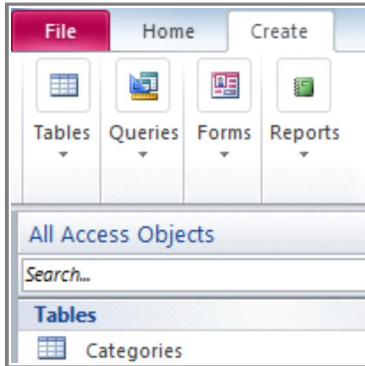




Introduction



Databases in Access 2010 are composed of four objects: **tables**, **queries**, **forms**, and **reports**. Together, these objects allow you to enter, store, analyze, and compile your data as you wish.

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.

The Access Objects

Tables, queries, forms, and reports are the framework for any database you create in Access. Understanding how each of these objects works will help you create a database that will be useful and will help you retrieve the information you need.

Video: Introduction to Objects

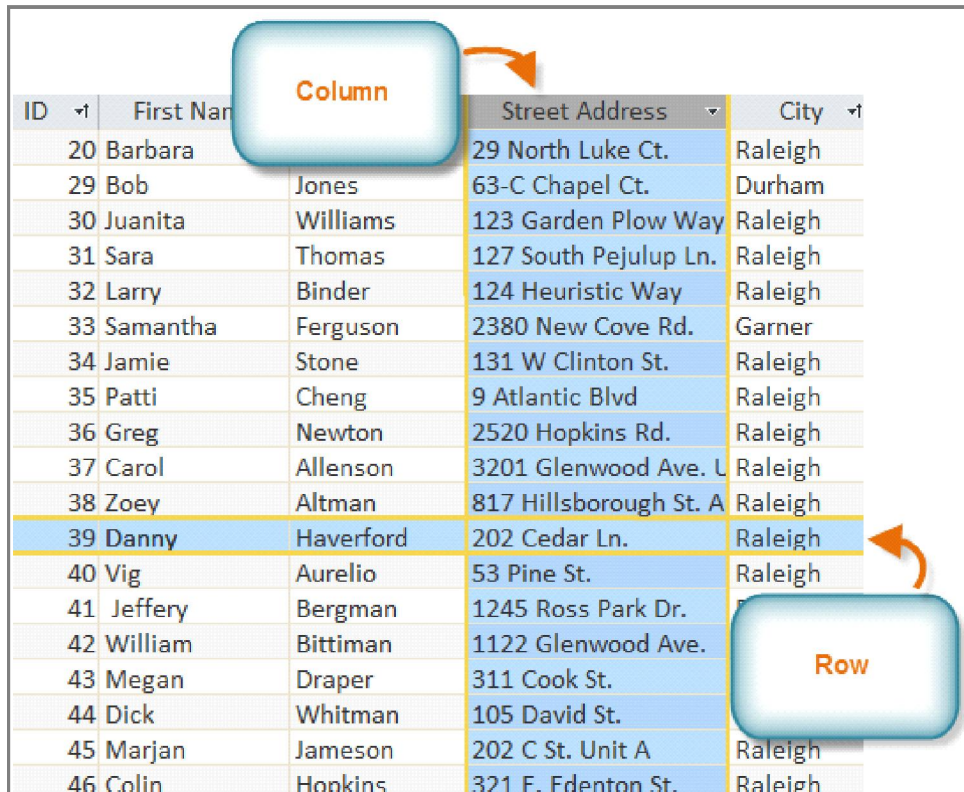


Watch the video (4:26). [Need help?](#)

Tables

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.

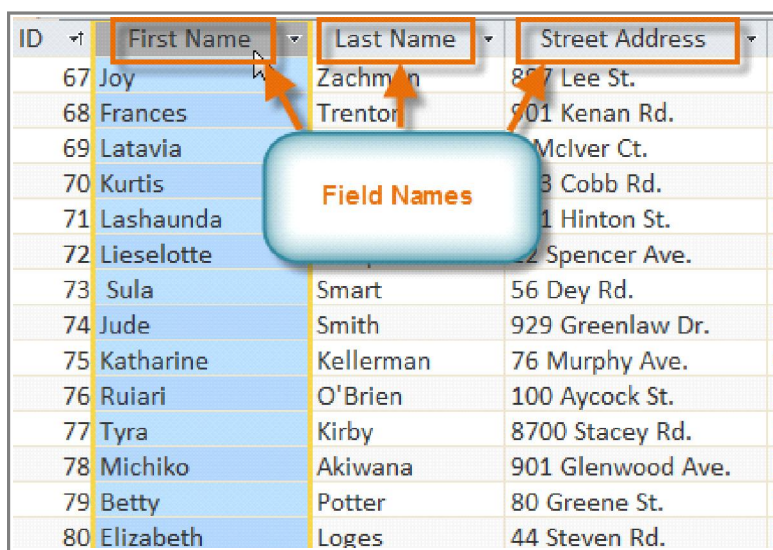
You might already know that tables are organized into vertical **columns** and horizontal **rows**.



ID	First Name	Last Name	Street Address	City
20	Barbara		29 North Luke Ct.	Raleigh
29	Bob	Jones	63-C Chapel Ct.	Durham
30	Juanita	Williams	123 Garden Plow Way	Raleigh
31	Sara	Thomas	127 South Pejulup Ln.	Raleigh
32	Larry	Binder	124 Heuristic Way	Raleigh
33	Samantha	Ferguson	2380 New Cove Rd.	Garner
34	Jamie	Stone	131 W Clinton St.	Raleigh
35	Patti	Cheng	9 Atlantic Blvd	Raleigh
36	Greg	Newton	2520 Hopkins Rd.	Raleigh
37	Carol	Allenson	3201 Glenwood Ave. L	Raleigh
38	Zoey	Altman	817 Hillsborough St. A	Raleigh
39	Danny	Haverford	202 Cedar Ln.	Raleigh
40	Vig	Aurelio	53 Pine St.	Raleigh
41	Jeffery	Bergman	1245 Ross Park Dr.	
42	William	Bittiman	1122 Glenwood Ave.	
43	Megan	Draper	311 Cook St.	
44	Dick	Whitman	105 David St.	
45	Marjan	Jameson	202 C St. Unit A	Raleigh
46	Colin	Hopkins	321 E. Edenton St.	Raleigh

Columns and rows in an Access table

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.



ID	First Name	Last Name	Street Address
67	Joy	Zachman	807 Lee St.
68	Frances	Trenton	901 Kenan Rd.
69	Latavia		Mclver Ct.
70	Kurtis		83 Cobb Rd.
71	Lashaunda		111 Hinton St.
72	Lieselotte		122 Spencer Ave.
73	Sula	Smart	56 Dey Rd.
74	Jude	Smith	929 Greenlaw Dr.
75	Katharine	Kellerman	76 Murphy Ave.
76	Ruiari	O'Brien	100 Aycock St.
77	Tyra	Kirby	8700 Stacey Rd.
78	Michiko	Akiwana	901 Glenwood Ave.
79	Betty	Potter	80 Greene St.
80	Elizabeth	Loges	44 Steven Rd.

Fields and field names

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.

