

FastCourse
Microsoft[®]
Access 2016
Level 1

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Berkeley, CA

FastCourse Microsoft Access 2016: Level 1

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EVALUATION ONLY

ACCESS 2016

Getting Started with Tables

In this chapter, you will be introduced to database concepts and work with tables, the starting point of all databases. Have you ever wondered how sportscasters come up with fun and interesting facts about teams and players in a flash? Have you been taken by surprise when a customer service agent suddenly begins to recite your name, address, and a detailed purchase history? In most cases, these people have access to a powerful database from which they obtain the information.

LEARNING OBJECTIVES

- Identify database objects and the functions they perform
- Identify table features
- Create database tables
- Identify and choose data types
- Sort and filter table records
- Import a data source
- Establish a relationship between two database tables

CHAPTER TIMING

- Concepts/Develop Your Skills: 2 hrs
- Self-Assessment: 15 mins
- Total: 2 hrs 15 mins

PROJECT: CREATING A DATABASE

Winchester Web Design is a small website development company. The company specializes in building websites for small businesses. You have been asked to build a database to help the company manage its employee, customer, and sales data. You'll get started by creating a database and building tables and table relationships.

Introducing Databases

It is likely that you routinely interact with databases. If you make an online purchase, your order information goes into a database. The database might be used to track your order status, product likes and reviews, past orders, or future promotions. If you post or like something on your Facebook account, that information is maintained in a database. If you search for or store a telephone number, that information is likely kept in a database. It is quite possible you have been using databases without even knowing it! Here, you will be introduced to what a database is and gain a better understanding of related terms, explore a sample database, and finally, create your own!

While there are many definitions of a database, you can think of a database as an organized collection of related data files or tables. For example, a company might organize its information by both customers (external to the business) and employees (internal to the business). While the data relate to the same business, the types of data provided for customers and employees will likely differ.



Databases are the epicenter of our digital world.

Types of Databases

Large organizations typically use large custom-designed databases specifically for that company or industry. When you make travel plans, you are using a database that is specific to the airline industry. It contains real-time data, meaning that if there is only one seat left on a plane, whoever selects and pays for the seat first gets the reservation. If you are a small business owner, you may use a database like Microsoft Access to track information about your customers, products, and employees. Access provides the tools needed to let small organizations create, use, and maintain databases.

Open and Save an Access Database

Each time you start Access, the Backstage view displays options for opening an existing file, creating a new blank database, or selecting from a number of pre-built templates. If you're creating a new database, Access will immediately prompt you to save the file in your desired storage location. You must save your file first because the database needs to constantly make updates to data as it is entered or edited.

DEVELOP YOUR SKILLS: A1-D1

In this exercise, you will open an existing Access database and save it with a new name.

Before You Begin: Be sure to visit the Learning Resource Center at labyrinthlab.com/lrc to retrieve the exercise files for this course before beginning this exercise.

1. Click **Start**.
2. Type **Ac** and then choose **Access 2016** from the list of suggestions.
3. Browse through the list of templates and then choose **Open Other Files** near the lower-left side of the window.
4. Click the **Browse** button, navigate to your **Access Chapter 1** folder, and double-click the **A1-D1-WinWebDesign** database file.
5. Click **Enable Content** if the Security Warning bar displays.
6. Choose **File**→**Save As**.
7. Click **Save As** to accept Access Database as the file type.
8. Add **Revised** to the end of the filename making it **A1-D1-WinWebDesignRevised** and click the **Save** button.
9. Click **Enable Content** when the Security Warning bar displays again.
10. Keep Access open, as you will continue to use the database to explore the Access environment.

Database Objects and the Access Window

The Access window includes the Ribbon, Navigation pane, and work area. A database object is a structure used to either store or retrieve data. The four Access objects are tables, queries, forms, and reports. The database objects are displayed in the Navigation pane on the left side of the window. The work area is where you create or modify database objects.


DATABASE OBJECT TYPES	
Access Object	What It Does
Table	Tables contain the database's data, and they let you enter, edit, delete, or view records in a row and column layout that is similar to that used in an Excel worksheet.
Form	Forms are used to view, edit, and add data one table record at a time.
Query	Queries are used to search for specific table records using criteria and to sort and perform calculations on the results.
Report	Reports are printable database objects that can display, group, and summarize data from tables and/or queries.














View the video "Working with Access Objects."

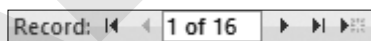
DEVELOP YOUR SKILLS: A1-D2





In this exercise, you will open and view the four Access object types.




1. Take a moment to explore the Access window noticing the various tables, queries, forms, and reports in the Navigation pane.
2. Double-click the **Customers** table in the Objects list of the Navigation pane to open it in the work area within Datasheet View.
3. Click in the **first empty Cust ID** cell at the bottom of the CustID column.
4. Type **AdamsA** and tap  to complete the entry and move the insertion point to the next field.

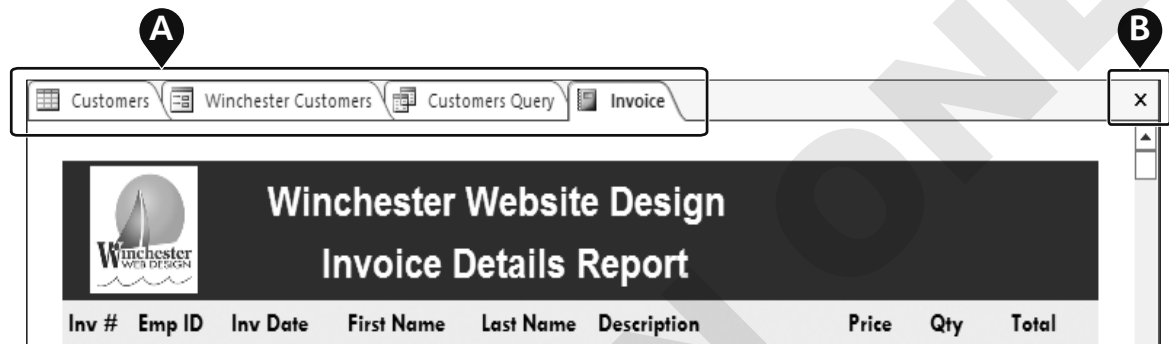
	ThibeauxP	Thibeaux	Pierre
	WinklerS	Winkler	Samuel
	AdamsA		
			

5. Type **Adams** in the Last Name field and tap .
6. Enter **Anthony** as the First Name, **23 Pine St** as the street address, and **Bradenton** as the city.
7. Click the **drop-down menu** button  in the ST field and choose **FL** from the list of states.
8. Complete the record as follows, making sure you tap  after entering the information.
 - ZIP: **34210**
 - Telephone: **(941) 555-3648**
 - Email: **AAdams@email.com**
 - Notes: **Call for delivery.**
9. Choose **Home**→**Views**→**View menu button**  and then choose **Design View** .
10. Click the **View menu** button  and choose **Datasheet View** .
11. Double-click **Customers Form** in the Forms section of the Navigation pane.
12. Locate the Record bar at the bottom of the form.



13. Click the **Next Record**  button to view the Anthony Adams record you just entered.
14. Click in the **Notes** box and add the phrase **after 10:00** to the end of the note (that is, "Call for Delivery after 10:00").
15. Click the **Next Record**  button again to complete the edit.
16. Double-click **Customers Query** in the Queries section of the Navigation pane.
17. Click the **View menu** button  on the Ribbon and choose **Design View** .

18. Choose **Design**→**Results**→**Run**  to run the query and display only the Bradenton results.
19. Double-click **Invoice Details Report** in the Reports section.
20. Switch to **Design View** .
21. Switch to **Report View** , which is great for viewing reports.
22. Follow these steps to explore the object tabs and to close an object:



- A** Switch between open objects using the tabs.
 - B** Click the **Close Object** button to close the objects one at a time.
23. Choose **File**→**Close** to close the database.

Introducing Tables

A table is the starting point for entering, finding, and reporting useful information located in your database. A database can have separate tables, each tracking different types of data. A business might use a table to keep track of customer billing or employee contact information.

Table Features

Data are meaningful units of information such as names, numbers, dates, and descriptions organized for reference or analysis. The data stored in the Winchester Web Design Group database might include customer first and last names, business names, telephone numbers, and other important information.

A field is the smallest meaningful unit of information about one person, place, or item. Individually, each field represents a piece of data. Together the fields provide information. In most databases fields are displayed in columns.

A record is a collection of related fields about a person, place, or item, such as a single customer or employee. A collection of related records makes up a table. In most databases records are displayed in rows.

Cust ID	Last Name	First Name	Street Address	City	ST	ZIP	Telephone
AndersM	Anders	Mark	205 Montana St	Bradenton	FL	34205	(941) 555-2309
DavisP	Davis	Peter	65 Terracotta Way	Sarasota	FL	34228	(941) 555-1792
JeffriesD	Jeffries	Daniel	102 South Fern St	Bradenton	FL	34209	(941) 555-6939
RobertsJ	Roberts	John	103 Pine Terrace	Sarasota	FL	34232	(941) 555-7820
SantosE	Santos	Emily	33 Fairview Lane	Bradenton	FL	34210	(941) 555-1029
SmithW	Smith	William	879 Fifteenth Ave	Bradenton	FL	34210	(941) 555-0793

First Name field and JeffriesD record in Customers table

Field Data Types

If you have ever filled out an online form, you might have seen instant formatting of some fields. When typing in currency values, the dollar sign and decimal point may appear automatically, and when entering a date, the slashes between month, day, and year spontaneously appear. This can be accomplished by assigning a data type to the field. A data type sets the characteristics of a particular field, identifying the type of values it may hold, such as alphanumeric text, or numbers, or dates, yes/no values, or even a hyperlink.

Primary Key Fields

Almost every database table should have a primary key field. A primary key is a unique identifier for each record in the table. Examples of fields that would make good primary keys are Social Security numbers, student IDs, or email addresses. Using a student ID as a primary key ensures that each student is uniquely identified in a student database table. Two students may have identical names, but they will never have identical student ID numbers.

☰ Design → Tools → Primary Key 

Creating a Table in a New Database


Instead of using a database that someone else has prepared, you can design your own using a blank database template in Access. Tables are the starting point for databases and this shows up when a new blank database is first created. The new table has a single primary key field as a starting point for the database.

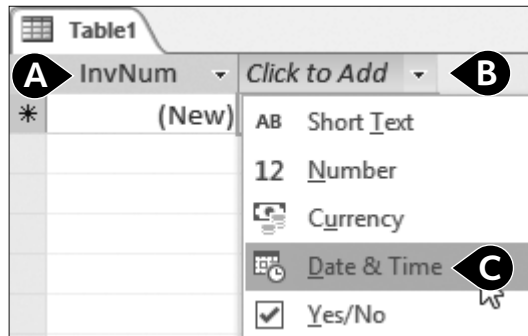
ID	Click to Add
*	(New)

The starting point in a blank database

DEVELOP YOUR SKILLS: A1-D3


In this exercise, you will create a new blank database and add an Invoices table in Datasheet View.

1. Choose **File**→**New**→**Blank Desktop Database**.
2. Click **Browse Folders**  and save the database in your **Access Chapter 1** folder as **A1-D3-Datasheet**.
3. Click the **Create** button, and a new table will appear.
4. Follow these steps to change the name of the ID field and set the data type for a second field:



- A** Double-click the **ID** field name and type **InvNum** as the new name. This will be the primary key field.
 - B** Tap **[Tab]** to go to the second column and, if necessary, choose **Click to Add** to display the data type list.
 - C** Choose **Date & Time**.
5. Replace *Field1* with the name **InvDate** and tap **[Tab]** to move to a new field.
6. Choose **Short Text** as the data type for the third field and change the field name to **EmpID**.
7. Tap **[Tab]**, choose **Short Text** for the fourth field data type, and change the field name to **CustID**.
8. Click in the **empty InvDate** field (you might have to click twice) and type **12/15/2016**.
9. Tap **[Tab]** and type **JFW** as the EmpID.
10. Tap **[Tab]** and type **SmithW** as the CustID.
11. Enter the data for these three additional records:

InvNum	InvDate	EmpID	CustID
1	12/15/2016	JFW	SmithW
2	12/2/2016	MJW	SantosE
3	1/1/2016	JMM	SantosE
4	11/30/2016	JMM	SmithW

12. Choose **File**→**Save** or click the **Save** button on the Quick Access toolbar and save the table with the name **Invoices**.
13. **Close**  the table, but leave the database open.

