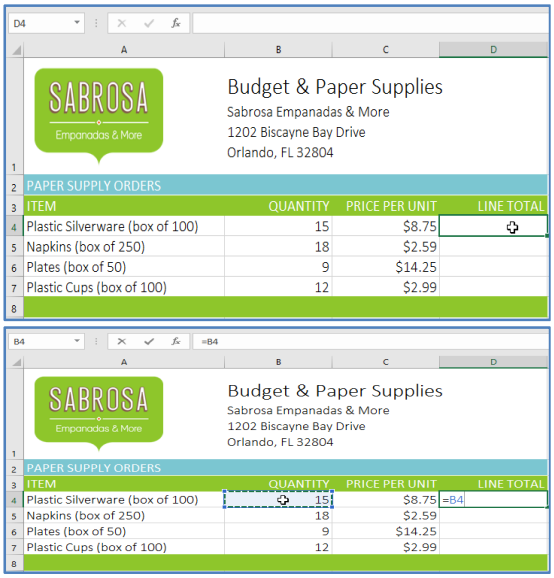
Modifying values with cell references



The true advantage of cell references is that they allow you to **update data** in your worksheet without having to rewrite formulas. In the example below, we've modified the value of cell D1 from $1,200 to $1,800. The formula in D3 will automatically recalculate and display the new value in cell D3.

To create a formula using the point-and-click method:

Instead of typing cell addresses manually, you can **point and click** the cells you want to include in your formula. This method can save a lot of time and effort when creating formulas. In our example below, we'll create a formula to calculate the cost of ordering several boxes of plastic silverware.



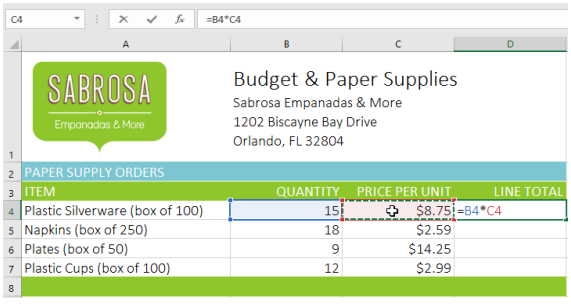
1.Select the **cell** that will contain the formula. In our example, we'll select cell **D4**.

Type the **equals sign (=)**.

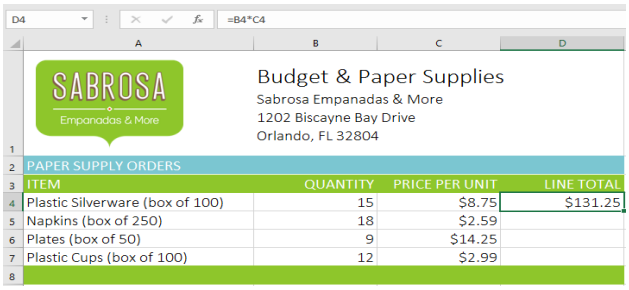
2.Select the **cell** you want to reference first in the formula: cell **B4** in our example. The **cell address** will appear in the formula.

Type the **mathematical operator** you want to use. In our example, we'll type the **multiplication sign (*)**.

3.Select the **cell** you want to reference second in the formula: cell **C4** in our example. The **cell address** will appear in the formula.

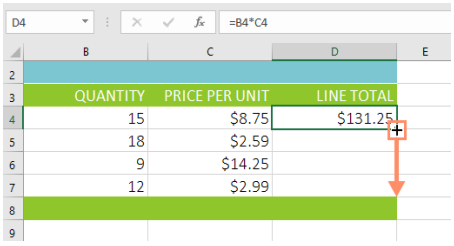


4.Press **Enter** on your keyboard. The formula will be **calculated**, and the **value**will be displayed in the cell.



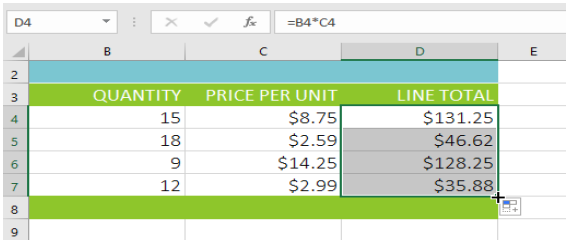
Copying formulas with the fill handle

Formulas can also be **copied** to adjacent cells with the **fill handle**, which can save a lot of time and effort if you need to perform the **same calculation** multiple times in a worksheet. The **fill handle** is the small square at the bottom-right corner of the selected cell(s).



1.Select the cell containing the formula you want to copy. Click and drag the **fill handle** over the cells you want to fill.

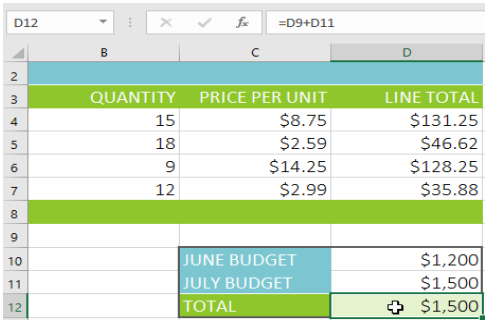
2.After you release the mouse, the formula will be copied to the selected cells.



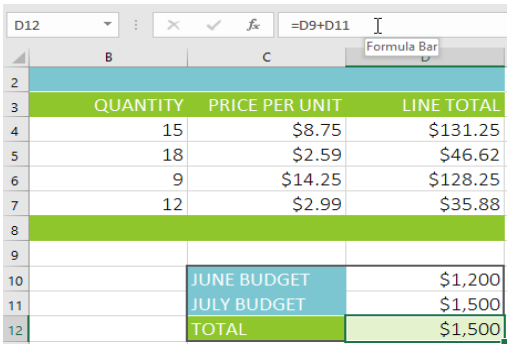
To edit a formula:

Sometimes you may want to modify an existing formula.
In the example below, we've entered an incorrect cell address in our formula, so we'll need to correct it.

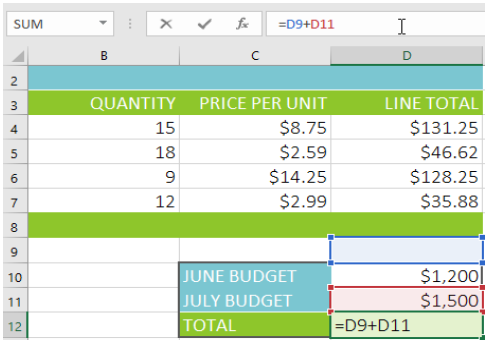
1.Select the **cell** containing the formula you want to edit. In our example, we'll select cell **D12**.



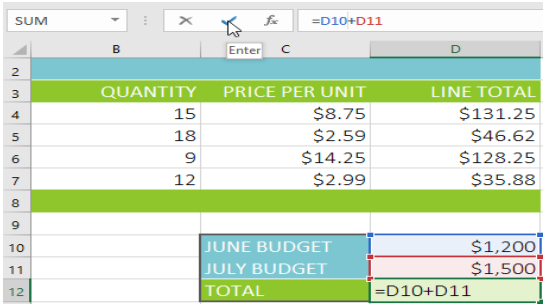
2.Click the **formula bar** to edit the formula. You can also **double-click** the cell to view and edit the formula directly within the cell.



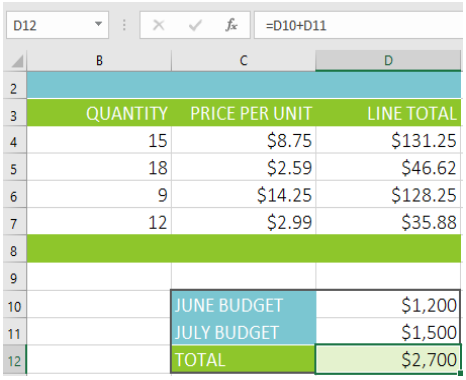
3.A **border** will appear around any referenced cells. In our example, we'll change the first part of the formula to reference cell **D10** instead of cell **D9**.



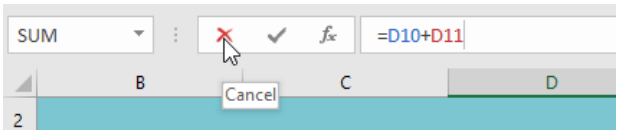
4.When you're finished, press **Enter** on your keyboard or select the **Enter**command in the formula bar.



5.The formula will be **updated**, and the **new value** will be displayed in the cell.



6. you change your mind, you can press the **Esc** key on your keyboard or click the **Cancel** command in the formula bar to avoid accidentally making changes to your formula.



To show all of the formulas in a spreadsheet, you can hold the **Ctrl** key and press `(grave accent). The grave accent key is usually located in the top-left corner of the keyboard. You can press **Ctrl+`** again to switch back to the normal view.

CHAPTER-14- CREATING MORE COMPLEX FORMULAS

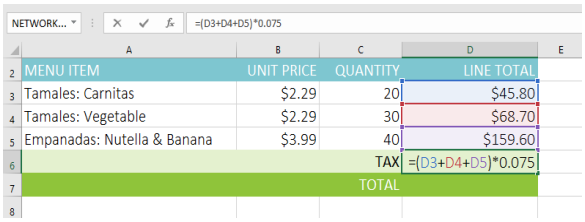
Introduction

You may have experience working with formulas that contain only one operator, such as **7+9**. More complex formulas can contain **several mathematical operators**, such as **5+2*8**. When there's more than one operation in a formula, the **order of operations** tells Excel which operation to calculate first. To write formulas that will give you the correct answer, you'll need to understand the order of operations.

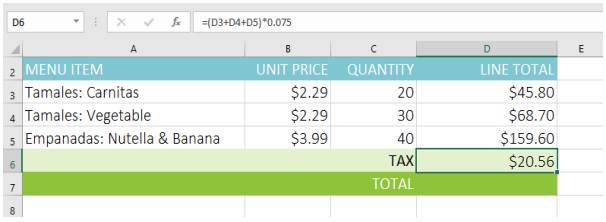
The order of operations

Excel calculates formulas based on the following **order of operations**:
Operations enclosed in **parentheses**
Exponential calculations (3^2, for example)
Multiplication and **division**, whichever comes first
Addition and **subtraction**, whichever comes first

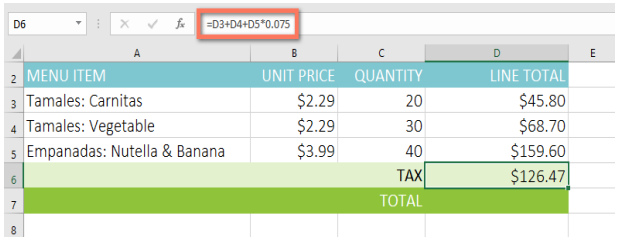
Creating complex formulas



1.In the example below, we'll demonstrate how Excel uses the order of operations to solve a more complex formula. Here, we want to calculate the cost of **sales tax** for a catering invoice. To do this, we'll write our formula as **=(D3+D4+D5)*0.075** in cell **D6**. This formula will add the prices of our items, then multiply that value by the 7.5% tax rate (which is written as 0.075) to calculate the answer.

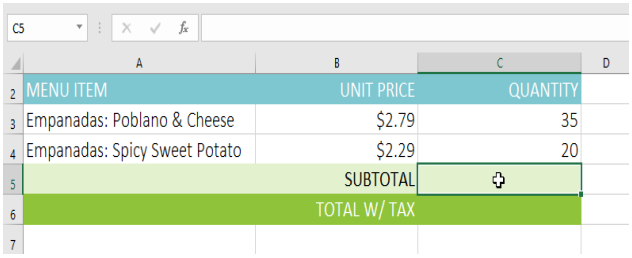


2.Excel follows the order of operations and first adds the values inside the parentheses: **(45.80+68.70+159.60) = 274.10**. It then multiplies that value by the tax rate: **274.10*0.075**. The result will show that the sales tax is **$20.56**.



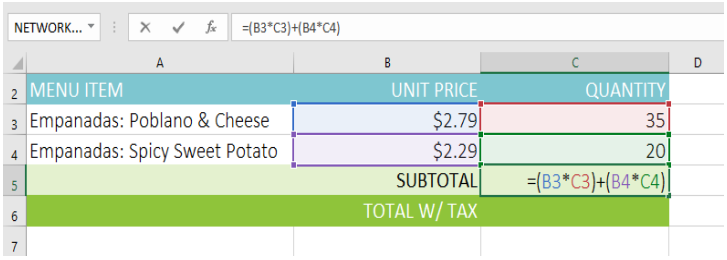
3.It's especially important to follow the order of operations when creating a formula. Otherwise, Excel won't calculate the results accurately. In our example, if the **parentheses** are not included, the multiplication is calculated first and the result is incorrect. Parentheses are often the best way to define which calculations will be performed first in Excel.

To create a complex formula using the order of operations:



In the example below, we'll use **cell references** along with **numerical values** to create a complex formula that will calculate the **subtotal** for a catering invoice. The formula will calculate the cost of each menu item first, then add these values.

1.Select the **cell** that will contain the formula. In our example, we'll select cell **C5**.



2.You can add **parentheses** to any equation to make it easier to read. While it won't change the result of the formula in this example, we could enclose the multiplication operations within parentheses to clarify that they will be calculated before the addition.

CHAPTER-15- RELATIVE AND ABSOLUTE CELL REFERENCES

Introduction

There are two types of cell references: **relative** and **absolute**. Relative and absolute references behave differently when copied and filled to other cells. Relative references **change** when a formula is copied to another cell. Absolute references, on the other hand, remain **constant** no matter where they are copied.

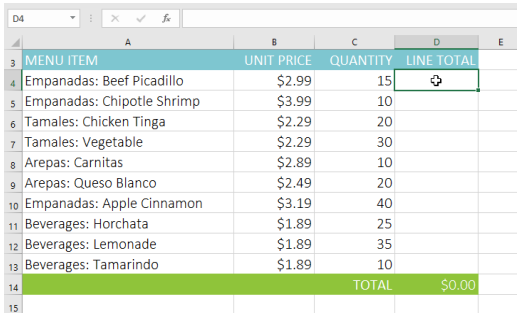
Relative references

By default, all cell references are **relative references**. When copied across multiple cells, they change based on the relative position of rows and columns. For example, if you copy the formula **=A1+B1** from row 1 to row 2, the formula will become **=A2+B2**. Relative references are especially convenient whenever you need to repeat the same calculation across multiple rows or columns.

To create and copy a formula using relative references:

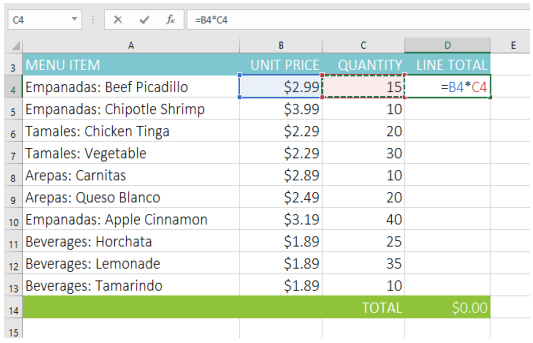
In the following example, we want to create a formula that will multiply each item's **price** by the **quantity**. Instead of creating a new formula for each row, we can create a single formula in cell **D4** and then copy it to the other rows. We'll use relative references so the formula calculates the total for each item correctly.

1.Select the **cell** that will contain the formula. In our example, we'll select cell **D4**.



MENU ITEM	UNIT PRICE	QUANTITY	LINE TOTAL
Empanadas: Beef Picadillo	$2.99	15	
Empanadas: Chipotle Shrimp	$3.99	10	
Tamales: Chicken Tinga	$2.29	20	
Tamales: Vegetable	$2.29	30	
Arepas: Carnitas	$2.89	10	
Arepas: Queso Blanco	$2.49	20	
Empanadas: Apple Cinnamon	$3.19	40	
Beverages: Horchata	$1.89	25	
Beverages: Lemonade	$1.89	35	
Beverages: Tamarindo	$1.89	10	
		TOTAL	$0.00

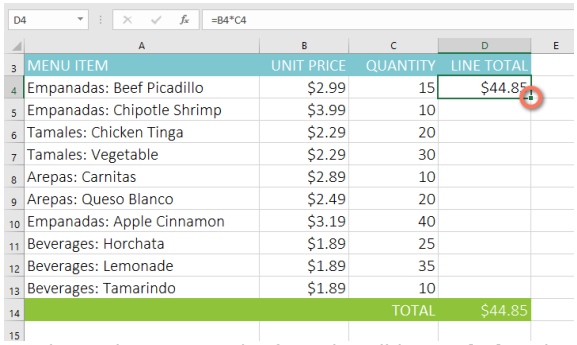
2.Enter the **formula** to calculate the desired value. In our example, we'll type **=B4*C4**.



MENU ITEM	UNIT PRICE	QUANTITY	LINE TOTAL
Empanadas: Beef Picadillo	$2.99	15	=B4*C4
Empanadas: Chipotle Shrimp	$3.99	10	
Tamales: Chicken Tinga	$2.29	20	
Tamales: Vegetable	$2.29	30	
Arepas: Carnitas	$2.89	10	
Arepas: Queso Blanco	$2.49	20	
Empanadas: Apple Cinnamon	$3.19	40	
Beverages: Horchata	$1.89	25	
Beverages: Lemonade	$1.89	35	
Beverages: Tamarindo	$1.89	10	
		TOTAL	$0.00

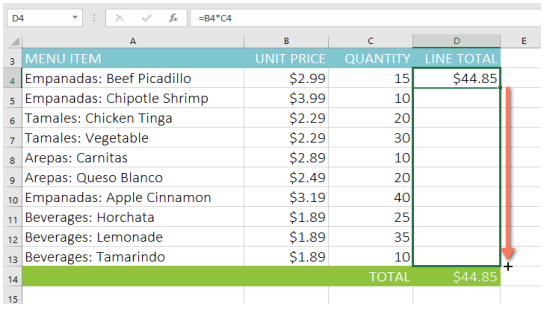
Press **Enter** o n your keyboard. The formula will be calculated, and the result will be displayed in the cell.

3.Locate the **fill handle** in the bottom-right corner of the desired cell. In our example, we'll locate the fill handle for cell **D4**.



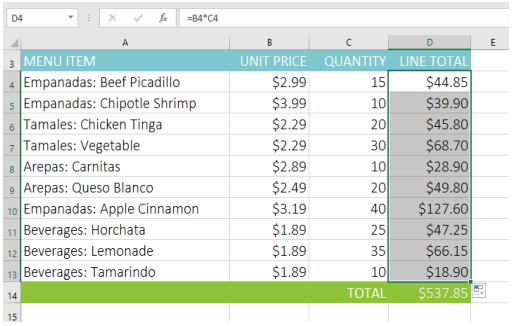
MENU ITEM	UNIT PRICE	QUANTITY	LINE TOTAL
Empanadas: Beef Picadillo	$2.99	15	$44.85
Empanadas: Chipotle Shrimp	$3.99	10	
Tamales: Chicken Tinga	$2.29	20	
Tamales: Vegetable	$2.29	30	
Arepas: Carnitas	$2.89	10	
Arepas: Queso Blanco	$2.49	20	
Empanadas: Apple Cinnamon	$3.19	40	
Beverages: Horchata	$1.89	25	
Beverages: Lemonade	$1.89	35	
Beverages: Tamarindo	$1.89	10	
		TOTAL	$44.85

4.Click and drag the **fill handle** over the cells you want to fill. In our example, we'll select cells **D5:D13**.



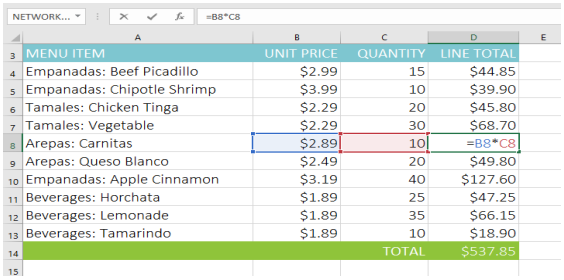
MENU ITEM	UNIT PRICE	QUANTITY	LINE TOTAL
Empanadas: Beef Picadillo	$2.99	15	$44.85
Empanadas: Chipotle Shrimp	$3.99	10	
Tamales: Chicken Tinga	$2.29	20	
Tamales: Vegetable	$2.29	30	
Arepas: Carnitas	$2.89	10	
Arepas: Queso Blanco	$2.49	20	
Empanadas: Apple Cinnamon	$3.19	40	
Beverages: Horchata	$1.89	25	
Beverages: Lemonade	$1.89	35	
Beverages: Tamarindo	$1.89	10	
		TOTAL	$44.85

5.Release the mouse. The formula will be **copied** to the selected cells with **relative references**, displaying the result in each cell.



MENU ITEM	UNIT PRICE	QUANTITY	LINE TOTAL
Empanadas: Beef Picadillo	$2.99	15	$44.85
Empanadas: Chipotle Shrimp	$3.99	10	$39.90
Tamales: Chicken Tinga	$2.29	20	$45.80
Tamales: Vegetable	$2.29	30	$68.70
Arepas: Carnitas	$2.89	10	$28.90
Arepas: Queso Blanco	$2.49	20	$49.80
Empanadas: Apple Cinnamon	$3.19	40	$127.60
Beverages: Horchata	$1.89	25	$47.25
Beverages: Lemonade	$1.89	35	$66.15
Beverages: Tamarindo	$1.89	10	$18.90
		TOTAL	$537.85

6.You can double-click the **filled cells** to check their formulas for accuracy. The relative cell references should be different for each cell, depending on their rows.



MENU ITEM	UNIT PRICE	QUANTITY	LINE TOTAL
Empanadas: Beef Picadillo	$2.99	15	$44.85
Empanadas: Chipotle Shrimp	$3.99	10	$39.90
Tamales: Chicken Tinga	$2.29	20	$45.80
Tamales: Vegetable	$2.29	30	$68.70
Arepas: Carnitas	$2.89	10	=B8*C8
Arepas: Queso Blanco	$2.49	20	$49.80
Empanadas: Apple Cinnamon	$3.19	40	$127.60
Beverages: Horchata	$1.89	25	$47.25
Beverages: Lemonade	$1.89	35	$66.15
Beverages: Tamarindo	$1.89	10	$18.90
		TOTAL	$537.85

Absolute references

There may be a time when you don't want a cell reference to change when copied to other cells. Unlike relative references, **absolute references** do not change when copied or filled. You can use an absolute reference to keep a row and/or column **constant**.

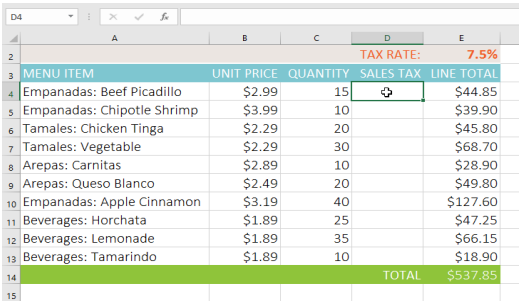
A2	**The column and the row do not change when copied**
A$2	**The row does not change when copied**
$A2	**The column does not change when copied**

An absolute reference is designated in a formula by the addition of a **dollar sign ($)**. It can precede the column reference, the row reference, or both.

You will generally use the **A2** format when creating formulas that contain absolute references. The other two formats are used much less frequently.

create and copy a formula using absolute references:

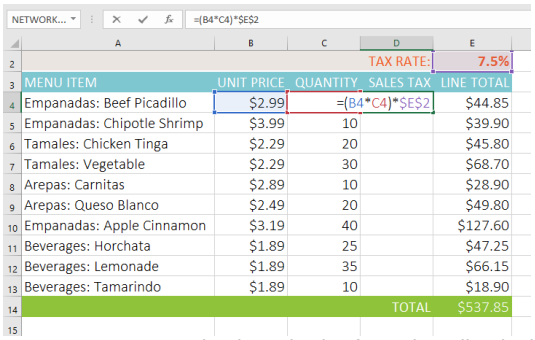
In the example below, we're going to use cell **E2** (which contains the tax rate at 7.5%) to calculate the sales tax for each item in **column D**. To make sure the reference to the tax rate stays constant—even when the formula is copied and filled to other cells—we'll need to make cell **E2** an absolute reference.



	A	B	C	D	E
2				TAX RATE:	7.5%
3	MENU ITEM	UNIT PRICE	QUANTITY	SALES TAX	LINE TOTAL
4	Empanadas: Beef Picadillo	$2.99	15		$44.85
5	Empanadas: Chipotle Shrimp	$3.99	10		$39.90
6	Tamales: Chicken Tinga	$2.29	20		$45.80
7	Tamales: Vegetable	$2.29	30		$68.70
8	Arepas: Carnitas	$2.89	10		$28.90
9	Arepas: Queso Blanco	$2.49	20		$49.80
10	Empanadas: Apple Cinnamon	$3.19	40		$127.60
11	Beverages: Horchata	$1.89	25		$47.25
12	Beverages: Lemonade	$1.89	35		$66.15
13	Beverages: Tamarindo	$1.89	10		$18.90
14				TOTAL	$537.85

1.Select the **cell** that will contain the formula. In our example, we'll select cell **D4**.

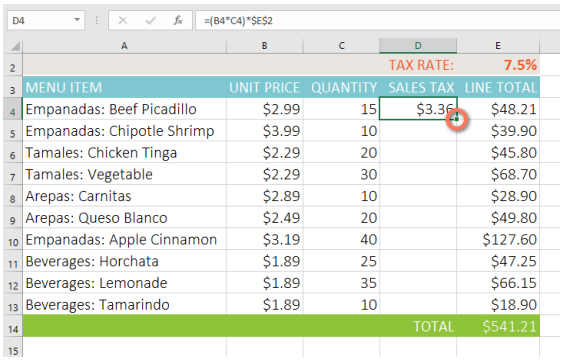
2.Enter the **formula** to calculate the desired value. In our example, we'll type **=(B4*C4)*E2**, making **E2** an absolute reference.



	A	B	C	D	E
2				TAX RATE:	7.5%
3	MENU ITEM	UNIT PRICE	QUANTITY	SALES TAX	LINE TOTAL
4	Empanadas: Beef Picadillo	$2.99	=(B4*C4)*E2		$44.85
5	Empanadas: Chipotle Shrimp	$3.99	10		$39.90
6	Tamales: Chicken Tinga	$2.29	20		$45.80
7	Tamales: Vegetable	$2.29	30		$68.70
8	Arepas: Carnitas	$2.89	10		$28.90
9	Arepas: Queso Blanco	$2.49	20		$49.80
10	Empanadas: Apple Cinnamon	$3.19	40		$127.60
11	Beverages: Horchata	$1.89	25		$47.25
12	Beverages: Lemonade	$1.89	35		$66.15
13	Beverages: Tamarindo	$1.89	10		$18.90
14				TOTAL	$537.85

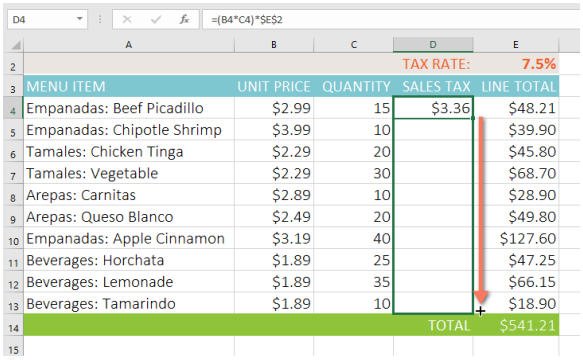
Press **Enter** on your keyboard. The formula will calculate, and the result will display in the cell.

3.Locate the **fill handle** in the bottom-right corner of the desired cell. In our example, we'll locate the fill handle for cell **D4**.



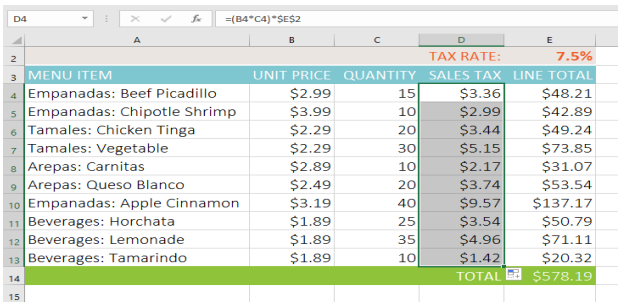
	A	B	C	D	E
2				TAX RATE:	7.5%
3	MENU ITEM	UNIT PRICE	QUANTITY	SALES TAX	LINE TOTAL
4	Empanadas: Beef Picadillo	$2.99	15	$3.36	$48.21
5	Empanadas: Chipotle Shrimp	$3.99	10		$39.90
6	Tamales: Chicken Tinga	$2.29	20		$45.80
7	Tamales: Vegetable	$2.29	30		$68.70
8	Arepas: Carnitas	$2.89	10		$28.90
9	Arepas: Queso Blanco	$2.49	20		$49.80
10	Empanadas: Apple Cinnamon	$3.19	40		$127.60
11	Beverages: Horchata	$1.89	25		$47.25
12	Beverages: Lemonade	$1.89	35		$66.15
13	Beverages: Tamarindo	$1.89	10		$18.90
14				TOTAL	$541.21

4.Click and drag the **fill handle** over the cells you want to fill (cells **D5:D13** in our example).



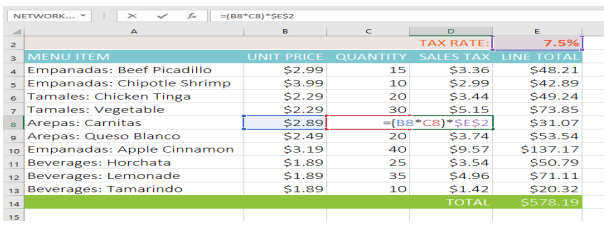
	A	B	C	D	E
2				TAX RATE:	7.5%
3	MENU ITEM	UNIT PRICE	QUANTITY	SALES TAX	LINE TOTAL
4	Empanadas: Beef Picadillo	$2.99	15	$3.36	$48.21
5	Empanadas: Chipotle Shrimp	$3.99	10		$39.90
6	Tamales: Chicken Tinga	$2.29	20		$45.80
7	Tamales: Vegetable	$2.29	30		$68.70
8	Arepas: Carnitas	$2.89	10		$28.90
9	Arepas: Queso Blanco	$2.49	20		$49.80
10	Empanadas: Apple Cinnamon	$3.19	40		$127.60
11	Beverages: Horchata	$1.89	25		$47.25
12	Beverages: Lemonade	$1.89	35		$66.15
13	Beverages: Tamarindo	$1.89	10		$18.90
14				TOTAL	$541.21

5.Release the mouse. The formula will be **copied** to the selected cells with an **absolute reference**, and the values will be calculated in each cell.



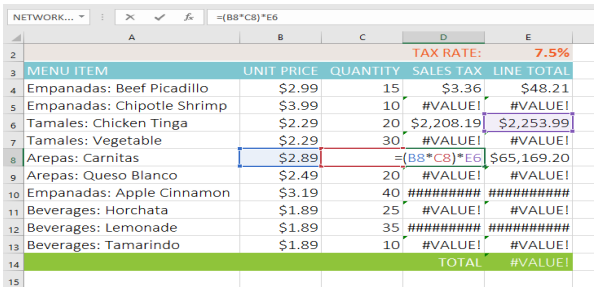
	A	B	C	D	E
2				TAX RATE:	7.5%
3	MENU ITEM	UNIT PRICE	QUANTITY	SALES TAX	LINE TOTAL
4	Empanadas: Beef Picadillo	$2.99	15	$3.36	$48.21
5	Empanadas: Chipotle Shrimp	$3.99	10	$2.99	$42.89
6	Tamales: Chicken Tinga	$2.29	20	$3.44	$49.24
7	Tamales: Vegetable	$2.29	30	$5.15	$73.85
8	Arepas: Carnitas	$2.89	10	$2.17	$31.07
9	Arepas: Queso Blanco	$2.49	20	$3.74	$53.54
10	Empanadas: Apple Cinnamon	$3.19	40	$9.57	$137.17
11	Beverages: Horchata	$1.89	25	$3.54	$50.79
12	Beverages: Lemonade	$1.89	35	$4.96	$71.11
13	Beverages: Tamarindo	$1.89	10	$1.42	$20.32
14				TOTAL	$578.19

6.You can double-click the **filled cells** to check their formulas for accuracy. The absolute reference should be the same for each cell, while the other references are relative to the cell's row.



	A	B	C	D	E
2				TAX RATE:	7.5%
3	MENU ITEM	UNIT PRICE	QUANTITY	SALES TAX	LINE TOTAL
4	Empanadas: Beef Picadillo	$2.99	15	$3.36	$48.21
5	Empanadas: Chipotle Shrimp	$3.99	10	$2.99	$42.89
6	Tamales: Chicken Tinga	$2.29	20	$3.44	$49.24
7	Tamales: Vegetable	$2.29	30	$5.15	$73.85
8	Arepas: Carnitas	$2.89	=(B8*C8)*E2		$31.07
9	Arepas: Queso Blanco	$2.49	20	$3.74	$53.54
10	Empanadas: Apple Cinnamon	$3.19	40	$9.57	$137.17
11	Beverages: Horchata	$1.89	25	$3.54	$50.79
12	Beverages: Lemonade	$1.89	35	$4.96	$71.11
13	Beverages: Tamarindo	$1.89	10	$1.42	$20.32
14				TOTAL	$578.19

7.Be sure to include the **dollar sign ($)** whenever you're making an absolute reference across multiple cells. The dollar signs were omitted in the example below. This caused Excel to interpret it as a **relative reference**, producing an incorrect result when copied to other cells.

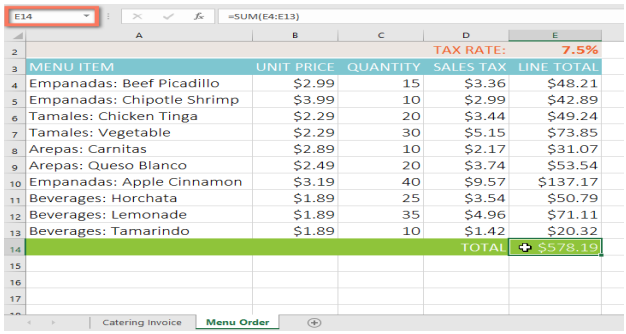


Using cell references with multiple worksheets

Excel allows you to refer to any cell on any **worksheet**, which can be especially helpful if you want to reference a specific value from one worksheet to another. To do this, you'll simply need to begin the cell reference with the **worksheet name** followed by an **exclamation point (!)**. For example, if you wanted to reference cell **A1** on **Sheet1**, its cell reference would be **Sheet1!A1**.

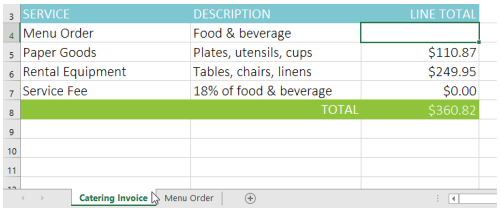
To reference cells across worksheets:

In our example below, we'll refer to a cell with a calculated value between two worksheets. This will allow us to use the **exact same value** on two different worksheets without rewriting the formula or copying data.

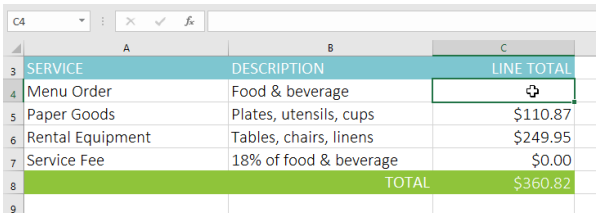


1.Locate the cell you want to reference, and note its worksheet. In our example, we want to reference cell **E14** on the **Menu Order** worksheet.

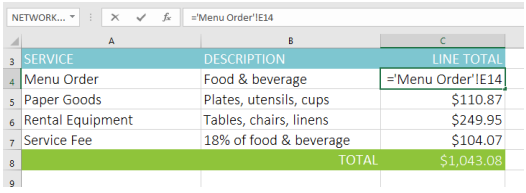
2.Navigate to the desired **worksheet**. In our example, we'll select the **Catering Invoice** worksheet.



