
Chapter 6

Database Forms and Reports

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After reading this chapter, you will:

1. *Understand* how to create simple forms in Access.
2. *Understand* the difference between a bound control and an unbound control on an Access form or report.
3. *Know how to* create advanced forms in Access with subforms.
4. *Understand* how to create simple reports in Access.
5. *Know how to* create reports based on queries.
6. *Know how to* create reports that contain calculated fields and understand why databases do not store such fields in their tables.
7. *Know how to* create reports containing grouped data with control breaks in them.

... accountants have a greater opportunity to support corporate strategy when they are involved in developing IT databases....

George Joseph and Asha George, "Merging Management Accounting with Database Design" *Management Accounting Quarterly* Vol. 6, No. 2 (Winter 2005), pp. 34-43.

INTRODUCTION

The previous chapters illustrated how to design a database with several tables and also how to construct queries to select information from these tables. Two additional database tools are those that help you create forms and those that help you create hard-copy reports. The first section of this chapter discusses how to create forms, and also how to use forms for input and output tasks. The second section of this chapter discusses how to create reports. Both sections illustrate these tasks using Microsoft Access, but almost all the skills discussed here have counterparts in other database software such as FoxPro or Oracle.

FORMS

Figure 6-1 illustrates an example of a database **form**—i.e., a custom-designed screen for entering new records in, or displaying existing records from, a database table. As you can see in Figure 6-1, a form has three major sections: (1) a **heading section**, which appears at the top of the form, (2) a **detail section**, which usually occupies the most room on the form and which typically displays the record information, and (3) a **navigation bar**, which always appears at the bottom of the form.

FIGURE 6-1 An example of a database form.

Customer Num	Last Name	First Name	Street Address #1	Street Address #2	City	State	Zip Code	Home Phone	Work Phone	Cell Phone	Credit
12345	Abramson	Arlene	3567 Bancroft Street		Arlington	VA					
12346	Benson	Barbara	3567 Bancroft Street		Branson	MD					
12347	Carter	Christopher	761 Cambridge Circle		Citrus Center	VA					
12350	Franklin	Fanny	9875 Franklin Drive		Franktown	VA	13421-	(876) 543-8876			5556-55

FIGURE 6-2 A portion of the customers table (in datasheet view) from the BSN Database.

Although there is no requirement to use a form for entering data into a database table, there are several reasons why using a form is better than using a default, **datasheet screen** such as the one in Figure 6-2 for this task. One is that a datasheet displays many records at once, making it possible to accidentally type over existing information instead of creating a new record. Another is that a form can display all the data-entry textboxes for an entire record in one screen, whereas a datasheet typically requires users to keep tabbing to the right to enter data for off-screen items (see again Figure 6-2).

A third advantage of forms is that you can customize them. Figure 6-1 illustrates several examples of such customization, including: (1) custom header information (e.g., the label with the words “BSN Customers”) at the top of a form, (2) text, logos, artwork, and (as shown) pictures for graphic interest, (3) more complete names (instead of the default database names) to identify each field in the database table (e.g., “Customer Number” instead of “CustNo”), (4) the ability to group similar fields together in the form (e.g., the phone numbers in Figure 6-1), (5) the ability to add explanations or special instructions in the form to help users understand how to enter data (e.g., see the label for the State field), and (6) customized tab ordering that governs the order in which textboxes become active on the form.

Creating Simple Forms

To create a custom form for a database table in Access, first select “More Forms” from the “Create” tab (Figure 6-3). You can design a form from scratch by selecting *Blank Form*

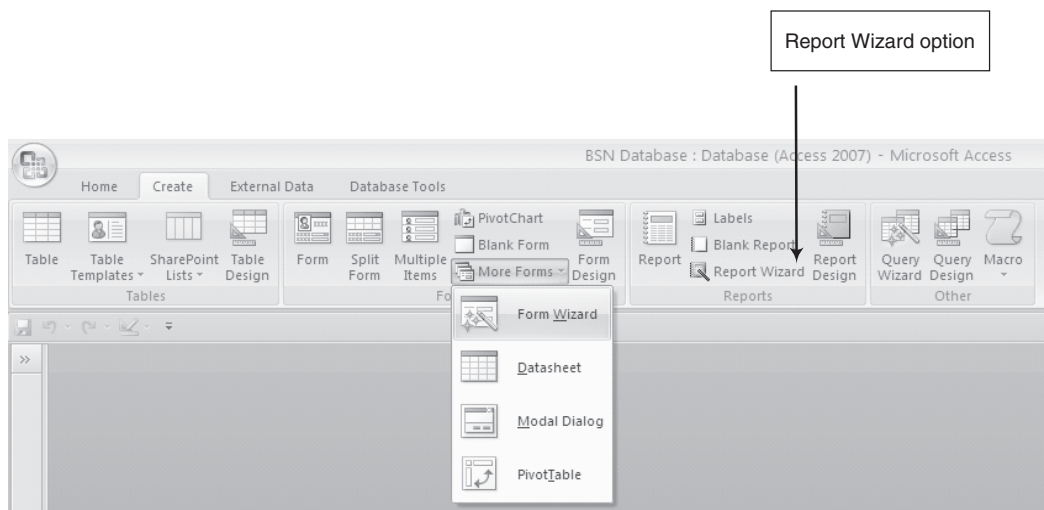


FIGURE 6-3 Create menu showing the Form Wizard in Access 2007.

from the Form menu in Figure 6-3, but it is usually easier to use the **Form Wizard** for this. When you select the second option click on “More Forms” and then *Form Wizard*.

You will see dialog boxes similar to the ones in Figure 6-4. Follow these steps to create a form in Access:

Step 1. Enter the appropriate settings in the Form Wizard dialog boxes. In the drop down option on the left side of Figure 6-4a, select the table you want your form to reference (e.g., *tbl BSN Customer Master Table*). You will also need to select the fields you want to display on the form. Clicking on the button with the >> symbol selects all the fields from your table in your form—a typical choice. You can also click on individual field names with your mouse and then click on the > button to select data fields one by one.

Use the second dialog box in Figure 6-4b to select a layout for your form—typically “Columnar” because this setting enables you to include all the data fields on one form. The third dialog box of the Form Wizard enables you to choose from several alternate preformatted styles for a form—i.e., different settings for the overall appearance of the form that dictate the back color of labels, the font sizes of the text in textboxes, and

(a) First screen.

(b) Second screen.

(c) Third screen.

(d) Fourth screen.

FIGURE 6-4 The four dialog boxes in the Form Wizard.

so forth. The dialog box in Figure 6-4c illustrates some of the different choices. You can experiment with different ones to find one that suits your application.

Finally, in the fourth dialog box of the Form Wizard (Figure 6-4d), you will need to create a name for your form. As with the many other database objects, you should use the conventional prefix for a form name—*frm*—and then create a name that helps you remember the form's application.¹ In Figure 6-4d, for example, we have named the form *frm Customers*. At this point, you can click on the Finish button in the last dialog box—you're done. Access' Form Wizard will then create the form with the settings you've indicated and list the completed form among those available for use in the main menu for forms.

Step 2: Customize the Form. If you open your form in design view, you will see something like the one in Figure 6-5. This figure helps make clear that a form has two modes—Form or **run mode**, which looks like Figure 6-1, and **design mode**, which looks like Figure 6-5. In fact, the form in Figure 6-5 was the starting point for the completed form in Figure 6-1. This screen contains form objects such as labels and textboxes that you can delete (by first clicking on the object and then hitting the Del key on your keyboard), reposition (by dragging them with your mouse), or customize in many other ways.

