ACCESS 2016

CHAPTER-1- INTRODUCTION TO DATABASES

Introduction

Microsoft Access is a **database creation and management** program. To understand Access, you must first understand **databases**.

In this lesson, you will learn about databases and how they are used. You will familiarize yourself with the differences between data management in **Microsoft Access** and **Microsoft Excel**. Finally, you will get a look ahead at the rest of the Access tutorial.

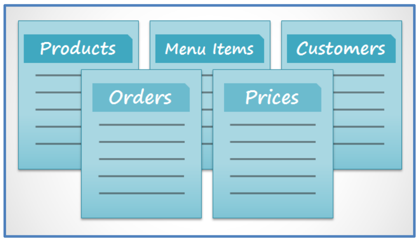
What is a database?

A **database** is a collection of data that is stored in a computer system. Databases allow their users to **enter**, **access**, and **analyze** their data quickly and easily. They're such a useful tool that you see them all the time. Ever waited while a doctor's receptionist entered your personal information into a computer, or watched a store employee use a computer to see whether an item was in stock? If so, then you've seen a database in action.

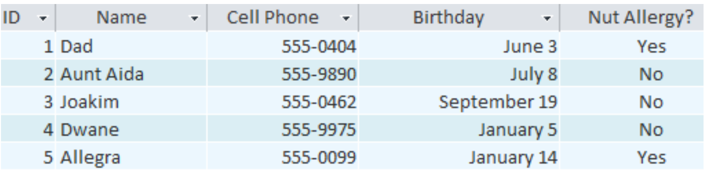
The easiest way to understand a database is to think of it as a **collection of lists**. Think about one of the databases we mentioned above: the database of patient information at a doctor's office. What lists are contained in a database like this? To start with, there's a list of patients' names. Then there's a list of past appointments, a list with medical history for each patient, a list of contact information, and so on.

This is true of all databases, from the simplest to the most complex. For instance, if you like to bake you might decide to keep a database containing the types of cookies you know how to make and the friends you give these cookies to. This is one of the simplest databases imaginable. It contains two lists: a list of your friends, and a list of cookies.

However, if you were a professional baker, you would have many more lists to keep track of: a list of customers, a list of products sold, a list of prices, a list of orders, and so on. The more lists you add, the more **complex** the database will be.



In Access, lists are a little more complex than the ones you write on paper. Access stores its lists of data in **tables**, which allow you to store even more detailed information. In the table below, the **People** list in the amateur baker's database has been expanded to include other relevant information on the baker's friends.



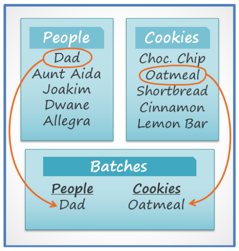
ID	Name	Cell Phone	Birthday	Nut Allergy?
1	Dad	555-0404	June 3	Yes
2	Aunt Aida	555-9890	July 8	No
3	Joakim	555-0462	September 19	No
4	Dwane	555-9975	January 5	No
5	Allegra	555-0099	January 14	Yes

If you are familiar with other programs in the Microsoft Office suite, this might remind you of Excel, which allows you to organize data in a similar way. In fact, you could build a similar table in Excel.

Why use a database?

If a database is essentially a collection of lists stored in tables and you can build tables in Excel, why do you need a real database in the first place? While Excel is great at storing and organizing numbers, Access is far stronger at handling **non-numerical data**, like names and descriptions. Non-numerical data plays a significant role in almost any database, and it's important to be able to sort and analyze it.

However, the thing that really sets databases apart from any other way of storing data is **connectivity**. We call a database like the ones you'll work with in Access a **relational database**. A relational database is able to understand how lists and the objects within them **relate** to one another. To explore this idea, let's go back to the simple database with two lists: names of your friends, and the types of cookies you know how to make. You decide to create a third list to keep track of the batches of cookies you make and who they're for. Because you're only making cookies you know the recipe for and you're only going to give them to your friends, this new list will get all of its information from the lists you made earlier.



See how the third list uses words that appeared in the first two lists? A database is capable of understanding that the **Dad** and **Oatmeal** cookies in the **Batches** list are the same things as the **Dad** and **Oatmeal** cookies in the first two lists. This relationship seems obvious, and a person would understand it right away; however, an Excel workbook wouldn't.

Excel would treat all of these things as distinct and unrelated pieces of information. In Excel, you'd have to enter every single piece of information about a person or type of cookie each time you mentioned it because that database wouldn't be **relational** like an Access database. Simply put, relational databases can recognize what a human can: If the same words appear in multiple lists, they **refer** to the same thing.

The fact that relational databases can handle information this way allows you to **enter**, **search for**, and **analyze** data in more than one table at a time. All of these things would be difficult to accomplish in Excel, but in Access even complicated tasks can be simplified and made fairly user friendly.

Taking the Access 2016 tutorial

What to expect from this tutorial

This tutorial will not teach you how to build a database from scratch. It is designed for people who plan to use a pre-existing database, most likely in the workplace.

The tutorial begins with a basic introduction to Access. You will become familiar with the structure of an Access database and learn how to navigate its various windows and the objects contained in it. As the tutorial goes on, you will learn how to enter information in several ways. You will also learn how to sort, retrieve, and analyze this information by running queries. After you understand how to use your database, you'll be introduced to tools that let you modify its structure and appearance.

By the time you've finished reading this tutorial, you will be able to use a database with confidence. You should also be able to alter it to best suit your needs.

Is this tutorial right for you?

If you've read the description and believe this tutorial fits your needs, then go ahead and jump in. As mentioned above, it's primarily designed to teach people how to use an existing database. But no matter your eventual goal, it can provide you with a solid foundation.

If you're planning to create a system to keep track of personal information, strongly consider whether you need the full functionality of Access in your database. While Access is an extremely useful tool, setting up a new database can be difficult and time consuming. If you don't necessarily need the full connectivity of a relational database, consider managing your information with Excel instead. If you decide to create your own database, review our lesson on **Designing Your Own Database** for resources on database creation.

CHAPTER -2- INTRODUCTION TO OBJECTS

Introduction

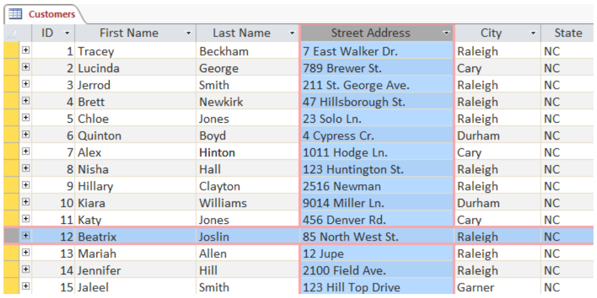
Databases in Access are composed of four objects: **tables**, **queries**, **forms**, and **reports**. Together, these objects allow you to enter, store, analyze, and compile data however you want.

In this lesson, you will learn about each of the four **objects** and come to understand how they interact with each other to create a fully functional relational database.

Tables

1.By this point, you should already understand that a database is a collection of data organized into many connected **lists**. In Access, all data is stored in **tables**, which puts tables at the heart of any database.

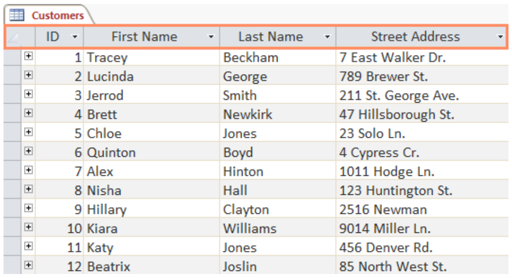
You might already know that tables are organized into vertical **columns** and horizontal **rows**.



Customers

ID	First Name	Last Name	Street Address	City	State
1	Tracey	Beckham	7 East Walker Dr.	Raleigh	NC
2	Lucinda	George	789 Brewer St.	Cary	NC
3	Jerrod	Smith	211 St. George Ave.	Raleigh	NC
4	Brett	Newkirk	47 Hillsborough St.	Raleigh	NC
5	Chloe	Jones	23 Solo Ln.	Raleigh	NC
6	Quinton	Boyd	4 Cypress Cr.	Durham	NC
7	Alex	Hinton	1011 Hodge Ln.	Cary	NC
8	Nisha	Hall	123 Huntington St.	Raleigh	NC
9	Hillary	Clayton	2516 Newman	Raleigh	NC
10	Kiara	Williams	9014 Miller Ln.	Durham	NC
11	Katy	Jones	456 Denver Rd.	Cary	NC
12	Beatrix	Joslin	85 North West St.	Raleigh	NC
13	Mariah	Allen	12 Jupe	Raleigh	NC
14	Jennifer	Hill	2100 Field Ave.	Raleigh	NC
15	Jaleel	Smith	123 Hill Top Drive	Garner	NC

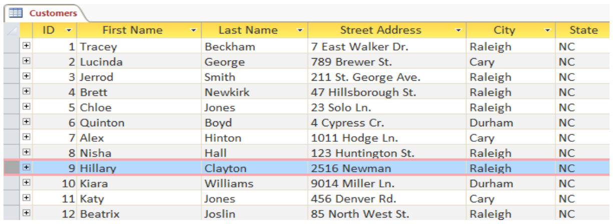
2.In Access, rows and columns are referred to as **records** and **fields**. A **field** is more than just a column; it's a way of organizing information by the **type** of data it is. Every piece of information within a field is of the same **type**. For example, every entry in a field called **First Name** would be a name, and every entry in field called **Street Address** would be an address.



Customers

ID	First Name	Last Name	Street Address
1	Tracey	Beckham	7 East Walker Dr.
2	Lucinda	George	789 Brewer St.
3	Jerrod	Smith	211 St. George Ave.
4	Brett	Newkirk	47 Hillsborough St.
5	Chloe	Jones	23 Solo Ln.
6	Quinton	Boyd	4 Cypress Cr.
7	Alex	Hinton	1011 Hodge Ln.
8	Nisha	Hall	123 Huntington St.
9	Hillary	Clayton	2516 Newman
10	Kiara	Williams	9014 Miller Ln.
11	Katy	Jones	456 Denver Rd.
12	Beatrix	Joslin	85 North West St.

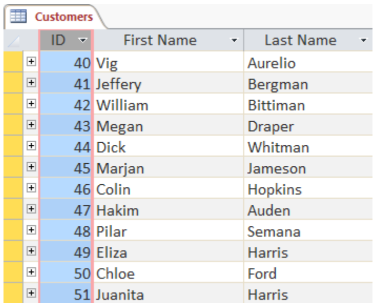
3.Likewise, a **record** is more than just a row; it's a unit of information. Every cell in a given row is part of that row's record.



Customers

ID	First Name	Last Name	Street Address	City	State
1	Tracey	Beckham	7 East Walker Dr.	Raleigh	NC
2	Lucinda	George	789 Brewer St.	Cary	NC
3	Jerrod	Smith	211 St. George Ave.	Raleigh	NC
4	Brett	Newkirk	47 Hillsborough St.	Raleigh	NC
5	Chloe	Jones	23 Solo Ln.	Raleigh	NC
6	Quinton	Boyd	4 Cypress Cr.	Durham	NC
7	Alex	Hinton	1011 Hodge Ln.	Cary	NC
8	Nisha	Hall	123 Huntington St.	Raleigh	NC
9	Hillary	Clayton	2516 Newman	Raleigh	NC
10	Kiara	Williams	9014 Miller Ln.	Durham	NC
11	Katy	Jones	456 Denver Rd.	Cary	NC
12	Beatrix	Joslin	85 North West St.	Raleigh	NC

4.Notice how each record spans several fields. Even though the information in each record is organized into fields, it belongs with the other information in that record. See the **number** at the left of each row? It's the **ID number** that identifies each record. The ID number for a record refers to every piece of information contained on that row.



Customers

ID	First Name	Last Name
40	Vig	Aurelio
41	Jeffery	Bergman
42	William	Bittiman
43	Megan	Draper
44	Dick	Whitman
45	Marjan	Jameson
46	Colin	Hopkins
47	Hakim	Auden
48	Pilar	Semana
49	Eliza	Harris
50	Chloe	Ford
51	Juanita	Harris

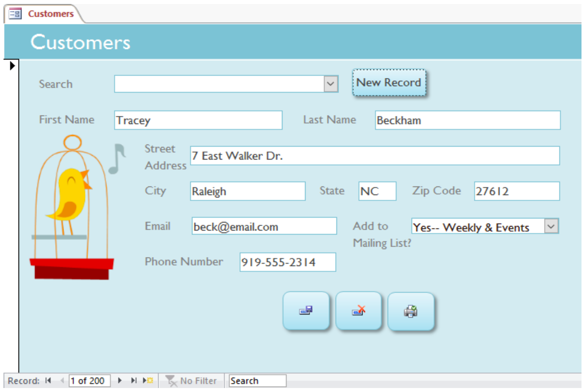
Tables are good for storing **closely related information**. Let's say you own a bakery and have a database that includes a table with your customers' names and information, like their phone numbers, home addresses, and email addresses. Because these pieces of information are all details on your customers, you'd include them all in the same **table**. Each customer would be represented by a unique **record**, and each type of information about these customers would be stored in its own field. If you decided to add any more information—say, a customer's birthday—you would simply create a new field within the same table.

Forms, queries, and reports

Although tables store all of your data, the other three objects—**forms**, **queries**, and **reports**—offer you ways to work with it. Each of these objects interacts with the **records** stored in your database's tables.

Forms

Forms are used for **entering**, **modifying**, and **viewing** records. You likely have had to fill out forms on many occasions, like when visiting a doctor's office, applying for a job, or registering for school. The reason forms are used so often is that they're an easy way to guide people toward entering data correctly. When you enter information into a form in Access, the data goes exactly where the database designer wants it to go: in one or more related tables.



Customers

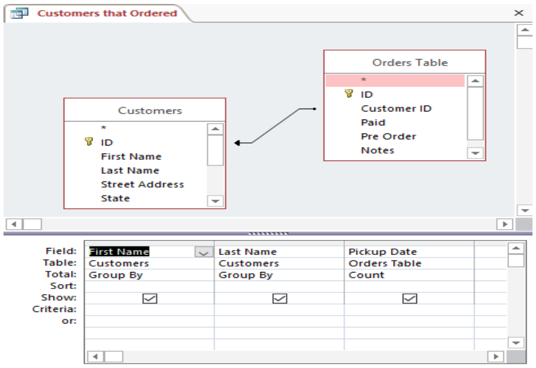
Customers

Search:

First Name: Tracey
Last Name: Beckham
Street Address: 7 East Walker Dr.
City: Raleigh
State: NC
Zip Code: 27612
Email: beck@email.com
Add to Mailing List?: Yes-- Weekly & Events
Phone Number: 919-555-2314

Record: 1 of 200

Forms make entering data easier. Working with extensive tables can be confusing, and when you have connected tables you might need to work with more than one at a time to enter a set of data. However, with forms it's possible to enter data into multiple tables at once, all in one place. Database designers can even set restrictions on individual form components to ensure all of the needed data is entered in the correct format. All in all, forms help keep data consistent and organized, which is essential for an accurate and powerful database.



Customers that Ordered

Customers
*
ID
First Name
Last Name
Street Address
State

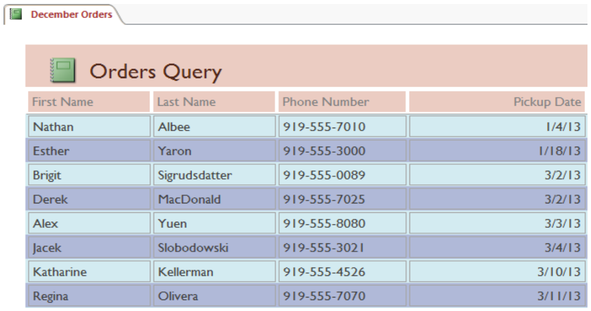
Orders Table
*
ID
Customer ID
Paid
Pre Order
Notes

Field:	First Name	Last Name	Pickup Date
Table:	Customers	Customers	Orders Table
Total:	Group By	Group By	Count
Sort:			
Show:	☑	☑	☑
Criteria:			
or:			

Queries

Queries are a way of **searching** for and **compiling** data from one or more tables. Running a query is like asking a detailed **question** of your database. When you build a query in Access, you are **defining specific search conditions** to find exactly the data you want.

Queries are far more powerful than the simple searches you might carry out within a table. While a **search** would be able to help you find the name of one customer at your business, you could run a **query** to find the name and phone number of every customer who's made a purchase within the past week. A well-designed query can give information you might not be able to find just by looking through the data in your tables.



December Orders

Orders Query

First Name	Last Name	Phone Number	Pickup Date
Nathan	Albee	919-555-7010	1/4/13
Esther	Yaron	919-555-3000	1/18/13
Brigit	Sigrudsdatter	919-555-0089	3/2/13
Derek	MacDonald	919-555-7025	3/2/13
Alex	Yuen	919-555-8080	3/3/13
Jacek	Slobodowski	919-555-3021	3/4/13
Katharine	Kellerman	919-555-4526	3/10/13
Regina	Olivera	919-555-7070	3/11/13

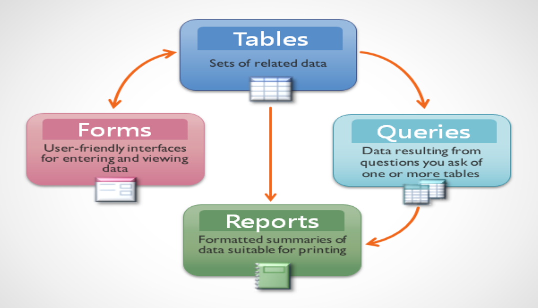
Reports

Reports offer you the ability to **present** your data **in print**. If you've ever received a computer printout of a class schedule or a printed invoice of a purchase, you've seen a database report. Reports are useful because they allow you to present components of your database in an easy-to-read format. You can even customize a report's appearance to make it visually appealing. Access offers you the ability to create a report from any **table** or **query**.

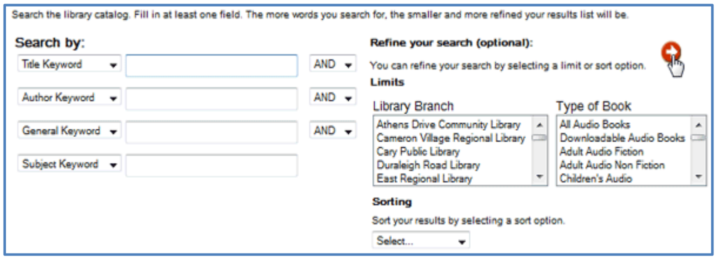
Putting it all together

Even if you have a good idea of how each object can be used, it can initially be difficult to understand how they all work together. It helps to remember that they all work with the same data. Every piece of data a **query**, **form**, or **report** uses is stored in one of your database **tables**.

Forms allow you to both **add** data to tables and **view** data that already exists. Reports **present** data from tables and also from queries, which then **search for** and **analyze** data within these same tables.


Tables
Sets of related data
Forms
User-friendly interfaces for entering and viewing data
Queries
Data resulting from questions you ask of one or more tables
Reports
Formatted summaries of data suitable for printing

These relationships sound complicated, but in fact they work together so well and naturally that we often don't even notice when we're using connected database objects. Have you ever used an electronic card catalog to search for a book at the library? Chances are, you entered your search into something that looks like this:



Search the library catalog. Fill in at least one field. The more words you search for, the smaller and more refined your results list will be.

Search by:

Title Keyword ▾ [ ] AND ▾
Author Keyword ▾ [ ] AND ▾
General Keyword ▾ [ ] AND ▾
Subject Keyword ▾ [ ]

Refine your search (optional):

You can refine your search by selecting a limit or sort option.

Limits

Library Branch
Athens Drive Community Library
Cameron Village Regional Library
Cary Public Library
Duraleigh Road Library
East Regional Library

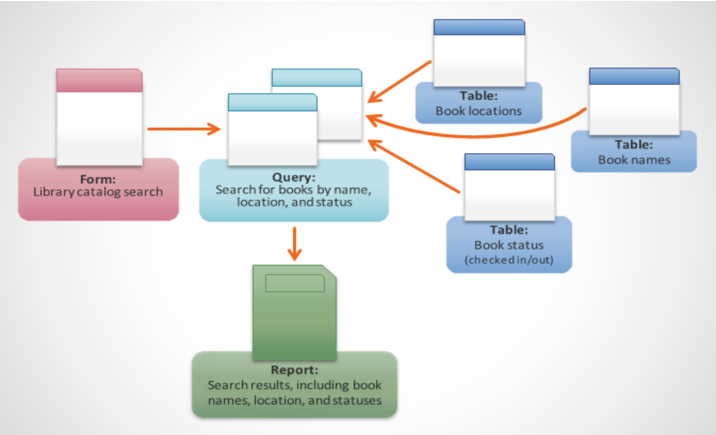
Type of Book
All Audio Books
Downloadable Audio Books
Adult Audio Fiction
Adult Audio Non Fiction
Children's Audio

Sorting

Sort your results by selecting a sort option.

Select... ▾

When you performed your search, you were entering your search terms into a **form**that then created and ran a **query** based on your request. When the query finished searching the database's **tables** for records that matched your search, you were shown a **report** that drew information from the query and the related tables—in this case, a list of books matching your search terms. You could represent the connections between the objects like this:



Let's say instead of using these tools you had to search within a giant table containing every book in the library system. The relevant records would likely be spread out across many tables: a table for book titles and descriptions, a table containing information on which books are checked in or out, and a table with each branch of the library, just to name a few.

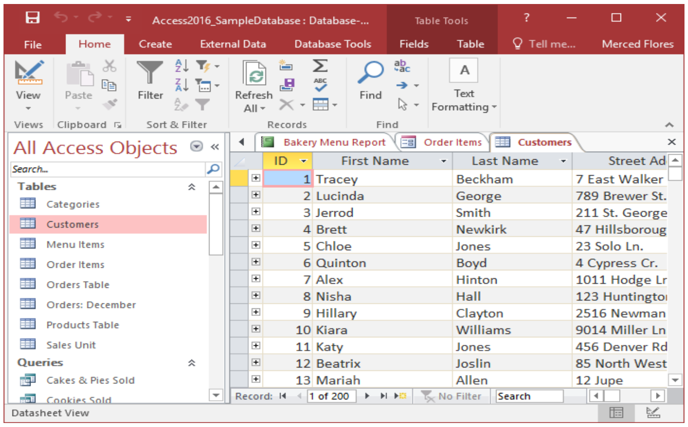
You'd have to search at least three tables just to find a book, learn its location, and see whether it's checked in! It's easy to imagine how difficult it could become to find the right book. If you weren't careful, you might even mess something up by accidentally deleting or editing a record. It's easy to see how the database objects make this search much more manageable.

In our **Introduction to Databases lesson**, we discussed the concept of a **relational database**, which is a database that is able to understand how different sets of data **relate** to one another. Situations like the example above are exactly why people find relational databases so useful. Without a relational database, what should be a simple task—searching for a book and seeing if it's checked in and where—becomes incredibly complicated and time consuming. Knowing how to use the four Access objects can make even complicated tasks fairly user friendly.

CHAPTER -3- GETTING STARTED IN ACCESS

Whenever you're learning a new program, it's important to familiarize yourself with the program window and the tools within it. Working with Access is no different. Knowing your way around the Access environment will make learning and using Access much easier.

In this lesson, you will familiarize yourself with the Access environment, including the **Ribbon**, **Backstage view**, **Navigation pane**, **Document Tabs bar**, and more. You will also learn how to navigate with a **navigation form**, if your database includes one.



ID	First Name	Last Name	Street Ad
1	Tracey	Beckham	7 East Walker
2	Lucinda	George	789 Brewer St.
3	Jerrod	Smith	211 St. George
4	Brett	Newkirk	47 Hillsboroug
5	Chloe	Jones	23 Solo Ln.
6	Quinton	Boyd	4 Cypress Cr.
7	Alex	Hinton	1011 Hodge Lr
8	Nisha	Hall	123 Huntingtoı
9	Hillary	Clayton	2516 Newman
10	Kiara	Williams	9014 Miller Ln
11	Katy	Jones	456 Denver Rd
12	Beatrix	Joslin	85 North West
13	Mariah	Allen	12 Jupe

Getting to know Access 2016

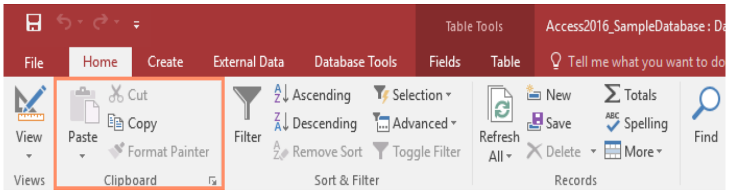
Access 2016 uses the **Ribbon** to organize commands, just like in Access 2013 and 2010. If you've used these versions before, Access 2016 will feel familiar. But if you are new to Access or have more experience with older versions, you should first take some time to become familiar with the **Access 2016 interface**.

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

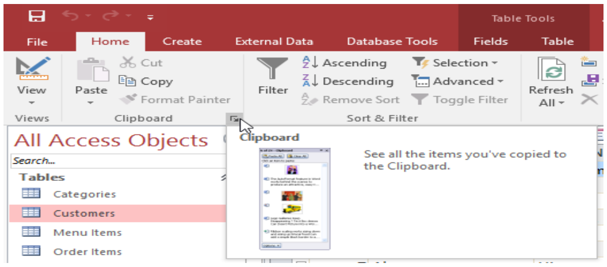
Working with your Access environment

If you've previously used Access 2013 or 2010, Access 2016 will feel familiar. It continues to use features like the **Ribbon** and the **Quick Access Toolbar**—where you will find commands to perform common tasks in Access—as well as **Backstage view**.

The Ribbon



Access uses a **tabbed Ribbon system** instead of traditional menus. **The Ribbon**contains **multiple tabs**, each with several **groups of commands**. For example, the Clipboard group on the Home tab contains commands such as Cut, Copy, and Paste.



Clipboard

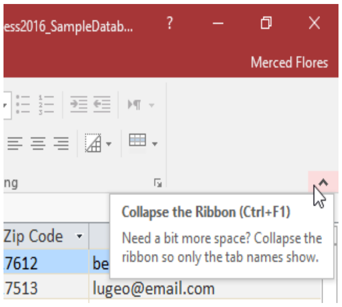
See all the items you've copied to the Clipboard.

Some groups also have a small arrow in the bottom-right corner that you can click for even more options.

To minimize and maximize the Ribbon:

The Ribbon is designed to respond to your current task; however, you can choose to **minimize** the Ribbon if you find that it takes up too much screen space.

1.Click the **arrow** in the lower-right corner of the Ribbon to minimize it.

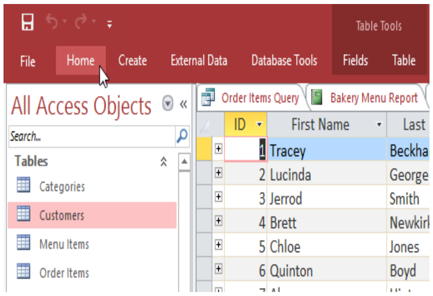


Collapse the Ribbon (Ctrl+F1)

Need a bit more space? Collapse the ribbon so only the tab names show.

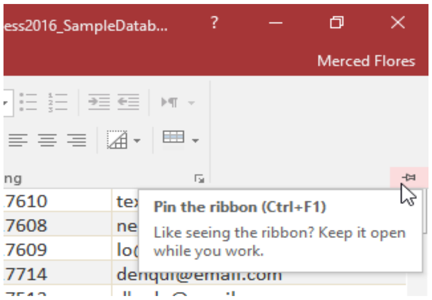
Zip Code	
7612	be
7513	lugeo@email.com

2.The **Ribbon** will be minimized. Click a **tab** to make the Ribbon reappear. It will disappear again when not in use.



ID	First Name	Last
1	Tracey	Beckha
2	Lucinda	George
3	Jerrod	Smith
4	Brett	Newkirl
5	Chloe	Jones
6	Quinton	Boyd

3.To **maximize** the Ribbon, click a tab, then click the **pin** icon in the lower-right corner. The Ribbon will appear at all times.

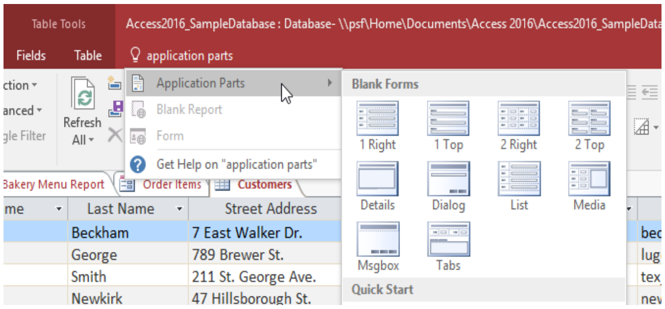


Pin the ribbon (Ctrl+F1)

Like seeing the ribbon? Keep it open while you work.

7610	te
7608	ne
7609	lo
7714	denqui@email.com

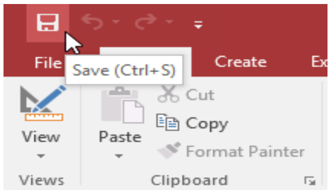
Using the Tell me feature



Last Name	Street Address
Beckham	7 East Walker Dr.
George	789 Brewer St.
Smith	211 St. George Ave.
Newkirk	47 Hillsborough St.

If you're having trouble finding command you want, the **Tell me** feature can help. It works just like a regular search bar: Type what you're looking for, and a list of options will appear. You can then use the command directly from the menu without having to find it on the Ribbon.

The Quick Access Toolbar



The **Quick Access Toolbar**, located above the Ribbon, lets you access common commands no matter which tab you are on. By default, it shows the **Save**, **Undo**, and **Redo** commands. If you'd like, you can **customize** it by **adding additional commands**.

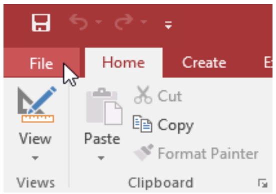
Note that the **Save** command only saves the current open object. In addition, the **Undo** command will not undo certain actions, like adding a record. Pay close attention to your information when using the **Undo** command to make sure it has the desired effect.

Backstage view

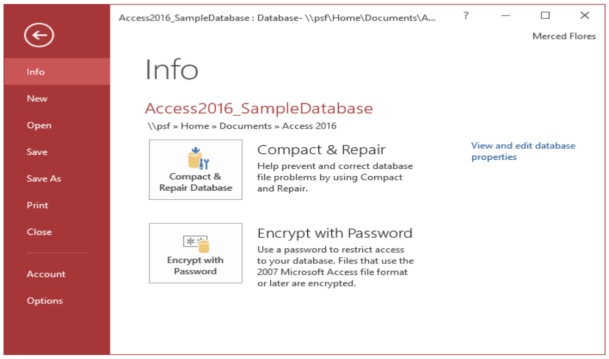
Backstage view gives you various options for saving, opening, and printing your database.

To access Backstage view:

1.Click the **File** tab on the **Ribbon**.



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


Access2016_SampleDatabase : Database- \\psf\Home\Documents\A...
Merced Flores
Info
New
Open
Save
Save As
Print
Close
Account
Options
Compact & Repair Database
Encrypt with Password
View and edit database properties

Info

Access2016_SampleDatabase

\\psf » Home » Documents » Access 2016

Compact & Repair

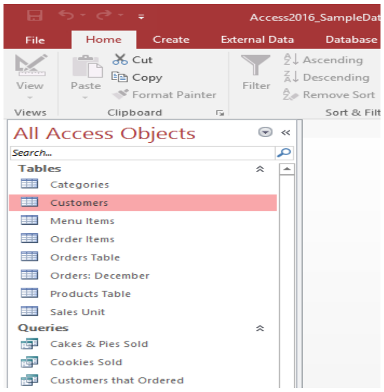
Help prevent and correct database file problems by using Compact and Repair.

Encrypt with Password

Use a password to restrict access to your database. Files that use the 2007 Microsoft Access file format or later are encrypted.

Backstage view will appear.

The Navigation pane

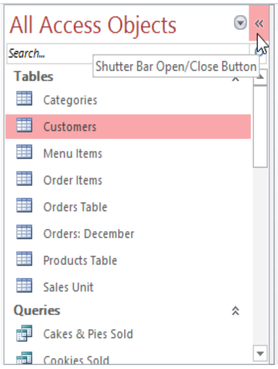


The **Navigation pane** is a list containing every object in your database. For easier viewing, the objects are organized into groups by type. You can **open**, **rename**, and **delete** objects using the Navigation pane.

To minimize and maximize the Navigation pane:

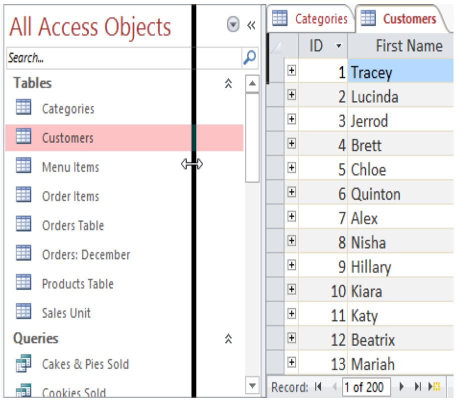
The Navigation pane is designed to help you manage all of your objects; however, if you feel that it takes up too much of your screen space, you can **minimize** it.

To minimize the Navigation pane, click the **double arrow** in the upper-right corner.



The Navigation pane will be minimized. Click the **double arrow** again to maximize it.

If you want to make the Navigation pane smaller without fully minimizing it, you can **resize** it. Simply click and drag the right border of the Navigation pane. When it is the desired size, release your mouse.



ID	First Name
1	Tracey
2	Lucinda
3	Jerrod
4	Brett
5	Chloe
6	Quinton
7	Alex
8	Nisha
9	Hillary
10	Kiara
11	Katy
12	Beatrix
13	Mariah

Object sorting in the Navigation pane

By default, objects are sorted by **type**, with tables in one group, forms in another, and so on. However, if you want you can sort the objects in the Navigation pane into groups of your choosing. There are four sort options:

Custom allows you to create a custom group for sorting objects. After applying the sort, simply drag the desired objects to the new group.

Object Type groups objects by type. This is the default setting.

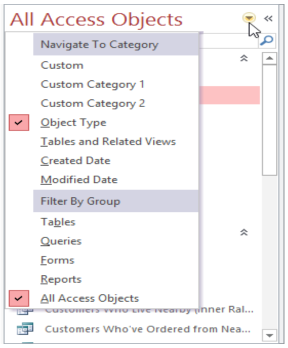
Tables and Related Views groups forms, queries, and reports with the tables they refer to.

Created Date or **Modified Date** sorts objects based on when they were created or last edited.

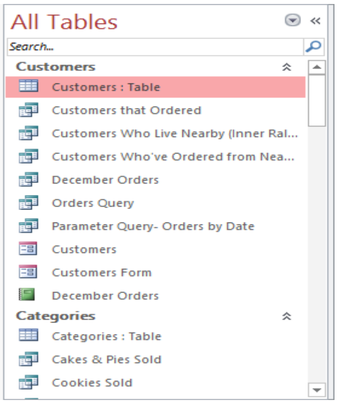
To sort objects in the Navigation pane:

1.Click the **drop-down arrow** to the right of **All Access Objects**,

then select the desired sort from the drop-down menu.



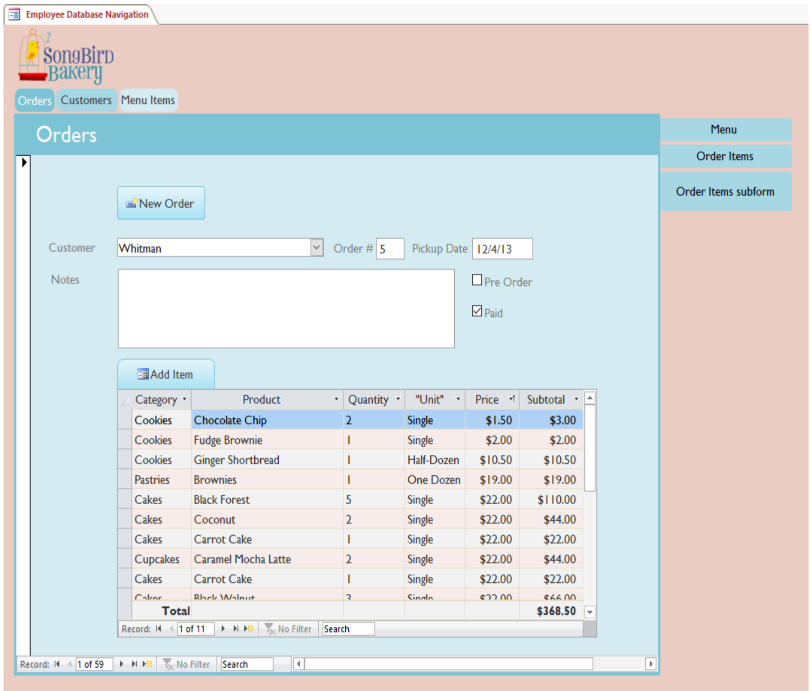
2.The objects in the Navigation pane will now be sorted to reflect your choice.