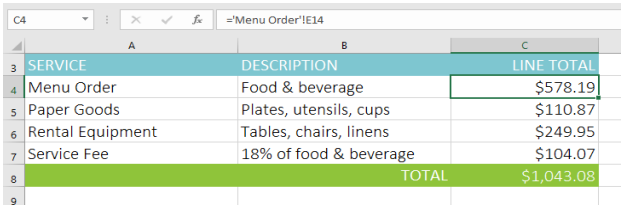
3.Locate and select the **cell** where you want the value to appear. In our example, we'll select cell **C4**.



4.Type the **equals sign (=)**, the **sheet name** followed by an **exclamation point(!)**, and the **cell address**. In our example, we'll type **='Menu Order'!E14**.

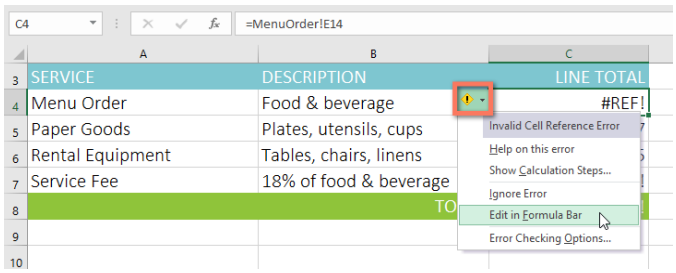


5.Press **Enter** on your keyboard. The **value** of the referenced cell will appear. Now, if the value of cell E14 changes on the Menu Order worksheet, it will be updated automatically on the Catering Invoice worksheet.



If you **rename** your worksheet at a later point, the cell reference will be updated automatically to reflect the new worksheet name.

6.If you enter a worksheet name incorrectly, the **#REF!** error will appear in the cell. In our example below, we've mistyped the name of the worksheet. To edit, ignore, or investigate the error, click the **Error** button beside the cell and choose an option from the **menu**.



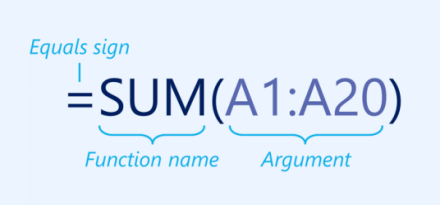
CHAPTER-16- FUNCTIONS

Introduction

A **function** is a **predefined formula** that performs calculations using specific values in a particular order. Excel includes many common functions that can be used to quickly find the **sum**, **average**, **count**, **maximum value**, and **minimum value** for a range of cells. In order to use functions correctly, you'll need to understand the different **parts of a function** and how to create **arguments** to calculate values and cell references.

The parts of a function

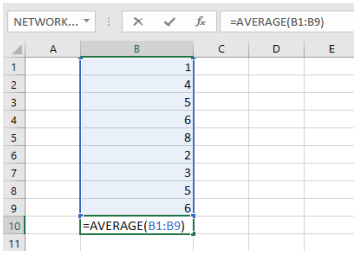
In order to work correctly, a function must be written a specific way, which is called the **syntax**. The basic syntax for a function is the **equals sign (=)**, the **function name** (SUM, for example), and one or more **arguments**. Arguments contain the information you want to calculate. The function in the example below would add the values of the cell range A1:A20.



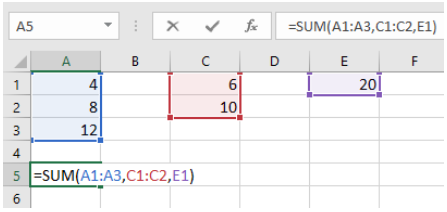
Working with arguments

Arguments can refer to both **individual cells** and **cell ranges** and must be enclosed within **parentheses**. You can include one argument or multiple arguments, depending on the syntax required for the function.

1.For example, the function **=AVERAGE(B1:B9)** would calculate the **average** of the values in the cell range B1:B9. This function contains only one argument.



2.Multiple arguments must be separated by a **comma**. For example, the function **=SUM(A1:A3, C1:C2, E1)** will **add** the values of all of the cells in the three arguments.

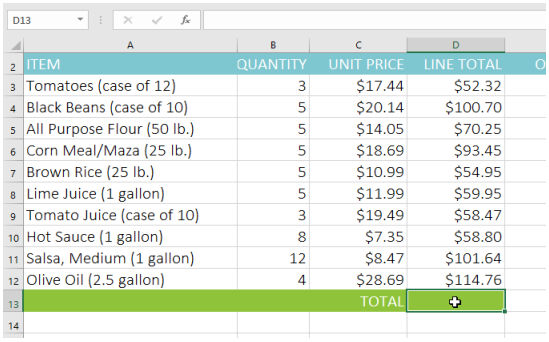


Creating a function

There are a variety of functions available in Excel. Here are some of the most common functions you'll use:
SUM: This function **adds** all of the values of the cells in the argument.
AVERAGE: This function determines the **average** of the values included in the argument. It calculates the sum of the cells and then divides that value by the number of cells in the argument.
COUNT: This function **counts** the number of cells with numerical data in the argument. This function is useful for quickly counting items in a cell range.
MAX: This function determines the **highest cell value** included in the argument.
MIN: This function determines the **lowest cell value** included in the argument.

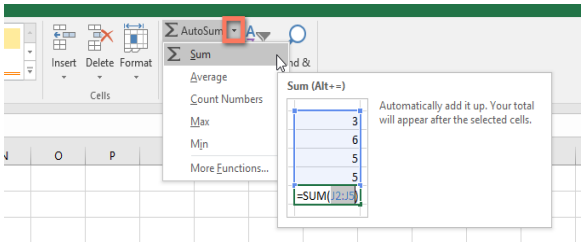
To create a function using the AutoSum command:

The **AutoSum** command allows you to automatically insert the most common functions into your formula, including SUM, AVERAGE, COUNT, MIN, and MAX. In the example below, we'll use the **SUM** function to calculate the **total cost** for a list of recently ordered items.

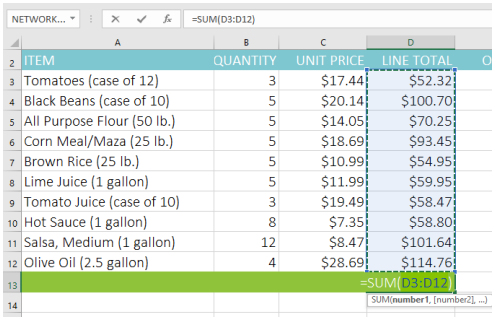


1.Select the **cell** that will contain the function. In our example, we'll select cell **D13**.

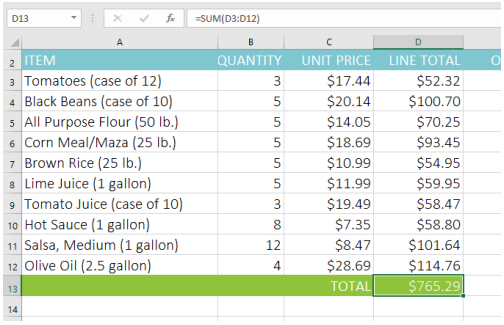
2.In the **Editing** group on the **Home** tab, click the **arrow** next to the **AutoSum** command. Next, choose the **desired function** from the drop-down menu. In our example, we'll select **Sum**.



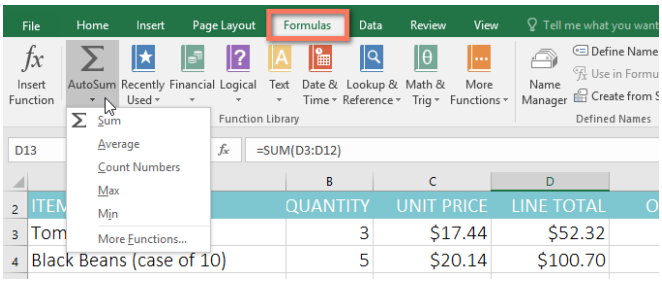
3.Excel will place the **function** in the cell and automatically select a **cell range**for the argument. In our example, cells **D3:D12** were selected automatically; their values will be **added** to calculate the total cost. If Excel selects the wrong cell range, you can manually enter the desired cells into the argument.



4.Press **Enter** on your keyboard. The function will be **calculated**, and the **result** will appear in the cell. In our example, the sum of D3:D12 is **$765.29**.



5.The **AutoSum** command can also be accessed from the **Formulas** tab on the **Ribbon**.

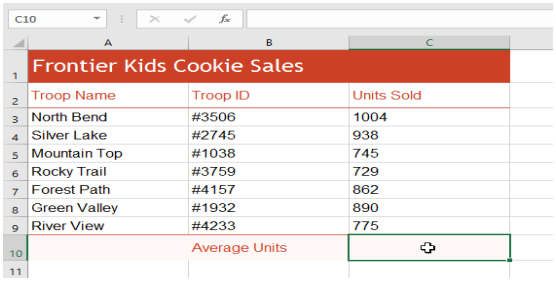


You can also use the **Alt+=** keyboard shortcut instead of the AutoSum command. To use this shortcut, hold down the **Alt** key and then press the **equals sign**.

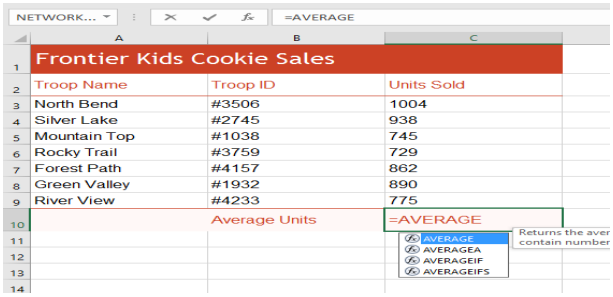
To enter a function manually:

If you already know the function name, you can easily type it yourself. In the example below (a tally of cookie sales), we'll use the **AVERAGE** function to calculate the **average number of units sold** by each troop.

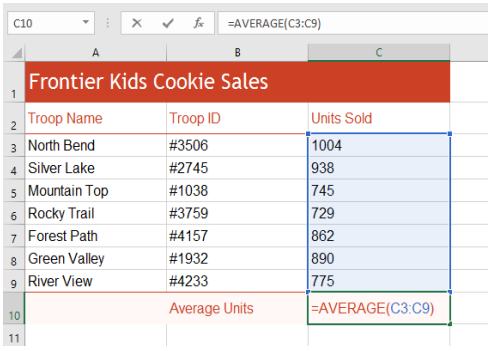
1.Select the **cell** that will contain the function. In our example, we'll select cell **C10**.



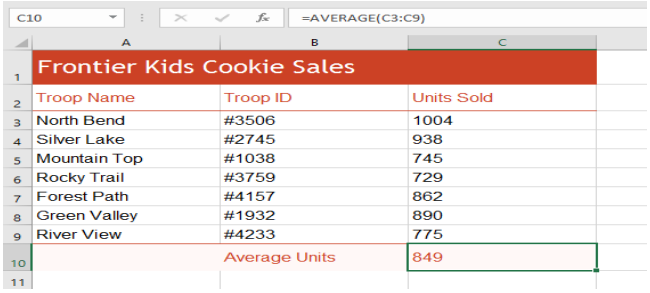
2.Type the **equals sign (=)**, and enter the desired **function name**. You can also select the desired function from the list of **suggested functions** that appears below the cell as you type. In our example, we'll type **=AVERAGE**.



3.Enter the **cell range** for the argument inside **parentheses**. In our example, we'll type **(C3:C9)**. This formula will add the values of cells C3:C9, then divide that value by the total number of values in the range.

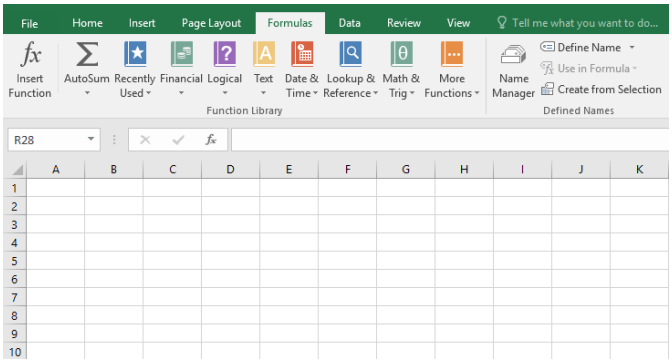


4.Press **Enter** on your keyboard. The function will be calculated, and the **result**will appear in the cell. In our example, the average number of units sold by each troop is **849**.



The Function Library

While there are hundreds of functions in Excel, the ones you'll use the most will depend on the **type of data** your workbooks contain. There's no need to learn every single function, but exploring some of the different **types** of functions will help you as you create new projects. You can even use the **Function Library** on the **Formulas** tab to browse functions by category, such as **Financial**, **Logical**, **Text**, and **Date & Time**.



To access the **Function Library**, select the **Formulas** tab on the **Ribbon**. Look for the **Function Library** group.

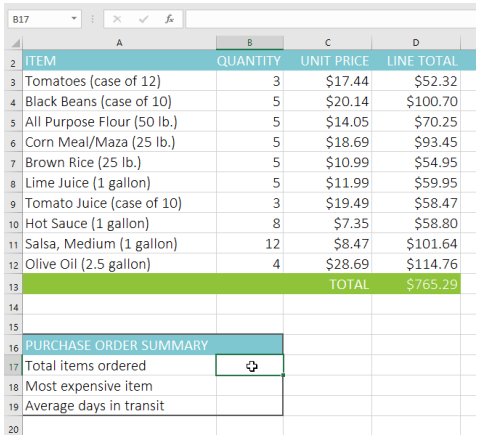
Click the buttons in the interactive below to learn more about the different types of functions in Excel.

Lookup & Reference

The **Lookup & Reference** category contains functions that will return results for finding and referencing information. For example, you can add a hyperlink to a cell (**HYPERLINK**) or return the value of a particular row and column intersection (**INDEX**).

To insert a function from the Function Library:

In the example below, we'll use the COUNTA function to count the total number of items in the **Items** column. Unlike COUNT, **COUNTA** can be used to tally cells that contain data of any kind, not just numerical data.

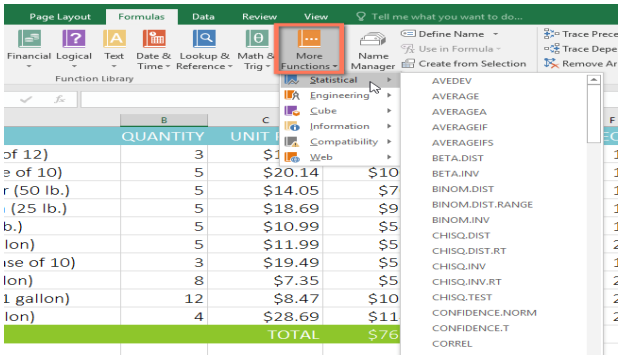


	A	B	C	D
2	ITEM	QUANTITY	UNIT PRICE	LINE TOTAL
3	Tomatoes (case of 12)	3	$17.44	$52.32
4	Black Beans (case of 10)	5	$20.14	$100.70
5	All Purpose Flour (50 lb.)	5	$14.05	$70.25
6	Corn Meal/Maza (25 lb.)	5	$18.69	$93.45
7	Brown Rice (25 lb.)	5	$10.99	$54.95
8	Lime Juice (1 gallon)	5	$11.99	$59.95
9	Tomato Juice (case of 10)	3	$19.49	$58.47
10	Hot Sauce (1 gallon)	8	$7.35	$58.80
11	Salsa, Medium (1 gallon)	12	$8.47	$101.64
12	Olive Oil (2.5 gallon)	4	$28.69	$114.76
13			TOTAL	$765.29
16	PURCHASE ORDER SUMMARY			
17	Total items ordered			
18	Most expensive item			
19	Average days in transit			

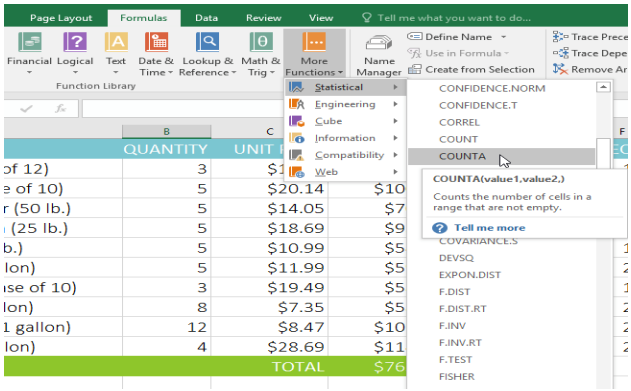
1.Select the **cell** that will contain the function. In our example, we'll select cell **B17**.

Click the **Formulas** tab on the **Ribbon** to access the **Function Library**.

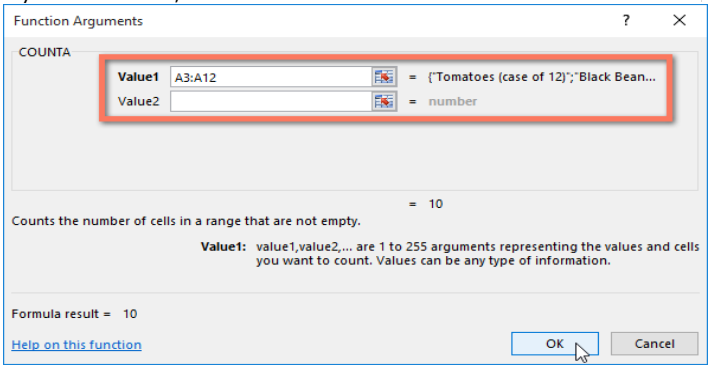
2.From the **Function Library** group, select the desired **function category**. In our example, we'll choose **More Functions**, then hover the mouse over **Statistical**.

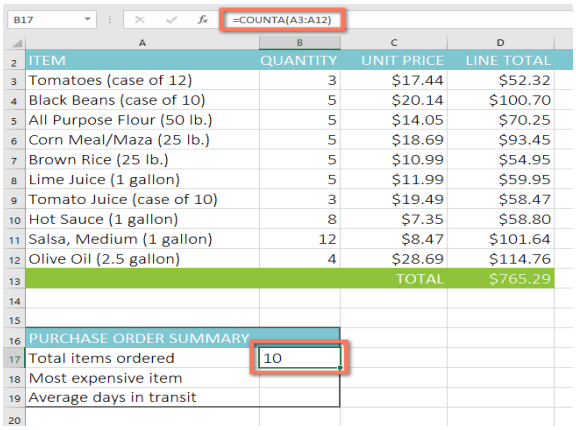


3.Select the **desired function** from the drop-down menu. In our example, we'll select the **COUNTA** function, which will count the number of cells in the **Items**column that are not empty.



4.The **Function Arguments** dialog box will appear. Select the **Value1** field, then enter or select the desired cells. In our example, we'll enter the cell range **A3:A12**. You may continue to add arguments in the **Value2** field, but in this case we only want to count the number of cells in the cell range **A3:A12**.
When you're satisfied, click **OK**.





5.The function will be **calculated**, and the **result** will appear in the cell. In our example, the result shows that a total of **10 items** were ordered.

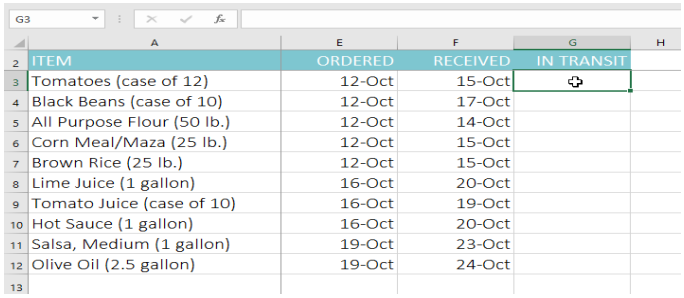
The Insert Function command

While the Function Library is a great place to browse for functions, sometimes you may prefer to **search** for one instead. You can do so using the **Insert Function** command. It may take some trial and error depending on the type of function you're looking for; however, with practice, the Insert Function command can be a powerful way to find a function quickly.

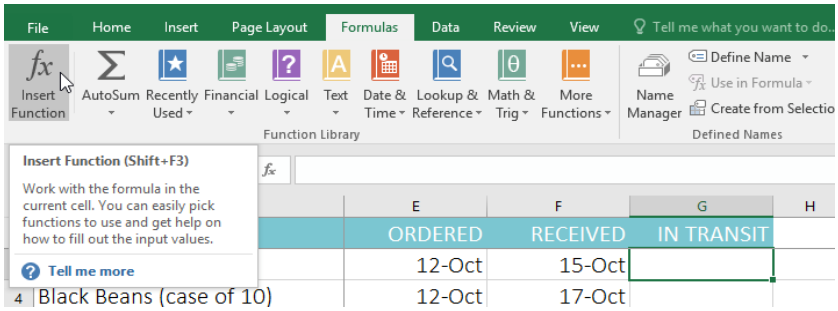
To use the Insert Function command:

In the example below, we want to find a function that will calculate the **number of business days** it took to receive items after they were ordered. We'll use the dates in columns **E** and **F** to calculate the delivery time in column **G**.

1.Select the **cell** that will contain the function. In our example, we'll select cell **G3**.

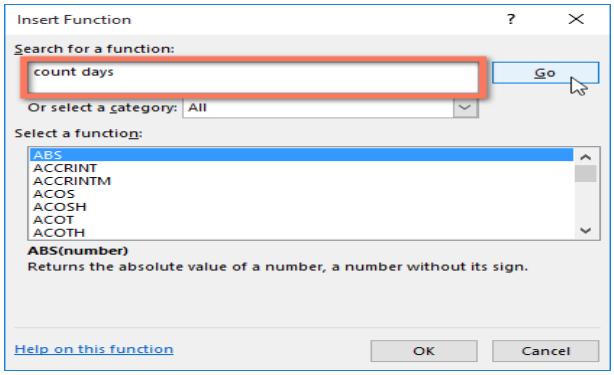


2.Click the **Formulas** tab on the **Ribbon**, then click the **Insert Function** command.

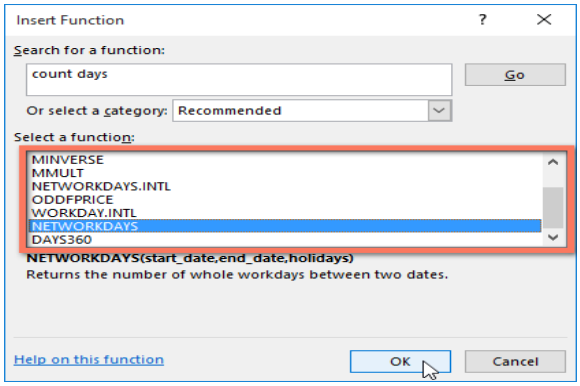


The **Insert Function** dialog box will appear.

3.Type a few **keywords** describing the calculation you want the function to perform, then click **Go**. In our example, we'll type **count days**, but you can also search by selecting a **category** from the drop-down list.

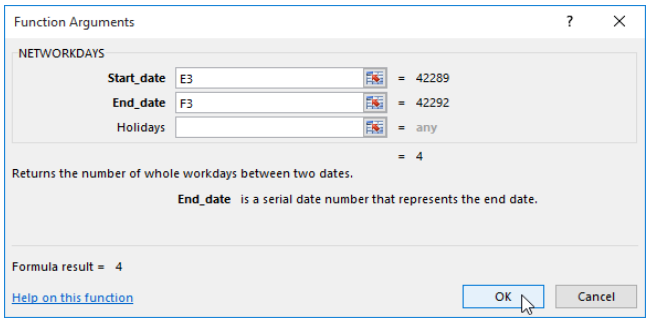


4.Review the **results** to find the desired function, then click **OK**. In our example, we'll choose **NETWORKDAYS**, which will count the number of business days between the ordered date and received date.

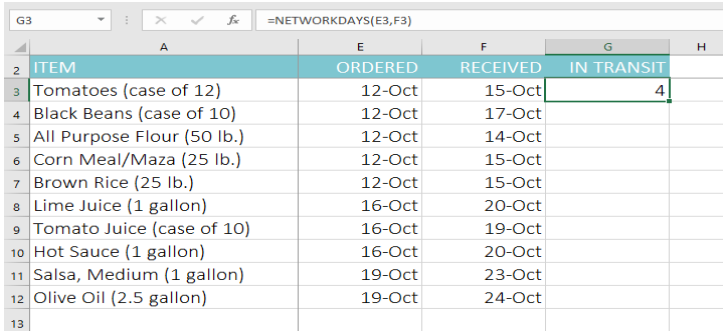


5.The **Function Arguments** dialog box will appear. From here, you'll be able to enter or select the cells that will make up the arguments in the function. In our example, we'll enter **E3** in the **Start_date** field and **F3** in the **End_date**field.

When you're satisfied, click **OK**.

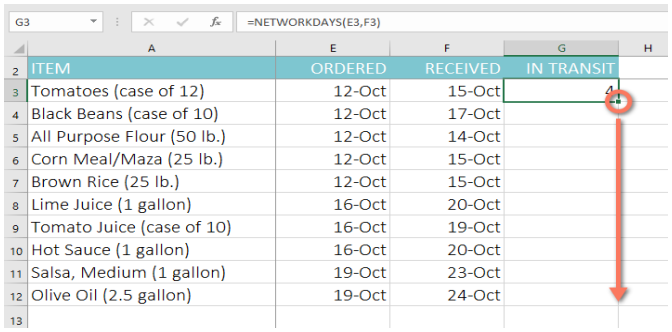


6.The function will be **calculated**, and the **result** will appear in the cell. In our example, the result shows that it took **four business days** to receive the order.



	A	E	F	G	H
2	ITEM	ORDERED	RECEIVED	IN TRANSIT	
3	Tomatoes (case of 12)	12-Oct	15-Oct	4	
4	Black Beans (case of 10)	12-Oct	17-Oct		
5	All Purpose Flour (50 lb.)	12-Oct	14-Oct		
6	Corn Meal/Maza (25 lb.)	12-Oct	15-Oct		
7	Brown Rice (25 lb.)	12-Oct	15-Oct		
8	Lime Juice (1 gallon)	16-Oct	20-Oct		
9	Tomato Juice (case of 10)	16-Oct	19-Oct		
10	Hot Sauce (1 gallon)	16-Oct	20-Oct		
11	Salsa, Medium (1 gallon)	19-Oct	23-Oct		
12	Olive Oil (2.5 gallon)	19-Oct	24-Oct		
13					

7.Like formulas, functions can be copied to adjacent cells. Simply select the **cell** that contains the function, then click and drag the **fill handle** over the cells you want to fill. The function will be copied, and values for those cells will be calculated relative to their rows or columns.



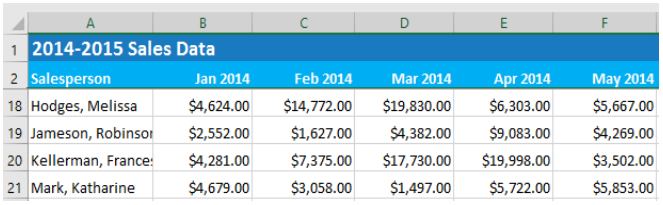
	A	E	F	G	H
2	ITEM	ORDERED	RECEIVED	IN TRANSIT	
3	Tomatoes (case of 12)	12-Oct	15-Oct	4	
4	Black Beans (case of 10)	12-Oct	17-Oct		
5	All Purpose Flour (50 lb.)	12-Oct	14-Oct		
6	Corn Meal/Maza (25 lb.)	12-Oct	15-Oct		
7	Brown Rice (25 lb.)	12-Oct	15-Oct		
8	Lime Juice (1 gallon)	16-Oct	20-Oct		
9	Tomato Juice (case of 10)	16-Oct	19-Oct		
10	Hot Sauce (1 gallon)	16-Oct	20-Oct		
11	Salsa, Medium (1 gallon)	19-Oct	23-Oct		
12	Olive Oil (2.5 gallon)	19-Oct	24-Oct		
13					

CHAPTER-17- BASIC TIPS FOR WORKING WITH DATA

Introduction

Excel workbooks are designed to store a lot of information. Whether you're working with 20 cells or 20,000, Excel has several features to help you **organize your data** and **find what you need**. You can see some of the most useful features below. And be sure to check out the other lessons in this tutorial to get step-by-step instructions for each of these features.

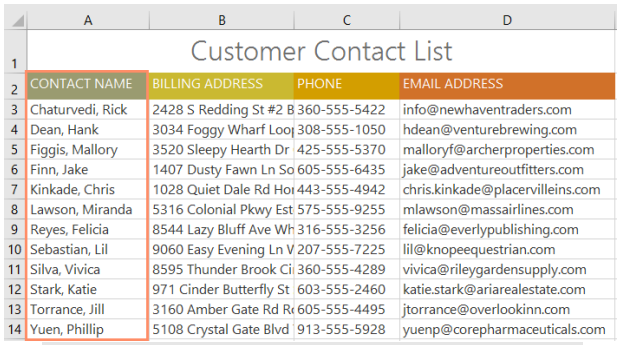
Freezing rows and columns



	A	B	C	D	E	F
1	2014-2015 Sales Data					
2	Salesperson	Jan 2014	Feb 2014	Mar 2014	Apr 2014	May 2014
18	Hodges, Melissa	$4,624.00	$14,772.00	$19,830.00	$6,303.00	$5,667.00
19	Jameson, Robinsor	$2,552.00	$1,627.00	$4,382.00	$9,083.00	$4,269.00
20	Kellerman, France	$4,281.00	$7,375.00	$17,730.00	$19,998.00	$3,502.00
21	Mark, Katharine	$4,679.00	$3,058.00	$1,497.00	$5,722.00	$5,853.00

You may want to see certain rows or columns all the time in your worksheet, especially **header cells**. By **freezing rows or columns** in place, you'll be able to scroll through your content while continuing to view the frozen cells. In this example, we've frozen the top two rows, which allows us to view the dates no matter where we scroll in the spreadsheet.

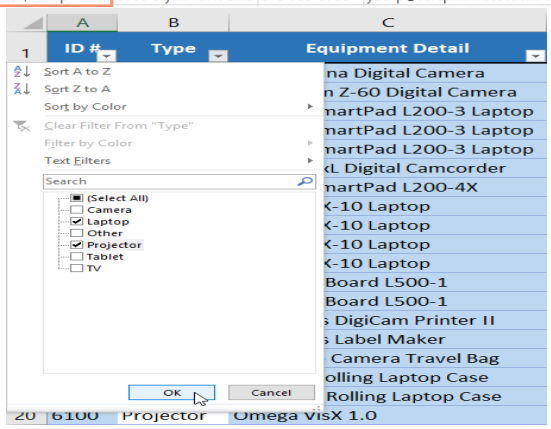
Sorting data



	A	B	C	D
1	Customer Contact List			
2	CONTACT NAME	BILLING ADDRESS	PHONE	EMAIL ADDRESS
3	Chaturvedi, Rick	2428 S Redding St #2 B	360-555-5422	info@newhaventraders.com
4	Dean, Hank	3034 Foggy Wharf Loo	308-555-1050	hdean@venturebrewing.com
5	Figgis, Mallory	3520 Sleepy Hearth Dr	425-555-5370	malloryf@archerproperties.com
6	Finn, Jake	1407 Dusty Fawn Ln So	605-555-6435	jake@adventureoutfitters.com
7	Kinkade, Chris	1028 Quiet Dale Rd Ho	443-555-4942	chris.kinkade@placervilleins.com
8	Lawson, Miranda	5316 Colonial Pkwy Est	575-555-9255	mlawson@massairlines.com
9	Reyes, Felicia	8544 Lazy Bluff Ave Wh	316-555-3256	felicia@everlypublishing.com
10	Sebastian, Lil	9060 Easy Evening Ln V	207-555-7225	lil@knopeequestrian.com
11	Silva, Vivica	8595 Thunder Brook Ci	360-555-4289	vivica@rileygardensupply.com
12	Stark, Katie	971 Cinder Butterfly St	603-555-2460	katie.stark@ariarealestate.com
13	Torrance, Jill	3160 Amber Gate Rd R	605-555-4495	jtorrance@overlookinn.com
14	Yuen, Phillip	5108 Crystal Gate Blvd	913-555-5928	yuenp@corepharmaceuticals.com

You can quickly **reorganize** a worksheet by **sorting your data**. Content can be sorted alphabetically, numerically, and in many other ways. For example, you could organize a list of contact information by last name.

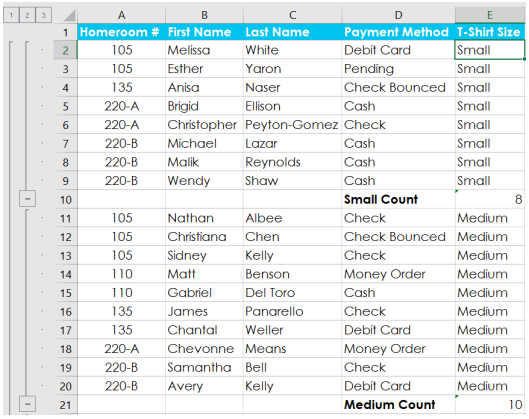
Filtering data



Filters can be used to **narrow down** the data in your worksheet, allowing you to view only the information you need. In this example, we're filtering the worksheet to show only rows that contain the words **Laptop** or **Projector** in column B.

Summarizing data

The **Subtotal feature** allows you to quickly summarize your data. In our example, we've created a subtotal for **each T-shirt size**, which makes it easy to see how many we'll need in each size.



	A	B	C	D	E
1	Homeroom #	First Name	Last Name	Payment Method	T-Shirt Size
2	105	Melissa	White	Debit Card	Small
3	105	Esther	Yaron	Pending	Small
4	135	Anisa	Naser	Check Bounced	Small
5	220-A	Brigid	Ellison	Cash	Small
6	220-A	Christopher	Peyton-Gomez	Check	Small
7	220-B	Michael	Lazar	Cash	Small
8	220-B	Malik	Reynolds	Cash	Small
9	220-B	Wendy	Shaw	Cash	Small
10				Small Count	8
11	105	Nathan	Albee	Check	Medium
12	105	Christiana	Chen	Check Bounced	Medium
13	105	Sidney	Kelly	Check	Medium
14	110	Matt	Benson	Money Order	Medium
15	110	Gabriel	Del Toro	Cash	Medium
16	135	James	Panarello	Check	Medium
17	135	Chantal	Weller	Debit Card	Medium
18	220-A	Chevonne	Means	Money Order	Medium
19	220-B	Samantha	Bell	Check	Medium
20	220-B	Avery	Kelly	Debit Card	Medium
21				Medium Count	10

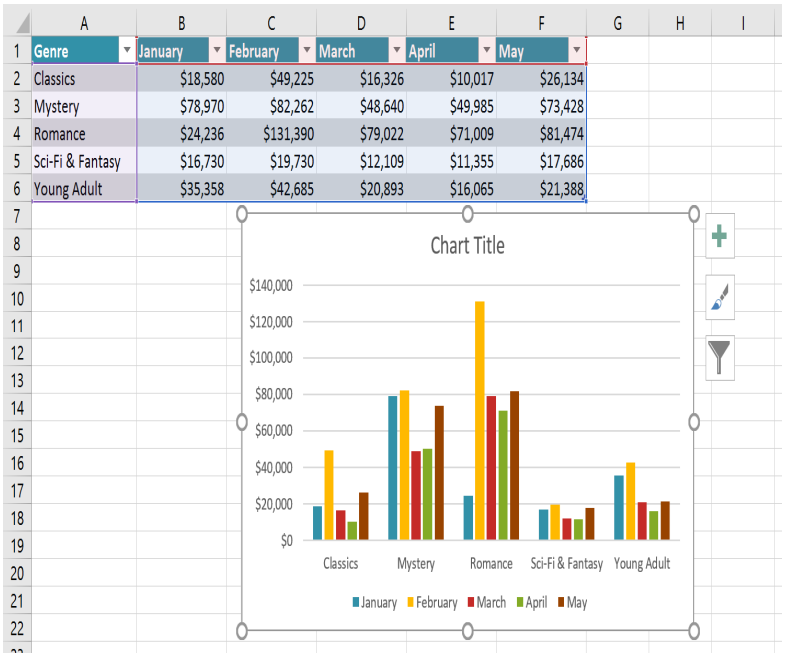
Formatting data as a table

Just like regular formatting, **tables** can improve the **look and feel** of your workbook, but they'll also help you **organize** your content and make your data easier to use. For example, tables have built-in sorting and filtering options. Excel also includes several **predefined table styles**, allowing you to create tables quickly.