The objects such as textboxes and labels that appear on a form are examples of **form controls**. When customizing a form, it is important to distinguish between bound

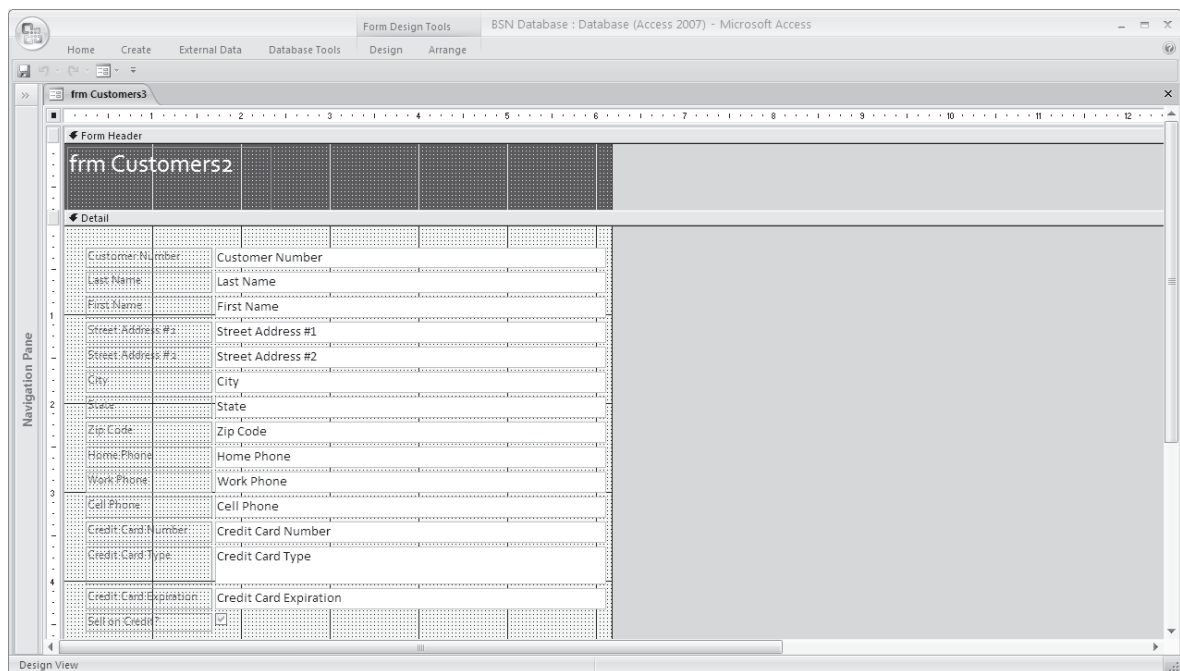


FIGURE 6-5 The starting format for the form in Figure 6-1.

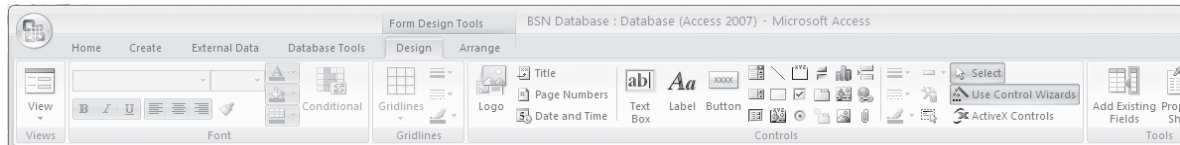
¹Throughout Chapters 4, 5, and 6 we have recommended prefixing all files with *tbl*, *frm*, and *rpt*. However, if you use Access 2007 and prefer, you can look at the icon on the left side of each file name and see the different icons provided by Microsoft. Therefore, it is your choice how to indicate what each database item represents.

controls and unbound controls. **Bound controls** are textboxes, drop down boxes, and similar controls that depend upon the underlying data and therefore change from record to record. In contrast, **unbound controls** are labels, pictures, and similar items that are consistent from record to record in a form and do not display underlying database information. On Access forms, labels and textboxes typically appear in pairs, but they are, in fact, separate objects. Thus, for example, you can delete the label for a particular data field on a form and the accompanying (bound) textbox will continue to display database information.

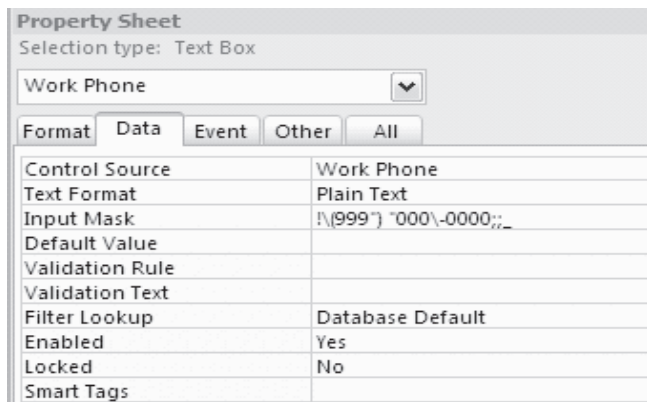
You can include additional controls to your form by selecting them from the Form Design Tools (Figure 6-6a). Typical objects that you'll use for this task are labels and picture boxes, but you can also add bound control such as textboxes if you wish. You can only view the Toolbox when your form is in design mode.

To add a control to your form, left click on the control in the Toolbox and then use your mouse to draw the selected object on your form. For example, in Figure 6-1, you can see additional labels (e.g., the heading “BSN Bicycles” in the header portion of the form or the label “Phone Numbers” in the detail portion of the form) and also a picture of a bicycle (which we created with an Image object from the Toolbox). The size of the object depends upon how large you drew it when you first created it, but you can resize any control on your form using the dots, or **sizing handles**, that appear on the border of your control when you click on it in the form.

Finally, to customize a control on a form, use the object's **Property Sheet window** (Figure 6-6b) to make individual settings for control objects. In effect, each form object has separate settings and therefore, its own Property Sheet window. To view the one for a particular control, right click on an object in your form and select “Properties” from the drop-down list of choices that appears. This window allows you to make a wide range of



(a) Selected controls in Design Tools.



(b) An example of a Properties window. Note the “Control Source” and “Input Mask” settings for this particular control—a textbox that displays a work phone number.

FIGURE 6-6 An example of (a) the Forms Controls window, and (b) a Properties window.

settings—for example, the font size, font weight, italics, or boldness of the text in labels. Of particular importance is the **Control Source property** of an object, which you will find among the settings in the Data tab portion of the Property Sheet window and which links the control to an underlying data field. Bound controls have a Control Source setting, whereas unbound objects do not.

Step 3: Refine your Design. You can toggle back and forth between run mode and design mode by clicking on the *Form* and *Design* options—for example, from the View portion of the Design option of the main screen. Form (Run) mode allows you to see how your form looks at run time, and therefore what further work you need to perform to complete your form’s design. For example, in design mode, you can select multiple form objects at once (by depressing the Ctrl key and clicking on several objects successively) and then use the formatting options from Access’s Format menu (on the main menu bar) to resize, align, and consistently space objects on your form.

Step 4: Reset the Tab Order. If you rearrange objects in your form in design mode, there is a good chance you will also want to reset the **tab order** of your form controls—i.e., the order in which each control becomes active in run mode. To do so, click on the Arrange tab in Figure 6-6a. One of the options you will see there is “Tab Order.” If you click on this choice, Access will provide a small dialog window that enables you to reset this order. Here, you can create a custom order for the objects in your form or, more simply, click on the “Auto Order” button at the bottom of this window to have Access automatically reset the tab order. The new, auto-order sequence makes form controls become active sequentially from top to bottom and left to right.

Using Forms for Input and Output Tasks

As noted earlier, database forms provide a convenient tool for inputting data into, and displaying data from, a database table. Both tasks require use of the navigation bar at the bottom of the form—i.e., the portion of the screen that looks like this:



You can use this navigation bar for both the input and output tasks explained here.

Displaying Information. The number in the middle of the navigation bar (e.g. “2”) indicates which record currently displays in your form. Clicking on the ◀ symbol causes Access to display the first record in the underlying database table, and clicking on the ▶ symbol displays the last record in the table. Clicking on the ◀ symbol displays the record just before the current one, and clicking on the ▶ symbol displays the next record after the current one. You can also access the “previous record” or “next record” using the “Page Up” and “Page Down” keys on your keyboard.

Forms also enable you to *change* the information already in a database table. For example, if a customer moves to a new address or changes his or her phone number, you would want to update this information in the appropriate table. It is a simple matter to enter the new information for the appropriate record using a form for this task. Changing data in a form causes Access to automatically update the information in the underlying table.