ID	First Name	Last Name	Street Address	City	State	Zip
84	Magda	Sremski	98 Tyler St.	Raleigh	NC	276
85	Peggy	Moss	1130 Jackson St.	Raleigh	NC	276
94	Margot	Wade	532 Chronicle Way	Raleigh	NC	276
95	Florent	Marais	53 Ada St.	Raleigh	NC	276
96	Erwan	Hausman	918 Lonesome Dove R	Raleigh	NC	276
97	Rodrigue	Sterling	49 Mockingbird Way	Raleigh	NC	276
102	Theodore	Achi	120 Baker St.	Raleigh	NC	276

A record

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? That's the **ID number** that identifies each record. The ID number for a record refers to every piece of information contained on that row.

ID	First Name	Last Name	Street Address	City
84	Magda	Sremski	98 Tyler St.	Raleigh
85	Peggy	Moss	1130 Jackson St.	Raleigh
94	Margot	Wade	532 Chronicle Way	Raleigh
95	Florent	Marais	53 Ada St.	Raleigh
96	Erwan	Hausman	918 Lonesome Dove R	Raleigh
97	Rodrigue	Sterling	49 Mockingbird Way	Raleigh
102	Theodore	Achi	120 Baker St.	Raleigh
105	Dwyane	James	4221 Basil Ct.	Cary

Record ID numbers

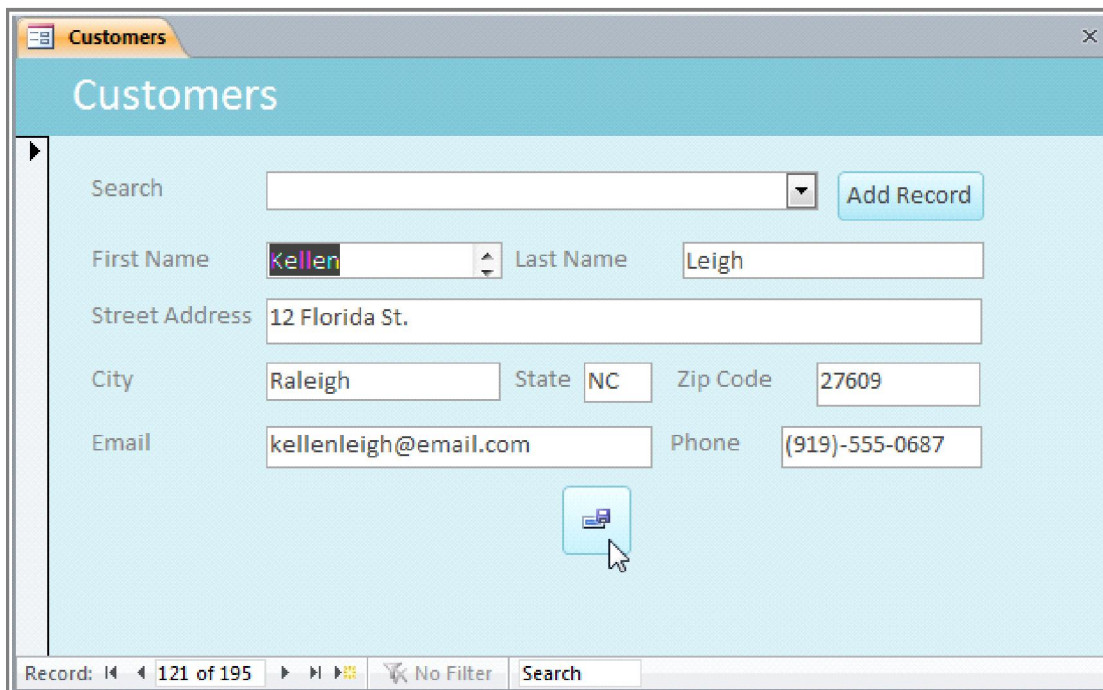
Tables are good for storing **closely related information**. Say that you own a bakery and have a database that includes a table with your customers' names and information like their phone numbers, home addresses, and email addresses. Since these pieces of information are all details about your customers, you'd include them all in the same **table**. Each customer would be represented by a unique **record**, and each type of information about those customers would be stored in its own field. If you decided to add any more information — say, the 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 offer you ways to work with it. They are: **forms**, **queries**, and **reports**. 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 have probably 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 into entering data correctly. When you enter information into a form in Access, that data goes exactly where the database designer wants it to go — in one or more related tables.



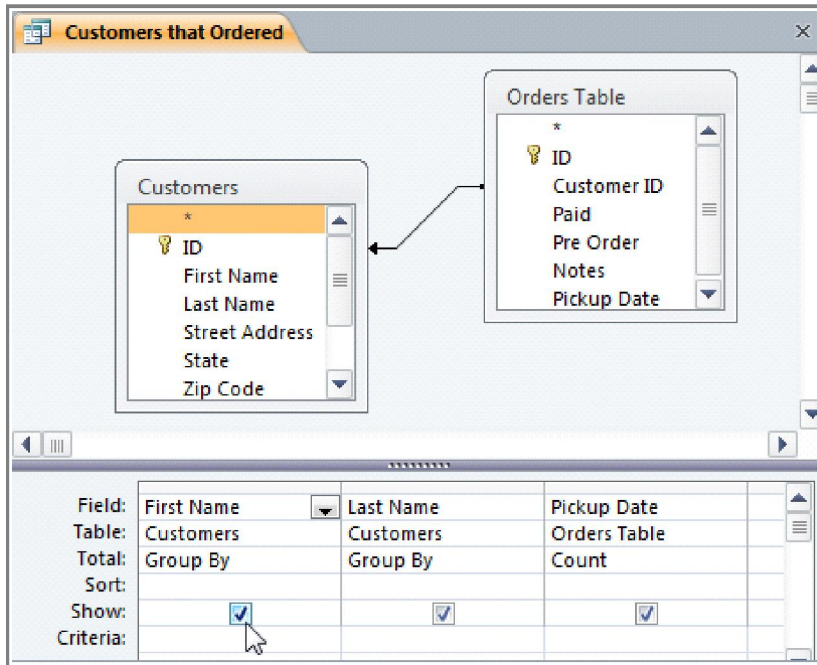
A form

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 once 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 that all of the needed data is entered in the correct format. All in all, forms help keep data consistent and well-organized, which is essential for an accurate and powerful database.

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 that you might not be able to find out just by looking through the data in your tables.



A query design

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**.