	A	B	C	D
1	SABROSA Empanadas & More	Catering Invoice Sabrosa Empanadas & More 1202 Biscayne Bay Drive Orlando, FL 32804		Invoice #: 5686B Date: 05/10/16
2	MENU ITEM	UNIT PRICE	QUANTITY	LINE TOTAL
3	Empanadas: Beef Picadillo	$2.99	15	$44.85
4	Empanadas: Chipotle Shrimp	$3.99	10	$39.90
5	Tamales: Chicken Tinga	$2.29	20	$45.80
6	Tamales: Vegetable	$2.29	30	$68.70
7	Arepas: Carnitas	$2.89	10	$28.90
8	Arepas: Queso Blanco	$2.49	20	$49.80
9	Beverages: Horchata	$1.89	25	$47.25

Visualizing data with charts

It can be difficult to interpret Excel workbooks that contain a lot of data. **Charts** allow you to illustrate your workbook data **graphically**, which makes it easy to visualize **comparisons** and **trends**.



Genre	January	February	March	April	May
Classics	$18,580	$49,225	$16,326	$10,017	$26,134
Mystery	$78,970	$82,262	$48,640	$49,985	$73,428
Romance	$24,236	$131,390	$79,022	$71,009	$81,474
Sci-Fi & Fantasy	$16,730	$19,730	$12,109	$11,355	$17,686
Young Adult	$35,358	$42,685	$20,893	$16,065	$21,388

Adding conditional formatting

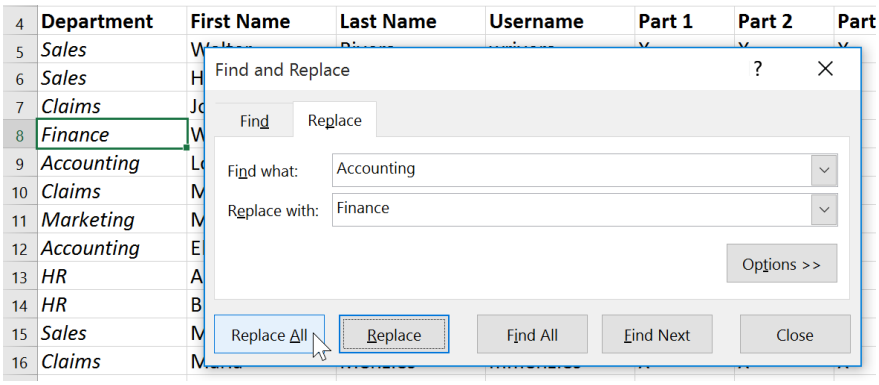
Let's say you have a worksheet with thousands of rows of data. It would be extremely difficult to see patterns and trends just from examining the raw information. **Conditional formatting** allows you to automatically apply cell formatting—such as **colors**, **icons**, and **data bars**—to one or more cells based on the **cell value**.

Westbrook Parker Sales Data

Salesperson	May	June	July	August	September	October
Albertson, Kathy	$3,799.00	$557.00	$3,863.00	$1,117.00	$8,237.00	$8,690.00
Allenson, Carol	$18,930.00	$1,042.00	$9,355.00	$1,100.00	$10,185.00	$18,749.00
Altman, Zoey	$5,725.00	$3,072.00	$6,702.00	$2,116.00	$13,452.00	$8,046.00
Bittiman, William	$1,344.00	$3,755.00	$4,415.00	$1,089.00	$4,404.00	$20,114.00
Brennan, Michael	$8,296.00	$3,152.00	$11,601.00	$1,122.00	$3,170.00	$10,733.00
Carlson, David	$3,945.00	$4,056.00	$3,726.00	$1,135.00	$8,817.00	$18,524.00
Collman, Harry	$8,337.00	$4,906.00	$9,007.00	$2,113.00	$13,090.00	$13,953.00
Counts, Elizabeth	$3,742.00	$521.00	$4,505.00	$1,024.00	$3,528.00	$15,275.00
David, Chloe	$7,605.00	$3,428.00	$3,973.00	$1,716.00	$4,839.00	$13,085.00
Davis, William	$5,304.00	$1,562.00	$2,945.00	$1,176.00	$9,642.00	$13,714.00
Dumlao, Richard	$9,333.00	$2,779.00	$7,549.00	$1,101.00	$5,850.00	$15,065.00
Farmer, Kim	$1,103.00	$3,470.00	$3,862.00	$1,040.00	$10,024.00	$18,389.00
Ferguson, Elizabeth	$1,333.00	$1,913.00	$4,596.00	$1,126.00	$5,503.00	$10,686.00
Flores, Tia	$12,398.00	$2,883.00	$2,142.00	$2,014.00	$13,547.00	$21,983.00
Ford, Victor	$3,251.00	$4,931.00	$8,283.00	$1,054.00	$9,543.00	$11,967.00
Hodges, Melissa	$4,624.00	$4,798.00	$8,420.00	$1,389.00	$10,468.00	$12,677.00
Jameson, Robinson	$2,552.00	$4,459.00	$2,248.00	$1,058.00	$6,267.00	$14,982.00
Kellerman, Frances	$4,281.00	$4,172.00	$11,074.00	$1,282.00	$2,365.00	$9,380.00

Using Find and Replace

When working with a lot of data, it can be difficult and time consuming to locate specific information. You can easily search your workbook using the **Find feature**, which also allows you to modify content using the **Replace** feature.



CHAPTER-18- FREEZING PANES AND VIEW OPTIONS

Introduction

Whenever you're working with a lot of data, it can be difficult to **compare** information in your workbook. Fortunately, Excel includes several tools that make it easier to view content from different parts of your workbook at the same time, including the ability to **freeze panes** and **split** your worksheet.

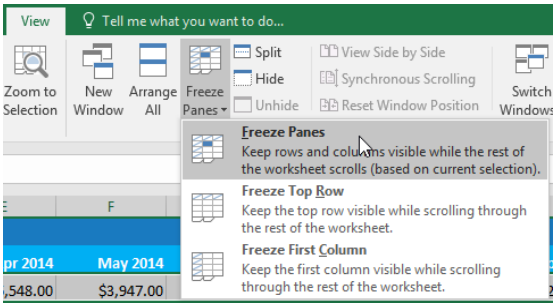
To freeze rows:

You may want to see certain rows or columns all the time in your worksheet, especially **header cells**. By **freezing** rows or columns in place, you'll be able to scroll through your content while continuing to view the frozen cells.

1.Select the **row** below the row(s) you want to **freeze**. In our example, we want to freeze rows **1** and **2**, so we'll select row **3**.

	A	B	C	D	E	F
1	2014-2015 Sales Data					
2	Salesperson	Jan 2014	Feb 2014	Mar 2014	Apr 2014	May 2014
3	Albertson, Kathy	$3,799.00	$4,162.00	$10,491.00	$6,548.00	$3,947.00
4	Allenson, Carol	$18,930.00	$3,993.00	$9,133.00	$19,845.00	$4,411.00
5	Altman, Zoey	$5,725.00	$4,848.00	$8,741.00	$11,138.00	$2,521.00
6	Bittiman, William	$1,344.00	$3,693.00	$15,346.00	$17,253.00	$4,752.00

2.On the **View** tab, select the **Freeze Panes** command, then choose **Freeze Panes** from the drop-down menu.



3.The rows will be **frozen** in place, as indicated by the **gray line**. You can **scroll down** the worksheet while continuing to view the frozen rows at the top. In our example, we've scrolled down to row **18**.

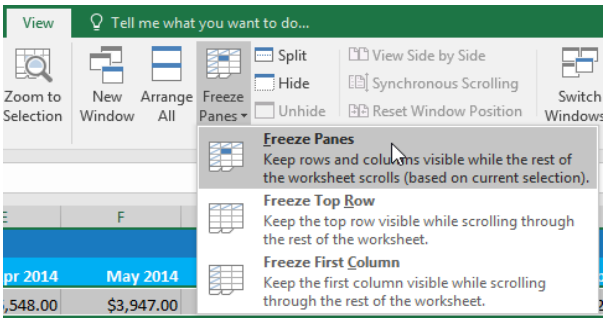
	A	B	C	D	E	F
1	2014-2015 Sales Data					
2	Salesperson	Jan 2014	Feb 2014	Mar 2014	Apr 2014	May 2014
18	Hodges, Melissa	$4,624.00	$14,772.00	$19,830.00	$6,303.00	$5,667.00
19	Jameson, Robinson	$2,552.00	$1,627.00	$4,382.00	$9,083.00	$4,269.00
20	Kellerman, Frances	$4,281.00	$7,375.00	$17,730.00	$19,998.00	$3,502.00
21	Mark, Katharine	$4,679.00	$3,058.00	$1,497.00	$5,722.00	$5,853.00

To freeze columns:

1.Select the **column** to the right of the column(s) you want to **freeze**. In our example, we want to freeze **column A**, so we'll select column **B**.

	A	B	C	D	E	F
1	2014-2015 Sales Data					
2	Salesperson	Jan 2014	Feb 2014	Mar 2014	Apr 2014	May 2014
3	Albertson, Kathy	$3,799.00	$4,162.00	$10,491.00	$6,548.00	$3,947.00
4	Allenson, Carol	$18,930.00	$3,993.00	$9,133.00	$19,845.00	$4,411.00
5	Altman, Zoey	$5,725.00	$4,848.00	$8,741.00	$11,138.00	$2,521.00
6	Bittiman, William	$1,344.00	$3,693.00	$15,346.00	$17,253.00	$4,752.00

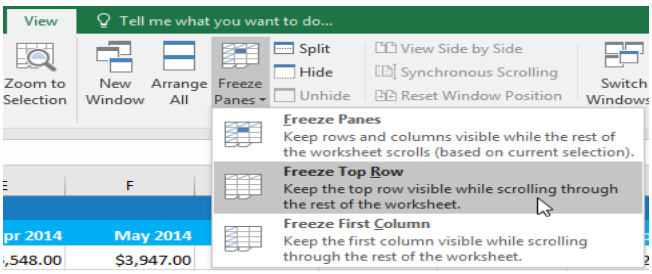
2.On the **View** tab, select the **Freeze Panes** command, then choose **Freeze Panes** from the drop-down menu.



3.The column will be **frozen** in place, as indicated by the **gray line**. You can **scroll across** the worksheet while continuing to view the frozen column on the left. In our example, we've scrolled across to column **E**.

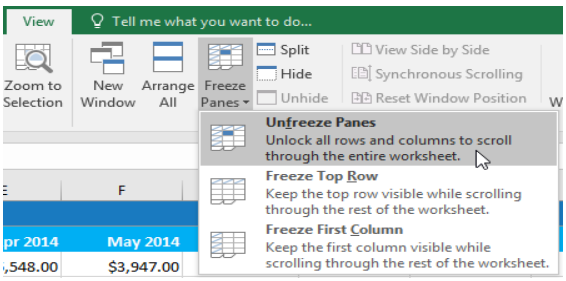
	A	E	F	G	H	I
1	2014-2015 Sal					
2	Salesperson	Apr 2014	May 2014	Jun 2014	Jul 2014	Aug 2014
3	Albertson, Kathy	$6,548.00	$3,947.00	$557.00	$3,863.00	$1,117.00
4	Allenson, Carol	$19,845.00	$4,411.00	$1,042.00	$9,355.00	$1,100.00
5	Altman, Zoey	$11,138.00	$2,521.00	$3,072.00	$6,702.00	$2,116.00
6	Bittiman, William	$17,253.00	$4,752.00	$3,755.00	$4,415.00	$1,089.00

4.If you only need to freeze the **top row** (row 1) or **first column** (column A) in the worksheet, you can simply select **Freeze Top Row** or **Freeze First Column** from the drop-down menu.



To unfreeze panes:

If you want to select a different view option, you may first need to reset the spreadsheet by unfreezing panes.
To **unfreeze** rows or columns, click the **Freeze Panes** command, then select **Unfreeze Panes** from the drop-down menu.



Other view options

If your workbook contains a lot of content, it can sometimes be difficult to compare different sections. Excel includes additional options to make your workbooks easier to view and compare. For example, you can choose to **open a new window** for your workbook or **split a worksheet** into separate panes.

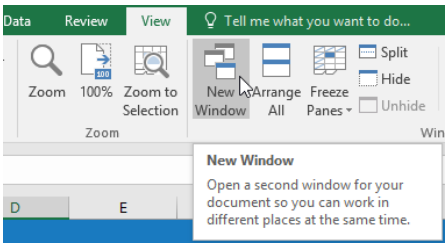
Other view options

If your workbook contains a lot of content, it can sometimes be difficult to compare different sections. Excel includes additional options to make your workbooks easier to view and compare. For example, you can choose to **open a new window** for your workbook or **split a worksheet** into separate panes.

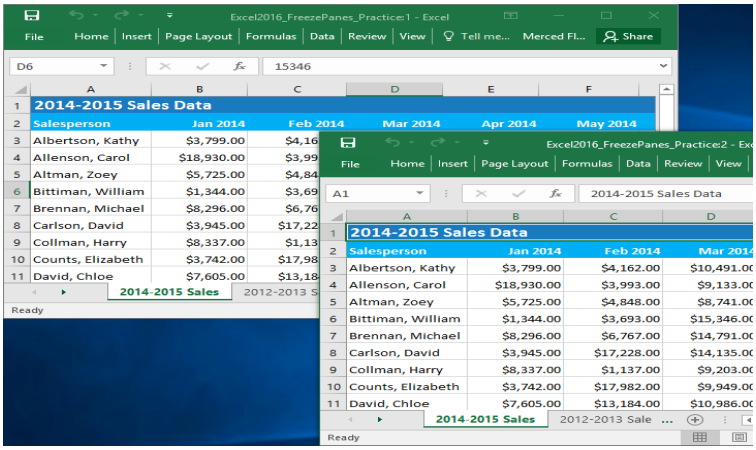
To open a new window for the current workbook:

Excel allows you to open **multiple windows** for a single workbook at the same time. In our example, we'll use this feature to compare two different **worksheets** from the same workbook.

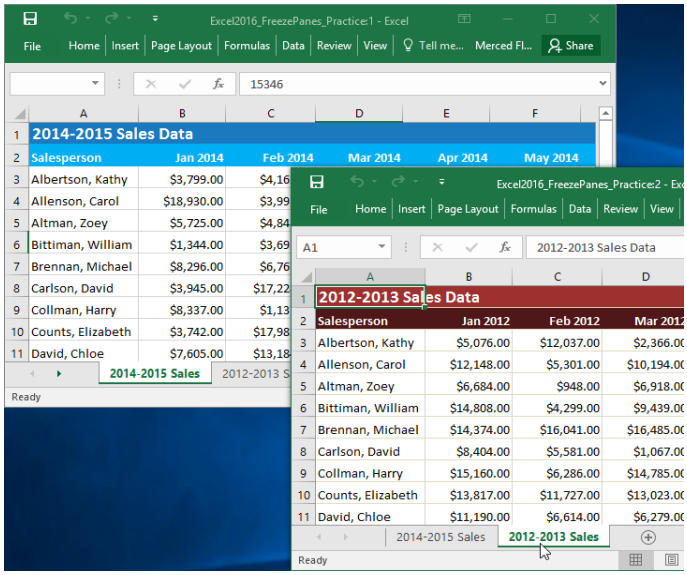
1.Click the **View** tab on the **Ribbon**, then select the **New Window** command.



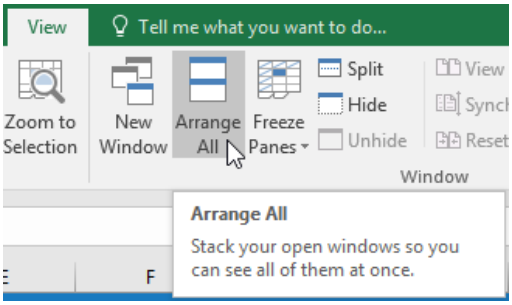
2.A **new window** for the workbook will appear.



3.You can now compare different worksheets from the same workbook across windows. In our example, we'll select the **2013 Sales Detailed View** worksheet to compare **2012** and **2013** sales.



4.If you have several windows open at the same time, you can use the **Arrange All** command to rearrange them quickly.



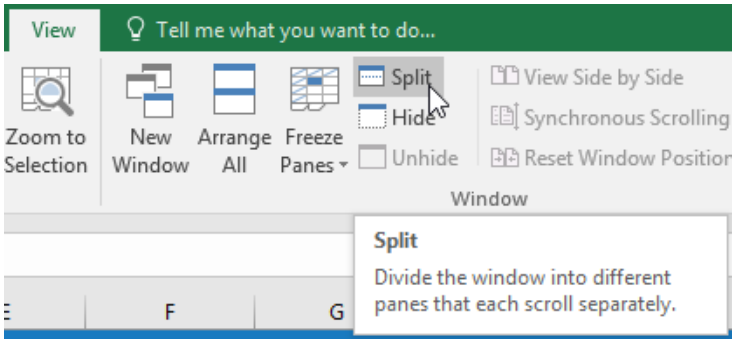
To split a worksheet:

Sometimes you may want to compare different sections of the same workbook without creating a new window. The **Split** command allows you to **divide** the worksheet into multiple panes that scroll separately.

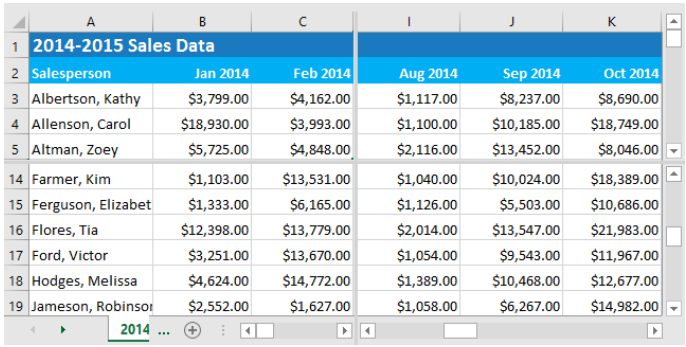
1.Select the **cell** where you want to split the worksheet. In our example, we'll select cell **D6**.

	A	B	C	D	E	F
1	2014-2015 Sales Data					
2	Salesperson	Jan 2014	Feb 2014	Mar 2014	Apr 2014	May 2014
3	Albertson, Kathy	$3,799.00	$4,162.00	$10,491.00	$6,548.00	$3,947.00
4	Allenson, Carol	$18,930.00	$3,993.00	$9,133.00	$19,845.00	$4,411.00
5	Altman, Zoey	$5,725.00	$4,848.00	$8,741.00	$11,138.00	$2,521.00
6	Bittiman, William	$1,344.00	$3,693.00	$15,346.00	$17,253.00	$4,752.00
7	Brennan, Michael	$8,296.00	$6,767.00	$14,791.00	$14,130.00	$4,964.00
8	Carlson, David	$3,945.00	$17,228.00	$14,135.00	$19,306.00	$2,327.00
9	Collman, Harry	$8,337.00	$1,137.00	$9,203.00	$2,302.00	$3,967.00
10	Counts, Elizabeth	$3,742.00	$17,982.00	$9,949.00	$17,075.00	$4,670.00
11	David, Chloe	$7,605.00	$13,184.00	$10,986.00	$5,401.00	$3,379.00

2.Click the **View** tab on the **Ribbon**, then select the **Split** command.



3.The workbook will be **split** into different **panes**. You can scroll through each pane separately using the **scroll bars**, allowing you to compare different sections of the workbook.



	A	B	C	I	J	K
1	2014-2015 Sales Data					
2	Salesperson	Jan 2014	Feb 2014	Aug 2014	Sep 2014	Oct 2014
3	Albertson, Kathy	$3,799.00	$4,162.00	$1,117.00	$8,237.00	$8,690.00
4	Allenson, Carol	$18,930.00	$3,993.00	$1,100.00	$10,185.00	$18,749.00
5	Altman, Zoey	$5,725.00	$4,848.00	$2,116.00	$13,452.00	$8,046.00
14	Farmer, Kim	$1,103.00	$13,531.00	$1,040.00	$10,024.00	$18,389.00
15	Ferguson, Elizabet	$1,333.00	$6,165.00	$1,126.00	$5,503.00	$10,686.00
16	Flores, Tia	$12,398.00	$13,779.00	$2,014.00	$13,547.00	$21,983.00
17	Ford, Victor	$3,251.00	$13,670.00	$1,054.00	$9,543.00	$11,967.00
18	Hodges, Melissa	$4,624.00	$14,772.00	$1,389.00	$10,468.00	$12,677.00
19	Jameson, Robinsor	$2,552.00	$1,627.00	$1,058.00	$6,267.00	$14,982.00

2014 ...

After creating a split, you can click and drag the vertical and horizontal dividers to change the size of each section.

To remove the split, click the **Split** command again.

CHAPTER-19- SORTING DATA

Introduction

As you add more content to a worksheet, organizing this information becomes especially important. You can quickly **reorganize** a worksheet by **sorting** your data. For example, you could organize a list of contact information by last name. Content can be sorted alphabetically, numerically, and in many other ways.

Types of sorting

When sorting data, it's important to first decide if you want the sort to apply to the **entire worksheet** or just a **cell range**.

1.Sort sheet organizes all of the data in your worksheet by one column. Related information across each row is kept together when the sort is applied. In the example below, the **Contact Name** column (column **A**) has been sorted to display the names in alphabetical order.

Customer Contact List

CONTACT NAME	BILLING ADDRESS	PHONE	EMAIL ADDRESS
Chaturvedi, Rick	2428 S Redding St #2 B	360-555-5422	info@newhaventraders.com
Dean, Hank	3034 Foggy Wharf Loo	308-555-1050	hdean@venturebrewing.com
Figgis, Mallory	3520 Sleepy Hearth Dr	425-555-5370	malloryf@archerproperties.com
Finn, Jake	1407 Dusty Fawn Ln So	605-555-6435	jake@adventureoutfitters.com
Kinkade, Chris	1028 Quiet Dale Rd Ho	443-555-4942	chris.kinkade@placervilleins.com
Lawson, Miranda	5316 Colonial Pkwy Est	575-555-9255	mlawson@massairlines.com
Reyes, Felicia	8544 Lazy Bluff Ave Wh	316-555-3256	felicia@everlypublishing.com
Sebastian, Lil	9060 Easy Evening Ln V	207-555-7225	lil@knopeequestrian.com
Silva, Vivica	8595 Thunder Brook Ci	360-555-4289	vivica@rileygardensupply.com
Stark, Katie	971 Cinder Butterfly St	603-555-2460	katie.stark@ariarealestate.com
Torrance, Jill	3160 Amber Gate Rd R	605-555-4495	jtorrance@overlookinn.com
Yuen, Phillip	5108 Crystal Gate Blvd	913-555-5928	yuenp@corepharmaceuticals.com

2.Sort range sorts the data in a range of cells, which can be helpful when working with a sheet that contains several tables. Sorting a range will not affect other content on the worksheet.

EXERCISES	SET 1		SET 2	
	REPS	WEIGHT (lbs)	REPS	WEIGHT (lbs)
Bench Press	14	65	12	75
Bench Press (Decline)	10	60	8	70
Triceps Extension	15	35	20	35
Average	13.9	50.5	12.5	54

Running Log

Date	Distance (miles)	Time (hrs:mins)
25-Jun	2.8	0:45
26-Jun	3	0:44
27-Jun	2.75	0:42
29-Jun	3.25	0:44
30-Jun	3.25	0:45
2-Jul	2.5	0:44
3-Jul	3	0:30
Total	20.55	

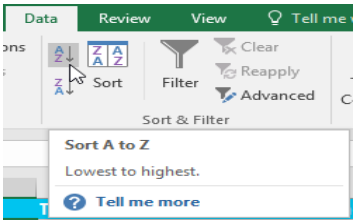
To sort a sheet:

In our example, we'll sort a T-shirt order form alphabetically by **Last Name** (column **C**).

1.Select a **cell** in the column you want to sort by. In our example, we'll select cell **C2**.

Homeroom #	First Name	Last Name	T-Shirt Size	Payment Method
105	Christiana	Chen	Medium	Check Bounced
105	Derek	MacDonald	Large	Cash
105	Esther	Yaron	Small	Pending
105	Melissa	White	Small	Debit Card
105	Nathan	Albee	Medium	Check
105	Sidney	Kelly	Medium	Check
110	Gabriel	Del Toro	Medium	Cash
110	Kris	Ackerman	Large	Money Order

2.Select the **Data** tab on the **Ribbon**, then click the **A-Z command** to sort A to Z, or the **Z-A command** to sort Z to A. In our example, we'll sort A to Z.



3.The worksheet will be **sorted** by the selected column. In our example, the worksheet is now sorted by **last name**.

Homeroom #	First Name	Last Name	T-Shirt Size	Payment Method
110	Kris	Ackerman	Large	Money Order
105	Nathan	Albee	Medium	Check
220-B	Samantha	Bell	Medium	Check
110	Matt	Benson	Medium	Money Order
105	Christiana	Chen	Medium	Check Bounced
110	Gabriel	Del Toro	Medium	Cash
220-A	Brigid	Ellison	Small	Cash
220-A	Juan	Flores	X-Large	Pending

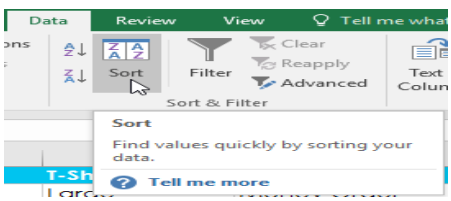
To sort a range:

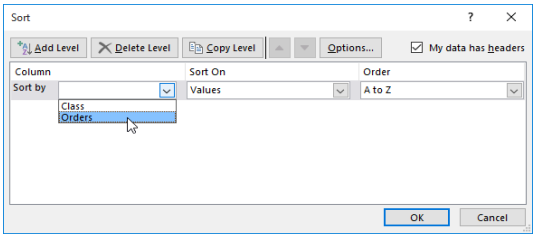
In our example, we'll select a **separate table** in our T-shirt order form to sort the number of shirts that were ordered on different dates.

1.Select the **cell range** you want to sort. In our example, we'll select cell range **G2:H6**.

Total Orders (by Grade)	
Class	Orders
Freshmen	5
Sophomore	7
Junior	10
Senior	5

2.Select the **Data** tab on the **Ribbon**, then click the **Sort** command.

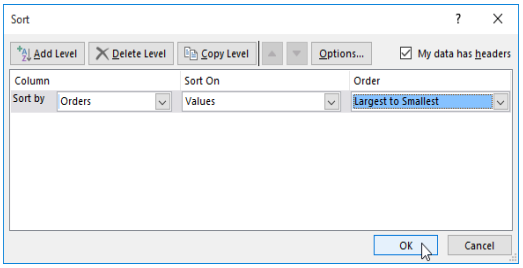




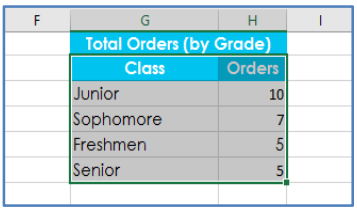
3.The **Sort** dialog box will appear. Choose the **column** you want to sort by. In our example, we want to sort the data by the number of T-shirt orders, so we'll select **Orders**.

4.Decide the **sorting order** (either ascending or descending). In our example, we'll use **Largest to Smallest**.

Once you're satisfied with your selection, click **OK**.



5.The cell range will be **sorted** by the selected column. In our example, the Orders column will be sorted from **highest to lowest**. Notice that the other content in the worksheet was not affected by the sort.



Custom sorting

Sometimes you may find that the default sorting options can't sort data in the order you need. Fortunately, Excel allows you to create a **custom list** to define your own sorting order.

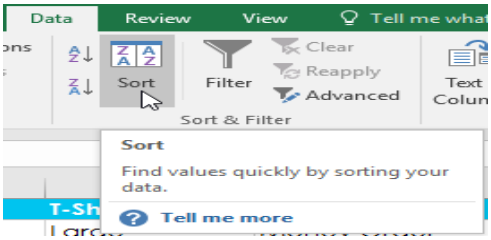
To create a custom sort:

In our example below, we want to sort the worksheet by **T-Shirt Size** (column **D**). A regular sort would organize the sizes alphabetically, which would be incorrect. Instead, we'll create a custom list to sort from smallest to largest.

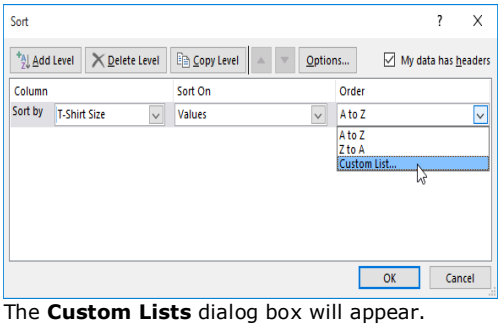
1.Select a **cell** in the column you want to sort by. In our example, we'll select cell **D2**.

	A	B	C	D	E
1	Homeroom #	First Name	Last Name	T-Shirt Size	Payment Method
2	110	Kris	Ackerman	Large	Money Order
3	105	Nathan	Albee	Medium	Check
4	220-B	Samantha	Bell	Medium	Check
5	110	Matt	Benson	Medium	Money Order
6	105	Christiana	Chen	Medium	Check Bounced
7	110	Gabriel	Del Toro	Medium	Cash
8	220-A	Brigid	Ellison	Small	Cash
9	220-A	Juan	Flores	X-Large	Pending
10	220-B	Tyrese	Hanlon	X-Large	Debit Card

2.Select the **Data** tab, then click the **Sort** command.

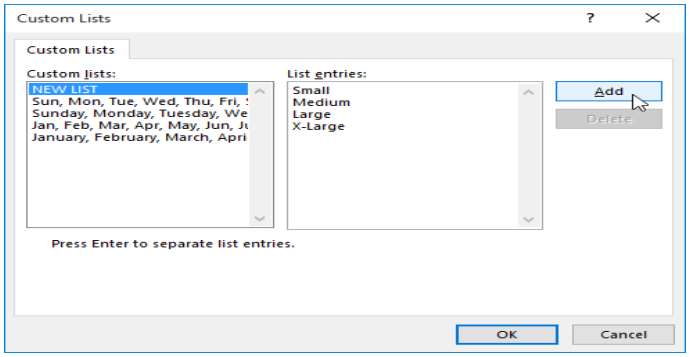


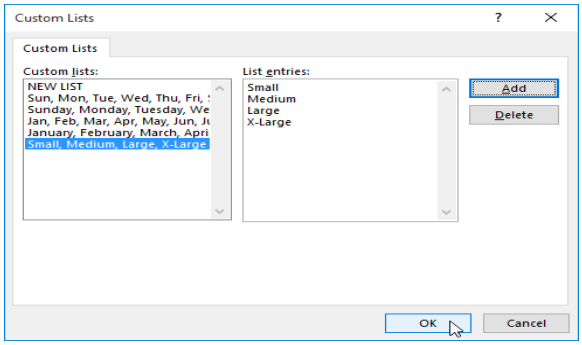
3.The **Sort** dialog box will appear. Select the **column** you want to sort by, then choose **Custom List...** from the **Order** field. In our example, we will choose to sort by **T-Shirt Size**.



The **Custom Lists** dialog box will appear. Select **NEW LIST** from the **Custom Lists:** box.

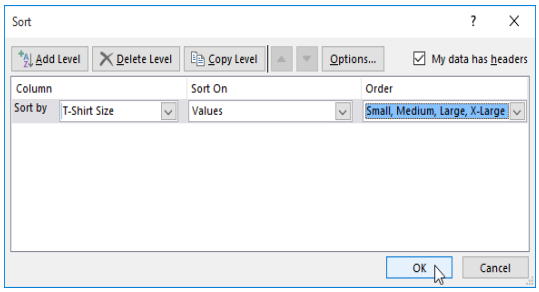
4.Type the items in the desired custom order in the **List entries:** box. In our example, we want to sort our data by T-shirt size from **smallest** to **largest**, so we'll type **Small**, **Medium**, **Large**, and **X-Large**, pressing **Enter** on the keyboard after each item.





5.Click **Add** to save the new sort order. The new list will be added to the **Custom lists:** box. Make sure the new list is **selected**, then click **OK**.

6.The **Custom Lists** dialog box will close. Click **OK** in the **Sort** dialog box to perform the custom sort.



7.The worksheet will be **sorted** by the custom order. In our example, the worksheet is now organized by T-shirt size from smallest to largest.

	A	B	C	D	E
1	Homeroom #	First Name	Last Name	T-Shirt Size	Payment Method
2	220-A	Brigid	Ellison	Small	Cash
3	220-B	Michael	Lazar	Small	Cash
4	135	Anisa	Naser	Small	Check Bounced
5	220-A	Christopher	Peyton-Gomez	Small	Check
6	220-B	Malik	Reynolds	Small	Cash
7	220-B	Wendy	Shaw	Small	Cash
8	105	Melissa	White	Small	Debit Card
9	105	Esther	Yaron	Small	Pending
10	105	Nathan	Albee	Medium	Check
11	220-B	Samantha	Bell	Medium	Check
12	110	Matt	Benson	Medium	Money Order
13	105	Christiana	Chen	Medium	Check Bounced
14	110	Gabriel	Del Toro	Medium	Cash
15	105	Sidney	Kelly	Medium	Check
16	220-B	Avery	Kelly	Medium	Debit Card
17	220-A	Chevonne	Means	Medium	Money Order
18	135	James	Panarello	Medium	Check
19	135	Chantal	Weller	Medium	Debit Card
20	110	Kris	Ackerman	Large	Money Order
21	105	Derek	MacDonald	Large	Cash

Sorting levels

If you need more control over how your data is sorted, you can add multiple **levels** to any sort. This allows you to sort your data by **more than one column**.

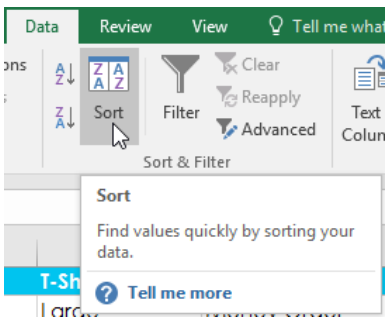
To add a level:

In our example below, we'll sort the worksheet by **T-Shirt Size** (Column **D**), and then by **Homeroom Number** (column **A**).

1.Select a **cell** in the column you want to sort by. In our example, we'll select cell **A2**.

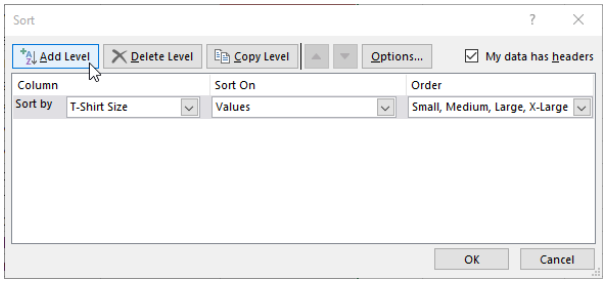
	A	B	C	D	E
1	Homeroom #	First Name	Last Name	T-Shirt Size	Payment Method
2	220-A	Brigid	Ellison	Small	Cash
3	220-B	Michael	Lazar	Small	Cash
4	135	Anisa	Naser	Small	Check Bounced
5	220-A	Christopher	Peyton-Gomez	Small	Check
6	220-B	Malik	Reynolds	Small	Cash
7	220-B	Wendy	Shaw	Small	Cash
8	105	Melissa	White	Small	Debit Card
9	105	Esther	Yaron	Small	Pending
10	105	Nathan	Albee	Medium	Check

2.Click the **Data** tab, then select the **Sort** command.

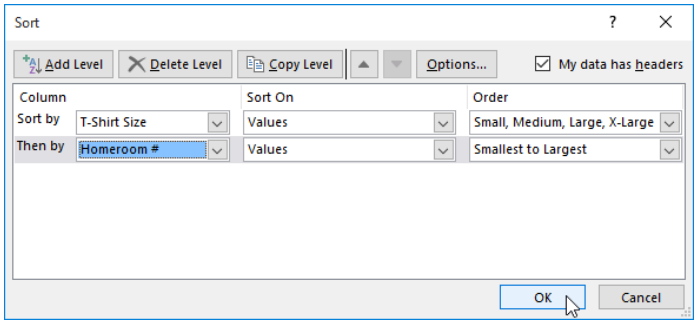


3.The **Sort** dialog box will appear. Select the first column you want to sort by. In this example, we will sort by **T-Shirt Size** (column **D**) with the custom list we previously created for the Order field.