Databases with navigation forms

Some databases include a **navigation form** that opens automatically when the database is opened. Navigation forms are designed to be a **user-friendly** replacement for the **Navigation pane**. They contain **tabs** that allow you to view and work with common forms, queries, and reports. Having your frequently used objects available to you in one place lets you access them quickly and easily.

To open an object from a navigation form, click its tab. The object will be displayed within the navigation form. Once an object is open, you can work with it as you normally would. In the example below, the navigation form has tabs near the top left for orders, customers, and menu items, and each one will open a corresponding object.



Customer Whitman Order # 5 Pickup Date 12/4/13

Notes

□ Pre Order

☑ Paid

Category	Product	Quantity	"Unit"	Price	Subtotal
Cookies	Chocolate Chip	2	Single	$1.50	$3.00
Cookies	Fudge Brownie	1	Single	$2.00	$2.00
Cookies	Ginger Shortbread	1	Half-Dozen	$10.50	$10.50
Pastries	Brownies	1	One Dozen	$19.00	$19.00
Cakes	Black Forest	5	Single	$22.00	$110.00
Cakes	Coconut	2	Single	$22.00	$44.00
Cakes	Carrot Cake	1	Single	$22.00	$22.00
Cupcakes	Caramel Mocha Latte	2	Single	$22.00	$44.00
Cakes	Carrot Cake	1	Single	$22.00	$22.00
Cakes	Black Walnut	3	Single	$22.00	$66.00
Total					**$368.50**

Record: 1 of 11 No Filter Search

Record: 1 of 59 No Filter Search

Generally, navigation forms include only the objects a typical user will need to work with fairly regularly, which is why your navigation form may not include every single form, query, or report. This makes it easier to navigate the database. By hiding tables and rarely used forms, queries, and reports, it also reduces the chance of the database being damaged by users accidentally editing or deleting necessary data.

For this reason, it's important to ask your database designer or administrator before working with objects that are not available in your navigation form. Once you have the go-ahead, you can simply **maximize** the **Navigation pane** and open the objects from there.

CHAPTER -4- MANAGING DATABASES AND OBJECTS

Introduction

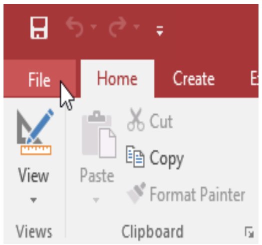
Each Access database consists of multiple **objects** that let you interact with data. Databases can include **forms** for entering data, **queries** for searching within it, **reports** for analyzing it, and **tables** for storing it. Whenever you work with your database, you are working with many of these objects at once. Fortunately, Access makes managing these objects pretty easy.

In this lesson, you will learn how to **open** and **close** databases, as well as how to **open**, **close**, and **save** objects.

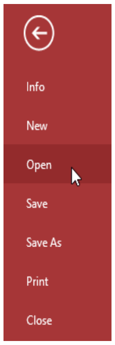
To open an existing database:

Before you enter data or modify your objects, you will need to open your database.

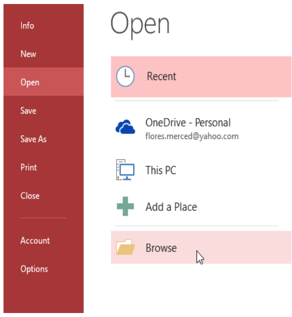
1.Select the **File** tab to go to **Backstage view**.



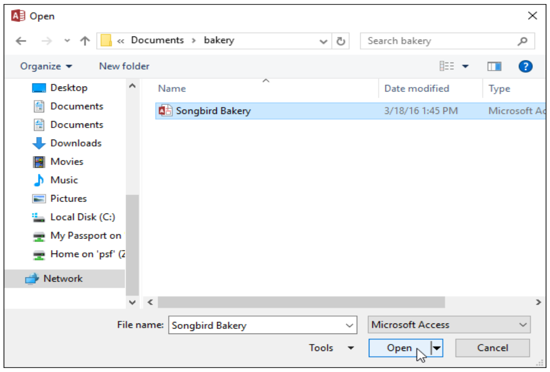
2.Click **Open**.



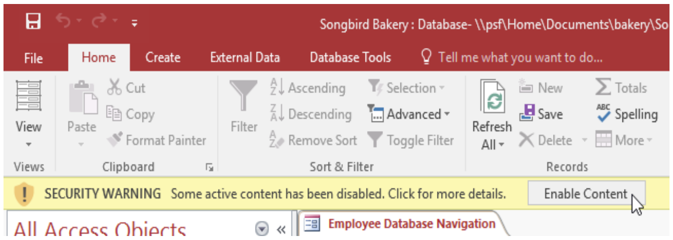
3.Click **Browse**.



4.The **Open** dialog box will appear. Locate and select the database, then click **Open**.

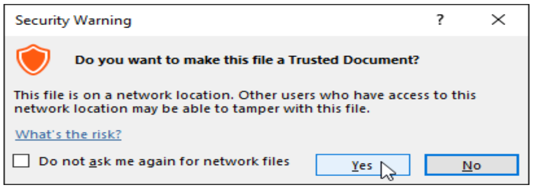


5.One or more **warning messages** may appear when you open your database. If the database contains customized functions, a yellow bar with a security warning may appear below the Ribbon. If you trust the source of your database, click **Enable Content** for your database to display correctly.



SECURITY WARNING Some active content has been disabled. Click for more details.

6.After enabling all content in the database, you may see a message asking if you want to make the database a **Trusted Document**. Click **Yes** if you would like all content to be automatically enabled each time you open the database.



Do you want to make this file a Trusted Document?

This file is on a network location. Other users who have access to this network location may be able to tamper with this file.

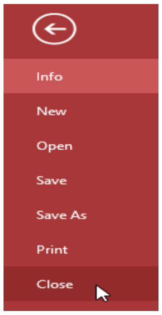
☐ Do not ask me again for network files

You may also be prompted to **sign in** to the database. Select your name from the login list. If your name does not appear, click **Add User** to enter your information.

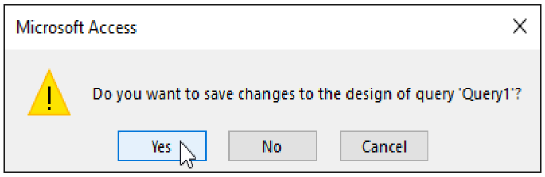
To close a database:

1.Select the **File** tab to go to **Backstage view**.

Select **Close**.



2.If you have any unsaved objects, a dialog box will appear for each one asking if you would like to save it. Select **Yes** to save the object, **No** to close it without saving, or **Cancel** to leave your database open.



Do you want to save changes to the design of query 'Query1'?

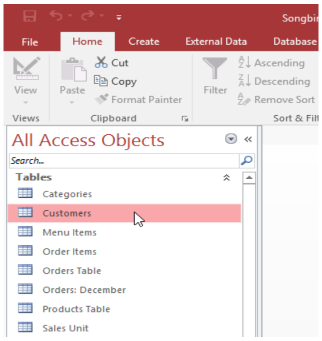
Working with objects

It's helpful to think of your database as a large binder or folder in which you store your data. The data itself is contained in database **objects**. Access treats each of these objects as separate documents, which means you will have to **open** and **save** them individually in order to work with them.

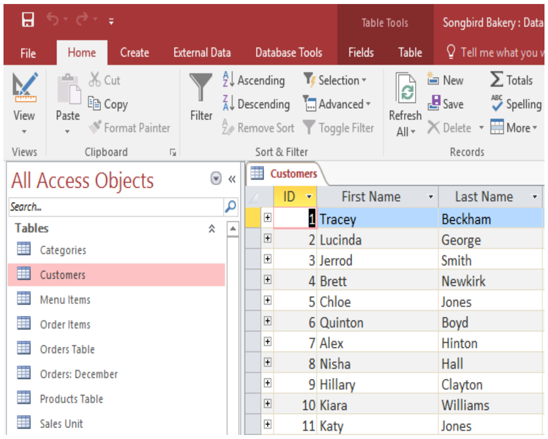
You may have noticed that this lesson contains no instructions for saving a database. This is because you cannot save an entire database at once. Rather, you must individually save the objects contained within the database.

To open an object:

1.In the **Navigation pane**, locate and double-click the desired object.



2.The object will appear as a **tab** in the **Document Tabs bar**.



ID	First Name	Last Name
1	Tracey	Beckham
2	Lucinda	George
3	Jerrod	Smith
4	Brett	Newkirk
5	Chloe	Jones
6	Quinton	Boyd
7	Alex	Hinton
8	Nisha	Hall
9	Hillary	Clayton
10	Kiara	Williams
11	Katy	Jones

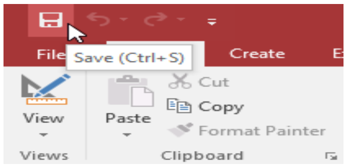
Saving objects

You'll need to **save** any changes you make to each object before closing your database. Remember, saving early and often can prevent your work from being lost. However, you will also be prompted to save any unsaved work when you attempt to close your database.

To save a new object:

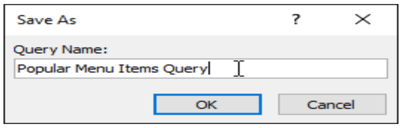
Select the object you want to save by clicking its tab in the **Document Tabs bar**.

1.Click the **Save** command on the **Quick Access Toolbar**, or press **Ctrl+S** on your keyboard.



2.The first time you save an object, you will be prompted to name it. Enter the desired object name, then click **OK**.

The object will be saved. Click the **Save** command again to save any changes to the object.

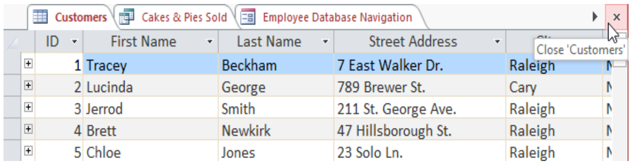


Query Name: Popular Menu Items Query

To close an object:

1.Select the object you want to close, then click the **X** to the right of the **Document Tabs bar**.

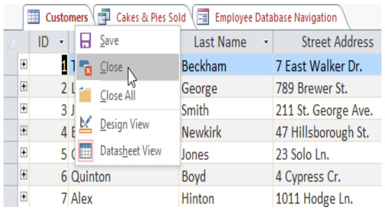
If there are any unsaved changes to the object, you will be prompted to save it. Select **Yes** to save, **No** to close it without saving your changes, and **Cancel** to leave the object open.



ID	First Name	Last Name	Street Address	Ci
1	Tracey	Beckham	7 East Walker Dr.	Raleigh
2	Lucinda	George	789 Brewer St.	Cary
3	Jerrod	Smith	211 St. George Ave.	Raleigh
4	Brett	Newkirk	47 Hillsborough St.	Raleigh
5	Chloe	Jones	23 Solo Ln.	Raleigh

2.You can also close an object by right-clicking its tab on the Document Tabs bar and selecting **Close**.

Select **Close All** to close all open objects.

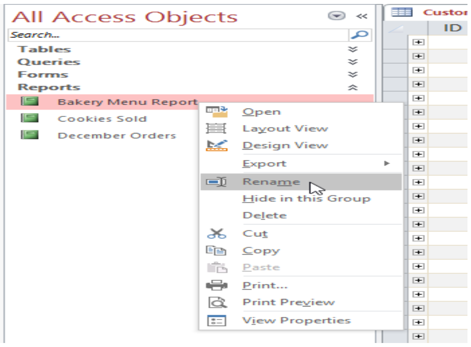


ID	First Name	Last Name	Street Address
1		Beckham	7 East Walker Dr.
2		George	789 Brewer St.
3		Smith	211 St. George Ave.
4		Newkirk	47 Hillsborough St.
5		Jones	23 Solo Ln.
6	Quinton	Boyd	4 Cypress Cr.
7	Alex	Hinton	1011 Hodge Ln.

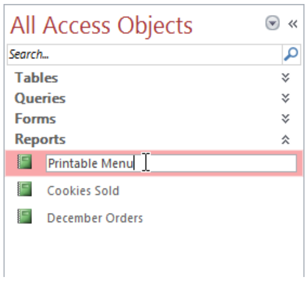
To rename an object:

If the object you want to rename is open, **close** it.

1.In the **Navigation pane**, **right-click** the desired object, then select **Rename**.



2.Type the new object name, then press **Enter** on your keyboard.



CHAPTER -5- WORKING WITH TABLES

Introduction

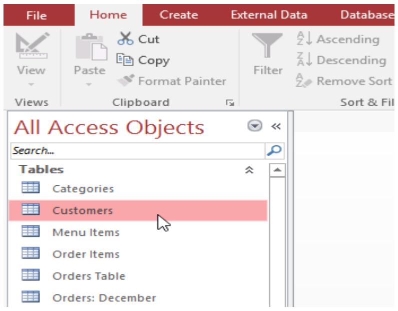
While there are four types of database objects in Access, **tables** are arguably the most important. Even when you're using forms, queries, and reports, you're still working with tables because that's where all of your **data** is stored. Tables are at the heart of any database, so it's important to understand how to use them.

In this lesson, you will learn how to **open tables**, **create** and **edit records**, and **modify the appearance** of your table to make it easier to view and work with.

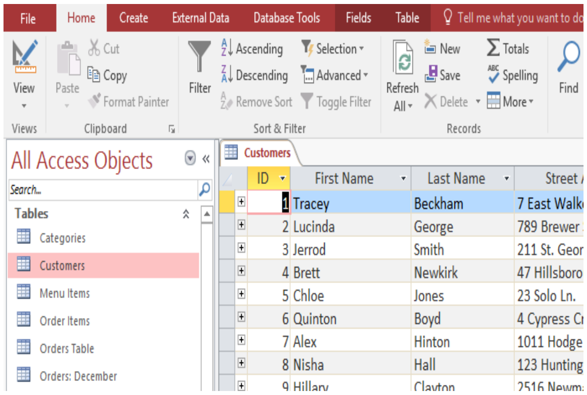
Table basics

To open an existing table:

1.Open your database, and locate the **Navigation pane**.
In the Navigation pane, locate the table you want to open.
Double-click the desired table.

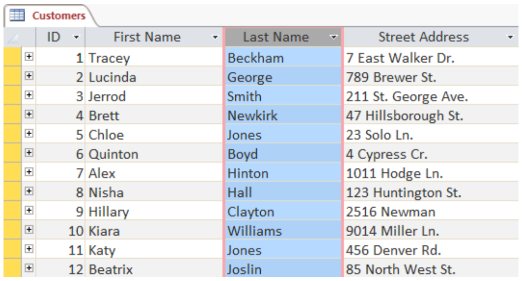


2.The table will open and appear as a **tab** in the **Document Tabs bar**.



ID	First Name	Last Name	Street /
1	Tracey	Beckham	7 East Walk
2	Lucinda	George	789 Brewer
3	Jerrod	Smith	211 St. Geor
4	Brett	Newkirk	47 Hillsboro
5	Chloe	Jones	23 Solo Ln.
6	Quinton	Boyd	4 Cypress Cr
7	Alex	Hinton	1011 Hodge
8	Nisha	Hall	123 Hunting
9	Hillary	Clayton	2516 Newm

Understanding tables

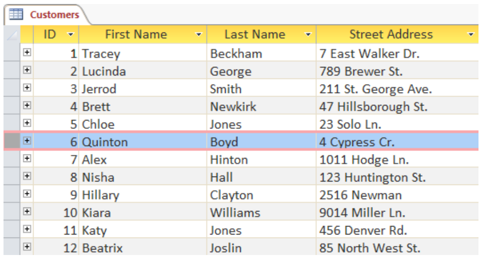


ID	First Name	Last Name	Street Address
1	Tracey	Beckham	7 East Walker Dr.
2	Lucinda	George	789 Brewer St.
3	Jerrod	Smith	211 St. George Ave.
4	Brett	Newkirk	47 Hillsborough St.
5	Chloe	Jones	23 Solo Ln.
6	Quinton	Boyd	4 Cypress Cr.
7	Alex	Hinton	1011 Hodge Ln.
8	Nisha	Hall	123 Huntington St.
9	Hillary	Clayton	2516 Newman
10	Kiara	Williams	9014 Miller Ln.
11	Katy	Jones	456 Denver Rd.
12	Beatrix	Joslin	85 North West St.

1.All tables are composed of horizontal **rows** and vertical **columns**, with small rectangles called **cells** in the places where rows and columns intersect. In Access, rows and columns are referred to as **records** and **fields**.

A **field** is a way of organizing information by type. Think of the **field name** as a question and every cell within that field as a response to that question. In our example, the **Last Name** field is selected, which contains all the last names in the table.

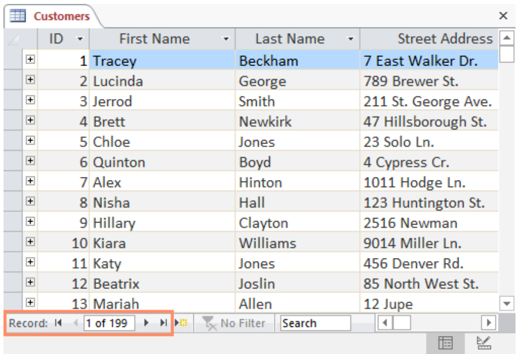
2.A record is one unit of information. Every cell on a given row is part of that row's record. In our example, Quinton Boyd's record is selected, which contains all of the information related to him in the table.
Each record has its own **ID number**. Within a table, each ID number is unique to its record and refers to all of the information within that record. The ID number for a record cannot be changed.
Each cell of data in your table is part of both a **field** and a **record**. For instance, if you had a table of names and contact information, each person would be represented by a record, and each piece of information about each person—name, phone number, address, and so on—would be contained within a distinct field on that record's row.



ID	First Name	Last Name	Street Address
1	Tracey	Beckham	7 East Walker Dr.
2	Lucinda	George	789 Brewer St.
3	Jerrod	Smith	211 St. George Ave.
4	Brett	Newkirk	47 Hillsborough St.
5	Chloe	Jones	23 Solo Ln.
6	Quinton	Boyd	4 Cypress Cr.
7	Alex	Hinton	1011 Hodge Ln.
8	Nisha	Hall	123 Huntington St.
9	Hillary	Clayton	2516 Newman
10	Kiara	Williams	9014 Miller Ln.
11	Katy	Jones	456 Denver Rd.
12	Beatrix	Joslin	85 North West St.

Navigating within tables

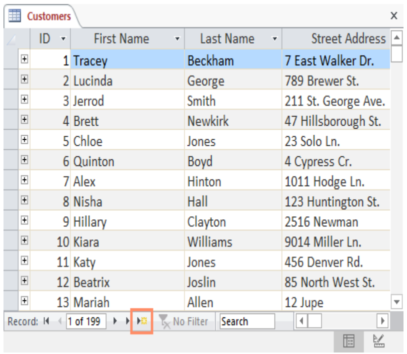
1.The bar at the bottom of the table contains many commands to help you search or scroll through records.
To navigate through records in a table, you can use the **up and down arrow keys**, **scroll up and down**, or use the arrows in the **Record Navigation bar**located at the bottom of your table.



ID	First Name	Last Name	Street Address
1	Tracey	Beckham	7 East Walker Dr.
2	Lucinda	George	789 Brewer St.
3	Jerrod	Smith	211 St. George Ave.
4	Brett	Newkirk	47 Hillsborough St.
5	Chloe	Jones	23 Solo Ln.
6	Quinton	Boyd	4 Cypress Cr.
7	Alex	Hinton	1011 Hodge Ln.
8	Nisha	Hall	123 Huntington St.
9	Hillary	Clayton	2516 Newman
10	Kiara	Williams	9014 Miller Ln.
11	Katy	Jones	456 Denver Rd.
12	Beatrix	Joslin	85 North West St.
13	Mariah	Allen	12 Jupe

2.You can create a new record with the **new (blank) record**

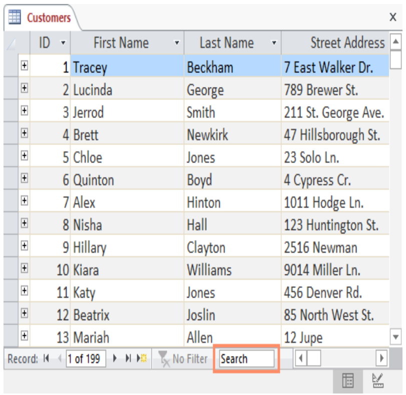
command on the **Record Navigation bar**.



ID	First Name	Last Name	Street Address
1	Tracey	Beckham	7 East Walker Dr.
2	Lucinda	George	789 Brewer St.
3	Jerrod	Smith	211 St. George Ave.
4	Brett	Newkirk	47 Hillsborough St.
5	Chloe	Jones	23 Solo Ln.
6	Quinton	Boyd	4 Cypress Cr.
7	Alex	Hinton	1011 Hodge Ln.
8	Nisha	Hall	123 Huntington St.
9	Hillary	Clayton	2516 Newman
10	Kiara	Williams	9014 Miller Ln.
11	Katy	Jones	456 Denver Rd.
12	Beatrix	Joslin	85 North West St.
13	Mariah	Allen	12 Jupe

3.You can find any record in the currently open table by **searching** for it using the **record search box**. Place your cursor in the search box, type any word that appears in the record you want to find, and press the **Enter** key.

To navigate between fields, you can use the **left and right arrow keys** or **scroll left and right**.



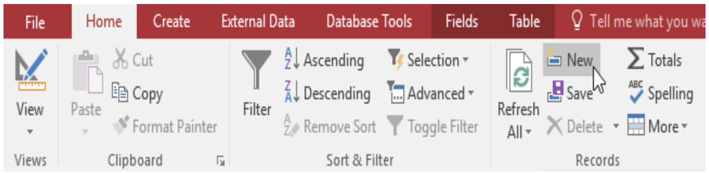
ID	First Name	Last Name	Street Address
1	Tracey	Beckham	7 East Walker Dr.
2	Lucinda	George	789 Brewer St.
3	Jerrod	Smith	211 St. George Ave.
4	Brett	Newkirk	47 Hillsborough St.
5	Chloe	Jones	23 Solo Ln.
6	Quinton	Boyd	4 Cypress Cr.
7	Alex	Hinton	1011 Hodge Ln.
8	Nisha	Hall	123 Huntington St.
9	Hillary	Clayton	2516 Newman
10	Kiara	Williams	9014 Miller Ln.
11	Katy	Jones	456 Denver Rd.
12	Beatrix	Joslin	85 North West St.
13	Mariah	Allen	12 Jupe

Adding records and entering data

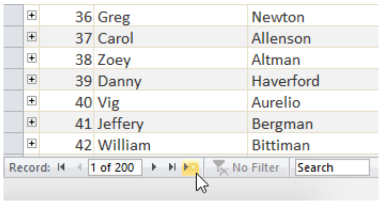
Entering data into tables in Access is similar to entering data in Excel. To work with records, you'll have to enter data into **cells**. If you need help entering data into records, you might want to review our **Cell Basics** lesson from our **Excel 2016** tutorial.

To add a new record:

There are three ways to add a new record to a table:
1.In the **Records** group on the **Home** tab, click the **New** command.

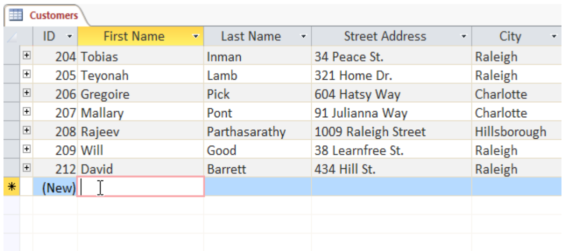


2.On the **Record Navigation bar** at the bottom of the window, click the **New record** button.



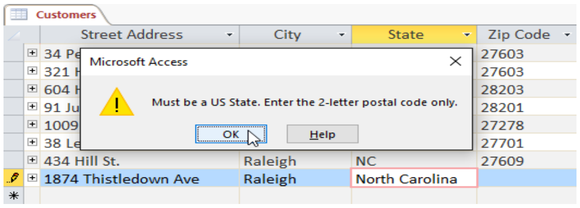
36	Greg	Newton
37	Carol	Allenson
38	Zoey	Altman
39	Danny	Haverford
40	Vig	Aurelio
41	Jeffery	Bergman
42	William	Bittiman

3.Begin typing in the row below your last added record.



ID	First Name	Last Name	Street Address	City
204	Tobias	Inman	34 Peace St.	Raleigh
205	Teyonah	Lamb	321 Home Dr.	Raleigh
206	Gregoire	Pick	604 Hatsy Way	Charlotte
207	Mallary	Pont	91 Julianna Way	Charlotte
208	Rajeev	Parthasarathy	1009 Raleigh Street	Hillsborough
209	Will	Good	38 Learnfree St.	Raleigh
212	David	Barrett	434 Hill St.	Raleigh
(New)				

Sometimes when you enter information into a record, a window will pop up to tell you that the information you've entered is invalid. This means the field you're working with has a **validation rule**, which is a rule about the type of data that can appear in that field. Click **OK**, then follow the instructions in the pop-up window to **re-enter** your data.

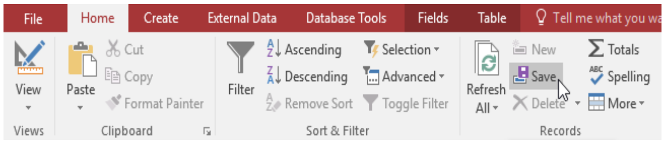


Must be a US State. Enter the 2-letter postal code only.

Street Address	City	State	Zip Code
34 Pe			27603
321 H			27603
604 H			28203
91 Ju			28201
1009			27278
38 Le			27701
434 Hill St.	Raleigh	NC	27609
1874 Thistledown Ave	Raleigh	North Carolina	

To save a record:

Access is designed to save records automatically. After you enter a record, you can either select a different record or close the object, and Access will save the record. However, in certain situations you many want to save a record manually. For example, if you needed to edit an existing record, you could save the record to ensure your changes are saved.



Select the **Home** tab, and locate the **Records** group.

Click the **Save** command. The record will be saved.

Editing records

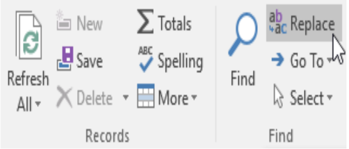
To quickly edit any record within a table, you can click it and type your changes. However, Access offers you the ability to **find and replace** a word within multiple records and **delete** records entirely.

To replace a word within a record:

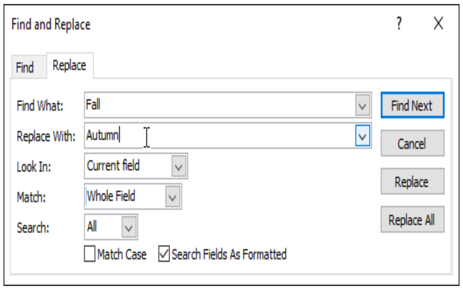
You can edit multiple occurrences of the same word by using **Find and Replace**, which searches for a term and replaces it with another term.

Select the **Home** tab, and locate the **Find** group.

1.Select the **Replace** command. The **Find and Replace** dialog box will appear.



2.In the **Find What:** field, type the word you want to find, then in the **Replace With:** field type the word you want to replace the original word. In our example, we'll find instances of the word **Fall** and replace it with **Autumn**.


Find and Replace

Find | Replace

Find What: Fall

Replace With: Autumn

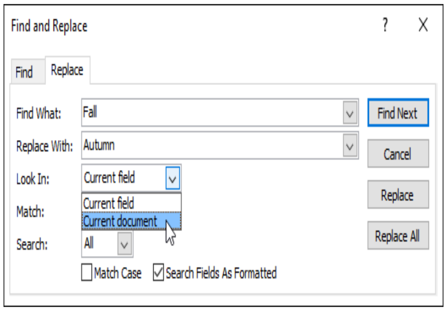
Look In: Current field

Match: Whole Field

Search: All

☐ Match Case ☑ Search Fields As Formatted

3.Click the **Look In:** drop-down arrow to select the area you want to search. Select **Current Field** to limit your search to the currently selected field. Select **Current Document** to search within the entire table.


Find and Replace

Find | Replace

Find What: Fall

Replace With: Autumn

Look In: Current field

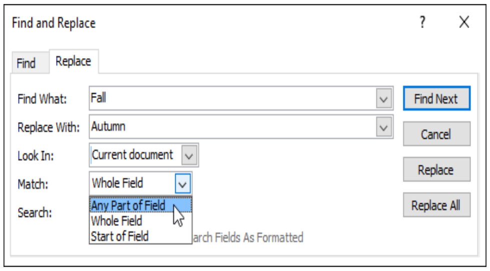
Current field
Current document

Match:

Search: All

☐ Match Case ☑ Search Fields As Formatted

4.Click the **Match:** drop-down arrow to select how closely you'd like results to match your search. Select **Any Part of Field** to search for your search term in any part of a cell. Select **Whole Field** to search only for cells that match your search term exactly. Select **Beginning of Field** to search only for cells that start with your search term.


Find and Replace

Find | Replace

Find What: Fall

Replace With: Autumn

Look In: Current document

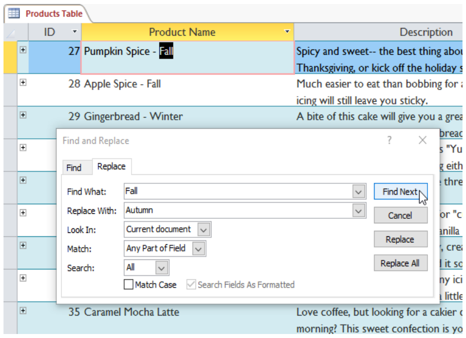
Match: Whole Field

Any Part of Field
Whole Field
Start of Field

Search:

arch Fields As Formatted

5.Click **Find Next**. If the text is found, it will be **selected**.


Products Table

ID	Product Name	Description
27	Pumpkin Spice - Fall	Spicy and sweet-- the best thing abou Thanksgiving, or kick off the holiday s
28	Apple Spice - Fall	Much easier to eat than bobbing for a icing will still leave you sticky.
29	Gingerbread - Winter	A bite of this cake will give you a grea bread
		s "Yu g eith
		thre
		or "c anilla
		, crea l it sc
		ny ici a little
35	Caramel Mocha Latte	Love coffee, but looking for a cakier c morning? This sweet confection is yo

Find and Replace

Find | Replace

Find What: Fall

Replace With: Autumn

Look In: Current document

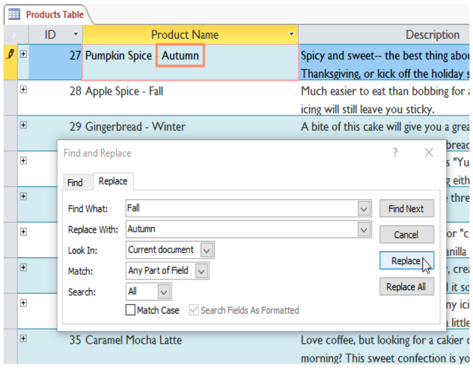
Match: Any Part of Field

Search: All

☐ Match Case ☑ Search Fields As Formatted

6.Review the text to make sure you want to replace it. Click **Replace** to replace the original word with the new one.

Access will move to the next instance of the text in the object. When you are finished replacing text, click **Cancel** to close the dialog box.


Products Table

ID	Product Name	Description
27	Pumpkin Spice - Autumn	Spicy and sweet-- the best thing abou Thanksgiving, or kick off the holiday s
28	Apple Spice - Fall	Much easier to eat than bobbing for a icing will still leave you sticky.
29	Gingerbread - Winter	A bite of this cake will give you a grea bread
		s "Yu g eith
		thre
		or "c anilla
		, crea l it sc
		ny ici a little
35	Caramel Mocha Latte	Love coffee, but looking for a cakier c morning? This sweet confection is yo

Find and Replace

Find | Replace

Find What: Fall

Replace With: Autumn

Look In: Current document

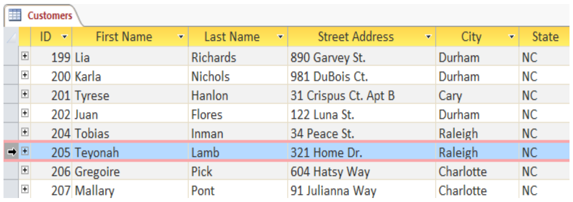
Match: Any Part of Field

Search: All

☐ Match Case ☑ Search Fields As Formatted

To delete a record:

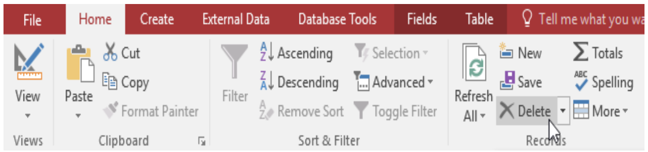
1.Select the entire record by clicking the **gray border** on the left side of the record.


Customers

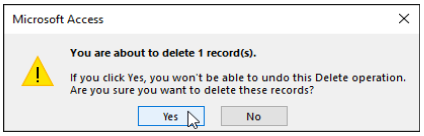
ID	First Name	Last Name	Street Address	City	State
199	Lia	Richards	890 Garvey St.	Durham	NC
200	Karla	Nichols	981 DuBois Ct.	Durham	NC
201	Tyrese	Hanlon	31 Crispus Ct. Apt B	Cary	NC
202	Juan	Flores	122 Luna St.	Durham	NC
204	Tobias	Inman	34 Peace St.	Raleigh	NC
205	Teyonah	Lamb	321 Home Dr.	Raleigh	NC
206	Gregoire	Pick	604 Hatsy Way	Charlotte	NC
207	Mallary	Pont	91 Julianna Way	Charlotte	NC

2.Select the **Home** tab and locate the **Records** group.

Click the **Delete** command.



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


Microsoft Access

You are about to delete 1 record(s).

If you click Yes, you won't be able to undo this Delete operation.
Are you sure you want to delete these records?

The record will be permanently deleted.

Modifying table appearance

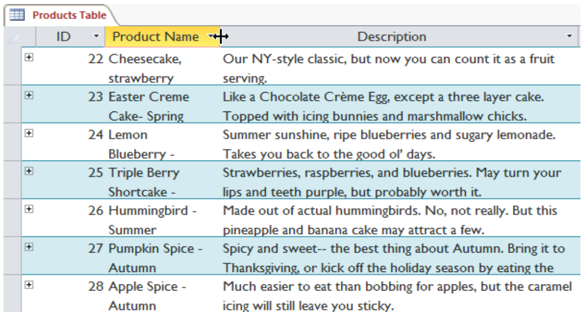
Access offers various ways to modify the appearance of tables, including resizing fields and rows and temporarily hiding information you don't need to see. These changes aren't just about making your table look good; they also can make the table easier to read.

Resizing fields and rows

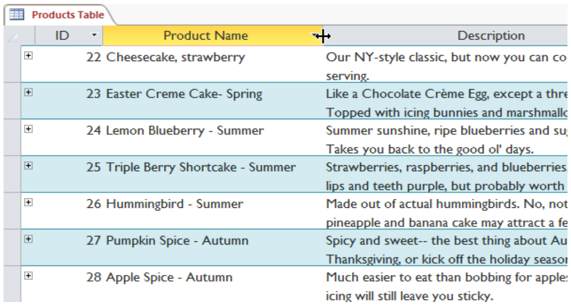
If your fields and rows are too small or large for the data contained with them, you can always **resize** them so all of the text is displayed.

To resize a field:

1.Place your cursor over the **right gridline** in the **field title**. Your mouse will become a **double arrow**.


Products Table

ID	Product Name	Description
22	Cheesecake, strawberry	Our NY-style classic, but now you can count it as a fruit serving.
23	Easter Creme Cake- Spring	Like a Chocolate Crème Egg, except a three layer cake. Topped with icing bunnies and marshmallow chicks.
24	Lemon Blueberry -	Summer sunshine, ripe blueberries and sugary lemonade. Takes you back to the good ol' days.
25	Triple Berry Shortcake -	Strawberries, raspberries, and blueberries. May turn your lips and teeth purple, but probably worth it.
26	Hummingbird - Summer	Made out of actual hummingbirds. No, not really. But this pineapple and banana cake may attract a few.
27	Pumpkin Spice - Autumn	Spicy and sweet-- the best thing about Autumn. Bring it to Thanksgiving, or kick off the holiday season by eating the
28	Apple Spice - Autumn	Much easier to eat than bobbing for apples, but the caramel icing will still leave you sticky.