Menu Items Ordered



Cakes and Pies Ordered 12/19-12/26

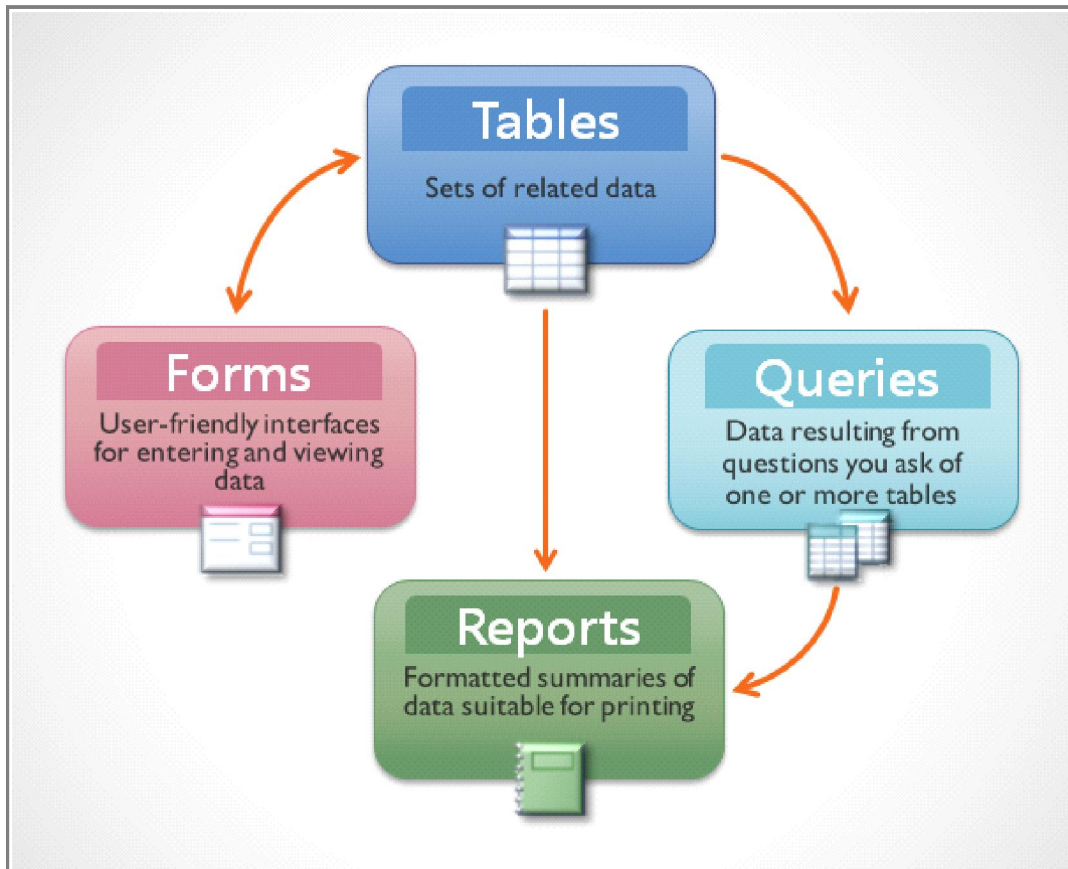
Product Type	Product Name	Quantity
Cakes	Cheesecake	17
Cakes	Buche de Noel (Christmas Cake)- Winter	12
Pies	Pecan	10
Pies	Pumpkin	9
Pies	French Silk	5
Pies	Chocolate Chess	5
Pies	Apple	5

A report

Page 4

Putting it All Together

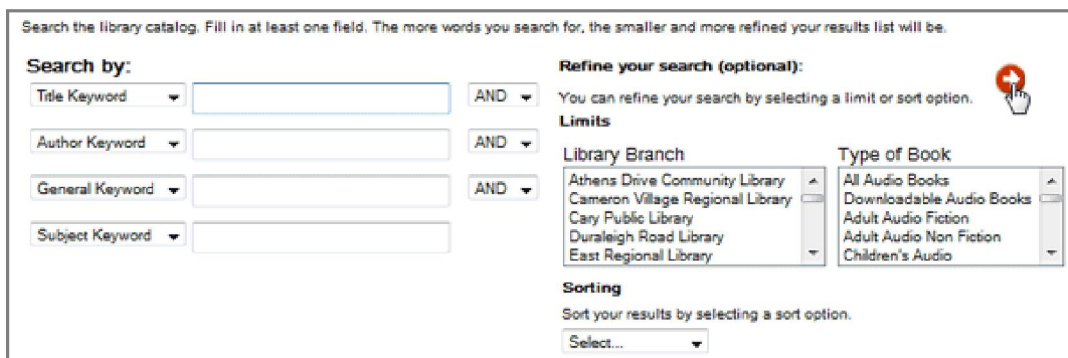
Even if you have a good idea of how each object can be used, it can initially be hard to understand how they all work together. It helps to remember that they all work with the same data. Every piece of data a **query**, **form**, or **report** uses is stored in one of your database **tables**.



The four Access 2010 objects

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, in turn, **search for** and **analyze** data within those same tables.

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 in something that looks like this:

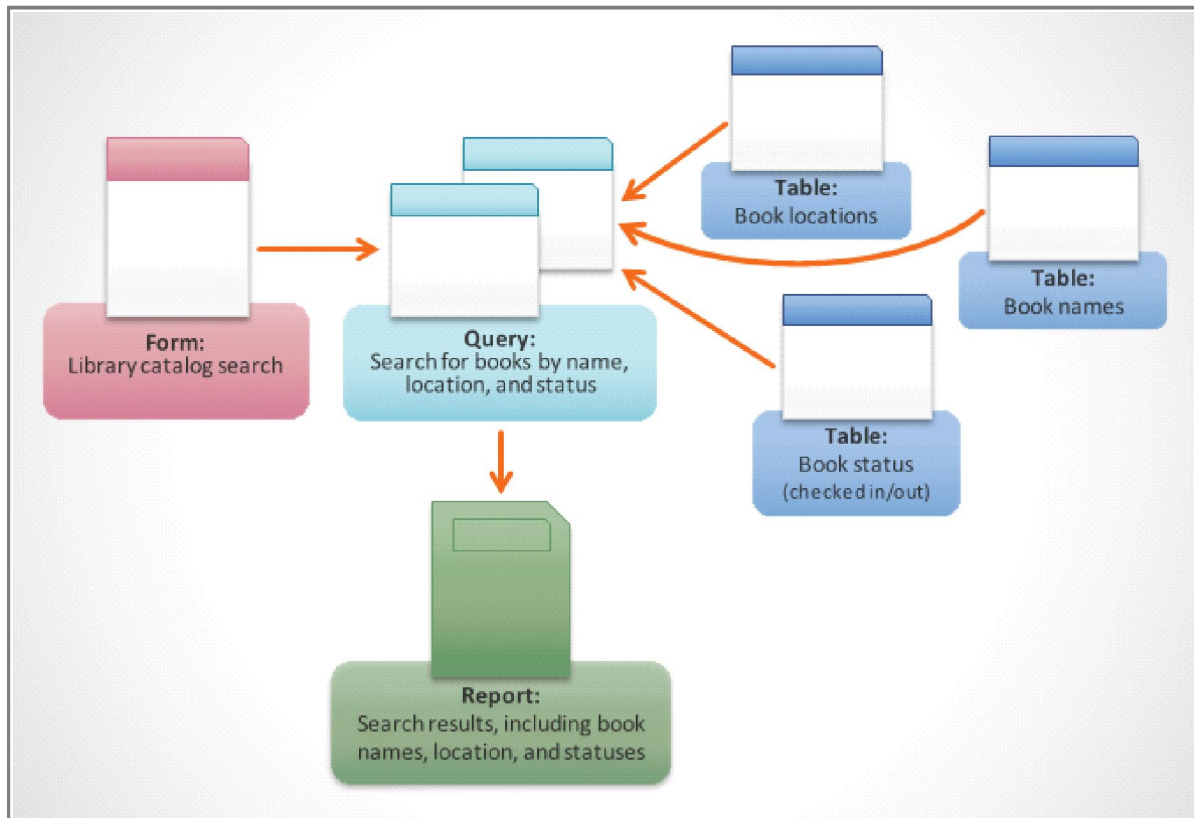


The screenshot shows a search interface for a library catalog. It includes a search bar with a dropdown menu for 'Search by:' and four input fields for 'Title Keyword', 'Author Keyword', 'General Keyword', and 'Subject Keyword'. There are 'AND' buttons between the input fields. To the right, there is a 'Refine your search (optional):' section with a 'Limits' dropdown menu showing 'Library Branch' and 'Type of Book' options. Below that is a 'Sorting' section with a 'Sort your results by selecting a sort option.' dropdown menu.