Creating Tables in Design View

You may find it easier to create a new table in Design View because it offers a straightforward layout and intuitive options for entering field names, setting data types, adding field descriptions, and setting field properties.

 **Create**→**Tables**→**Table** 

Field Properties

Each field data type has numerous properties that can be set to assist with data entry, formatting of displayed data, and other useful functions. Properties are set while working in Design View.

DEVELOP YOUR SKILLS: A1-D4

In this exercise, you will create a new table using Table Design View. Then, you will adjust the width of the table columns.








1. Choose **Create**→**Tables**→**Table Design** .
2. Type **CustID** in the Field Name box and tap **Tab**.
3. Tap **Tab** to accept *Short Text* as the Data Type.
4. Type **Customer Last Name and First Initial** in the Description field and tap **Tab**.
5. Click in the **CustID** field and choose **Design**→**Tools**→**Primary Key** .
6. Click in the empty box below the CustID field and complete the following fields as shown:

Table1			
	Field Name	Data Type	Description (Optional)
	CustID	Short Text	Customer Last Name and First Initial
	CustLastName	Short Text	
	CustFirstName	Short Text	
	CustStreetAddress	Short Text	
	CustCity	Short Text	
	CustState	Short Text	2 character state abbreviation
	CustZip	Short Text	5 digit ZIP code
	CustPhone	Short Text	Area code and number
	CustEmail	Hyperlink	
	Notes	Long Text	Special comments

7. Click anywhere in the **CustLastName** field, and the Field Properties for that field will display at the bottom of the window.
8. Change the Field Size property to **25** and enter **Last Name** as the Caption property.
9. Change the Field Size and Caption properties for the remaining fields as follows:

Field Name	Field Size	Caption
CustFirstName	25	First Name
CustStreetAddress	25	Street
CustCity	15	City
CustState	2	State
CustZIP	5	ZIP
CustPhone	15	Telephone
CustEmail		Email

10. Choose **File**→**Save** or click the **Save**  button on the Quick Access toolbar and save the table as **Customers**.
11. Click anywhere in the **CustPhone** field and then click in the **Input Mask** property box.
12. Click the **Input Mask**  button on the right side of the property box to display the Input Mask Wizard.
13. Click **Finish** to complete the input mask and apply it to the CustPhone field.
14. Click the **View menu** button , choose **Datasheet View** , and choose **Yes** when asked if you want to save the table.
15. Enter the following records.

CustID	Last Name	First Name	Street	City	State	ZIP	Telephone	Email	Notes
AndersM	Anders	Mark	205 Pine St	Bradenton	FL	34211	(941) 555-2309	MAnders@email.com	
DavisP	Davis	Peter	65 Maple St	Sarasota	FL	34228	(941) 555-1792	PDavis@email.com	
JeffriesD	Jeffries	Daniel	102 Fern St	Bradenton	FL	34209	(941) 555-6939	DannyJ@email.com	

16. Choose **File**→**Close** to close the database.

Sorting Table Data


The primary purpose of any database is to locate and retrieve data quickly and efficiently. Sorting table records can help accomplish this goal.

When a table is created the records are automatically sorted using the primary key field. This can be changed by applying an ascending or descending sort to other table fields. You can even sort on more than one field so customers could be sorted by last name and then by first name.

 Home→Sort & Filter→Ascending  or Descending 



DEVELOP YOUR SKILLS: A1-D5

In this exercise, you will sort and filter records in a database for a medical clinic named Raritan Clinic East.

1. Open **A1-D5-RCE** from your **Access Chapter 1** folder and save it as **A1-D5-RCERevised**.
2. Double-click the **Patients** table in the Navigation pane to open it in **Datasheet View**.
3. Click on any name in the Last Name column, and then click the **Ascending**  button.
4. Choose **File**→**Close** to close the database.


Importing Data Sources

Organizations frequently have data in text files, Excel worksheets, and other formats that needs to be imported into a database. It's easy to import data into Access using the Import & Link tools. Data is imported into tables that become part of the database. Excel workbooks are the most common source of imported data.

 External Data→Import & Link→Excel 

DEVELOP YOUR SKILLS: A1-D6

In this exercise, you will import an Excel worksheet into a new table.

1. Open **A1-D6-WinWebDesign** from your **Access Chapter 1** folder and save it as **A1-D6-WinWebDesignRevised**.
2. Click the **External Data** Ribbon tab and notice the available Import & Link options.
3. Choose **Excel**  and take a moment to examine the options in the first screen of the Get External Data Wizard.
4. Click the **Browse** button and navigate to your **Access Chapter 1** folder, choose **A1-D6-WebContacts**, and click **Open**.
5. Click **OK** to start the import and display the second Wizard screen.
6. Check the **First Row Contains Column Headings** box and click **Next** to specify the Excel column headings as the field names in the new table.
7. Click in the Email column and click the **Data Type menu** button ▼.
8. Choose **Hyperlink** and click **Next**.
9. Click **Next** again to let Access add a primary key field with autonumbering.
10. Name the table **Web Contacts** and click **Finish**.
11. Choose **Close** on the final Wizard screen without checking the Save Import Steps box.
12. Double-click the **Web Contacts** table to open it in Datasheet View.

13. Adjust the column widths to fit the widest entries in each column by either dragging the column head borders or autofitting the columns by double-clicking between two column heads.
 14. Save the database and save changes to the table if prompted to do so.
-

Relational Databases

Early database programs stored data in one large, flat file similar to a worksheet. If a sales person sold merchandise and the same product was sold many times, these databases required the sales person to enter the same product description and price for every transaction. Such repetitive data entry is time consuming and bound to cause data errors and inconsistencies.

Relational databases like Access link tables together using primary key fields. A good example is linking a Sales Person table with a Sales Invoices table. One sales person might be linked to hundreds of sales invoices for which they receive commissions. Once a relationship between the Sales Person and Sales Invoices tables is created, all that's needed to associate an invoice with a sales person is to choose the correct sales person when creating the invoice. This type of relationship is called a one-to-many relationship because one sales person is responsible for many invoices. The other types of database relationships are one-to-one and many-to-many, although they are not frequently used.

☰ Database Tools → Relationships → Relationships 

Referential Integrity



Referential integrity is an option that can be chosen when creating a relationship between tables. It is a set of rules that prevents changes from being made to fields or records that are related to other fields or records. For example, if referential integrity were in effect, then a salesperson could not be removed from a database that has invoices assigned to that sales person. Referential integrity would require all of the invoices either be removed (not a good idea) or associated with a different sales person before the original sales person's record could be deleted. Referential integrity also requires the data types of related fields to be the same or compatible.

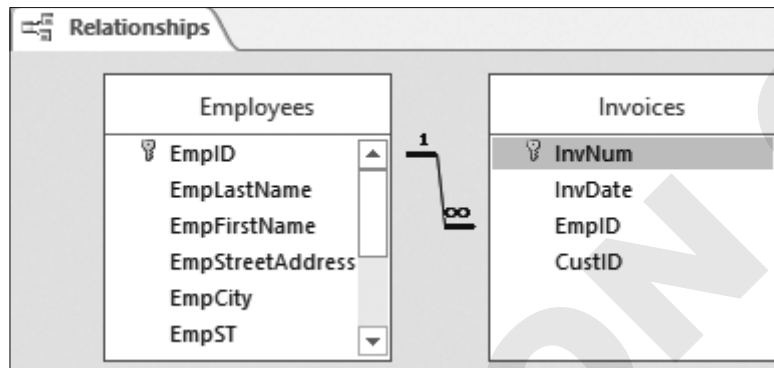
Data Normalization


A properly designed database organizes tables and fields into their smallest usable units and then links them together using relationships. This is known as normalization. Normalization eliminates data duplication, decreases data entry errors and inconsistencies, reduces file size, and streamlines the search for necessary information. An example of reducing fields to their smallest usable units would be to use separate fields for first name and last name rather than a single name field. If a single name field were used, then the database could never be searched or sorted by just last name or first name.

DEVELOP YOUR SKILLS: A1-D7

In this exercise, you will open the Relationships window, add tables, create a one-to-many relationship between the Invoices table and the Employees table, and set referential integrity for the relationship.

1. If necessary, open the **A1-D6-WinWebDesignRevised** database.
2. Choose **Database Tools**→**Relationships**→**Relationships** .
3. Click the **Show Table**  button.
4. Add the **Employees** and **Invoices** tables to the Relationship window and close the Show Table box.



5. Click the **Close**  button above the relationship and choose **Yes** to save the relationship.
6. Choose **File**→**Close** to close the database and then close Access.

Self-Assessment

Check your knowledge of this chapter's key concepts and skills by completing the Self-Assessment. The answers to these questions can be found at the back of this book.

1. Zara should use a form to display one record at a time on her screen. True False
2. A primary key uniquely identifies each record in a table. True False
3. A filter is used to arrange records in either ascending or descending order. True False
4. Excel worksheets can be imported into an Access database as new tables. True False
5. Referential integrity is a set of rules that prevents changes from being made to records that are related to other records. True False
6. Which database object is used for storing data?
 - A. Form
 - B. Query
 - C. Report
 - D. Table
7. Which database object should be used to locate all customers who live in Springfield, Illinois, and to then sort the results in order by zip code?
 - A. Form
 - B. Query
 - C. Report
 - D. Table
8. Which table feature is shown within the Emp ID column?

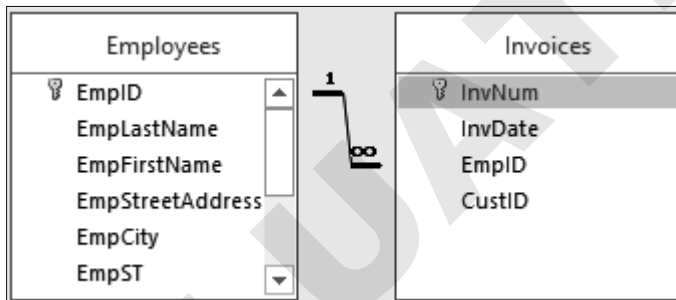
Invoices				
	InvNum	Invoice Date	Emp ID	Cust ID
+	1	3 /15/2012	JFW	SmithW
+	2	4 /2 /2012	MJW	SantosE
+	3	5 /11/2012	JMM	SantosE
+	4	5 /30/2012	JMM	SmithW

- A. Field
 - B. Record
 - C. Relationship
 - D. Primary key
9. Which database object is best for viewing and editing one record at a time?
 - A. Table
 - B. Form
 - C. Query
 - D. Report

(continued)

10. What are short text, hyperlink, and numeric examples of?
- Primary keys
 - Records
 - Queries
 - Data types
11. Which feature is used to alphabetize a list of customers?
- Filter
 - Form
 - Property Sheet
 - Sort
12. An Access relationship occurs between which of the following?
- Tables
 - Forms
 - Queries
 - Reports
13. Breaking the field Name into two smaller fields, Firstname and Lastname, is part of which process?
- Referential integrity
 - Establishing a relationship
 - Data normalization
 - None of these options

14. Which field is the primary key in the following relationship?



- EmpID in the Employees table
 - EmpID in the Invoices table
 - EmpID in both tables
 - There is no foreign key in this relationship
15. The names, addresses, and phone numbers for 5,000 customers are stored in a database as which of the following?
- 5,000 fields
 - 5,000 records
 - 5,000 tables
 - A single object

ACCESS 2016

Working with Forms

In this chapter, you will create and use forms. If you have ever entered your personal information on a college application, filled out a loan application, or purchased an item from an online retailer, you have used a form. You also use forms to sign up for Facebook, Flickr, and Gmail accounts. A form ideally provides an attractive and easy-to-use interface, which allows a user to focus on one table record at a time.