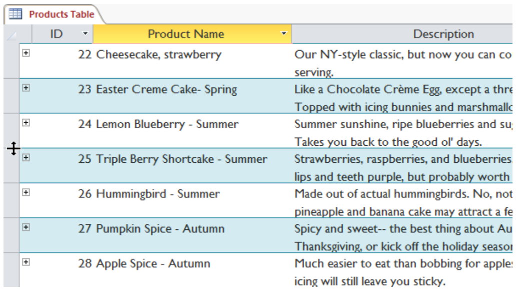
Products Table

ID	Product Name	Description
22	Cheesecake, strawberry	Our NY-style classic, but now you can co serving.
23	Easter Creme Cake- Spring	Like a Chocolate Crème Egg, except a thre Topped with icing bunnies and marshmallo
24	Lemon Blueberry - Summer	Summer sunshine, ripe blueberries and su Takes you back to the good ol' days.
25	Triple Berry Shortcake - Summer	Strawberries, raspberries, and blueberries lips and teeth purple, but probably worth
26	Hummingbird - Summer	Made out of actual hummingbirds. No, not pineapple and banana cake may attract a fe
27	Pumpkin Spice - Autumn	Spicy and sweet-- the best thing about Au Thanksgiving, or kick off the holiday seasor
28	Apple Spice - Autumn	Much easier to eat than bobbing for apple: icing will still leave you sticky.

2.Click and drag the gridline to the right to increase the field width or to the left to decrease the field width, then release the mouse. The field width will be changed.

To resize a row:

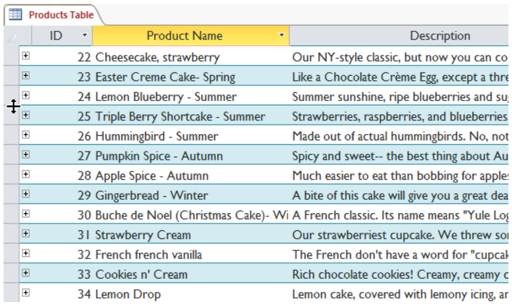
1.Place your cursor over the **bottom gridline** in the **gray area** to the left of the row. Your mouse will become a **double arrow**.



Products Table

ID	Product Name	Description
22	Cheesecake, strawberry	Our NY-style classic, but now you can co serving.
23	Easter Creme Cake- Spring	Like a Chocolate Crème Egg, except a thre Topped with icing bunnies and marshmallc
24	Lemon Blueberry - Summer	Summer sunshine, ripe blueberries and su Takes you back to the good ol' days.
25	Triple Berry Shortcake - Summer	Strawberries, raspberries, and blueberries lips and teeth purple, but probably worth
26	Hummingbird - Summer	Made out of actual hummingbirds. No, not pineapple and banana cake may attract a fe
27	Pumpkin Spice - Autumn	Spicy and sweet-- the best thing about Au Thanksgiving, or kick off the holiday seasor
28	Apple Spice - Autumn	Much easier to eat than bobbing for apple: icing will still leave you sticky.

2.Click and drag the gridline downward to increase the row height or upward to decrease the row height, then release the mouse. The row height will be changed.



Products Table

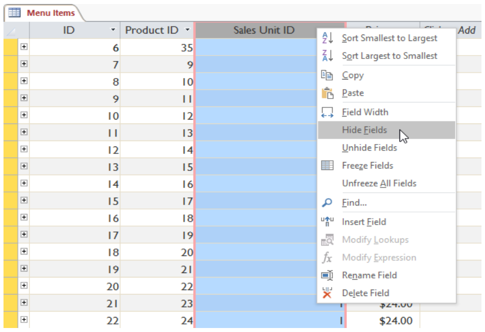
ID	Product Name	Description
22	Cheesecake, strawberry	Our NY-style classic, but now you can co
23	Easter Creme Cake- Spring	Like a Chocolate Crème Egg, except a thre
24	Lemon Blueberry - Summer	Summer sunshine, ripe blueberries and su
25	Triple Berry Shortcake - Summer	Strawberries, raspberries, and blueberries
26	Hummingbird - Summer	Made out of actual hummingbirds. No, not
27	Pumpkin Spice - Autumn	Spicy and sweet-- the best thing about Au
28	Apple Spice - Autumn	Much easier to eat than bobbing for apple:
29	Gingerbread - Winter	A bite of this cake will give you a great dea
30	Buche de Noel (Christmas Cake)- Wi	A French classic. Its name means "Yule Log
31	Strawberry Cream	Our strawberriest cupcake. We threw soi
32	French french vanilla	The French don't have a word for "cupcak
33	Cookies n' Cream	Rich chocolate cookies! Creamy, creamy c
34	Lemon Drop	Lemon cake, covered with lemony icing, ar

Hiding fields

If you have a field you don't plan on editing or don't want other people to edit, you can **hide** it. A hidden field is invisible but is still part of your database. Data within a hidden field can still be accessed from forms, queries, reports, and any related tables.

To hide a field:

1.Right-click the **field title**, then select **Hide Fields**.

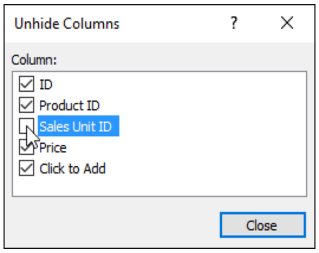


Menu Items

ID	Product ID	Sales Unit ID	Price	Click to Add
6	35			
7	9			
8	10			
9	11			
10	12			
11	13			
12	14			
13	15			
14	16			
15	17			
16	18			
17	19			
18	20			
19	21			
20	22			
21	23	1	$24.00	
22	24	1	$24.00	

The field will be hidden.

2.If you decide you want the field to be visible again, you can **unhide** it. Simply right-click any field title, then select **Unhide Fields**. A dialog box will appear. Click the checkboxes of any fields you want to be visible again, then click **Close**.



Unhide Columns

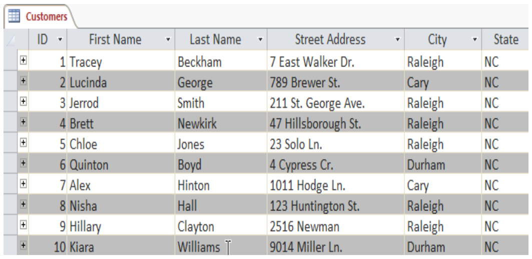
Column:

☑ ID
☑ Product ID
☐ Sales Unit ID
☑ Price
☑ Click to Add

Table formatting options

Alternate row color

By default, the background of every other row in an Access table is a few shades darker than the background of the rest of the table. This darker **alternate row color** makes your table easier to read by offering a **visual distinction** between each record and the records directly above and below it.

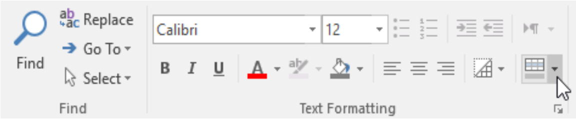


Customers

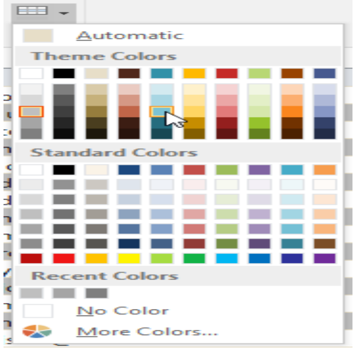
ID	First Name	Last Name	Street Address	City	State
1	Tracey	Beckham	7 East Walker Dr.	Raleigh	NC
2	Lucinda	George	789 Brewer St.	Cary	NC
3	Jerrod	Smith	211 St. George Ave.	Raleigh	NC
4	Brett	Newkirk	47 Hillsborough St.	Raleigh	NC
5	Chloe	Jones	23 Solo Ln.	Raleigh	NC
6	Quinton	Boyd	4 Cypress Cr.	Durham	NC
7	Alex	Hinton	1011 Hodge Ln.	Cary	NC
8	Nisha	Hall	123 Huntington St.	Raleigh	NC
9	Hillary	Clayton	2516 Newman	Raleigh	NC
10	Kiara	Williams	9014 Miller Ln.	Durham	NC

To change the alternate row color:

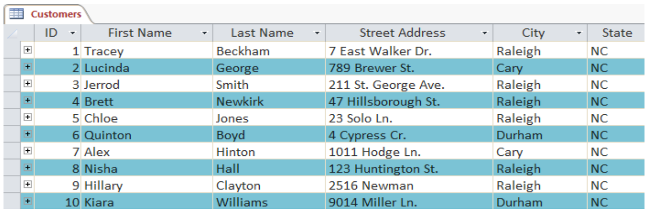
1.Select the **Home** tab, locate the **Text Formatting** group, and click the **Alternate Row Color** drop-down arrow.



2.Select a color from the drop-down menu, or select **No Color** to remove the alternate row color.



3.The alternate row color will be updated.



Customers

ID	First Name	Last Name	Street Address	City	State
1	Tracey	Beckham	7 East Walker Dr.	Raleigh	NC
2	Lucinda	George	789 Brewer St.	Cary	NC
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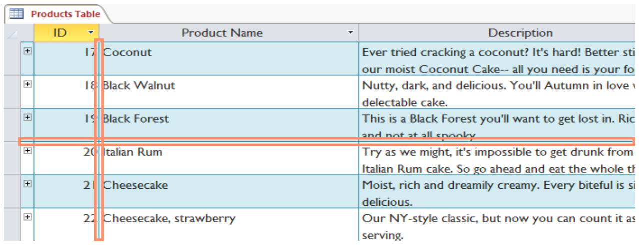
4	Brett	Newkirk	47 Hillsborough St.	Raleigh	NC
5	Chloe	Jones	23 Solo Ln.	Raleigh	NC
6	Quinton	Boyd	4 Cypress Cr.	Durham	NC
7	Alex	Hinton	1011 Hodge Ln.	Cary	NC
8	Nisha	Hall	123 Huntington St.	Raleigh	NC
9	Hillary	Clayton	2516 Newman	Raleigh	NC
10	Kiara	Williams	9014 Miller Ln.	Durham	NC

Modifying gridlines

Another way Access makes your tables easier to read is by adding **gridlines** that mark the borders of each cell. Gridlines are the **thin lines** that appear between each cell, row, and column of your table. By default, gridlines are dark gray and appear on every side of a cell, but you can change their **color** and **hide** undesired gridlines.

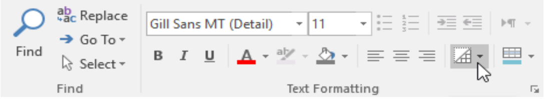


Products Table

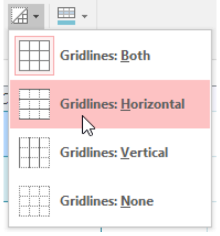
ID	Product Name	Description
17	Coconut	Ever tried cracking a coconut? It's hard! Better sti our moist Coconut Cake-- all you need is your fo
18	Black Walnut	Nutty, dark, and delicious. You'll Autumn in love v delectable cake.
19	Black Forest	This is a Black Forest you'll want to get lost in. Ric and not at all spooky.
20	Italian Rum	Try as we might, it's impossible to get drunk from Italian Rum cake. So go ahead and eat the whole th
21	Cheesecake	Moist, rich and dreamily creamy. Every biteful is si delicious.
22	Cheesecake, strawberry	Our NY-style classic, but now you can count it as serving.

To customize which gridlines appear:

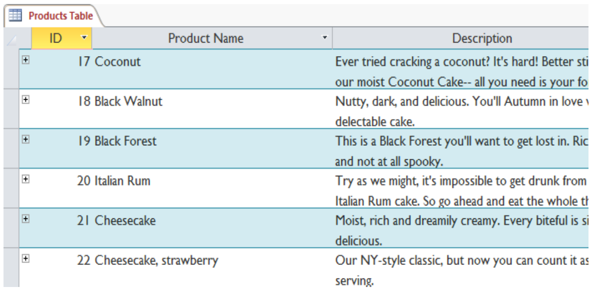
1.Select the **Home** tab, locate the **Text Formatting** group, and click the **Gridlines** drop-down arrow.



2.Select the gridlines you want to appear. You can choose to have **horizontal** gridlines between the rows, **vertical** gridlines between the columns**, both** types of gridlines, or **none** at all.



3.The gridlines on your table will be updated.

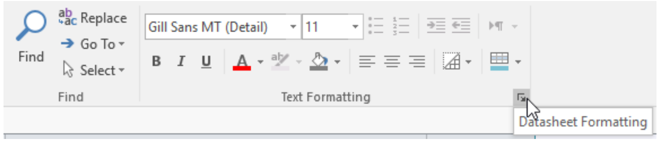


Products Table

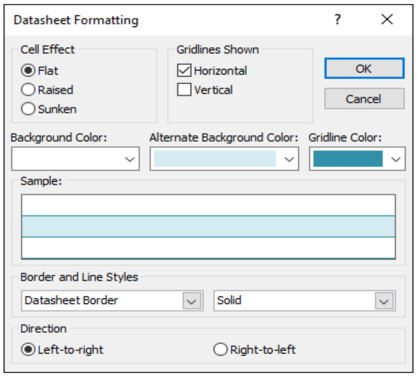
ID	Product Name	Description
17	Coconut	Ever tried cracking a coconut? It's hard! Better sti our moist Coconut Cake-- all you need is your fo
18	Black Walnut	Nutty, dark, and delicious. You'll Autumn in love v delectable cake.
19	Black Forest	This is a Black Forest you'll want to get lost in. Ric and not at all spooky.
20	Italian Rum	Try as we might, it's impossible to get drunk from Italian Rum cake. So go ahead and eat the whole th
21	Cheesecake	Moist, rich and dreamily creamy. Every biteful is si delicious.
22	Cheesecake, strawberry	Our NY-style classic, but now you can count it as serving.

Additional formatting options

1.To view additional formatting options, click the **Datasheet Formatting arrow** in the bottom-right corner of the **Text Formatting** group.



2.The **Datasheet Formatting** dialog box offers several advanced formatting options, including the ability to modify background color, gridline color, and border and line style. It even includes the ability to view a **sample** table with your formatting choices, so play around with the various formatting options until you get your table looking the way you want it.



Datasheet Formatting

Cell Effect
● Flat
○ Raised
○ Sunken

Gridlines Shown
☑ Horizontal
☐ Vertical

Background Color:

Alternate Background Color:

Gridline Color:

Sample:

Border and Line Styles
Datasheet Border
Solid

Direction
● Left-to-right
○ Right-to-left

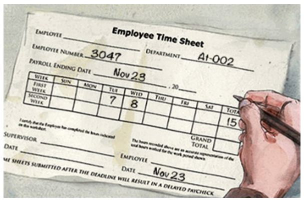
CHAPTER -6- WORKING WITH FORMS

Introduction

While you can always enter data directly into database tables, you might find it easier to use **forms**. Forms ensure you're entering the right data in the right location and format. This can help keep your database accurate and consistent.

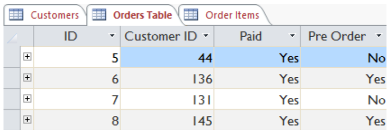
This lesson will address the **benefits of using forms** in a database. You will review examples of different forms and form components. Finally, you will learn how to **use forms** to **enter** new records and **view** and **edit** existing ones.

Why use forms?



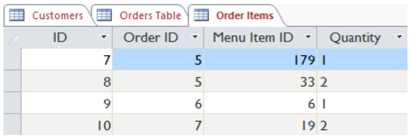
Many of us fill out forms so often that we hardly notice when we're asked to use them. Forms are so popular because they're useful to the person asking for the information and to the person providing it. They are a way of requiring information in a specific format, which means the person filling out the form knows exactly which information to include and where to put it.

This is just as true of forms in Access. When you enter information into a form in Access, the data goes exactly where it's supposed to go: into one or more related tables. While entering data into simple tables is fairly straightforward, data entry becomes more complicated as you start populating tables with records from elsewhere in the database. For instance, the **orders table** in a bakery's database might link to information on customers, products, and prices drawn from related tables. For example, in the Orders Table below the Customer ID field is linked to the Customers table.



ID	Customer ID	Paid	Pre Order
5	44	Yes	No
6	136	Yes	Yes
7	131	Yes	No
8	145	Yes	Yes

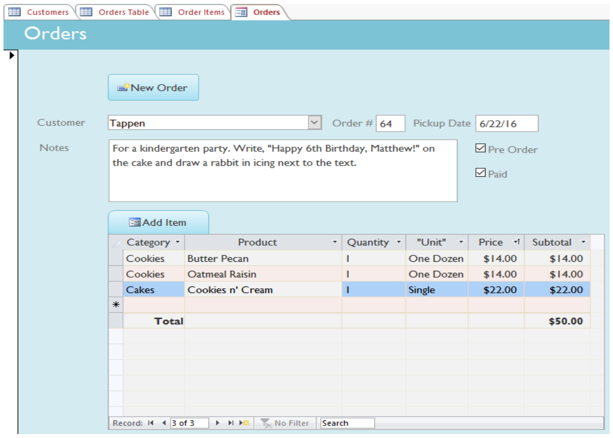
In fact, in order to see the entire order you would also have to look at the **Order Items table**, where the menu items that make up each order are recorded.



ID	Order ID	Menu Item ID	Quantity
7	5	179	1
8	5	33	2
9	6	6	1
10	7	19	2

The records in these tables include **ID numbers** of records from other tables. You can't learn much just by glancing at these records because the ID numbers don't tell you much about the data they relate to. Plus, because you have to look at two tables just to view one order, you might have a difficult time even finding the right data. It's easy to see how viewing or entering many records this way could become a difficult and tedious task.

A form containing the same data might look like this:



Customer: Tappen Order # 64 Pickup Date 6/22/16

Notes: For a kindergarten party. Write, "Happy 6th Birthday, Matthew!" on the cake and draw a rabbit in icing next to the text.

☑ Pre Order

☑ Paid

Category	Product	Quantity	"Unit"	Price	Subtotal
Cookies	Butter Pecan	1	One Dozen	$14.00	$14.00
Cookies	Oatmeal Raisin	1	One Dozen	$14.00	$14.00
Cakes	Cookies n' Cream	1	Single	$22.00	$22.00
Total					$50.00

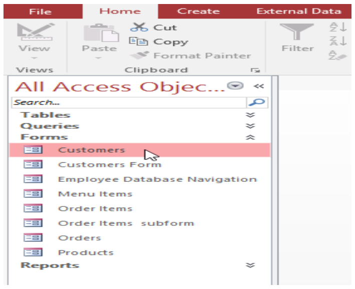
Record: 3 of 3

As you can see, this record is much easier to understand when viewed in a form. Modifying the record also would be easier because you wouldn't have to know any ID numbers to enter new data. When you're using a form, you don't have to worry about entering data into the right tables or in the right format—the form can handle these things itself. There's no need to go back and forth between tables because forms bring all of the information you need together in one place**.** Not only do forms make the data entry process easier for the user, but they also keep the database itself working smoothly. With forms, database designers can control exactly how users are able to interact with the database. They can even set restrictions on individual form components to ensure all of the needed data is entered and that it's all entered in a valid format. This is useful because keeping data consistent and organized is essential for an accurate and powerful database.

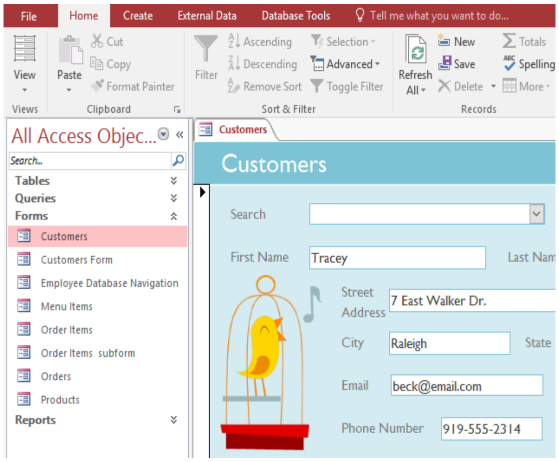
Working with forms

To open an existing form:

1.Open your database, and locate the **Navigation pane**. In the Navigation pane, locate the form you want to open. Double-click the desired form.



2.It will open and appear as a **tab** in the **Document Tabs bar**.



First Name: Tracey

Street Address: 7 East Walker Dr.

City: Raleigh

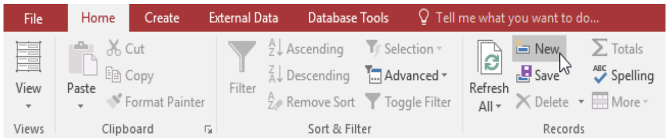
Email: beck@email.com

Phone Number: 919-555-2314

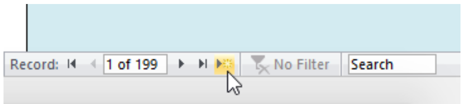
Entering and modifying data

Depending on the database you're using, the forms you work with may include special tools and features that let you perform common tasks with one click of a button. You'll see examples of these tools in the inter actives on the next page. However, no matter what type of form you're working with, you can follow the same procedures for carrying out certain basic tasks.

To add a new record:
There are two ways to add a new record to a form:
1.In the **Records** group on the **Home** tab of the **Ribbon**, click the **New**command.

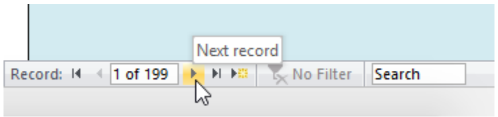


2.On the **Record Navigation bar** at the bottom of the window, click the **New Record** button.

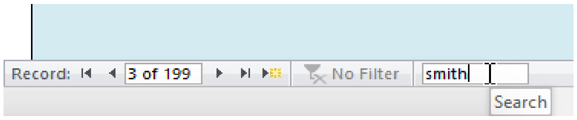


To find an existing record to view or edit:

There are two ways to find and view an existing record using a form, and they both use the **Navigation bar** at the bottom of the screen:
1.To look through records one at a time, click the **navigation arrows**. The right arrow will take you to the next record, and the left arrow will take you to the previous one.

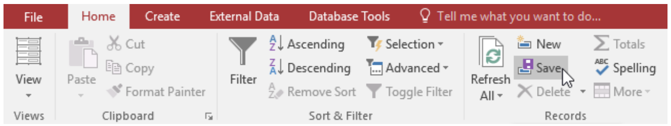


2.To **search** for a record, type a word you know is contained in that record in the **navigation search box**.



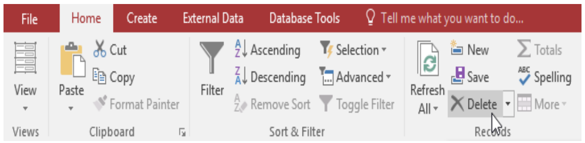
To save the current record:

Select the **Home** tab and locate the **Records** group. Click the **Save** command. The current record will be saved.

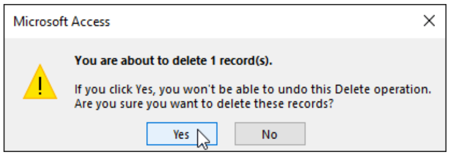


To delete the current record:

Select the **Home** tab and locate the **Records** group.
1.Click the **Delete** command.



2.A dialog box will appear. Click **Yes** The record will be permanently deleted.


Microsoft Access

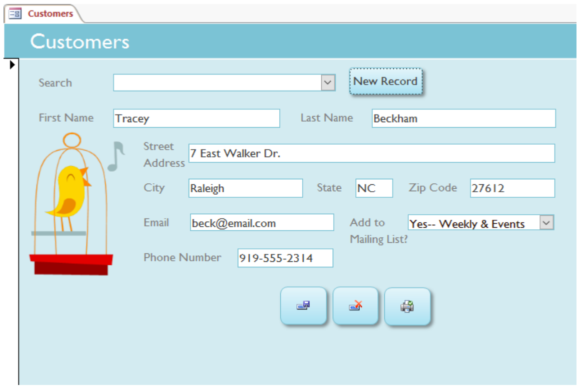
You are about to delete 1 record(s).

If you click Yes, you won't be able to undo this Delete operation.
Are you sure you want to delete these records?

Using form features

The exact procedure you use for filling out a form will vary depending on the content and design of the form you're using. The forms in your database might be similar to the examples in the two inter actives below. Between them, they include most of the features you'll commonly encounter in forms.

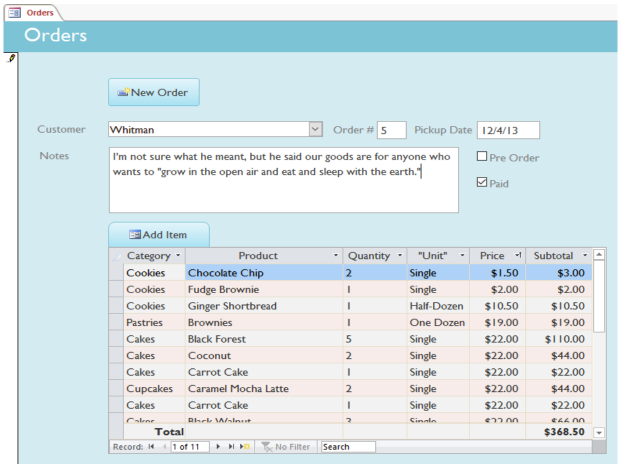
Click the buttons in the interactive below to learn about a **simple form**.


Customers

First Name	Tracey	Last Name	Beckham
Street Address	7 East Walker Dr.		
City	Raleigh	State	NC
Zip Code	27612		
Email	beck@email.com	Add to Mailing List?	Yes-- Weekly & Events
Phone Number	919-555-2314		

Some forms may include more options, like calendar buttons, drop-down lists, yes/no checkboxes, sub forms, and embedded tables.

Click the buttons in the interactive below to learn about a more **complex form**.


Orders

Customer	Whitman	Order #	5
Pickup Date	12/4/13		
Notes	I'm not sure what he meant, but he said our goods are for anyone who wants to "grow in the open air and eat and sleep with the earth."		

□ Pre Order
☑ Paid

Category	Product	Quantity	"Unit"	Price	Subtotal
Cookies	Chocolate Chip	2	Single	$1.50	$3.00
Cookies	Fudge Brownie	1	Single	$2.00	$2.00
Cookies	Ginger Shortbread	1	Half-Dozen	$10.50	$10.50
Pastries	Brownies	1	One Dozen	$19.00	$19.00
Cakes	Black Forest	5	Single	$22.00	$110.00
Cakes	Coconut	2	Single	$22.00	$44.00
Cakes	Carrot Cake	1	Single	$22.00	$22.00
Cupcakes	Caramel Mocha Latte	2	Single	$22.00	$44.00
Cakes	Carrot Cake	1	Single	$22.00	$22.00
Cakes	Black Walnut	3	Single	$22.00	$66.00
Total					$368.50

CHAPTER -7- SORTING AND FILTERING RECORDS

Introduction

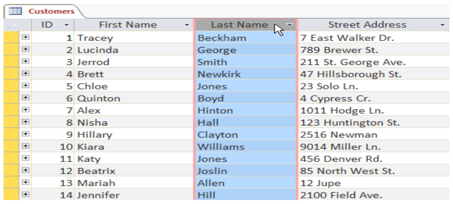
Access gives you the ability to work with enormous amounts of data, which means it can be difficult to learn anything about your database just by glancing at it. **Sorting** and **filtering** are two tools that let you customize how you organize and view your data, making it more convenient to work with. In this lesson, you'll learn how to **sort** and **filter** records.

About sorting and filtering

Essentially, sorting and filtering are tools that let you **organize your data**. When you sort data, you are **putting it in order**. Filtering data lets you hide unimportant data and focus only on the data you're interested in.

Sorting records

When you **sort** records, you are putting them into a **logical order**, with **similar data grouped together**. As a result, sorted data is often simpler to read and understand than unsorted data. By default, Access sorts records by their **ID numbers**. However, there are many other ways records can be sorted. For example, the information in a database belonging to a bakery could be sorted in a number of ways:
Orders could be sorted by **order date** or by the **last name** of the customers who placed the orders.
Customers could be sorted by **name** or by the **city** or **zip code** where they live.
Products could be sorted by **name**, **category** (like pies, cakes, and cupcakes), or **price**.
You can sort both **text** and **numbers** in two ways: in **ascending** order and **descending** order. **Ascending** means **going up**, so an ascending sort will arrange numbers from **smallest to largest** and text from **A to Z**. **Descending** means **going down**, or **largest to smallest** for numbers and **Z to A** for text. The default ID number sort that appears in your tables is an ascending sort, which is why the lowest ID numbers appear first.



Customers

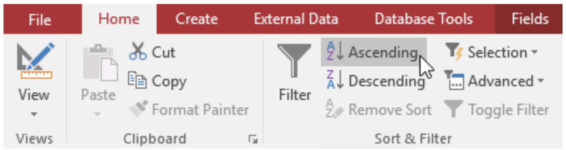
ID	First Name	Last Name	Street Address
1	Tracey	Beckham	7 East Walker Dr.
2	Lucinda	George	789 Brewer St.
3	Jerrod	Smith	211 St. George Ave.
4	Brett	Newkirk	47 Hillsborough St.
5	Chloe	Jones	23 Solo Ln.
6	Quinton	Boyd	4 Cypress Cr.
7	Alex	Hinton	1011 Hodge Ln.
8	Nisha	Hall	123 Huntington St.
9	Hillary	Clayton	2516 Newman
10	Kiara	Williams	9014 Miller Ln.
11	Katy	Jones	456 Denver Rd.
12	Beatrix	Joslin	85 North West St.
13	Mariah	Allen	12 Jupe
14	Jennifer	Hill	2100 Field Ave.

To sort records:

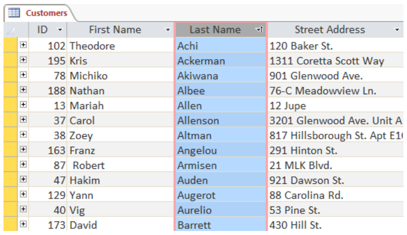
1.Select a field you want to sort by. In this example, we will sort by customers' last names.

2.Click the **Home** tab on the Ribbon, and locate the **Sort & Filter** group.

Sort the field by selecting the **Ascending** or **Descending** command.



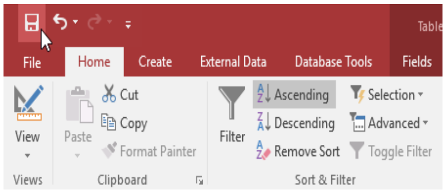
3.The table will now be sorted by the selected field.



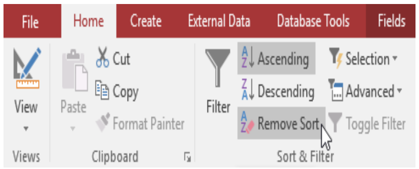
Customers

ID	First Name	Last Name	Street Address
102	Theodore	Achi	120 Baker St.
195	Kris	Ackerman	1311 Coretta Scott Way
78	Michiko	Akiwana	901 Glenwood Ave.
188	Nathan	Albee	76-C Meadowview Ln.
13	Mariah	Allen	12 Jupe
37	Carol	Allenson	3201 Glenwood Ave. Unit A
38	Zoey	Altman	817 Hillsborough St. Apt E1
163	Franz	Angelou	291 Hinton St.
87	Robert	Armisen	21 MLK Blvd.
47	Hakim	Auden	921 Dawson St.
129	Yann	Augerot	88 Carolina Rd.
40	Vig	Aurelio	53 Pine St.
173	David	Barrett	430 Hill St.

4.To save the new sort, click the **Save** command on the Quick Access Toolbar.



5.After you save the sort, the records will stay sorted this way until you perform another sort or remove the current one. To remove a sort, click the **Remove Sort** command.



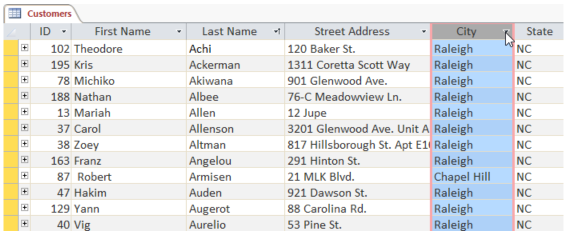
Filtering records

Filters allow you to view **only the data you want to see**. When you create a filter, you set **criteria** for the data you want to display. The filter then searches all of the records in the table, finds the ones that meet your search criteria, and temporarily hides the ones that don't.

Filters are useful because they allow you to **focus in** on specific records without being distracted by the data you're uninterested in. For instance, if you had a database that included customer and order information, you could create a filter to display only customers living within a certain city or only orders containing a certain product. Viewing this data with a filter would be far more convenient than searching for it in a large table.

To create a simple filter:

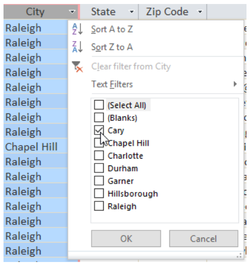
Click the **drop-down arrow** next to the field you want to filter by. We will filter by city because we want to see a list of customers who live in a certain city.



Customers

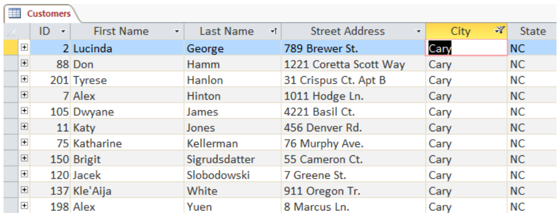
ID	First Name	Last Name	Street Address	City	State
102	Theodore	Achi	120 Baker St.	Raleigh	NC
195	Kris	Ackerman	1311 Coretta Scott Way	Raleigh	NC
78	Michiko	Akiwana	901 Glenwood Ave.	Raleigh	NC
188	Nathan	Albee	76-C Meadowview Ln.	Raleigh	NC
13	Mariah	Allen	12 Jupe	Raleigh	NC
37	Carol	Allenson	3201 Glenwood Ave. Unit A	Raleigh	NC
38	Zoey	Altman	817 Hillsborough St. Apt E1(	Raleigh	NC
163	Franz	Angelou	291 Hinton St.	Raleigh	NC
87	Robert	Armisen	21 MLK Blvd.	Chapel Hill	NC
47	Hakim	Auden	921 Dawson St.	Raleigh	NC
129	Yann	Augerot	88 Carolina Rd.	Raleigh	NC
40	Vig	Aurelio	53 Pine St.	Raleigh	NC

A drop-down menu with a checklist will appear. Only checked items will be included in the filtered results. Clicking **Select All** will select or deselect everything at once. In our example, we'll deselect everything except **Cary**.



☐ (Select All)
☐ (Blanks)
☑ Cary
☐ Chapel Hill
☐ Charlotte
☐ Durham
☐ Garner
☐ Hillsborough
☐ Raleigh

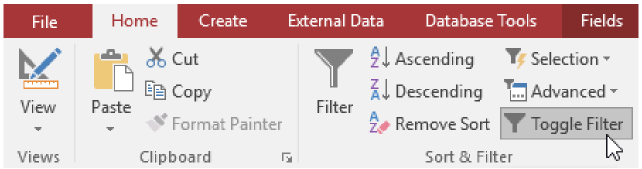
Click **OK**. The filter will be applied. Our customers table now displays only customers who live in Cary.



Customers

ID	First Name	Last Name	Street Address	City	State
2	Lucinda	George	789 Brewer St.	Cary	NC
88	Don	Hamm	1221 Coretta Scott Way	Cary	NC
201	Tyrese	Hanlon	31 Crispus Ct. Apt B	Cary	NC
7	Alex	Hinton	1011 Hodge Ln.	Cary	NC
105	Dwyane	James	4221 Basil Ct.	Cary	NC
11	Katy	Jones	456 Denver Rd.	Cary	NC
75	Katharine	Kellerman	76 Murphy Ave.	Cary	NC
150	Brigit	Sigrudsdatter	55 Cameron Ct.	Cary	NC
120	Jacek	Slobodowski	7 Greene St.	Cary	NC
137	Kle'Aija	White	911 Oregon Tr.	Cary	NC
198	Alex	Yuen	8 Marcus Ln.	Cary	NC

Toggling your filter allows you to turn it on and off. To view the records without the filter, click the **Toggle Filter** command. To restore the filter, click it again.