An electronic card catalog

When you did that search, you were entering your search terms into a **form** that, in turn, 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:



A search for a book. The data submitted in the form is used in a database query, which draws its data from relevant tables. The results of the query are presented in a report.

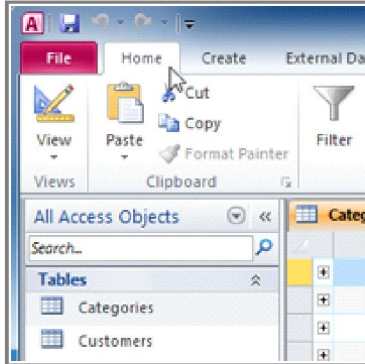
Imagine if, instead of using these tools, you'd had to search within a giant table containing every book in the library system. The relevant records would likely be spread out across many tables: a table for book titles and descriptions, a table containing information about which books are checked in 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 get 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 [Lesson 1](#), 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.



Introduction



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**, the **Backstage view**, the **Navigation Pane**, the **Document Tabs bar**, and the **Record Navigation bar**. You will also learn how to navigate with a **navigation form**, if your database includes one.

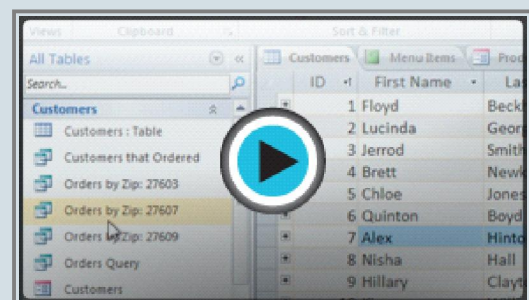
Throughout this course, we will be using a sample database. If you would like to follow along, [download our example](#) and use it to follow the procedures demonstrated in this lesson. You will need to have Access 2010 installed on your computer in order to open the example.

Getting to Know Access 2010

If you are familiar with Access 2007, then you will notice that there are not too many changes to the 2010 interface, other than the addition of the **Backstage view**.

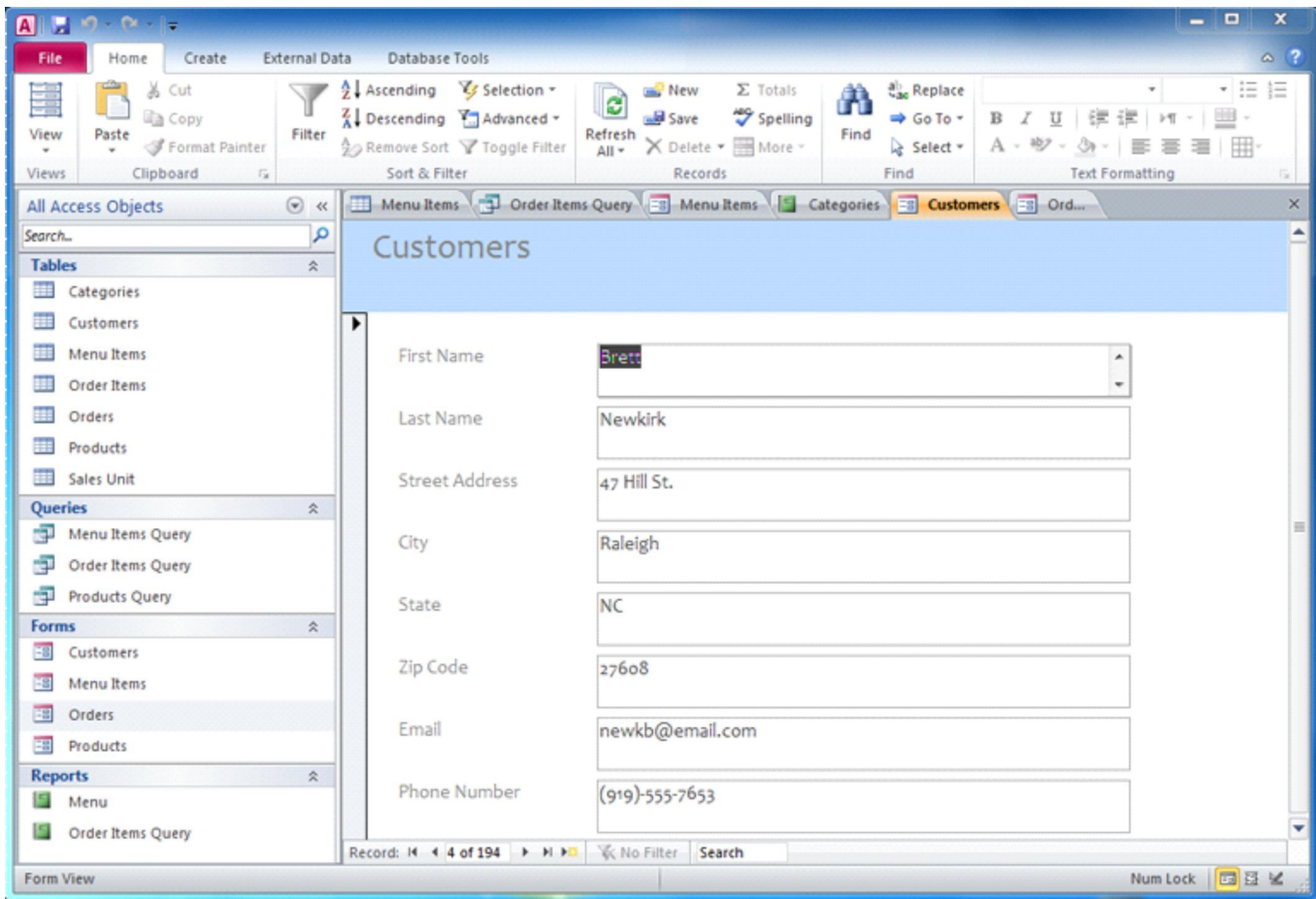
However, if you are new to Access, you will first need to take some time to familiarize yourself with the Access environment.

Video: Getting Around in Access 2010



Watch the video (4:07). [Need help?](#)

➡➡➡ Click the buttons in the interactive below to learn how to navigate the Access window.