Click **Add Level** to add another column to sort by.



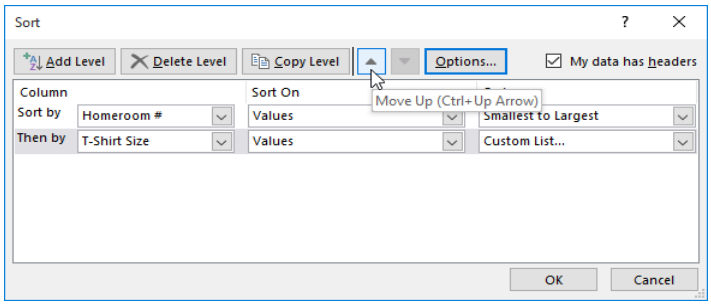
4.Select the next column you want to sort by, then click **OK**. In our example, we'll sort by **Homeroom #** (column **A**).



5.The worksheet will be **sorted** according to the selected order. In our example, the orders are sorted by T-shirt size. Within each group of T-shirt sizes, students are sorted by homeroom number.

	A	B	C	D	E
1	Homeroom #	First Name	Last Name	T-Shirt Size	Payment Method
2	105	Melissa	White	Small	Debit Card
3	105	Esther	Yaron	Small	Pending
4	135	Anisa	Naser	Small	Check Bounced
5	220-A	Brigid	Ellison	Small	Cash
6	220-A	Christopher	Peyton-Gomez	Small	Check
7	220-B	Michael	Lazar	Small	Cash
8	220-B	Malik	Reynolds	Small	Cash
9	220-B	Wendy	Shaw	Small	Cash
10	105	Nathan	Albee	Medium	Check
11	105	Christiana	Chen	Medium	Check Bounced
12	105	Sidney	Kelly	Medium	Check
13	110	Matt	Benson	Medium	Money Order
14	110	Gabriel	Del Toro	Medium	Cash
15	135	James	Panarello	Medium	Check
16	135	Chantal	Weller	Medium	Debit Card
17	220-A	Chevonne	Means	Medium	Money Order
18	220-B	Samantha	Bell	Medium	Check
19	220-B	Avery	Kelly	Medium	Debit Card
20	105	Derek	MacDonald	Large	Cash
21	110	Kris	Ackerman	Large	Money Order

6.If you need to change the order of a multilevel sort, it's easy to control which column is sorted first. Simply select the desired **column**, then click the **Move Up** or **Move Down** arrow to adjust its priority.



CHAPTER-20- FILTERING DATA

Introduction

If your worksheet contains a lot of content, it can be difficult to find information quickly. **Filters** can be used to **narrow down** the data in your worksheet, allowing you to view only the information you need.

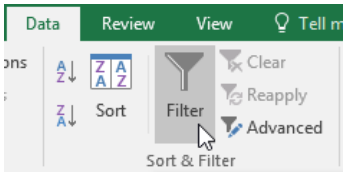
To filter data:

In our example, we'll apply a filter to an equipment log worksheet to display only the laptops and projectors that are available for checkout.

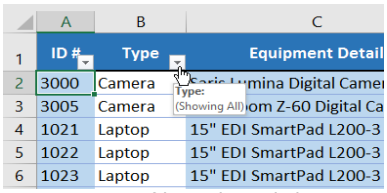
	A	B	C	D	E	F
1	ID #	Type	Equipment Detail	Checked Out	Checked In	Checked Out By
2	3000	Camera	Saris Lumina Digital Camera	12-May-15	15-May-15	Shannon Nguyen
3	3005	Camera	Saris Zoom Z-60 Digital Camera	27-Jul-15	06-Aug-15	Sela Shepard
4	1021	Laptop	15" EDI SmartPad L200-3 Laptop	15-Sep-15	01-Oct-15	Sofie Ragnar
5	1022	Laptop	15" EDI SmartPad L200-3 Laptop	14-Aug-15	16-Aug-15	Hank Sorenson
6	1023	Laptop	15" EDI SmartPad L200-3 Laptop	08-Aug-15	15-Aug-15	Jennifer Weiss
7	3070	Camera	Omega PixL Digital Camcorder	06-Oct-15		Min Seung
8	1025	Laptop	15" EDI SmartPad L200-4X	26-Sep-15	04-Oct-15	Min Seung
9	1031	Laptop	17" Saris X-10 Laptop	04-Oct-15		Nick Ortiz
10	1032	Laptop	17" Saris X-10 Laptop	19-Sep-15		Stanley Geyer
11	1033	Laptop	17" Saris X-10 Laptop	24-Sep-15	26-Sep-15	George D'Agosta

1.In order for filtering to work correctly, your worksheet should include a **header row**, which is used to identify the name of each column. In our example, our worksheet is organized into different columns identified by the header cells in row 1: **ID#**, **Type**, **Equipment Detail**, and so on.

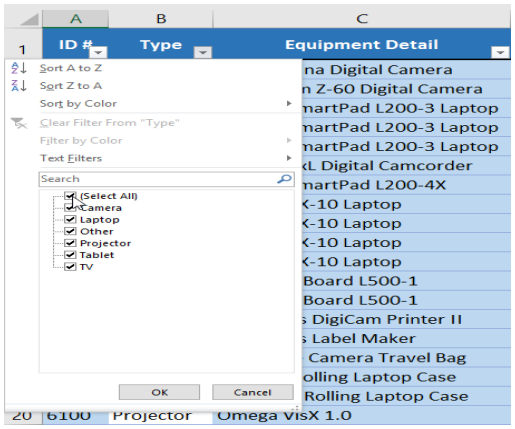
2.Select the **Data** tab, then click the **Filter** command.



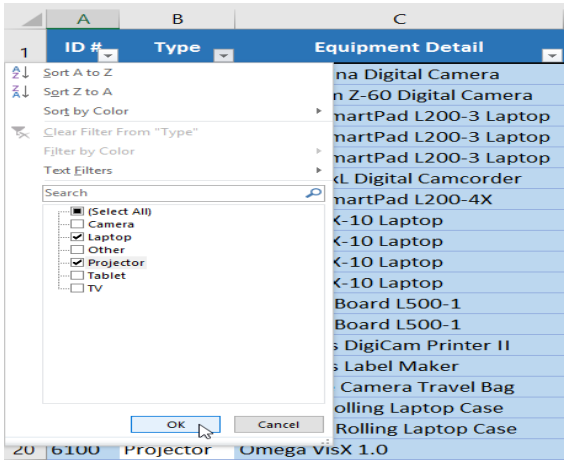
3.Click the **drop-down arrow** for the column you want to filter. In our example, we will filter column **B** to view only certain types of equipment.



4.Uncheck the box next to **Select All** to quickly deselect all data.



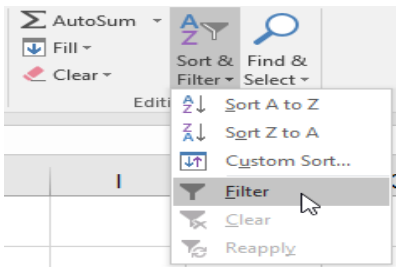
5.Check the boxes next to the data you want to filter, then click **OK**. In this example, we will check **Laptop** and **Projector** to view only these types of equipment.



6.The data will be **filtered**, temporarily hiding any content that doesn't match the criteria. In our example, only laptops and projectors are visible.

	A	B	C	D	E	F
1	ID #	Type	Equipment Detail	Checked Out	Checked In	Checked Out By
4	1021	Laptop	15" EDI SmartPad L200-3 Laptop	15-Sep-15	01-Oct-15	Sofie Ragnar
5	1022	Laptop	15" EDI SmartPad L200-3 Laptop	14-Aug-15	16-Aug-15	Hank Sorenson
6	1023	Laptop	15" EDI SmartPad L200-3 Laptop	08-Aug-15	15-Aug-15	Jennifer Weiss
8	1025	Laptop	15" EDI SmartPad L200-4X	26-Sep-15	04-Oct-15	Min Seung
9	1031	Laptop	17" Saris X-10 Laptop	04-Oct-15		Nick Ortiz
10	1032	Laptop	17" Saris X-10 Laptop	19-Sep-15		Stanley Geyer
11	1033	Laptop	17" Saris X-10 Laptop	24-Sep-15	26-Sep-15	George D'Agosta
12	1034	Laptop	17" Saris X-10 Laptop	25-Aug-15	27-Aug-15	Jay Peralta
20	6100	Projector	Omega VisX 1.0	28-Sep-15	01-Oct-15	Win Armitage
21	6101	Projector	Omega VisX 1.0	26-Sep-15	27-Sep-15	Michael Earley
22	6102	Projector	Omega VisX 1.0	22-Aug-15	23-Aug-15	Jamila Kyle
23	6200	Projector	Saris Lux T-80	01-Sep-15	04-Sep-15	Jolie Chaturvedi
24	6301	Projector	Saris Lux T-81 Lite	10-Sep-15		Marques Herndon
25	6302	Projector	Saris Lux T-81 Lite	08-Sep-15	15-Sep-15	Dean Sorenson
31						
32						

7.Filtering options can also be accessed from the **Sort & Filter** command on the **Home** tab.



To apply multiple filters:

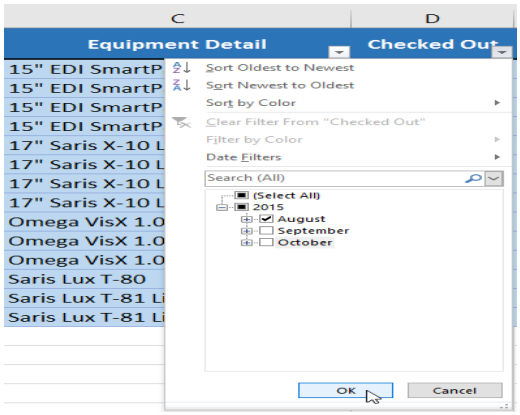
Filters are **cumulative**, which means you can apply **multiple filters** to help narrow down your results. In this example, we've already filtered our worksheet to show laptops and projectors, and we'd like to narrow it down further to only show laptops and projectors that were checked out in August.

1.Click the **drop-down arrow** for the column you want to filter. In this example, we will add a filter to column **D** to view information by date.

	A	B	C	D	E	F
1	ID #	Type	Equipment Detail	Checked Out	Checked In	Checked Out By
4	1021	Laptop	15" EDI SmartPad L200-3 Laptop	15-Sep-15	01-Oct-15	Sofie Ragnar
5	1022	Laptop	15" EDI SmartPad L200-3 Laptop	14-Aug-15	15	Hank Sorenson
6	1023	Laptop	15" EDI SmartPad L200-3 Laptop	08-Aug-15	15-Aug-15	Jennifer Weiss
8	1025	Laptop	15" EDI SmartPad L200-4X	26-Sep-15	04-Oct-15	Min Seung
9	1031	Laptop	17" Saris X-10 Laptop	04-Oct-15		Nick Ortiz
10	1032	Laptop	17" Saris X-10 Laptop	19-Sep-15		Stanley Geyer
11	1033	Laptop	17" Saris X-10 Laptop	24-Sep-15	26-Sep-15	George D'Agosta
12	1034	Laptop	17" Saris X-10 Laptop	25-Aug-15	27-Aug-15	Jay Peralta
20	6100	Projector	Omega VisX 1.0	28-Sep-15	01-Oct-15	Win Armitage
21	6101	Projector	Omega VisX 1.0	26-Sep-15	27-Sep-15	Michael Earley
22	6102	Projector	Omega VisX 1.0	22-Aug-15	23-Aug-15	Jamila Kyle
23	6200	Projector	Saris Lux T-80	01-Sep-15	04-Sep-15	Jolie Chaturvedi
24	6301	Projector	Saris Lux T-81 Lite	10-Sep-15		Marques Herndon
25	6302	Projector	Saris Lux T-81 Lite	08-Sep-15	15-Sep-15	Dean Sorenson
31						
32						

The **Filter menu** will appear.

2.Check or **uncheck** the boxes depending on the data you want to filter, then click **OK**. In our example, we'll uncheck everything except for **August**.



3.The new filter will be applied. In our example, the worksheet is now filtered to show only laptops and projectors that were checked out in August.

	A	B	C	D	E	F
1	ID #	Type	Equipment Detail	Checked Out	Checked In	Checked Out By
5	1022	Laptop	15" EDI SmartPad L200-3 Laptop	14-Aug-15	16-Aug-15	Hank Sorenson
6	1023	Laptop	15" EDI SmartPad L200-3 Laptop	08-Aug-15	15-Aug-15	Jennifer Weiss
12	1034	Laptop	17" Saris X-10 Laptop	25-Aug-15	27-Aug-15	Jay Peralta
22	6102	Projector	Omega VisX 1.0	22-Aug-15	23-Aug-15	Jamila Kyle
31						
32						

To clear a filter:

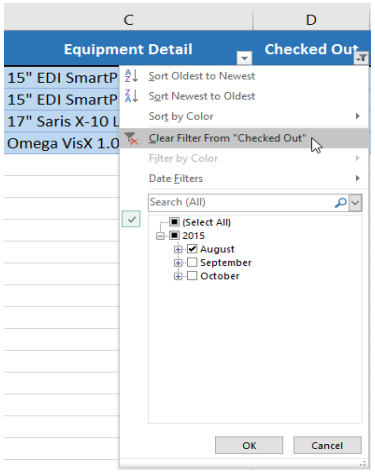
After applying a filter, you may want to remove—or **clear**—it from your worksheet so you'll be able to filter content in different ways.

1.Click the **drop-down arrow** for the filter you want to clear. In our example, we'll clear the filter in column **D**.

	A	B	C	D	E	F
1	ID #	Type	Equipment Detail	Checked Out	Checked In	Checked Out By
5	1022	Laptop	15" EDI SmartPad L200-3 Laptop	14-Aug-15	16-Aug-15	Hank Sorenson
6	1023	Laptop	15" EDI SmartPad L200-3 Laptop	08-Aug-15	15-Aug-15	Jennifer Weiss
12	1034	Laptop	17" Saris X-10 Laptop	25-Aug-15	27-Aug-15	Jay Peralta
22	6102	Projector	Omega VisX 1.0	22-Aug-15	23-Aug-15	Jamila Kyle
31						
32						

The **Filter menu** will appear.

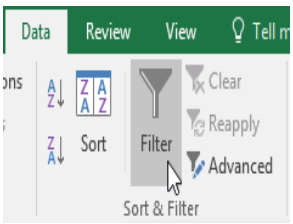
2.Choose **Clear Filter From [COLUMN NAME]** from the Filter menu. In our example, we'll select **Clear Filter From "Checked Out"**.



3.The filter will be cleared from the column. The previously hidden data will be displayed.

	A	B	C	D	E	F
1	ID #	Type	Equipment Detail	Checked Out	Checked In	Checked Out By
4	1021	Laptop	15" EDI SmartPad L200-3 Laptop	15-Sep-15	01-Oct-15	Sofie Ragnar
5	1022	Laptop	15" EDI SmartPad L200-3 Laptop	14-Aug-15	15	Hank Sorenson
6	1023	Laptop	15" EDI SmartPad L200-3 Laptop	08-Aug-15	15-Aug-15	Jennifer Weiss
8	1025	Laptop	15" EDI SmartPad L200-4X	26-Sep-15	04-Oct-15	Min Seung
9	1031	Laptop	17" Saris X-10 Laptop	04-Oct-15		Nick Ortiz
10	1032	Laptop	17" Saris X-10 Laptop	19-Sep-15		Stanley Geyer
11	1033	Laptop	17" Saris X-10 Laptop	24-Sep-15	26-Sep-15	George D'Agosta
12	1034	Laptop	17" Saris X-10 Laptop	25-Aug-15	27-Aug-15	Jay Peralta
20	6100	Projector	Omega VisX 1.0	28-Sep-15	01-Oct-15	Win Armitage
21	6101	Projector	Omega VisX 1.0	26-Sep-15	27-Sep-15	Michael Earley
22	6102	Projector	Omega VisX 1.0	22-Aug-15	23-Aug-15	Jamila Kyle
23	6200	Projector	Saris Lux T-80	01-Sep-15	04-Sep-15	Jolie Chaturvedi
24	6301	Projector	Saris Lux T-81 Lite	10-Sep-15		Marques Herndon
25	6302	Projector	Saris Lux T-81 Lite	08-Sep-15	15-Sep-15	Dean Sorenson
31						
32						

4.To remove all filters from your worksheet, click the **Filter** command on the **Data**tab.



Advanced filtering

If you need a filter for something specific, basic filtering may not give you enough options. Fortunately, Excel includes many **advanced filtering tools**, including **search**, **text**, **date**, and **number filtering**, which can narrow your results to help find exactly what you need.

To filter with search:

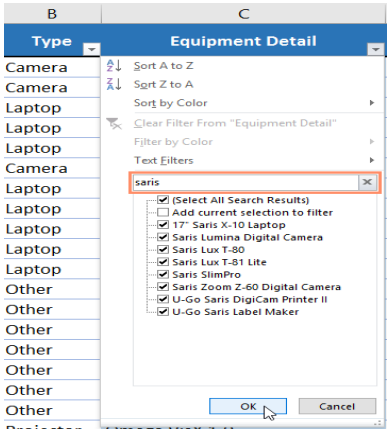
Excel allows you to **search** for data that contains an exact phrase, number, date, and more. In our example, we'll use this feature to show only **Saris** brand products in our equipment log.

Select the **Data** tab, then click the **Filter** command. A **drop-down arrow** will appear in the header cell for each column. **Note**: If you've already added filters to your worksheet, you can skip this step.

1.Click the **drop-down arrow** for the column you want to filter. In our example, we'll filter column **C**.

	A	B	C	D	E	F
1	ID #	Type	Equipment Detail	Checked Out	Checked In	Checked Out By
2	3000	Camera	Saris Lumina Digital Camera	12-May-15	15-May-15	Shannon Nguyen
3	3005	Camera	Saris Zoom Z-60 Digital Camera	27-Jul-15	06-Aug-15	Sela Shepard
4	1021	Laptop	15" EDI SmartPad L200-3 Laptop	15-Sep-15	01-Oct-15	Sofie Ragnar
5	1022	Laptop	15" EDI SmartPad L200-3 Laptop	14-Aug-15	16-Aug-15	Hank Sorenson
6	1023	Laptop	15" EDI SmartPad L200-3 Laptop	08-Aug-15	15-Aug-15	Jennifer Weiss
7	3070	Camera	Omega PixL Digital Camcorder	06-Oct-15		Min Seung
8	1025	Laptop	15" EDI SmartPad L200-4X	26-Sep-15	04-Oct-15	Min Seung
9	1031	Laptop	17" Saris X-10 Laptop	04-Oct-15		Nick Ortiz
10	1032	Laptop	17" Saris X-10 Laptop	19-Sep-15		Stanley Geyer

2.The **Filter menu** will appear. Enter a **search term** into the **search box**. Search results will appear automatically below the **Text Filters** field as you type. In our example, we'll type **saris** to find all Saris brand equipment. When you're done, click **OK**.



3.The worksheet will be **filtered** according to your search term. In our example, the worksheet is now filtered to show only Saris brand equipment.

	A	B	C	D	E	F
1	ID #	Type	Equipment Detail	Checked Out	Checked In	Checked Out By
2	3000	Camera	Saris Lumina Digital Camera	12-May-15	15-May-15	Shannon Nguyen
3	3005	Camera	Saris Zoom Z-60 Digital Camera	27-Jul-15	06-Aug-15	Sela Shepard
9	1031	Laptop	17" Saris X-10 Laptop	04-Oct-15		Nick Ortiz
10	1032	Laptop	17" Saris X-10 Laptop	19-Sep-15		Stanley Geyer
11	1033	Laptop	17" Saris X-10 Laptop	24-Sep-15	26-Sep-15	George D'Agosta
12	1034	Laptop	17" Saris X-10 Laptop	25-Aug-15	27-Aug-15	Jay Peralta
15	3800	Other	U-Go Saris DigiCam Printer II	04-Aug-15	05-Aug-15	Hank Sorenson
16	3900	Other	U-Go Saris Label Maker	13-Jun-15	20-Jun-15	Clint Gosse
23	6200	Projector	Saris Lux T-80	01-Sep-15	04-Sep-15	Jolie Chaturvedi
24	6301	Projector	Saris Lux T-81 Lite	10-Sep-15		Marques Herndon
25	6302	Projector	Saris Lux T-81 Lite	08-Sep-15	15-Sep-15	Dean Sorenson
26	1011	Tablet	Saris SlimPro	04-Oct-15		Jay Peralta
27	1012	Tablet	Saris SlimPro	29-Sep-15		August Zorn
31						
32						

To use advanced text filters:

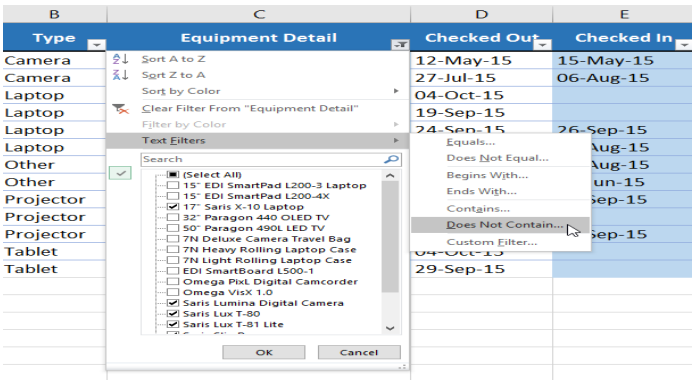
Advanced text filters can be used to display more specific information, like cells that contain a certain number of characters or data that excludes a specific word or number. In our example, we'd like to exclude any item containing the word **laptop**.

Select the **Data** tab, then click the **Filter** command. A **drop-down arrow** will appear in the header cell for each column. **Note**: If you've already added filters to your worksheet, you can skip this step.

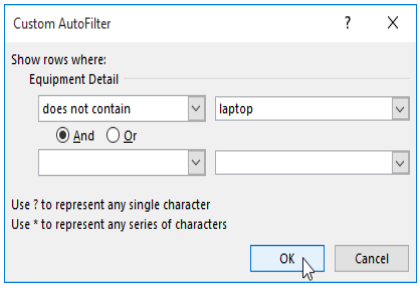
1.Click the **drop-down arrow** for the column you want to filter. In our example, we'll filter column **C**.

	A	B	C	D	E	F
1	ID #	Type	Equipment Detail	Checked Out	Checked In	Checked Out By
2	3000	Camera	Saris Lumina Digital Camera	12-May-15	15-May-15	Shannon Nguyen
3	3005	Camera	Saris Zoom Z-60 Digital Camera	27-Jul-15	06-Aug-15	Sela Shepard
4	1021	Laptop	15" EDI SmartPad L200-3 Laptop	15-Sep-15	01-Oct-15	Sofie Ragnar
5	1022	Laptop	15" EDI SmartPad L200-3 Laptop	14-Aug-15	16-Aug-15	Hank Sorenson
6	1023	Laptop	15" EDI SmartPad L200-3 Laptop	08-Aug-15	15-Aug-15	Jennifer Weiss
7	3070	Camera	Omega PixL Digital Camcorder	06-Oct-15		Min Seung
8	1025	Laptop	15" EDI SmartPad L200-4X	26-Sep-15	04-Oct-15	Min Seung
9	1031	Laptop	17" Saris X-10 Laptop	04-Oct-15		Nick Ortiz
10	1032	Laptop	17" Saris X-10 Laptop	19-Sep-15		Stanley Geyer

2.The **Filter menu** will appear. Hover the mouse over **Text Filters**, then select the desired text filter from the drop-down menu. In our example, we'll choose **Does Not Contain** to view data that does not contain specific text.



3.The **Custom AutoFilter** dialog box will appear. Enter the **desired text** to the right of the filter, then click **OK**. In our example, we'll type **laptop** to exclude any items containing this word.



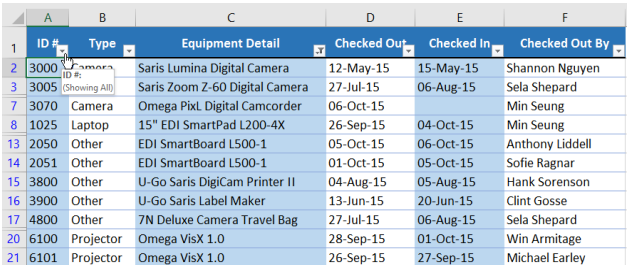
4.The data will be filtered by the selected text filter. In our example, our worksheet now displays items that do not contain the word **laptop**.

ID #	Type	Equipment Detail	Checked Out	Checked In	Checked Out By
3000	Camera	Saris Lumina Digital Camera	12-May-15	15-May-15	Shannon Nguyen
3005	Camera	Saris Zoom Z-60 Digital Camera	27-Jul-15	06-Aug-15	Sela Shepard
3070	Camera	Omega PixL Digital Camcorder	06-Oct-15		Min Seung
1025	Laptop	15" EDI SmartPad L200-4X	26-Sep-15	04-Oct-15	Min Seung
2050	Other	EDI SmartBoard L500-1	05-Oct-15	06-Oct-15	Anthony Liddell
2051	Other	EDI SmartBoard L500-1	01-Oct-15	05-Oct-15	Sofie Ragnar
3800	Other	U-Go Saris DigiCam Printer II	04-Aug-15	05-Aug-15	Hank Sorenson
3900	Other	U-Go Saris Label Maker	13-Jun-15	20-Jun-15	Clint Gosse
4800	Other	7N Deluxe Camera Travel Bag	27-Jul-15	06-Aug-15	Sela Shepard
6100	Projector	Omega VisX 1.0	28-Sep-15	01-Oct-15	Win Armitage
6101	Projector	Omega VisX 1.0	26-Sep-15	27-Sep-15	Michael Earley
6102	Projector	Omega VisX 1.0	22-Aug-15	23-Aug-15	Jamila Kyle

To use advanced number filters:

Advanced number filters allow you to manipulate numbered data in different ways. In this example, we'll display only certain types of equipment based on the range of ID numbers.

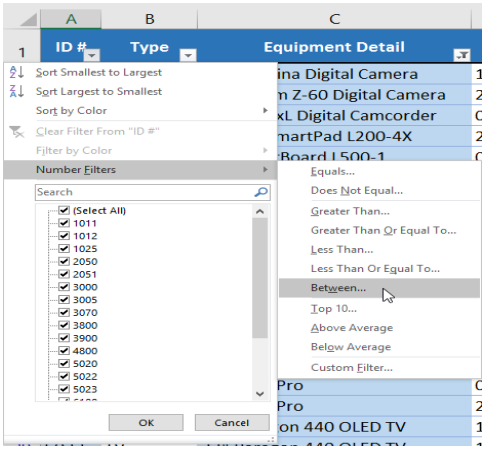
Select the **Data** tab on the Ribbon, then click the **Filter** command. A **drop-down arrow** will appear in the header cell for each column. **Note**: If you've already added filters to your worksheet, you can skip this step.



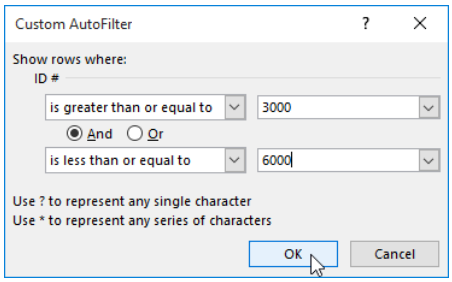
ID #	Type	Equipment Detail	Checked Out	Checked In	Checked Out By
3000	[illegible]	Saris Lumina Digital Camera	12-May-15	15-May-15	Shannon Nguyen
3005	Camera	Saris Zoom Z-60 Digital Camera	27-Jul-15	06-Aug-15	Sela Shepard
3070	Camera	Omega PixL Digital Camcorder	06-Oct-15		Min Seung
1025	Laptop	15" EDI SmartPad L200-4X	26-Sep-15	04-Oct-15	Min Seung
2050	Other	EDI SmartBoard L500-1	05-Oct-15	06-Oct-15	Anthony Liddell
2051	Other	EDI SmartBoard L500-1	01-Oct-15	05-Oct-15	Sofie Ragnar
3800	Other	U-Go Saris DigiCam Printer II	04-Aug-15	05-Aug-15	Hank Sorenson
3900	Other	U-Go Saris Label Maker	13-Jun-15	20-Jun-15	Clint Gosse
4800	Other	7N Deluxe Camera Travel Bag	27-Jul-15	06-Aug-15	Sela Shepard
6100	Projector	Omega VisX 1.0	28-Sep-15	01-Oct-15	Win Armitage
6101	Projector	Omega VisX 1.0	26-Sep-15	27-Sep-15	Michael Earley

1.Click the **drop-down arrow** for the column you want to filter. In our example, we'll filter column **A** to view only a certain range of ID numbers.

2.The **Filter menu** will appear. Hover the mouse over **Number Filters**, then select the desired number filter from the drop-down menu. In our example, we'll choose **Between** to view ID numbers between a specific number range.



3.The **Custom AutoFilter** dialog box will appear. Enter the desired **number(s)** to the right of each filter, then click **OK**. In our example, we want to filter for ID numbers greater than or equal to **3000** but less than or equal to **6000**, which will display ID numbers in the 3000-6000 range.



4.The data will be filtered by the selected number filter. In our example, only items with an ID number between **3000** and **6000** are visible.

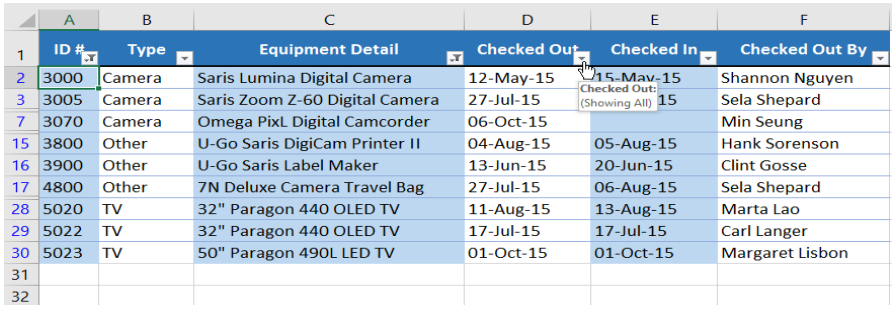
ID #	Type	Equipment Detail	Checked Out	Checked In	Checked Out By
3000	Camera	Saris Lumina Digital Camera	12-May-15	15-May-15	Shannon Nguyen
3005	Camera	Saris Zoom Z-60 Digital Camera	27-Jul-15	06-Aug-15	Sela Shepard
3070	Camera	Omega PixL Digital Camcorder	06-Oct-15		Min Seung
3800	Other	U-Go Saris DigiCam Printer II	04-Aug-15	05-Aug-15	Hank Sorenson
3900	Other	U-Go Saris Label Maker	13-Jun-15	20-Jun-15	Clint Gosse
4800	Other	7N Deluxe Camera Travel Bag	27-Jul-15	06-Aug-15	Sela Shepard
5020	TV	32" Paragon 440 OLED TV	11-Aug-15	13-Aug-15	Marta Lao
5022	TV	32" Paragon 440 OLED TV	17-Jul-15	17-Jul-15	Carl Langer
5023	TV	50" Paragon 490L LED TV	01-Oct-15	01-Oct-15	Margaret Lisbon

To use advanced date filters:

Advanced date filters can be used to view information from a certain time period, such as last year, next quarter, or between two dates. In this example, we'll use advanced date filters to view only equipment that has been checked out between July 15 and August 15.

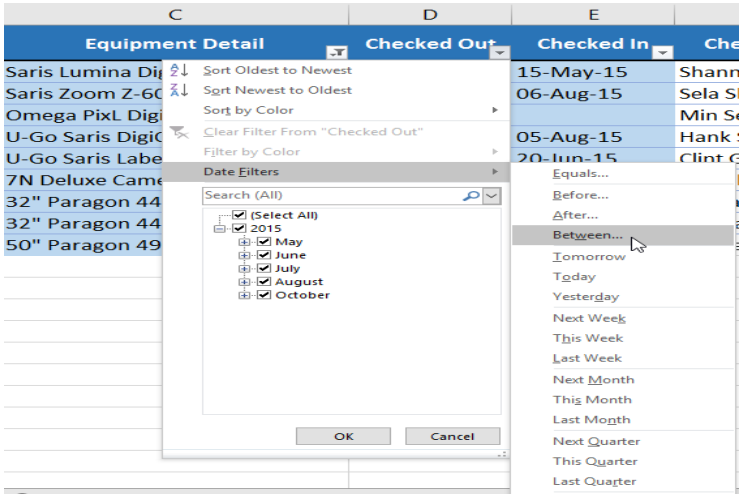
Select the **Data** tab, then click the **Filter** command. A **drop-down arrow** will appear in the header cell for each column. **Note**: If you've already added filters to your worksheet, you can skip this step.

1.Click the **drop-down arrow** for the column you want to filter. In our example, we'll filter column **D** to view only a certain range of dates.

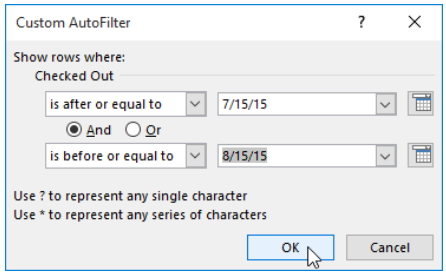


	A	B	C	D	E	F
1	ID #	Type	Equipment Detail	Checked Out	Checked In	Checked Out By
2	3000	Camera	Saris Lumina Digital Camera	12-May-15	15-May-15	Shannon Nguyen
3	3005	Camera	Saris Zoom Z-60 Digital Camera	27-Jul-15	15	Sela Shepard
7	3070	Camera	Omega PixL Digital Camcorder	06-Oct-15		Min Seung
15	3800	Other	U-Go Saris DigiCam Printer II	04-Aug-15	05-Aug-15	Hank Sorenson
16	3900	Other	U-Go Saris Label Maker	13-Jun-15	20-Jun-15	Clint Gosse
17	4800	Other	7N Deluxe Camera Travel Bag	27-Jul-15	06-Aug-15	Sela Shepard
28	5020	TV	32" Paragon 440 OLED TV	11-Aug-15	13-Aug-15	Marta Lao
29	5022	TV	32" Paragon 440 OLED TV	17-Jul-15	17-Jul-15	Carl Langer
30	5023	TV	50" Paragon 490L LED TV	01-Oct-15	01-Oct-15	Margaret Lisbon
31						
32						

2.The **Filter menu** will appear. Hover the mouse over **Date Filters**, then select the desired date filter from the drop-down menu. In our example, we'll select **Between** to view equipment that has been checked out between July 15 and August 15.



3.The **Custom AutoFilter** dialog box will appear. Enter the desired **date(s)** to the right of each filter, then click **OK**. In our example, we want to filter for dates after or equal to **July 15, 2015**, and before or equal to **August 15, 2015**, which will display a range between these dates.



4.The worksheet will be filtered by the selected date filter. In our example, we can now see which items have been checked out **between July 15 and August 15**.

	A	B	C	D	E	F
1	ID #	Type	Equipment Detail	Checked Out	Checked In	Checked Out By
3	3005	Camera	Saris Zoom Z-60 Digital Camera	27-Jul-15	06-Aug-15	Sela Shepard
15	3800	Other	U-Go Saris DigiCam Printer II	04-Aug-15	05-Aug-15	Hank Sorenson
17	4800	Other	7N Deluxe Camera Travel Bag	27-Jul-15	06-Aug-15	Sela Shepard
28	5020	TV	32" Paragon 440 OLED TV	11-Aug-15	13-Aug-15	Marta Lao
29	5022	TV	32" Paragon 440 OLED TV	17-Jul-15	17-Jul-15	Carl Langer
31						
32						

CHAPTER-21- GROUPS AND SUBTOTALS

Introduction

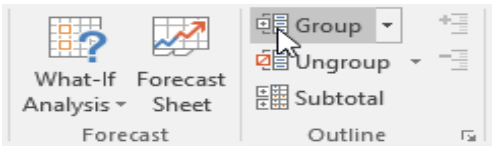
Worksheets with a lot of content can sometimes feel overwhelming and even become difficult to read. Fortunately, Excel can organize data into **groups**, allowing you to easily **show** and **hide** different sections of your worksheet. You can also summarize different groups using the **Subtotal** command and create an **outline** for your worksheet.