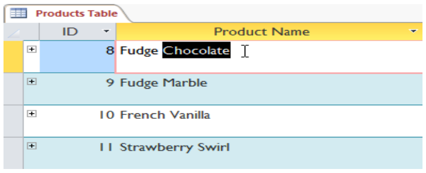
Creating a filter from a selection

Filtering by selection allows you to **select specific data** from your table and find data that is **similar** or **dissimilar** to it. For instance, if you were working with a bakery's database and wanted to search for all products whose names contained the word **chocolate**, you could select that word in one product name and create a filter with that selection. Creating a filter with a selection can be more convenient than setting up a simple filter if the field you're working with contains many items. **You can choose from the following options:**

Contains includes only records with cells that contain the selected data.
Does Not Contain includes all records **except** for those with cells that contain the selected data.
Ends With includes only records whose data for the selected field **ends** with the search term.
Does Not End With includes all records **except** for those whose data for the selected field ends with the search term.

To create a filter from a selection:

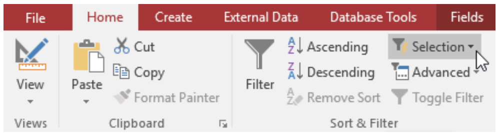
1.Select the cell or data you want to create a filter with. We want to see a list of all of our products that contain the word **chocolate** in their names, so we'll select the word **Chocolate** in the **Product Name** field.



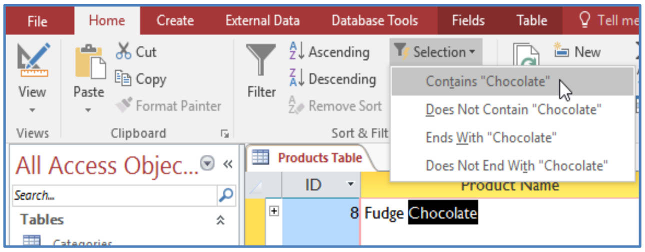
Products Table

ID	Product Name
8	Fudge Chocolate
9	Fudge Marble
10	French Vanilla
11	Strawberry Swirl

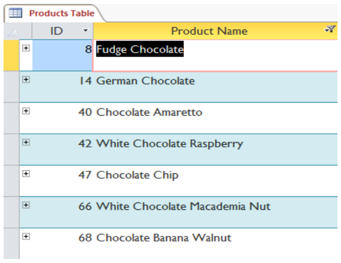
2.Select the **Home** tab on the Ribbon, locate the **Sort & Filter** group, and click the **Selection** drop-down arrow.



3.Select the type of filter you want to apply. We'll select **Contains "Chocolate"** because we want to see records that contain the word **Chocolate** anywhere in the field.



4.The filter will be applied. Our table now displays only products with the word **Chocolate** in their names.


Products Table

ID	Product Name
8	Fudge Chocolate
14	German Chocolate
40	Chocolate Amaretto
42	White Chocolate Raspberry
47	Chocolate Chip
66	White Chocolate Macademia Nut
68	Chocolate Banana Walnut

Creating a filter from a search term

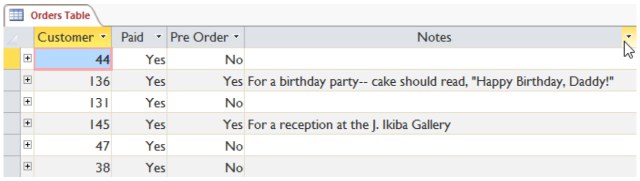
You can also create a filter by entering a **search term** and specifying the way Access should match data to that term. Creating a filter from a search term is similar to creating a filter from a selection.

Filtering text by a search term

When filtering text by entering a search term, you can use some of the same options you use when filtering by a selection, like **Contains**, **Does Not Contain**, **Ends With**, and **Does Not End With**. You can also choose from the following options:
Equals, which includes only records with data that is identical to the selected data
Does Not Equal, which includes all records except for the data that is identical to the selection
Begins With, which includes only records whose data for the selected field **begins** with the search term
Does Not Begin With, which includes all records **except** for those whose data for the selected field begins with the search term

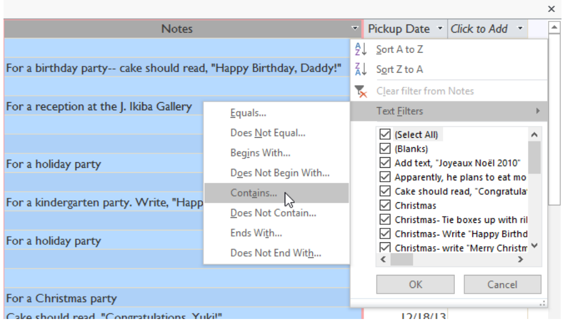
To filter text by a search term:

1.Click the **drop-down arrow** next to the field you want to filter by. We want to filter the records in our orders table to display only those that contain notes with certain information, so we'll click the arrow in the **Notes** field.

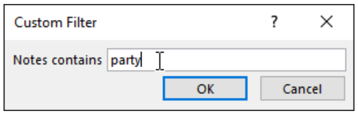

Orders Table

Customer	Paid	Pre Order	Notes
44	Yes	No	
136	Yes	Yes	For a birthday party-- cake should read, "Happy Birthday, Daddy!"
131	Yes	No	
145	Yes	Yes	For a reception at the J. Ikiba Gallery
47	Yes	No	
38	Yes	No	

2.In the drop-down menu, hover your mouse over **Text Filters**. From the list that appears, select the way you want the filter to match the term you enter. In this example, we want to view only records whose notes indicate the order was placed for a party. We'll select **Contains** so we can search for records that contain the word **party**.

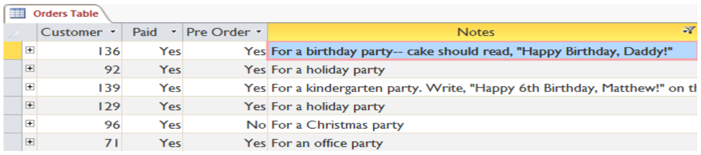

Notes
Pickup Date
Click to Add
For a birthday party-- cake should read, "Happy Birthday, Daddy!"
For a reception at the J. Ikiba Gallery
For a holiday party
For a kindergarten party. Write, "Happ
For a holiday party
For a Christmas party
Cake should read, "Congratulations, Yuki!"
12/18/13
Sort A to Z
Sort Z to A
Clear filter from Notes
Text Filters
Equals...
Does Not Equal...
Begins With...
Does Not Begin With...
Contains...
Does Not Contain...
Ends With...
Does Not End With...
☑ (Select All)
☑ (Blanks)
☑ Add text, "Joyeaux Noël 2010"
☑ Apparently, he plans to eat mo
☑ Cake should read, "Congratula
☑ Christmas
☑ Christmas- Tie boxes up with ri
☑ Christmas- Write "Happy Birthd
☑ Christmas- write "Merry Christm
OK
Cancel

3.The **Custom Filter** dialog box will appear. Type the word you want to use in your filter.


Custom Filter

Notes contains party

4.Click **OK**. The filter will be applied.


Orders Table

Customer	Paid	Pre Order	Notes
136	Yes	Yes	For a birthday party-- cake should read, "Happy Birthday, Daddy!"
92	Yes	Yes	For a holiday party
139	Yes	Yes	For a kindergarten party. Write, "Happy 6th Birthday, Matthew!" on tl
129	Yes	Yes	For a holiday party
96	Yes	No	For a Christmas party
71	Yes	Yes	For an office party

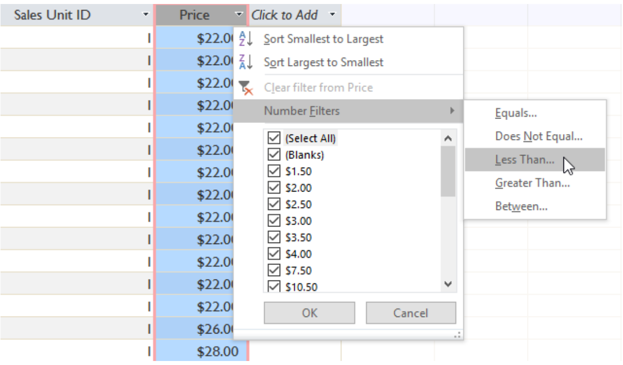
Filtering numbers with a search term

The process for filtering numbers with a search term is similar to the process for filtering text. However, different filtering options are available to you when working with numbers. In addition to **Equals** and **Does not Equal**, you can choose:
Greater Than to include only records with numbers in that field that are **greater than or equal to** the number you enter
Less Than to include only records with numbers in that field that are **less than or equal to** the number you enter
Between to include records with numbers that fall within a certain range

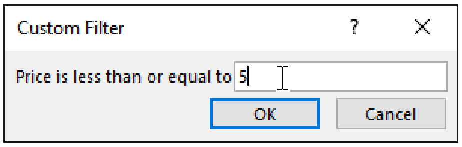
To filter numbers by a search term:

Click the **drop-down arrow** next to the field you want to filter by. We want to filter the records in our menu items table by price, so we'll click the arrow in the **Price** field.

In the drop-down menu, hover your mouse over **Number Filters**. From the list that appears, select the way you want the filter to match your search term. In this example, we want to see items that are less than $5, so we'll select **Less Than**.

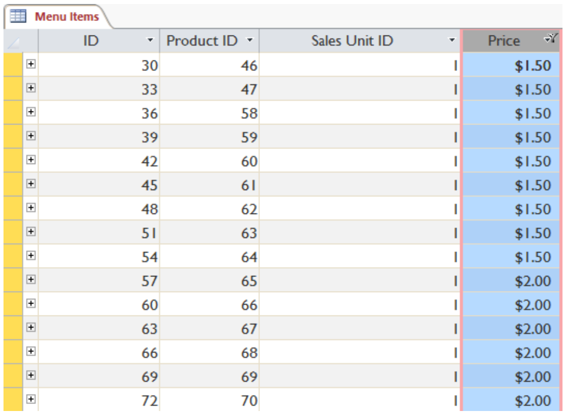


The **Custom Filter** dialog box will appear. Type the number or numbers you want to use in your filter. We'll type **5** so the filter will show us only menu items that cost $5 or less.



Price is less than or equal to 5

Click **OK**. The filter will be applied.



ID	Product ID	Sales Unit ID	Price
30	46	1	$1.50
33	47	1	$1.50
36	58	1	$1.50
39	59	1	$1.50
42	60	1	$1.50
45	61	1	$1.50
48	62	1	$1.50
51	63	1	$1.50
54	64	1	$1.50
57	65	1	$2.00
60	66	1	$2.00
63	67	1	$2.00
66	68	1	$2.00
69	69	1	$2.00
72	70	1	$2.00

CHAPTER -8- DESIGNING A SIMPLE QUERY

Introduction

The real power of a relational database lies in its ability to quickly **retrieve** and **analyze** your data by running a query. **Queries** allow you to **pull information** from one or more tables based on a set of search conditions you define. In this lesson, you will learn how to create a simple **one-table query**.

What are queries?

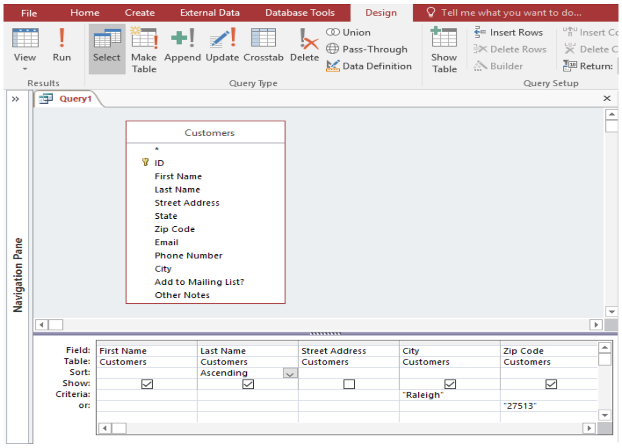
Queries are a way of **searching** for and **compiling** data from one or more tables. Running a query is like asking a **detailed question** of your database. When you build a query in Access, you are **defining specific search conditions** to find exactly the data you want.

How are queries used?

Queries are far more powerful than the simple searches or filters you might use to find data within a table. This is because queries can draw their information from **multiple** tables. For example, while you could use a **search** in the customers table to find the name of one customer at your business or a **filter** on the orders table to view only orders placed within the past week, neither would let you view both customers and orders at once. However, you could easily run a **query** to find the name and phone number of every customer who's made a purchase within the past week. A well-designed query can give information you might not be able to find out just by examining the data in your tables.

When you run a query, the results are presented to you in a table, but when you design one you use a different view. This is called **Query Design view**, and it lets you see how your query is put together.

Click the buttons in the interactive below to learn how to navigate the **Query Design view**.



Field:	First Name	Last Name	Street Address	City	Zip Code
Table:	Customers	Customers	Customers	Customers	Customers
Sort:		Ascending			
Show:	☑	☑	☐	☑	☑
Criteria:				"Raleigh"	
or:					"27513"

One-table queries

Let's familiarize ourselves with the query-building process by building the **simplest** query possible: a one-table query.

We will run a query on the **Customers** table of our bakery database. Let's say our bakery is having a special event, and we want to invite our customers who live nearby because they are the most likely to come. This means we need to see a list of all customers who live close by, and **only** those customers.

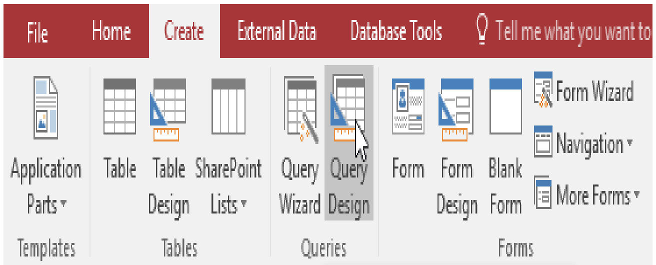
We want to find our customers who live in the city of **Raleigh**, so we'll search for **"Raleigh"** in the City field. Some customers who live in the suburbs live fairly close by, and we'd like to invite them as well. We'll add their zip code, **27513**, as another criteria.

If you think this sounds a little like applying a filter, you're right. A one-table query is actually just an **advanced filter** applied to a table.

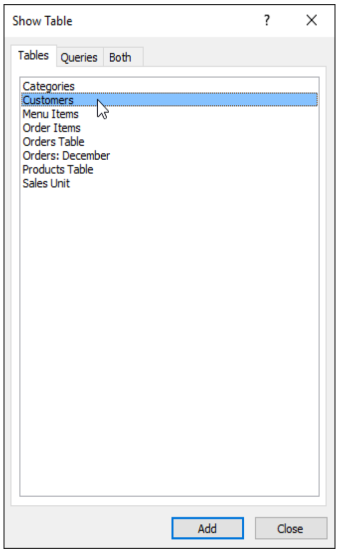
To create a simple one-table query:

Select the **Create** tab on the Ribbon, and locate the **Queries** group.

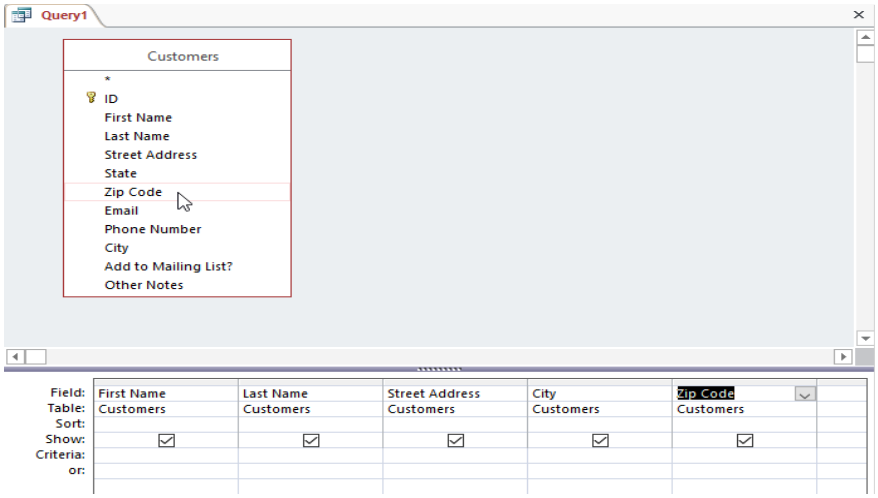
1.Click the **Query Design** command.



2.Access will switch to **Query Design view**. In the **Show Table** dialog box that appears, select the table you want to run a query on. We are running a query on our customers, so we'll select the **Customers** table.



3.The selected table will appear as a small window in the **Object Relationship pane**. In the table window, double-click the **field names** you want to include in your query. They will be added to the **design grid** in the bottom part of the screen. In our example, we want to mail invitations to customers who live in a certain area, so we'll include the **First Name**, **Last Name**, **Street Address**, **City**, and **Zip Code** fields.



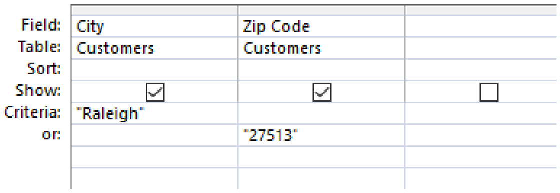
Query1

Customers

- *
- ID
- First Name
- Last Name
- Street Address
- State
- Zip Code
- Email
- Phone Number
- City
- Add to Mailing List?
- Other Notes

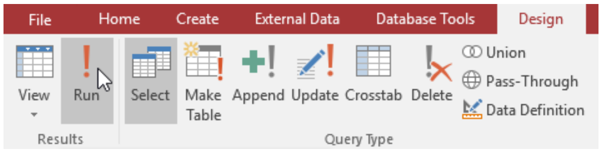
Field:	First Name	Last Name	Street Address	City	Zip Code	
Table:	Customers	Customers	Customers	Customers	Customers	
Sort:						
Show:	☑	☑	☑	☑	☑	
Criteria:						
or:						

4.Set the **search criteria** by clicking the cell in the **Criteria:** row of each field you want to filter. Typing criteria into more than one field in the Criteria: row will set your query to include only results that meet all criteria. If you want to set multiple criteria but don't need the records shown in your results to meet all of them, type the first criteria in the Criteria: row and additional criteria in the **or:** row and the rows beneath it. Because we want to find customers who either live in Raleigh **or** in the 27513 zip code, we'll type "Raleigh" in the **City** field and "27513" into the **or:** row of the **Zip Code** field. The **quotation marks** will search these fields for an **exact match**.

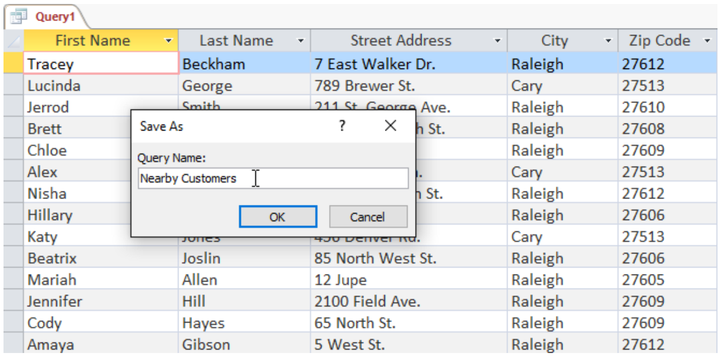


Field:	City	Zip Code	
Table:	Customers	Customers	
Sort:			
Show:	☑	☑	☐
Criteria:	"Raleigh"		
or:		"27513"	

5.After you have set your criteria, **run** the query by clicking the **Run** command on the **Design** tab.



6.The query results will be displayed in the query's **Datasheet view**, which looks like a table. If you want, **save** your query by clicking the **Save** command in the Quick Access Toolbar. When prompted to name it, type the desired name, then click **OK**.



Query1

First Name	Last Name	Street Address	City	Zip Code
Tracey	Beckham	7 East Walker Dr.	Raleigh	27612
Lucinda	George	789 Brewer St.	Cary	27513
Jerrod	Smith	211 St. George Ave.	Raleigh	27610
Brett		h St.	Raleigh	27608
Chloe			Raleigh	27609
Alex		.	Cary	27513
Nisha		h St.	Raleigh	27612
Hillary			Raleigh	27606
Katy	Jones	450 Denver Rd.	Cary	27513
Beatrix	Joslin	85 North West St.	Raleigh	27606
Mariah	Allen	12 Jupe	Raleigh	27605
Jennifer	Hill	2100 Field Ave.	Raleigh	27609
Cody	Hayes	65 North St.	Raleigh	27609
Amaya	Gibson	5 West St.	Raleigh	27612

Save As

Query Name: Nearby Customers

OK Cancel

Now you know how to create the simplest type of query with only **one table**. In the next lesson, you'll learn how to create a query that uses **multiple tables**.

CHAPTER -9- DESIGNING A MULTI-TABLE QUERY

Introduction

In the previous lesson, you learned how to create a **simple query** with one table. Most queries you design in Access will likely use **multiple tables**, allowing you to answer more complex questions. In this lesson, you'll learn how to design and create a **multi-table query**.

Planning a query

When planning a query that uses more than one table, you should go through these four steps:

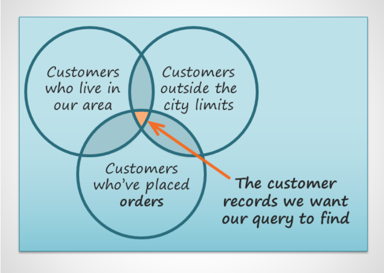
Pinpoint exactly what you want to know. If you could ask your database any question, what would it be? Building a query is more complicated than just asking a question, but knowing precisely what question you want to answer is essential to building a useful query.
Identify every type of information you want included in your query results. Which fields contain this information?
Locate the fields you want to include in your query. Which tables are they contained in?
Determine the criteria the information in each field needs to meet. Think about the question you asked in the first step. Which fields do you need to search for specific information? What information are you looking for? How will you search for it?
This process might seem abstract at first, but as we go through the process of planning our own multi-table query you should start to understand how planning your queries can make building them a lot easier.

Planning our query

Let's go through this planning process with a query we'll run on our bakery database. As you read through the planning process step by step, think about how each part of the planning process could apply to other queries you might run.

Step 1: Pinpointing the question we want to ask

Our bakery database contains many customers, some of whom have never placed an order but who are in our database because they signed up for our mailing list. Most of them live within the city limits, but others live out of town or even out of state. We want to get our out-of-town customers who've placed orders in the past to come back and give us another try, so we're going to mail them some coupons. We don't actually want our list to include customers who live too far away; sending a coupon to someone who doesn't live in our area probably won't make that person come in. So we just want to find people who don't live in our city but who still live in our area.


Customers who live in our area
Customers outside the city limits
Customers who've placed orders
The customer records we want our query to find

In short, the question we want our query to answer is this: **Which customers live in our area, are outside the city limits, and have placed an order at our bakery?**

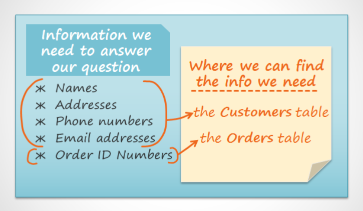
Step 2: Identifying the information we need

What information might we want to see in a list about these customers? Obviously, we'll need the **customers' names** and their **contact information**—their **addresses**, **phone numbers**, and **email addresses**. But how are we going to know if they've placed orders? Each record of an order identifies the customer who placed that order. If we include the **order ID numbers**, we should be able to narrow our list down to only customers who have previously placed orders.

Information we need to answer our question
⁎ Names
⁎ Addresses
⁎ Phone numbers
⁎ Email addresses
⁎ Order ID Numbers

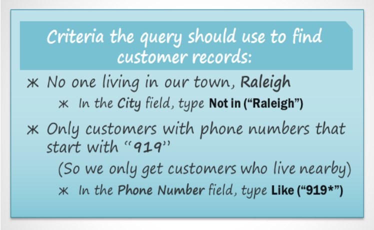
Step 3: Locating the tables containing the information we need

In order to write a query, you need to be familiar with the different tables in your database. From working extensively with our own database, we know that the customer information we need is located in fields in the **Customers** table. Our **Order ID numbers** are in a field in the **Orders** table. We only need to include these two tables to find all of the information we need.



Step 4: Determining the criteria our query should search for

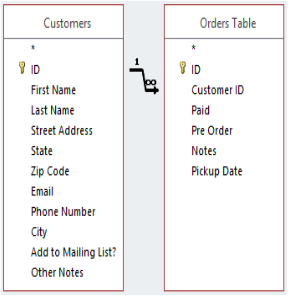
When you set criteria for a field in a query, you are basically applying a filter to it that tells the query to retrieve only information that matches your criteria. Review the list of fields we are including in this query. How and where can we set criteria that will best help us answer our question?
We don't want customers who live in our town, Raleigh, so we want a criteria that will return all records **except for** those with **Raleigh** in the city field. We don't want customers who live too far away, either. All of the phone numbers in the area start with the 919 area code, so we'll also include a criteria that will only return records whose entries from the **phone number field** begin with **919.** This should guarantee that we'll only send coupons to customers who live close enough to actually come back and use them.


Criteria the query should use to find customer records:
⁎ No one living in our town, Raleigh
⁎ In the City field, type Not in ("Raleigh")
⁎ Only customers with phone numbers that start with "919"
(So we only get customers who live nearby)
⁎ In the Phone Number field, type Like ("919*")

We won't set a criteria for the order ID field or any other fields because we want to see **all** of the orders made by people who meet the two criteria we just set.

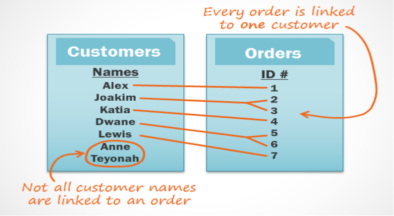
Joining tables in queries

The final thing you need to consider when designing a query is the way you link—or **join**—the tables you're working with. When you add two tables to an Access query, this is what you'll see in the **Object Relationship pane**:



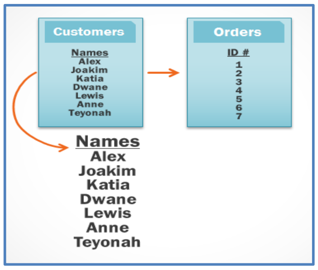
The line connecting the two tables is called the **join line**. See how the join line is actually an arrow? This is because it indicates the order in which the query looks at data from the two tables. In the image above, the arrow is pointing from **left** to **right**, which means the query will look at data in the **left** table first, then look at only the data in the **right** table that **relates** to the records it's already seen in the left table.

Your tables won't always be joined this way. Sometimes Access will join them **right** to **left**. In either case, you might need to **change the direction** of the join to make sure your query includes the correct information. The join direction can affect **which information** your query **retrieves**.


Every order is linked to one customer
Customers
Names
Alex
Joakim
Katia
Dwane
Lewis
Anne
Teyonah
Orders
ID #
1
2
3
4
5
6
7
Not all customer names are linked to an order

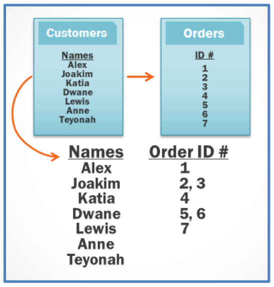
To understand what this means, consider the query we're designing. For our query, we need to see customers who have placed orders, so we've included the **Customers** table and the **Orders** table. Let's take a look at some of the data contained in these tables.

What do you notice when you look at these lists? First of all, every single order in the **Orders** table is linked to someone in the **Customers** table—the customer who placed that order. However, when you look at the Customers table, you'll see that the customers who've placed multiple orders are linked to more than one order, and those who've never placed an order are linked to no orders. As you can see, even when two tables are linked it's possible to have records in one table that have no relationship to any record in the other table.



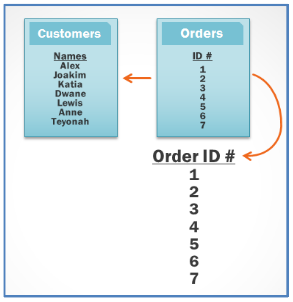
1.So what happens when Access tries to run our query with the current join, **left to right**? It pulls every record from the table to the left: our Customers table.

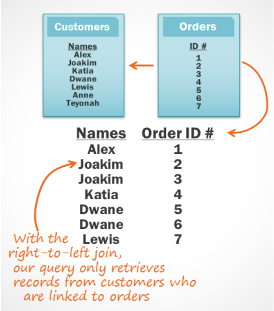
2.It then retrieves every record from the **right** table that has a relationship with a record Access has already taken from the left table.



3.Because our join began with the **Customers** table, our query will include records for **all** of our customers, including those who've never placed orders. This is more information than we need. We **only** want to see records for **customers who have placed orders**.

Fortunately, we can fix this problem by changing the direction of the join line. If we join the tables from **right to left** instead, Access will first retrieve the orders from the **right** table, our **Orders** table:





4.Then Access will look at the left table and retrieve **only** the records of customers who are linked to an order on the right.

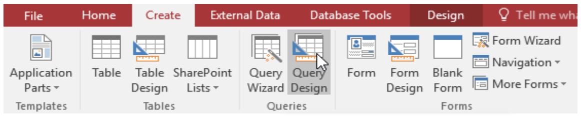
We now have exactly the information we want: **all** of the customers who have placed an order, and **only** those customers. As you can see, we had to join our tables in the **correct direction** to obtain the information we wanted.

Now that we understand which join direction we need to use, we're ready to build our query!

Creating a multi-table query

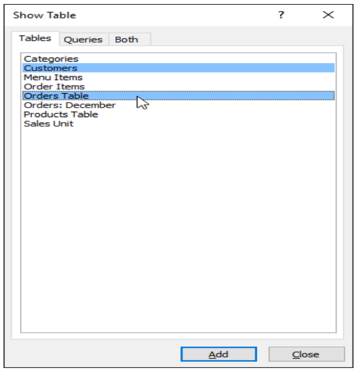
Now that we've planned our query, we're ready to design and run it. If you have created written plans for your query, be sure to reference them often throughout the query design process.

To create a multi-table query:



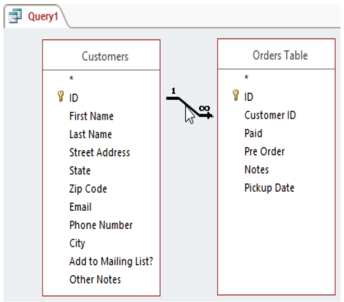
1. Select the **Query Design** command from the **Create** tab on the Ribbon.

2. In the dialog box that appears, select each table you want to include in your query and click **Add**. You can press and hold the **Ctrl** key on your keyboard to select more than one table. When we planned our query, we decided we needed information from the **Customers** and **Orders** tables, so we'll add these.

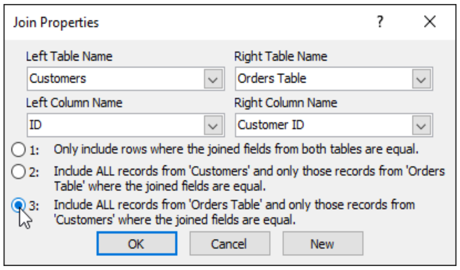


After you have added all of the tables you want, click **Close**.

3. The tables will appear in the **Object Relationship pane**, linked by a **join line**. Double-click the thin section of the join line between two tables to edit its **join direction**.



4. The **Join Properties** dialog box will appear. Select an option to choose the direction of your join. In our example, we'll choose option 3 because we want a right-to-left join.



Left Table Name: Customers

Right Table Name: Orders Table

Left Column Name: ID

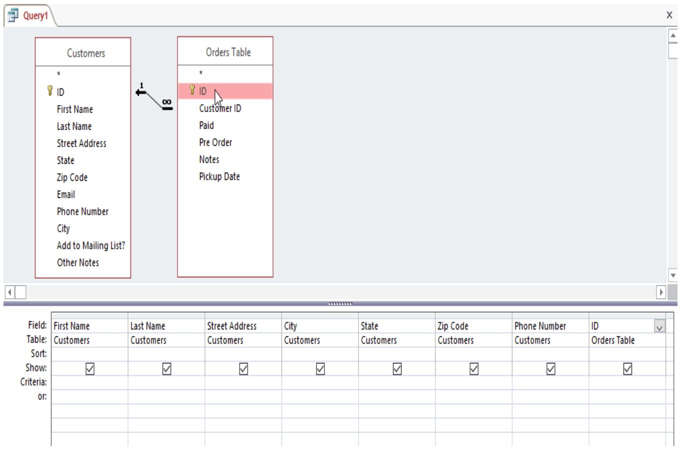
Right Column Name: Customer ID

○ 1: Only include rows where the joined fields from both tables are equal.

○ 2: Include ALL records from 'Customers' and only those records from 'Orders Table' where the joined fields are equal.

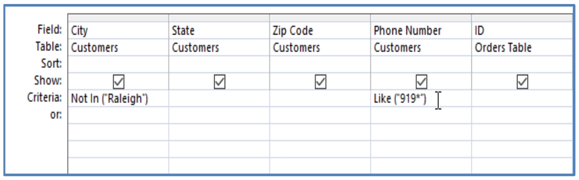
● 3: Include ALL records from 'Orders Table' and only those records from 'Customers' where the joined fields are equal.

5. In the table windows, double-click the **field names** you want to include in your query. They will be added to the **design grid** in the bottom part of the screen. In our example, we'll include most of the fields from the **Customers** table: **First Name**, **Last Name**, **Street Address**, **City**, **State**, **Zip Code**, and **Phone Number**. We'll also include the **ID number** from the **Orders** table.



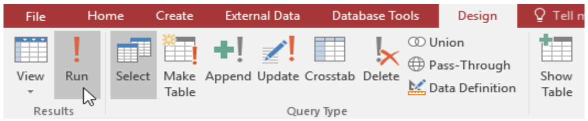
Field:	First Name	Last Name	Street Address	City	State	Zip Code	Phone Number	ID
Table:	Customers	Customers	Customers	Customers	Customers	Customers	Customers	Orders Table
Sort:								
Show:	☑	☑	☑	☑	☑	☑	☑	☑
Criteria:								
or:								

6. Set field **criteria** by entering the desired criteria in the criteria row of each field. We want to set two criteria: **Not in ("Raleigh")** in the **City** field, and **Like ("919*")** in the **Phone Number** field. This will find customers who do not live in Raleigh but who do live in the 919 area code.

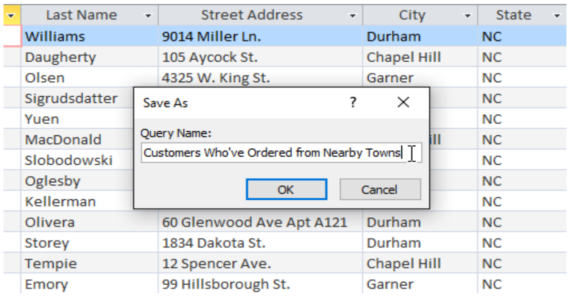


Field:	City	State	Zip Code	Phone Number	ID
Table:	Customers	Customers	Customers	Customers	Orders Table
Sort:					
Show:	☑	☑	☑	☑	☑
Criteria:	Not In ("Raleigh")			Like ("919*")	
or:					

7. After you have set your criteria, **run** the query by clicking the **Run** command on the **Design** tab.



8. The query results will be displayed in the query's **Datasheet view**, which looks like a table. If you want, **save** your query by clicking the **Save** command in the Quick Access Toolbar. When prompted to name it, type the desired name, then click **OK**.



Last Name	Street Address	City	State
Williams	9014 Miller Ln.	Durham	NC
Daugherty	105 Aycock St.	Chapel Hill	NC
Olsen	4325 W. King St.	Garner	NC
Sigrudsdatter			NC
Yuen			NC
MacDonald		ill	NC
Slobodowski			NC
Oglesby			NC
Kellerman			NC
Olivera	60 Glenwood Ave Apt A121	Durham	NC
Storey	1834 Dakota St.	Durham	NC
Tempie	12 Spencer Ave.	Chapel Hill	NC
Emory	99 Hillsborough St.	Garner	NC

Query Name: Customers Who've Ordered from Nearby Towns

Now you know how to create a **multi-table** query. In the next lesson, we'll talk about more query design options that can make your query even more powerful.

CHAPTER -10- MORE QUERY DESIGN OPTIONS

Introduction

Access offers several options that let you design and run queries that return exactly the information you're looking for. For instance, what if you need to find out **how many** of something exists within your database? Or what if you would like your query results to automatically be sorted a certain way? If you know how to use query options in Access, you can design almost any query you want.

In this lesson, you'll learn how to **modify** and **sort** your queries within Query Design view, as well as how to use the **Totals** function to create a query that can **perform calculations** with your data. You'll also learn about additional query-building options offered in Access.

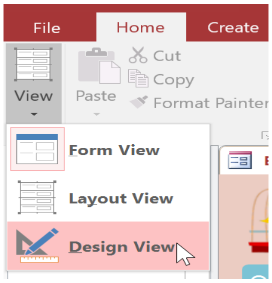
Modifying queries

Access offers several options for making your queries work better for you. In addition to **modifying** your query criteria and joins after you build your queries, you can choose to **sort** and **hide** fields in your query results.