Using Forms to Create New Records. If you wish to add a new record, you can use a form for this task as well. First, click on the ►* symbol in the navigation bar. The system will then display the first available empty record (i.e., the one at the end of the underlying table) and allow you to enter the information for a new table entity—for example, the data for a new customer.

A nice feature about Access is that any data field that you include in a form automatically inherits all the properties that you set for that field at the time you initially created it in a table. This means that the same edit tests and data restrictions apply to the field for data entry, whether you enter the data in datasheet view or in form view. For example, if you create an input mask for a phone number that looks like this: (999) 000-0000, Access will display the mask for this data field when you start entering data for this field in your form at run time. Similarly, if you restrict a certain field to Integer data (e.g., a zip code), the system will not allow you to enter alphabetic text for that field. Finally, if you create a range test in your form (e.g., limit input to values between “0” and “40” hours), Access will not allow you to enter a value of “50” for that field in your form.

Case-in-Point 6.1 A growing use of database forms is to conduct survey research. Respondents enter the answers to questions in a form customized to the needs of the survey, often not realizing that the form itself is simply the front end of a database system. Each response is stored as a record, which the researchers can then combine with others for data analysis.²

Printing Forms. You can print a form just as easily as you print any other Microsoft document—i.e., by using the familiar “Print” option from the Office button on the main screen. When you click this button and select “Print,” Access will display a familiar Print dialog box that enables you to print a single form, print several forms (pages), or print selected records. Be careful *not* to select “All” from the dialog choices—you will print separate forms for *each record* in your underlying table, even if there are thousands of them!

Subforms: Showing Data from Multiple Tables

A **subform** is a form within a form—i.e., a display of data that is related to the information in the main form. Figure 6-7 is an example—the original customer form from Figure 6-1 with a new subform showing a list of invoices for a particular customer. This explains why there are two navigation bars in the figure—the initial one at the bottom of Figure 6-1 and a new one in the subform of Figure 6-7. If you advance through the records of the customer table using the lower navigation bar, you will see the information for each customer of the main form. Conversely, if you advance through the records of the subform, you will see the invoices for a particular customer—if they exist.

Some Advantages of Subforms. One advantage of subforms is their ability to display subordinate information related to the information in the main form. This reflects the parent-child or one-to-many relationship of the underlying data. In Figure 6-7, for example, each customer might have several invoices, but each invoice is related to only one customer. Other examples for the BSN Company include invoices with many detail lines, vendors with many purchase orders, or purchaser orders with many detail lines.

²Source: Bonometti, Robert J. and Jun Tang. “A Dynamic Technique for Conducting Online Survey-Based Research” *Competitiveness Review* Vol. 16, No. 2 (2006), pp. 97–105.

BSN Customers

Basic Data

Customer Number: 12350
 Last Name: Franklin
 First Name: Fanny
 Street Address #1: 9875 Franklin Drive
 Street Address #2:
 City: Franktown
 State (enter 2 letters): VA
 Zip Code: 13421-

Credit Card Information

Credit Card Number: 5556-5353-3509-3999
 Credit Card Type: Discover
 Credit Card Expiration: 1108
 Sell on Credit?

Phone Numbers

Home Phone: (876) 543-8876
 Work Phone:
 Cell Phone:

The current invoices for this customer are:

Invoice Number	Customer ID	Date
1025	12350	6/29/2009
1027	12350	7/3/2009
*	12350	

Record: 1 of 2 | No Filter | Search

FIGURE 6-7 A form with a subform.

Another advantage of subforms is that you can use them for data entry in the same manner that you use regular forms. Thus, if you wish, you could create the data for a new invoice in the subform of Figure 6-7. An advantage of entering data in this manner is that it helps ensure that you create an invoice for the right customer.

Creating Subforms. As noted above, a key requirement of a subform is that the data in it must be in a one-to-many relationship with the data in the main form. For example, in Figure 6-7, this requires that “customers” and “invoices” have a one-to-many relationship. Thus, to create a form with a subform in Access, your first task is to make sure that the data in the two tables are related via the Relationships window. Chapter 4 explains the tasks for creating such relationships using the Relationships window.

In Access, there are two principle ways of creating a form with a subform. One way is to identify the subform at the time you use the Form Wizard. To use this option, you would use the dialog box in Figure 6-4a to select the data for the main form as explained above. But before continuing to the next form, you would also click on the drop down menu in this dialog box and select a second table from this list. If a one-to-many relationship exists between the two tables, the Form Wizard will recognize your wish to create a subform within your main form and will create one for you.

A second way to create a subform is to add one to an existing form *after* you’ve created it. This is what we did here. To duplicate our work, open the form of Figure 6-1 in design view and use your mouse to extend the size of the details section of the form (to make room for the subform). Then, click on the Subform icon in Toolbox shown in Figure 6-6a and use your mouse to draw a rectangle in the detail section of your form. This procedure causes Access to launch the Subform Wizard, which will ask you for setting information similar to those shown in Figure 6-4—e.g., “which table do you want to use for the subform,” “how do you want the data to appear in the subform,” and so forth.

In design mode, your resulting form and subform will not look exactly like the one in Figure 6-7. For example, you will probably have to resize the outer dimensions of the subform to fit the data and perhaps reword the text in the heading in the label at the top of the subform. With a little bit of work, however, you should be able to design things to look like Figure 6-7. If you need to resize the column widths of your subform, however, you can do that at run time rather than at design time—a helpful advantage because you can see live data at run time.

Concluding Remarks about Forms

Database forms enable you to add records to a database table, modify the data in existing records of a table, and simply view the data in a table. Although forms are not needed for such tasks, the ability to customize a form, provide explanations for data-entry fields within forms, and create convenient tab orderings are especially useful features of them. In commercial environments, the database developer is rarely the same person who enters data in database tables on a daily basis. Anything that developers can do to make this job more convenient and straightforward for an hourly worker helps avoid errors, streamlines the data-entry process, and saves money. Experts estimate that it costs about ten times as much to *correct* an error in a database as it does to enter the data initially. Get the picture?

Case-in-Point 6.2 CheckPoint is a company that provides background screening, authentication, and criminal record identification services for its clients. To avoid errors, the company uses database forms with very exacting definitions and safeguards that help data entry personnel avoid mistakes. A key finding is the idea that the data stored in a database about an individual can be consistent, but still be wrong!³

REPORTS

Database **reports** provide custom information to database users. Reports can be simple documents that only output the contents of a table, or complex outputs that combine the information from several tables and show selected subsets of database information. If you're using Access to print something to paper, the chances are high that you are using a report to perform this task. This means that many items that you might not consider a "report" are treated as one by Access—for example, an invoice for a particular customer or a document that shows the name and address of only one vendor.

Case-in-Point 6.3 The National Motor Vehicle Title Information System requires all insurance companies and salvage yards to forward the VIN numbers of vehicles that have been totaled to a national database. The reports from this database will enable consumers to obtain such information as a car's odometer reading or theft report, as well as the reason for its condition—e.g., a flood.⁴

Unlike forms, reports are strictly outputs and do not allow users to input data into databases. This section of the chapter explains how to create simple reports, how to create reports containing calculated fields, how to create reports based on queries instead of tables, and how to create reports containing grouped data.

³Source: Carr, David F. "Gotcha! Pitfalls in Personal Profiles" *Baseline* Vol. 45 (June 2005), p. 41.

⁴Source: Jones, Candice Lee. "Used Car Blacklist" *Kiplinger's Personal Finance* Vol. 63, No. 1 (January 2009), p. 17.



Customer Number	Last Name	First Name	Street Address	City	State	Zip Code	Sell on Credit?
12345	Abramson	Arlene	3567 Bancroft Street	Arlington	VA	12345-6789	<input checked="" type="checkbox"/>
12346	Benson	Barbara	3567 Bancroft Street	Branson	MD	23456-7890	<input type="checkbox"/>
12347	Carter	Christopher	761 Cambridge Circle	Citrus Ce	VA	12345-6543	<input type="checkbox"/>
12350	Franklin	Fanny	9875 Franklin Drive	Franktow	VA	12345-6321	<input type="checkbox"/>

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FIGURE 6-8 A print preview of a portion of a simple Access report.