To group rows or columns:

1.Select the **rows** or **columns** you want to group. In this example, we'll select columns **B**, **C**, and **D**.

	A	B	C	D	E
1	Homeroom #	First Name	Last Name	Payment Method	T-Shirt Size
2	105	Melissa	White	Debit Card	Small
3	105	Esther	Yaron	Pending	Small
4	135	Anisa	Naser	Check Bounced	Small
5	220-A	Brigid	Ellison	Cash	Small
6	220-A	Christopher	Peyton-Gomez	Check	Small
7	220-B	Michael	Lazar	Cash	Small
8	220-B	Malik	Reynolds	Cash	Small
9	220-B	Wendy	Shaw	Cash	Small
10	105	Nathan	Albee	Check	Medium

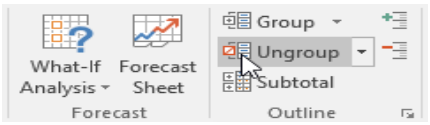
2.Select the **Data** tab on the **Ribbon**, then click the **Group** command.



3.The selected rows or columns will be **grouped**. In our example, columns **B**, **C**, and **D** are grouped.

	A	B	C	D	E
1	Homeroom #	First Name	Last Name	Payment Method	T-Shirt Size
2	105	Melissa	White	Debit Card	Small
3	105	Esther	Yaron	Pending	Small
4	135	Anisa	Naser	Check Bounced	Small
5	220-A	Brigid	Ellison	Cash	Small
6	220-A	Christopher	Peyton-Gomez	Check	Small
7	220-B	Michael	Lazar	Cash	Small
8	220-B	Malik	Reynolds	Cash	Small
9	220-B	Wendy	Shaw	Cash	Small
10	105	Nathan	Albee	Check	Medium

4.To **ungroup** data, select the grouped rows or columns, then click the **Ungroup** command.



To hide and show groups:

1.To hide a group, click the minus sign, also known as the **Hide Detail** button.

	A	B	C	D	E
1	Homeroom #	First Name	Last Name	Payment Method	T-Shirt Size
2	105	Melissa	White	Debit Card	Small
3	105	Esther	Yaron	Pending	Small
4	135	Anisa	Naser	Check Bounced	Small
5	220-A	Brigid	Ellison	Cash	Small
6	220-A	Christopher	Peyton-Gomez	Check	Small
7	220-B	Michael	Lazar	Cash	Small
8	220-B	Malik	Reynolds	Cash	Small
9	220-B	Wendy	Shaw	Cash	Small
10	105	Nathan	Albee	Check	Medium

2.The group will be **hidden**. To show a hidden group, click the plus sign, also known as the **Show Detail** button.

	A	E	F	G
1	Homeroom #	T-Shirt Size		
2	105	Small		
3	105	Small		
4	135	Small		
5	220-A	Small		
6	220-A	Small		
7	220-B	Small		
8	220-B	Small		
9	220-B	Small		
10	105	Medium		

Creating subtotals

The **Subtotal** command allows you to automatically **create groups** and use common functions like SUM, COUNT, and AVERAGE to help **summarize** your data. For example, the **Subtotal** command could help to calculate the cost of office supplies by type from a large inventory order. It will create a hierarchy of groups, known as an **outline**, to help organize your worksheet.

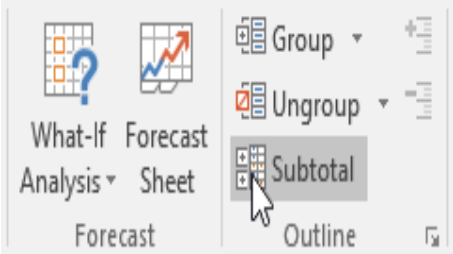
To create a subtotal:

In our example, we'll use the Subtotal command with a T-shirt order form to determine how many T-shirts were ordered in each size (Small, Medium, Large, and X-Large). This will create an **outline** for our worksheet with a **group** for each T-shirt size and then **count** the total number of shirts in each group.

1.First, **sort** your worksheet by the data you want to subtotal. In this example, we'll create a subtotal for each T-shirt size, so our worksheet has been sorted by T-shirt size from smallest to largest.

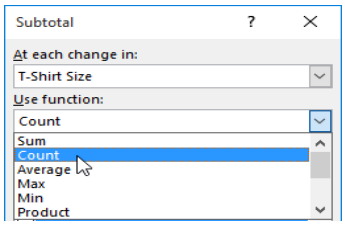
	A	B	C	D	E
1	Homeroom #	First Name	Last Name	Payment Method	T-Shirt Size
2	105	Melissa	White	Debit Card	Small
3	105	Esther	Yaron	Pending	Small
4	135	Anisa	Naser	Check Bounced	Small
5	220-A	Brigid	Ellison	Cash	Small
6	220-A	Christopher	Peyton-Gomez	Check	Small
7	220-B	Michael	Lazar	Cash	Small
8	220-B	Malik	Reynolds	Cash	Small
9	220-B	Wendy	Shaw	Cash	Small
10	105	Nathan	Albee	Check	Medium
11	105	Christiana	Chen	Check Bounced	Medium
12	105	Sidney	Kelly	Check	Medium
13	110	Matt	Benson	Money Order	Medium
14	110	Gabriel	Del Toro	Cash	Medium

2.Select the **Data** tab, then click the **Subtotal** command.

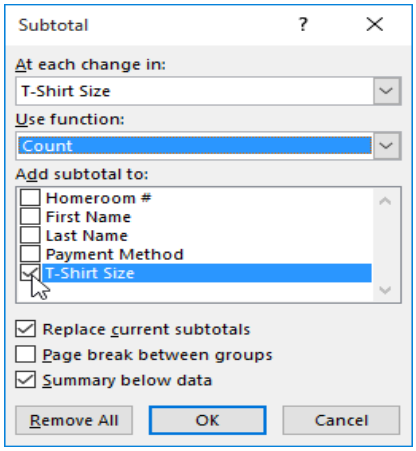


The **Subtotal** dialog box will appear. Click the drop-down arrow for the **At each change in:** field to select the **column** you want to subtotal. In our example, we'll select **T-Shirt Size**.

3.Click the drop-down arrow for the **Use function:** field to select the **function** you want to use. In our example, we'll select **COUNT** to count the number of shirts ordered in each size.



4.In the **Add subtotal to:** field, select the **column** where you want the **calculated subtotal** to appear. In our example, we'll select **T-Shirt Size**. When you're satisfied with your selections, click **OK**.



5.The worksheet will be **outlined** into **groups**, and the **subtotal** will be listed below each group. In our example, the data is now grouped by T-shirt size, and the number of shirts ordered in that size appears below each group.

	A	B	C	D	E
1	Homeroom #	First Name	Last Name	Payment Method	T-Shirt Size
2	105	Melissa	White	Debit Card	Small
3	105	Esther	Yaron	Pending	Small
4	135	Anisa	Naser	Check Bounced	Small
5	220-A	Brigid	Ellison	Cash	Small
6	220-A	Christopher	Peyton-Gomez	Check	Small
7	220-B	Michael	Lazar	Cash	Small
8	220-B	Malik	Reynolds	Cash	Small
9	220-B	Wendy	Shaw	Cash	Small
10				**Small Count**	8
11	105	Nathan	Albee	Check	Medium
12	105	Christiana	Chen	Check Bounced	Medium
13	105	Sidney	Kelly	Check	Medium
14	110	Matt	Benson	Money Order	Medium
15	110	Gabriel	Del Toro	Cash	Medium
16	135	James	Panarello	Check	Medium
17	135	Chantal	Weller	Debit Card	Medium
18	220-A	Chevonne	Means	Money Order	Medium
19	220-B	Samantha	Bell	Check	Medium
20	220-B	Avery	Kelly	Debit Card	Medium
21				**Medium Count**	10

To view groups by level:

When you create subtotals, your worksheet it is divided into different **levels**. You can switch between these levels to quickly control how much information is displayed in the worksheet by clicking the **Level** buttons to the left of the worksheet. In our example, we'll switch between all three levels in our outline. While this example contains only three levels, Excel can accommodate up to eight.

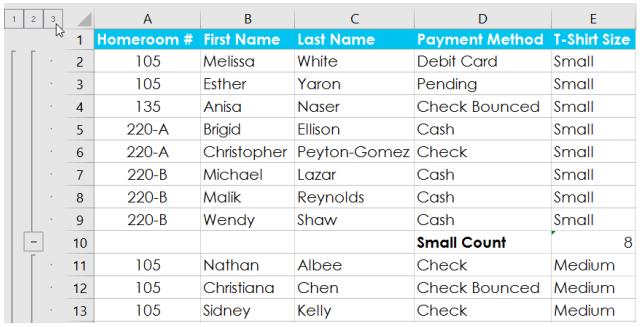
1.Click the **lowest level** to display the least detail. In our example, we'll select **level 1**, which contains only the **grand count**, or total number of T-shirts ordered.

	A	B	C	D	E
1	Homeroom #	First Name	Last Name	Payment Method	T-Shirt Size
33				**Grand Count**	27
34					
35					

2.Click the **next level** to expand the detail. In our example, we'll select **level 2**, which contains each subtotal row but hides all other data from the worksheet.

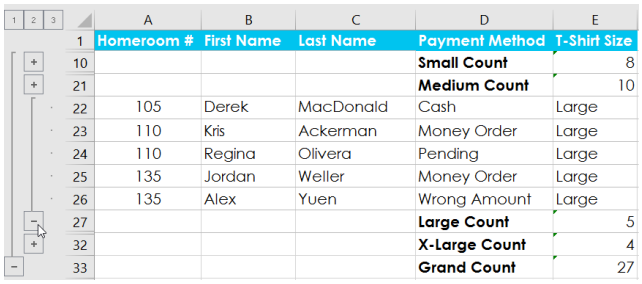
	A	B	C	D	E
1	Homeroom #	First Name	Last Name	Payment Method	T-Shirt Size
10				**Small Count**	8
21				**Medium Count**	10
27				**Large Count**	5
32				**X-Large Count**	4
33				**Grand Count**	27

3.Click the **highest level** to view and expand all of your worksheet data. In our example, we'll select **level 3**.



	A	B	C	D	E
1	Homeroom #	First Name	Last Name	Payment Method	T-Shirt Size
2	105	Melissa	White	Debit Card	Small
3	105	Esther	Yaron	Pending	Small
4	135	Anisa	Naser	Check Bounced	Small
5	220-A	Brigid	Ellison	Cash	Small
6	220-A	Christopher	Peyton-Gomez	Check	Small
7	220-B	Michael	Lazar	Cash	Small
8	220-B	Malik	Reynolds	Cash	Small
9	220-B	Wendy	Shaw	Cash	Small
10				**Small Count**	8
11	105	Nathan	Albee	Check	Medium
12	105	Christiana	Chen	Check Bounced	Medium
13	105	Sidney	Kelly	Check	Medium

4.You can also use the **Show** and **Hide Detail** buttons to show and hide the groups within the outline.

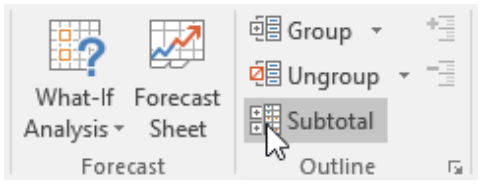


	A	B	C	D	E
1	Homeroom #	First Name	Last Name	Payment Method	T-Shirt Size
10				**Small Count**	8
21				**Medium Count**	10
22	105	Derek	MacDonald	Cash	Large
23	110	Kris	Ackerman	Money Order	Large
24	110	Regina	Olivera	Pending	Large
25	135	Jordan	Weller	Money Order	Large
26	135	Alex	Yuen	Wrong Amount	Large
27				**Large Count**	5
32				**X-Large Count**	4
33				**Grand Count**	27

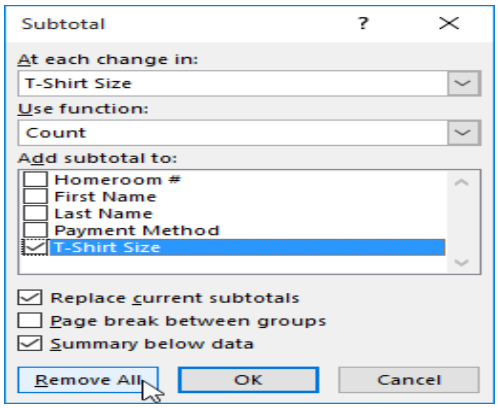
To remove subtotals:

Sometimes you may not want to keep subtotals in your worksheet, especially if you want to reorganize data in different ways. If you no longer want to use subtotaling, you'll need **remove it** from your worksheet.

1.Select the **Data** tab, then click the **Subtotal** command.

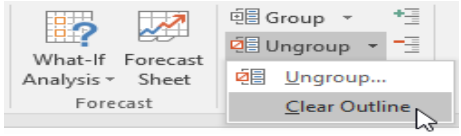


2.The **Subtotal** dialog box will appear. Click **Remove All**.



All worksheet data will be **ungrouped**, and the subtotals will be **removed**.

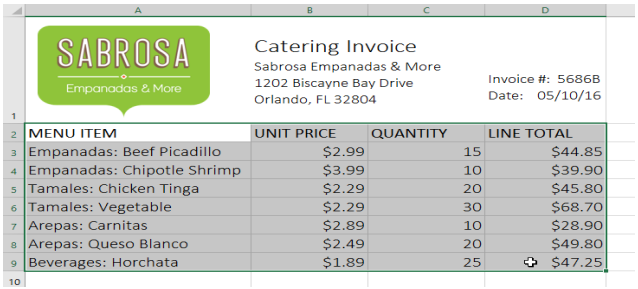
3.To remove all groups without deleting the subtotals, click the **Ungroup** command drop-down arrow, then choose **Clear Outline**.



CHAPTER-22- TABLES

Introduction

Once you've entered information into your worksheet, you may want to format your data as a **table**. Just like regular formatting, tables can improve the **look and feel** of your workbook, and they'll also help you **organize** your content and make your data easier to use. Excel includes several **tools** and **predefined table styles**, allowing you to create tables quickly and easily.

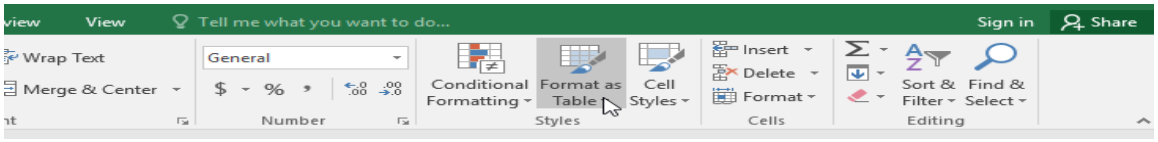


MENU ITEM	UNIT PRICE	QUANTITY	LINE TOTAL
Empanadas: Beef Picadillo	$2.99	15	$44.85
Empanadas: Chipotle Shrimp	$3.99	10	$39.90
Tamales: Chicken Tinga	$2.29	20	$45.80
Tamales: Vegetable	$2.29	30	$68.70
Arepas: Carnitas	$2.89	10	$28.90
Arepas: Queso Blanco	$2.49	20	$49.80
Beverages: Horchata	$1.89	25	$47.25

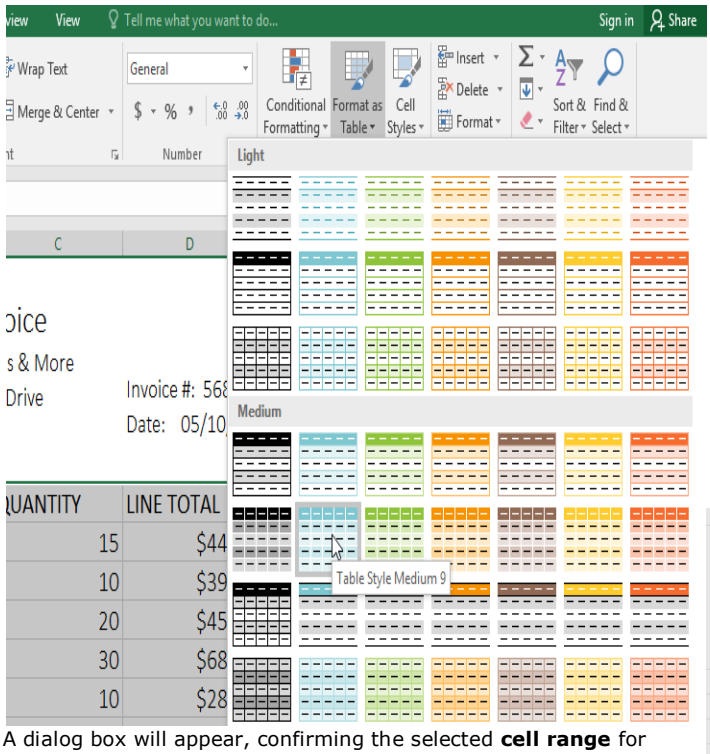
To format data as a table:

1.Select the **cells** you want to format as a table. In our example, we'll select the cell range **A2:D9**.

2.From the **Home** tab, click the **Format as Table** command in the **Styles** group.

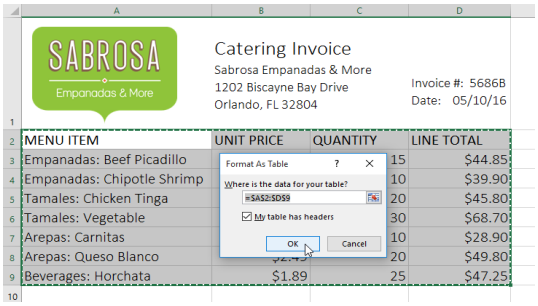


3.Select a **table style** from the drop-down menu.



A dialog box will appear, confirming the selected **cell range** for the table.

4.If your table has **headers**, check the box next to **My table has headers**, then click **OK**.



5.The cell range will be formatted in the selected **table style**.

MENU ITEM	UNIT PRICE	QUANTITY	LINE TOTAL
Empanadas: Beef Picadillo	$2.99	15	$44.85
Empanadas: Chipotle Shrimp	$3.99	10	$39.90
Tamales: Chicken Tinga	$2.29	20	$45.80
Tamales: Vegetable	$2.29	30	$68.70
Arepas: Carnitas	$2.89	10	$28.90
Arepas: Queso Blanco	$2.49	20	$49.80
Beverages: Horchata	$1.89	25	$47.25

Modifying tables

It's easy to modify the look and feel of any table after adding it to a worksheet. Excel includes many different options for customizing a table, including **adding rows or columns** and changing the **table style**.

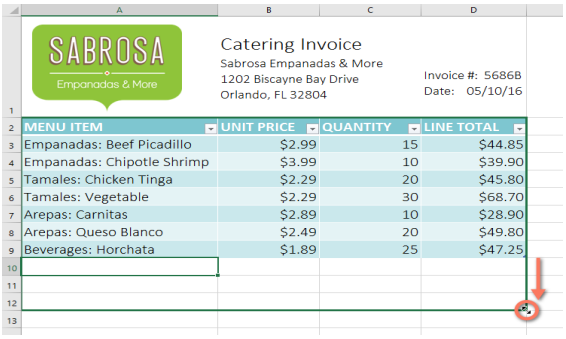
To add rows or columns to a table:

If you need to fit more content into your table, Excel allows you to modify the **table size** by including additional rows and columns. There are two simple ways to change the table size:

1.Enter **new content** into any adjacent row or column. The row or column will be roped into the table automatically.

MENU ITEM	UNIT PRICE	QUANTITY	LINE TOTAL
Empanadas: Beef Picadillo	$2.99	15	$44.85
Empanadas: Chipotle Shrimp	$3.99	10	$39.90
Tamales: Chicken Tinga	$2.29	20	$45.80
Tamales: Vegetable	$2.29	30	$68.70
Arepas: Carnitas	$2.89	10	$28.90
Arepas: Queso Blanco	$2.49	20	$49.80
Beverages: Horchata	$1.89	25	$47.25
Beverages: Lemonade			

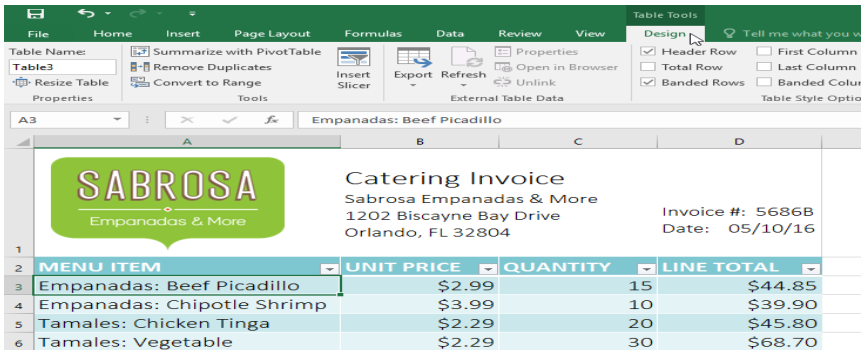
2.Click and drag the **bottom-right corner** of the table to create additional rows or columns.



MENU ITEM	UNIT PRICE	QUANTITY	LINE TOTAL
Empanadas: Beef Picadillo	$2.99	15	$44.85
Empanadas: Chipotle Shrimp	$3.99	10	$39.90
Tamales: Chicken Tinga	$2.29	20	$45.80
Tamales: Vegetable	$2.29	30	$68.70
Arepas: Carnitas	$2.89	10	$28.90
Arepas: Queso Blanco	$2.49	20	$49.80
Beverages: Horchata	$1.89	25	$47.25

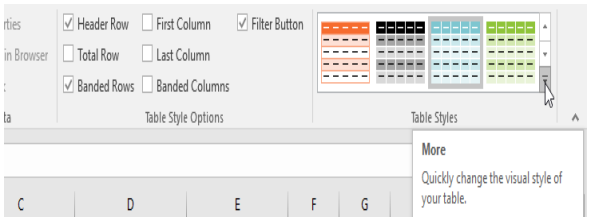
To change the table style:

1.Select **any cell** in your table, then click the **Design** tab.

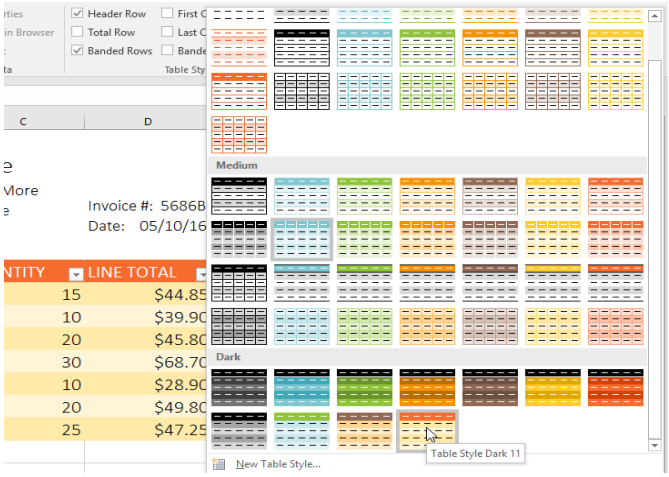


MENU ITEM	UNIT PRICE	QUANTITY	LINE TOTAL
Empanadas: Beef Picadillo	$2.99	15	$44.85
Empanadas: Chipotle Shrimp	$3.99	10	$39.90
Tamales: Chicken Tinga	$2.29	20	$45.80
Tamales: Vegetable	$2.29	30	$68.70

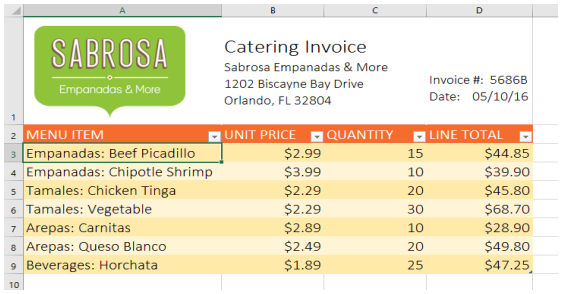
2.Locate the **Table Styles** group, then click the **More** drop-down arrow to see all available table styles.



3.Select the desired **table style**.



4.The **table style** will be applied.



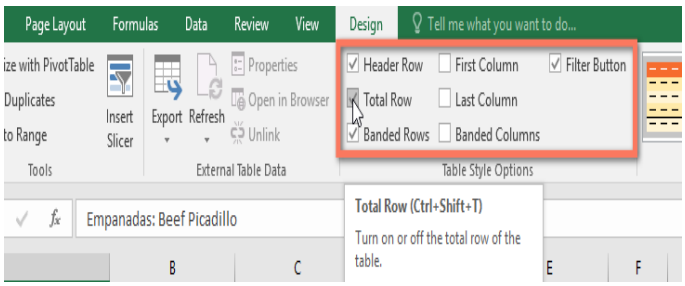
MENU ITEM	UNIT PRICE	QUANTITY	LINE TOTAL
Empanadas: Beef Picadillo	$2.99	15	$44.85
Empanadas: Chipotle Shrimp	$3.99	10	$39.90
Tamales: Chicken Tinga	$2.29	20	$45.80
Tamales: Vegetable	$2.29	30	$68.70
Arepas: Carnitas	$2.89	10	$28.90
Arepas: Queso Blanco	$2.49	20	$49.80
Beverages: Horchata	$1.89	25	$47.25

To modify table style options:

You can turn various options **on** or **off** to change the appearance of any table. There are six options: **Header Row**, **Total Row**, **Banded Rows**, **First Column**, **Last Column**, and **Banded Columns**.

Select **any cell** in your table, then click the **Design** tab.

1.Check or **uncheck** the desired options in the **Table Style Options** group. In our example, we'll check **Total Row** to automatically include a **total** for our table.



2.The table style will be modified. In our example, a **new row** has been added to the table with a **formula** that automatically calculates the total value of the cells in column D.

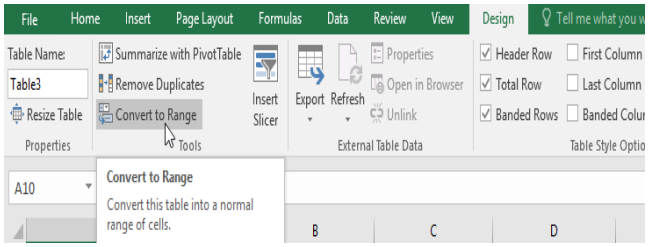
MENU ITEM	UNIT PRICE	QUANTITY	LINE TOTAL
Empanadas: Beef Picadillo	$2.99	15	$44.85
Empanadas: Chipotle Shrimp	$3.99	10	$39.90
Tamales: Chicken Tinga	$2.29	20	$45.80
Tamales: Vegetable	$2.29	30	$68.70
Arepas: Carnitas	$2.89	10	$28.90
Arepas: Queso Blanco	$2.49	20	$49.80
Beverages: Horchata	$1.89	25	$47.25
Total			$325.20

To remove a table:

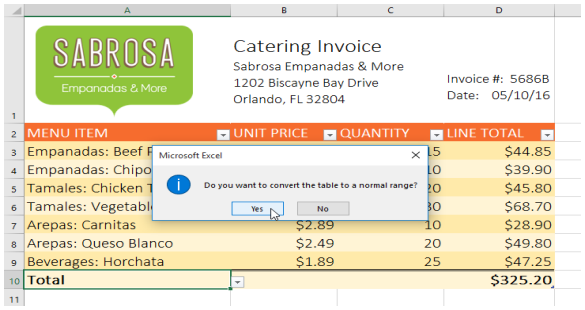
It's possible to remove a table from your workbook without losing any of your data. However, this can cause issues with certain types of **formatting**, including colors, fonts, and banded rows. Before you use this option, make sure you're prepared to reformat your cells if necessary.

Select **any cell** in your table, then click the **Design** tab.

1.Click the **Convert to Range** command in the **Tools** group.



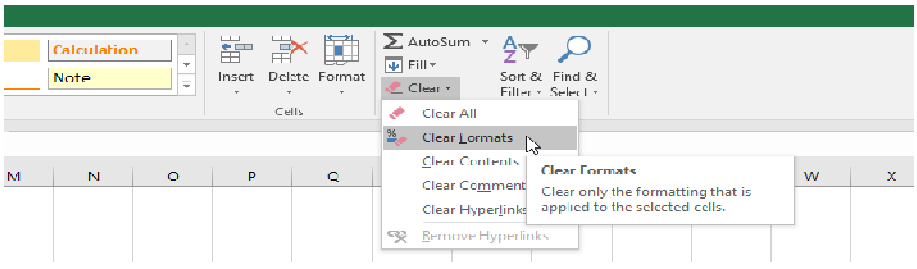
2.A dialog box will appear. Click **Yes**.



3.The range will no longer be a table, but the cells will retain their data and formatting.

MENU ITEM	UNIT PRICE	QUANTITY	LINE TOTAL
Empanadas: Beef Picadillo	$2.99	15	$44.85
Empanadas: Chipotle Shrimp	$3.99	10	$39.90
Tamales: Chicken Tinga	$2.29	20	$45.80
Tamales: Vegetable	$2.29	30	$68.70
Arepas: Carnitas	$2.89	10	$28.90
Arepas: Queso Blanco	$2.49	20	$49.80
Beverages: Horchata	$1.89	25	$47.25
Total			$325.20

4.To restart your formatting from scratch, click the **Clear** command on the **Home** tab. Next, choose **Clear Formats** from the menu.



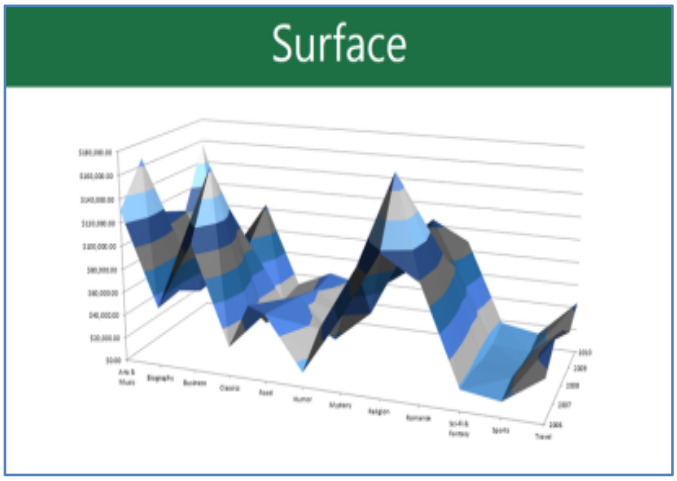
CHAPTER-23- CHARTS

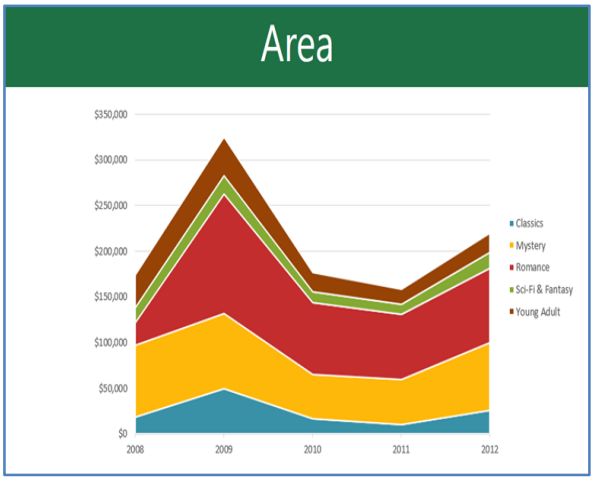
Introduction

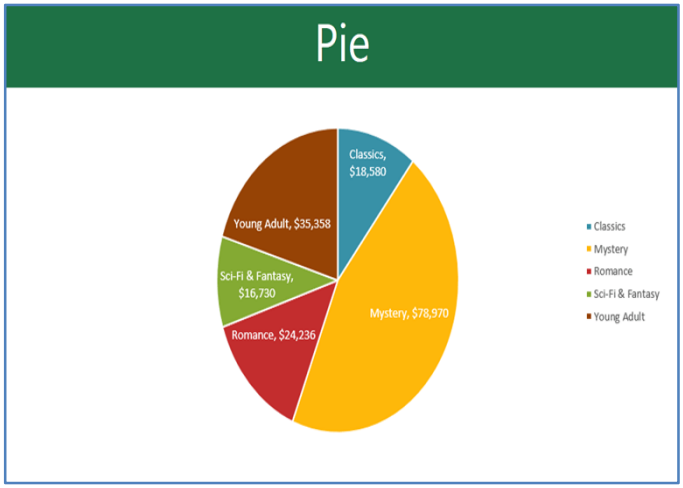
It can be difficult to interpret Excel workbooks that contain a lot of data. **Charts** allow you to illustrate your workbook data **graphically**, which makes it easy to visualize **comparisons** and **trends**.

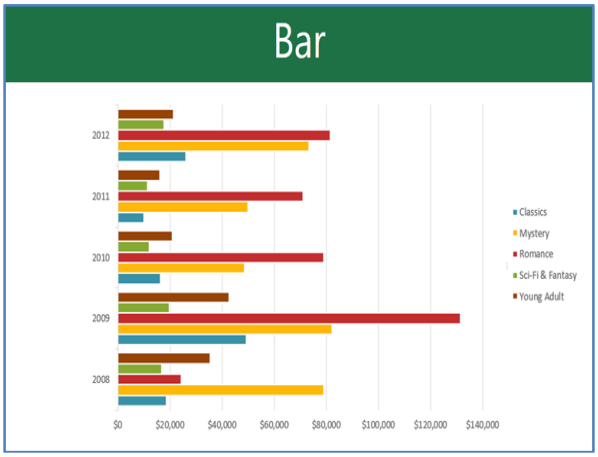
Understanding charts

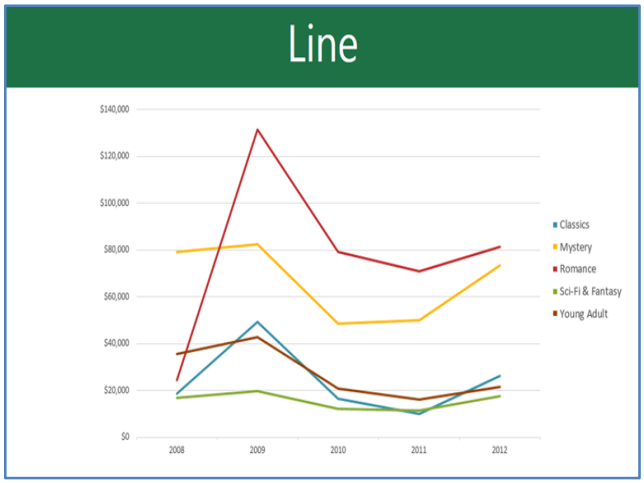
Excel has several different **types of charts**, allowing you to choose the one that best fits your data. In order to use charts effectively, you'll need to understand how different charts are used.