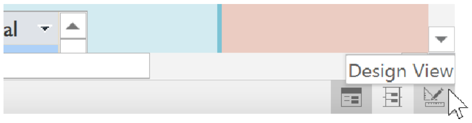
To modify your query:

When you open an existing query in Access, it is displayed in **Datasheet view**, meaning you will see your query results in a table. To modify your query, you must enter **Design view**, the view you used when creating it. There are two ways to switch to Design view:

1.On the **Home** tab of the Ribbon, click the **View** command. Select **Design View** from the drop-down menu that appears.



2.In the bottom-right corner of your Access window, locate the small **view icons**. Click the **Design View** icon, which is the icon farthest to the right.

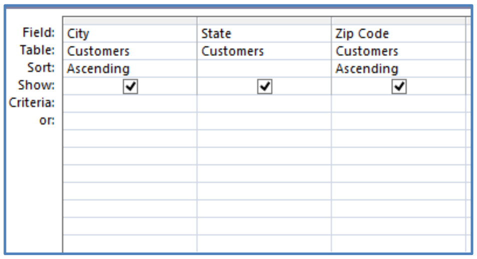


Once in **Design view**, make the desired changes, then select the **Run** command to view your updated results.

Sorting queries

Access allows you to apply multiple sorts at once while you're designing your query. This allows you to view your data exactly the way you want.

A sort that includes more than one sorted field is called a **multilevel sort**. A multilevel sort allows you to apply an initial sort, then further organize data with additional sorts. For instance, if you had a table filled with customers and their addresses, you might choose to first sort the records by city, then alphabetically by last name.



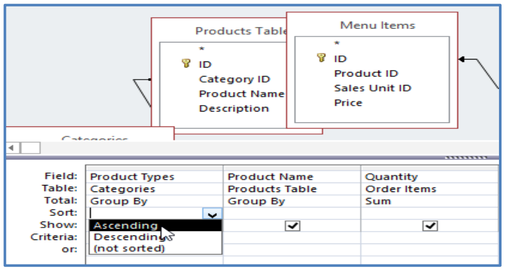
Field:	City	State	Zip Code
Table:	Customers	Customers	Customers
Sort:	Ascending		Ascending
Show:	☑	☑	☑
Criteria:			
or:			

When more than one sort is included in a query, Access reads the sorts from **left to right**. This means the leftmost sort will be applied first. In the example below, customers will be sorted first by the **City** where they live and then by the **Zip Code** within that city.

To apply a multilevel sort:

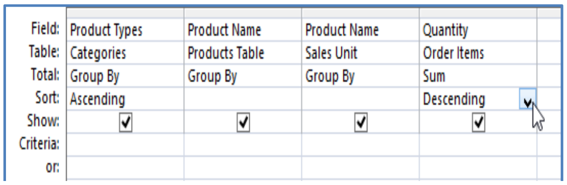
Open the query and switch to **Design view**.

1.Locate the field you want to sort first. In the **Sort:** row, click the drop-down arrow to select either an **Ascending** or **Descending** sort.



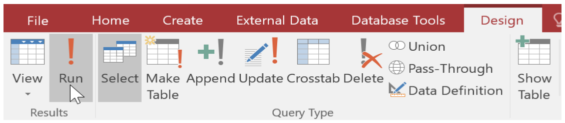
Field:	Product Types	Product Name	Quantity
Table:	Categories	Products Table	Order Items
Total:	Group By	Group By	Sum
Sort:	Ascending Descending (not sorted)		
Show:		☑	☑
Criteria:			
or:			

2.Repeat the process in the other fields to add additional sorts. Remember, the sorts are applied from left to right, so any additional sorts must be applied to fields located **to the right** of your primary sort. If necessary, you can **rearrange** the fields by clicking the top of a field and dragging it to a new location.

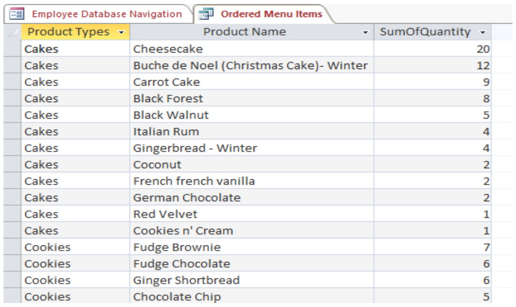


Field:	Product Types	Product Name	Product Name	Quantity
Table:	Categories	Products Table	Sales Unit	Order Items
Total:	Group By	Group By	Group By	Sum
Sort:	Ascending			Descending
Show:	☑	☑	☑	☑
Criteria:				
or:				

3.To apply the sort, click the **Run** command.

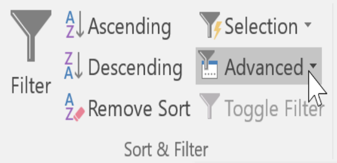


4.Your query results will appear with the desired sort.



Product Types	Product Name	SumOfQuantity
Cakes	Cheesecake	20
Cakes	Buche de Noel (Christmas Cake)- Winter	12
Cakes	Carrot Cake	9
Cakes	Black Forest	8
Cakes	Black Walnut	5
Cakes	Italian Rum	4
Cakes	Gingerbread - Winter	4
Cakes	Coconut	2
Cakes	French french vanilla	2
Cakes	German Chocolate	2
Cakes	Red Velvet	1
Cakes	Cookies n' Cream	1
Cookies	Fudge Brownie	7
Cookies	Fudge Chocolate	6
Cookies	Ginger Shortbread	6
Cookies	Chocolate Chip	5

5.You can also apply multilevel sorts to tables that don't have queries applied to them. On the **Home** tab on the Ribbon, select the **Advanced** drop-down command in the **Sort & Filter** group. From the menu that appears, select **Advanced Filter/Sort** and create the multilevel sort as you normally would. When you're finished, click the **Toggle Filter** command to apply your sort.



Hiding fields within queries

Sometimes you might have fields that contain important criteria, but you might not need to actually see the information from that field in the final results. For example, take one of the queries we built in our last lesson: a query to find the names and contact information of customers who had placed orders. We included Order ID numbers in our query because we wanted to make sure we only pulled customers who had placed orders.

However, we really didn't need to see this information in our final query results. In fact, if we were just looking for customer names and addresses, seeing the order number mixed in there might have been distracting. Fortunately, Access makes it easy to **hide** fields while still including any criteria they contain.

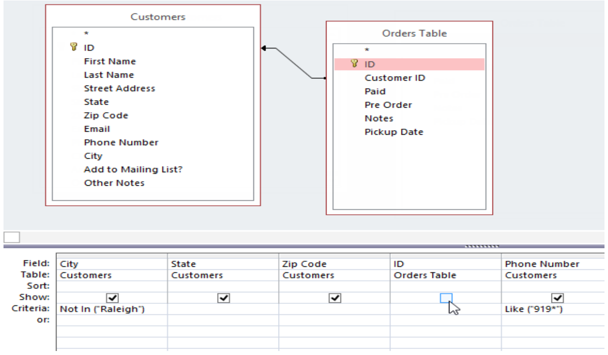
To hide a field within a query:

Open the query and switch to **Design view**.

Locate the field you want to hide.

Click the **checkbox** in the **Show:** row to uncheck it.

To see the updated query, select the **Run** command. The field will be hidden.



Field:	City	State	Zip Code	ID	Phone Number
Table:	Customers	Customers	Customers	Orders Table	Customers
Sort:					
Show:	☑	☑	☑	□	☑
Criteria:	Not In ("Raleigh")				Like ("919*")
or:					

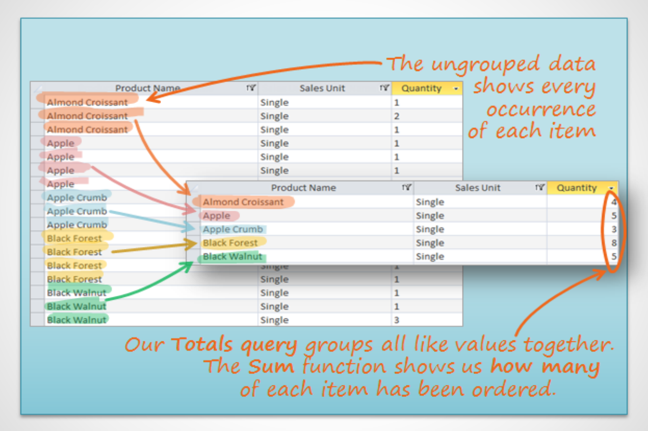
More types of queries

By this point, you should understand how to create a simple one-table or multi-table query using multiple criteria. Additional queries offer you the ability to perform even more complex actions with your database. One of these is the **totals query**, which lets

Totals queries

Sometimes setting simple criteria won't give you the results you need, especially when you're working with numerical values. You may want to see your query results grouped or counted in some way. For example, let's say we want to find out **how many of each menu item at our bakery has been ordered**—how many Almond Croissants, Apple Pies, and so on. To do this, we could create a totals query to find the **sum** of the **quantities** for each item.

First, the totals query will group all similar menu items from separate orders (for example, Almond Croissants). Then, the Sum function will add the values in the Quantity field to calculate the total number sold for that item.



Product Name	Sales Unit	Quantity
Almond Croissant	Single	1
Almond Croissant	Single	2
Almond Croissant	Single	1
Apple	Single	1
Apple	Single	1
Apple	Single	1
Apple		
Apple Crumb		
Apple Crumb		
Apple Crumb		
Black Forest		
Black Forest		
Black Forest		
Black Forest	Single	1
Black Walnut	Single	1
Black Walnut	Single	1
Black Walnut	Single	3

Product Name	Sales Unit	Quantity
Almond Croissant	Single	4
Apple	Single	5
Apple Crumb	Single	3
Black Forest	Single	8
Black Walnut	Single	5

The ungrouped data shows every occurrence of each item

Our Totals query groups all like values together. The Sum function shows us how many of each item has been ordered.

The **Sum** function helped us find the desired information in this example, but in other situations you may need to use a different function to find the answer you need. There are several functions you can choose from:

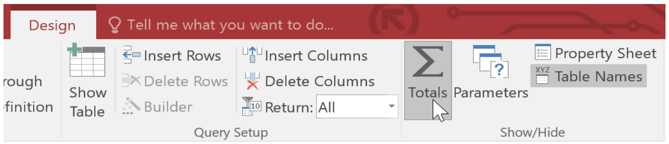
Count: Counts the total number of each item
Sum: Adds the values together
Average: Finds the average of the values
Maximum: Returns the highest value
Minimum: Returns the lowest value
First: Returns the first—or earliest—value
Last: Returns the last—or most recent—value

To create a totals query:

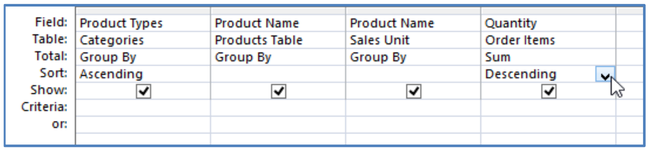
For our example, we want to find the total number we've sold of each of our menu items, so we'll use a query showing us all of the menu items we've sold. If you want to follow along in our database, open the **Menu Items Ordered** query.

1.Create or open a query you want to use as a **totals query**.

From the **Design** tab, locate the **Show/Hide** group, then select the **Totals** command.

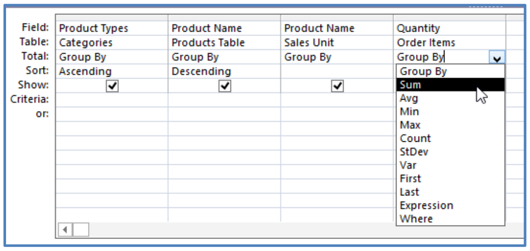


2.A row will be added to the table in the **design grid**, with all values in that row set to **Group By**. Select the cell in the **Total:** row of the field you want to perform a calculation on, then click the drop-down arrow that appears.



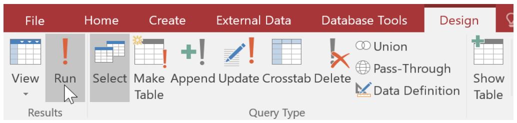
Field:	Product Types	Product Name	Product Name	Quantity
Table:	Categories	Products Table	Sales Unit	Order Items
Total:	Group By	Group By	Group By	Sum
Sort:	Ascending			Descending
Show:	☑	☑	☑	☑
Criteria:				
or:				

3.Select the calculation you want to be performed in that field. In our example, we want to **add** the quantities of products we've sold, so we'll select the **Sum** option.

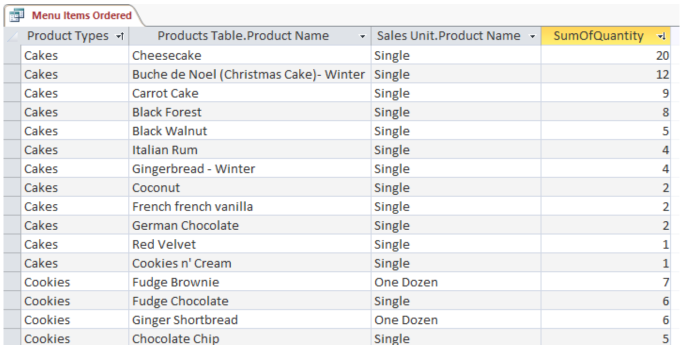


Field:	Product Types	Product Name	Product Name	Quantity
Table:	Categories	Products Table	Sales Unit	Order Items
Total:	Group By	Group By	Group By	Group By
Sort:	Ascending	Descending		
Show:	☑	☑	☑	
Criteria:				
or:				

4.When you are satisfied with your query design, select the **Run** command on the **Query Tools Design** tab to **run** the query.



5.The query results will be displayed in the query's **Datasheet view**, which looks like a table. If you want, save your query by clicking the **Save** command on the Quick Access Toolbar.



Menu Items Ordered

Product Types	Products Table.Product Name	Sales Unit.Product Name	SumOfQuantity
Cakes	Cheesecake	Single	20
Cakes	Buche de Noel (Christmas Cake)- Winter	Single	12
Cakes	Carrot Cake	Single	9
Cakes	Black Forest	Single	8
Cakes	Black Walnut	Single	5
Cakes	Italian Rum	Single	4
Cakes	Gingerbread - Winter	Single	4
Cakes	Coconut	Single	2
Cakes	French french vanilla	Single	2
Cakes	German Chocolate	Single	2
Cakes	Red Velvet	Single	1
Cakes	Cookies n' Cream	Single	1
Cookies	Fudge Brownie	One Dozen	7
Cookies	Fudge Chocolate	Single	6
Cookies	Ginger Shortbread	One Dozen	6
Cookies	Chocolate Chip	Single	5

More query options

We offer mini-lessons on creating additional types of queries in the last lesson in this tutorial. Below is a list of the queries we currently cover.

Parameter query
A **parameter query** allows you to create a query that can be updated easily to reflect a new criterion, or **search term**. When you open a parameter query, Access will prompt you for a search term and then show you query results that reflect that search.

Find duplicates query
A **find duplicates query** lets you find all **duplicate records** in your database so you can **delete** them. Duplicate records can negatively affect the **integrity**of your database.

Other query-building resources

Review our **Query Criteria Quick Reference Guide** for a list of criteria you can use in building queries. You can also download a **printable version** of the guide.

CHAPTER -11- CREATING REPORTS

Introduction

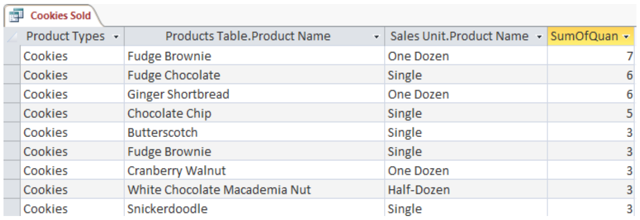
If you need to share information from your database with someone but don't want that person actually working with your database, consider creating a **report**. Reports allow you to organize and present your data in a reader-friendly, visually appealing format. Access makes it easy to create and customize a report using data from any query or table in your database.

In this lesson, you will learn how to **create**, **modify**, and **print** reports.

To create a report:

Reports give you the ability to present components of your database in an easy-to-read, printable format. Access lets you create reports from both **tables** and **queries**.

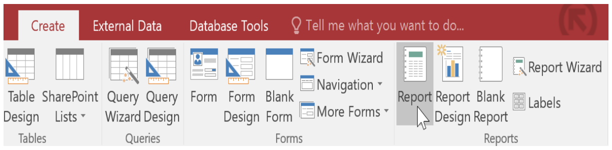
1.Open the table or query you want to use in your report. We want to print a list of cookies we've sold, so we'll open the **Cookies Sold** query.



Cookies Sold

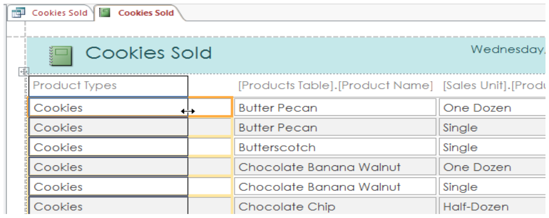
Product Types	Products Table.Product Name	Sales Unit.Product Name	SumOfQuan
Cookies	Fudge Brownie	One Dozen	7
Cookies	Fudge Chocolate	Single	6
Cookies	Ginger Shortbread	One Dozen	6
Cookies	Chocolate Chip	Single	5
Cookies	Butterscotch	Single	3
Cookies	Fudge Brownie	Single	3
Cookies	Cranberry Walnut	One Dozen	3
Cookies	White Chocolate Macademia Nut	Half-Dozen	3
Cookies	Snickerdoodle	Single	3

2.Select the **Create** tab on the Ribbon. Locate the **Reports** group, then click the **Report** command.



Access will create a new report based on your object.

3.It's likely that some of your data will be located on the other side of the **page break**. To fix this, **resize** your fields. Simply select a field, then **click** and **drag**its edge until the field is the desired size. **Repeat** with additional fields until all of your fields fit.

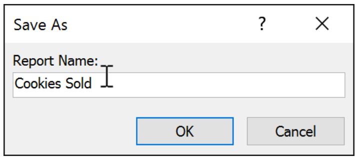


Cookies Sold | Cookies Sold

Cookies Sold — Wednesday,

Product Types	[Products Table].[Product Name]	[Sales Unit].[Produ
Cookies	Butter Pecan	One Dozen
Cookies	Butter Pecan	Single
Cookies	Butterscotch	Single
Cookies	Chocolate Banana Walnut	One Dozen
Cookies	Chocolate Banana Walnut	Single
Cookies	Chocolate Chip	Half-Dozen

4.To **save** your report, click the **Save** command on the **Quick Access Toolbar**. When prompted, type a **name** for your report, then click **OK**.



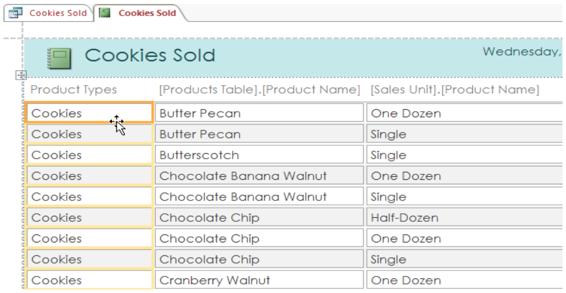
Save As

Report Name:

Cookies Sold

To delete a field in a report:

Click any cell in the field you want to delete, then press the **Delete** key on your keyboard.

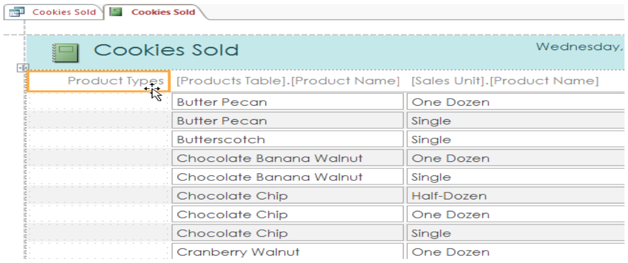


Cookies Sold | Cookies Sold

Cookies Sold — Wednesday,

Product Types	[Products Table].[Product Name]	[Sales Unit].[Product Name]
Cookies	Butter Pecan	One Dozen
Cookies	Butter Pecan	Single
Cookies	Butterscotch	Single
Cookies	Chocolate Banana Walnut	One Dozen
Cookies	Chocolate Banana Walnut	Single
Cookies	Chocolate Chip	Half-Dozen
Cookies	Chocolate Chip	One Dozen
Cookies	Chocolate Chip	Single
Cookies	Cranberry Walnut	One Dozen

The field will be deleted.



Cookies Sold | Cookies Sold

Cookies Sold — Wednesday,

Product Types	[Products Table].[Product Name]	[Sales Unit].[Product Name]
	Butter Pecan	One Dozen
	Butter Pecan	Single
	Butterscotch	Single
	Chocolate Banana Walnut	One Dozen
	Chocolate Banana Walnut	Single
	Chocolate Chip	Half-Dozen
	Chocolate Chip	One Dozen
	Chocolate Chip	Single
	Cranberry Walnut	One Dozen

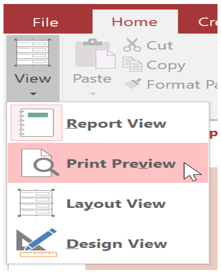
When you delete a field, be sure to delete its header as well. Simply select the header and press the **Delete** key.

Printing and saving reports in Print Preview

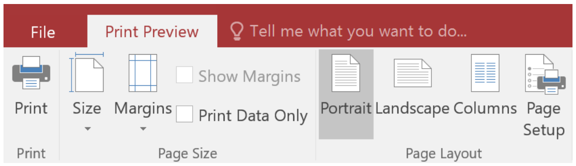
While you can print reports using commands in **Backstage view,** you can also use **Print Preview**. Print Preview shows you how your report will appear on the printed page. It also allows you to **modify** the way your report is displayed, **print** it, and even **save** it as a different file type.

To print a report:

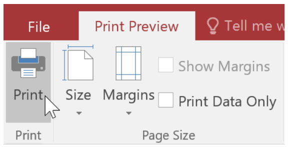
1.From the **Home** tab, click the **View** command, then select **Print Preview** from the drop-down list. Your report will be shown as it will appear on the printed page.



2.If necessary, modify the **page size**, **margin width**, and **page orientation** using the related commands on the Ribbon.



3.Click the **Print** command.



The **Print** dialog box will appear. Set any desired print options, then click **OK**. The report will be printed.

Saving reports

You can save reports in other formats so they'll be viewable outside of Access. This is called **exporting** a file, and it allows you to view and even modify reports in other formats and programs.

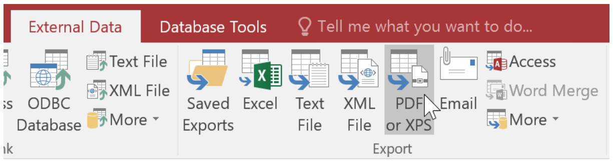
Access offers options to save your report as an **Excel file**, **text file**, **PDF**, **HTML documen**t, and more. Experiment with the different export options to find the one that best suits your needs.

To export a report:

From the **Home** tab, click the **View** command, then select **Print Preview** from the drop-down list.

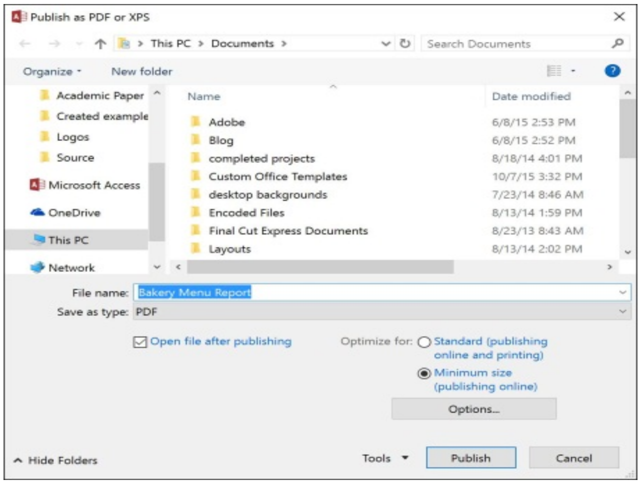
Locate the **Data** group on the Ribbon.

Select one of the file type options, or click **More** to see options to save your report as a **Word** or **HTML** file.



A dialog box will appear. Select the **location** where you want to save the report.

Enter a **file name** for the report, then click **Publish**.



Publish as PDF or XPS

This PC > Documents >

Search Documents

Organize · New folder

Academic Paper
Created example
Logos
Source
Microsoft Access
OneDrive
This PC
Network

Name	Date modified
Adobe	6/8/15 2:53 PM
Blog	6/8/15 2:52 PM
completed projects	8/18/14 4:01 PM
Custom Office Templates	10/7/15 3:32 PM
desktop backgrounds	7/23/14 8:46 AM
Encoded Files	8/13/14 1:59 PM
Final Cut Express Documents	8/23/13 8:43 AM
Layouts	8/13/14 2:02 PM

File name: Bakery Menu Report
Save as type: PDF

☑ Open file after publishing

Optimize for: ○ Standard (publishing online and printing)
● Minimum size (publishing online)

Options...

Hide Folders Tools Publish Cancel

A dialog box will appear to notify you that your file has been successfully saved. Click **Close** to return to your report.

CHAPTER -12- ADVANCED REPORT OPTIONS

Introduction

Access offers several **advanced options** for creating and modifying reports. The **Report Wizard** is a tool that guides you through the process of creating complex reports. Once you've created a report—whether through the Report Wizard or the Report command—you can then **format** it to make it look exactly how you want.

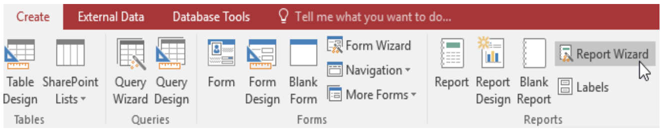
In this lesson, you'll learn how to use the **Report Wizard** to create complex reports. You'll also learn how to use **formatting options** to **format text**, **change report colors** and **fonts**, and **add a logo**.

The Report Wizard

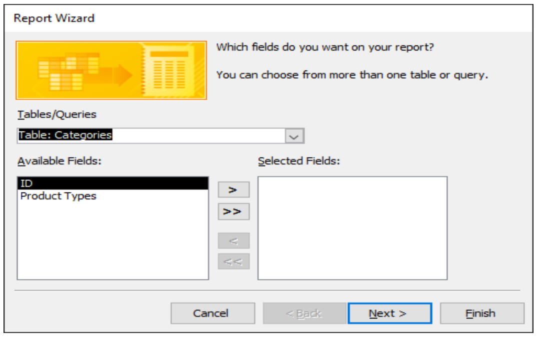
While using the **Report** command is a quick way to create reports from the current object, it's not as helpful if you want to create a report with data from multiple objects. The **Report Wizard** makes it easy to create reports using fields from multiple tables and queries. It even lets you choose how your data will be organized.

To create a report with the Report Wizard:

1.Select the **Create** tab and locate the **Reports** group. Click the **Report Wizard** command.



2.The **Report Wizard** will appear. In the procedures below, we'll discuss the different pages in the Report Wizard.


Report Wizard

Which fields do you want on your report?

You can choose from more than one table or query.

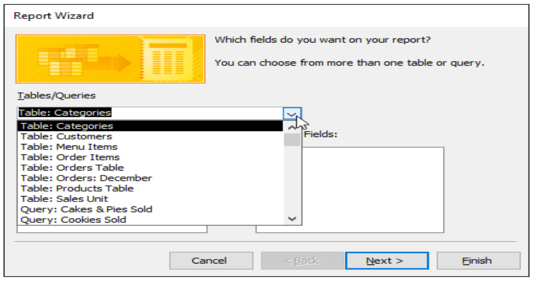
Tables/Queries: Table: Categories

Available Fields: ID, Product Types

Selected Fields:

Step 1: Select the fields to include in your report

1.Click the **drop-down arrow** to select the table or query that contains the desired field(s).

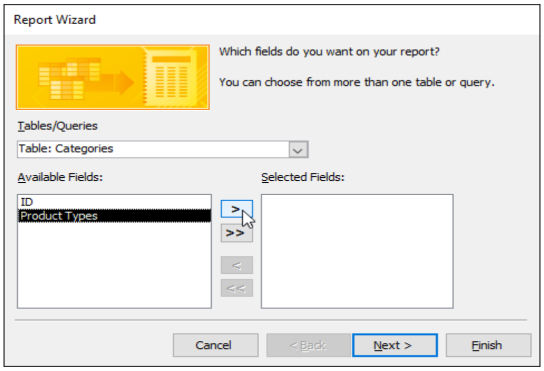

Report Wizard

Which fields do you want on your report?

You can choose from more than one table or query.

Tables/Queries: Table: Categories

2.Select a field from the list on the left, and click the **right arrow** to add it to the report.


Report Wizard

Which fields do you want on your report?

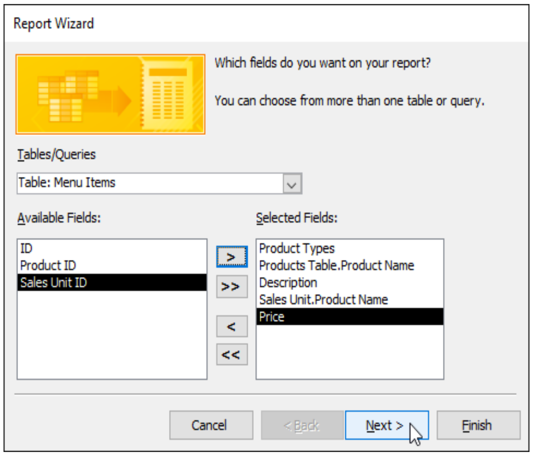
You can choose from more than one table or query.

Tables/Queries: Table: Categories

Available Fields: ID, Product Types

Selected Fields:

3. Once you've added the desired fields, click **Next**.


Report Wizard

Which fields do you want on your report?

You can choose from more than one table or query.

Tables/Queries: Table: Menu Items

Available Fields: ID, Product ID, Sales Unit ID

Selected Fields: Product Types, Products Table.Product Name, Description, Sales Unit.Product Name, Price

Step 2: Organize the report

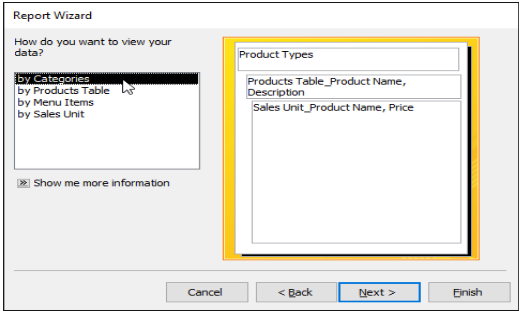
The Report Wizard will provide you with options that let you choose how to view and organize your data. These options **group** similar data within your fields and **organize** these fields into multiple levels, like in an outline or bulleted list.

If you are building a report from only one table or query, you can skip to **Step 3**below.

1.Access will offer a list of several organization options. Select an option from the list to preview it.

Click **Next** when you are satisfied with the basic organization of your data.

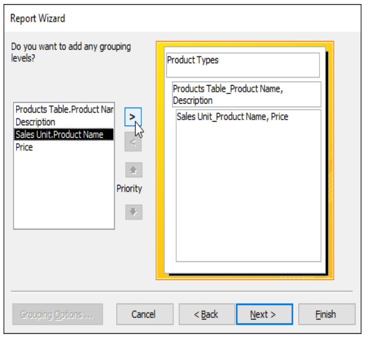
2.If you're not satisfied with the way your data is organized, you can now modify the grouping levels. Select a field from the list, and click the **right arrow** to add it as a new level.


Report Wizard

How do you want to view your data?

by Categories
by Products Table
by Menu Items
by Sales Unit

Product Types
Products Table_Product Name, Description
Sales Unit_Product Name, Price


Report Wizard

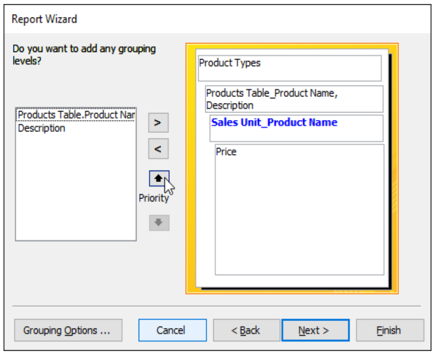
Do you want to add any grouping levels?

Products Table.Product Nar
Description
Sales Unit.Product Name
Price

Product Types
Products Table_Product Name, Description
Sales Unit_Product Name, Price

3.If necessary, modify the order of your grouped fields by selecting a field and clicking the **up** or **down Priority** arrow to move it up or down a level.

Once you are satisfied with the organization of your report, click **Next**.


Report Wizard

Do you want to add any grouping levels?

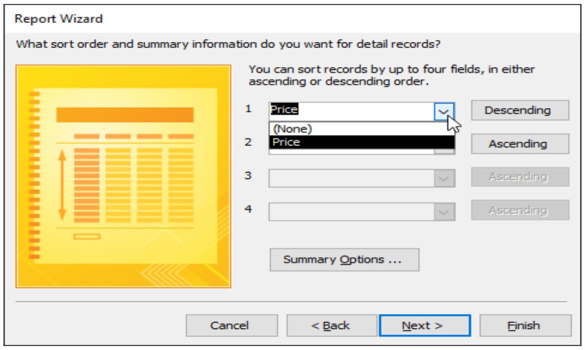
Products Table.Product Nar
Description

Product Types
Products Table_Product Name, Description
Sales Unit_Product Name
Price

Step 3: Sort your report data

Click the top drop-down arrow, and select the name of the first field you want to sort.

Click the button on the right to change the sort to **ascending** or **descending**.


Report Wizard

What sort order and summary information do you want for detail records?

You can sort records by up to four fields, in either ascending or descending order.

1 Price — Descending
(None)
Price
2 — Ascending
3 — Ascending
4 — Ascending

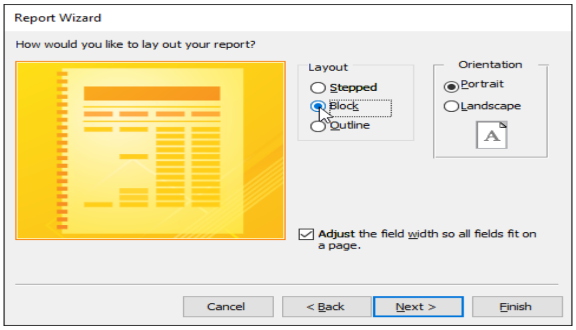
Add any additional sorts. You can sort up to **four fields**. The sort will be applied from top to bottom, meaning the sort at the top of the list will be the main sort.

When you are satisfied with the way your data is sorted, click **Next**.

Depending on the grouping you have chosen for your data, your sorting options may be limited.

Step 4: Select a layout and title

1.Click the various layout options to see how they look, then **select** one to use in your report.


Report Wizard

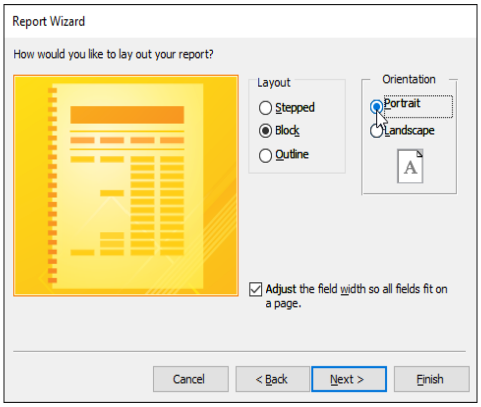
How would you like to lay out your report?

Layout
○ Stepped
● Block
○ Outline

Orientation
● Portrait
○ Landscape

☑ Adjust the field width so all fields fit on a page.

2.Select either a **portrait** (tall) or **landscape** (wide) orientation for your report.


Report Wizard

How would you like to lay out your report?

Layout
○ Stepped
● Block
○ Outline

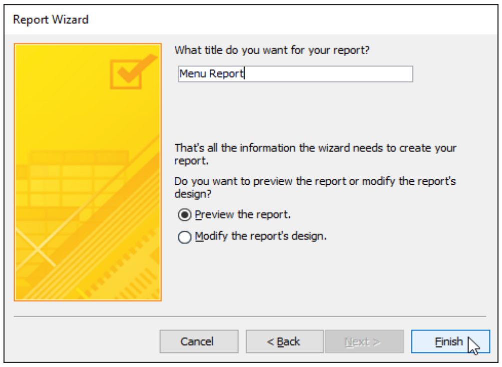
Orientation
● Portrait
○ Landscape

☑ Adjust the field width so all fields fit on a page.

3.Select the text box, and type the **title** you want for your report.