LEARNING OBJECTIVES

- Create basic forms
- Create forms using the Forms Wizard
- Modify forms using Layout View
- Modify forms using Design View
- Set properties for form sections and form controls
- Set the tab order of a form

CHAPTER TIMING

- Concepts/Develop Your Skills: 2 hrs
- Self-Assessment: 15 mins
- Total: 2 hrs 15 mins

PROJECT: DESIGNING FORMS AT WINCHESTER WEB DESIGN

As the information technology (IT) director at Winchester Web Design, you are responsible for designing and formatting the forms and reports in the company database to make them more attractive, consistent, and user friendly. Part of your job is to customize forms so they better identify the company. To accomplish this, you plan to create a consistent color scheme and add the corporate name and logo to all the company's forms.

Creating Forms

A form is a database object used to enter, edit, or view the data for individual table records. Forms are a nice alternative to the row and column arrangement of table Datasheet View. Being able to view and focus on a single record can help ensure data accuracy.

Record Sources

Forms display data from a record source, which is typically a single table or query. However, if a relationship exists between two or more tables, fields from all related tables can be displayed on the same form. An example is an Invoice form that displays data from the Invoice, Products, Customers, and Employee tables.

ProdID	Description	Price	Qty	Line Total
01HP	Home Page, Nav, CSS, Design	\$400.00	4	\$1,600.00
02SP	Secondary Page	\$200.00	1	\$200.00
05IM	Image, Custom Designed	\$40.00	2	\$80.00

A form with fields from the Invoice, Products, Customers, and Employee tables




Creating and Using Basic Forms

Use the Form button to instantly create a basic form for a selected table or query. This is the easiest way to create a form using all fields from the table or query. Only one table or query can be used in a basic form.



☰ Create → Forms → Form 

DEVELOP YOUR SKILLS: A2-D1

In this exercise, you will create a basic form and edit a record using the form.



1. Open **A2-D1-WinWebDesign** from your **Access Chapter 2** folder and save it as **A2-D1-WinWebDesignRevised**.
2. Choose the **Employee Spouses** table in the Navigation pane by clicking the table name (don't double-click).
3. Choose **Create**→**Forms**→**Form** .
4. Close any boxes that may be open, such as the Property Sheet or Field List box.
5. Click the **View menu** button  and choose **Form View** .
6. Use the navigation controls at the bottom of the form to browse the records from the underlying table.



7. Navigate to record 2 (the Tom Franklin record) and change the last four digits of the phone number to **6767**.
8. Choose **File**→**Save** or click the **Save**  button on the Quick Access toolbar and save the form as **Employee Spouses**.
9. Click the **Close**  button on the right side of the form.



Creating Forms with the Form Wizard

The Form Wizard is a great way to get started with the creation of most forms. It lets you choose the fields you want from one or more tables or queries (the data source) and then builds a form from the chosen fields. The form can then easily be modified using Layout View or Design View.

 **Create**→**Forms**→**Form Wizard** 

DEVELOP YOUR SKILLS: A2-D2

In this exercise, you will use the Form Wizard to create a form.

1. If necessary, open the **A2-D1-WinWebDesignRevised** database.
2. Choose the **Customers** table in the Navigation pane.
3. Choose **Create**→**Forms**→**Form Wizard** .
4. Click the **Add All Fields**  button and click **Next**.
5. Click **Next** again to accept the Columnar layout format.
6. Leave the form name as *Customers* and click **Finish**.

Changing Forms in Layout View

A typical form has a header section where tiles, logos, and decorative elements are displayed and a detail section with text boxes and labels where data is displayed. These objects can easily be sized, moved, edited, and removed in Layout View. Multiple objects can be changed together by holding the **[Ctrl]** key while selecting them with single mouse clicks.



View the video “Reorganizing Forms in Layout View.”

☰ Home → Views → Layout View

DEVELOP YOUR SKILLS: A2-D3

In this exercise, you will size, position, and edit controls, and you’ll get extensive practice selecting multiple controls.

1. If necessary, open the **A2-D1-WinWebDesignRevised** database and open the **Customers** form.
2. Click the **View menu** button ▼ and choose **Layout View** .
3. Click on the **Street Address** label to select it.
4. Click inside the selected label just to the right of *Address*.
5. Use the **[Backspace]** key and any other keys as necessary to remove the word *Address*.
6. Change the *ST* label to **State**.
7. Change the *ZIP* label to **Zip**.
8. Click on the large, empty **Notes** text box (not the label) to select it.
9. Hover the mouse pointer over the right edge until the adjust pointer appears.
10. Drag left, reducing the box width to equal the Email text box width.

11. Reduce the width of the State text box so it is slightly wider than the two-character state abbreviation.

12. Click the large **Notes** text box.
13. Press and hold **[Ctrl]** and click the **Email** text box.

14. Press and hold **Ctrl** while you select all other text boxes in the column.
15. Tap the **left arrow** **←** key repeatedly to move the text boxes closer to the labels.

Customers	
Cust ID	AndersM
Last Name	Anders
First Name	Mark
Street	205 Montana St
City	Bradenton
State	FL
Zip	34211
Telephone	(941) 555-2309
Email	AndersM@email.com
Notes	

16. Click an empty part of the form to deselect all boxes.
17. Use the mouse and **Ctrl** key to select the **Telephone**, **Email**, and **Notes** labels and text boxes.
18. Use the keyboard or drag with your mouse (when the four-headed arrow appears) to move the labels and text boxes up and right as shown here.


Customers			
Cust ID	AndersM	Telephone	(941) 555-2309
Last Name	Anders	Email	AndersM@email.com
First Name	Mark	Notes	
Street	205 Montana St		
City	Bradenton		
State	FL		
Zip	34211		

19. Make any additional adjustments to the controls you deem necessary.
20. Choose **File**→**Save** or click the **Save**  button on the Quick Access toolbar to save the changes to the form.

Changing Forms in Design View

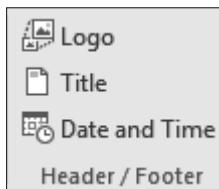
Form Layout View is a great tool for editing, sizing, and rearranging labels and text boxes, but there are many form design details that can be more precisely set using Design View. In Design View you can precisely control any part of a form and its controls. The Property Sheet is used in both Layout View and Design View to specify the details for any form object.

☰ Design→Views→Design View 

☰ Design→Tools→Property Sheet 




Modify the Form Header Section

The Form Header and Footer appear at the top and bottom of the form. The Form Header typically has one or more titles and often a logo and decorative features. Form Footers are rarely used. The Form Header can be modified in either Layout View or Design View.







DEVELOP YOUR SKILLS: A2-D4

In this exercise, you will format the Form Header and field labels and insert a logo to make the form look more professional.

1. If necessary, open the **A2-D1-WinWebDesignRevised** database and open the **Customers** form.
2. Choose **Design→Views→Design View** .
3. Click inside the **Customers** title box in the Form Header and change the title to **Winchester Customers**.
4. Choose **Design→Tools→Property Sheet** .
5. Click in the **Width** box in the Property Sheet and set the Width to **5.5**.
6. Click in the **Left** box and set the Left position to **1.5**.
7. Set the Font Size to **30** and the Font Name to **Lucida Calligraphy**.
8. Choose **Home→Text Formatting→Font Color**  menu button ▼ and choose a blue color of your choice.

- Click the **Cust ID** label (not the text box) in the Detail section and notice the name *CustID_Label* appears at the top of the Property Sheet.



- Press and hold the **Ctrl** key and click all labels in the Detail section to select them all.
- Apply the same blue font color that you just applied to the title.
- Choose **Design**→**Header/Footer**→**Logo** .
- Navigate to your **Access Chapter 2** folder, choose **WWD-Logo.bmp**, and click **OK**.
- Set both the Width and Height properties to **0.8**.
- Switch to **Form View**  to see the changes.
- Switch to **Design View** .
- Click the **Form Header** section bar and view the Property Sheet.
- Click the **Detail** section bar and examine its properties.
- Click the **Selection Type menu** button  in the Property Sheet, scroll through the list, and choose **Form**.




Tab Order

The most effective way to enter a record using a form is to tap the **Tab** key to move from one field to the next. Forms have a tab order that determines which field the insertion point moves to each time the **Tab** key is tapped. The tab order can be changed to allow fields to be entered in a different sequence. This may be necessary if fields are rearranged on a form and when fields from more than one table appear on the same form.

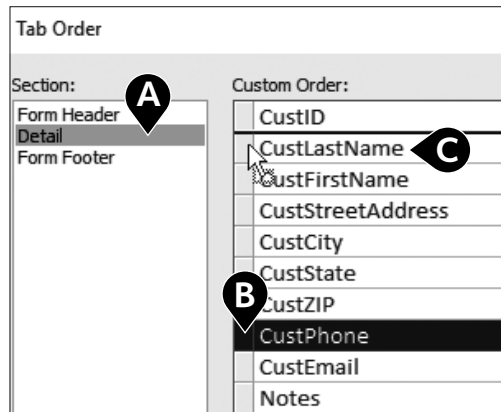
 **Design**→**Tools**→**Tab Order** 



DEVELOP YOUR SKILLS: A2-D5

In this exercise, you will change the form tab order to make the telephone number the second field in the tab order.

- Switch to **Form View** .
- Use the **Tab** key to cycle through the fields.
- Switch to **Design View** .
- Choose **Design**→**Tools**→**Tab Order** .

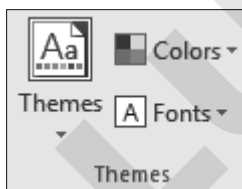
5. Follow these steps to adjust the tab order:





- A** Choose **Detail** to see the current tab order for fields in the Detail section.
 - B** Click the small selection box next to the CustPhone field.
 - C** Drag the **CustPhone** selection box up and drop it above the CustLastName field. CustPhone should now be second in the tab order.
6. Click **OK** to complete the tab order change.
7. Switch to **Form View**  and tap **Tab**  repeatedly to cycle through the fields.

Themes


Themes are prepackaged groups of design elements such as background colors, font families, font sizes, and other properties. When themes are applied, they impact all objects in the database (tables, forms, queries, and reports). The Themes group on the Ribbon lets you change just the colors or fonts, or the overall design including both the colors and fonts.



 Design → Themes → Themes 

DEVELOP YOUR SKILLS: A2-D6

In this exercise, you will apply a theme to your form.

1. Switch to **Design View** and choose **Design** → **Themes** → **Themes** .
2. Hover over each theme's thumbnail and notice how the form changes.
3. Choose your favorite **theme** and then switch to **Form View** to see how your finished form looks with the new theme.

4. If desired, switch back to **Design View** and choose a different **theme** or switch to **Layout View** to change the position and size of controls on your form.
 5. Close your form, saving the changes, if prompted to do so.
-

Creating Other Types of Forms

A typical large organization will have a need for many types of forms. Different departments within an organization may need to access the same database tables but may need to view different fields from within those tables. A good example would be the difference between what a customer service representative and a sales person might need. They will both have a need to access customer information, but the sales person will also want to see sales history, sales opportunities, and other information that a customer service representative won't need. Large organizations typically have an extensive collection of forms designed to make their staff highly efficient.

Creating Multiple Item Forms



Most forms are designed to let the user focus on one record at a time. Sometimes, however, it is necessary to print multiple items in a table using a layout that is more appropriate for printing and distributing than a table datasheet. The multiple item form is used for those occasions.

Multiple item forms resemble datasheets because data appears in rows and columns. However, multiple item forms can be customized to enhance the appearance of the form using colors, graphics, and other design elements.

☰ Create → Forms → More Forms → Multiple Items 

DEVELOP YOUR SKILLS: A2-D7

In this exercise, you will create a multiple item form.