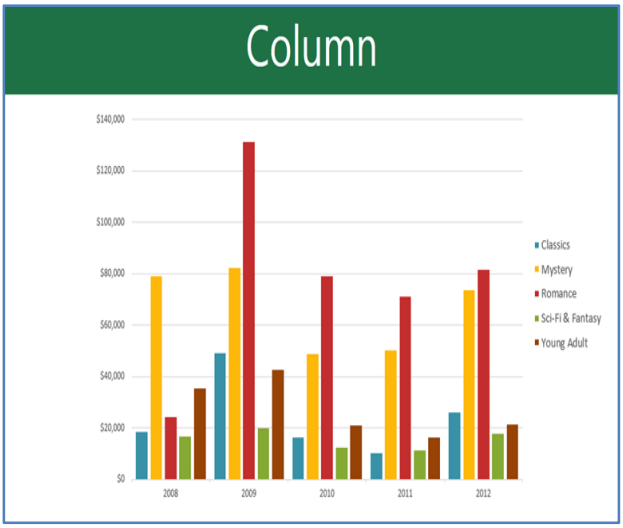




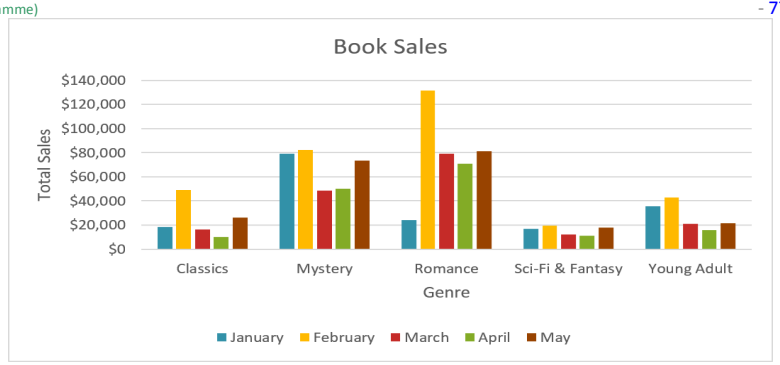






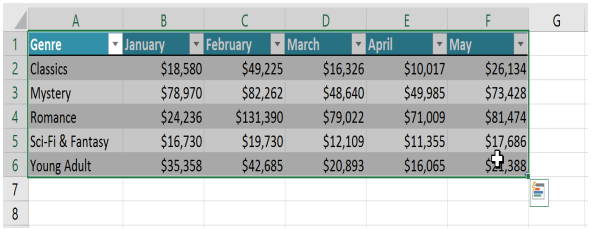


In addition to chart types, you'll need to understand how to **read a chart**. Charts contain several different elements, or parts, that can help you interpret the data.



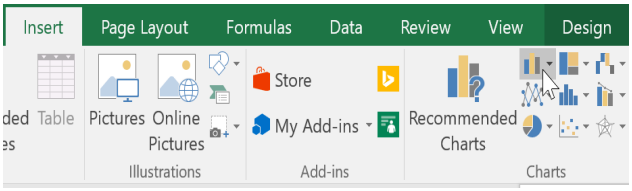
To insert a chart:

1.Select the **cells** you want to chart, including the **column titles** and **row labels**. These cells will be the source data for the chart. In our example, we'll select cells A1:F6.

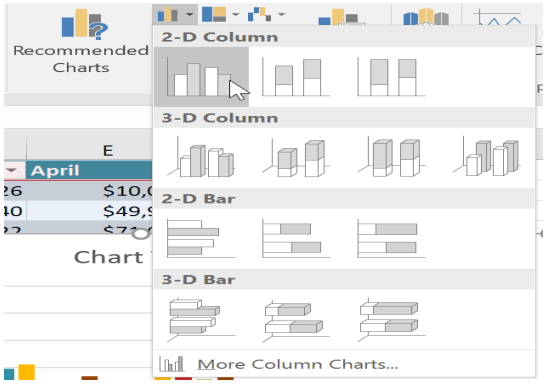


	A	B	C	D	E	F
1	Genre	January	February	March	April	May
2	Classics	$18,580	$49,225	$16,326	$10,017	$26,134
3	Mystery	$78,970	$82,262	$48,640	$49,985	$73,428
4	Romance	$24,236	$131,390	$79,022	$71,009	$81,474
5	Sci-Fi & Fantasy	$16,730	$19,730	$12,109	$11,355	$17,686
6	Young Adult	$35,358	$42,685	$20,893	$16,065	$21,388

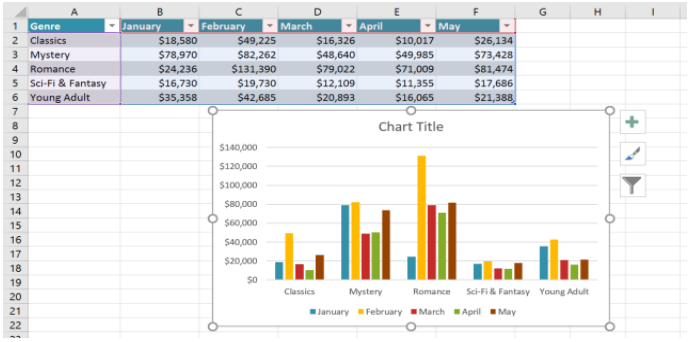
2.From the **Insert** tab, click the desired **Chart** command. In our example, we'll select **Column**.



3.Choose the desired **chart type** from the drop-down menu.



4.The Selected chart will be inserted into the worksheet.



5.If you're not sure which type of chart to use, the **Recommended Charts** command will suggest several different charts based on the source data.

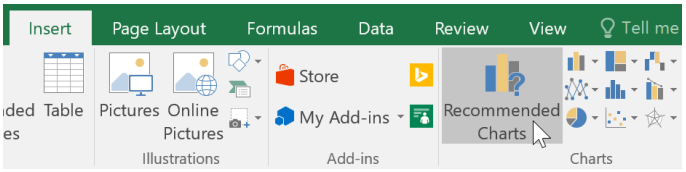
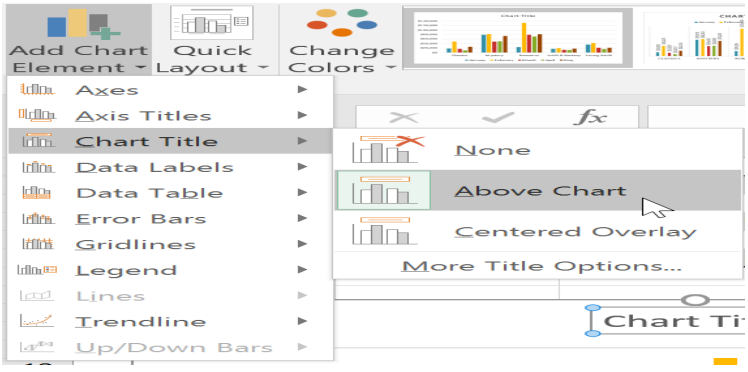


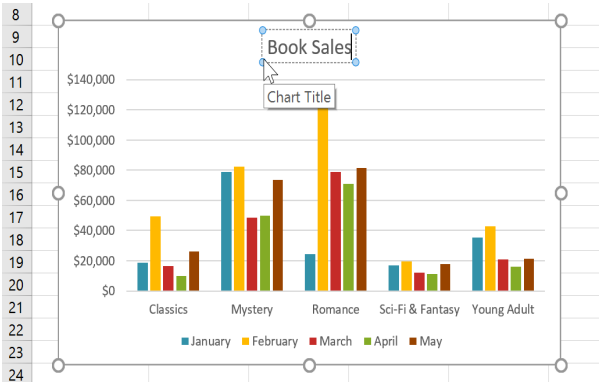
Chart and layout style

After inserting a chart, there are several things you may want to change about the way your data is displayed. It's easy to edit a chart's **layout** and **style** from the **Design** tab.



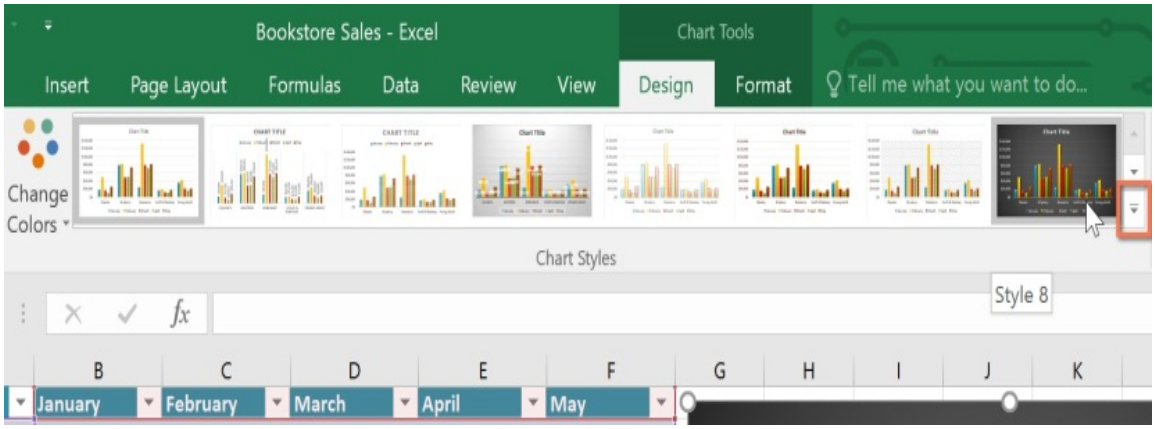
1.Excel allows you to add **chart elements**—such as **chart titles**, **legends**, and **data labels**—to make your chart easier to read. To add a chart element, click the **Add Chart Element** command on the **Design** tab, then choose the **desired element** from the drop-down menu.

2.To **edit** a chart element, like a **chart title**, simply double-click the **placeholder** and begin typing.



3.If you don't want to add chart elements individually, you can use one of Excel's predefined layouts. Simply click the **Quick Layout** command, then choose the **desired layout** from the drop-down menu.

4.Excel also includes several **chart styles**, which allow you to quickly modify the look and feel of your chart. To change the chart style, select the **desired style** from the **Chart styles** group. You can also click the drop-down arrow on the right to see more styles.

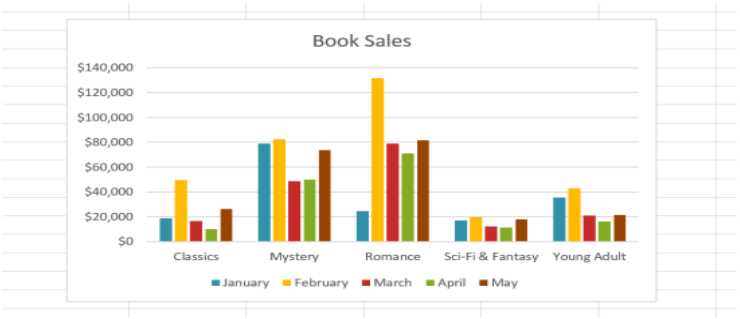


Other chart options

There are many other ways to customize and organize your charts. For example, Excel allows you to **rearrange** a chart's data, change the **chart type**, and even **move** the chart to a different location in a workbook.

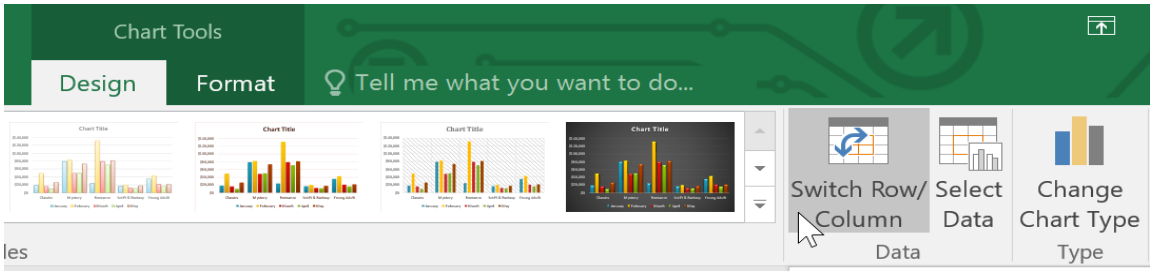
To switch row and column data:

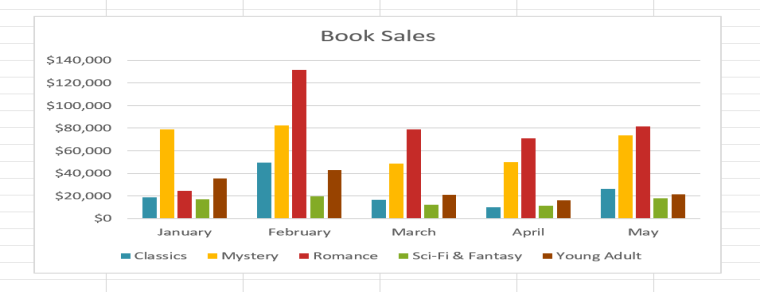
Sometimes you may want to change the way charts **group** your data. For example, in the chart below Book Sales data is grouped **by genre**, with columns for **each month**. However, we could switch the rows and columns so the chart will group the data **by month**, with columns for **each genre**. In both cases, the chart contains the same data—it's just organized differently.



Select the **chart** you want to modify.

From the **Design** tab, select the **Switch Row/Column** command.



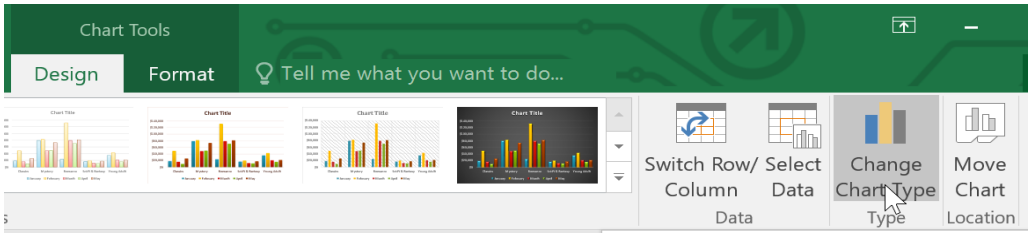


The rows and columns will be **switched**. In our example, the data is now grouped by month, with columns for each genre.

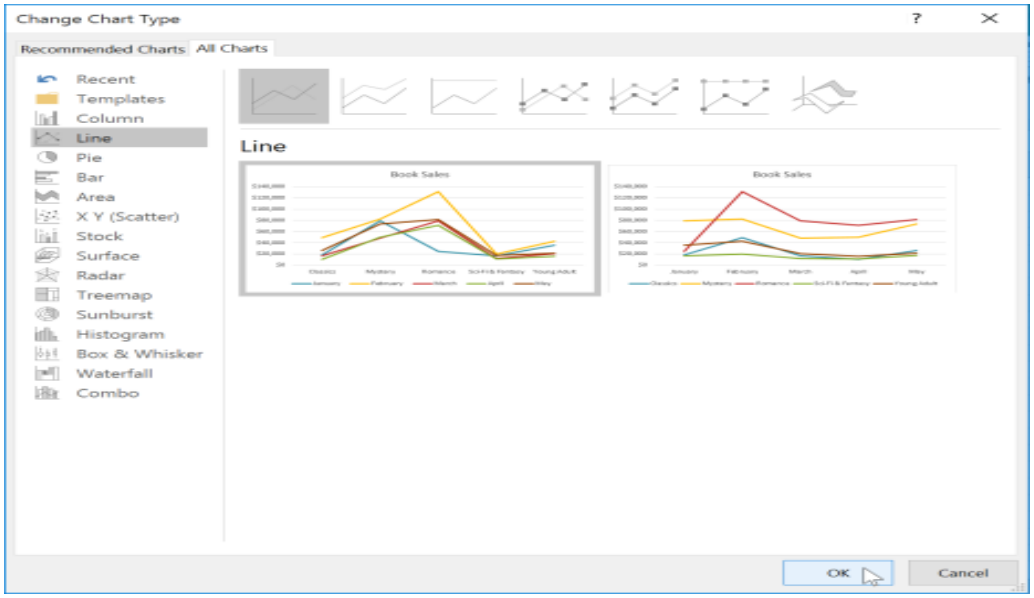
To change the chart type:

If you find that your data isn't well suited to a certain chart, it's easy to switch to a new chart type. In our example, we'll change our chart from a column chart to a line chart.

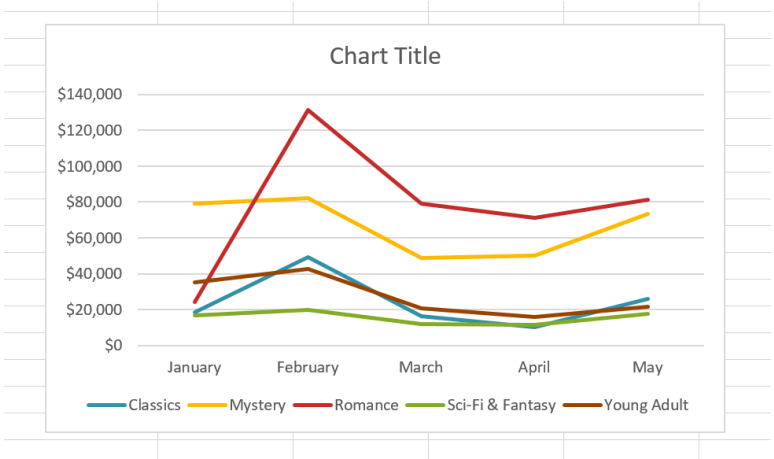
1.From the **Design** tab, click the **Change Chart Type** command.



2.The **Change Chart Type** dialog box will appear. Select a new chart **type** and **layout**, then click **OK**. In our example, we'll choose a **Line** chart.



3.The selected chart type will appear. In our example, the line chart makes it easier to see trends in sales data over time.

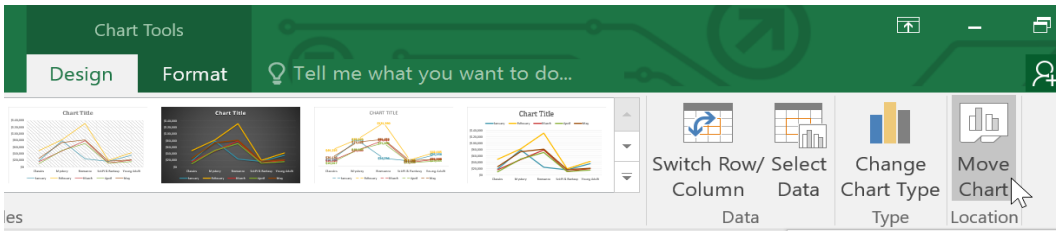


To move a chart:

Whenever you insert a new chart, it will appear as an object on the same worksheet that contains its source data. Alternatively, you can **move** the chart to a **new worksheet** to help keep your data organized.

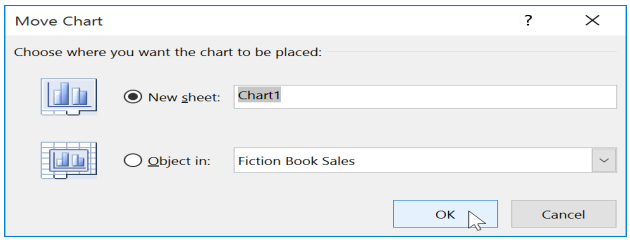
Select the **chart** you want to move.

1.Click the **Design** tab, then select the **Move Chart** command.

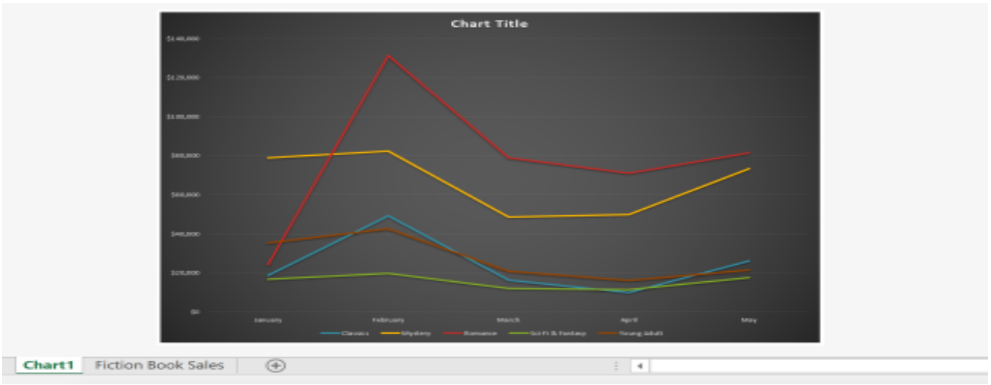


2.The **Move Chart** dialog box will appear. Select the **desired location** for the chart. In our example, we'll choose to move it to a **New sheet**, which will create a new worksheet.

Click **OK**.



3.The chart will appear in the selected location. In our example, the chart now appears on a new worksheet.



Keeping charts up to date

By default, when you add more data to your spreadsheet, the chart may not include the new data. To fix this, you can adjust the **data range**. Simply click the chart, and it will highlight the data range in your spreadsheet. You can then click and drag the **handle** in the lower-right corner to change the data range.

B	C	D	E	F
January	February	March	April	May
$18,580	$49,225	$16,326	$10,017	$26,134
$78,970	$82,262	$48,640	$49,985	$73,428
$24,236	$131,390	$79,022	$71,009	$81,474
$16,730	$19,730	$12,109	$11,355	$17,686
$35,358	$42,685	$20,893	$16,065	$21,388

If you frequently add more data to your spreadsheet, it may become tedious to update the data range. Luckily, there is an easier way. Simply format your source data as a **table**, then create a **chart based on that table**. When you add more data below the table, it will automatically be included in both the table and the chart, keeping everything consistent and up to date.

CHAPTER-24- CONDITIONAL FORMATTING

Introduction

Let's say you have a worksheet with thousands of rows of data. It would be extremely difficult to see patterns and trends just from examining the raw information. Similar to charts and spark lines, **conditional formatting** provides another way to visualize data and make worksheets easier to understand.

Understanding conditional formatting

Conditional formatting allows you to automatically apply formatting—such as **colors**, **icons**, and **data bars**—to one or more cells based on the **cell value**. To do this, you'll need to create a **conditional formatting rule**. For example, a conditional formatting rule might be: **If the value is less than $2000, color the cell red**. By applying this rule, you'd be able to quickly see which cells contain values less than $2000.

	A	B	C	D	E
2	Salesperson	May	June	July	August
3	Albertson, Kathy	$3,799.00	$557.00	$3,863.00	$1,117.00
4	Allenson, Carol	$18,930.00	$1,042.00	$9,355.00	$1,100.00
5	Altman, Zoey	$5,725.00	$3,072.00	$6,702.00	$2,116.00
6	Bittiman, William	$1,344.00	$3,755.00	$4,415.00	$1,089.00
7	Brennan, Michael	$8,296.00	$3,152.00	$11,601.00	$1,122.00
8	Carlson, David	$3,945.00	$4,056.00	$3,726.00	$1,135.00
9	Collman, Harry	$8,337.00	$4,906.00	$9,007.00	$2,113.00
10	Counts, Elizabeth	$3,742.00	$521.00	$4,505.00	$1,024.00
11	David, Chloe	$7,605.00	$3,428.00	$3,973.00	$1,716.00

To create a conditional formatting rule:

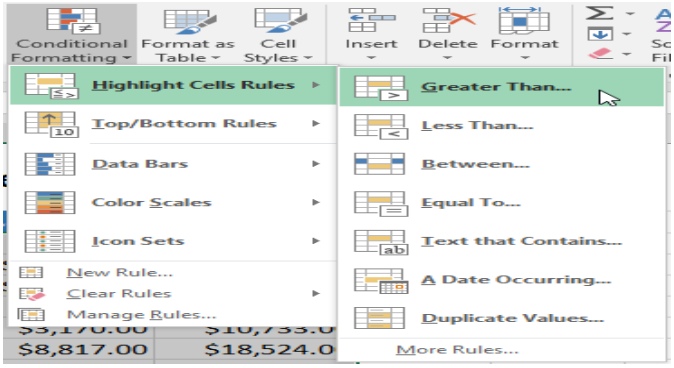
In our example, we have a worksheet containing sales data, and we'd like to see which salespeople are meeting their monthly sales goals. The sales goal is $4000 per month, so we'll create a conditional formatting rule for any cells containing a value higher than 4000.

	A	B	C	D	E	F	G
1				Westbrook Parker Sales Data			
2	Salesperson	May	June	July	August	September	October
3	Albertson, Kathy	$3,799.00	$557.00	$3,863.00	$1,117.00	$8,237.00	$8,690.00
4	Allenson, Carol	$18,930.00	$1,042.00	$9,355.00	$1,100.00	$10,185.00	$18,749.00
5	Altman, Zoey	$5,725.00	$3,072.00	$6,702.00	$2,116.00	$13,452.00	$8,046.00
6	Bittiman, William	$1,344.00	$3,755.00	$4,415.00	$1,089.00	$4,404.00	$20,114.00
7	Brennan, Michael	$8,296.00	$3,152.00	$11,601.00	$1,122.00	$3,170.00	$10,733.00
8	Carlson, David	$3,945.00	$4,056.00	$3,726.00	$1,135.00	$8,817.00	$18,524.00
9	Collman, Harry	$8,337.00	$4,906.00	$9,007.00	$2,113.00	$13,090.00	$13,953.00
10	Counts, Elizabeth	$3,742.00	$521.00	$4,505.00	$1,024.00	$3,528.00	$15,275.00
11	David, Chloe	$7,605.00	$3,428.00	$3,973.00	$1,716.00	$4,839.00	$13,085.00
12	Davis, William	$5,304.00	$1,562.00	$2,945.00	$1,176.00	$9,642.00	$13,714.00
13	Dumlao, Richard	$9,333.00	$2,779.00	$7,549.00	$1,101.00	$5,850.00	$15,065.00
14	Farmer, Kim	$1,103.00	$3,470.00	$3,862.00	$1,040.00	$10,024.00	$18,389.00
15	Ferguson, Elizabeth	$1,333.00	$1,913.00	$4,596.00	$1,126.00	$5,503.00	$10,686.00
16	Flores, Tia	$12,398.00	$2,883.00	$2,142.00	$2,014.00	$13,547.00	$21,983.00
17	Ford, Victor	$3,251.00	$4,931.00	$8,283.00	$1,054.00	$9,543.00	$11,967.00
18	Hodges, Melissa	$4,624.00	$4,798.00	$8,420.00	$1,389.00	$10,468.00	$12,677.00
19	Jameson, Robinson	$2,552.00	$4,459.00	$2,248.00	$1,058.00	$6,267.00	$14,982.00
20	Kellerman, Frances	$4,281.00	$4,172.00	$11,074.00	$1,282.00	$2,365.00	$9,380.00

1.Select the **desired cells** for the conditional formatting rule.

From the **Home** tab, click the **Conditional Formatting** command. A drop-down menu will appear.

2.Hover the mouse over the desired **conditional formatting type**, then select the **desired rule** from the menu that appears. In our example, we want to **highlight cells** that are **greater than** $4000.



A dialog box will appear. Enter the **desired value(s)** into the blank field. In our example, we'll enter 4000 as our value.

3.Select a **formatting style** from the drop-down menu. In our example, we'll choose **Green Fill with Dark Green Text**, then click **OK**.

4.The conditional formatting will be applied to the selected cells. In our example, it's easy to see which salespeople reached the $4000 sales goal for each month.

	A	B	C	D	E	F	G
1				Westbrook Parker Sales Data			
2	Salesperson	May	June	July	August	September	October
3	Albertson, Kathy	$3,799.00	$557.00	$3,863.00	$1,117.00	$8,237.00	$8,690.00
4	Allenson, Carol	$18,930.00	$1,042.00	$9,355.00	$1,100.00	$10,185.00	$18,749.00
5	Altman, Zoey	$5,725.00	$3,072.00	$6,702.00	$2,116.00	$13,452.00	$8,046.00
6	Bittiman, William	$1,344.00	$3,755.00	$4,415.00	$1,089.00	$4,404.00	$20,114.00
7	Brennan, Michael	$8,296.00	$3,152.00	$11,601.00	$1,122.00	$3,170.00	$10,733.00
8	Carlson, David	$3,945.00	$4,056.00	$3,726.00	$1,135.00	$8,817.00	$18,524.00
9	Collman, Harry	$8,337.00	$4,906.00	$9,007.00	$2,113.00	$13,090.00	$13,953.00
10	Counts, Elizabeth	$3,742.00	$521.00	$4,505.00	$1,024.00	$3,528.00	$15,275.00
11	David, Chloe	$7,605.00	$3,428.00	$3,973.00	$1,716.00	$4,839.00	$13,085.00
12	Davis, William	$5,304.00	$1,562.00	$2,945.00	$1,176.00	$9,642.00	$13,714.00
13	Dumlao, Richard	$9,333.00	$2,779.00	$7,549.00	$1,101.00	$5,850.00	$15,065.00
14	Farmer, Kim	$1,103.00	$3,470.00	$3,862.00	$1,040.00	$10,024.00	$18,389.00
15	Ferguson, Elizabeth	$1,333.00	$1,913.00	$4,596.00	$1,126.00	$5,503.00	$10,686.00
16	Flores, Tia	$12,398.00	$2,883.00	$2,142.00	$2,014.00	$13,547.00	$21,983.00
17	Ford, Victor	$3,251.00	$4,931.00	$8,283.00	$1,054.00	$9,543.00	$11,967.00
18	Hodges, Melissa	$4,624.00	$4,798.00	$8,420.00	$1,389.00	$10,468.00	$12,677.00
19	Jameson, Robinson	$2,552.00	$4,459.00	$2,248.00	$1,058.00	$6,267.00	$14,982.00
20	Kellerman, Frances	$4,281.00	$4,172.00	$11,074.00	$1,282.00	$2,365.00	$9,380.00

Conditional formatting presets

Excel has several predefined styles—or **presets**—you can use to quickly apply conditional formatting to your data. They are grouped into three categories:

$3,863.00	$1,117.00	$8,237.00	$8,690.00
$9,355.00	$1,100.00	$10,185.00	$18,749.00
$6,702.00	$2,116.00	$13,452.00	$8,046.00
$4,415.00	$1,089.00	$4,404.00	$20,114.00

1.Data Bars are horizontal bars added to each cell, much like a **bar graph**.

2.Color Scales change the color of each cell based on its value. Each color scale uses a **two- or three-color gradient**. For example, in the **Green-Yellow-Red** color scale, the **highest** values are green, the **average** values are yellow, and the **lowest** values are red.

$3,863.00	$1,117.00	$8,237.00	$8,690.00
$9,355.00	$1,100.00	$10,185.00	$18,749.00
$6,702.00	$2,116.00	$13,452.00	$8,046.00
$4,415.00	$1,089.00	$4,404.00	$20,114.00

3.Icon Sets add a specific icon to each cell based on its value.

$3,863.00	$1,117.00	$8,237.00	$8,690.00
$9,355.00	$1,100.00	$10,185.00	$18,749.00
$6,702.00	$2,116.00	$13,452.00	$8,046.00
$4,415.00	$1,089.00	$4,404.00	$20,114.00

To use preset conditional formatting:

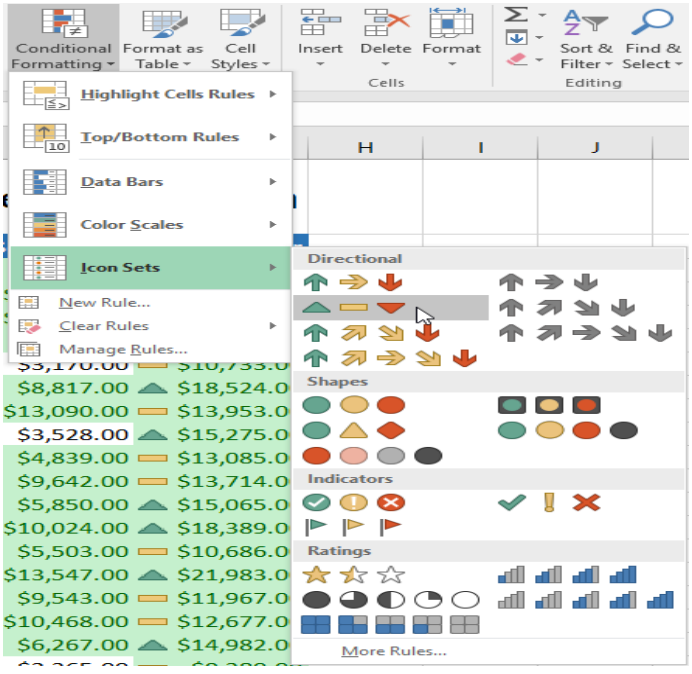
1.Select the **desired cells** for the conditional formatting rule.

Westbrook Parker Sales Data

Salesperson	May	June	July	August	September	October
Albertson, Kathy	$3,799.00	$557.00	$3,863.00	$1,117.00	$8,237.00	$8,690.00
Allenson, Carol	$18,930.00	$1,042.00	$9,355.00	$1,100.00	$10,185.00	$18,749.00
Altman, Zoey	$5,725.00	$3,072.00	$6,702.00	$2,116.00	$13,452.00	$8,046.00
Bittiman, William	$1,344.00	$3,755.00	$4,415.00	$1,089.00	$4,404.00	$20,114.00
Brennan, Michael	$8,296.00	$3,152.00	$11,601.00	$1,122.00	$3,170.00	$10,733.00
Carlson, David	$3,945.00	$4,056.00	$3,726.00	$1,135.00	$8,817.00	$18,524.00
Collman, Harry	$8,337.00	$4,906.00	$9,007.00	$2,113.00	$13,090.00	$13,953.00
Counts, Elizabeth	$3,742.00	$521.00	$4,505.00	$1,024.00	$3,528.00	$15,275.00
David, Chloe	$7,605.00	$3,428.00	$3,973.00	$1,716.00	$4,839.00	$13,085.00
Davis, William	$5,304.00	$1,562.00	$2,945.00	$1,176.00	$9,642.00	$13,714.00
Dumlao, Richard	$9,333.00	$2,779.00	$7,549.00	$1,101.00	$5,850.00	$15,065.00
Farmer, Kim	$1,103.00	$3,470.00	$3,862.00	$1,040.00	$10,024.00	$18,389.00
Ferguson, Elizabeth	$1,333.00	$1,913.00	$4,596.00	$1,126.00	$5,503.00	$10,686.00
Flores, Tia	$12,398.00	$2,883.00	$2,142.00	$2,014.00	$13,547.00	$21,983.00
Ford, Victor	$3,251.00	$4,931.00	$8,283.00	$1,054.00	$9,543.00	$11,967.00
Hodges, Melissa	$4,624.00	$4,798.00	$8,420.00	$1,389.00	$10,468.00	$12,677.00
Jameson, Robinson	$2,552.00	$4,459.00	$2,248.00	$1,058.00	$6,267.00	$14,982.00
Kellerman, Frances	$4,281.00	$4,172.00	$11,074.00	$1,282.00	$2,365.00	$9,380.00

Click the **Conditional Formatting** command. A drop-down menu will appear.

2.Hover the mouse over the **desired preset**, then choose a **preset style** from the menu that appears.



3.The conditional formatting will be applied to the selected cells.

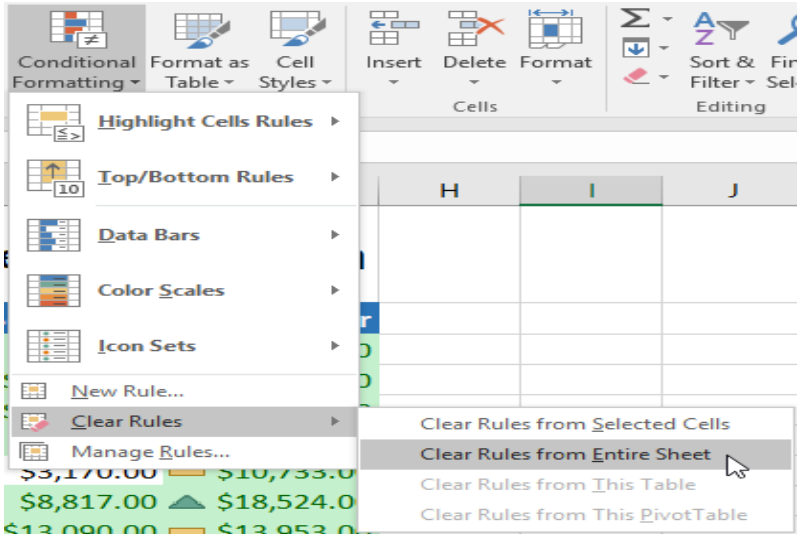
	A	B	C	D	E	F	G
1				Westbrook Parker Sales Data			
2	Salesperson	May	June	July	August	September	October
3	Albertson, Kathy	$3,799.00	$557.00	$3,863.00	$1,117.00	$8,237.00	$8,690.00
4	Allenson, Carol	$18,930.00	$1,042.00	$9,355.00	$1,100.00	$10,185.00	$18,749.00
5	Altman, Zoey	$5,725.00	$3,072.00	$6,702.00	$2,116.00	$13,452.00	$8,046.00
6	Bittiman, William	$1,344.00	$3,755.00	$4,415.00	$1,089.00	$4,404.00	$20,114.00
7	Brennan, Michael	$8,296.00	$3,152.00	$11,601.00	$1,122.00	$3,170.00	$10,733.00
8	Carlson, David	$3,945.00	$4,056.00	$3,726.00	$1,135.00	$8,817.00	$18,524.00
9	Collman, Harry	$8,337.00	$4,906.00	$9,007.00	$2,113.00	$13,090.00	$13,953.00
10	Counts, Elizabeth	$3,742.00	$521.00	$4,505.00	$1,024.00	$3,528.00	$15,275.00
11	David, Chloe	$7,605.00	$3,428.00	$3,973.00	$1,716.00	$4,839.00	$13,085.00
12	Davis, William	$5,304.00	$1,562.00	$2,945.00	$1,176.00	$9,642.00	$13,714.00
13	Dumlao, Richard	$9,333.00	$2,779.00	$7,549.00	$1,101.00	$5,850.00	$15,065.00
14	Farmer, Kim	$1,103.00	$3,470.00	$3,862.00	$1,040.00	$10,024.00	$18,389.00
15	Ferguson, Elizabeth	$1,333.00	$1,913.00	$4,596.00	$1,126.00	$5,503.00	$10,686.00
16	Flores, Tia	$12,398.00	$2,883.00	$2,142.00	$2,014.00	$13,547.00	$21,983.00
17	Ford, Victor	$3,251.00	$4,931.00	$8,283.00	$1,054.00	$9,543.00	$11,967.00
18	Hodges, Melissa	$4,624.00	$4,798.00	$8,420.00	$1,389.00	$10,468.00	$12,677.00
19	Jameson, Robinson	$2,552.00	$4,459.00	$2,248.00	$1,058.00	$6,267.00	$14,982.00
20	Kellerman, Frances	$4,281.00	$4,172.00	$11,074.00	$1,282.00	$2,365.00	$9,380.00

Removing conditional formatting

To remove conditional formatting:

Click the **Conditional Formatting** command. A drop-down menu will appear.