Select whether you want to **preview** the report or **modify** its design, then click **Finish**.

Your report will be created and saved.


Report Wizard

What title do you want for your report?

Menu Report

That's all the information the wizard needs to create your report.

Do you want to preview the report or modify the report's design?

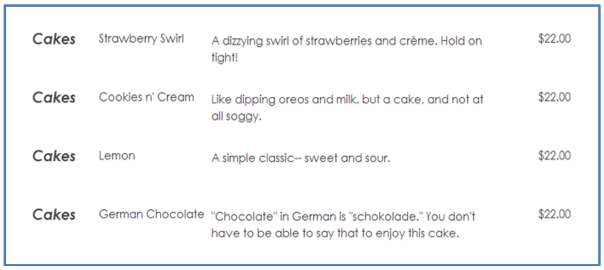
● Preview the report.
○ Modify the report's design.

Formatting reports

One of the strengths of reports is that you can modify their appearance to make them look how you want. You can add **headers** and **footers**, apply new **colors**, and even add a **logo**. All of these things can help you create visually appealing reports.

Modifying report text

The bulk of the information in your report comes straight from the query or table you built it from, which means you can't edit it within the report. However, you can change, add, or delete label text, headers, and footers to make your report clearer and easier to read. For example, in our report we decided we didn't need the field headings to understand our data, so we simply **deleted** them.

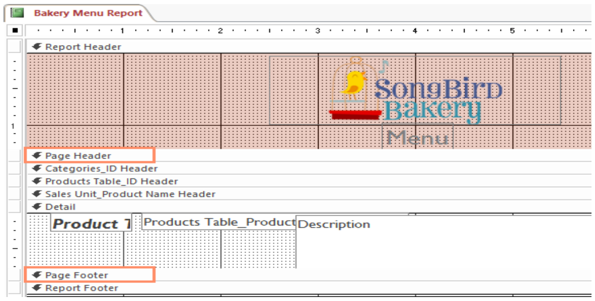


Cakes	Strawberry Swirl	A dizzying swirl of strawberries and crème. Hold on tight!	$22.00
Cakes	Cookies n' Cream	Like dipping oreos and milk, but a cake, and not at all soggy.	$22.00
Cakes	Lemon	A simple classic-- sweet and sour.	$22.00
Cakes	German Chocolate	"Chocolate" in German is "schokolade." You don't have to be able to say that to enjoy this cake.	$22.00

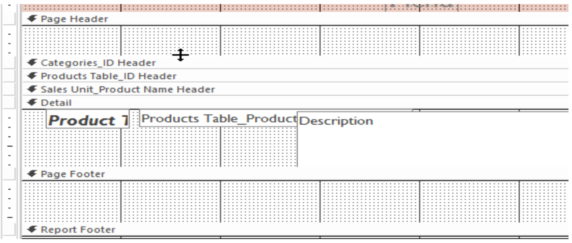
Just like other Office programs, Access allows you to modify the text color and font, add shapes, and more. If you're not sure how to perform basic text and shape formatting, visit the **Formatting Text** and **Shapes** lessons from our **Word 2016** tutorial.

Modifying the page header and footer

1.To view and modify the **header** and **footer** that appear on each page of your report, select the **View** command on the Ribbon and switch to **Design view**. The header and footer are located in the white space beneath the **Page Header** and **Page Footer** bars.

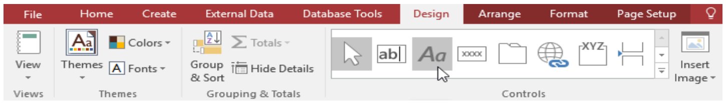


2.Depending on your report's design, sometimes you may find that there is no white space in the page header and footer, as in the image above. If this is the case, you must **resize** the header and footer before you can add anything to them. Simply click and drag the bottom border of the header or footer to make it larger.

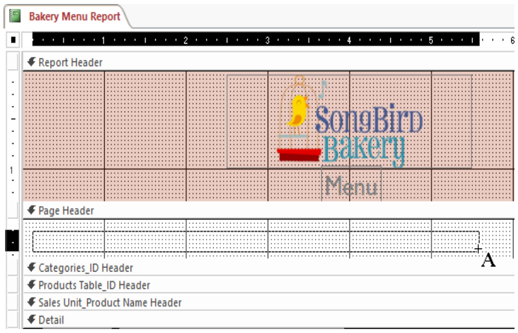


To add text to a header or footer:

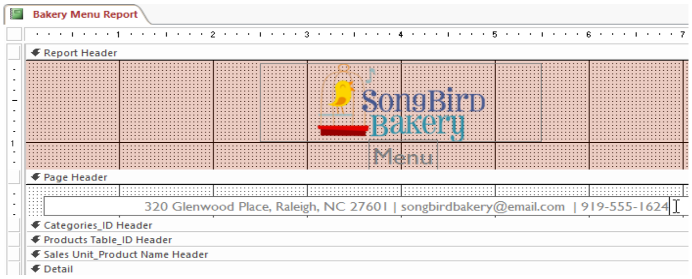
1.Select the **Design** tab, locate the **Controls** group, and click the **Label** command.



2.Click and drag the mouse inside the white area to create your label. Release the mouse when it is the desired size.



3.Click the text box, and type the desired text.



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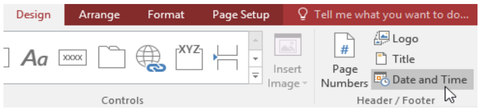
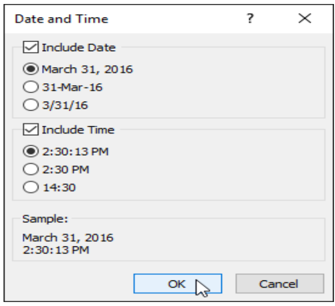
To add the date and time to a header or footer:

1.Select the **Design** tab, locate the **Header/Footer** group, and click the **Date and Time** command.



2.A dialog box will appear. Select the desired formatting options. A preview of the text that will be included in your report will appear.

When you are satisfied with the appearance of the date and time, click **OK**.



Date and Time

☑ Include Date
● March 31, 2016
○ 31-Mar-16
○ 3/31/16

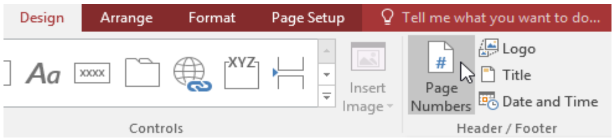
☑ Include Time
● 2:30:13 PM
○ 2:30 PM
○ 14:30

Sample:
March 31, 2016
2:30:13 PM

To add page numbers to a header or footer:

Select the **Design** tab, then locate the **Header/Footer** group.

Click the **Page Numbers** command.

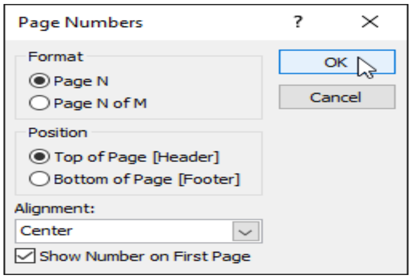


The **Page Numbers** dialog box will appear. Under **Format**, choose **Page N** to display the number of only the current page, or **Page N of M** to display the number of the current page and the number of total pages.

Under **Position**, choose **Top of Page** or **Bottom of Page** to control where the page numbers appear.

Click the drop-down arrow to select the **alignment** of the page numbers.

When you are satisfied with the settings, click **OK**.



Page Numbers

Format
● Page N
○ Page N of M

Position
● Top of Page [Header]
○ Bottom of Page [Footer]

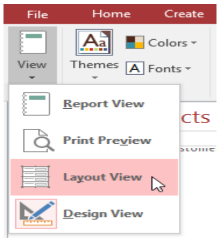
Alignment:
Center

☑ Show Number on First Page

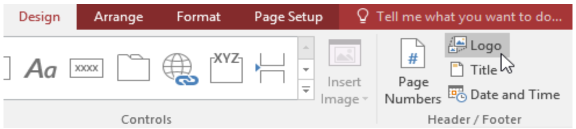
Modifying your report's appearance

To add a logo:

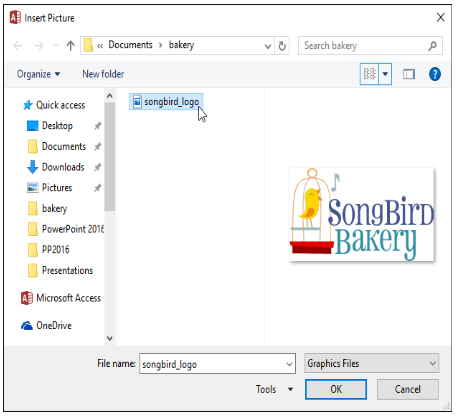
1.From the **Design** tab, click the **View** command, then select **Layout View** from the drop-down list.



2.Locate the **Header/Footer** group, then click the **Logo** command.



3.A dialog box will appear. Locate and select the desired file, then click **OK** to add it to your report.

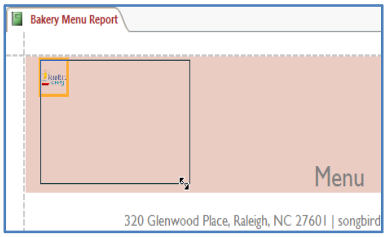


Insert Picture

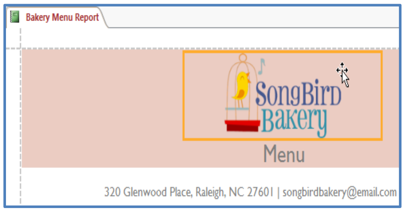
« Documents › bakery

File name: songbird_logo
Graphics Files

4.A small version of the image will appear in the header. Click and drag the image border to resize it.



5.If necessary, move your logo to the desired location by clicking and dragging it.

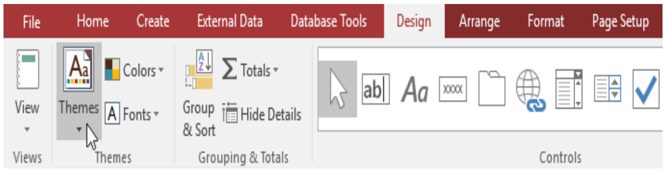

Bakery Menu Report
SongBird Bakery
Menu
320 Glenwood Place, Raleigh, NC 27601 | songbirdbakery@email.com

Themes and fonts

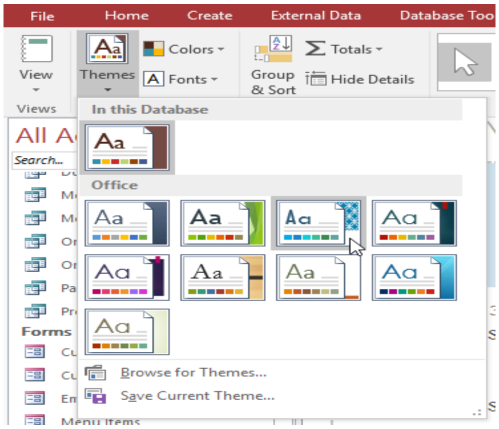
A **theme** is a set of **colors** and **fonts** that applies to the **entire database** to give it a consistent, professional look. By default, databases use the Office theme. When you change the theme, all of the theme fonts and colors in your database change to match the new theme. Designing and modifying reports using theme elements can help you keep the appearance of your reports consistent.

To change the theme:

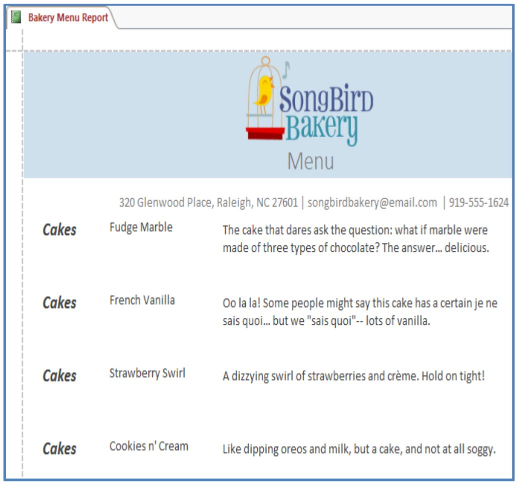
1.Select the **Design** tab, locate the **Themes** group, and click the **Themes** command.



2.A drop-down menu will appear. Select the desired theme.



3.The theme will be applied to your entire database.



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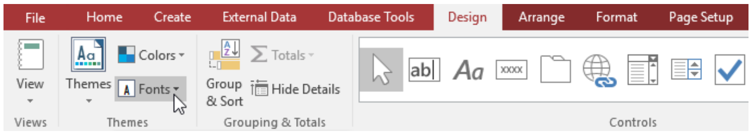
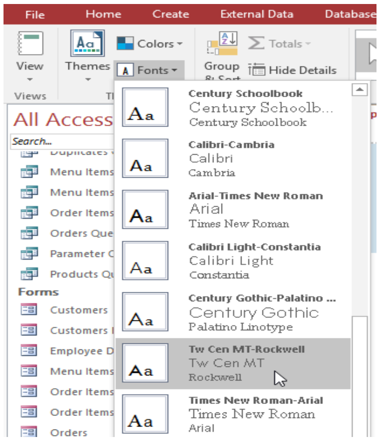
Cakes	Fudge Marble	The cake that dares ask the question: what if marble were made of three types of chocolate? The answer... delicious.
Cakes	French Vanilla	Oo la la! Some people might say this cake has a certain je ne sais quoi... but we "sais quoi"-- lots of vanilla.
Cakes	Strawberry Swirl	A dizzying swirl of strawberries and crème. Hold on tight!
Cakes	Cookies n' Cream	Like dipping oreos and milk, but a cake, and not at all soggy.

To change the theme fonts:

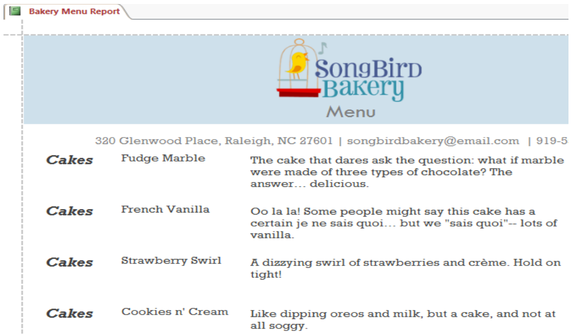
1.Select the **Design** tab, locate the **Themes** group, and click the **Fonts** command.



2.A drop-down menu will appear. Select a set of **theme fonts**.



3.The fonts will be applied to your entire database.



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Cakes	Fudge Marble	The cake that dares ask the question: what if marble were made of three types of chocolate? The answer... delicious.
Cakes	French Vanilla	Oo la la! Some people might say this cake has a certain je ne sais quoi... but we "sais quoi"-- lots of vanilla.
Cakes	Strawberry Swirl	A dizzying swirl of strawberries and crème. Hold on tight!
Cakes	Cookies n' Cream	Like dipping oreos and milk, but a cake, and not at all soggy.

CHAPTER -13- MODIFYING TABLES

Introduction

After working with your database, you might find that you need to make some changes to the tables that store your data. Access makes it easy to modify your tables to suit your database's needs.
In this lesson, you'll learn how to **create** and **rearrange** table fields. You'll also learn how to ensure your table data is correctly and consistently formatted by setting **validation rules**, **character limits**, and **data types** in your fields. Finally, we will direct you to additional options for performing simple math functions within your tables.

Modifying tables

In addition to making basic modifications to your tables, like **adding** and **moving** fields, you can make more advanced modifications that let you set **rules** for your data. All of these changes can help make your tables even more useful.

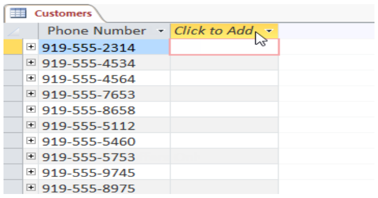
Adding and rearranging fields

Access makes it easy to rearrange existing fields and add new ones. When you add a new field, you can even set the **data type**, which dictates which **type** of data can be entered into that field.

There are several types of fields you can add to a table:

Short Text: This is the default option and is best for most text in Access. You should also choose it for numbers you don't plan to do math with, like postal codes and phone numbers.
Number: This is best for numbers you might want to do calculations with, like quantities of an item ordered or sold.
Currency: This automatically formats numbers in the currency used in your region.
Date & Time: This allows you to choose a date from a pop-out calendar.
Yes/No: This inserts a checkbox into your field.
Rich Text: This allows you to add formatting to text, like **bold** and *italics*.
Long Text: This is ideal for large amounts of text, like product descriptions.
Attachment: This allows you to attach files, like images.
Hyperlink: This creates a link to a URL or email address.

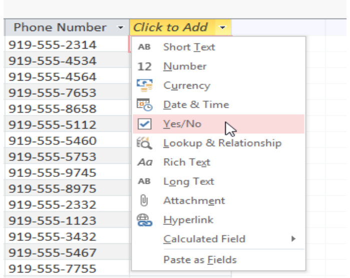
To add a new field to an existing table:



Phone Number	Click to Add
919-555-2314	
919-555-4534	
919-555-4564	
919-555-7653	
919-555-8658	
919-555-5112	
919-555-5460	
919-555-5753	
919-555-9745	
919-555-8975	

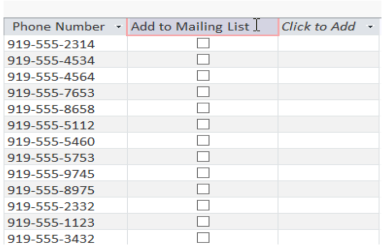
1.Open the desired table, then click the header with the text **Click to Add**. If you already have several fields, you may need to scroll all the way to the right to see this option.

2.A drop-down menu will appear. Select the desired **data type** for the new field.



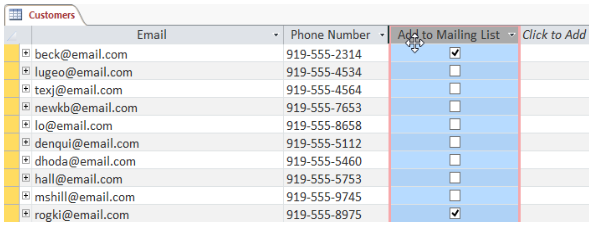
Phone Number	Click to Add
919-555-2314	
919-555-4534	
919-555-4564	
919-555-7653	
919-555-8658	
919-555-5112	
919-555-5460	
919-555-5753	
919-555-9745	
919-555-8975	
919-555-2332	
919-555-1123	
919-555-3432	
919-555-5467	
919-555-7755	

3.Type a name for your field, then press the **Enter** key.



Phone Number	Add to Mailing List	Click to Add
919-555-2314	☐	
919-555-4534	☐	
919-555-4564	☐	
919-555-7653	☐	
919-555-8658	☐	
919-555-5112	☐	
919-555-5460	☐	
919-555-5753	☐	
919-555-9745	☐	
919-555-8975	☐	
919-555-2332	☐	
919-555-1123	☐	
919-555-3432	☐	

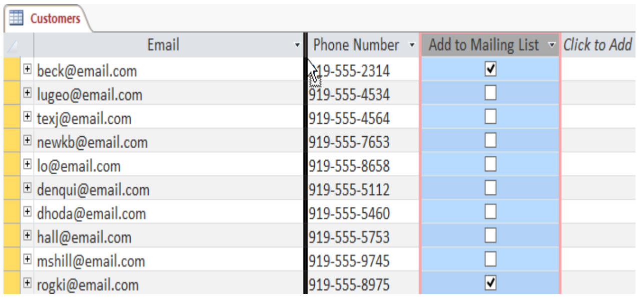
To move a field:



Email	Phone Number	Add to Mailing List	Click to Add
beck@email.com	919-555-2314	☑	
lugeo@email.com	919-555-4534	☐	
texj@email.com	919-555-4564	☐	
newkb@email.com	919-555-7653	☐	
lo@email.com	919-555-8658	☐	
denqui@email.com	919-555-5112	☐	
dhoda@email.com	919-555-5460	☐	
hall@email.com	919-555-5753	☐	
mshill@email.com	919-555-9745	☐	
rogki@email.com	919-555-8975	☑	

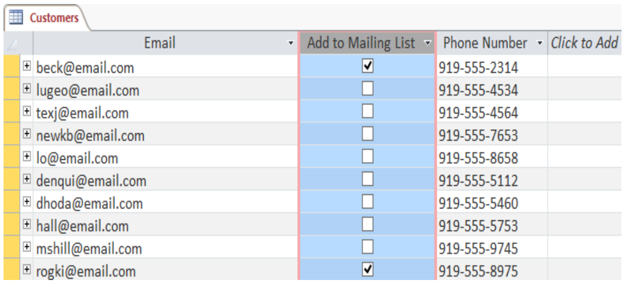
1.Locate the field you want to move, then hover your mouse over the **bottom border** of the field header. The cursor will become a four-sided arrow.

2.Click and drag the field to its new location.



Email	Phone Number	Add to Mailing List	Click to Add
beck@email.com	919-555-2314	☑	
lugeo@email.com	919-555-4534	☐	
texj@email.com	919-555-4564	☐	
newkb@email.com	919-555-7653	☐	
lo@email.com	919-555-8658	☐	
denqui@email.com	919-555-5112	☐	
dhoda@email.com	919-555-5460	☐	
hall@email.com	919-555-5753	☐	
mshill@email.com	919-555-9745	☐	
rogki@email.com	919-555-8975	☑	

3.Release the mouse. The field will appear in the new location.



Email	Add to Mailing List	Phone Number	Click to Add
beck@email.com	☑	919-555-2314	
lugeo@email.com	□	919-555-4534	
texj@email.com	□	919-555-4564	
newkb@email.com	□	919-555-7653	
lo@email.com	□	919-555-8658	
denqui@email.com	□	919-555-5112	
dhoda@email.com	□	919-555-5460	
hall@email.com	□	919-555-5753	
mshill@email.com	□	919-555-9745	
rogki@email.com	☑	919-555-8975	

Advanced field options

On the previous page, you learned about setting the **data type** for new fields. When you set field data type, you are really setting a **rule** for that field. Databases often include rules because they help ensure users enter the correct type of data.

Why is this important? Computers aren't as smart as humans about certain things. While you might recognize that **two** and **2** or **NC** and **North Carolina** are the same thing, Access will not and therefore won't group these things together. Making sure to enter your data in a standard format will help you better organize, count, and understand it.

Rules can also determine which options you have for working with your data. For example, you can only do math with data entered in **number** or **currency** fields, and you can only format text entered into **text** fields.

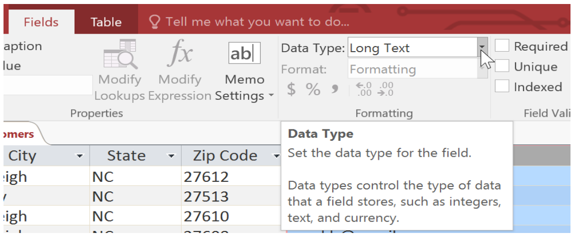
There are three main types of rules you can set for a field: **data type**, **character limit**, and **validation rules**.

To change the data type for existing fields:

Select the field whose data type you want to change.

1.Select the **Fields** tab, then locate the **Formatting** group. Click the **Data Type**drop-down arrow.

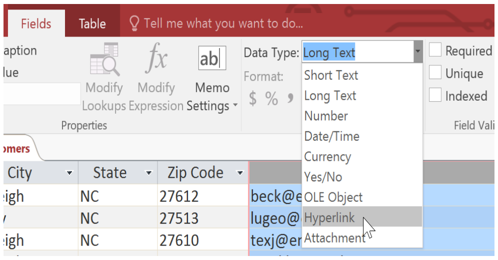
2.Select the desired data type.



Data Type
Set the data type for the field.

Data types control the type of data that a field stores, such as integers, text, and currency.

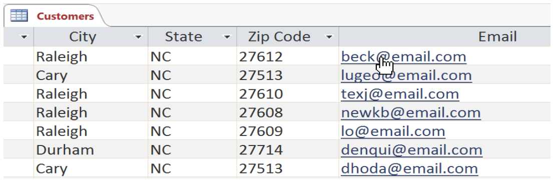
City	State	Zip Code
igh	NC	27612
/	NC	27513
igh	NC	27610



Data Type: Long Text

City	State	Zip Code	
igh	NC	27612	beck@e
/	NC	27513	lugeo@
igh	NC	27610	texj@er

3.The field data type will be changed. Depending on the data type you chose, you may notice changes to your information. For instance, because we set the data type for the **Email** field to **Hyperlink** all of the email addresses in the field are now clickable links.



City	State	Zip Code	Email
Raleigh	NC	27612	beck@email.com
Cary	NC	27513	lugeo@email.com
Raleigh	NC	27610	texj@email.com
Raleigh	NC	27608	newkb@email.com
Raleigh	NC	27609	lo@email.com
Durham	NC	27714	denqui@email.com
Cary	NC	27513	dhoda@email.com

Field character limits

Setting the **character limit** for a field sets a rule about how many characters—letters, numbers, punctuation, and even spaces—can be entered into that field. This can help to keep the data in your records concise and even force users to enter data a certain way.

In the example below, a user is entering records that include addresses. If you set the character limit in the **State** field to **2**, users can only enter **two characters** of information. This means they must enter postal abbreviations for the states instead of the full name—here, NC instead of North Carolina. Note that you can only set a character limit for fields defined as text.

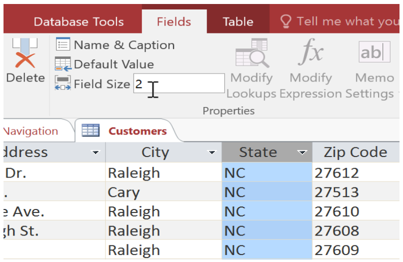
To set a character limit for a field:

Select the desired field.

Click the **Fields** tab, then locate the **Properties** group.

In the **Field Size** box, type the maximum number of characters you want to allow in your field.

Save your table. The character limit for the field will be set.



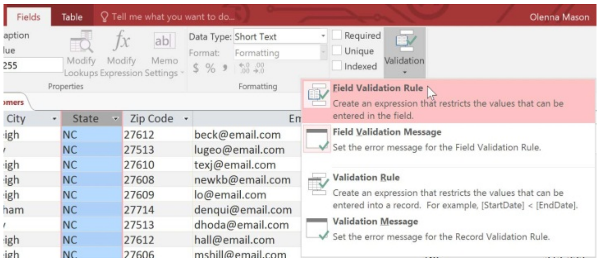
Field Size 2

ddress	City	State	Zip Code
Dr.	Raleigh	NC	27612
.	Cary	NC	27513
e Ave.	Raleigh	NC	27610
h St.	Raleigh	NC	27608
	Raleigh	NC	27609

Validation rules

A **validation rule** is a rule that dictates which information can be entered into a field. When a validation rule is in place, it is impossible for a user to enter data that violates the rule. For example, if we were asking users to input a state name into a table with contact information, we might create a rule that limits the valid responses to U.S. state postal codes. This would prevent users from typing something that wasn't actually a real state postal code.

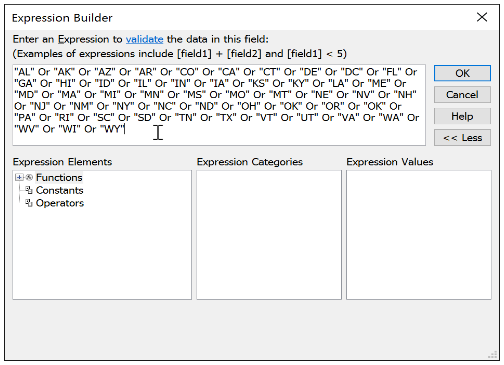
In the example below, we will apply this rule to our **Customers** table. It's a fairly simple validation rule—we'll just name all of the valid responses a user could enter, which will mean users can't type anything else into the record. However, it's possible to create validation rules that are much more complex.


Fields
Table
Tell me what you want to do...
Olenna Mason
Modify Lookups
Modify Expression
Memo Settings
Data Type: Short Text
Format: Formatting
Required
Unique
Indexed
Validation
Properties
Formatting
City
State
Zip Code
Field Validation Rule
Create an expression that restricts the values that can be entered in the field.
Field Validation Message
Set the error message for the Field Validation Rule.
Validation Rule
Create an expression that restricts the values that can be entered into a record. For example, [StartDate] < [EndDate].
Validation Message
Set the error message for the Record Validation Rule.

To create a validation rule:

Select the field you want to add a validation rule to. In our example, we'll set a rule for the **State** field.

Select the **Fields** tab, then locate the **Field Validation** group. Click the **Validation** drop-down command, then select **Field Validation Rule**.



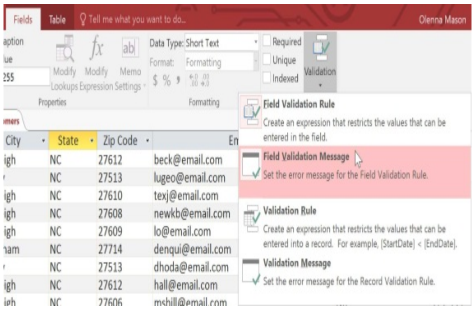
Enter an Expression to validate the data in this field:
(Examples of expressions include [field1] + [field2] and [field1] < 5)

```
"AL" Or "AK" Or "AZ" Or "AR" Or "CO" Or "CA" Or "CT" Or "DE" Or "DC" Or "FL" Or
"GA" Or "HI" Or "ID" Or "IL" Or "IN" Or "IA" Or "KS" Or "KY" Or "LA" Or "ME" Or
"MD" Or "MA" Or "MI" Or "MN" Or "MS" Or "MO" Or "MT" Or "NE" Or "NV" Or "NH"
Or "NJ" Or "NM" Or "NY" Or "NC" Or "ND" Or "OH" Or "OK" Or "OR" Or "OK" Or
"PA" Or "RI" Or "SC" Or "SD" Or "TN" Or "TX" Or "VT" Or "UT" Or "VA" Or "WA" Or
"WV" Or "WI" Or "WY"
```

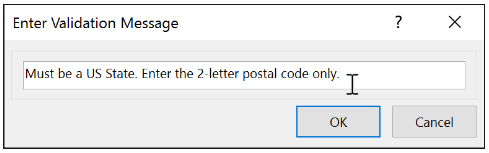
The **Expression Builder** dialog box will appear. Click the text box and type your validation rule. In our example, we want to limit data in the **State** field to actual state postal codes. We'll type each of the valid responses in quotation marks and separate them with the word **Or**, which lets Access know that this field can accept the response "AL" **Or** "AK" **Or** "AZ" or any of the other terms we've entered.

Once you're satisfied with the validation rule, click **OK**. The dialog box will close.

Click the **Validation** drop-down command again. This time, select **FieldValidation Message**.


Fields
Table
Tell me what you want to do...
Olenna Mason
Modify Lookups
Modify Expression
Memo Settings
Data Type: Short Text
Format: Formatting
Required
Unique
Indexed
Validation
Properties
Formatting
City
State
Zip Code
Field Validation Rule
Create an expression that restricts the values that can be entered in the field.
Field Validation Message
Set the error message for the Field Validation Rule.
Validation Rule
Create an expression that restricts the values that can be entered into a record. For example, [StartDate] < [EndDate].
Validation Message
Set the error message for the Record Validation Rule.

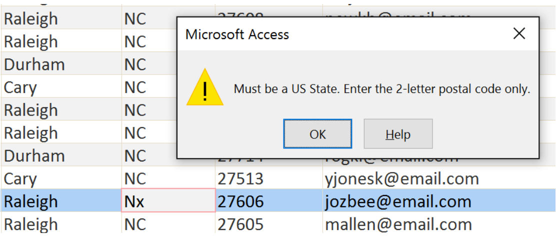
A dialog box will appear. Type the phrase you want to appear in an **error message** when users try to enter data that **violates** the validation rule. Your message should let them know what data is permitted.



Must be a US State. Enter the 2-letter postal code only.

When you're satisfied with the error message, click **OK**.

The validation rule is now included in the field. Users will be unable to enter data that violates the rule.



Must be a US State. Enter the 2-letter postal code only.

Raleigh	NC		
Raleigh	NC		
Durham	NC		
Cary	NC		
Raleigh	NC		
Raleigh	NC		
Durham	NC		
Cary	NC	27513	yjonesk@email.com
Raleigh	Nx	27606	jozbee@email.com
Raleigh	NC	27605	mallen@email.com

More table options

Calculated fields and totals rows

Adding **calculated fields** and **totals rows** to your table lets you perform **calculations** using your table data. A calculated field calculates data within one record, while a totals row performs a calculation on an entire field of data. Whenever you see a **subtotal** for one record, you are looking at a calculated field. Similarly, whenever you see a **grand total** at the bottom of a table, you're looking at a totals row.

CHAPTER -14- CREATING FORMS

Creating forms for your database can make entering data more convenient. When you create a form, you can design it in a way that works with your database and that makes sense to you.

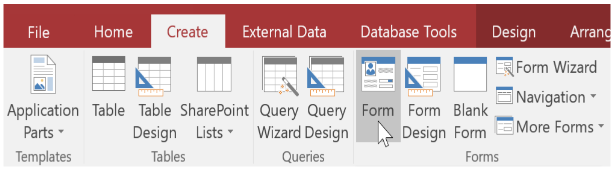
In this lesson, you will learn how to **create** and **modify** forms. You'll also learn how to use form options like **design controls** and **form properties** to make sure your form works exactly the way you want.

To create a form:

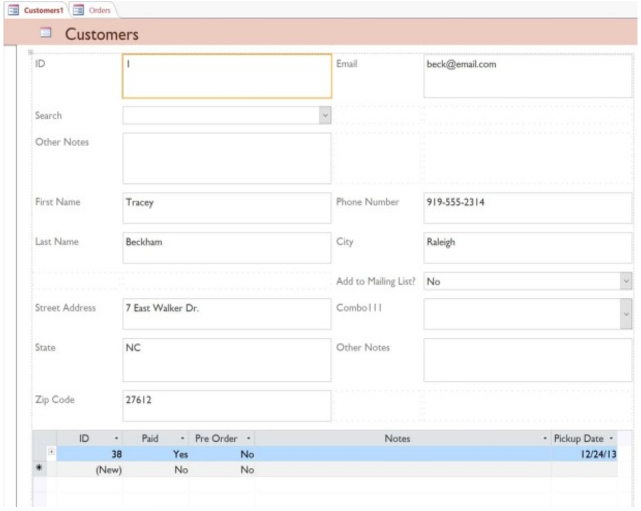
Access makes it easy to create a **form** from any table in your database. Any form you create from a table will let you **view the data** that's already in that table and **add new data**. Once you've created a form, you can modify it by adding additional fields and **design controls** like combo boxes.

In the Navigation pane, select the table you want to use to create a form. You do not need to open the table.

1.Select the **Create** tab, locate the **Forms** group, and click the **Form** command.



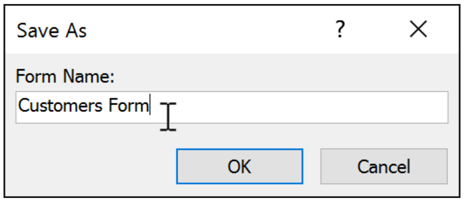
2.Your form will be created and opened in **Layout view**.



ID	I	Email	beck@email.com
Search			
Other Notes			
First Name	Tracey	Phone Number	919-555-2314
Last Name	Beckham	City	Raleigh
		Add to Mailing List?	No
Street Address	7 East Walker Dr.	Combo111	
State	NC	Other Notes	
Zip Code	27612		

ID	Paid	Pre Order	Notes	Pickup Date
38	Yes	No		12/24/13
(New)	No	No		

3.To **save** the form, click the **Save** command on the **Quick Access Toolbar**. When prompted, type a **name** for the form, then click **OK**.

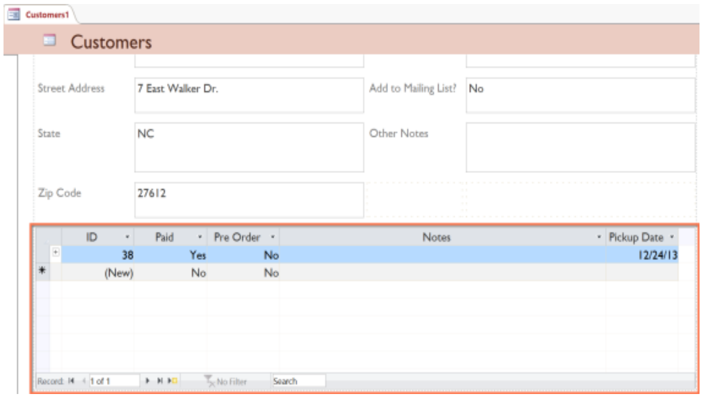


Form Name: Customers Form

About subforms

If you created a form from a table whose records are linked to another table, your form probably includes a **subform**. A subform is a **datasheet form** that displays linked records in a table-like format. For instance, the subform included in the **Customers** form we just created displays linked customer **orders**.