1. If necessary, open the **A2-D1-WinWebDesignRevised** database.
2. Choose the **Customers** table in the Navigation pane.
3. Choose **Create → Forms → More Forms → Multiple Items** .
4. Choose **Design → Themes → Themes**  and choose a theme that has text sizes and formatting you like.
5. If necessary, click on any of the customer IDs in the CustID column to select all cells in that column.
6. Drag the right border of the selected cells to the left, reducing the column width.
7. Reduce all column widths to see if you can get the form to fit on your screen.


- Click the **Forms** icon in the form header next to the Customers title and tap **Delete** to remove it.



- Close the form and save it as **CustomersMultiItem**.
-


Creating Split Forms

A split form simultaneously shows a table in Datasheet View and a form displaying a single record from the table. The views are synchronized so that a selected record in one view is also selected in the other view.

☰ Create → Forms → More Forms → Split Form 



DEVELOP YOUR SKILLS: A2-D8

In this exercise, you will create a split form.

- Choose the **Customers** table in the Navigation pane.
 - Choose **Create** → **Forms** → **More Forms** → **Split Form** .
 - The form is displayed in Layout View, so adjust the field widths in the form and the datasheet as needed.
 - Remove the Forms icon that is next to the Customers heading.
 - Choose **File** → **Close** to close the database and save the form as **CustomersSplitForm**.
-

Self-Assessment

Check your knowledge of this chapter's key concepts and skills by completing the Self-Assessment. The answers to these questions can be found at the back of this book.

1. Layout View can be used to change the position and size of objects on a database form. True False
2. Forms can display data from either tables or queries. True False
3. Text boxes are typically positioned in the Form Header. True False
4. Only one table or query can be chosen in the Form Wizard. True False
5. Themes impact all objects in a database. True False
6. The Form  tool can be used to build a form with more than one table or query. True False
7. The Form Wizard  can be used to build a form with more than one table or query. True False
8. The Property Sheet can be used to adjust the size of individual form controls. True False
9. Forms have a tab order that determines which field the insertion point moves to each time the **Tab** key is tapped. True False
10. Only Design View can be used to rearrange controls on a form. True False
11. In which section of a form are a title and logo typically displayed?
 - A. Form Header
 - B. Detail
 - C. Form Footer
12. Which form view allows you to set precise controls for any part of a form?
 - A. Layout
 - B. Design
 - C. Form
13. Which type of form lets you view a single record in a typical form layout while simultaneously viewing the datasheet?
 - A. Basic
 - B. Multiple item
 - C. Split
 - D. None of these options
14. Which keystroke can be used to select multiple fields in Form Layout and Design Views?
 - A. **Enter**
 - B. **F10**
 - C. **Alt**
 - D. **Ctrl**
15. Which type of form resembles a datasheet?
 - A. Basic
 - B. Multiple item
 - C. Split
 - D. None of these options

EVALUATION ONLY

ACCESS 2016

Querying a Database

One of the main goals of a database is to organize data so that information can be located and retrieved quickly. People in all types of businesses retrieve stored data and information daily, often at a moment's notice. In this chapter, you will search information that is stored in tables in a relational database and extract records that meet specific criteria using a query, a database object used to locate records based on the conditions you set.

LEARNING OBJECTIVES

- Create, save, and run select queries
- Create select queries using multiple tables
- Use simple query criteria
- Use AND and OR criteria in queries
- Use wildcard characters in query criteria
- Sort query results
- Create and format a calculated field

CHAPTER TIMING

- Concepts/Develop Your Skills: 2 hrs 45 mins
- Self-Assessment: 15 mins
- Total: 3 hrs

PROJECT: USING QUERIES TO GET ANSWERS


You have been asked to query the Winchester Web Design database and compile two separate customer lists. The lists will be used to notify all past clients of updates to their website contact forms. The first list will include only the first and last name of the clients and their email address. The second list will include the first and last name of the clients and their mailing addresses, sorted by ZIP code. Additionally, you have been asked to build queries that instantly calculate the total income from all the Winchester Web Design services, and from specific areas such as blogs or shopping carts.

Select Queries

A select query allows you to select records from one or more database tables based on criteria that you set. A select query asks a question, such as, *What are the customer addresses?* or *How much money did the company make last month?* The answer to the question is a set of records. A select query is basically a database inquiry that selects only the records you want to see or edit. The easiest way to create a query is with the Query Wizard.


Query Features

- A query functions like a saved question you ask a database.
- A query produces a subset of data from one or more tables.
- When you edit data in query results, you are actually editing the data stored in the source tables.
- Queries are dynamic objects that display up-to-date data from tables.
- Queries can be used to create forms and reports with fields drawn from multiple tables.

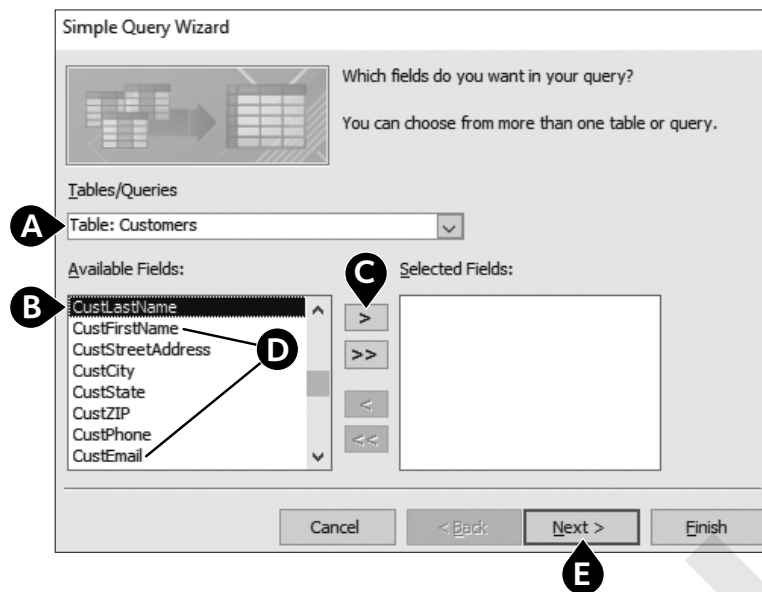
☰ Create → Queries → Query Wizard 

DEVELOP YOUR SKILLS: A3-D1

In this exercise, you will use the Query Wizard to create a select query that generates a customer email list.

1. Open **A3-D1-WinWebDesign** from your **Access Chapter 3** folder and save it as **A3-D1-WinWebDesignRevised**.
2. Choose **Create → Queries → Query Wizard** .
3. Click **OK** to accept the Simple Query Wizard.

4. Follow these steps to build the query:



- A** Make sure the **Customers** table is chosen in the Tables/Queries list. When building a query, you can use multiple tables and even existing queries.
- B** Choose the **CustLastName** field from the Available Fields list.
- C** Click the **Add**

5. Type **Customers Email List** as the query title.

6. Make sure the **Open the Query to View Information** option is chosen and click the **Finish** button.

Last Name	First Name	Email
Abrams	John	JPAbrams@email.com
Anders	Mark	AndersM@email.com
Blaser	Helen	BlasingHel@email.com
Davis	Peter	DavisAngie@email.com

7. Click the **Close** button to the right of the *Customers Email List* tab to close the query.

Creating a Select Query Using Query Design View

Some queries display just a few fields but report on every single record in the table. That may not be a problem for a small table, but when thousands of records and multiple tables are involved, it is often necessary to choose only specific records by setting precise criteria. Using Query Design View, Access allows you to:

- Select fields from multiple tables
- Locate records using criteria from one or more fields
- Perform calculations
- Sort query results and show or hide fields in query results



View the video “Create a Multi-Table Select Query.”

☰ Create → Queries → Query Design

DEVELOP YOUR SKILLS: A3-D2

You have already created an email list for the Winchester Web Design customers and now need one for the company's employees. In this exercise, you will create a query to select fields from the Employees table in the Winchester Web Design database and then rearrange the columns in the query grid.


1. Choose **Create** → **Queries** → **Query Design** to display the query design grid.
2. Choose the **Employees** table and click the **Add** button.
3. Close the Show Table box and close the Property Sheet box if it is open.
4. Double-click the **EmpFirstName** field in the **Employees** table to add it to the grid.
5. Now add the **EmpLastName**, **EmpPhone**, and **EmpEmail** fields to the grid by either double-clicking or dragging them.

Field:	EmpFirstName	EmpLastName	EmpPhone	EmpEmail
Table:	Employees	Employees	Employees	Employees
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:				
or:				

6. Choose **File** → **Save** or click the **Save** button on the Quick Access toolbar.
7. Type **Employee Contact Info** as the query name and click **OK**.
8. Click the **Run** button.
9. Choose **Home** → **Views** → **Design View** to switch to Design View.

10. Follow these steps to rearrange the EmpFirstName and EmpLastName fields:

Field:	EmpFirstName	EmpLastName	EmpPhone	EmpEmail
Table:	Employees	Employees	Employees	Employees
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:				
or:				

- Click the **EmpLastName** column heading to select the column. The mouse pointer will change to a white arrow, indicating you can now move the column.
 - Drag the **EmpLastName** column to the left of the EmpFirstName column until the thick vertical bar is positioned as shown here.
 - Release the mouse button to complete the rearrangement.
11. Run  the query.
12. Close the query and save the changes.

Designing a Query Using Multiple Tables

Until now, the datasheets you have worked with have displayed data from only one table. There will be times when you need to view data contained in different tables within the same database. Queries allow you to do this.

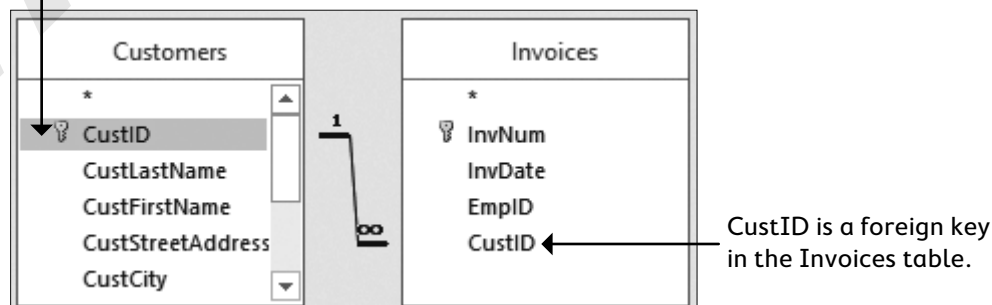
Choosing Fields to Include in a Query

When you build a query, you select only those tables and fields that you want to display in the query results datasheet and leave out those fields that have no impact on the data you want to view or that are confidential. By specifying only certain tables and fields in a database and displaying only the desired fields in a query, you can create a report or a form that only presents pertinent data.

Selecting a Field That Appears in Multiple Tables


Multiple tables are only effective in a query if the tables are related. Sometimes the same ID field occurs as a primary key in one table and as a foreign (or secondary) key in another table. If this occurs, always use the table with the primary key in your query.

Use the Customers table in the query because CustID is the primary key.



DEVELOP YOUR SKILLS: A3-D3


In this exercise, you will create a multitable query to track the Winchester Web Design invoices by invoice number using Query Design view.

1. Choose **Create**→**Queries**→**Query Design**  to display the query design grid.
2. Double-click the **Invoices**, **Invoice Details**, and **Products** tables to add them to the query.
3. Close the Show Table box.
4. Double-click the **InvNum**, **InvDate**, and **EmpID** fields in the Invoices table to add those fields to the query grid.
5. Add the **ProdDescription** and **Price** fields from the **Products** table.
6. Add the **Qty** field from the **Invoice Details** table.

Field:	InvNum	InvDate	EmpID	ProdDescription	Price	Qty
Table:	Invoices	Invoices	Invoices	Products	Products	Invoice Details
Sort:						
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:						
or:						

7. Click the **Sort** box for the InvNum field, click the menu button ▼, and choose **Ascending**.

Field:	InvNum	InvDate
Table:	Invoices	Invoices
Sort:	Ascending	
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:		
or:		

8. Save the database and save the query as **InvoicesList** and click **OK**.
9. Choose **Design**→**Results**→**Run**  to run the query.