Hover the mouse over **Clear Rules,** and choose which rules you want to clear. In our example, we'll select **Clear Rules from Entire Sheet** to remove all conditional formatting from the worksheet.



The conditional formatting will be removed.

	A	B	C	D	E	F	G
1				Westbrook Parker Sales Data			
2	Salesperson	May	June	July	August	September	October
3	Albertson, Kathy	$3,799.00	$557.00	$3,863.00	$1,117.00	$8,237.00	$8,690.00
4	Allenson, Carol	$18,930.00	$1,042.00	$9,355.00	$1,100.00	$10,185.00	$18,749.00
5	Altman, Zoey	$5,725.00	$3,072.00	$6,702.00	$2,116.00	$13,452.00	$8,046.00
6	Bittiman, William	$1,344.00	$3,755.00	$4,415.00	$1,089.00	$4,404.00	$20,114.00
7	Brennan, Michael	$8,296.00	$3,152.00	$11,601.00	$1,122.00	$3,170.00	$10,733.00
8	Carlson, David	$3,945.00	$4,056.00	$3,726.00	$1,135.00	$8,817.00	$18,524.00
9	Collman, Harry	$8,337.00	$4,906.00	$9,007.00	$2,113.00	$13,090.00	$13,953.00
10	Counts, Elizabeth	$3,742.00	$521.00	$4,505.00	$1,024.00	$3,528.00	$15,275.00
11	David, Chloe	$7,605.00	$3,428.00	$3,973.00	$1,716.00	$4,839.00	$13,085.00
12	Davis, William	$5,304.00	$1,562.00	$2,945.00	$1,176.00	$9,642.00	$13,714.00
13	Dumlao, Richard	$9,333.00	$2,779.00	$7,549.00	$1,101.00	$5,850.00	$15,065.00
14	Farmer, Kim	$1,103.00	$3,470.00	$3,862.00	$1,040.00	$10,024.00	$18,389.00
15	Ferguson, Elizabeth	$1,333.00	$1,913.00	$4,596.00	$1,126.00	$5,503.00	$10,686.00
16	Flores, Tia	$12,398.00	$2,883.00	$2,142.00	$2,014.00	$13,547.00	$21,983.00
17	Ford, Victor	$3,251.00	$4,931.00	$8,283.00	$1,054.00	$9,543.00	$11,967.00
18	Hodges, Melissa	$4,624.00	$4,798.00	$8,420.00	$1,389.00	$10,468.00	$12,677.00
19	Jameson, Robinson	$2,552.00	$4,459.00	$2,248.00	$1,058.00	$6,267.00	$14,982.00
20	Kellerman, Frances	$4,281.00	$4,172.00	$11,074.00	$1,282.00	$2,365.00	$9,380.00

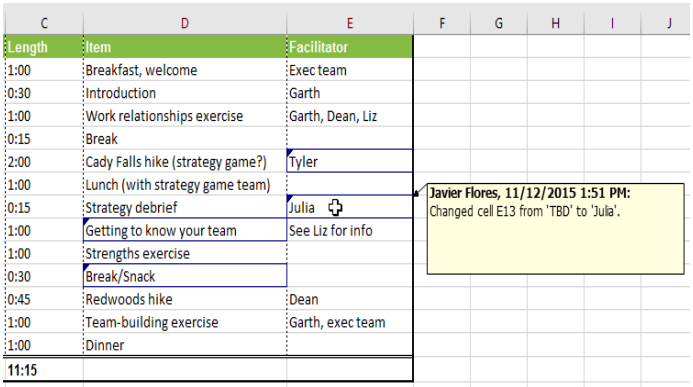
CHAPTER-25- TRACK CHANGES AND COMMENTS

Introduction

Let's say someone asked you to proofread or collaborate on a workbook. If you had a printed copy, you might use a red pen to edit cell data, mark spelling errors, or add comments in the margins. Excel allows you to do all of these things electronically using the **Track Changes** and **Comments** features.

Understanding Track Changes

When you turn on the **Track Changes** feature, every cell you edit will be **highlighted** with a unique border and indicator. Selecting a marked cell will show the details of the change. This allows you and other reviewers to see what's been changed before accepting the revisions permanently.



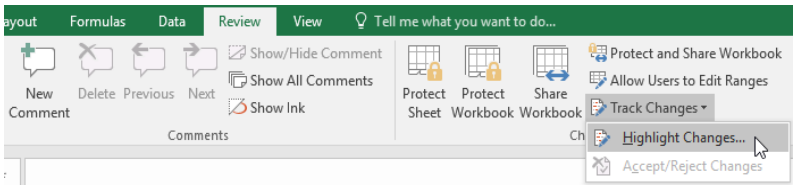
In the image below, each edited cell has a blue border and a small triangle in the upper-left corner.

There are some changes Excel **cannot** track. Before using this feature, you may want to review Microsoft's list of **changes that Excel does not track or highlight**.

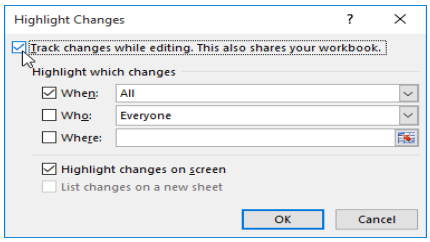
You cannot use Track Changes if your workbook includes **tables**. To remove a table, select it, click the **Design** tab, then click **Convert to Range**.

To turn on Track Changes:

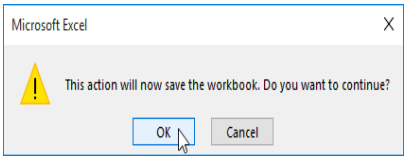
1.From the **Review** tab, click the **Track Changes** command, then select **Highlight Changes** from the drop-down menu.



2.The **Highlight Changes** dialog box will appear. Check the box next to **Track changes while editing**. Verify that the box is checked for **Highlight changes on screen**, then click **OK**.

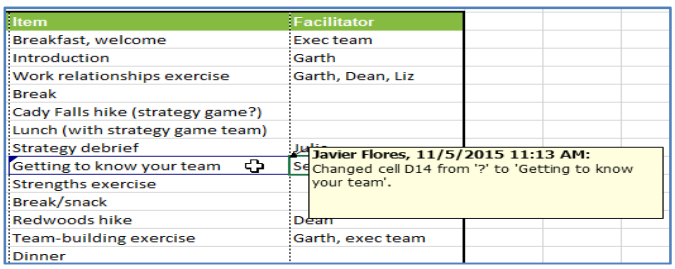


3.If prompted, click **OK** to allow Excel to save your workbook.



Track Changes will be **turned on**. A **triangle** and **border color** will appear in any cell you edit. If there are multiple reviewers, each person will be assigned a different color.

4.Select the edited cell to see a summary of the tracked changes. In our example below, we've changed the content of cell D14 from **?** to **Getting to know your team**.



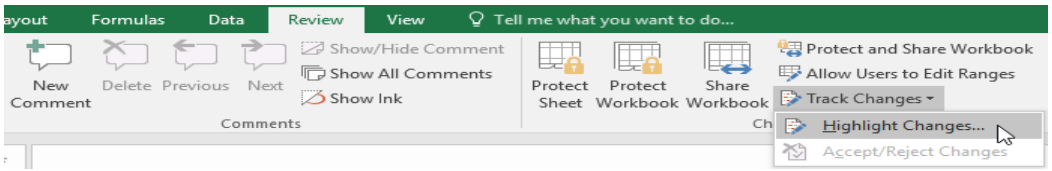
When you turn on Track Changes, your workbook will be **shared** automatically. Shared workbooks are designed to be stored where other users can access and edit the workbook at the same time, such as a network. However, you can also track changes in a local or personal copy, as seen throughout this lesson.

To list changes on a separate worksheet:

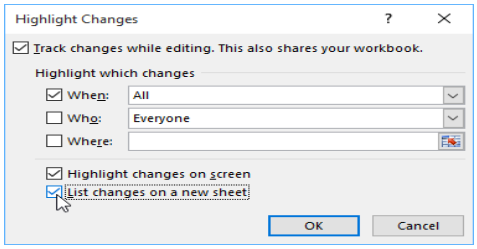
You can also view changes on a new worksheet, sometimes called the **Tracked Changes history**. The history lists everything in your worksheet that has been changed, including the **old value** (previous cell content) and the **new value** (current cell content).

Save your workbook.

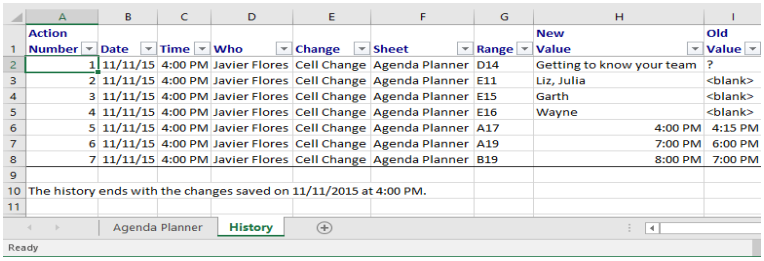
1.From the **Review** tab, click the **Track Changes** command, then select **Highlight Changes** from the drop-down menu.



2.The **Highlight Changes** dialog box will appear. Check the box next to **List changes on a new sheet**, then click **OK**.



3.The tracked changes will be listed on their own worksheet, called **History**.



	A	B	C	D	E	F	G	H	I
1	Action Number	Date	Time	Who	Change	Sheet	Range	New Value	Old Value
2	1	11/11/15	4:00 PM	Javier Flores	Cell Change	Agenda Planner	D14	Getting to know your team	?
3	2	11/11/15	4:00 PM	Javier Flores	Cell Change	Agenda Planner	E11	Liz, Julia	<blank>
4	3	11/11/15	4:00 PM	Javier Flores	Cell Change	Agenda Planner	E15	Garth	<blank>
5	4	11/11/15	4:00 PM	Javier Flores	Cell Change	Agenda Planner	E16	Wayne	<blank>
6	5	11/11/15	4:00 PM	Javier Flores	Cell Change	Agenda Planner	A17	4:00 PM	4:15 PM
7	6	11/11/15	4:00 PM	Javier Flores	Cell Change	Agenda Planner	A19	7:00 PM	6:00 PM
8	7	11/11/15	4:00 PM	Javier Flores	Cell Change	Agenda Planner	B19	8:00 PM	7:00 PM
9									
10	The history ends with the changes saved on 11/11/2015 at 4:00 PM.								
11									

Agenda Planner | History

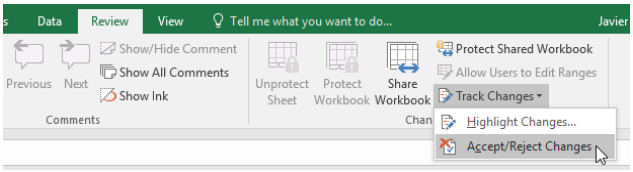
Ready

Reviewing changes

Tracked changes are really just **suggested** changes. To become permanent, the changes must be **accepted**. On the other hand, the original author may disagree with some of the tracked changes and choose to **reject** them.

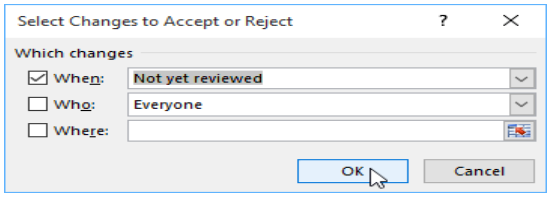
To review tracked changes:

1.From the **Review** tab, click **Track Changes**, then select **Accept/Reject Changes**from the drop-down menu.

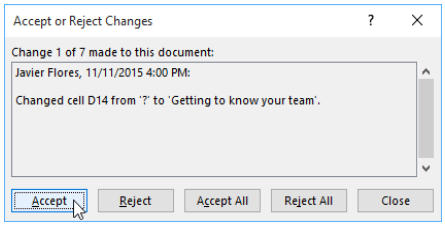


If prompted, click **OK** to save your workbook.

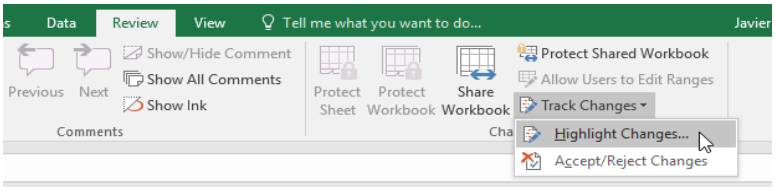
2.A dialog box will appear. Make sure the box next to the **When:** field is checked and set to **Not yet reviewed**, then click **OK**.



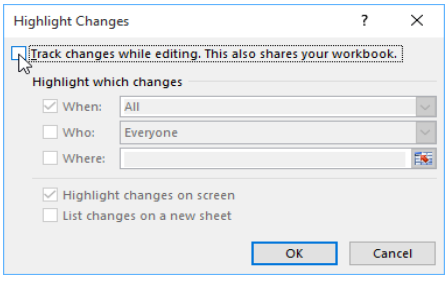
3.A dialog box will appear. Click **Accept** or **Reject** for each change in the workbook. Excel will move through each change automatically until you have reviewed them all.



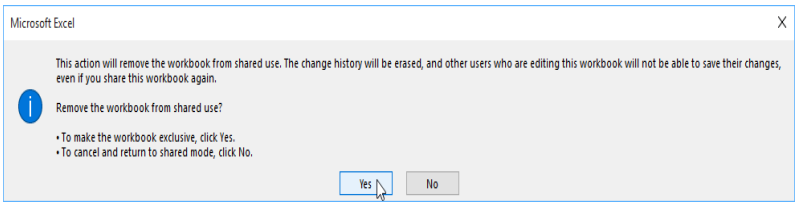
4.Even after accepting or rejecting changes, the tracked changes will still appear in your workbook. To remove them completely, you'll need to **turn off**Track Changes. From the **Review** tab, click **Track Changes**, then select **Highlight Changes** from the drop-down menu.



5.A dialog box will appear. Uncheck the box next to **Track changes while editing**, then click **OK**.



6.Click **Yes** to confirm that you want to turn off Track Changes and stop sharing your workbook.



To accept or reject all changes at once, click **Accept All** or **Reject All** in the Accept or Reject Changes dialog box.

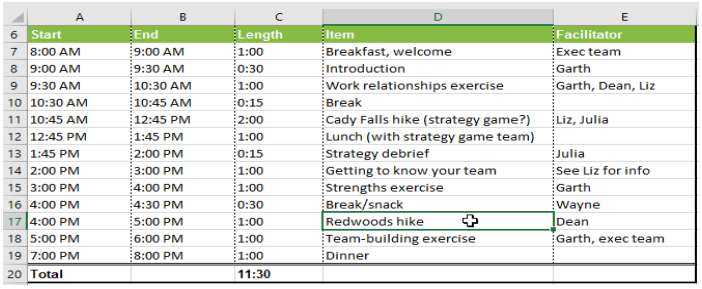
Turning off Track Changes will remove any tracked changes in your workbook. You will not be able to view, accept, or reject changes; instead, all changes will be accepted **automatically**. Always review the changes in your worksheet before turning off Track Changes.

Comments

Sometimes you may want to add a **comment** to provide feedback instead of editing the contents of a cell. While often used in combination with Track Changes, you don't necessarily need to have Track Changes turned on to use comments.

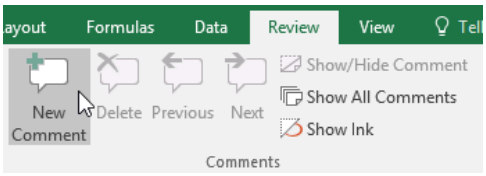
To add a comment:

1.Select the **cell** where you want the comment to appear. In our example, we'll select cell **D17**.

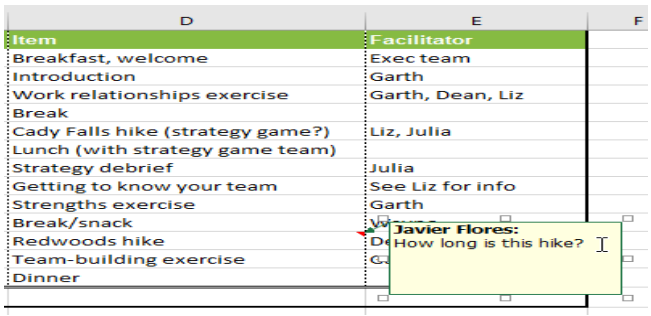


	A	B	C	D	E
6	Start	End	Length	Item	Facilitator
7	8:00 AM	9:00 AM	1:00	Breakfast, welcome	Exec team
8	9:00 AM	9:30 AM	0:30	Introduction	Garth
9	9:30 AM	10:30 AM	1:00	Work relationships exercise	Garth, Dean, Liz
10	10:30 AM	10:45 AM	0:15	Break	
11	10:45 AM	12:45 PM	2:00	Cady Falls hike (strategy game?)	Liz, Julia
12	12:45 PM	1:45 PM	1:00	Lunch (with strategy game team)	
13	1:45 PM	2:00 PM	0:15	Strategy debrief	Julia
14	2:00 PM	3:00 PM	1:00	Getting to know your team	See Liz for info
15	3:00 PM	4:00 PM	1:00	Strengths exercise	Garth
16	4:00 PM	4:30 PM	0:30	Break/snack	Wayne
17	4:00 PM	5:00 PM	1:00	Redwoods hike	Dean
18	5:00 PM	6:00 PM	1:00	Team-building exercise	Garth, exec team
19	7:00 PM	8:00 PM	1:00	Dinner	
20	Total		11:30		

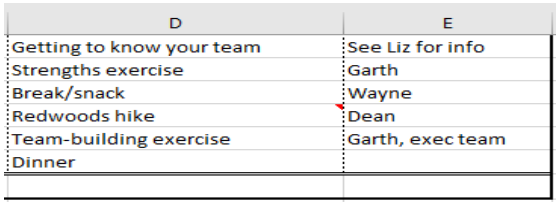
2.From the **Review** tab, click the **New Comment** command.



3.A **comment box** will appear. Type your comment, then click anywhere outside the box to close the comment.

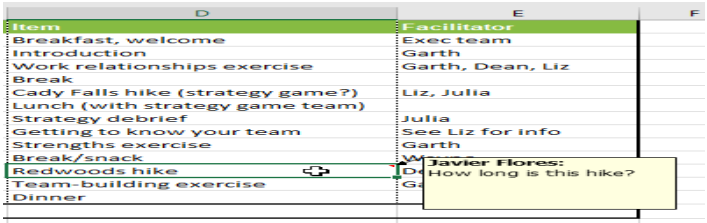


4.The comment will be added to the cell, represented by the **red triangle** in the top-right corner.



D	E
Getting to know your team	See Liz for info
Strengths exercise	Garth
Break/snack	Wayne
Redwoods hike	Dean
Team-building exercise	Garth, exec team
Dinner	

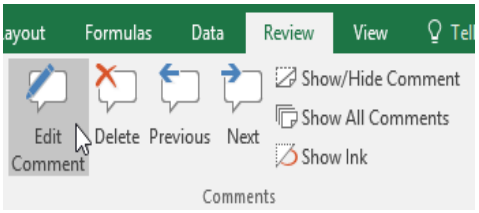
5.Select the cell again to view the comment.



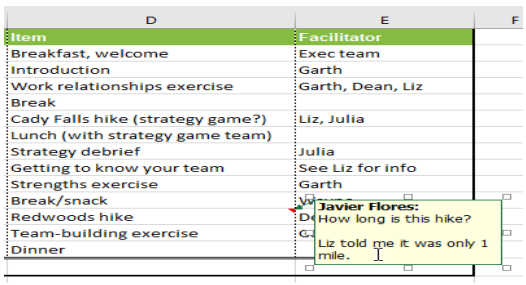
To edit a comment:

Select the **cell** containing the comment you want to edit.

1.From the **Review** tab, click the **Edit Comment** command.

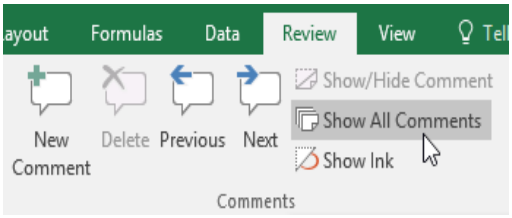


2.The **comment box** will appear. Edit the comment as desired, then click anywhere outside the box to close the comment.

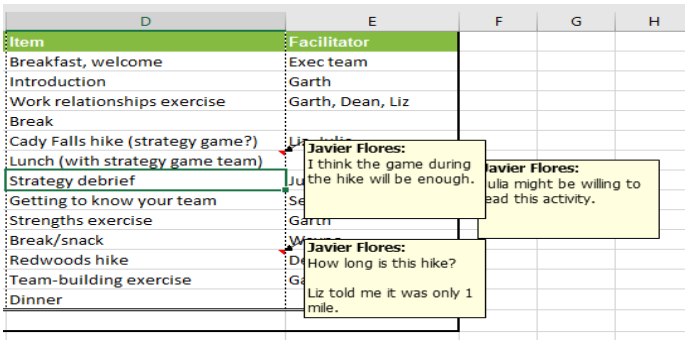


To show or hide comments:

1.From the **Review** tab, click the **Show All Comments** command to view every comment in your worksheet at the same time.

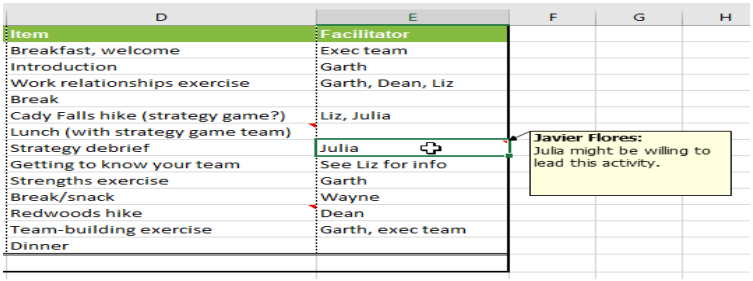


2.All comments in the worksheet will appear. Click the **Show All Comments** command again to hide them.

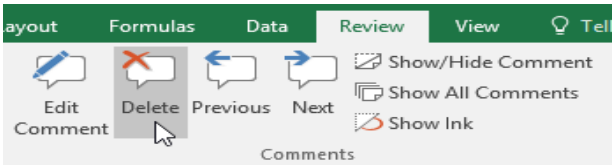


To delete a comment:

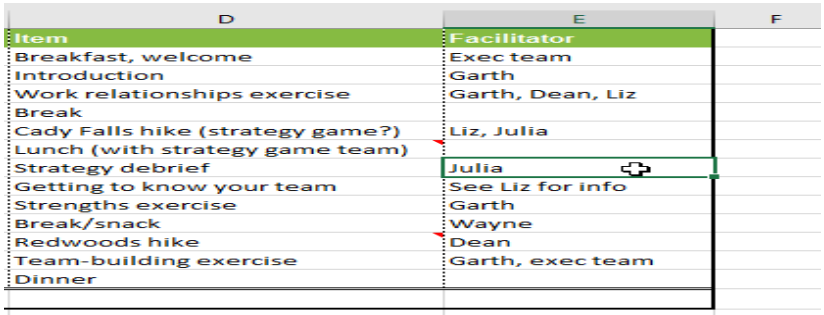
1.Select the **cell** containing the comment you want to delete. In our example, we'll select cell **E13**.



2.From the **Review** tab, click the **Delete** command in the **Comments** group.



3.The comment will be deleted.



CHAPTER-26- INSPECTING AND PROTECTING WORKBOOKS

Introduction

Before sharing a workbook, you'll want to make sure it doesn't include any spelling errors or information you want to keep private. Fortunately, Excel includes several tools to help **finalize** and **protect** your workbook, including **Document Inspector** and the **Protect Workbook** feature.

Document Inspector

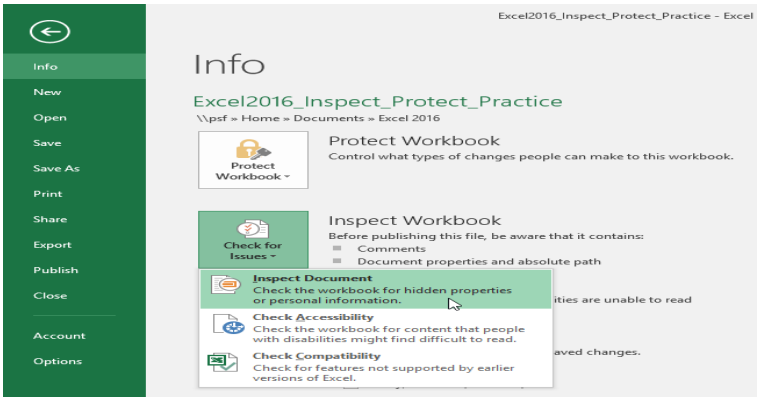
Whenever you create or edit a workbook, certain **personal information** may be added to the file automatically. You can use Document Inspector to remove this information before sharing a workbook with others.

Because some changes may be permanent, it's a good idea to save an additional copy of your workbook before using the Document Inspector to remove information.

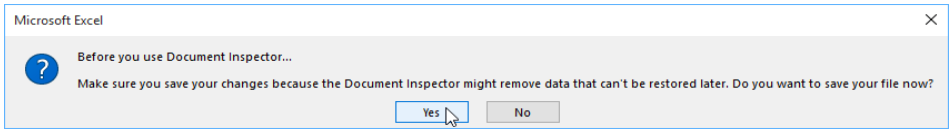
To use Document Inspector:

Click the **File** tab to access **Backstage view**.

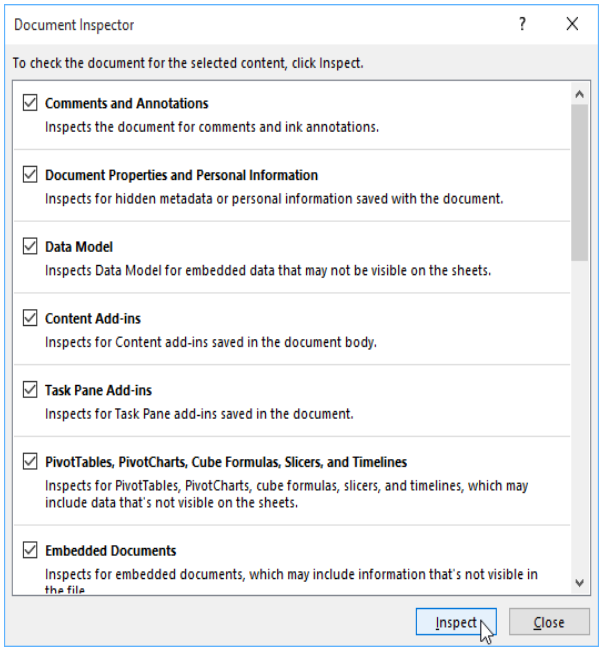
1.From the **Info** pane, click **Check for Issues**, then select **Inspect Document** from the drop-down menu.



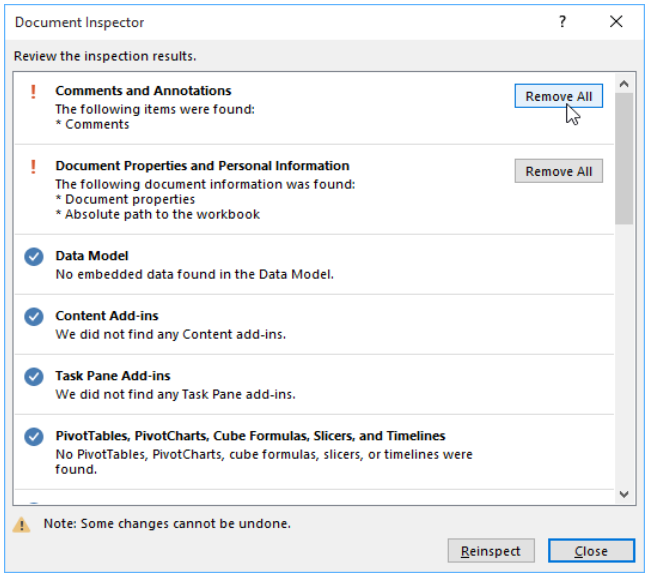
2.You may be prompted to save your file before running **Document Inspector**.

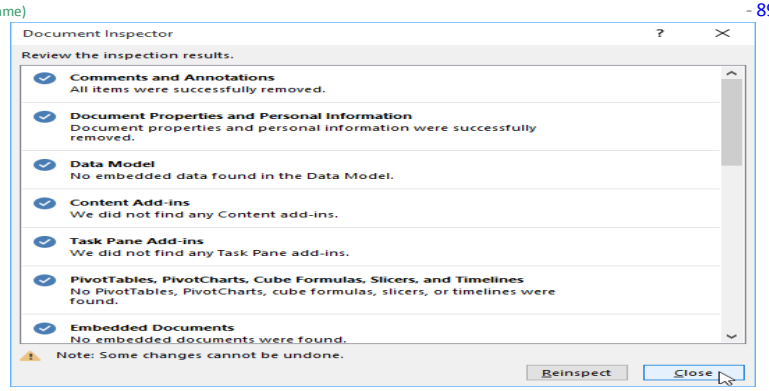


3.Document Inspector will appear. Check or uncheck boxes, depending on the content you want to review, then click **Inspect**. In our example, we'll leave everything selected.



4.The **inspection results** will appear. In our example, we can see that our workbook contains comments and some personal information, so we'll click **Remove All** on both items to remove this information from the workbook.





5.When you're done, click **Close**.

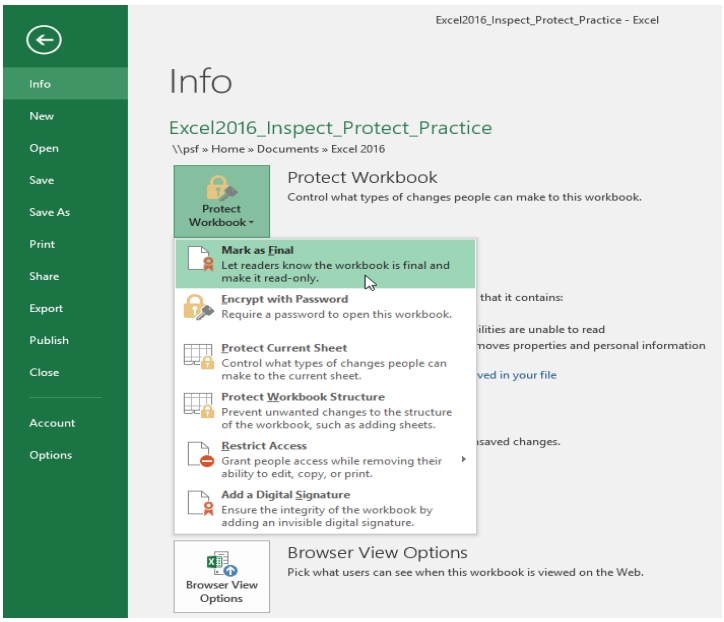
Protecting your workbook

By default, anyone with access to your workbook will be able to open, copy, and edit its content unless you **protect** it. There are many different ways to protect a workbook, depending on your needs.

To protect your workbook:

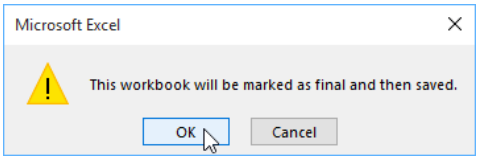
Click the **File** tab to access **Backstage view**.

From the **Info** pane, click the **Protect Workbook** command.

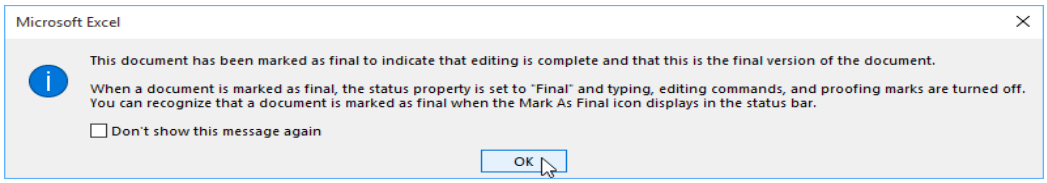


1.In the drop-down menu, choose the option that best suits your needs. In our example, we'll select **Mark as Final**. Marking your workbook as final is a good way to discourage others from editing the workbook, while the other options give you even more control if needed.

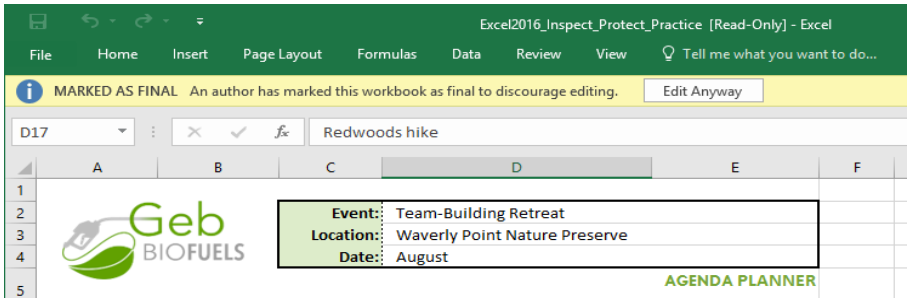
2.A dialog box will appear, prompting you to save. Click **OK**.



3.Another dialog box will appear. Click **OK**.



4.The workbook will be marked as final.



Marking a workbook as final will not prevent others from editing it. If you want to prevent people from editing it, you can use the **Restrict Access** option instead.

CHAPTER -27- INTRO TO PIVOTTABLES

Introduction

When you have a lot of data, it can sometimes be difficult to analyze all of the information in your worksheet. **PivotTables** can help make your worksheets more manageable by **summarizing** your data and allowing you to **manipulate** it in different ways.

Using PivotTables to answer questions

1.Consider the example below. Let's say we wanted to answer the question **What is the amount sold by each salesperson?** Answering it could be time consuming and difficult; each salesperson appears on multiple rows, and we would need to total all of their different orders individually. We could use the **Subtotal** command to help find the total for each salesperson, but we would still have a lot of data to work with.