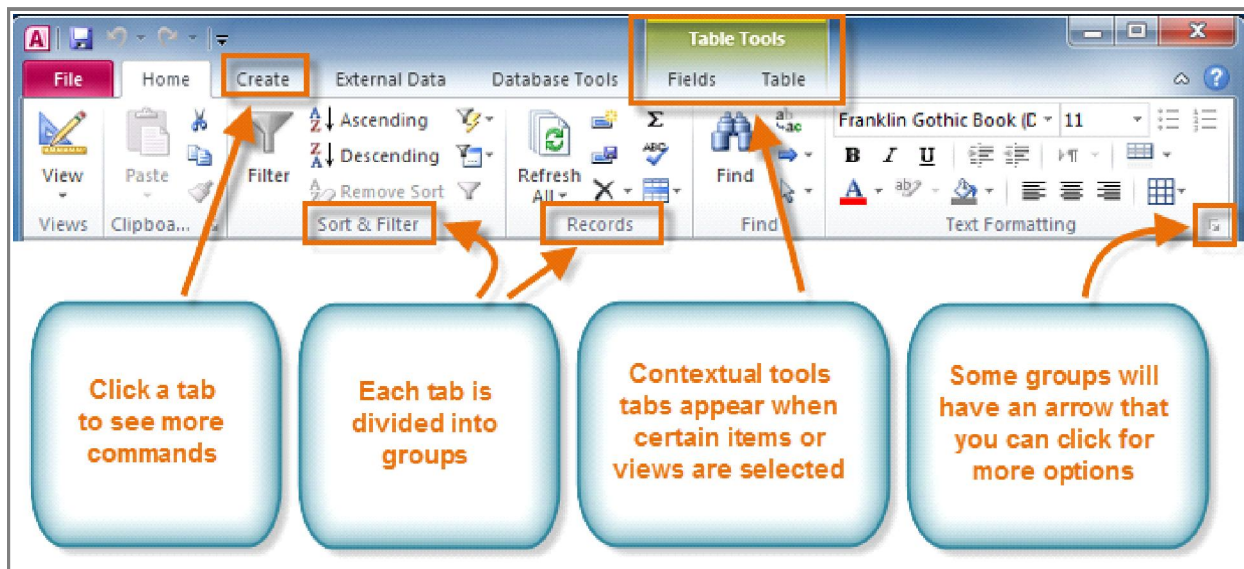


Working with Your Access Environment

The **Ribbon** and the **Quick Access Toolbar** are where you will find the commands you will use to do common tasks in Access. If you are familiar with Access 2007, you will find that the main difference in the Access 2010 Ribbon is that commands such as **Open** and **Print** are now housed in **Backstage view**.

The Ribbon

The Ribbon contains multiple **tabs**, each with several **groups** of commands. Some tabs, like **Form Layout Tools** or **Table Tools**, may appear only when you are working with certain objects like forms or tables. These tabs are called **contextual tabs**, and are highlighted in a contrasting color to distinguish them from normal tabs.

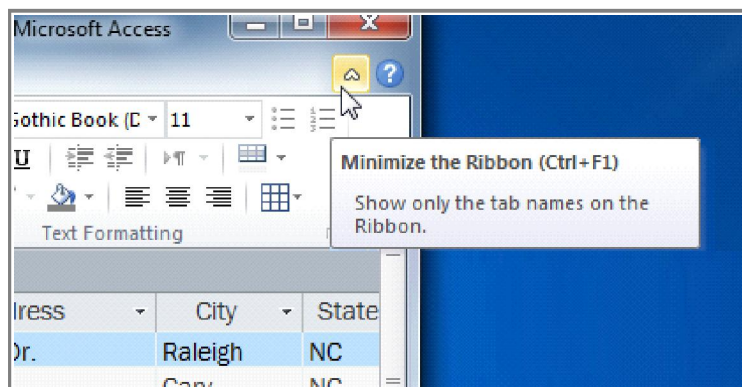


The Ribbon in Access 2010

To Minimize and Maximize the Ribbon:

The Ribbon is designed to be easy to use and responsive to your current task, but if you feel that it's taking up too much of your screen space, you can **minimize** it.

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



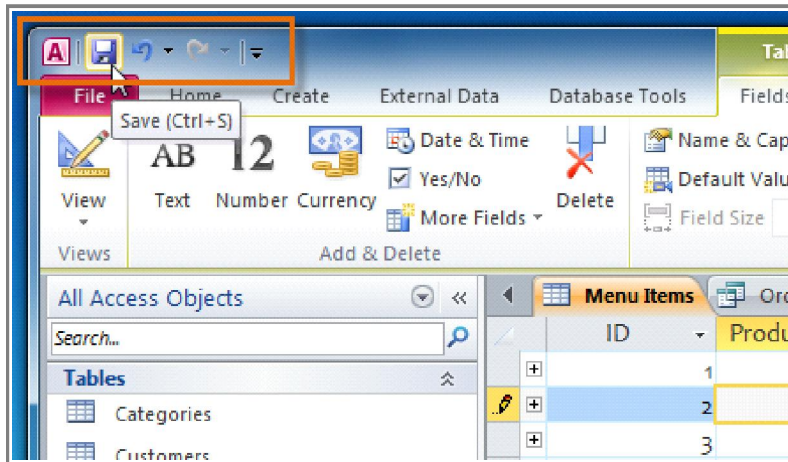
Minimizing the Ribbon

2. To maximize the Ribbon, click the arrow again.


When the Ribbon is minimized, you can make it reappear by clicking on a tab. However, the Ribbon will disappear again when you are not using it.