Using Criteria in Queries

Queries let you specify criteria, which are conditions that field values must meet. Only records meeting the criteria are returned when the query is run.

Field:	InvNum	InvDate	EmpID	ProdDescription	Price	Qty
Table:	Invoices	Invoices	Invoices	Products	Products	Invoice Details
Sort:	Ascending					
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			"JFW"			
or:						

In this query, the EmpID criteria is set to JFW.

InvNum	Invoice Date	Emp ID	Description	Price	Qty
1	3 /15/2012	JFW	Secondary Page	\$200.00	6
1	3 /15/2012	JFW	Image, Custom Designed	\$40.00	11
1	3 /15/2012	JFW	Home Page, Nav, CSS, Design	\$400.00	1
5	6 /19/2012	JFW	Image, Custom Designed	\$40.00	9

Only records where EmpID is JFW are returned.

Criteria are commonly used with text, numeric, currency, and date fields. The following table provides a few examples of how criteria are used.


TYPES OF CRITERIA		
Field Type	Criteria	Examples of How Records Are Returned
Text	Smith	Last name is Smith
	> =Smith	Last names are from Smith through the end of the alphabet
	Not Smith	Last name is not Smith
Numeric & Currency	> 123	Numeric value is greater than 123
	> =123	Numeric value is greater than or equal to 123
Date	Date()	Date is today's date
	< Date() – 30	The Date field is 30 days or more prior to today's date




View the video "Create a Query with Criteria."

DEVELOP YOUR SKILLS: A3-D4

In this exercise, you will add criteria to the query grid and run the query.

1. If necessary, open the **InvoicesList** query and switch to **Design View** .
2. Click the **Criteria** box for the EmpID field, type **JFW**, and tap **[Enter]**. Access will apply quotation marks indicating this is a literal value.

Field:	InvNum	InvDate	EmpID
Table:	Invoices	Invoices	Invoices
Sort:	Ascending		
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			"JFW"
or:			

3. Choose **Design**→**Results**→**Run**  to run the query.
4. Close the query and choose **No** when prompted to save the changes.

Wildcard Characters

Wildcard characters are used to locate records that have similar but not identical data. They help you locate records that match a pattern. For example, you might want to find all customers with last names that begin with the letter *B* or all products that begin with the word *Blog*.

WILDCARD CHARACTERS	
Common Wildcard Symbols	How They Are Used
Asterisk (*)	Substitutes for a group of characters that appear at the position of the asterisk Example: <i>R*</i> in the last name field will locate all last names beginning with <i>R</i> regardless of how many characters make up the name. In this case, <i>Rogers</i> , <i>Rich</i> , and <i>Rodriguez</i> would all appear in the results datasheet.
Question mark (?)	Substitutes for a single character that might appear at the position of the question mark Example: <i>m?s</i> will locate records containing values such as <i>mrs</i> , <i>ms</i> , and <i>mbs</i> .
Open/close brackets []	Matches text or individual characters placed within the brackets individually Example: <i>ca[rt]</i> will find <i>cat</i> and <i>car</i> but not <i>cab</i> or <i>cad</i> .

AND and OR Criteria

In some cases, you may need to locate records that meet multiple criteria. This can be done using AND and OR conditions. For example, you may want to locate all records where the employee is web certified AND lives in Sarasota. Or you may want to locate all employees who live in Sarasota OR Bradenton.

Field:	CustID	CustFirstName	CustLastName	CustCity
Table:	Customers	Customers	Customers	Customers
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:				"Sarasota"
or:				"Bradenton"

Create an OR condition by adding a second criterion to the Or row of a field.

Field:	InvNum	InvDate	ProdDescription	Price	Qty
Table:	Invoices	Invoices	Products	Products	Invoice Details
Sort:	Ascending				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			"Image"		> 10

Create an AND condition by adding another criterion to a different field on the Criteria row.

DEVELOP YOUR SKILLS: A3-D5

In this exercise, you will use wildcards to locate variable data and set multiple criteria in a query to find out which customers have gotten blogs and which customers have added more than ten images at a time to their websites.

1. Open the **Invoices Query** query in **Design View**.

2. Follow these steps to use wildcard characters and to use AND and OR criteria:

Field:	InvNum	InvDate	ProdDescription	Price	Qty	LineTotal: [Qty]*[Price]
Table:	Invoices	Invoices	Products	Products	Invoice Details	
Sort:			A			
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			Like "Blog*" B			
or:			Like "Image*" C	>10		

- A** Click in the **ProdDescription Criteria** box, type **Blog***, and tap .
- B** Click in the **ProdDescription Or** box, type **Image***, and tap .
- C** Click in the **Qty Or** box and type **>10**. Be sure to type in the same row as *Like "Image"* (the *Or* row).

3. Run the query.

4. Close the query and save the changes.

Date Criteria

You can set date criteria to determine age, hired date, invoice date, and so forth. Access acknowledges the same comparison criteria for performing date comparisons that it does for locating other types of data, regardless of the format used to enter dates.

DATE CRITERIA	
Criterion	Examples of How Records Are Returned
06/22/2013	Date is 06/22/2013
<22-Oct-2013	Dates that occur before 22/Oct/2013
>01/01/13	Dates that occur after 01/01/13
Between 01/01/13 and 06/30/13	Dates between 01/01/2013 and 06/30/2013

DEVELOP YOUR SKILLS: A3-D6

Winchester Web Design needs to track all invoices issued in 2012. In this exercise, you will query the database to locate customers with invoices dated from January 1, 2012, through December 31, 2012.


1. Choose **Create**→**Queries**→**Query Design** .
2. Use double clicks to add the **Customers**, **Invoices**, **Invoice Details**, and **Products** tables to the query.
3. Close the Show Table box.
4. Double-click **InvNum** and **InvDate** in the **Invoices** table to add those fields to the query grid.
5. Add the **CustID** field from the **Customers** table.
6. Add the **Qty** field from the **Invoice Details** table.
7. Add the **ProdDescription** and **Price** fields from the **Products** table.

8. Widen the InvDate field by dragging the column heading to the right as shown here.

InvDate	CustID
Invoices	Customers
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

9. Click in the **Criteria** box for the InvDate field, type **Between January 1, 2012 and December 31, 2012**, and then tap **Enter**.

Field:	InvNum	InvDate	CustID	Qty	ProdDescription	Price
Table:	Invoices	Invoices	Customers	Invoice Details	Products	Products
Sort:						
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:		Between #1/1/2012# And #12/31/2012#				
or:						


10. Run  the query.
11. Choose **File**→**Save** or click the **Save** button on the Quick Access toolbar.
12. Save the query as **Invoices2012** and then close it.

Sorting and Showing Results

The query grid contains a Sort row that lets you sort the query results. At times you may also want to use fields to specify criteria but may not want those fields to be displayed in the query results. This can be accomplished by unchecking the Show box for the desired field(s).

DEVELOP YOUR SKILLS: A3-D7

In this exercise, you will create a query that sets a sort order and you will hide a field from displaying in the query results.

1. Choose **Create**→**Queries**→**Query Design** .
2. Use double clicks to add the **Customers**, **Invoices**, **Invoice Details**, and **Products** tables to the query.
3. Close the Show Table box.
4. Double-click the **CustID**, **CustFirstName**, and **CustLastName** fields in the **Customers** table to add them to the design grid.
5. Add the **InvDate** field from the **Invoices** table.
6. Add the **ProdDescription** field from the **Products** table.
7. Add the **Qty** field from the **Invoice Details** table.

8. Follow these steps to set a criterion and set the sort order:

Field:	CustID	CustFirstName	CustLastName	InvDate	ProdDescription	Qty
Table:	Customers	Customers	Customers	Invoices	Products	Invoice Detail
Sort:						Descending
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:					Like "Image"	
or:						

- Ⓐ Click in the **ProdDescription** criteria box, type **Image***, and tap **Enter**. Access converts *Image** to *Like "Image"*. This criterion will choose only records where the product description begins with *Image*.
- Ⓑ Click in the **Sort** box for the Qty field and choose **Descending** from the list of sort options.

9. Run **!** the query.
10. Choose **Home**→**Views**→**Design View** to switch back to Design View.
11. Uncheck the **Show** box for the **CustID** field and **Run** **!** the query.
12. Save the query as **Images** and then close it.

Calculated Fields

Calculated fields are formulas that perform calculations on other query fields. Calculated fields are added to queries and are not part of the underlying query tables. They are added to the query design grid and their calculated results then appear in the query results. A calculated field:

- Creates a new field in a query that can also be used in a form or report
- Can be used to perform mathematical operations such as addition and multiplication
- Has a name and can be formatted with properties just like a regular field
- Enables you to combine values in two text fields into one field such as LastName and FirstInitial
- Updates and recalculates each time you run the query

Identifying Parts of a Calculated Field

The structure of a calculated field includes a field name and a mathematical expression. Two examples of calculated fields in an Access query would be Wage: Hours * Rate and Total: Price * Quantity, where Wage and Price are calculated field names and Hours * Rate and Price * Quantity are the calculations that are performed.

Price	Qty	LineTotal: [Price]*[Qty]
Products	Invoice Details	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

The LineTotal calculated field multiplies Price * Qty

Price	Qty	LineTotal
\$200.00	6	\$1,200.00
\$40.00	11	\$440.00
\$400.00	1	\$400.00
\$40.00	15	\$600.00

The query results

Each calculated field can contain the following elements.

CALCULATED FIELD ELEMENTS	
Element	Description
Calculated field name	This is the unique name you assign to the field and is followed by a colon (:) to separate the field name from the expression.
Field names from existing tables	Field names from the query can be added to the calculated field expression. Access adds brackets [] around field names.
Arithmetic or comparison operators	Use +, -, *, /, (), ^, <, =, > to perform mathematical operations or compare values.
Concatenation (i.e., linking together)	An ampersand (&) can be used to join text values from multiple fields. For example, FirstName&LastName. Spaces can be added between fields by using quotation marks around a single space (" "). For example, the quotation marks in FirstName & " " & LastName create a space between the first and last names in the query results.

Calculated Field Properties

You can set field properties such as size, number format, and default values within tables. Likewise, you can set field properties in calculated fields. This is almost always needed in calculated fields as the query results need to be formatted with the correct number of decimal places, commas, currency format, and other formatting as needed. Field properties are set using the field Property Sheet.

☰ Design → Show/Hide → Property Sheet 

DEVELOP YOUR SKILLS: A3-D8

In this exercise, you will create and format a calculated field.

1. Open the **InvoicesList** query and switch to **Design View**.
2. Click in the **first cell** of the blank column next to the *Qty* field.

Price	Qty	
Products	Invoice Details	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	>10	

3. Type the calculated field expression **LineTotal:Price * Qty**, making sure you include the colon between *LineTotal* and *Price*.
4. Tap **Enter**.
5. Right-click anywhere in your calculated field column and choose **Properties**.
6. Set the Format property to **Currency** and type **Line Total** in the **Caption** field.

7. Run  the query, and your calculated field results will appear as shown below.

InvNum	Invoice Date	Emp ID	Description	Price	Qty	Line Total
	3 /15/2012	JFW	Secondary Page	\$200.00	6	\$1,200.00
1	3 /15/2012	JFW	Image, Custom Designed	\$40.00	11	\$440.00
1	3 /15/2012	JFW	Home Page, Nav, CSS, Design	\$400.00	1	\$400.00
2	4 /2 /2012	MJW	Image, Custom Designed	\$40.00	15	\$600.00
2	4 /2 /2012	MJW	Home Page, Nav, CSS, Design	\$400.00	1	\$400.00
2	4 /2 /2012	MJW	Secondary Page	\$200.00	7	\$1,400.00

8. Save and close the query and then close the A3-D1-WinWebDesignRevised database.
-

Self-Assessment

Check your knowledge of this chapter's key concepts and skills by completing the Self-Assessment. The answers to these questions can be found at the back of this book.