Creating Simple Reports

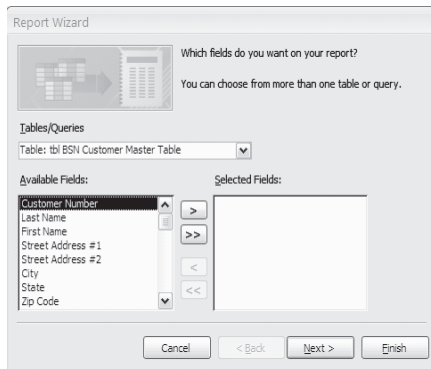
Figure 6-8 illustrates the print preview of a simple report—a listing of selected information about the customers in BSN’s Customers table. The first step in creating such reports is *not* to use your database system at all, but rather to decide what information to include in the report and how best to display that information in a printed document. We stress again that spending a few minutes designing the general format of a report on the back of an old envelop may save you hours of redesign work later.

A typical report has seven major components: (1) report header, (2) page header, (3) group header, (4) detail or body, (5) group footer, (6) page footer, and (7) report footer. Figure 6-9 describes these items in greater detail. Perhaps the most important is the Detail section, which is similar to the detail section of a form, and which repetitively displays information from the records of database tables. After you have a general idea of the format for your report, you can develop the report itself using these components. An easy way to do so is by using the Report Wizard in Access, following these steps:

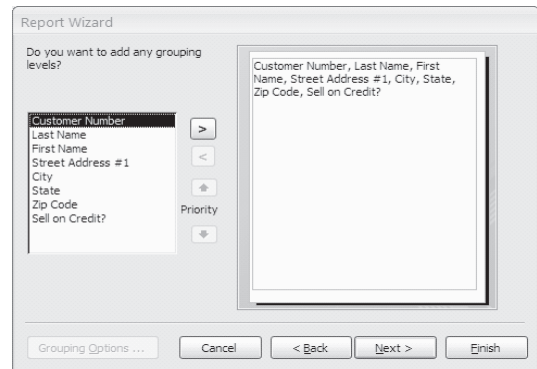
Step 1: Launch the Report Wizard. To launch the **Report Wizard**, select the Create option from the main menu and then select “Report Wizard” (see again Figure 6-3). The first dialog box you will see is the one in Figure 6-10a.

Component	Where it appears	Typical content
Report Header	First page of the report	Company name and address, date prepared or relevant time period, company logo
Page Header	Top of each page	Identification of each data field below it
Group Header	Beginning of each group of records	Identification of a new group of data
Detail Lines	Body of the report	The individual data fields of, and computed data fields from, underlying database tables
Group Footer	End of each group	Control totals or other statistics such as maximums, minimums, or averages for the group
Page Footer	Bottom of each page	Page number, report number
Report Footer	Last page of the report	End-of-report identifier, grand totals

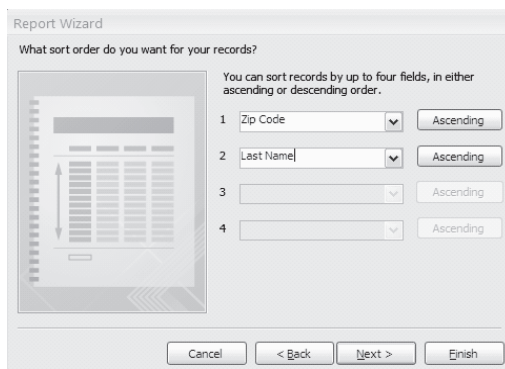
FIGURE 6-9 The components of a database report.



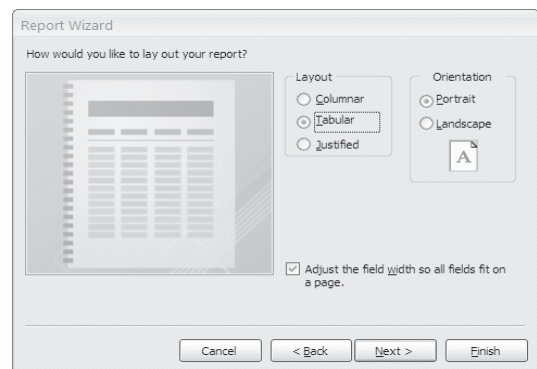
(a) The first screen in the Report Wizard.



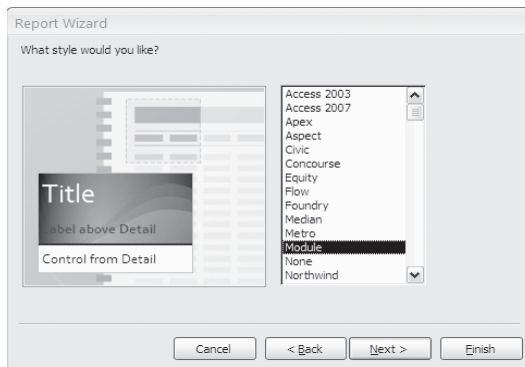
(b) The second screen in the Report Wizard.



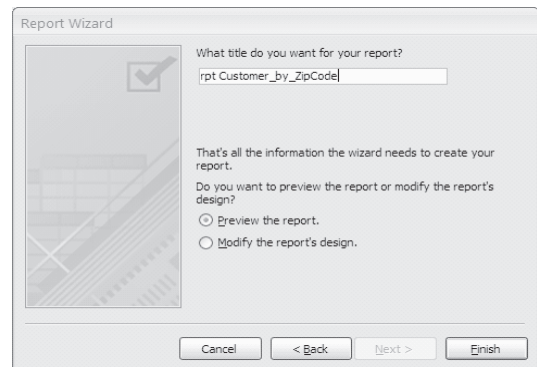
(c) The third screen in the Report Wizard.



(d) The fourth screen in the Report Wizard.



(e) The fifth screen in the Report Wizard.



(f) The sixth screen in the Report Wizard.

FIGURE 6-10 The Report menu in Access and the dialog boxes of the Report Wizard.

Step 2: Select the Underlying Data Source and Desired Fields. You can base a report on a table, as we will do in this case, or a query (which in turn might integrate the data from several tables). To create the report in Figure 6-8, however, we will only need the Customers table. Thus, to replicate our work, select *tbl BSN Customer Master Table* from the drop-down list in Figure 6-10a and then select the appropriate fields using the data field selector buttons (> and >>) as needed.

Notice that not all the information in the Customers table appears in the Customer report of Figure 6-8. For example, the customer's home and cell phone numbers are missing. This is typical of output reports—only selected information from underlying tables appears in them. The more information you include, the more complete the report, but also the more crowded the report becomes and the harder it is to format properly or read. As you know from Chapter 1, sometimes “less is more,” and this is one reason to “plan before you program.”

Step 3: Indicate any Grouping Levels. When you click “Next” in Figure 6-10a, you will see the dialog box of Figure 6-10b. This is where you tell the Report Wizard how you would like to group your data. For example, if you wish, you can group your customers by zip code. For the simple report in Figure 6-8, however, we do not need any such groupings and you can simply click the Next button in this dialog box.

Step 4: Indicate any Sort Fields and Select the Desired Report Format. The Report Wizard also allows you to sort up to four different fields. For example, Figure 6-10c indicates the settings to create a report of customers sorted by customer last name within zip code. After you have selected the sort fields, click Next in the dialog box. The fourth screen in the Report Wizard appears (Figure 6-10d) and allows you to select a particular report layout. For line-by-line listings—the typical choice in simple reports—select “Tabular.” You can also choose either “Portrait” or “Landscape” print options here.

Step 5: Select a Desired Report Style and Name the Report. After clicking Next in the dialog box of Figure 6-10d, you will see the dialog box in Figure 6-10e. This screen of the Report Wizard enables you to select a report style, which determines the color of the text, the default font sizes for data fields and labels, and similar design elements. Select the one you want by clicking on the desired style in the menu box. In Figure 6-10e, we selected “Module,” for example.

Finally, when you click Next in the dialog screen of Figure 6-10f, you will see the final screen of the Report Wizard. Here, you have the opportunity to name your report. The standard prefix for a report is *rpt*, which is the reason why we've named our report *rptCustomers_by_ZipCode*.

Step 6: Modify the Design of the Report as Desired. When you finish with the Report Wizard, you will probably need to modify the report design still further. If you open your new report in design view, you will see a screen similar to the one in Figure 6-11.