The Quick Access Toolbar

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



Saving the current object with the Quick Access Toolbar

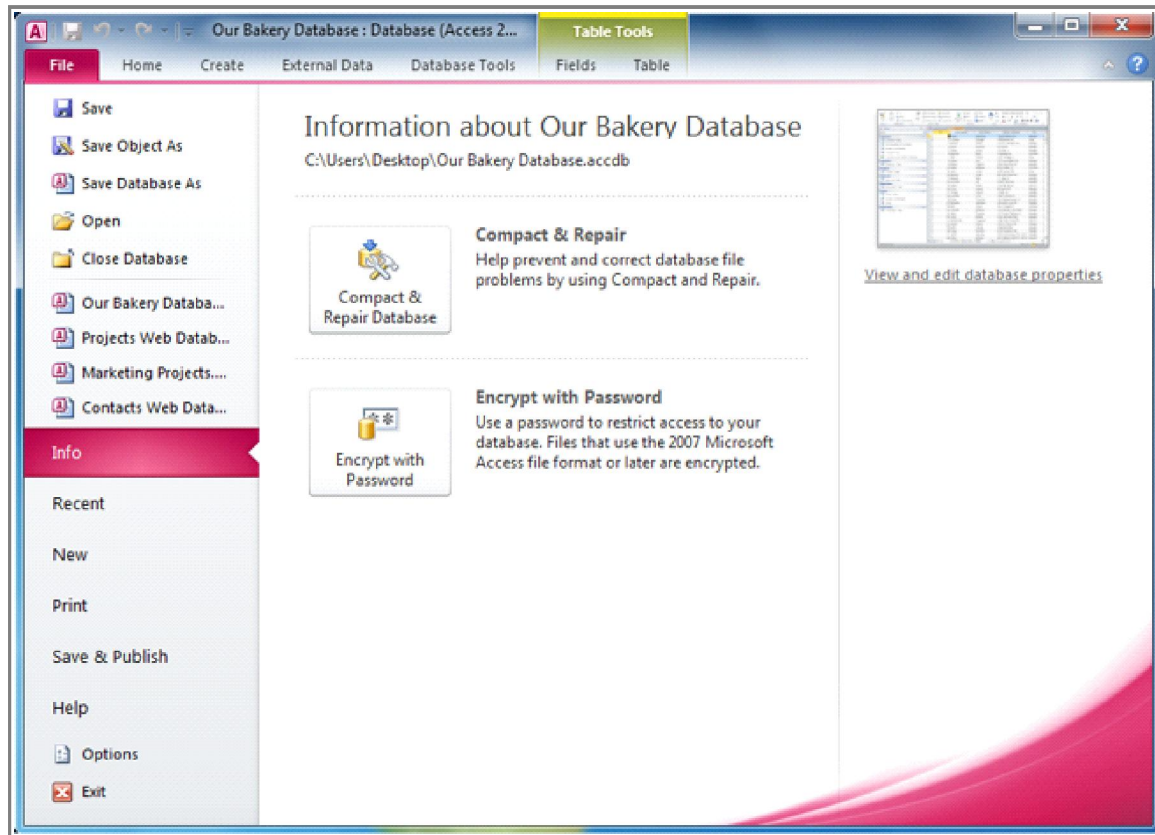
 Note that the **Save** command only saves the current open object. In addition, the **Undo** command will not undo certain actions, like adding a record. Pay close attention to your information when using the **Undo** command to make sure it has the desired effect.

Backstage View

Backstage view gives you various options for opening, saving, printing, and viewing more information about your database. It is similar to the **Office Button Menu** from Access 2007 or the **File Menu** from earlier versions of Access. However, unlike those menus, it is a full-page view, which makes it easier to work with.

To Get to Backstage View:

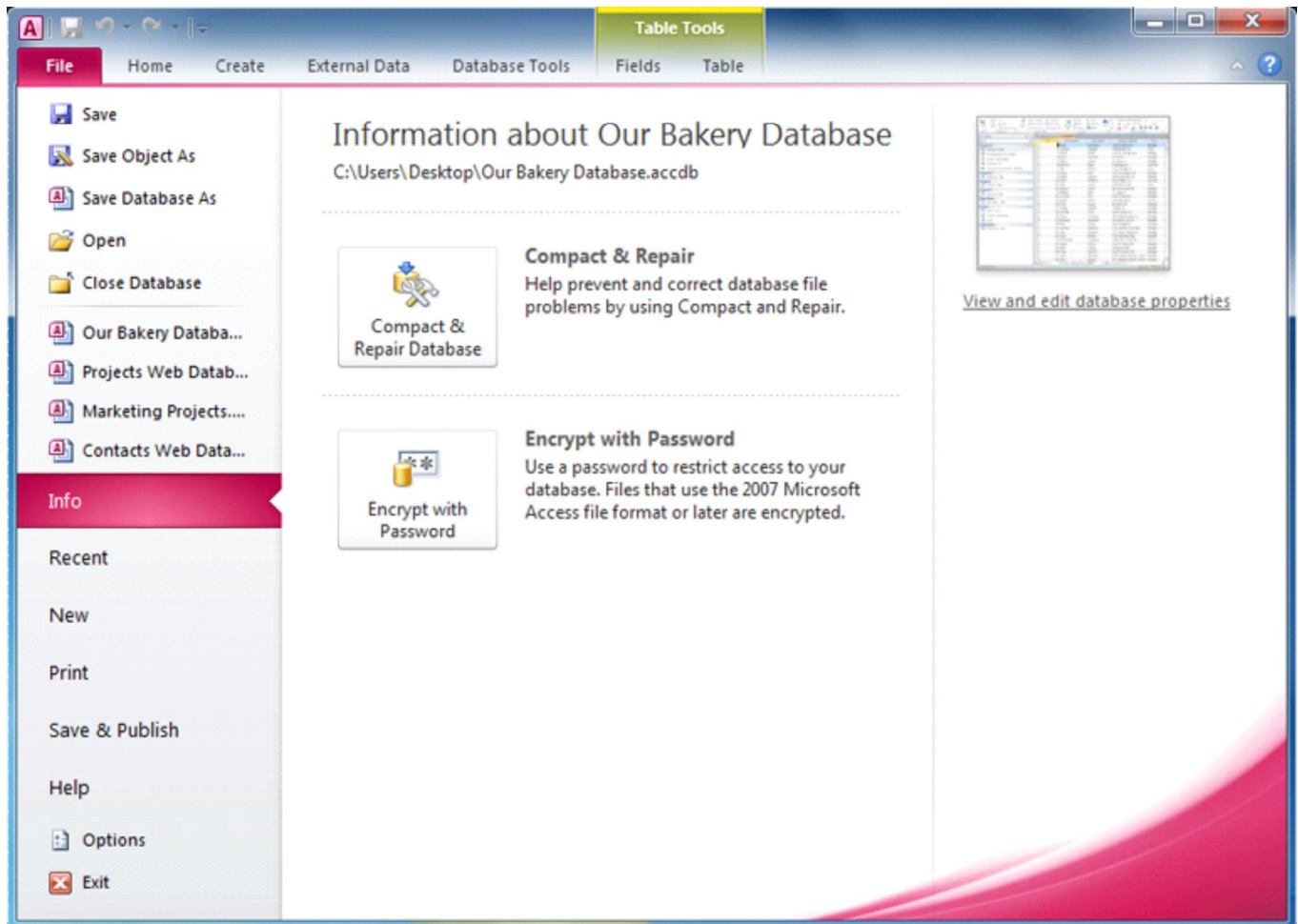
1. Click the **File** tab.