1. A query can use fields from more than one table. True False
2. It is important for two tables to be related if a query uses fields from both of them. True False
3. Entering a specific date criterion such as 06/22/2016 in a date field will only return records where the date is an exact match. True False
4. The Property Sheet can be used to set properties for calculated fields. True False
5. When data in query results is edited, the data is changed in the query fields, not in the underlying tables. True False
6. Calculated fields must first be created in the underlying tables before they can be added to a query. True False
7. Which field types can criteria be used with?
 - A. Text
 - B. Numeric
 - C. Date
 - D. All of these options
8. What records will the following query return?

Field:	VolDay	VolLastName	VolFirstName	VolPhone
Table:	Volunteers	Volunteers	Volunteers	Volunteers
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:		Smith		
or:				

- A. All records
- B. Only records with a last name of Smith
- C. Only records where the last name begins with Smith
- D. All records except for those with a last name of Smith

(continued)

9. What records will the following query return?

Field:	CustID	CustFirstName	CustLastName	CustCity
Table:	Customers	Customers	Customers	Customers
Sort:				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:				"Sarasota"
or:				"Bradenton"

- A. All records
 B. Only records with customers in Sarasota
 C. Only records with customers in both Sarasota and Bradenton
 D. Only records with customers in either Sarasota or Bradenton
10. Which symbol is used to separate the field name from the expression in a calculated field?
 A. []
 B. *
 C. :
 D. □
11. Which of the following would work properly as a calculated field assuming the query has fields named Price and Quantity?
 A. Total=Price*Quantity
 B. Price*Quantity=Totals
 C. Total:Price*Quantity
 D. [Total]=[Price]*[Quantity]
12. Which criteria could be used to choose only records containing the letters HR somewhere within the data?
 A. HR
 B. [HR]
 C. *HR*
 D. HR or RH

(continued)

13. Which query will return the following results?

Last Name	First Name	Email
Smith	William	SmithBilly@email.com
Santos	Emily	SantosE@email.com
Winkler	Samuel	SamWinkler45@email.com
Thibeaux	Pierre	PierreJT@email.com
Mansur	Jo	Mansur@email.com
Klein	Joyce	KleinBrian@email.com
Roberts	John	JRoberts@email.com
Abrams	John	JPAbrams@email.com
Roberts	Ilsa	IlsaRoberts@email.com
Hassan	Ahmed	HansAnge@email.com

A.

Field:	CustLastName	CustFirstName	CustEmail
Table:	Customers	Customers	Customers
Sort:			Ascending
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			
or:			

B.

Field:	CustLastName	CustFirstName	CustEmail
Table:	Customers	Customers	Customers
Sort:			
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:		> "M"	
or:			

C.

Field:	CustLastName	CustFirstName	CustEmail
Table:	Customers	Customers	Customers
Sort:			Descending
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			
or:			

D.

Field:	CustLastName	CustFirstName	CustEmail
Table:	Customers	Customers	Customers
Sort:			
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	"Smith"	"William"	
or:	"Hassan"	"Ahmed"	

(continued)

14. Which query will return records in which the invoice date occurs after January 1, 2014, the employee ID is JB, and all fields are shown in the query result?

A.

Field:	InvNum	InvDate	EmpID	CustFirstName	CustLastName
Table:	Invoices	Invoices	Invoices	Customers	Customers
Sort:	Ascending				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:		>#1/1/2014#	"JB"		
or:					

B.

Field:	InvNum	InvDate	EmpID	CustFirstName	CustLastName
Table:	Invoices	Invoices	Invoices	Customers	Customers
Sort:	Ascending				
Show:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:		>#1/1/2014#	"JB"		
or:					

C.

Field:	InvNum	InvDate	EmpID	CustFirstName	CustLastName
Table:	Invoices	Invoices	Invoices	Customers	Customers
Sort:	Ascending				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Criteria:		>#1/1/2014#	"JB"		
or:					

D.

Field:	InvNum	InvDate	EmpID	CustFirstName	CustLastName
Table:	Invoices	Invoices	Invoices	Customers	Customers
Sort:	Ascending				
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:		>#1/1/2014#			
or:		"EmpID-JB"			

15. Which of the following best describes the records returned by a query that has the criterion Date() in a date field:

- A. Only records with today's date
- B. Only records without dates
- C. Any record with a date
- D. Criteria can't include dates

EVALUATION ONLY

ACCESS 2016

Using Reports to Display Information

In this chapter, you will create reports to organize and summarize data into meaningful information. Although reports can summarize data from a single database table, they often present specific data from multiple tables or from queries based on multiple tables. Both forms and reports use many of the same tools and techniques to organize and present information in a readable format.

LEARNING OBJECTIVES

- Create basic reports using the Report tool
- Create reports with the Report Wizard
- Change field alignment and size in Layout View
- Change field properties
- Insert logos and dates
- Insert new fields
- Apply themes

CHAPTER TIMING

- Concepts/Develop Your Skills: 2 hrs
- Self-Assessment: 15 mins
- Total: 2 hrs 15 mins

PROJECT: TURNING DATA INTO INFORMATION WITH REPORTS

Forms are great for entering data and displaying single records. Most businesses, however, want to filter and summarize data, as well as display specific data, such as running totals, in a readable format. Winchester Web Design needs a new report to summarize the sales for each employee and display sales totals. As its database manager, you have agreed to create a report to meet these needs.

Introducing Reports

Because reports are often presented in a readable format and end up as a printout, there are some basics that every report should include. Of course it should be well organized, look professional, and be visually appealing. Imagine finding a report on your desk without a date, without page numbers, or without a title that states what it is for. How might this affect the usability and readability of the data?

Most reports should have both a title and a subtitle. The title may simply be the company name. The subtitle should state specifically what the report is for, such as Monthly Income or Product List. Every report requires a date and should include the page number, even if the report is only one page. Once you have a good handle on the who, what, and when, you will be ready to create your first report.





Basic Reports

Use the Report button to instantly create a basic report for a selected table or query. This is the easiest way to create a report using all of the fields from the table or query. Only one table or query can be used in a basic report.

 Create→Reports→Report 

DEVELOP YOUR SKILLS: A4-D1

In this exercise, you will create a basic report.

1. Open **A4-D1-WinWebDesign** from your **Access Chapter 4** folder and save it as **A4-D1-WinWebDesignRevised**.
2. Choose the **Products** table in the Navigation pane.
3. Choose **Create→Reports→Report** .
4. Close any boxes that may be open, such as the Property Sheet or field list pane.
5. Choose **Home→View→Report View** .
6. Choose **Home→View→Print Preview**  to see how your report will look when printed.
7. Click the **Close Print Preview** button on the right side of the Ribbon.
8. Switch to **Design View** .
9. Take a moment to mouse over the design tools and review the ToolTips that appear.
10. Choose **File→Save** or click the **Save** button on the Quick Access toolbar and save the report as **Products**.
11. Close the report.

Report Organization and Structure

Reports can display data from multiple tables and even from queries. Report data must often be grouped and sorted so it can be easily analyzed and interpreted. Effective reports turn data into information by displaying it in an organized and understandable manner. Queries are often the best data source for reports as they can receive data from multiple tables, sort the data, and even include calculated fields.

Sections

Sections provide the structure needed to effectively organize and present information. There are several types of sections, with each type used for a specific purpose.

REPORT SECTIONS	
Section(s)	Description
Report Header and Footer	Displayed only at the top of the first page and bottom of the last page. Some uses include titles, subtitles, and logos.
Page Header and Footer	Displayed at the top and bottom of every page. Some uses include descriptive labels, page numbers, and dates.
Group Header and Footer	The group header shows the fields on which report data is grouped. For example, grouping by Sales Person might list each sales person and all the transactions that person is responsible for. The group footer displays summary information such as the total of all transactions for each sales person.
Detail	Main part of the report where the records are displayed. The records are typically organized in groups. The detail sections are where field headings appear.

The following image shows a report in Layout View with the various sections highlighted.



The Report Header appears at the top of the report.

The Group Headers show the records grouped first by Employee ID and then by Invoice Number.

The Detail sections show headings, records, and a LineTotal calculated field from the underlying query.

EmpID		MJW						
InvNum		29						
Invoice Date	Last Name	ProdID	Description	Price	Qty	LineTotal		
3 /12/2013	Klein	01HP	Home Page, Nav, CSS, Desig	\$400.00	1	\$400.00		
3 /12/2013	Klein	02SP	Secondary Page	\$200.00	9	\$1,800.00		
3 /12/2013	Klein	03BL	Blog, Integrated into Site	\$300.00	1	\$300.00		
3 /12/2013	Klein	06HR	Hourly Rate for Modifier	\$80.00	3	\$240.00		
						Sum	\$2,740.00	
InvNum		30						
Invoice Date	Last Name	ProdID	Description	Price	Qty	LineTotal		
3 /21/2013	Klein	06HR	Hourly Rate for Modifier	\$80.00	3	\$240.00		
3 /21/2013	Klein	02SP	Secondary Page	\$200.00	1	\$200.00		
3 /21/2013	Klein	05IM	Image, Custom Designed	\$40.00	2	\$80.00		
						Sum	\$520.00	
						Sum	\$3,260.00	
Grand Total							\$19,920.00	
Friday, February 12, 2016							Page 1 of 1	

The Group Footers show totals for Invoice Numbers 29 and 30.

The Group Footer for Employee ID MJW adds the group totals for invoices 29 and 30.

The Page Footer is often used for page numbers and dates.

The Grand Total appears in the Report Footer and adds all group totals (some not shown here).

Grouping and Sorting

A group is a collection of records that has at least one data element or key field in common. In the preceding example, records are grouped first by Employee ID MJW then by Invoice Numbers 29 and 30. A group consists of a header, records, and a footer. Grouping helps organize the information in meaningful ways.

It is important that records first be sorted using the same field that is used for grouping. Otherwise, a new group might be created each time the data in the group changes. Sorting can be added in the report; however, it's best to make the sorting occur in the underlying tables or queries.




The Report Wizard

The Report Wizard is a great way to get started with most reports. It lets you choose multiple tables or queries, group and sort data, perform calculations, and organize and present the information. The Wizard builds the report for you creating the necessary structure and organization.



DEVELOP YOUR SKILLS: A4-D2

In this exercise, you will create a detailed Invoice report using the Report Wizard.

1. Choose **Invoice Details Query Q1 2013** in the Navigation pane under the Queries heading.
2. Choose **Create**→**Reports**→**Report Wizard** .
3. Double-click the **EmpID** field to add it to the **Selected Fields** list, or choose it and click the **Add**  button.
4. Add the **InvNum**, **InvDate**, **CustLastName**, **ProdID**, **Price**, **Qty**, and **LineTotal** fields to the **Selected Fields** list.
5. Click **Next**, and the Wizard will ask if you want grouping levels.
6. With **EmpID** selected, click the **Add**  button to set **EmpID** as the first grouping level.
7. Now add the **InvNum** field to make it the second grouping level.
8. Click **Next**, and the sort order and summary information screen will appear.
9. Click the **Summary Options** button in the lower part of the dialog box.
10. Check the **Sum** box for the LineTotal field.

Field	Sum	Avg	Min	Max
Price	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Qty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LineTotal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. Leave the other settings as they are and click **OK**.
12. Click **Next** since sorting isn't needed.
13. Choose **Outline** as the Layout option and **Landscape** as the Orientation.
14. Leave the **Adjust the Field Width** box checked and click **Next**.
15. Name the report **Invoice Details Report Q1 2013** and click **Finish**.
16. Take a moment to review the report using the page controls at the bottom of the screen (there should be five pages).
17. Click the **Close Print Preview** button on the right side of the Ribbon.