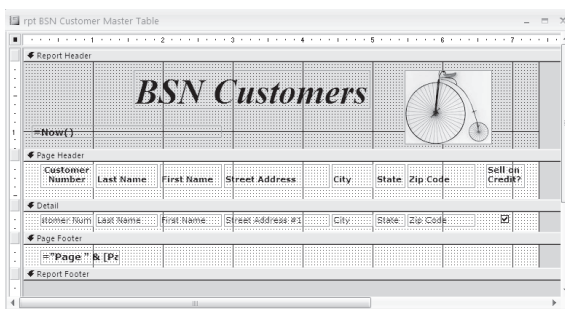


FIGURE 6-11 An Access report at design time.

This interactive screen enables you to modify the height or width of labels or textboxes (using their sizing handles), change the font size, italics, or boldness of headings (using the Properties Window for each element), or reposition items (as we did for the second line of the address). You can also change your mind and delete any element in the report by left clicking on it and hitting the Del key on your keyboard.

In design view, the bar of any section of your report will darken to indicate which section of the report is active for design purposes. There are many additional things you can do to modify your report's appearance. For example, you can cut and paste (or copy and paste) elements from one portion of your report to another. Thus, we moved the date (with content "`= Now()`") from the footer section of the report to the header section using this cut-and-paste method. As with designing forms, you can also add charts, pictures, or logos to your report. To do so, select the Image tool in the Toolbox control section by left clicking on this tool with your computer mouse and drawing it in the desired portion of your report. When adding figures, you will probably also have to change the Size Mode (in the Properties Window of your Image control) to "Stretch" in order to expand or shrink your image properly.

Finally, you should be careful when moving anything into the "Detail" section of the report because the report will repeat any element in this section for each line of the report. For this same reason, you should try to make the detail section of the report as small as possible—it will save room on lengthy reports.

Creating Reports with Calculated Fields

A common task when creating reports is to include **calculated fields** in them. For example, a report of employee information might also include a field entitled "years of service," which the system can calculate from the employee's date of hire. Sometimes, you want a calculated field to appear in the detail section of a report, and at other times you want group or grand totals to appear in the group footer or the report footer sections of your report. In this section of the chapter, we review the steps needed to accomplish the first task—creating a calculated field for the detail section of a report. In the following section, we review the steps needed to accomplish the second task—creating group summaries.

In AISs, a common task is to multiply prices by quantities in order to compute an extension (line total) in an invoice. There is no reason to *store* such values in the records of a relational database because we can *recompute* such values whenever we need them. This is why we only stored prices and quantities in the Customer_Invoice_Details table. However, when we print customer invoice information on a report, we need to show such computations.

It is usually easiest to create calculated fields using queries rather than tables for the underlying data. To illustrate, suppose we wanted to create the report shown in Figure 6-12—a report that shows invoice extensions for all current invoices for BSN. To create such a report, follow these steps:

Step 1: Create the Query with a Calculated Field. Figure 6-13 shows the query for our report. To create this query, we begin by selecting the tables needed for this task. One such table is the Customer_Invoice_Details table. The records in this table contain the item number and the quantity ordered, but not the *name* of the item purchased or its *price*. For this information, we need the Products_And_Services table.

Figure 6-13 is the design view for our query. We have selected the two tables we need for our task and also the desired fields—i.e., the item number and the description of

rptCustomer_Invoices

BSN Invoice Extensions

Tuesday, June 30, 2009

Invoice #	Item Number	Item Description	Quantity	Unit Price	Extension
1023	G123-786	Hot Rider Gloves --Men's Medium	1	\$24.95	\$24.95
	G453-324	Mogul Tire Pump Model 3G	2	\$34.95	\$69.90
	S123	Basic Bicycle Tune UP	1	\$39.95	\$39.95
	S124	Repair Flat Tire	1	\$19.95	\$19.95
					Invoice Total:
Invoice #	Item Number	Item Description	Quantity	Unit Price	Extension
1024	S123	Basic Bicycle Tune UP	1	\$39.95	\$39.95
					Invoice Total:
Invoice #	Item Number	Item Description	Quantity	Unit Price	Extension
1025	S125	Replace Shifter	1	\$49.95	\$49.95
	S127	Replace Seat	1	\$15.95	\$15.95
	G124-464	Hot-RiderGloves--Woman's Medi	1	\$24.95	\$24.95
					Invoice Total:

FIGURE 6-12 The print preview of a report that contains a calculated field (in the last column of the report).

qryInvoice_Extensions : Select Query

Field:	Invoice Number	Item Number	Description of Good	Unit Sales Price	Quantity	Extension: [Unit Sales Price]*[Quantity]
Table:	tbCustomer_Invoice	tbCustomer_Invoice	tblProducts_And_Sr	tblProducts_And_Sr	tbCustomer_Invoice	
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:						

FIGURE 6-13 A query with a calculated field.

the good or service (both taken from the Products_And_Services table), and the quantity (taken from the Customer_Invoice_Details table). For convenience, it is a good idea to select these items in the order in which you want them to appear in your final invoice, but this isn't required.

To create the calculated field, select the first available column in the query design screen and type the *name* of your calculated field. We chose the name “Extension” but this choice is arbitrary. You can also choose a name with more than one word (e.g., “Extension Calculation”), but be careful *not* to choose a term with the same name as an existing data field.

Type a colon following your calculated field name and then input the formula for your calculated field. Use an asterisk for a multiplication sign and a forward slash (/) for a division sign. Also, be careful to spell the field names in your formulas exactly as they appear in your underlying database tables. (If you misspell a field name, Access will not indicate that you've made an error, but instead will assume you're creating a parameter

Item Number	Item Description	Unit Price	Quantity	Ext
G124-464	Hot-RiderGloves--Woman's Medi	\$24.95	1	\$24.95
S127	Replace Seat	\$15.95	1	\$15.95
S125	Replace Shifter	\$49.95	1	\$49.95
S124	Repair Flat Tire	\$19.95	1	\$19.95
S123	Basic Bicycle Tune UP	\$39.95	1	\$39.95
G453-324	Mogul Tire Pump Model 3G	\$34.95	2	\$69.90
G123-786	Hot Rider Gloves --Men's Medium	\$24.95	1	\$24.95
S123	Basic Bicycle Tune UP	\$39.95	1	\$39.95
*				

FIGURE 6-14 Partial results for the query in Figure 6-13 at run time.

query and ask you for the data at run time.) Finally, place square brackets around your field names to indicate that you are referencing existing data fields.

When you have completed your query, you can test it by clicking on the Run button (with exclamation point icon) in the main menu. If things work properly, you will see something like the screen in Figure 6-14. Note that although the data in Figure 6-14 is from a query, the screen in Figure 6-14 is interactive. Thus, if you change the item number of a given line, for example, Access will look up the new product description and the new price, change the new extension, and display everything as quickly as you can enter the new item number in the screen.

Step 2: Create the Report Based on Your Query. It now remains to create the report. Using the steps outlined above, you can use the Report Wizard to create the final report in Figure 6-13. Base your report on the query you created in Step 1 above and select all the fields offered.

The second screen of the Report Wizard will ask you if you wish to group your data (refer back to Figure 6-10b). Access will recognize that you have a one-to-many relationship between “invoice numbers” and “invoice details” and should show you this possibility by default. If it does not, however, select this option so that all your invoice details for the same invoice will be grouped together. Then continue with the remainder of the Report Wizard questions. Be sure to name your report something appropriate—for example, rptInvoice-Details. When you finish answering questions in the Report Wizard, you should then reformat your report as needed. The results should look similar to Figure 6-12.

Creating Reports with Grouped Data

The report in Figure 6-12 contains useful data, but obviously lacks some critical information. What is the name of the customer associated with each invoice? What is his or her address? What is the total for each invoice? A typical manager might also want this information to appear in an invoice report, but it is missing in Figure 6-12. Finally, he or she might want the report organized by customer last name rather than by invoice number.