Backstage view in Access 2010

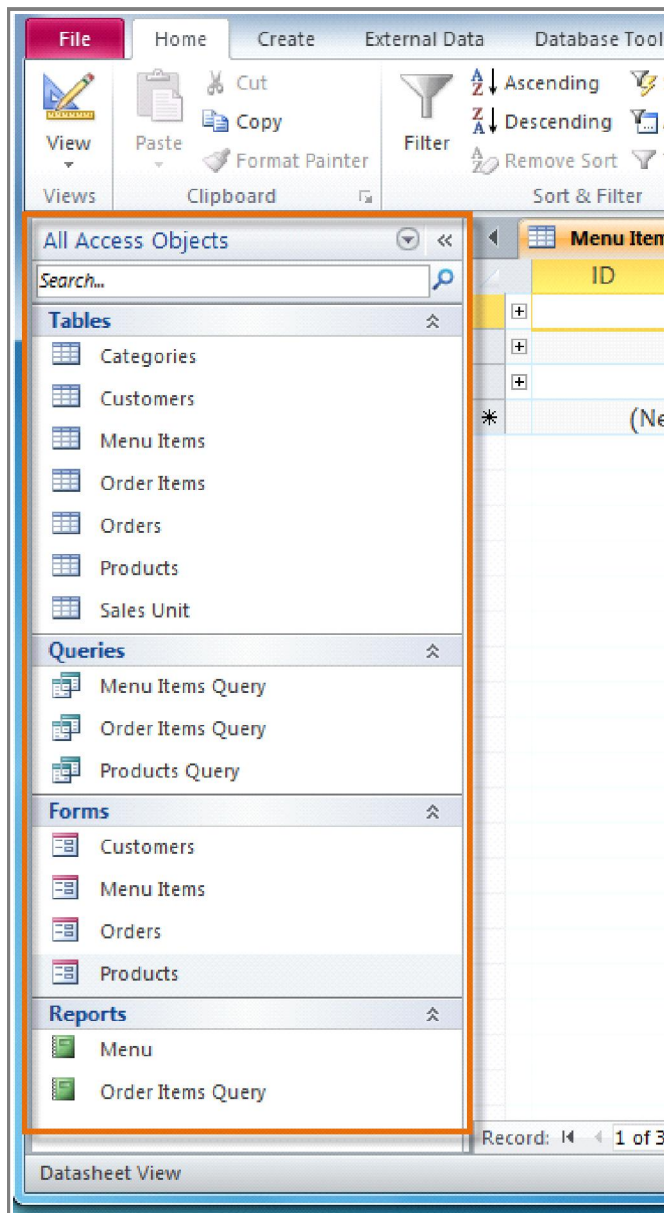
2. You can choose an option on the left side of the page.
3. To get back to your database objects, just click any tab on the Ribbon.

➤➤➤ Click the buttons in the interactive below to learn about the different things you can do in Backstage view.



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.

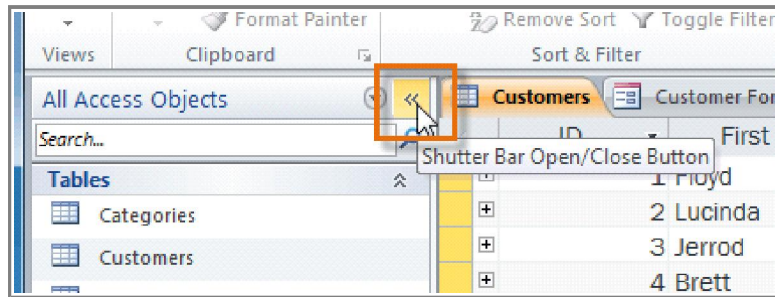


The Navigation Pane in Access 2010

To Minimize and Maximize the Navigation Pane:

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

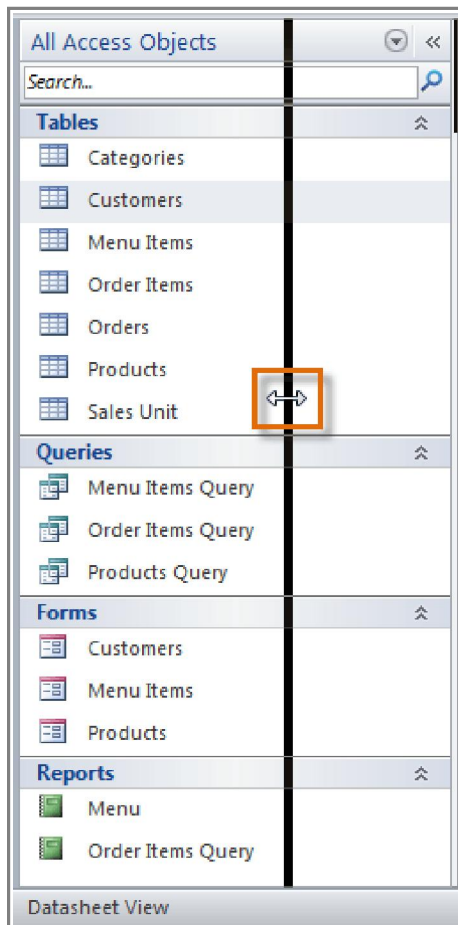
1. Click the **double arrow**  in the upper-right corner of the Navigation Pane to minimize it.



Minimizing the Navigation Pane

2. To make the Navigation Pane visible again, click the **double arrow** >> to maximize it.

If you would like 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.

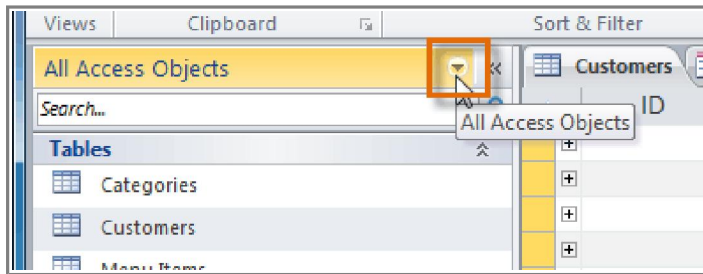


Resizing the Navigation Pane

To Sort the Objects in the Navigation Pane:

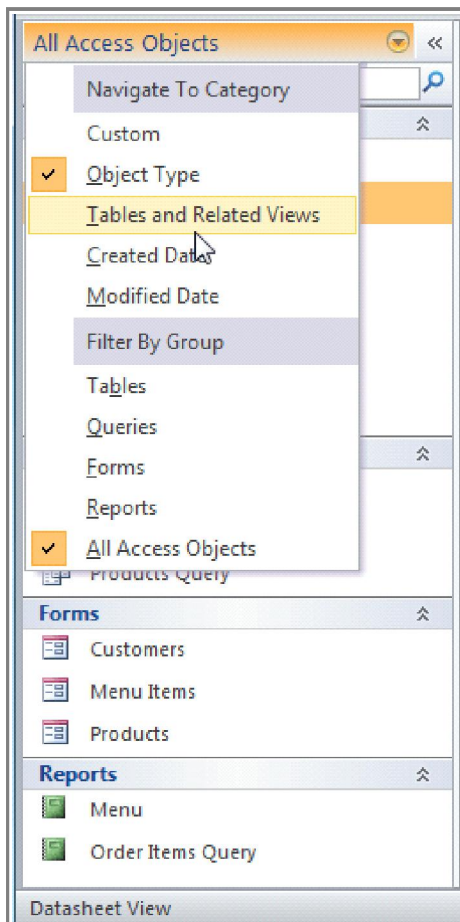
By default, your objects are sorted by type, with the tables in one group, the forms in another, and so on. However, if you wish, you can sort the objects in the Navigation Pane into groups of your choosing.