Modifying Reports

Reports can be created from scratch using Design View but the Report Wizard is much easier to use and far more efficient. The Report Wizard provides a great starting point but it's often necessary to add, delete, move, or resize fields and to enhance a report in other ways such as adding titles and a company logo. These and other enhancements can be done using Layout View or Design View.



View the video "Modify Reports in Layout View."



View the video "Modify Reports in Design View."

Controls

Controls determine where field data, titles, headings, images, and other information are precisely positioned within report sections. There are three types of controls used in reports.

TYPES OF CONTROLS	
Control Type	Description
Bound	Controls that display data from the table or query
Unbound	Objects that enhance the appearance of a report such as labels, titles, lines, and images
Calculated	Controls that display calculated fields from queries or that perform calculations within the report itself

The following controls are available on the Design tab of the Ribbon.



Available controls


Adding Fields to a Report

Sometimes fields need to be added to an existing report. The Existing Fields tool displays a list of tables and their fields. Fields are added to the report in Design View by dragging them from the Field List pane into report sections. Adding a field creates a text box control where the field data is displayed and a label control that contains the field name. The label can be changed, allowing you to be creative with the field names displayed on the report.

☰ Design → Tools → Add Existing Fields

DEVELOP YOUR SKILLS: A4-D3



In this exercise, you will delete unneeded controls, add controls, and rearrange and resize controls to produce a more attractive, well-balanced report.

1. If necessary, open **Invoice Details Report Q1 2013**.
2. Switch to **Layout View** .
3. Close any boxes that may be open such as the Property Sheet or Field List pane.
4. Follow these steps to delete and rearrange the invoice number summary controls:

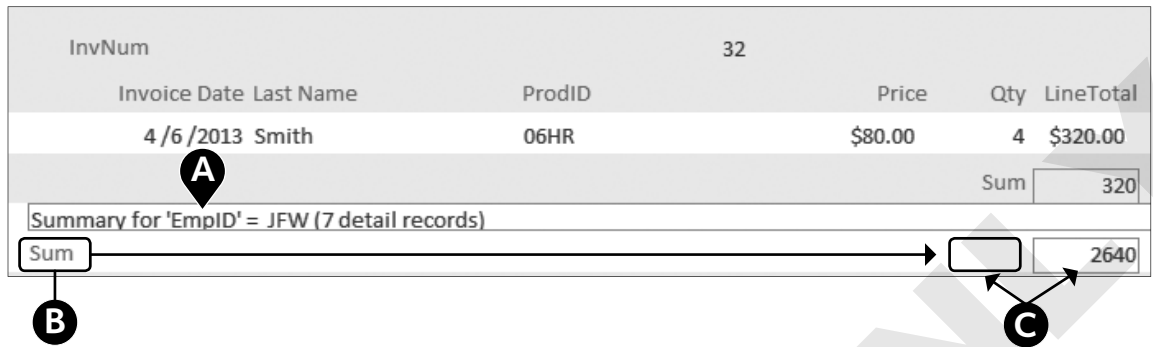
Invoice Details Report Q1 2013

EmpID	JFW				
InvNum	20				
Invoice Date	Last Name	ProdID	Price	Qty	LineTotal
1 /5 /2013	Smith	05IM	\$40.00	14	\$560.00
1 /5 /2013	Smith	06HR	\$80.00	5	\$400.00
1 /5 /2013	Sm	04SC	\$400.00	1	\$400.00
Summary for 'InvNum' = 20 (3 detail records)					
Sum					1360

Annotations: A points to the summary row, B points to the Sum label, C points to the right arrow, and D points to the total box.

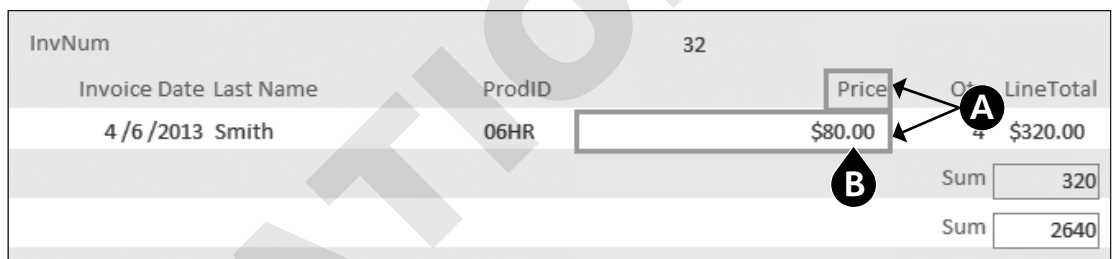
- A Click the **Summary for 'InvNum'** control and tap **Delete** to remove it.
- B Click the **Sum** label then tap or hold the right arrow  to move it across the report next to the LineTotal box.
- C With the Sum label still selected, press the **Ctrl** key and click the **total** box. Both controls should be selected.
- D Tap the **up arrow**  three times to move the controls up.

5. Follow these steps to repeat the preceding procedure for the EmpID field controls:



- A Scroll down until *Summary for 'EmpID'* is visible, click to select it, and tap **Delete** to remove it.
- B Scroll down, click the **Sum** label, and tap or hold the **right arrow** → until it is aligned with the Sum and Qty controls above it.
- C With the Sum label selected, press the **Ctrl** key and click the **total** box, then tap the **up arrow** ↑ three times to move the controls up.

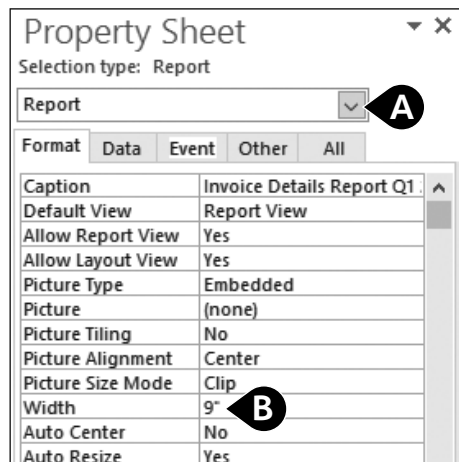
6. Follow these steps to change the width and alignment of the Price controls:




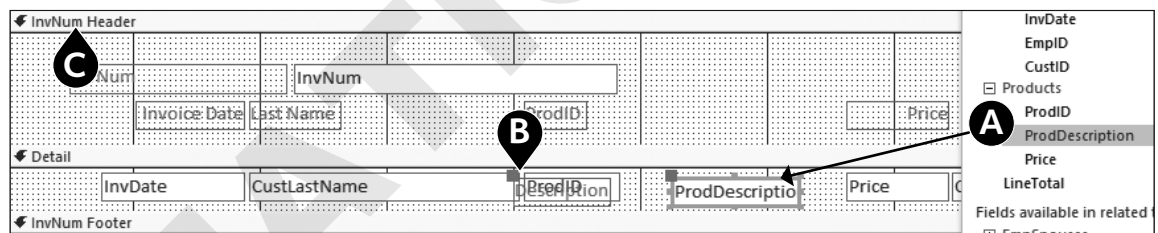
- A Click any **Price** label and then tap the **Ctrl** key and click any **price** box to select all price labels and boxes.
 - B If the Property Sheet is not visible, right-click the selected controls and choose **Properties**.
7. Set the Width property to 0.8.
 8. Set the Left property to 6.625 and tap **Enter** so you can see the change take effect.
 9. Switch to **Design View** .
 10. Click the **"Page"** numbering control located in the Page Footer section.

```
="Page " & [Page] & " of " & [Pages]
```


11. Make sure the Property Sheet box is visible, set the Width to 2, and tap **Enter** to see the change.
12. Follow these steps to change the report width:

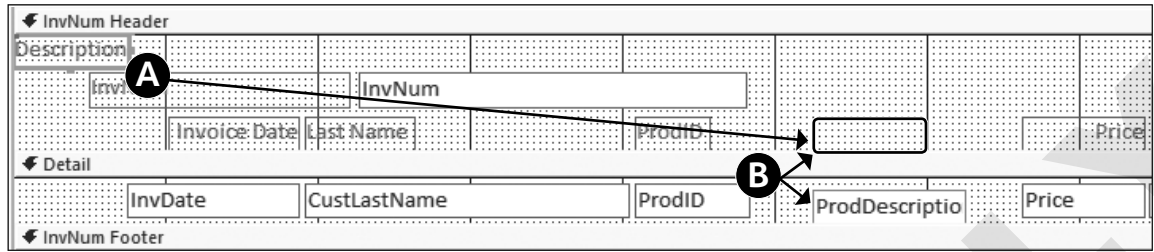


- A Click the **Selection Type** button in the Property Sheet box and choose **Report**.
 - B Set the Width to 9.
13. Choose **Design**→**Tools**→**Add Existing Fields** .
14. Follow these steps to add the **ProdDescription** field and to move its label:



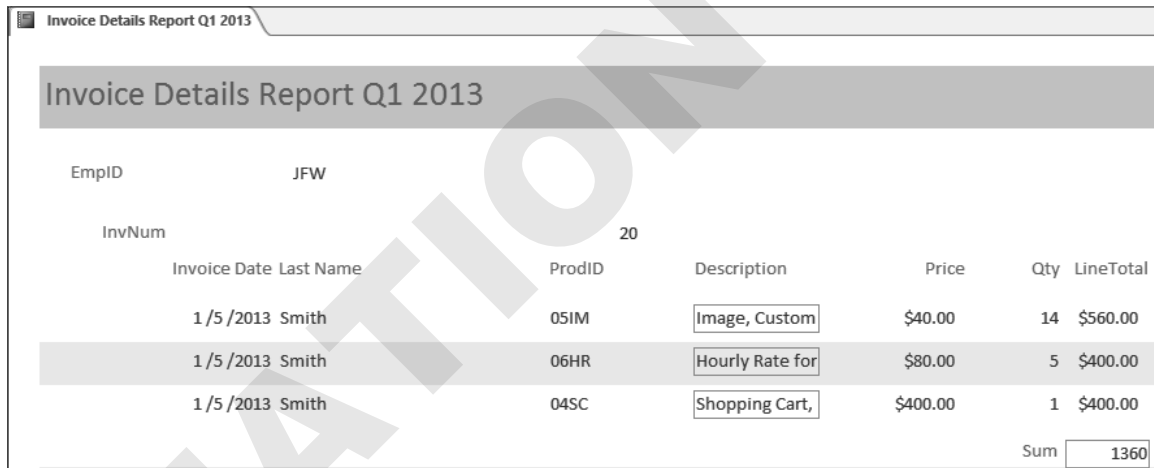
- A Drag the **ProdDescription** field from the Field List pane and drop it between the ProdID and Price fields in the Detail section. It's important to place it in the Detail section.
 - B Right-click the new **ProdDescription** label (it will be hard to see) and choose **Cut** from the menu.
 - C Right-click the **InvNum** Header and choose **Paste**.

15. Follow these steps to reposition the fields:



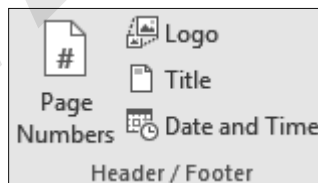
- Ⓐ Drag the **Description** label and drop it between the ProdID and Price labels in the InvNum Header.
- Ⓑ Use the arrow keys to position the **Description** label and the **ProdDescription** field so they are left-aligned with one another and roughly centered between the ProdID and Price fields.

16. Close the Field List pane and switch to **Layout View**.



Header and Footer Objects

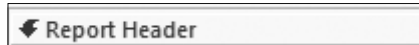
The Header/Footer group on the design tab lets you easily add page numbers, titles, the date and time, and logos while working in Design View. Logos are especially useful as they can make reports look more professional and visually appealing. The Report Wizard only creates one report title, so the Title tool is often used to add subtitles.



DEVELOP YOUR SKILLS: A4-D4


In this exercise, you will enhance the report header by adding a subtitle, logo, and the date and time, and you will format these controls.

1. Switch to **Design View** .
2. Right-click the **Report Header** section bar and choose **Properties**.





3. Set the Height property to **0.9**.
4. Click inside the current title box, **Invoice Details Report Q1 2013**, and replace the text with **Winchester Web Design**.
5. Set the properties for the title box as follows.