A **control break** is the technical term for the point at which a group changes from one type to the next in a report. Examples of control breaks include a change in zip code for the addresses in customer listings, a change in the department number for a listing of employees, and a change in a service classification for the yellow pages of a phone book.

rptCustomer_Invoices

BSN Customer Invoices

Tuesday, June 30, 2009

Invoice Number	Date	Customer Number	Last Name	First Name	Street Address	City	Zip Code	State	Home Phone
1023	6/15/2009	12345	Abramson	Ariene	3567 Bancroft Street	Arlington		VA	
Item Number	Item Description	Quantity	Unit Price	Extension					
G123-786	Hot Rider Gloves --Men's Medium	1	\$24.95	\$24.95					
G453-324	Hogul Tire Pump Model 3G	2	\$34.95	\$69.90					
S123	Basic Bicycle Tune UP	1	\$39.95	\$39.95					
S124	Repair Flat Tire	1	\$19.95	\$19.95					
				Invoice Total:	\$154.75				
1024	6/16/2009	12345	Abramson	Ariene	3567 Bancroft Street	Arlington		VA	
Item Number	Item Description	Quantity	Unit Price	Extension					
S113	Basic Bicycle Tune UP	1	\$39.95	\$39.95					
				Invoice Total:	\$39.95				
1025	6/29/2009	12350	Franklin	Fanny	9875 Franklin Drive	Franktown	13421-	VA	(876) 543-8876
Item Number	Item Description	Quantity	Unit Price	Extension					
S125	Replace Shifter	1	\$49.95	\$49.95					
S127	Replace Seat	1	\$15.95	\$15.95					
G124-464	Hot-RiderGloves--Woman's Medi	1	\$24.95	\$24.95					
				Invoice Total:	\$90.85				

FIGURE 6-15 The invoice report of Figure 6-12, expanded to include customer information and invoice totals.

Control breaks are often the point at which managers want to see subtotals, maximums, minimums, averages, or similar subgroup summaries.

To create control breaks for the report in Figure 6-12, we need to modify its design to include group totals for each invoice. Figure 6-15 illustrates the format for the final report, which includes new information and provides totals for each invoice. To create it, we will follow the steps outlined above for creating reports with calculated fields—i.e., (1) create a query to generate the desired information, (2) use the Report Wizard to create an initial report based on this query, and (3) reformat our report as needed to achieve the desired end product. Here are the detailed steps:

Step 1: Create the Underlying Query. Our first task is to create the underlying query for this report. Figure 6-16 shows a part of this query at design time, but not the entire set of fields—there were too many of them to fit conveniently in the figure.

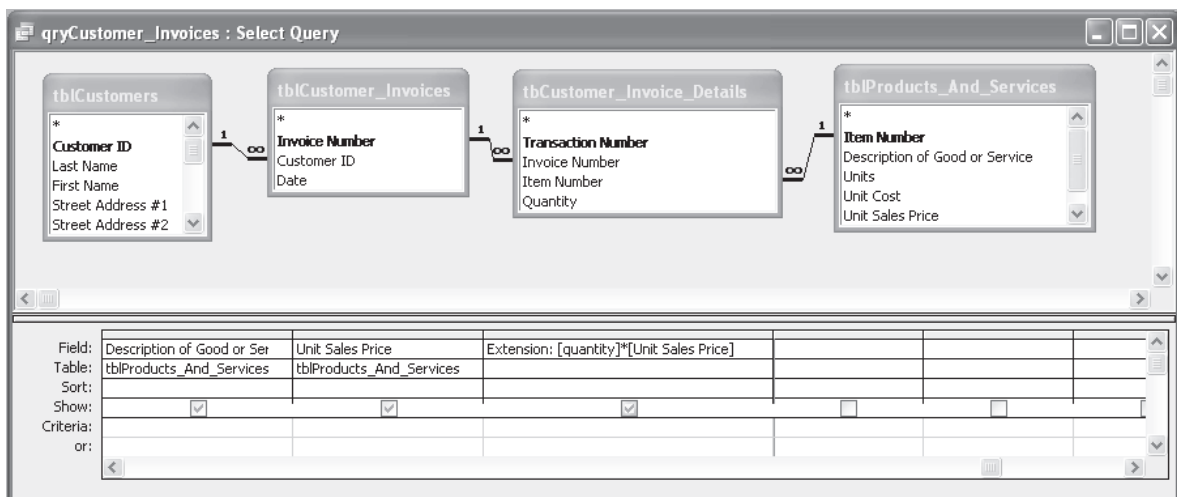


FIGURE 6-16 Part of the query used to create the report illustrated in Figure 6-15.

The upper portion of the query screen in Figure 6-15 identifies the four tables required to build it. If you study the information contained in the final report of Figure 6-15, you will realize *why* we needed four tables for this task. We needed the *Customers* table to provide the name and address information for each customer. We needed the *Invoice* table to provide the customer number for each invoice. We needed the *Customer Invoice Details* table to provide the item number and the order quantity for each detail line of an invoice. We needed the *Products and Services* table to provide the item description and sales price per unit for each item purchased. Finally, we had to create a calculated field—the extension of quantities times prices for each detail line—as described in the previous section of this chapter.

When queries become as complex as this one, it is a good idea to run them and make sure they work, even though the only reason you’ve created them is for a report. Again, you can perform this task by clicking on the exclamation point (run icon) in Access main menu. (You must be working on a query, however, and not working on a form, table, or report.)

Step 2: Use the Report Wizard to Create the Initial Report. After creating our initial query, we will then go the Reports portion of Access and use the Report Wizard to create an initial report. You already know how to perform such a task so we will not describe the process again here. The result is a report whose format will not look very much like the finished product in Figure 6-16, so we have additional work to do!

Step 3: Reformat the Report as Desired. It remains to reformat our report. Because we have also reviewed the activities for this step, we will not repeat them here. Again, it is useful to remember the following items: (1) you should expand the size of unbound labels so that their entire text shows, (2) you can delete any control you don’t need, (3) you can move both bound and unbound controls from one part of a report to another, and (4) the Format menu enables you to resize, align, and reposition multiple objects consistently on your report.

Concluding Remarks about Reports

Although experts had high hopes for paperless offices and a society that only used softcopy (screen) reports, it appears that hardcopy reports will be with us for some time. This section of the chapter illustrated how to create reports in Access, including reports that contain calculated fields and reports that calculate subtotals for grouped data.

One additional point is that you can modify the underlying queries for reports that further restrict what gets printed *on* them. For example, suppose we included a Yes-No logic field in our Invoice records that indicated whether or not a customer has paid a given invoice. Then, we could modify the underlying query for the Invoice report in Figure 6-13 to only print line information in Figure 6-15 for unpaid customer invoices.

Finally, forms and reports are related in that many of the formatting techniques that you can use for the one you can also use for the other. For example, you can create a *form* based on a query instead of a table, just as you can create a *report* based on a query instead of a table. As a result, you can create *calculated fields* in forms as well as in reports. For example, if an employee table contained a “Date of Hire” field, you could compute the years of service for this employee as part of your form. Similarly, you can create unbound data fields in reports as well as in forms.

Case-in-Point 6.4 If you think about it, Access is a great tool for creating a name-and-address book for yourself. Each record contains the name and address of one of your friend, and you can use a Yes/No field to indicate whether or not to send a Christmas card. Birthday lists become easy to create using an underlying query to determine the birthday list (report) for each month. Finally, you can print your entire name and address book (formatted, of course!) once a year as a hard-copy backup of your database table.



AIS AT WORK Mother Lode Bicycles

Although the BSN Bicycle Company is fictitious, Mother Lode Bicycles in Sparks, Nevada, is not. Founded in 1996 by two friends—Dave McDonald and Mark Kennedy—the 2,400-square-foot shop sells road and mountain bikes to local customers as well as out-of-towners visiting the area. Bike prices range from \$200 to \$5,000. Sales of bikes, clothing, and biking accessories are 90% of the store’s income; repairs make up the rest.

In many ways, running a bike shop is similar to running any small business. One partner manages the inventory, stocks the store shelves, and deals with the marketing and advertising parts of the business. The other partner deals with employees, supervises repairs, and interacts with customers. Their biggest problems: (1) making enough money to cover the overhead (especially during the months after Christmas and prior to spring cycling) and (2) the fact that the store must stay open seven days a week.