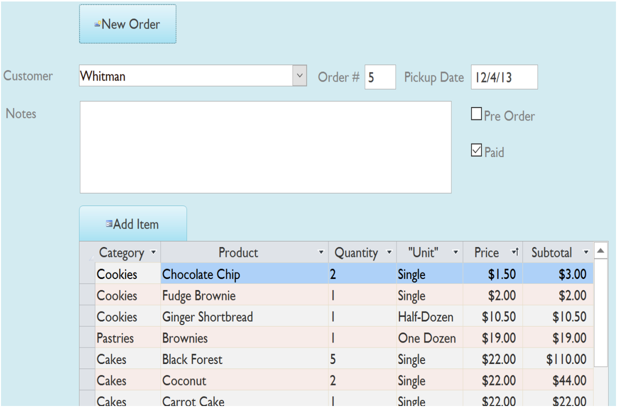
We probably don't need to include this subform because we just want to use the Customers form to enter and review contact information. If you find that you don't need a subform, you can easily **delete** it. To do this, simply click it and press the **Delete** key on your keyboard.



Street Address	7 East Walker Dr.	Add to Mailing List?	No
State	NC	Other Notes	
Zip Code	27612		

ID	Paid	Pre Order	Notes	Pickup Date
38	Yes	No		12/24/13
(New)	No	No		

However, subforms are often quite helpful. Depending on the content and source of your form, you might find that the subform contains useful information, like in the example below. In our **Orders** form, the subform contains the name, quantity, and price of each item contained in the order, which is all useful information.



Customer Whitman Order # 5 Pickup Date 12/4/13

Notes

□ Pre Order

☑ Paid

Category	Product	Quantity	"Unit"	Price	Subtotal
Cookies	Chocolate Chip	2	Single	$1.50	$3.00
Cookies	Fudge Brownie	1	Single	$2.00	$2.00
Cookies	Ginger Shortbread	1	Half-Dozen	$10.50	$10.50
Pastries	Brownies	1	One Dozen	$19.00	$19.00
Cakes	Black Forest	5	Single	$22.00	$110.00
Cakes	Coconut	2	Single	$22.00	$44.00
Cakes	Carrot Cake	1	Single	$22.00	$22.00

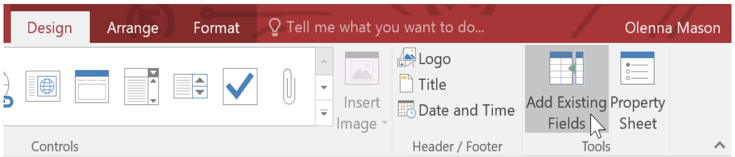
Adding additional fields to a form

When you use the **Form** command on an existing table, all of the fields from the table are included in the form. However, if you later add additional fields to the table, these fields will **not** automatically show up in existing forms. In situations like this, you can **add** additional fields to a form.

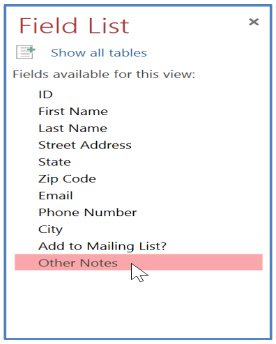
To add a field to a form:

Select the **Design** tab, then locate the **Tools** group on the right side of the Ribbon.

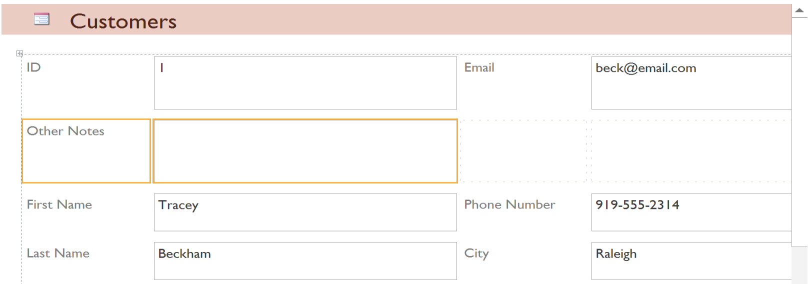
1.Click the **Add Existing Fields** command.



2.The **Field List** pane will appear. Double-click the desired field(s).



3.The field will be added.



Customers

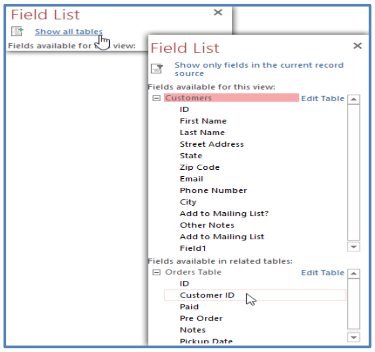
ID	I	Email	beck@email.com
Other Notes			
First Name	Tracey	Phone Number	919-555-2314
Last Name	Beckham	City	Raleigh

To add a field from a different table:

You can also add fields from **different tables** in your database to the form.

From the **Field List** pane, click **Show All Tables**.

Click the plus sign **+** next to the table that contains the field you want to add, then double-click the desired field. The new field will be added.



Adding design controls

Design controls set restrictions on the fields in your forms. This helps you better control how the data is entered into your forms, which in turn helps keep the database consistent.

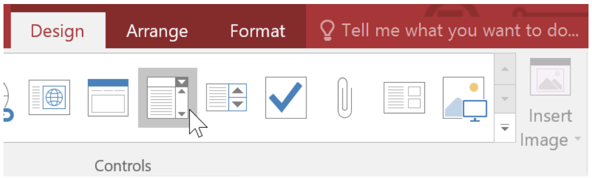
Combo boxes

A **combo box** is a drop-down list you can use in your form in place of a field. Combo boxes **limit** the information users can enter by forcing them to select only the **options**you have specified.
Combo boxes are useful for fields that have a limited number of possible valid responses. For instance, you might use a combo box to make sure people only enter a valid U.S. state while entering an address, or that they only choose products that already exist in your database while placing an order.

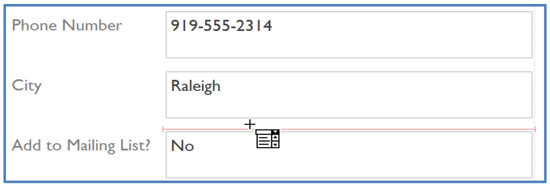
To create a combo box:

In **Form Layout** view, select the **Design** tab, then locate the **Controls** group.

1.Select the **Combo Box** command, which looks like a drop-down list.

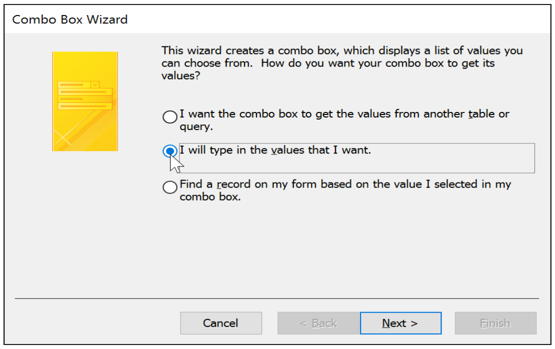


2.Select the desired location for the combo box. A line will appear to indicate the location where your combo box will be created. In our example, we'll place it between the **City** field and the **Add to Mailing List?** fields.



Phone Number	919-555-2314
City	Raleigh
Add to Mailing List?	No

3.The **Combo Box Wizard** dialog box will appear. Select **I will type in the values that I want**, then click **Next**.



Combo Box Wizard

This wizard creates a combo box, which displays a list of values you can choose from. How do you want your combo box to get its values?

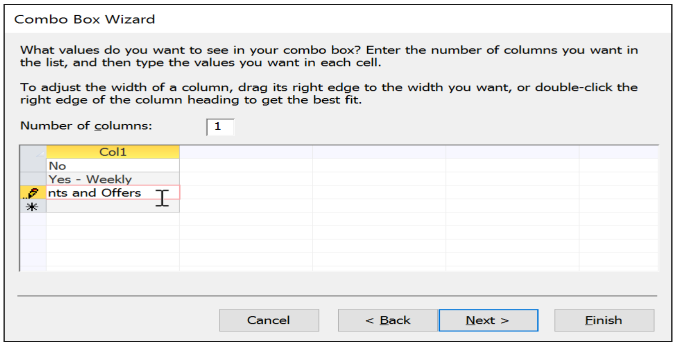
○ I want the combo box to get the values from another table or query.

● I will type in the values that I want.

○ Find a record on my form based on the value I selected in my combo box.

Cancel | < Back | Next > | Finish

4.Type the choices you want to appear in your drop-down list. Each choice should be on its own row. In our example, we are creating a combo box for the **Add to Mailing List?** field in our form, so we will enter all of the possible valid responses for this field. Users will be able to select one of three choices from our finished combo box: **No**, **Yes - Weekly**, and **Yes - Special Events and Offers**.



Combo Box Wizard

What values do you want to see in your combo box? Enter the number of columns you want in the list, and then type the values you want in each cell.

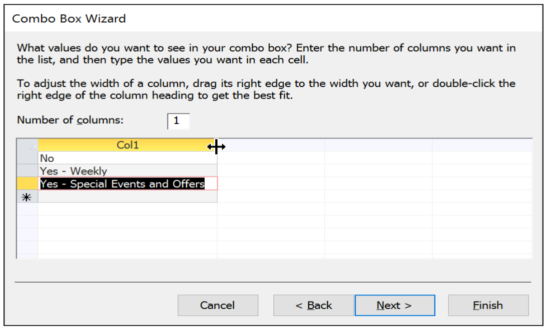
To adjust the width of a column, drag its right edge to the width you want, or double-click the right edge of the column heading to get the best fit.

Number of columns: 1

Col1
No
Yes - Weekly
nts and Offers

Cancel | < Back | Next > | Finish

5.If necessary, **resize** the column so all of your text is visible. Once you are satisfied with your list, click **Next**.



Combo Box Wizard

What values do you want to see in your combo box? Enter the number of columns you want in the list, and then type the values you want in each cell.

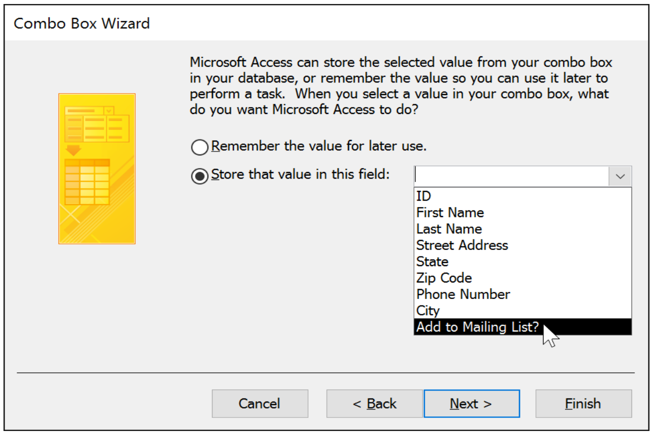
To adjust the width of a column, drag its right edge to the width you want, or double-click the right edge of the column heading to get the best fit.

Number of columns: 1

Col1
No
Yes - Weekly
Yes - Special Events and Offers

Cancel | < Back | Next > | Finish

6.Select **Store that value in this field**, then click the drop-down arrow and **select** the **field** where you want selections from your combo box to be recorded. After making your selection, click **Next**.



Combo Box Wizard

Microsoft Access can store the selected value from your combo box in your database, or remember the value so you can use it later to perform a task. When you select a value in your combo box, what do you want Microsoft Access to do?

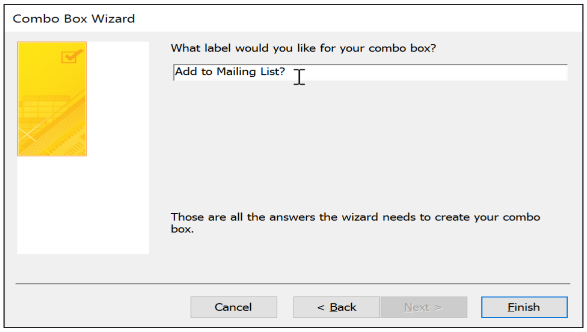
○ Remember the value for later use.

● Store that value in this field:

ID
First Name
Last Name
Street Address
State
Zip Code
Phone Number
City
Add to Mailing List?

Cancel | < Back | Next > | Finish

7.Enter the **label**—or **name**—that will appear next to your combo box. Generally, it's a good idea to use the name of the field you chose in the previous step.



Combo Box Wizard

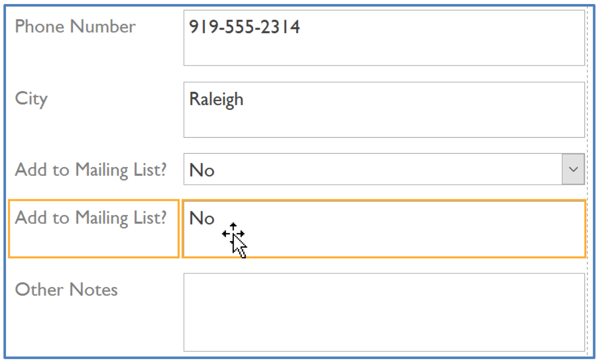
What label would you like for your combo box?

Add to Mailing List?

Those are all the answers the wizard needs to create your combo box.

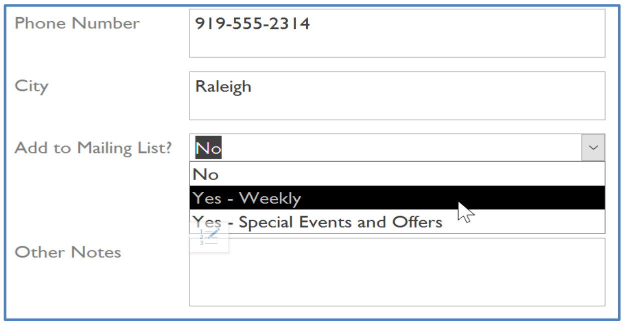
Cancel | < Back | Next > | Finish

8.Click **Finish**. Your combo box will appear on the form. If you created your combo box to **replace** an existing field, you should **delete** the first field. In our example, you might notice that we now have two fields with the same name. These two fields send information to the same place, so we don't need them both. We'll **delete** the one without the combo box.



Phone Number	919-555-2314
City	Raleigh
Add to Mailing List?	No
Add to Mailing List?	No
Other Notes	

9. Switch to **Form** view to **test** your combo box. Simply click the drop-down arrow and verify that the list contains the correct choices. The combo box can now be used to enter data.



Phone Number	919-555-2314
City	Raleigh
Add to Mailing List?	No
Other Notes	

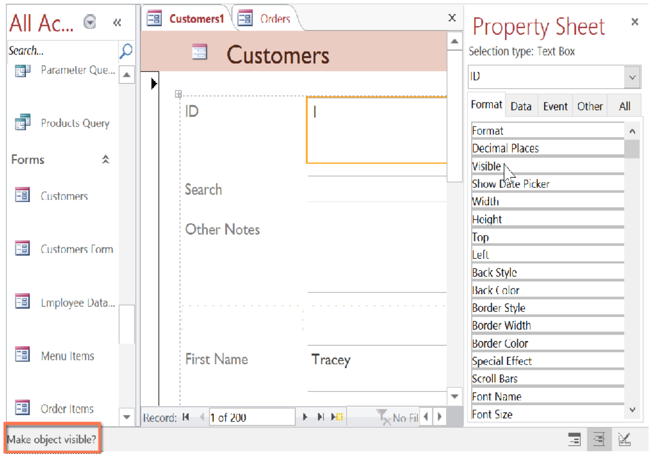
No
Yes - Weekly
Yes - Special Events and Offers

Customizing form settings with the Property Sheet

The **Property Sheet** is a pane containing **detailed information** on your form and each of its components. From the Property Sheet, you can make changes to every part of your form, both in terms of function and appearance.

The best way to familiarize yourself with the Property Sheet is to **open** it and **select**various options. When you select an option, Access will display a brief description of the option on the **bottom-left border** of the program window.

Pay close attention as you modify your form and its fields. It's possible to make subtle changes with the Property Sheet. Because there are so many options, it can sometimes be difficult to remember which one you used to modify each aspect of your form.

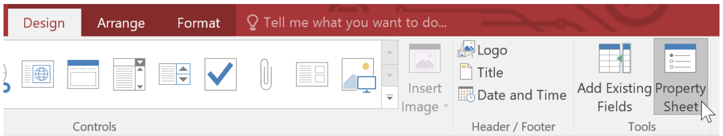


Modifying form settings

There are far too many options in the Property Sheet to discuss them all in detail. We'll review two useful ones here: **hiding** fields and setting fields with **dates** to **automatically fill in the current date**. Practicing these procedures should also give you a sense of how to work with other Property Sheet settings.

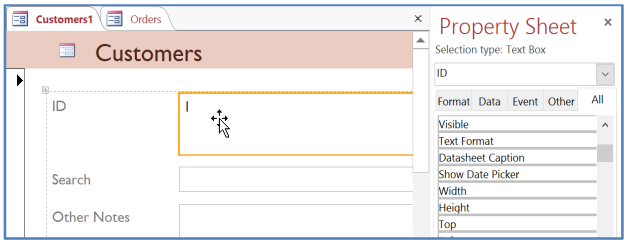
To hide a field:

1. In either **Layout** or **Design** view, select the **Design** tab, then locate the **Tools** group. Click the **Property Sheet** command.

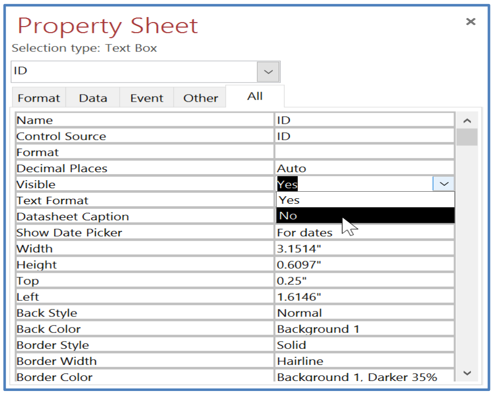


2.The **Property Sheet** will appear in a pane on the right. On the form, **select** the field you want to hide. In our example, we'll hide the **Customer ID** field because we don't want any of our users to try to edit it.

In the **Property Sheet**, click the **All** tab, then locate the **Visible** option on the fifth row.



3.Click the drop-down arrow in the column to the right, then select **No**.



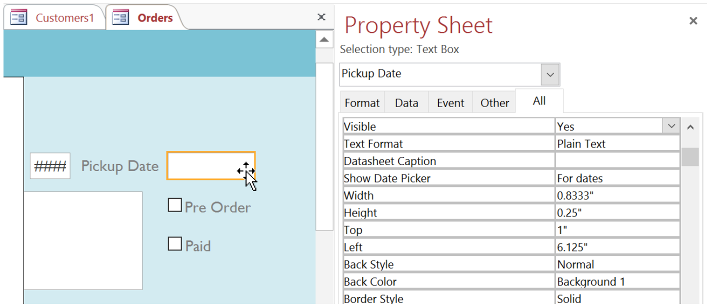
Name	ID
Control Source	ID
Format	
Decimal Places	Auto
Visible	Yes Yes No
Text Format	
Datasheet Caption	
Show Date Picker	For dates
Width	3.1514"
Height	0.6097"
Top	0.25"
Left	1.6146"
Back Style	Normal
Back Color	Background 1
Border Style	Solid
Border Width	Hairline
Border Color	Background 1, Darker 35%

Switch to **Form** view to verify that the field is hidden.

To set a field to auto fill with the current date:

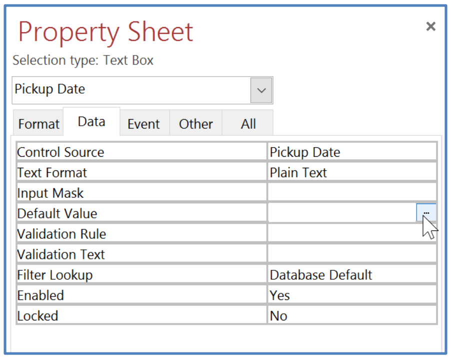
In either **Layout** or **Design** view, select the **Design** tab, then locate the **Tools**group. Click the **Property Sheet** command.

1.The **Property Sheet** will appear in a pane on the right. On the form, **select** the field you want to automatically fill in the current date. This **must** be a field with the **date** data type. For our example, we'll select the **Pickup Date** field on our **Orders** form.



Visible	Yes
Text Format	Plain Text
Datasheet Caption	
Show Date Picker	For dates
Width	0.8333"
Height	0.25"
Top	1"
Left	6.125"
Back Style	Normal
Back Color	Background 1
Border Style	Solid

2. In the **Property Sheet**, click the **Data** tab, then select the **Default Value** field in the fourth row. Click the **Expression Builder** button that appears in the column to the right.



Property Sheet

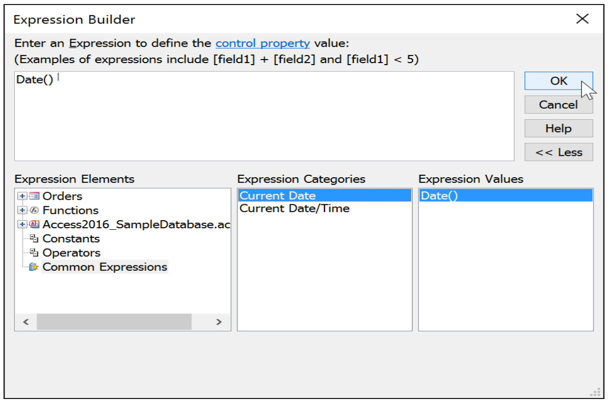
Selection type: Text Box

Pickup Date

Control Source	Pickup Date
Text Format	Plain Text
Input Mask	
Default Value	
Validation Rule	
Validation Text	
Filter Lookup	Database Default
Enabled	Yes
Locked	No

3.The **Expression Builder** dialog box will appear. In the **Expression Elements** list, click the words **Common Expressions**.

In the **Expression Categories** list, double-click **Current Date**.



Expression Builder

Enter an Expression to define the control property value:
(Examples of expressions include [field1] + [field2] and [field1] < 5)

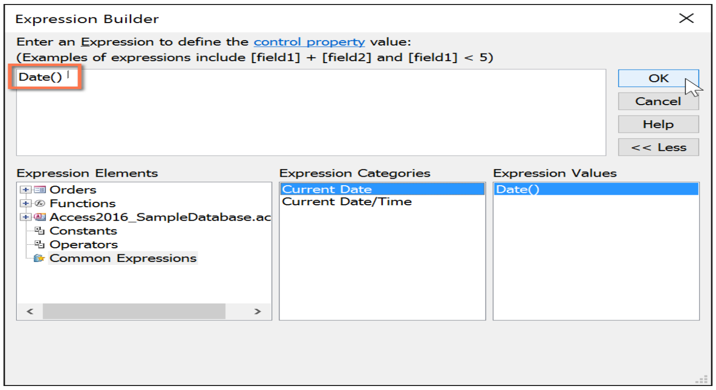
Date()

Expression Elements: Orders, Functions, Access2016_SampleDatabase.ac, Constants, Operators, Common Expressions

Expression Categories: Current Date, Current Date/Time

Expression Values: Date()

4.The expression for **Current Date** will be added. Click **OK**.



Expression Builder

Enter an Expression to define the control property value:
(Examples of expressions include [field1] + [field2] and [field1] < 5)

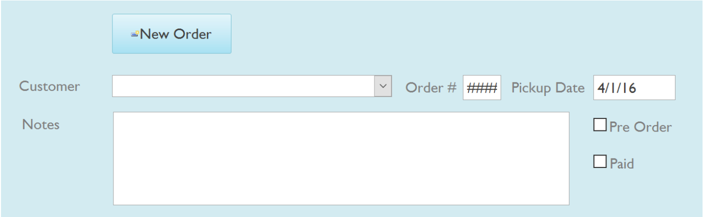
Date()

Expression Elements: Orders, Functions, Access2016_SampleDatabase.ac, Constants, Operators, Common Expressions

Expression Categories: Current Date, Current Date/Time

Expression Values: Date()

5.Switch to **Form** view to verify that the expression works. When you create a **new record** with that form, the date field you modified will automatically fill in the current date.



Customer

Order # ####

Pickup Date 4/1/16

Notes

□ Pre Order

□ Paid

CHAPTER -15- FORMATTING FORMS

Introduction

After creating a form, you might want to modify its appearance. **Formatting** your forms can help make your database look consistent and professional. Some formatting changes can even make your forms easier to use. With the formatting tools in Access, you can customize your forms to look exactly the way you want.

In this lesson, you will learn how to **add command buttons**, **modify form layouts**, add **logos** and **other images**, and change form **colors** and **fonts**.

Formatting forms

Access offers several options that let you make your forms look exactly the way you want. While some of these options—like **command buttons**—are unique to forms, others may be familiar to you.

Command buttons

If you want to create a way for users of your form to quickly perform specific actions and tasks, consider adding **command buttons**. When you create a command button, you specify an action for it to carry out when clicked. By including commands for common tasks right in your form, you're making the form easier to use.

Access offers many different types of command buttons, but they can be divided into a few main categories:

Record Navigation command buttons, which allow users to move among the records in your database

Record Operation command buttons, which let users do things like save and print a record

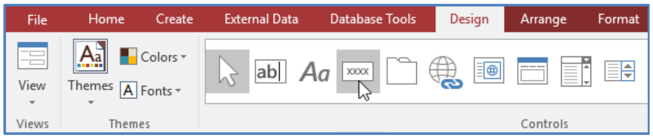
Form Operation command buttons, which allow users to quickly open or close a form, print the current form, and perform other actions

Report Operation command buttons, which offer users a quick way to do things like preview or mail a report from the current record

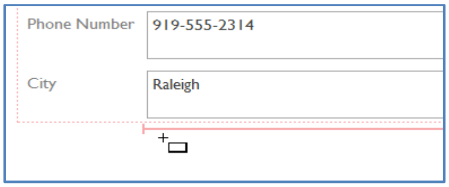
To add a command button to a form:

In **Form Layout** view, select the **Design** tab, then locate the **Controls** group.

1.Click the **Button** command.



2.Choose the desired location for the command button, then click the mouse.

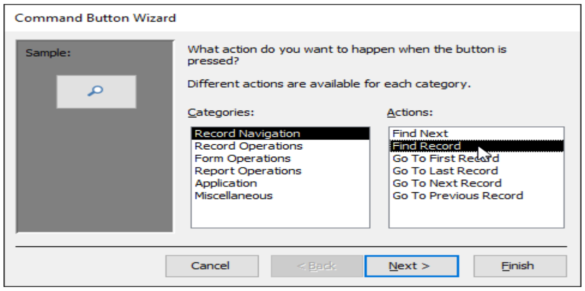


Phone Number 919-555-2314

City Raleigh

The **Command Button Wizard** will appear. In the **Categories** pane, select the category of button you want to add. We want to find a way to move more quickly to specific records, so we'll choose the **Record Navigation** category.

3.The list in the **Actions** pane will update to reflect your chosen category. Select the action you want the button to perform, then click **Next**. In our example, we'll choose **Find Record**.



Command Button Wizard

Sample:

What action do you want to happen when the button is pressed?

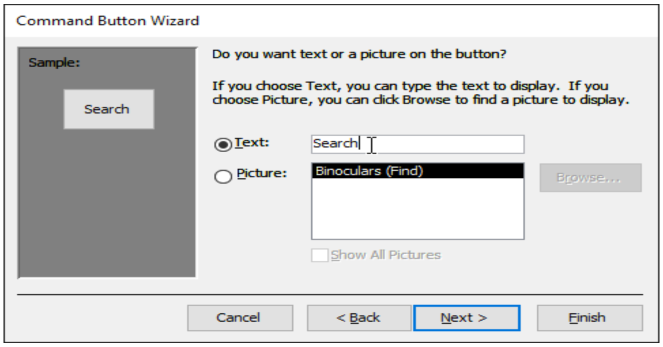
Different actions are available for each category.

Categories:
- Record Navigation
- Record Operations
- Form Operations
- Report Operations
- Application
- Miscellaneous

Actions:
- Find Next
- Find Record
- Go To First Record
- Go To Last Record
- Go To Next Record
- Go To Previous Record

You can now decide whether you want your button to include **text** or a **picture.** A live preview of your button appears on the left.

4.To include **text**, select the **Text** option, then type the desired word or phrase into the text box.



Command Button Wizard

Sample: Search

Do you want text or a picture on the button?

If you choose Text, you can type the text to display. If you choose Picture, you can click Browse to find a picture to display.

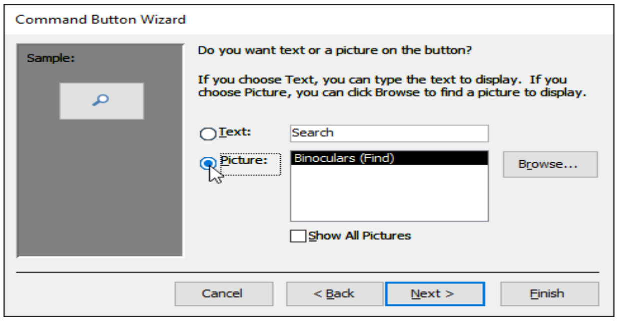
● Text: Search

○ Picture: Binoculars (Find)

□ Show All Pictures

5.To include a **picture**, select the **Picture** option. You can decide to keep the default picture for that command button or select another picture. Click **Show All Pictures** to choose from another command button icon or **Browse**to choose a picture from your computer.

When you are satisfied with the appearance of your command button, click **Next**.


Command Button Wizard

Sample:

Do you want text or a picture on the button?

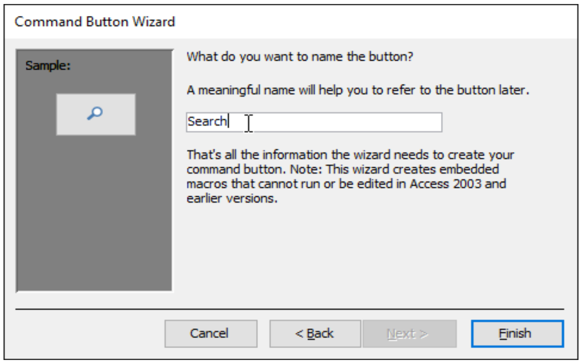
If you choose Text, you can type the text to display. If you choose Picture, you can click Browse to find a picture to display.

○ Text: Search

● Picture: Binoculars (Find)

□ Show All Pictures

6.Type a **name** for the button. This name won't appear on the button, but knowing the name will help you quickly identify the button if you ever want to **modify** it with the **Property Sheet**. After adding the button name, click **Finish**.


Command Button Wizard

Sample:

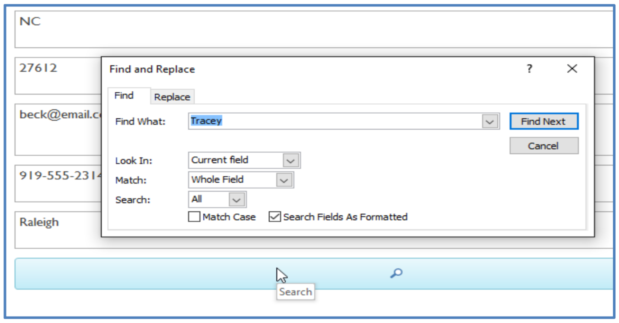
What do you want to name the button?

A meaningful name will help you to refer to the button later.

Search

That's all the information the wizard needs to create your command button. Note: This wizard creates embedded macros that cannot run or be edited in Access 2003 and earlier versions.

7.Switch to **Form** view to test the new button.
Our **Search** button opens the **Find and Replace** dialog box.


NC

27612

beck@email.c

919-555-231

Raleigh

Find and Replace

Find What: Tracey

Look In: Current field

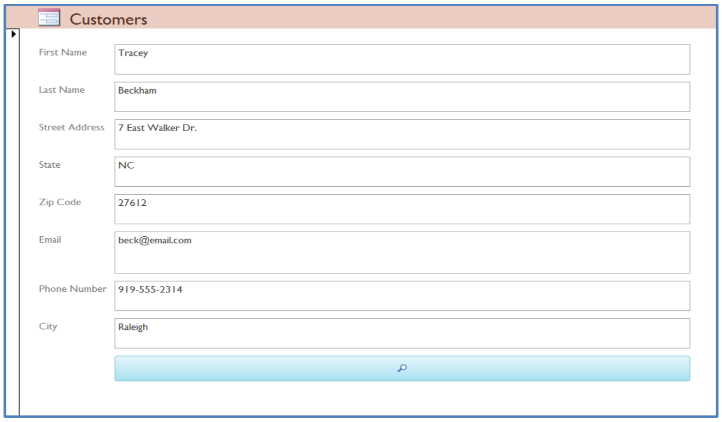
Match: Whole Field

Search: All

□ Match Case ☑ Search Fields As Formatted

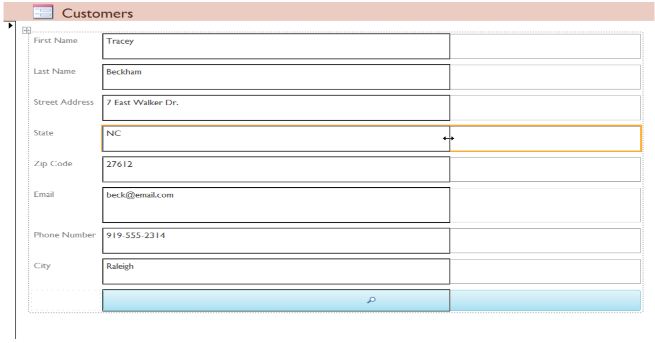
Modifying form layout

When you create a form, Access arranges the form components in a default layout where the fields are neatly stacked on top of each other, all exactly the same width. While this layout is functional, you might find that it doesn't best fit your information. For instance, in the form below, most of the fields are almost completely empty because the data stored there doesn't take up much room.


Customers

First Name	Tracey
Last Name	Beckham
Street Address	7 East Walker Dr.
State	NC
Zip Code	27612
Email	beck@email.com
Phone Number	919-555-2314
City	Raleigh

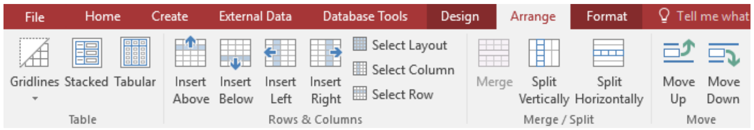
The form would fit the data better if we made the fields and command buttons smaller and even put some of them side by side. However, with the default layout, you won't be able to put two fields next to each other or resize one field or button without resizing all of them. This is because Access lines up form components in rows and columns. When you resize a field, you're really resizing the column that contains it.


Customers

First Name	Tracey
Last Name	Beckham
Street Address	7 East Walker Dr.
State	NC
Zip Code	27612
Email	beck@email.com
Phone Number	919-555-2314
City	Raleigh

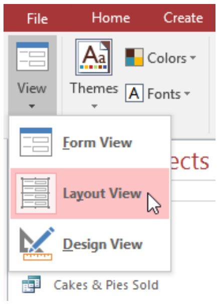
To resize and rearrange our fields the way we want, we'll have to **modify the form layout**. For instance, because the default layout for our form contains only two columns—one for the **field labels** and another for the **fields**—we would have to **create a new column** to put two fields side by side.

We can do this using the command on the **Arrange** tab, which contains all of the tools we'll need to customize a form's layout. If you've ever built and modified **tables** in Microsoft Word, you already know how to use most of these tools. If you're unfamiliar with tables, review our **Tables** lesson from our **Word 2016** tutorial.



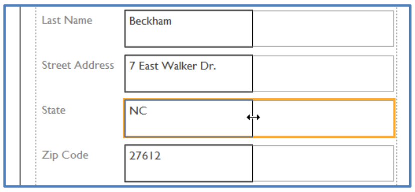
To resize form components:

1. Switch to **Layout view**.



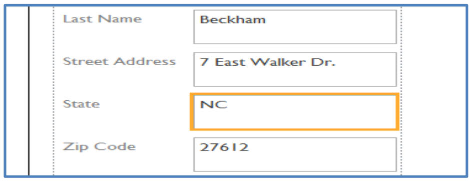
2. Select the field or button you want to resize, then **hover your mouse** over the edge. Your cursor will become a double-sided arrow.

Click and drag the mouse to resize the selected object.