Property	Setting
Width	3.5
Font Size	22
Text Align	Center
Font Weight	Bold

6. Choose **Design**→**Header/Footer**→**Title** .
7. Drag the new **subtitle** box so it is just below the *Winchester Web Design* title and aligned with it on the left side.
8. Replace the text in the new title box with **Invoices for Q1 2013**.
9. Set the properties for the new title as follows.

Property	Setting
Width	3.5
Height	0.35
Special Effect	Shadowed
Text Align	Center
Font Weight	Bold

10. Choose **Design**→**Header/Footer**→**Logo** , navigate to your **Access Chapter 4** folder, choose **WWD-Logo.bmp**, and click **OK**.
11. Set the Left property of the logo to **4**.
12. Set both the Width and Height properties to **0.8**.
13. Choose **Design**→**Header/Footer**→**Date and Time** .
14. Choose the **mm/dd/yyyy** date format (the third format).
15. Uncheck the **Include Time** checkbox and click **OK**.

16. Switch to **Report View** and review your Report Header.



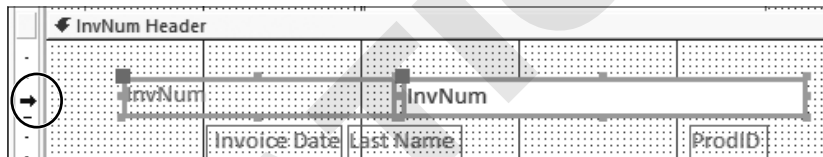
Formatting Controls



It is important to ensure that the data values are fully displayed in a report, while at the same time taking care not to leave unsightly and unnecessary blank space between columns. To accomplish this, you must resize, reposition, and align controls. It is best to adjust controls in Layout View because you can see the actual field values while making the adjustments. Multiple controls can be formatted together by first selecting them while using the **Ctrl** key.

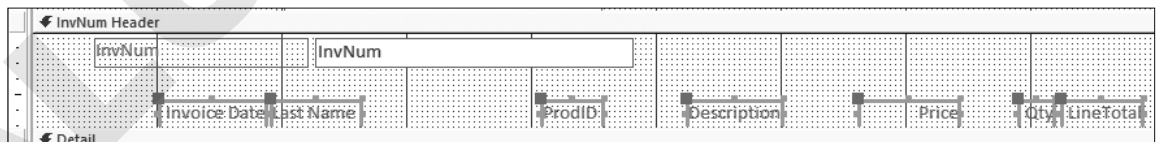
DEVELOP YOUR SKILLS: A4-D5

In this exercise, you will use both Design View and Layout View to resize, reposition, and align report controls.

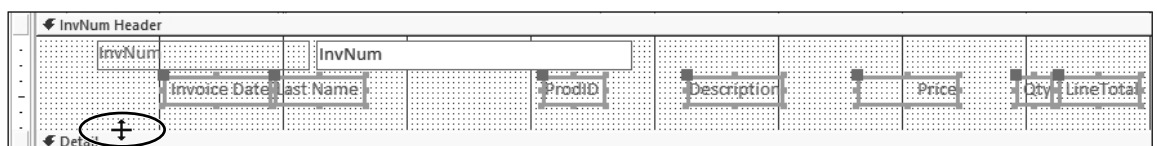
1. Switch to **Design View** in the **Invoice Details Report Q1 2013** report.
2. Click the **vertical ruler** to the left of the InvNum label and text box in the InvNum Header as shown here to select both of them.



3. Tap the **up arrow**  five times to nudge the controls up closer to the InvNum Header.
4. Select the remaining controls in the InvNum Header section as shown here and tap the **up arrow**  five times to nudge them up.

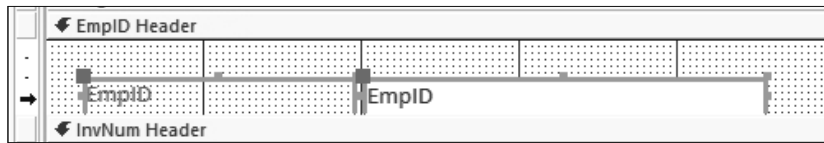


5. Position the mouse pointer on the top edge of the **Detail** section bar as shown here and drag it up until it is just below the controls you just moved.

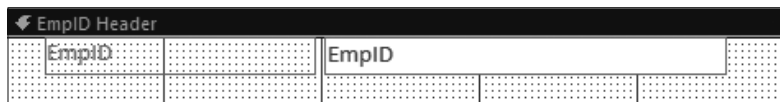


6. If necessary, choose **Design**→**Tools**→**Property Sheet**  to display the Property Sheet.

7. Select both of the **EmpID** controls in the EmpID Header section as shown here.



8. Set the Top property for these controls to 0.
9. Click the **EmpID** Header and it will turn black, indicating it is selected as shown here.



10. Set the Height property to 0.33.
11. Switch to **Layout View**.
12. Click one of the **boxes** in the Description column to select all of the fields and then drag left to widen the column almost to the ProdID column.


ProdID	Description	Price	Qty	LineTotal
05IM	Image, Custom	\$40.00	14	\$560.00
06HR	Hourly Rate for	\$80.00	5	\$400.00
04SC	Shopping Cart,	\$400.00	1	\$400.00

13. Select the **Last Name** boxes and drag left to shorten the boxes as shown here.

Invoice Date	Last Name	ProdID
1/5/2013	Smith	05IM
1/5/2013	Smith	06HR
1/5/2013	Smith	04SC

14. Press **Ctrl** and click the **Last Name** label to select the label and all the name boxes as shown here.

Invoice Date	Last Name	ProdID
1/5/2013	Smith	05IM
1/5/2013	Smith	06HR
1/5/2013	Smith	04SC

15. Tap the **right arrow**  8 times to nudge the boxes to the right.
16. Select the **ProdID** label and one of the boxes below it and then nudge the entire selection to the left 6 times.

17. Scroll to the top of the report and click the **InvNum** box with 20 in it then drag the left border to the right to shorten the box as shown here.

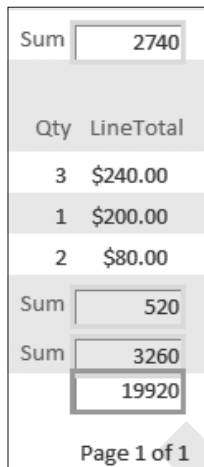


18. Tab the **left arrow** \leftarrow enough times to position the box closer to the InvNum label as shown here.



19. Scroll to the bottom of the report until the Sum controls are visible.

20. Use the **Ctrl** key to select the three **Sum** boxes and the **Grand Total** box as shown here.



21. Set the Format property in the Property Sheet to **Currency**.

22. With the controls still selected, press **Ctrl** and click one of the currently unselected boxes in the column so that all line total boxes are selected as shown here.




23. Now drag the right border of one of the controls to the right until the Grand Total is fully visible.
 24. Switch to **Print Preview** view to see how your report will look when printed.
 25. Close Print Preview and feel free to return to Design View or Layout View to make additional adjustments to the report.
 26. Choose **File**→**Close** to close the database, saving the changes to your report.
-

EVALUATION ONLY

Self-Assessment

Check your knowledge of this chapter's key concepts and skills by completing the Self-Assessment. The answers to these questions can be found at the back of this book.

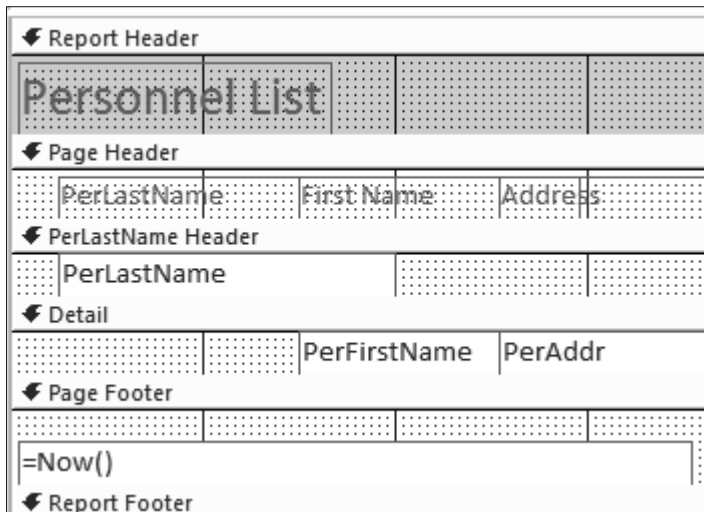
1. Layout View can be used to change the position and size of objects on a report. True False
2. Reports can display data from either tables or queries. True False
3. Report Headers are printed on every report page. True False
4. Only one table or query can be chosen in the Report Wizard. True False
5. All fields must be added within the Report Wizard, as fields can't be added after the report has been created and saved. True False
6. The Report  button can be used to build a report with more than one table. True False
7. The Property Sheet can be used to adjust the size of individual report controls. True False
8. In which section are report page numbers typically displayed?
 - A. Report Header or Footer
 - B. Group Header or Footer
 - C. Page Header or Footer
 - D. Detail
9. Which report view is shown here?

Personnel List					
PerLastName	First Name	Address	City	ST	
Adams	Chuck	872 Banks Ave	Tampa	FL	
Allison	Renee	Fowler Pkwy	Tampa	FL	
Brewster	Jade	Main St Ext	Ellenton	FL	

- A. Print Preview
 - B. Layout
 - C. Design
 - D. Report
10. What important step should be taken prior to setting up a report group?
 - A. Sort the records on the grouping field
 - B. Insert a date in the Report Header
 - C. Adjust column widths
 - D. All of these options

(continued)

11. Which report view is shown here?



- A. Print Preview
 B. Layout
 C. Design
 D. Report
12. Which keystroke can be used to select multiple fields in report Layout and Design Views?
 A.
 B.
 C.
 D.
13. Which of the following is a more efficient way of creating a report from scratch?
 A. Layout Wizard
 B. Layout View
 C. Design View
 D. Report Wizard
14. Which type of control within a report displays data from a table or query?
 A. Bound
 B. Unbound
 C. Calculated
 D. All of these options
15. Jasmine needs to create a report that shows all sales transactions and a transaction total for each sales rep. What important steps does she need to take to ensure the report produces the intended results?
 A. Sort the data by sales rep
 B. Group the data by sales rep
 C. Sort the data first by sales rep and then group it by sales rep
 D. A report can't display both the transactions and a total

EVALUATION ONLY

Self-Assessment Answer Key

CHAPTER 1: GETTING STARTED WITH TABLES

Item	Answer	Page Number
1	True	3
2	True	6
3	False	9
4	True	10
5	True	11
6	D	3
7	B	3
8	A	5
9	B	3
10	D	10
11	D	9
12	A	11
13	C	11
14	A	11
15	B	6

CHAPTER 2: WORKING WITH FORMS

Item	Answer	Page Number
1	True	18
2	True	16
3	False	20
4	False	17
5	True	22
6	False	16
7	True	17
8	True	20
9	True	21
10	False	18
11	A	20
12	B	20
13	C	24
14	D	18
15	B	23

CHAPTER 3: QUERYING A DATABASE

Item	Answer	Page Number
1	True	32
2	True	32
3	True	36
4	True	39
5	False	29
6	False	38
7	D	34
8	B	34
9	D	35
10	C	39
11	C	39
12	C	35
13	C	37
14	A	35
15	A	34

CHAPTER 4: USING REPORTS TO DISPLAY INFORMATION

Item	Answer	Page Number
1	True	51
2	True	48
3	False	48
4	False	49
5	False	51
6	False	47
7	True	53
8	C	48
9	B	51
10	A	49
11	C	51
12	D	52
13	D	51
14	A	51
15	C	49

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Note: Index entries ending in “V” indicate that a topic is discussed in the video referenced on that page.

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- ? (question mark), using with queries, 34
- [] (brackets), using with queries, 34

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