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



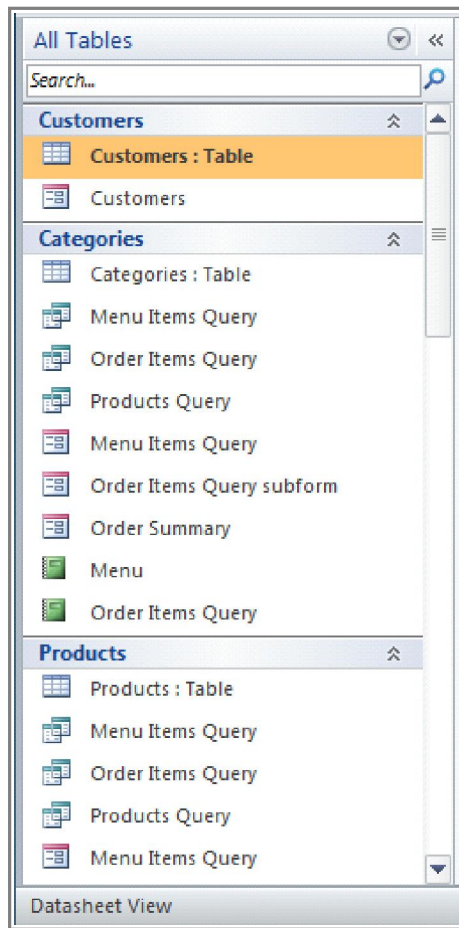
Clicking to re-sort the objects into new groups

2. In the drop-down menu, select the desired sort.
 - o Select **Custom** to create a custom group for sorting the objects. After applying the sort, simply drag the desired objects to the new group.
 - o Select **Object Type** to group the objects by type. This is the default setting.
 - o Select **Tables and Related Views** to group forms, queries, and reports together with the tables they refer to.
 - o Select **Created Date** or **Modified Date** to sort the objects from most to least recently created or modified.





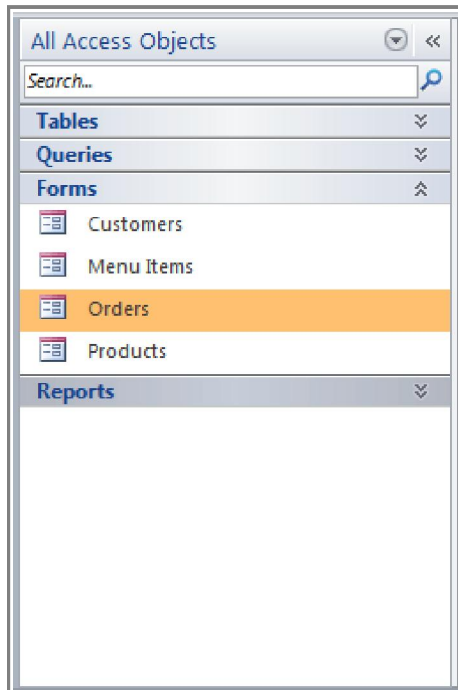
Selecting a new way to group the objects

3. The objects in the Navigation Pane will now be sorted to reflect your choice.



The Navigation Pane with the objects now sorted by tables and related views

To further customize the appearance of the Navigation Pane, you can also **minimize groups** of objects you don't want to see. Simply click the upward double arrow  next to the name of the group. To restore the group to its full size, click the downward double arrow .

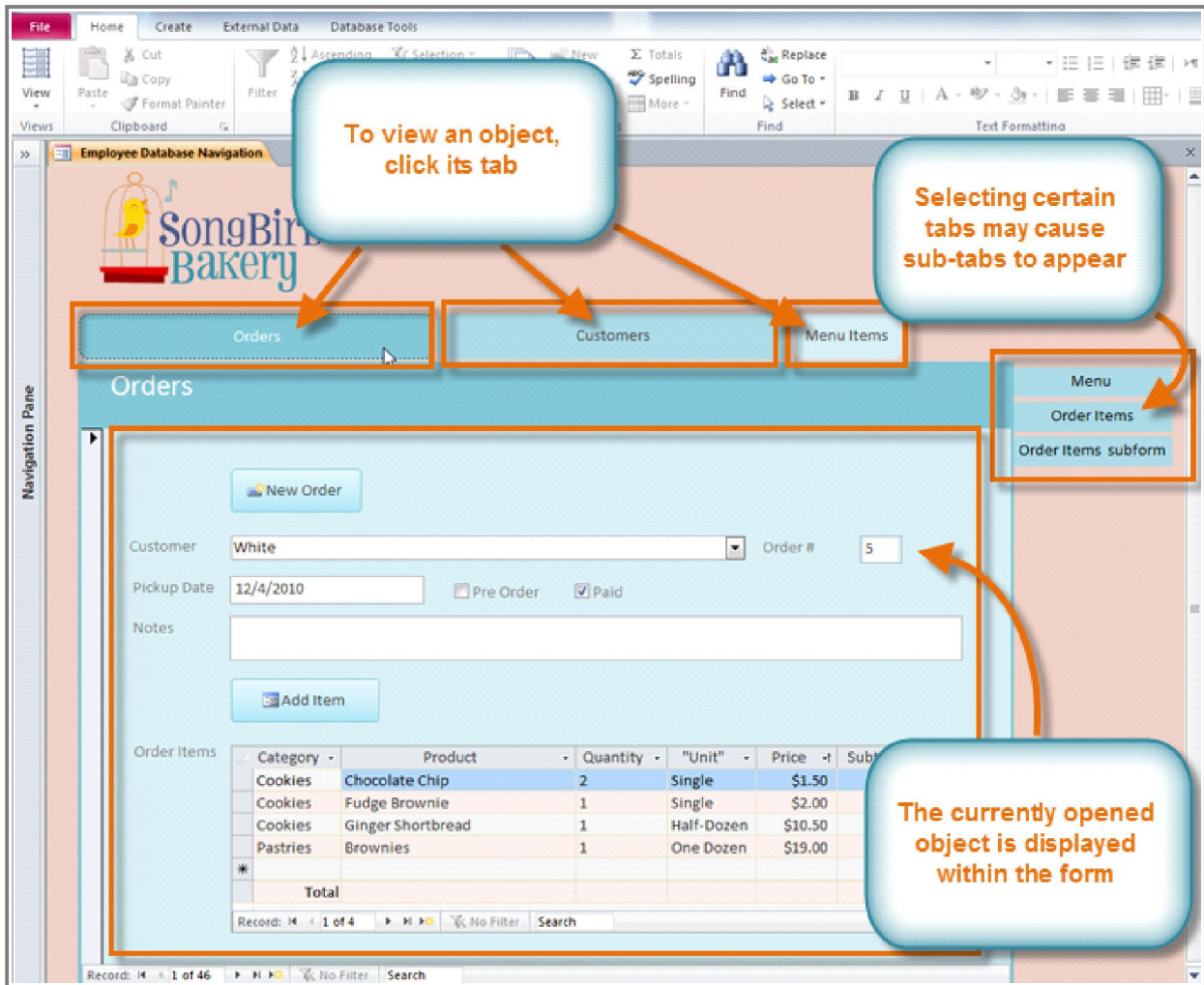


The Navigation Pane after minimizing the Tables, Queries, and Reports groups

Databases with Navigation Forms

Some databases include a **navigation form** that opens automatically when the database is opened. Navigation forms are designed as 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, simply click on 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.



Viewing the Orders form using a navigation form

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 around 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 you work 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.

Challenge!



1. Open **Access 2010** on your computer. Open an existing database. If you would like, you can use [our example](#).
2. Try **minimizing** and **maximizing** the Ribbon.
3. Click through all of the **tabs** and notice how the Ribbon options change.
4. **Resize** the **Navigation Pane** to make it take up less room.
5. **Re-sort** the objects in the **Navigation Pane**.