Last Name: Beckham
Street Address: 7 East Walker Dr.
State: NC
Zip Code: 27612

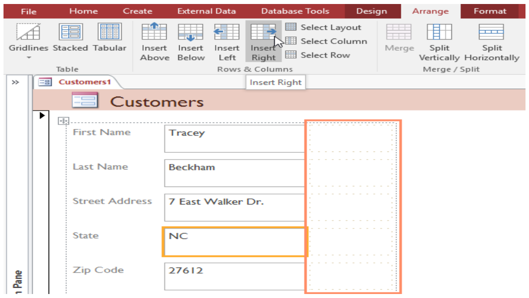
3. The field or button will be resized, as well as every other item aligned with it.



Last Name: Beckham
Street Address: 7 East Walker Dr.
State: NC
Zip Code: 27612

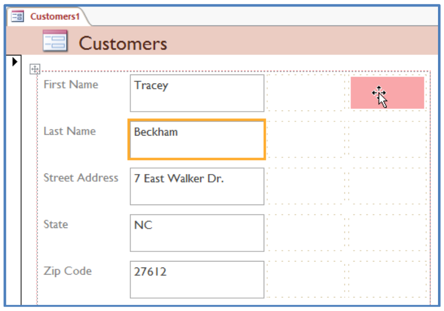
To move form components:

1. If necessary, **add columns or rows** to make room for the field or button you want to move by using the **Insert** commands in the **Rows & Columns** group. In our example, we want to move the **Last Name** field to the right of the **First Name** field, so we'll have to create two new columns to the right: one for the field label, and one for the field itself. To do this, we'll click the **Insert Right** command twice.



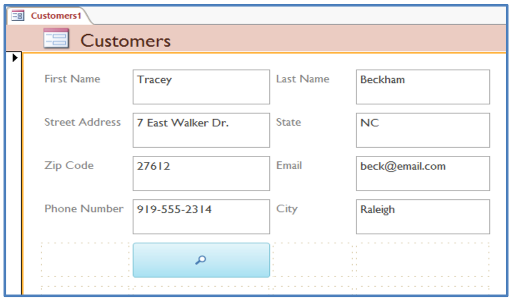
First Name: Tracey
Last Name: Beckham
Street Address: 7 East Walker Dr.
State: NC
Zip Code: 27612

2. Click and drag the field or button to its new location. If you're moving a field, make sure to move the **field label** as well.



First Name: Tracey
Last Name: Beckham
Street Address: 7 East Walker Dr.
State: NC
Zip Code: 27612

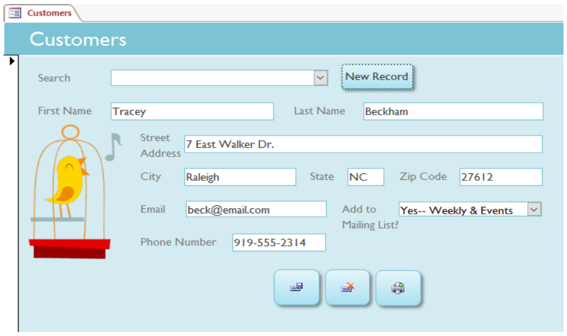
3. Repeat the steps above for any other fields or buttons you want to move.



First Name: Tracey
Last Name: Beckham
Street Address: 7 East Walker Dr.
State: NC
Zip Code: 27612
Email: beck@email.com
Phone Number: 919-555-2314
City: Raleigh

More formatting options

Adding **logos** and other images to your forms can greatly improve their appearance, as can applying **theme colors and fonts**. To learn how to add images and theme elements to your forms, review our **Advanced Report Options** lesson. The procedures are identical.

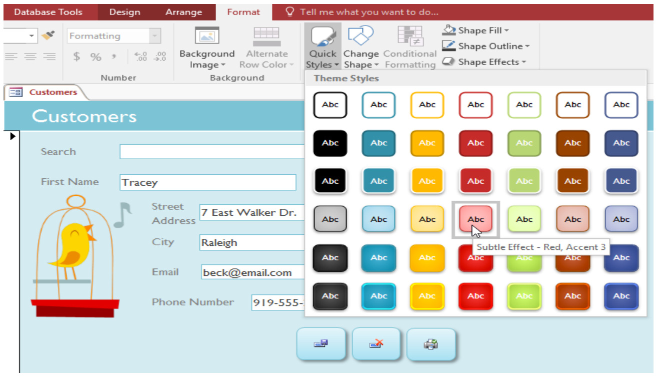


Search:
First Name: Tracey
Last Name: Beckham
Street Address: 7 East Walker Dr.
City: Raleigh
State: NC
Zip Code: 27612
Email: beck@email.com
Add to Mailing List?: Yes-- Weekly & Events
Phone Number: 919-555-2314

Modifying the colors and fonts of form components

To further customize the appearance of your forms, you can apply different **colors** and **fonts** to individual fields, buttons, labels, and other form components. Modifying form appearance this way is useful if you want to use a certain color or font scheme in a form but don't want these design elements to apply to your entire database.

For instance, in the form below we modified the **font** of our form **title**. We also applied a new **fill** and **border color** to the form **fields** and are doing the same with the **command buttons**.



Search:
First Name: Tracey
Street Address: 7 East Walker Dr.
City: Raleigh
Email: beck@email.com
Phone Number: 919-555-

CHAPTER-16- DESIGNING YOUR OWN DATABASE

Introduction

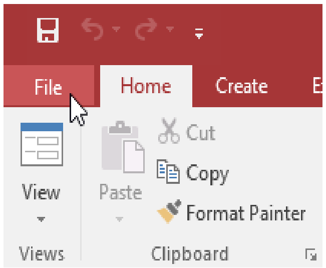
Now that you know how to use and modify existing databases, you might be interested in designing your own. Database design can be very complicated—so complicated, in fact, that people take extensive courses just to learn how to plan them. For this reason, we haven't focused on creating a database from scratch. However, we can help you get started.

In this lesson, you will learn how to create a database from an existing **template**. You will also learn about other resources you can use to understand database design.

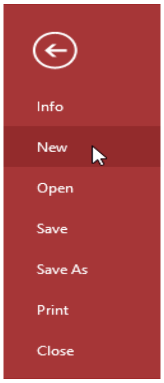
To create a database from a template:

Before deciding to build your own database, you may want to look at the **templates** included in Access to see if any of them match your needs. When you select a template, Access creates a **new database** based on that template. Once it's created, you can fill the database with your own information or modify it to suit your needs.

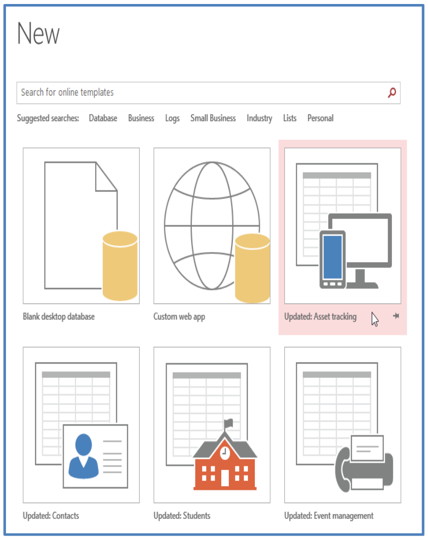
1.Select the **File** tab. This will take you to **Backstage view**.

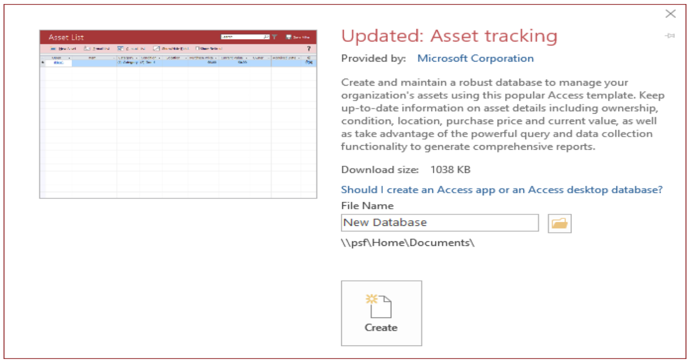


2.Click **New**.



3.Several templates will appear below the **Blank desktop database** option. You can also click a **suggested search** to find templates or use the **search bar** to find something more specific.


New
Search for online templates
Suggested searches: Database Business Logs Small Business Industry Lists Personal
Blank desktop database
Custom web app
Updated: Asset tracking
Updated: Contacts
Updated: Students
Updated: Event management



Updated: Asset tracking

Provided by: Microsoft Corporation

Create and maintain a robust database to manage your organization's assets using this popular Access template. Keep up-to-date information on asset details including ownership, condition, location, purchase price and current value, as well as take advantage of the powerful query and data collection functionality to generate comprehensive reports.

Download size: 1038 KB

Should I create an Access app or an Access desktop database?

File Name: New Database

\\psf\Home\Documents\

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

Click Create to use the selected template.

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

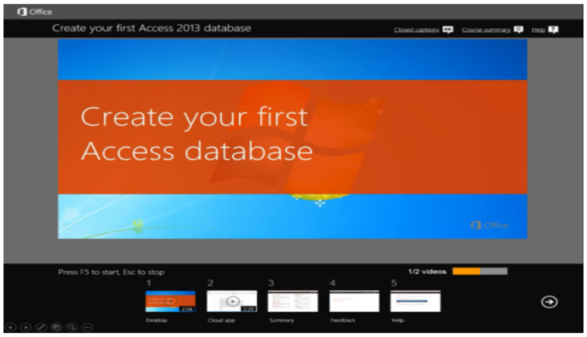
More resources on database design

Unfortunately, it can be difficult to find free, high-quality resources on database design. On this page, you'll find links to online resources that can help you get started. You can also contact your local library for instructional books and resources.

If you are willing to devote even more time and resources to learning database design, you can also search for **Access 2016 certification classes** online and in your community.
However, as a rule, these classes are not free.

Free online resources

Create Your First Access Database
This tutorial series from Microsoft offers basic guidance on database design and creation. The video shows this process in Access 2013, but it's similar in Access 2016.


Office
Create your first Access 2013 database
Closed captions
Course summary
Help
Create your first Access database
Press F5 to start, Esc to stop
1/2 videos
1
2
3
4
5
Desktop
Cloud app
Summary
Feedback
Help

CHAPTER -17- HOW TO CREATE CALCULATED FIELDS AND TOTALS ROWS

Introduction

Calculated fields and **totals rows** let you perform calculations with the data in your tables. Calculated fields perform calculations using data within one record, while totals rows perform a calculation on an entire field of data.

Calculated fields

When you create a **calculated field**, you are adding a new field in which every row contains a calculation involving other numerical fields in that row. To do this, you must enter a **mathematical expression**, which is made up of **field names in your table** and **mathematical symbols**. You don't need to know too much about math or expression building to create a useful calculated field. In fact, you can write robust expressions using only grade-school math. For instance, you could:

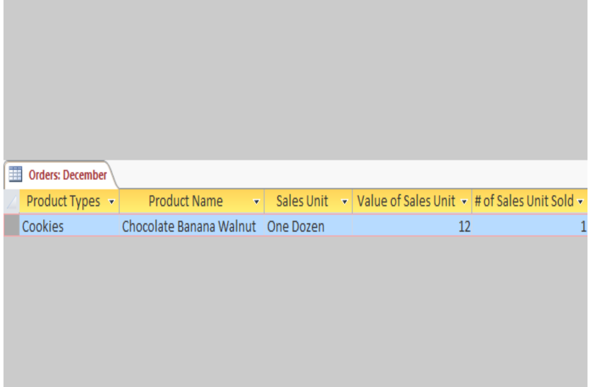
Use **+** to find the **sum** of the contents of two fields or to add a constant value (such as **+ 2** or **+ 5**) to a field

Use ***** to **multiply** the contents of two fields or to multiply fields by a constant value

Use **-** to **subtract** one field from another or to subtract a constant value from a field

In our example, we will use a table containing the orders from one month. The table contains items listed by **sales unit**—single, half-dozen, and dozen. One column lets us know the **number sold** of each sales unit. Another lets us know the actual **numerical value** of each of these units. For instance, in the top row you can see that **two dozen** fudge brownies have been sold and that one dozen equals **12** brownies.

To find the **total number** of brownies that have been sold, we'll have to multiply the number of units sold by the numerical value of that unit—here, 2*12, which equals 24. This was a simple problem, but performing this calculation for each row of the table would be tedious and time consuming. Instead, we can create a calculated field that shows the product of these two fields multiplied together on every row.

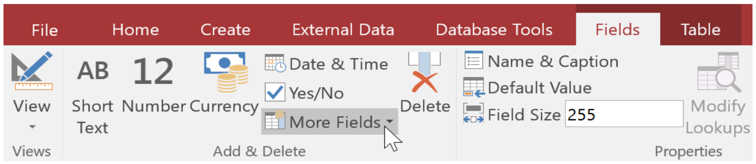


Orders: December

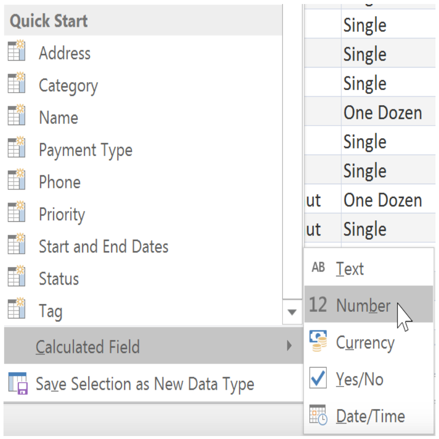
Product Types	Product Name	Sales Unit	Value of Sales Unit	# of Sales Unit Sold
Cookies	Chocolate Banana Walnut	One Dozen	12	1

To create a calculated field:

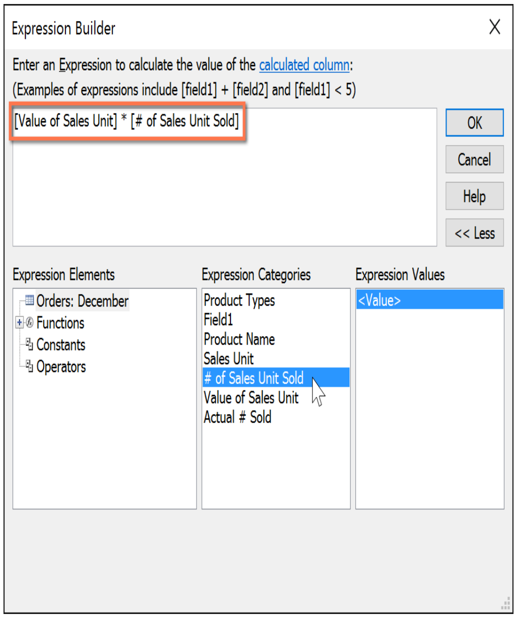
1.Select the **Fields** tab, locate the **Add & Delete** group, and click the **More Fields** drop-down command.



2.Hover your mouse over **Calculated Field** and select the desired data type. We want our calculation to be a number, so we'll select **Number**.



3.Build your expression. To select fields to include in your expression, double-click the field in the **Expression Categories** box. Remember to include mathematical operators like the **+** or **-** signs. Because we want to **multiply** our two fields, we'll put the multiplication symbol (*) between them.

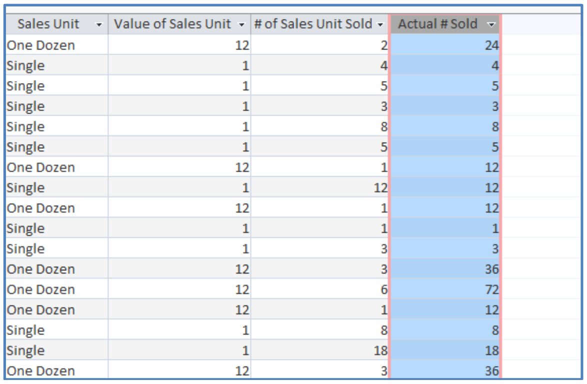


Expression Builder

Enter an Expression to calculate the value of the calculated column:
(Examples of expressions include [field1] + [field2] and [field1] < 5)

[Value of Sales Unit] * [# of Sales Unit Sold]

4.Click **OK**. The calculated field will be added to your table. If you want, you can now sort or filter it.



Sales Unit	Value of Sales Unit	# of Sales Unit Sold	Actual # Sold
One Dozen	12	2	24
Single	1	4	4
Single	1	5	5
Single	1	3	3
Single	1	8	8
Single	1	5	5
One Dozen	12	1	12
Single	1	12	12
One Dozen	12	1	12
Single	1	1	1
Single	1	3	3
One Dozen	12	3	36
One Dozen	12	6	72
One Dozen	12	1	12
Single	1	8	8
Single	1	18	18
One Dozen	12	3	36

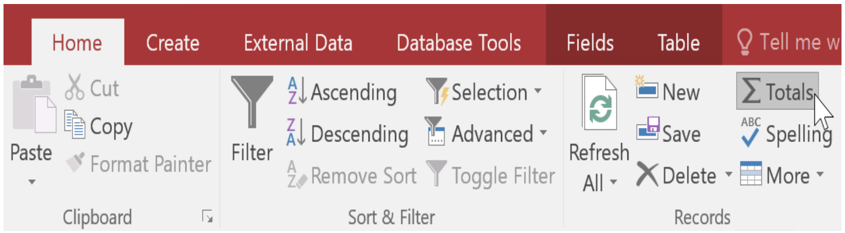
Totals rows

The **totals row** adds up an entire column of numbers, just like in a ledger or on a receipt. The resulting sum appears in a special row at the bottom of your table.

For our example, we'll add a totals row to our calculated field. This will show us the total number of items sold.

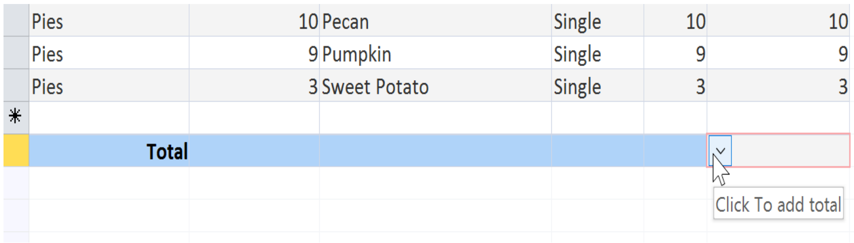
To create a totals row:

From the **Home** tab, locate the **Records** group, then click the **Totals**command.



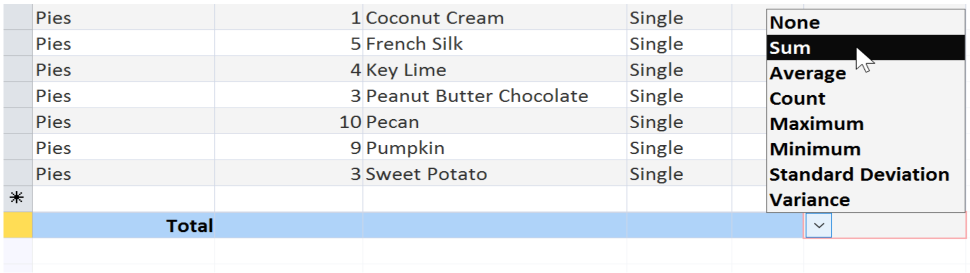
Scroll down to the **last row** of your table.

Locate the desired field for the totals row, then select the **second empty cell**below the last record for that field. When a **drop-down arrow** appears, click it.



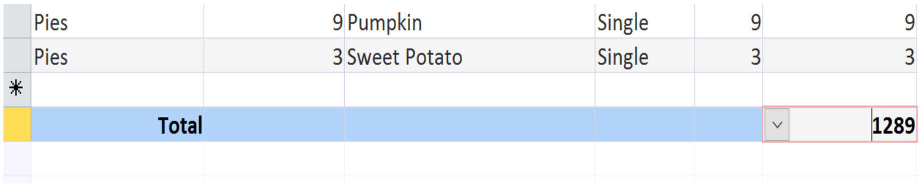
	Pies	10	Pecan	Single	10	10
	Pies	9	Pumpkin	Single	9	9
	Pies	3	Sweet Potato	Single	3	3
*						
	Total					

Select the function you want to perform on the field data. In our example, we'll choose **Sum** to add all of the values in the calculated field.



	Pies	1	Coconut Cream	Single	
	Pies	5	French Silk	Single	
	Pies	4	Key Lime	Single	
	Pies	3	Peanut Butter Chocolate	Single	
	Pies	10	Pecan	Single	
	Pies	9	Pumpkin	Single	
	Pies	3	Sweet Potato	Single	
*					
	Total				

The totals row will appear.



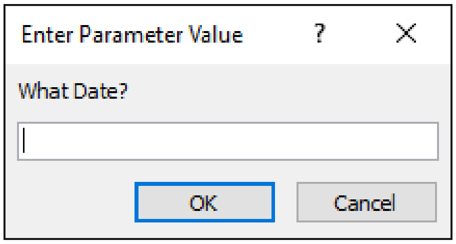
	Pies	9	Pumpkin	Single	9	9
	Pies	3	Sweet Potato	Single	3	3
*						
	Total					1289

CHAPTER -18- CREATING A PARAMETER QUERY

Introduction

A **parameter query** is one of the simplest and most useful queries you can create. Because parameter queries are so simple, they can be easily updated to reflect a new **search term**. When you open a parameter query, Access will prompt you for a search term and show you query results that reflect your search.

When you're running parameter queries, search terms act as **variable criteria**, which are query criteria that **change** each time you run the query. For instance, let's say we own a bakery and want to create a query that will quickly look up orders that were placed on a certain date. We could create a parameter query with variable criteria in the **Date** field. This way, each time we run the query a dialog box will appear prompting us to enter the date we'd like our query to search for.



We'll enter the date we want, then Access will run the query using the date we entered as a search term.

To create and run a parameter query:

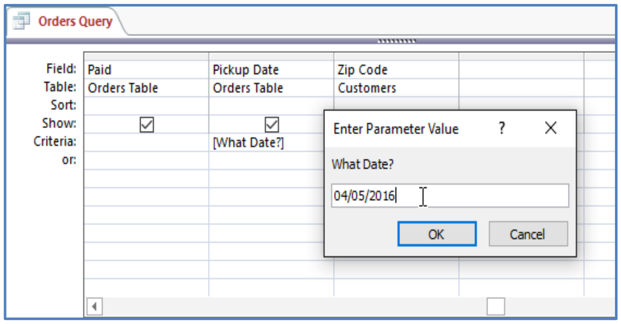
Create a query as you normally would, modifying the table joins if necessary, selecting the fields to include in your query, and adding any non variable criteria to the appropriate fields in the **Criteria:** row.

Locate the field or fields where you want the variable criteria to appear, then select the **Criteria:** row.

Type the phrase you want to appear in the prompt that will pop up each time you run your query. Make sure to enclose the phrase in brackets **[ ]**. For example, in our parameter query that searches for orders placed on a certain date, we might type our criteria like this: **[What Date?]**.

On the **Design** tab, click the **Run** command to **run** your query. A dialog box will appear with the specified prompt. Enter your search term and click **OK** to view your query results.

You can simply open an existing parameter query to run it.



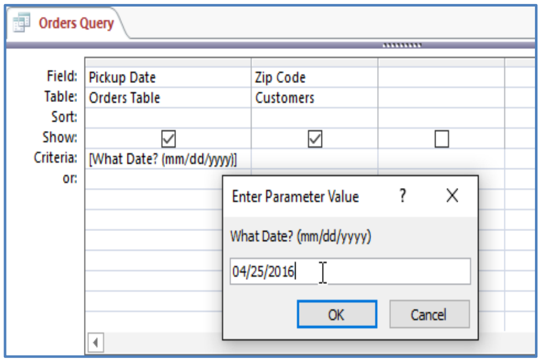
Field:	Paid	Pickup Date	Zip Code
Table:	Orders Table	Orders Table	Customers
Sort:			
Show:	☑	☑	
Criteria:		[What Date?]	
or:			

What Date?

04/05/2016

Tips for writing parameter queries

Ideally, the prompt you create for your query should make it clear what **type** of information the search term should be, as well as the desired **format**. For example, to guarantee users enter a search for a date in the format used in our database, we could write the following in the **Criteria:** row of the **Pickup Date** field like this: **[What Date? (mm/dd/yyyy)]** .



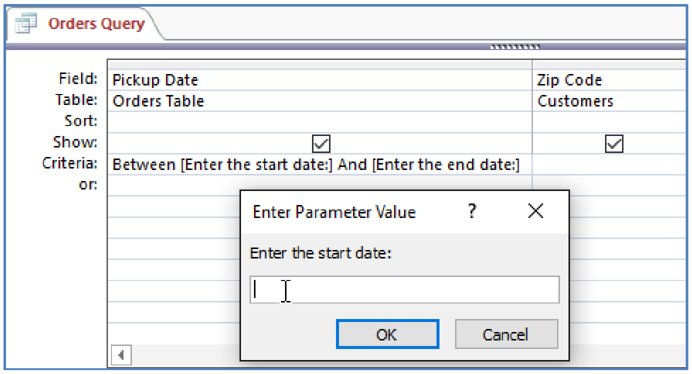
Field:	Pickup Date	Zip Code	
Table:	Orders Table	Customers	
Sort:			
Show:	☑	☑	☐
Criteria:	[What Date? (mm/dd/yyyy)]		
or:			

What Date? (mm/dd/yyyy)

04/25/2016

The simplest parameter query will give you an exact-match criteria, meaning the query will search for the **exact text** you enter in the prompt. However, you can turn any type of criteria into a variable criteria. Simply type your prompt text in brackets in the part of the criteria where you would normally put a search term.

For example, in a normal query we could find orders that were placed **between** two dates by using the criteria **Between x AND y** and replacing **x** and **y** with the first and second dates, respectively. To turn this into a parameter criteria, we would simply replace the **x** and **y** with the text we want to appear in the prompt. Our variable criteria might look like this: **Between [Enter the start date:] And [Enter the end date:]**. These two prompts will appear when you run the query.



Field:	Pickup Date	Zip Code
Table:	Orders Table	Customers
Sort:		
Show:	☑	☑
Criteria:	Between [Enter the start date:] And [Enter the end date:]	
or:		

Enter the start date:

CHAPTER -19- HOW TO CREATE A FIND DUPLICATES QUERY

Introduction

A **find duplicates query** allows you to search for and identify **duplicate records** within a table or tables. A duplicate record is a record that refers to the **same thing** or **person**as another record.

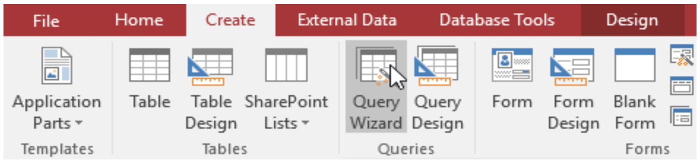
Not all records containing similar information are duplicates. For instance, records of two orders that were placed on different dates but that contained identical items would **not** be duplicate records. Likewise, not all duplicate records contain completely identical information. For example, two customer records could refer to the same person but include different addresses. The record with the out-of-date address would be the duplicate record.

Why is getting rid of duplicate records so important? Consider the example above. If we had multiple records for one customer, it would be difficult to view an order history for him because the information would be spread across several unlinked records. We might even deliver his order to the wrong address if the person entering the order information selects an outdated record. It's easy to see how having duplicate records can undermine the integrity and usefulness of your database.

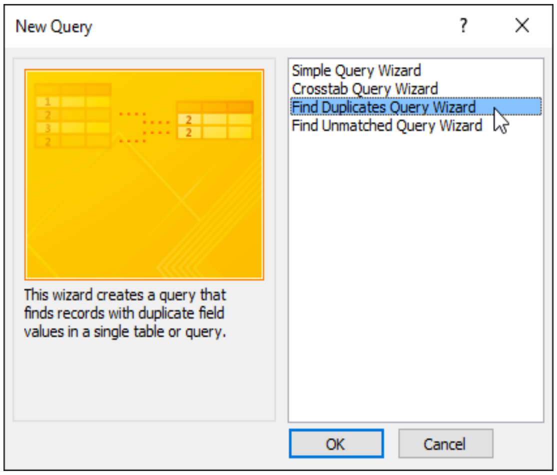
Fortunately, Access makes it easy to search for and locate potential duplicate records. Note that Access won't delete the records for you or help you figure out which one is current—you'll have to do those things for yourself. If you're familiar with the data in your database, though, getting rid of duplicate records will be a manageable task.

To create a find duplicates query:

1.Select the **Create** tab on the Ribbon, locate the **Queries** group, and click the **Query Wizard** command.



2.The **New Query** dialog box will appear. Select **Find Duplicates Query Wizard** from the list of queries, then click **OK**.

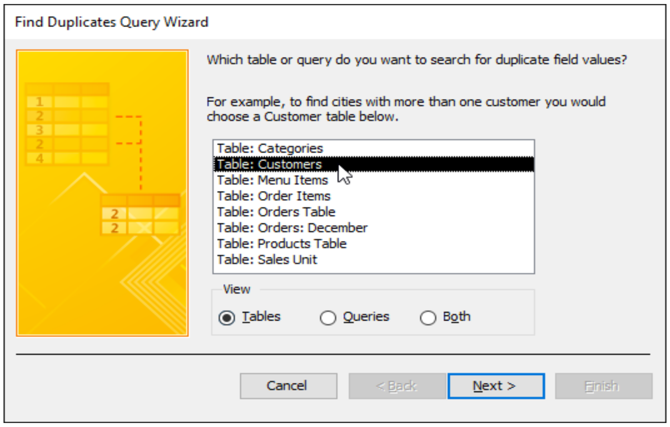


New Query

This wizard creates a query that finds records with duplicate field values in a single table or query.

Simple Query Wizard
Crosstab Query Wizard
Find Duplicates Query Wizard
Find Unmatched Query Wizard

3.Select the table you want to search for duplicate records, then click **Next**. We're searching for duplicate customer records, so we'll select the **Customers** table.



Find Duplicates Query Wizard

Which table or query do you want to search for duplicate field values?

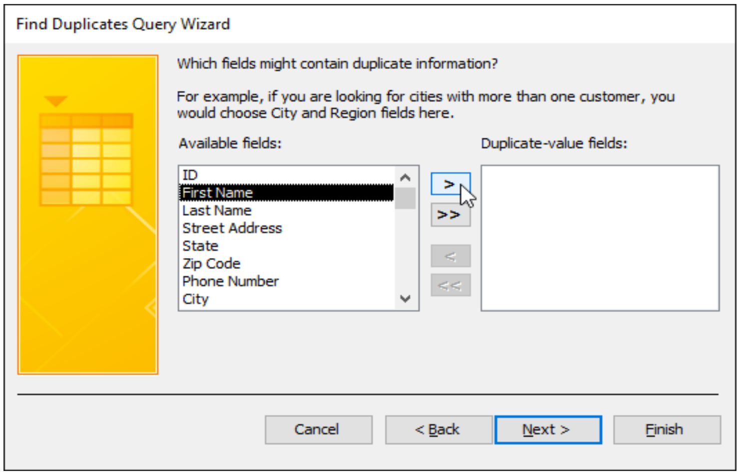
For example, to find cities with more than one customer you would choose a Customer table below.

Table: Categories
Table: Customers
Table: Menu Items
Table: Order Items
Table: Orders Table
Table: Orders: December
Table: Products Table
Table: Sales Unit

View
● Tables ○ Queries ○ Both

Choose the fields you want to search for duplicate information by selecting them and clicking the **right arrow button**. Only select fields that should not be identical in non duplicate records. For instance, because we're searching for duplicate customers we'll only select the **First Name** and **Last Name** fields because it's unlikely that multiple people with the exact same first and last names would place orders at our bakery.

When you've added the desired fields, click **Next**.



Find Duplicates Query Wizard

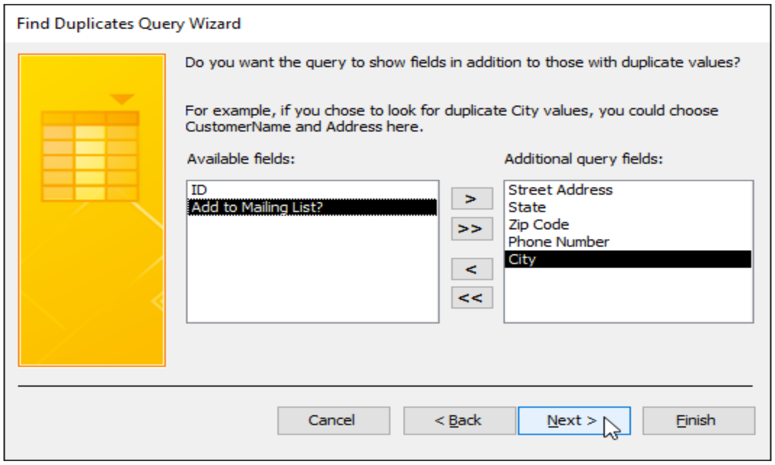
Which fields might contain duplicate information?

For example, if you are looking for cities with more than one customer, you would choose City and Region fields here.

Available fields:
ID
First Name
Last Name
Street Address
State
Zip Code
Phone Number
City

Duplicate-value fields:

Select additional fields to view in the query results. Choose fields that will help you distinguish between the duplicate records, and choose which one you want to keep. In our example, we'll add all of the fields relating to customer **addresses**, plus the **Phone Number** field because records with identical customer names might contain non identical information in this field. When you're satisfied, click **Next**.



Find Duplicates Query Wizard

Do you want the query to show fields in addition to those with duplicate values?

For example, if you chose to look for duplicate City values, you could choose CustomerName and Address here.

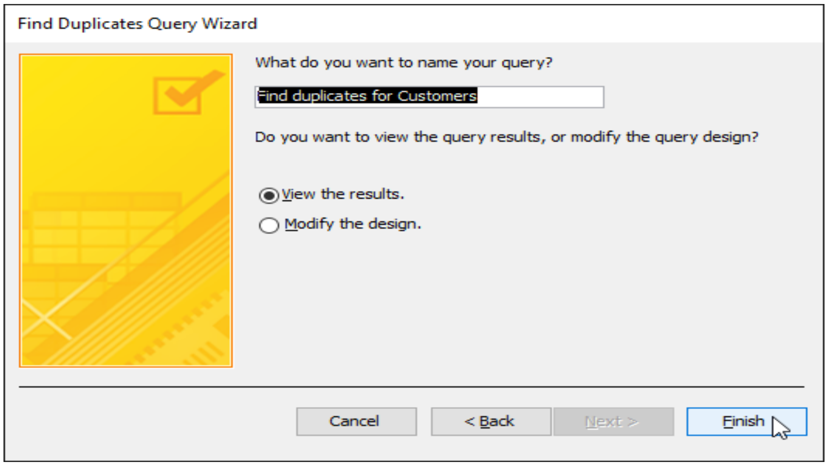
Available fields:

ID
Add to Mailing List?

Additional query fields:

Street Address
State
Zip Code
Phone Number
City

Access will suggest a name for your query, but you can type a different name if you want. When you're satisfied with the query name, click **Finish** to run your query.



Find Duplicates Query Wizard

What do you want to name your query?

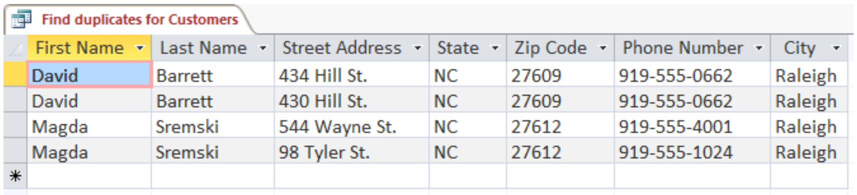
Find duplicates for Customers

Do you want to view the query results, or modify the query design?

● View the results.

○ Modify the design.

If Access found any duplicate records in your query, they will be displayed in the **query results**. Review the records and **delete** any outdated or incorrect records as needed.



Find duplicates for Customers

First Name	Last Name	Street Address	State	Zip Code	Phone Number	City
David	Barrett	434 Hill St.	NC	27609	919-555-0662	Raleigh
David	Barrett	430 Hill St.	NC	27609	919-555-0662	Raleigh
Magda	Sremski	544 Wayne St.	NC	27612	919-555-4001	Raleigh
Magda	Sremski	98 Tyler St.	NC	27612	919-555-1024	Raleigh
*						

Tips for resolving duplicate records

Save your duplicate records queries, and run them often.

Investigate potential duplicate records by looking at linked data in other tables. You can do this by searching for these records' **record ID numbers** in related tables. Is one record linked to mostly old orders while another contains recent ones? The latter is likely to be the current one.

Once you decide which record to delete, make sure you won't be losing any information you might need. In our example, before we deleted our duplicate record we found all of the orders linked to that record's **ID number** and replaced them with the ID number of the record we decided to keep.

Simplified

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Chapter At A Glance