For accounting tasks, the store’s owners rely on QuickBooks™ from Intuit and the bookkeeping expertise of Mark’s wife. With the exception of employees, the store does not sell items on credit, so there are no receivables. Mark personally supervises payables, taking advantage of cash discounts where possible and negotiating longer payment schedules with suppliers during the slower-selling seasons of the year.

Most of the shop’s inventory consists of items that sit on shelves and racks in the retail portion of the store, with just a few parts and unassembled bikes stored in the back room—a combination storeroom-warehouse-office-dining room. “Inventory control” is also a combination of elements, including “visual inspection,” working with sales representatives to keep merchandise levels up, and the expertise of the owners for ordering or not ordering items for the slower or busier season to follow. Mark is considering acquiring a point-of-sale system with a backend database, which he thinks will help the company become better aware of its best sellers as well as keep closer tabs on stock on hand.

Source: From the authors.

SUMMARY

- You can use database forms both to input data to, and to view data from, the records in tables.
- If you use forms to create new records, the data fields in the customized forms automatically inherit the same properties, attributes, and input restrictions that were created for them in the design of the table.
- The navigation bar at the bottom of a form enables you to view the first, last, next, and previous record in the underlying table.
- You can use subforms to display those “many” records related to the record in the main form in a one-to-many relationship—for example, the outstanding invoices for a specific customer.


- You typically design and develop reports to create hard-copy outputs. In Access, reports are either based directly on tables, or on queries that in turn reference tables.
- A typical report has seven major components: (1) report heading, (2) page headings, (3) group headings, (4) detail or body, (5) group footer, (6) page footer, and (7) report footer.
- You should name forms and reports systematically. The standard prefix for a form is *frm* and the standard prefix for a report is *rpt*.
- Most databases do not store calculated fields such as invoice line extensions (prices times quantities) in them. Instead, we calculate these fields with queries.
- Many reports contain grouped data in them—for example, the set of lines for a given invoice, or the set of invoices for a given customer. It is also possible to require a report to show control totals, averages, maximum, or minimum values for each such group. In Access, you can create such tasks using the Report Wizard and its grouping options.

KEY TERMS YOU SHOULD KNOW

bound control	navigation bar
calculated field	Property Sheet window
control break	report
control source property (form control)	Report Wizard
datasheet screen	run mode
design mode	sizing handles
detail section (form or report)	subform
form	tab order
Form Wizard	unbound control
heading section (form or report)	

TEST YOURSELF

- Q6-1.** In Access, you can use a *form* to perform all the following tasks *except*:
- Create a new record in a specific table
 - Change the information in an existing record of a table
 - View the information from many different records sequentially
 - All of these are tasks that can be performed with an Access form
- Q6-2.** Each record in a database table of student records contains the name, address, total university credits, and total quality points for a specific student. The student's grade point average (GPA) is equal to total quality points divided by total university credits. Where would a database typically store a student's GPA information?
- In the same table as the student's other information
 - In a new table of student details
 - In a report stored in the Reports section of the database
 - Nowhere. This is a calculated field that is typically created by a query at run time
- Q6-3.** A form control that does not change from record to record is probably:
- A design-time control

- b. A bound control
 - c. An unbound control
 - d. A mistake
- Q6-4.** The database of a veterinary clinic has records for the pets it treats in one table, records for pet owners in another table, and records for employees in a third table. Which of these is most likely to describe a database form and subform for this application?
- a. Employees in the main form and pets in the subform
 - b. Pets in the main form and owners in the subform
 - c. Owners in the main form and pets in the subform
 - d. Owners in the main form and employees in the subform.
- Q6-5.** If the form onscreen appears with grid lines and you can view the Toolbox, this form is mostly likely in:
- a. Design mode
 - b. Run mode
 - c. Sleep mode
 - d. Wizard mode
- Q6-6.** What happens when you click on this symbol  on a form's navigation bar?
- a. You will transition from run mode to design mode
 - b. You will transition from design mode to run mode
 - c. You will go to the first record in the table
 - d. You will go to the last record in the table
- Q6-7.** Which of these best identifies the underlying data source for an Access report?
- a. Only tables
 - b. Only queries
 - c. Both tables and queries
 - d. Tables, queries, and forms
- Q6-8.** The term "control break" most closely associates with which of the following terms in Access?
- a. Groups of data
 - b. Bathroom break
 - c. Form control
 - d. Report header
- Q6-9.** Which of these is *not* a typical part of a printed report using Access?
- a. Report header
 - b. Report footer
 - c. Navigation bar
 - d. Detail line
- Q6-10.** A column in an employee report contains the number of years each employee has worked for the company. This value is most likely:
- a. A raw value stored in a database table for each employees
 - b. An unbound value that was created in the report itself
 - c. A value that was calculated from each employee's date of hire
 - d. A group summary value

DISCUSSION QUESTIONS

- 6-1. What are some of the advantages and disadvantages of database forms?
- 6-2. Would you rather use a form or a datasheet for entering data into a database table? Why?
- 6-3. To create a form, would you rather use the Form Wizard in Access or create the form from scratch? Why?
- 6-4. What is a subform? Why do forms have subforms? How do you create subforms in Access?
- 6-5. Why do database developers customize forms? Why isn't it sufficient to use the form as initially created by the Form Wizard?
- 6-6. What is the purpose of a database report? What information do such reports contain?
- 6-7. The chapter suggested that it is important to design the format of a report before creating the report itself. Do you agree with this suggestion? Why or why not?
- 6-8. Do you think that we will still use hardcopy reports in the future, or will they be replaced with softcopy ones? Defend your answer.
- 6-9. Would you rather use the Report Wizard to create the format of a report or design one yourself from scratch? Why?
- 6-10. What is a calculated field in a report? Provide some examples. Why do reports contain calculated fields?
- 6-11. Why don't databases store calculated fields as normal fields in database tables? Do you think they should?
- 6-12. Why are calculated fields created with database queries? Why not create them directly with reports?

PROBLEMS

- 6-13. A form's navigation bar has five symbols on it. Identify each one and indicate its use.
- 6-14. A database report has seven major sections in it.
 - a. Identify each one and provide a short explanation of each section.
 - b. Identify a report that might be generated in a database application and indicate what data might be found in each section of the report for your example.
- 6-15. Provide a short explanation of the difference between each of the following sets of terms:
 - a. bound control versus unbound control
 - b. design mode versus run mode
 - c. ◀ symbol versus ▶ symbol on a form's navigation bar
 - d. form versus subform
 - e. normal data field versus calculated data field
 - f. page header versus page footer
 - g. report header versus report footer
 - h. a report based on a table versus a report based on a query
- 6-16. Using the Customers table in the BSN database that accompanies this book and following the directions in this chapter, create the form in Figure 6-1. Make sure that you reformat the default positions of the various textboxes as shown in the figure.
 - a. Add a label in the heading portion of your form that contains the term "Prepared by:" and add your name. Print a single copy of your completed form.

- b. Use the navigation bar at the bottom of your form. What is the first record? What is the last record?
 - c. Add a new record to this form with your name as the customer. Print a copy of this form.
 - d. Close your form, go to the Tables portion of the database, and open the Customers table in datasheet view (see Figure 6-2). Verify that your new record is there. Now, add a second record with your name again. Are you surprised that you can do this?
- 6-17.** If you have not done so already, use the Customers table in the BSN database that accompanies this book and the directions in this chapter to create the form in Figure 6-1. Make sure that you reformat the default positions of the various textboxes as shown in the figure. Now add a subform of customer invoices to your form so that it looks like Figure 6-7. To do this, open your initial form in design view, select the subform tool from the Toolbox Controls, and add a subform. Answer the questions for the Subform Wizard to select the Invoices table. When you have completed these tasks, also do the following:
- a. Use the navigation bar of the main form to go to the last record in the Customers table. Print the form for this record.
 - b. Use the navigation bar of the main form to find a record with invoices. Then use the navigation bar of the subform to select a particular invoice. Which one did you select? Print this form.
- 6-18.** Using the Customers table in the BSN database that accompanies this book and following the directions in this chapter, create the report in Figure 6-8. Note that you will have to reformat and perhaps reposition several labels in the detail section of the report. You will also have to add both labels and a graphic to the header portion of the report.
- a. Add a label in the heading portion of your report that contains the term “Prepared by:” and add your name. Print a single copy of your completed report.
 - b. Who is the first customer in your report? Who is the last customer in your report?
- 6-19.** Use the Customers table in the BSN database that accompanies this book and the Report Wizard to create the report in Figure 6-15. Note that you will have to reformat and perhaps reposition several labels, and add both labels and a graphic in the header portion of the report. Note that you will first have to create the underlying query for this report. Use Figures 6-12 through 6-16 as guides for this task. Print the final report.