	A	B	C	D	E
1	Salesperson	Region	Account	Order Amount	Month
2	Albertson, Kathy	East	29386	$925.00	January
3	Albertson, Kathy	East	74830	$875.00	February
4	Albertson, Kathy	East	90099	$500.00	February
5	Albertson, Kathy	East	74830	$350.00	March
6	Brennan, Michael	West	82853	$400.00	January
7	Brennan, Michael	West	72949	$850.00	January
8	Brennan, Michael	West	90044	$1,500.00	January
9	Brennan, Michael	West	82853	$550.00	February
10	Brennan, Michael	West	72949	$400.00	March
11	Davis, William	South	55223	$235.00	February
12	Davis, William	South	10354	$850.00	January
13	Davis, William	South	50192	$600.00	March
14	Davis, William	South	27589	$250.00	January
15	Dumlao, Richard	West	67275	$400.00	January
16	Dumlao, Richard	West	41828	$965.00	February

2.Fortunately, a PivotTable can instantly **calculate** and **summarize** the data in a way that will make it much easier to read. When we're done, the PivotTable will look something like this:

Row Labels	Sum of Order Amount
Albertson, Kathy	$2,650.00
Brennan, Michael	$3,700.00
Davis, William	$1,935.00
Dumlao, Richard	$1,490.00
Flores, Tia	$4,565.00
Post, Melissa	$1,690.00
Thompson, Shannon	$3,160.00
Walters, Chris	$4,375.00
Grand Total	**$23,565.00**

3.Once you've created a PivotTable, you can use it to answer different questions by rearranging—or **pivoting**—the data. For example, let's say we wanted to answer **What is the total amount sold in each month?** We could modify our PivotTable to look like this:

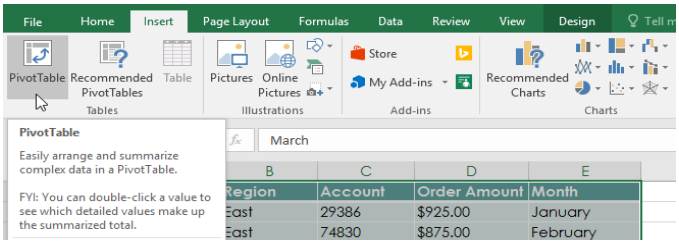
Row Labels	Sum of Order Amount
January	$9,090.00
February	$9,160.00
March	$5,315.00
Grand Total	**$23,565.00**

To create a PivotTable:

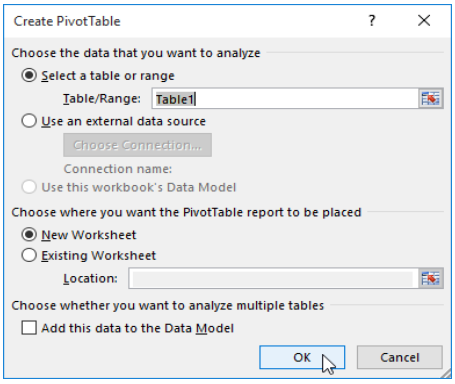
1.Select the **table** or **cells** (including column headers) you want to include in your PivotTable.

	A	B	C	D	E
1	Salesperson	Region	Account	Order Amount	Month
2	Albertson, Kathy	East	29386	$925.00	January
3	Albertson, Kathy	East	74830	$875.00	February
4	Albertson, Kathy	East	90099	$500.00	February
5	Albertson, Kathy	East	74830	$350.00	March
6	Brennan, Michael	West	82853	$400.00	January
7	Brennan, Michael	West	72949	$850.00	January
8	Brennan, Michael	West	90044	$1,500.00	January
9	Brennan, Michael	West	82853	$550.00	February
10	Brennan, Michael	West	72949	$400.00	March
11	Davis, William	South	55223	$235.00	February
12	Davis, William	South	10354	$850.00	January
13	Davis, William	South	50192	$600.00	March
14	Davis, William	South	27589	$250.00	January
15	Dumlao, Richard	West	67275	$400.00	January
16	Dumlao, Richard	West	41828	$965.00	February

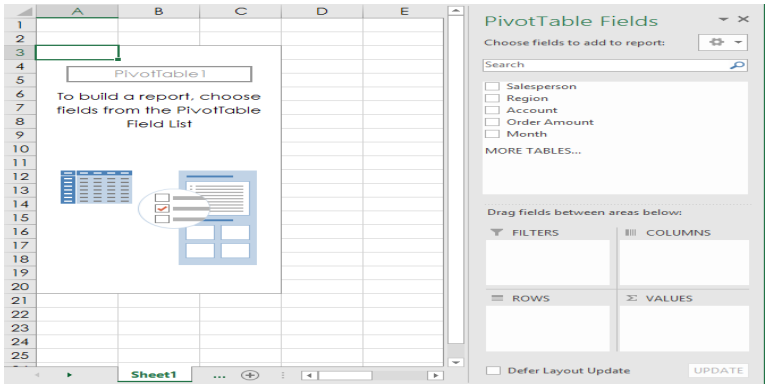
2.From the **Insert** tab, click the **PivotTable** command.

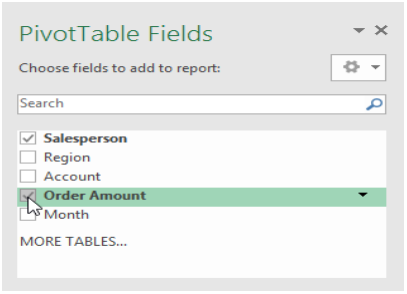


3.The **Create PivotTable** dialog box will appear. Choose your settings, then click **OK**. In our example, we'll use **Table1** as our source data and place the PivotTable on a **new worksheet**.



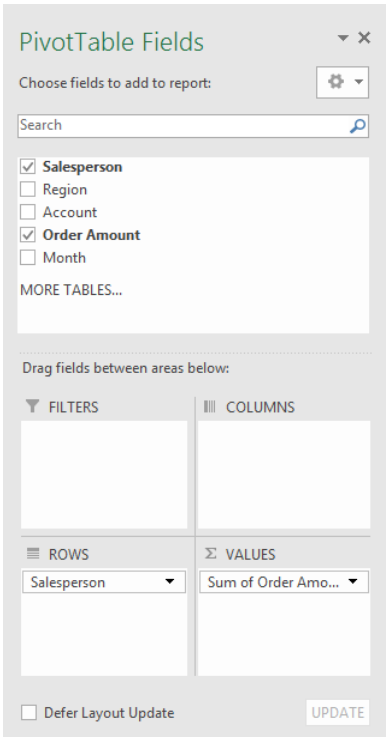
4.A blank **PivotTable** and **Field List** will appear on a new worksheet.



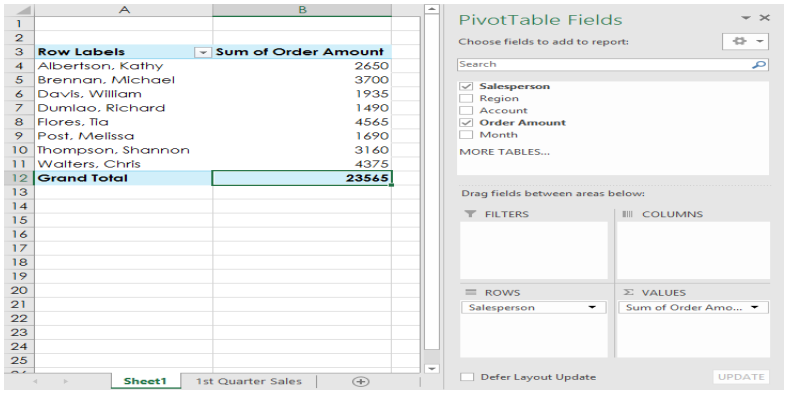


5.Once you create a PivotTable, you'll need to decide which **fields** to add. Each field is simply a **column header** from the source data. In the **PivotTable Field List**, check the box for each field you want to add. In our example, we want to know the total **amount** sold by each **salesperson**, so we'll check the **Salesperson** and **Order Amount** fields.

6.The selected fields will be added to one of the four areas below. In our example, the **Salesperson** field has been added to the **Rows** area, while **Order Amount** has been added to **Values**. Alternatively, you can **drag and drop**fields directly into the desired area.



7.The PivotTable will calculate and summarize the selected fields. In our example, the PivotTable shows the **amount sold by each salesperson**.



Row Labels	Sum of Order Amount
Albertson, Kathy	2650
Brennan, Michael	3700
Davis, William	1935
Dumlao, Richard	1490
Flores, Tia	4565
Post, Melissa	1690
Thompson, Shannon	3160
Walters, Chris	4375
Grand Total	**23565**

8.Just like with normal spreadsheets, you can sort the data in a PivotTable using the **Sort & Filter** command on the Home tab. You can also apply any type of **number formatting** you want. For example, you may want to change the number format to **Currency**. However, be aware that some types of formatting may disappear when you modify the PivotTable.

Row Labels	Sum of Order Amount
Flores, Tia	$4,565.00
Walters, Chris	$4,375.00
Brennan, Michael	$3,700.00
Thompson, Shannon	$3,160.00
Albertson, Kathy	$2,650.00
Davis, William	$1,935.00
Post, Melissa	$1,690.00
Dumlao, Richard	$1,490.00
Grand Total	**$23,565.00**

If you change any of the data in your source worksheet, the PivotTable **will not update automatically**. To manually update it, select the PivotTable and then go to **Analyze ➡ Refresh**.

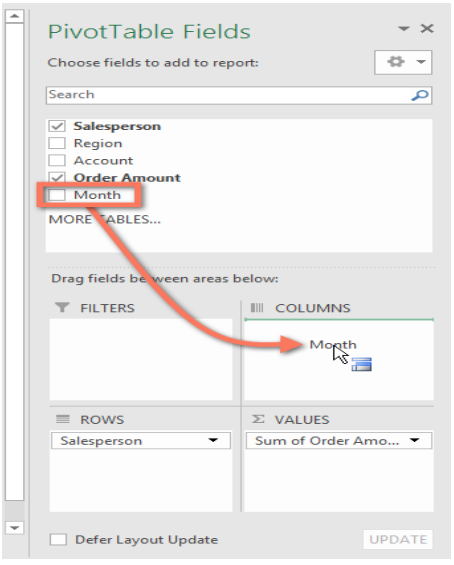
Pivoting data

One of the best things about PivotTables is that they can quickly **pivot**—or reorganize—your data, allowing you to examine your worksheet in several ways. Pivoting data can help you answer **different questions** and even **experiment** with your data to discover new trends and patterns.

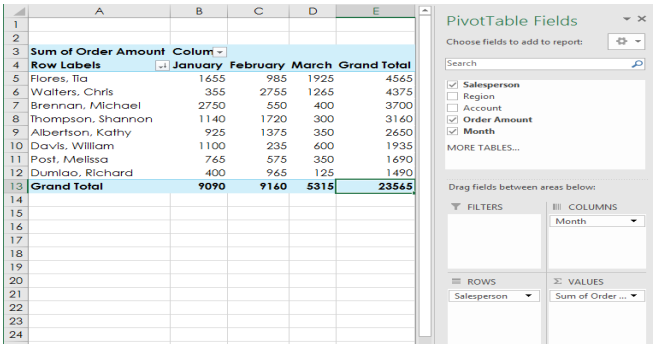
To add columns:

So far, our PivotTable has only shown **one column** of data at a time. In order to show **multiple columns**, you'll need to add a field to the **Columns** area.

1.Drag a field from the **Field List** into the **Columns** area. In our example, we'll use the **Month** field.



2.The PivotTable will include multiple columns. In our example, there is now a column for each person's **monthly sales**, in addition to the **grand total**.

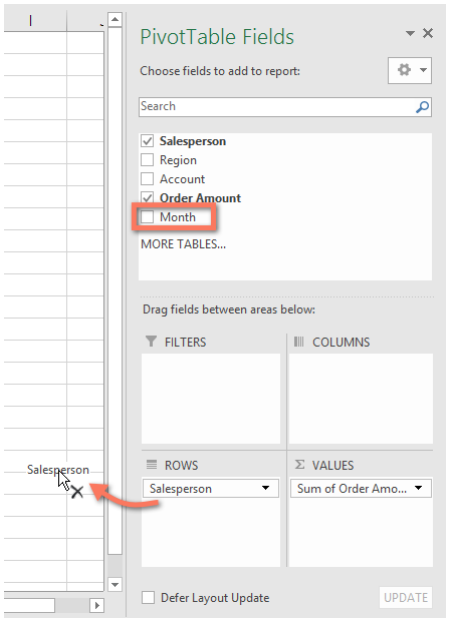


Sum of Order Amount	Colum			
Row Labels	January	February	March	Grand Total
Flores, Tia	1655	985	1925	4565
Walters, Chris	355	2755	1265	4375
Brennan, Michael	2750	550	400	3700
Thompson, Shannon	1140	1720	300	3160
Albertson, Kathy	925	1375	350	2650
Davis, William	1100	235	600	1935
Post, Melissa	765	575	350	1690
Dumlao, Richard	400	965	125	1490
Grand Total	9090	9160	5315	23565

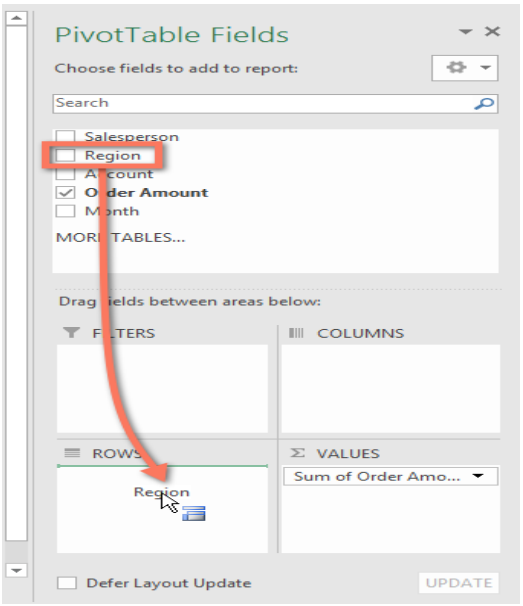
To change a row or column:

Changing a row or column can give you a completely different perspective on your data. All you have to do is **remove** the field in question, then **replace** it with another.

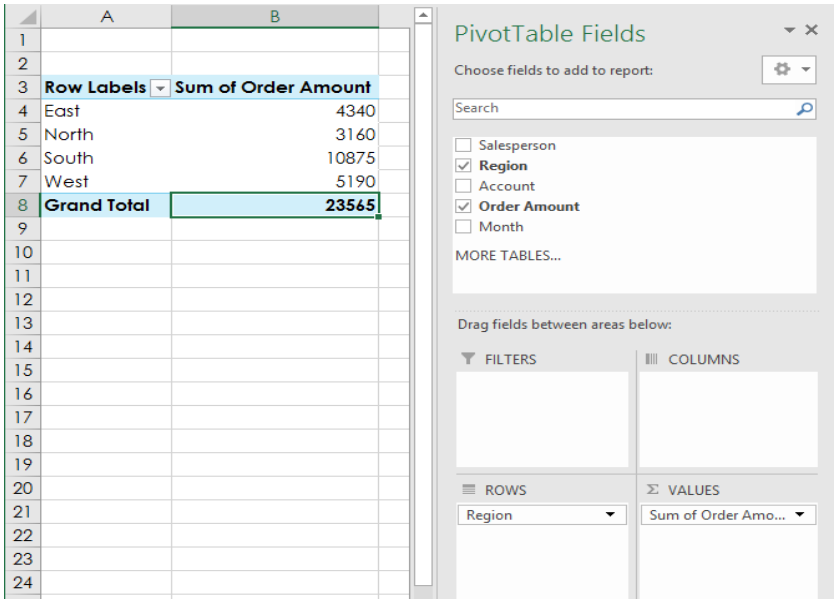
1.Drag the field you want to remove out of its **current area**. You can also **uncheck** the appropriate box in the **Field List**. In this example, we've removed the **Month** and **Salesperson** fields.



2.Drag a **new field** into the **desired area**. In our example, we'll place the **Region** field under **Rows**.



3.The PivotTable will adjust—or pivot—to show the new data. In our example, it now shows the **amount sold by each region**.



Row Labels	Sum of Order Amount
East	4340
North	3160
South	10875
West	5190
Grand Total	23565

CHAPTER-28- DOING MORE WITH PIVOTTABLES

Introduction

As you learned in our previous lesson, **Intro to PivotTables**, PivotTables can be used to summarize and analyze almost any type of data. To help you manipulate your PivotTable—and gain even more insight into your data—Excel offers three additional tools: **filters**, **slicers**, and **Pivot Charts**.

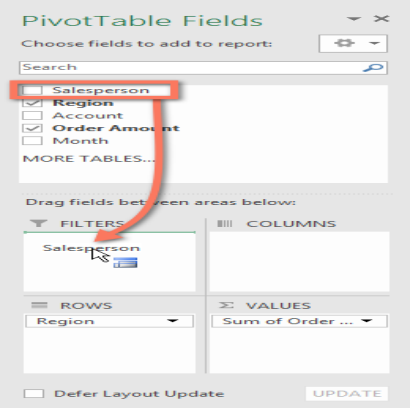
Filters

Sometimes you may want focus on a certain section of your data. **Filters** can be used to **narrow down** the data in your PivotTable, so you can view only the information you need.

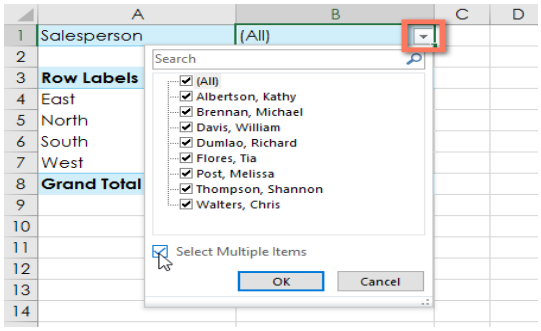
To add a filter:

In the example below, we'll filter out certain **salespeople** to determine how their individual sales are impacting each region.

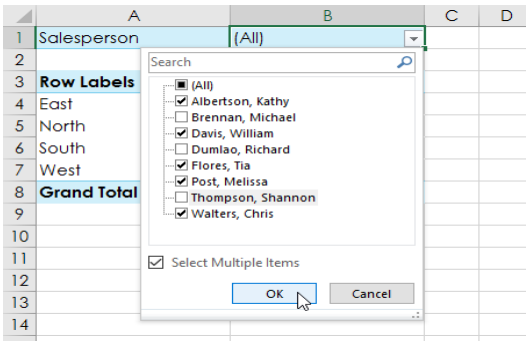
1.Drag a field from the **Field List** to the **Filters** area. In this example, we'll use the **Salesperson** field.



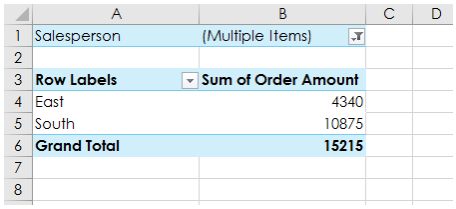
2.The **filter** will appear above the PivotTable. Click the **drop-down arrow**, then check the box next to **Select Multiple Items**.



3.Uncheck the box next to any item you don't want to include in the PivotTable. In our example, we'll uncheck the boxes for a few salespeople, then click **OK**.



4.The PivotTable will **adjust** to reflect the changes.



Salesperson	(Multiple Items)
Row Labels	Sum of Order Amount
East	4340
South	10875
Grand Total	15215

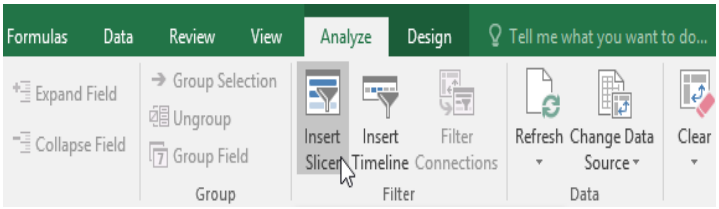
Slicers

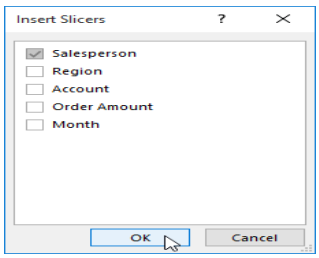
Slicers make filtering data in PivotTables even easier. Slicers are basically just **filters**but are easier and faster to use, allowing you to instantly pivot your data. If you frequently filter your PivotTables, you may want to consider using slicers instead of filters.

To add a slicer:

Select **any cell** in the PivotTable.

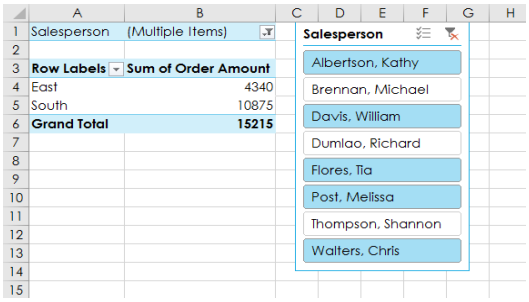
1.From the **Analyze** tab, click the **Insert Slicer** command.





2.A dialog box will appear. Check the box next to the desired **field**. In our example, we'll select **Salesperson**, then click **OK**.

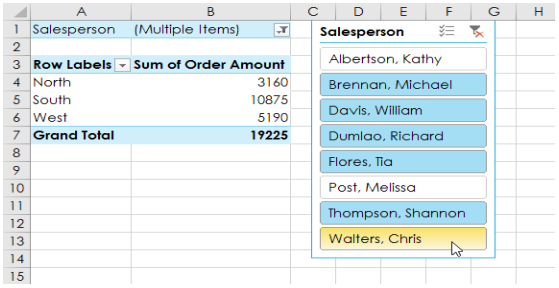
3.The slicer will appear next to the PivotTable. Each selected item will be highlighted in **blue**. In the example below, the slicer contains all eight salespeople, but only **five** of them are currently selected.



Salesperson	(Multiple Items)
Row Labels	Sum of Order Amount
East	4340
South	10875
Grand Total	15215

Salesperson: Albertson, Kathy; Brennan, Michael; Davis, William; Dumlao, Richard; Flores, Tia; Post, Melissa; Thompson, Shannon; Walters, Chris

4.Just like filters, only **selected** items are used in the PivotTable. When you **select** or **deselect** an item, the PivotTable will instantly reflect the change. Try selecting different items to see how they affect the PivotTable. Press and hold the **Ctrl** key on your keyboard to select **multiple** items at once.



Salesperson	(Multiple Items)
Row Labels	Sum of Order Amount
North	3160
South	10875
West	5190
Grand Total	19225

Salesperson: Albertson, Kathy; Brennan, Michael; Davis, William; Dumlao, Richard; Flores, Tia; Post, Melissa; Thompson, Shannon; Walters, Chris

You can also click the **Filter icon** in the top-right corner of the slicer to select **all** it ems at once.

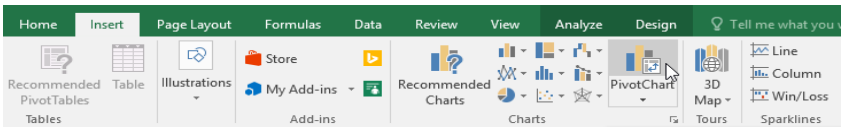
Pivot Charts

Pivot Charts are like regular charts, except they display data from a **PivotTable**. Just like regular charts, you'll be able to select a **chart type**, **layout**, and **style** that will best represent the data.

To create a PivotChart:

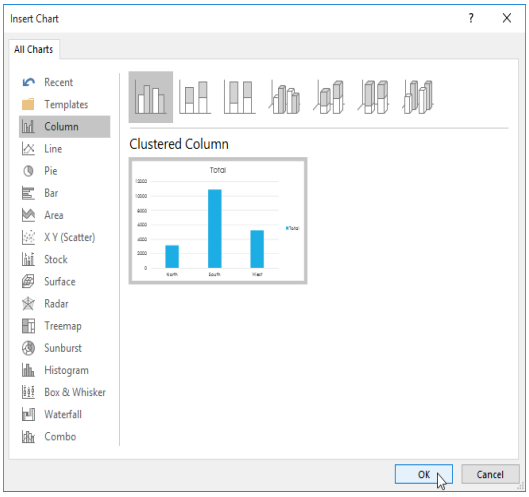
In the example below, our PivotTable is showing a portion of each region's **sales figures**. We'll use a PivotChart so we can see the information more clearly.

Select **any cell** in your PivotTable.

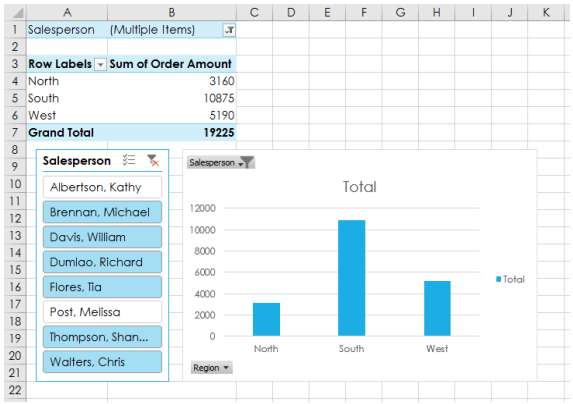


1.From the **Insert** tab, click the **PivotChart** command.

2.The **Insert Chart** dialog box will appear. Select the desired **chart type** and **layout**, then click **OK**.



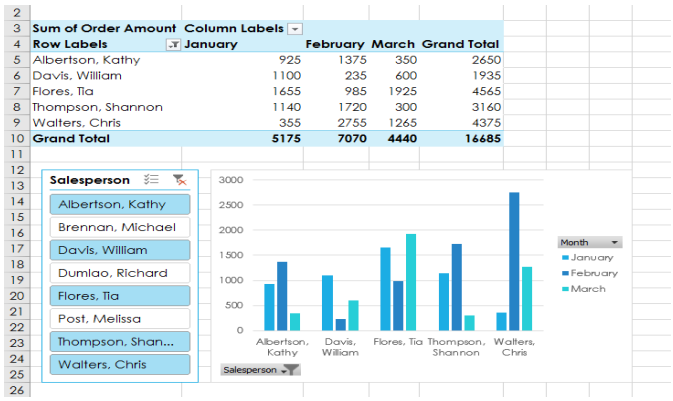
3.The PivotChart will appear.



Salesperson	(Multiple Items)
Row Labels	Sum of Order Amount
North	3160
South	10875
West	5190
Grand Total	19225

Salesperson: Albertson, Kathy; Brennan, Michael; Davis, William; Dumlao, Richard; Flores, Tia; Post, Melissa; Thompson, Shan...; Walters, Chris

4.Try using **filters** or **slicers** to narrow down the data in your PivotChart. To view different subsets of information, change the **columns** or **rows** in your PivotTable. In the example below, we've changed the PivotTable to view the **monthly sales** for each salesperson.



Sum of Order Amount	Column Labels			
Row Labels	January	February	March	Grand Total
Albertson, Kathy	925	1375	350	2650
Davis, William	1100	235	600	1935
Flores, Tia	1655	985	1925	4565
Thompson, Shannon	1140	1720	300	3160
Walters, Chris	355	2755	1265	4375
Grand Total	5175	7070	4440	16685

Salesperson: Albertson, Kathy; Brennan, Michael; Davis, William; Dumlao, Richard; Flores, Tia; Post, Melissa; Thompson, Shan...; Walters, Chris

CHAPTER -29- WHAT-IF ANALYSIS

Introduction

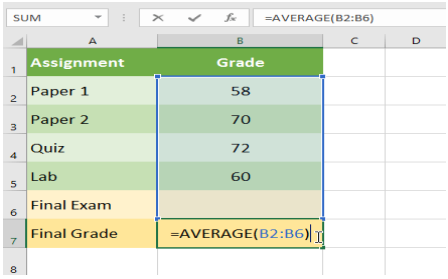
Excel includes many powerful tools to perform complex mathematical calculations, including **what-if analysis**. This feature can help you **experiment** and **answer questions** with your data, even when the data is incomplete. In this lesson, you will learn how to use a what-if analysis tool called **Goal Seek**.

Goal Seek

Whenever you create a formula or function in Excel, you put various parts together to calculate a **result**. **Goal Seek** works in the opposite way: It lets you start with the **desired result**, and it calculates the **input value** that will give you that result. We'll use a few examples to show how to use Goal Seek.

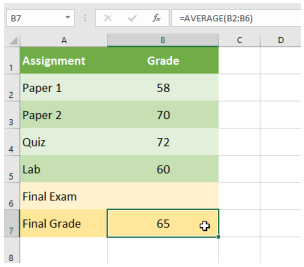
To use Goal Seek (example 1):

Let's say you're enrolled in a class. You currently have a grade of 65, and you need at least a 70 to pass the class. Luckily, you have one final assignment that might be able to raise your average. You can use Goal Seek to find out **what grade you need on the final assignment** to pass the class.

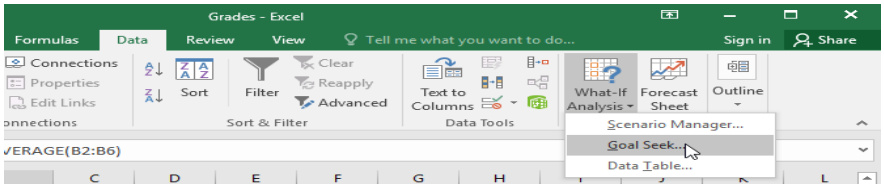


1.In the image below, you can see that the grades on the first four assignments are **58**,**70**, **72**, and **60**. Even though we don't know what the fifth grade will be, we can write a formula—or function—that calculates the final grade. In this case, each assignment is weighted equally, so all we have to do is average all five grades by typing **=AVERAGE(B2:B6)**. Once we use Goal Seek, cell **B6** will show us the minimum grade we'll need to make on that assignment.

2.Select the cell with the value you want to change. Whenever you use Goal Seek, you'll need to select a cell that already contains a **formula** or **function**. In our example, we'll select cell **B7** because it contains the formula **=AVERAGE(B2:B6)**.



3.From the **Data** tab, click the **What-If Analysis** command, then select **Goal Seek** from the drop-down menu.

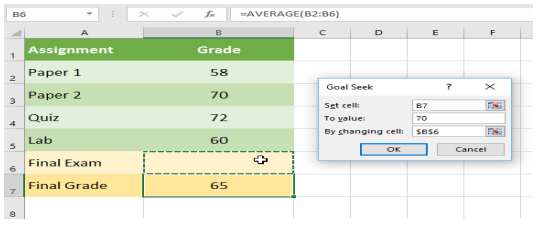


A dialog box will appear with three fields. The first field, **Set cell:**, will contain the desired result. In our example, cell **B7** is already selected.

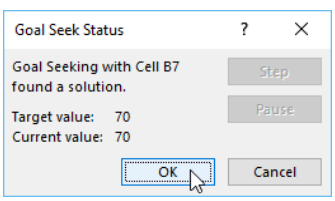
4.The second field, **To value:**, is the desired result. In our example, we'll enter **70** because we need to earn at least that to pass the class.

5.The third field, **By changing cell:**, is the cell where Goal Seek will place its answer. In our example, we'll select cell **B6** because we want to determine the grade we need to earn on the final assignment.

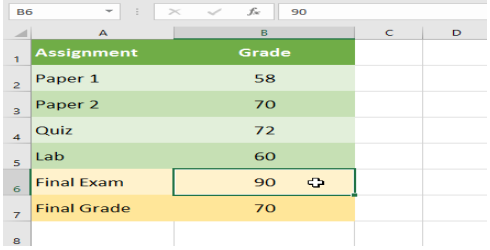
When you're done, click **OK.**



6.The dialog box will tell you if Goal Seek was able to find a solution. Click **OK**.

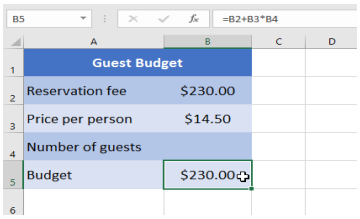


7.The result will appear in the specified cell. In our example, Goal Seek calculated that we will need to score at least a 90 on the final assignment to earn a passing grade.



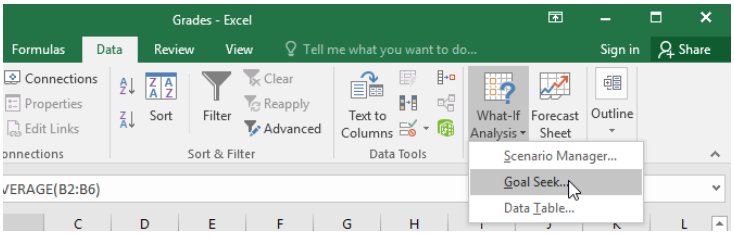
To use Goal Seek (example 2):

Let's say you're planning an event and want to invite as many people as you can without exceeding a budget of $500. We can use Goal Seek to figure out how many people to invite. In our example below, cell **B5** contains the formula **=B2+B3*B4** to calculate the total cost of a room reservation, plus the cost per person.



1.Select the cell with the value you want to change. In our example, we'll select cell **B5**.

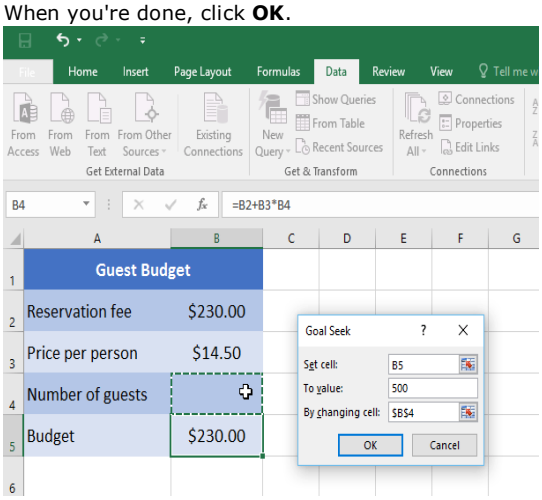
2.From the **Data** tab, click the **What-If Analysis** command, then select **Goal Seek** from the drop-down menu.



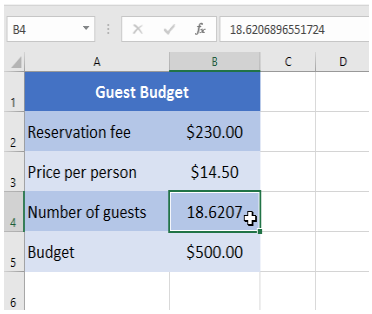
A dialog box will appear with three fields. The first field, **Set cell:**, will contain the desired result. In our example, cell **B5** is already selected.
The second field, **To value:**, is the desired result. In our example, we'll enter **500** because we only want to spend $500.

3.The third field, **By changing cell:**, is the cell where Goal Seek will place its answer. In our example, we'll select cell **B4** because we want to know how many guests we can invite without spending more than $500.

When you're done, click **OK**.



4.The result will appear in the specified cell. In our example, Goal Seek calculated the answer to be approximately 18.62. In this case, our final answer needs to be a whole number, so we'll need to round the answer up or down. Because rounding up would cause us to exceed our budget, we'll **round down** to 18 guests.



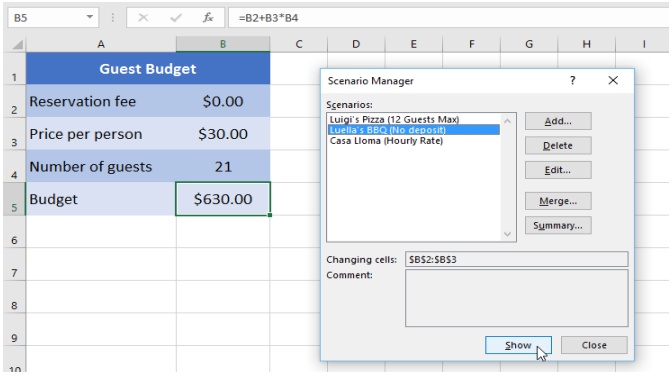
As you can see in the example above, some situations will require the answer to be a whole number. If Goal Seek gives you a decimal, you'll need to **round up or down**, depending on the situation.

The dialog box will tell you if Goal Seek was able to find a solution. Click **OK**.

Other types of what-if analysis

For more advanced projects, you may want to consider the other types of what-if analysis: **scenarios** and **data tables**. Instead of starting from the desired result and working backward, like with Goal Seek, these options allow you to test multiple values and see how the results change.

Scenarios let you substitute values for **multiple cells** (up to 32) at the same time. You can create as many scenarios as you want and then compare them without changing the values manually. In the example below, we're using scenarios to compare different venues for an upcoming event.



Simplified

E- BOOK

MS Excel 2016

*(An I.T Skill Advancement Training Programme, Initiated by **SITED®-India)***

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