CASE ANALYSES

6-20. A Form for BSN Suppliers (Creating a Simple Form in Access)

The BSN Company requires a form with which to view its existing suppliers conveniently and also to create records for new suppliers. Figure 6-17 contains a suggested format for this form.

Requirements:

- a. Using the Vendors table in the BSN database that accompanies this book, create the initial form using the Form Wizard. Note that you will have to reposition some of the data fields in the form, add the term “Abbrev.” to the label for the State field, and add the following items in the heading of the form: (1) a label with text “BSN Vendors,” (2) a label with your name, and (3) a graphic (which can be different than the one shown in the figure).
- b. Run your completed form to make sure it works. What is the first record that shows in your form? What is the last record?

FIGURE 6-17 A form for entering and viewing vendor information in the BSN database.

- c. While in run mode, tab through the individual data fields of any particular record and note that you do *not* tab through the data fields column by column. Return to design view and adjust the tab order by selecting View/Tab Order from the main menu and make the necessary adjustments. What is the correct Tab Order and how did you make these adjustments?
- d. Go back to run mode for your form and click on the ►* symbol to add the information in Figure 6-17 to the Vendors table. Note that you should use your own name as the Contact Person for this vendor.
- e. Print just this form to document your work, following the steps in the text for this task.
- f. Now that you have used your new form, what additional improvements would you make to further streamline data entry tasks?

6-21. A Form and Subform for BSN Suppliers (Creating Forms with Subforms in Access)

Create the form in Figure 6-17 and then add a subform to it that shows purchase orders for each vendor. Figure 6-18 provides a suggested format. To accomplish this task, follow these steps: (1) start with the Vendor form of Figure 6-17 in design mode, (2) click on the subform control in the Toolbox, and (3) follow the steps in the Subform Wizard to complete your work.

Requirements:

- a. Run your new form to make sure it works properly and then print a copy of your new form to document your work. Make sure your name is in the header portion of the form.
- b. Select a vendor for which there are outstanding purchase orders. Click on the ► symbol in the navigation bar of the main form. What happens?

The screenshot shows a form window titled 'frmVendors'. The main form is titled 'BSN Vendors' and includes a header with a logo and the text 'Prepared by: (your name here)'. Below this, there are several input fields for vendor information: Vendor ID (3450), Vendor Name (Cycles-R-US), Contact Person (Your name here), Street Address #1 (1234 Maple Avenue), Phone Number ((123) 456-7890), Street Address #2, Fax Number ((123) 908-7654), City (Martinsville), State (Abbrev.) (MD), and Zip Code (12345). Below these fields is a subform titled 'Purchase Orders for this Supplier'. The subform contains a table with columns for Purchase Order Number, Purchase Date, and Vendor ID. The table has five rows of data, with the first three rows showing purchase orders for Vendor ID 3450. The subform also has a navigation bar at the bottom with 'Record: 14 | 4 | 5 | 1 | 5' and 'of 7'.

FIGURE 6-18 A suggested format for the form and subform of Problem 6-21.

- c. Click on the ► symbol in navigation bar of the subform. What happens?
- d. Create a new purchase order for your current vendor using your new subform. Do you think it makes sense to be able to create a new purchase order that has no detail lines? Why or why not?

6-22. A Listing of BSN Suppliers (Creating Simple Reports in Access)

The BSN Company would like a hard copy report of all the current vendors in its database. Figure 6-19 provides a suggested format for the report. Note that your report header should include the company title, the current date, your name, and a graphic. Also note that the detail section contains multiple lines. Create a similar report for this assignment.

The screenshot shows a report window titled 'rptVendors'. The report header includes the title 'BSN Vendors', the date 'Monday, July 03, 2006', and 'Prepared by: (your name here)'. Below the header is a table with columns for Vendor Name, Vendor ID/Contact Person, Street Addresses, City/State, Zip Code, and Phone Number/Fax Number. The table lists several vendors, including Aranson Apparel, Bikes, Brakes, and Beyond, Cycles-R-US, D & D Manufacturers, Edge Supply, Franklin Cycles, and Greg's Gears. Each vendor entry has multiple lines of detail, such as the vendor's name and contact person, and their address and phone/fax numbers.

Vendor Name	Vendor ID/ Contact Person	Street Addresses	City/ State	Zip Code	Phone Number/ Fax Number
Aranson Apparel	3765	987 Able Street	Antioch	67554	(986) 654-3222
	Adam Aranson		AR		(986) 654-3322
Bikes, Brakes, and Beyond	3987	6555 Barbara Blvd	Billings	98765	(654) 473-6353
	Bill Brown		MT		(654) 676-9908
Cycles-R-US	3654	876 Cambridge Circle	Charlotte	76554	(203) 654-3398
	Carolyn Carson	Suite 654	CT		(203) 654-1998
D & D Manufacturers	3624	765 Danton Drive	Dubuque	98765	(432) 765-3390
	Dan Daniels	#176	DE		(432) 765-4433
Edge Supply	3628	8764 Edweter Street	Erie	76543	(765) 432-6664
	Edward Engles		PA		(765) 864-5332
Franklin Cycles	3630	876 Fendango Way	Franklin Falls	20098	(904) 544-3886
	Fanny Franks		MI		(904) 544-3888
Greg's Gears	3450	235 Green Street	Gentryville	12345	(123) 456-7890
	Greg Garrison	Attn: Garrison	GA		(123) 908-7654

FIGURE 6-19 A suggested format of the report required by Problem 6-22.

Requirements:

- a. Print the complete report.
- b. Who is the first supplier and who is the last supplier?

6-23. Furry Friends Foundation III (Creating Forms and Reports)

Recall from Case 4-21 in Chapter 4 and Case 5-27 in Chapter 5 that the Furry Friends Foundation is a nonprofit organization that finds homes for abandoned animals. The foundation has created a relational database to help it store data more easily and answer questions about donations. This portion of the case requires you to create database forms and reports for the organization.

Requirements:

1. If you have not already done so, create the tables and relationships described in Case 4-21.
2. Create an intake form for the Contributor's Table. The form should be similar to Figure 6-1 and contain two columns for data entry. Make sure that the system tabs properly, so that data entries proceed logically from left to right and from top to bottom. To document your work, provide a screen capture of your report at run time, which includes your name as the entered contributor.
3. Create an intake form for the Donation's Table. Again, the form should be similar to Figure 6-1 and contain two columns for data entry. Make sure that the system tabs properly, so that data entries proceed logically from left to right and from top to bottom. Provide a screen capture of your report at run time.
4. Create a report that contains a current list of contributors (including yourself as a one of them). The report should include the following information in the header: Foundations Title, a graphic of a furry pet, your name as the developer, and the current date. The body of the report should contain the name, address, and phone number of all contributors, listed alphabetically by contributor's last name. The information for each contributor should all be on one line. Print the complete report.
5. Expand the set of contributors to include at least 10 individual records, and then change the entries in the donations file to include donations from each of them. Create reports for both tables and then print complete lists. Finally, create a report that contains a complete list of all contributors who gave donations during the months of November and December 2009. (Hint: base your report on a query instead of a table.) The report should include a header with the Foundations Title, a graphic of furry pets, your name as the developer, and the current date. The body of the report should list donations in order of the donator's last name and should include the donator's address and phone number. An example set of lines is as follows:

Date	Contributor	Phone Number	Animal Code	Amount
November 11, 2009	Lawrence, Marie 9190 Teepee Road Doolittle, NV 54984	(501) 767-1114	C	150

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ANSWERS TO TEST YOURSELF

1. **d** 2. **d** 3. **c** 4. **c** 5. **a** 6. **d** 7. **c** 8. **a** 9. **c** 10. **c**