

# Access 2002: Intermediate

Desktop Training Manual & Reference Guide

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# **Intermediate Access 2002**

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# Acknowledgments

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We hope this training guide will be useful both during and after your training class. If you have any comments or questions about this guide, please forward them to Trillium Consulting.

## CURRICULUM DEVELOPMENT

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# Course Objectives

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Welcome to the **INTERMEDIATE ACCESS 2002** class. Microsoft Access is a relational database program designed for the Windows environment. Access gives you the ability to manage large amounts of data and manipulate it in a meaningful way. Some common uses of Access databases include managing lists of customers and clients, tracking inventories, maintaining employee records, and tracking financial data.

Intermediate Access is the second in a series of courses designed to give you the skills needed to use Access as an effective and efficient business tool. As you complete the Training Guide, remember to apply the concepts you've learned to your own work.

By the end of this course, you will have the skills to:

- Set query and control properties
- Query for blank and non-blank entries in records
- Perform query calculations
- Create crosstab and action queries
- Design and use forms
- Add, align, and format controls in a form
- Add list boxes, combo boxes, option groups, and buttons to forms
- Insert objects into forms
- Add subforms to a form
- Design and use reports
- Sort and group data in reports
- Calculate totals in reports
- Add subreports to a report

# Using the Training Guide

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This Training Guide is yours to keep at the end of the class. Please feel free to add your own notes if you like. This workbook contains not only the exercises that will be performed in class, but also valuable information you can refer to at a later date.

Each page in your book is divided into sections.

The **CONCEPTS** section explains the topic presented in that lesson. Each new feature will be shown in **CAPS AND BOLD**. If two words are shown separated by a comma (e.g., **FILE, OPEN**), the first one is a menu title on the menu bar, and the second one is a command listed on that menu.

All exercises to be done in class are in **bold** text, with the appropriate keystrokes listed. Field names are indicated with “quotes” and text to be typed is *italicized*.

At the bottom of many of the pages, you will find **NOTES**. These notes give you additional information about the skills, including information not in the manufacturer’s manuals.

You may use this Training Guide in several ways:

1. As a learning tool during class. Follow your instructor through the manual as each topic is discussed.
2. As a tool for reviewing skills after class. If you want to practice the exercises used in this manual, ask your Training Coordinator for a class diskette.
3. As a Quick Reference Guide.
4. As a self-study course workbook.

The following files are used in the Intermediate Access 2002 class:

CITYSTAFF.WMF  
CREDITREPORTREQUEST.DOC  
EMPLOYEE.MDB, EMPLOYEE2.MDB, EMPLOYEE3.MDB, EMPLOYEE4.MDB  
LOANS.MDB, LOANS2.MDB, LOANS3.MDB, LOANS4.MDB  
OPENINGDOORS.WMF  
REVIEW2002.MDB

The following files are provided for the instructor:

EMPLOYEEFINAL.MDB  
LOANSFINAL.MDB  
REVIEW2002FINAL.MDB

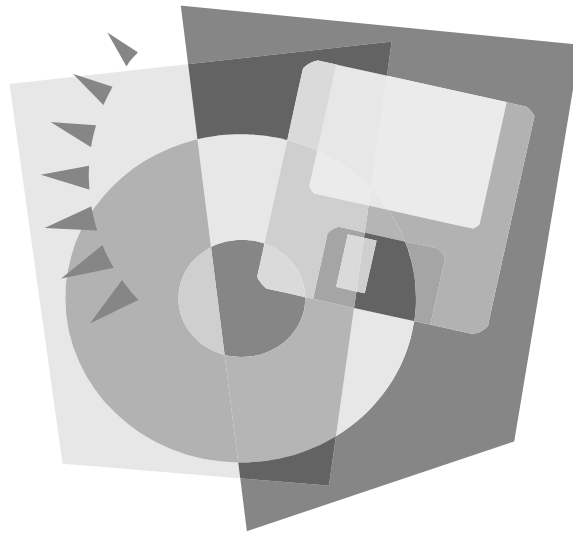
# Reviewing the Basics

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## ***Objectives***

In this section, we'll review concepts from the Introduction to Access 2002 class, including:

- Setting field properties
- Querying a database
- Using the Form Wizard
- Using the Report Wizard



# Review Exercise

---

To review the concepts covered in the Introduction to Access 2002 course, complete the steps listed below. Remember to use the HELP command if you need assistance. If HELP *doesn't* help, ask your instructor.

---

## PRACTICE

You are the owner of a sporting goods store and want to track your inventory. Let's work with tables, queries, forms and reports in your Access database.

**OPEN:** the REVIEW2002.MDB database, then open the "tblProducts" table in Design view

**CHANGE:** the FIELD SIZE of the "Type" field to 20 characters

**SET:** the DEFAULT VALUE for the "InServiceDate" field to today's date. (Hint: Type =DATE() in the DEFAULT VALUE box under Field Properties.)

**SET:** the VALIDATION RULE for the "UnitCost" field to only accept entries greater than or equal to 0

**SET:** the VALIDATION TEXT for the "UnitCost" field to read *The Unit Cost must be greater than or equal to 0*

Property	Value
Format	Currency
Decimal Places	Auto
Input Mask	
Caption	Unit Cost
Default Value	
Validation Rule	>=0
Validation Text	The Unit Cost must be greater than or equal to 0
Required	No
Indexed	No

**SAVE:** the table, choose YES twice in the dialog boxes that display, then close "tblProducts"

**CREATE:** a new table in Design view to keep track of the vendor information. Include the following fields in the new table:

<b>VendorID</b>	<b>AutoNumber</b>	<b>Unique Vendor ID number</b>
<b>Vendor</b>	<b>Text</b>	<b>Name of Vendor</b>
<b>ContactName</b>	<b>Text</b>	<b>Name of Contact Person</b>
<b>Phone</b>	<b>Text</b>	<b>Telephone Number</b>
<b>Address</b>	<b>Text</b>	<b>Vendor's Address</b>
<b>City</b>	<b>Text</b>	<b>Vendor's City</b>
<b>State</b>	<b>Text</b>	<b>Vendor's State</b>
<b>ZipCode</b>	<b>Text</b>	<b>Vendor's Zip Code</b>

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(Continued on next page)

# Review Exercise

## PRACTICE

Let's continue working with the REVIEW2002.MDB database.

**SET:** the "VendorID" field to be the primary key

**SAVE:** the table as *tblVendors*, then close the table

**CREATE:** a new query in Design view. Base the query on the "tblProducts" table and include all fields from the table.

**SET:** the criteria to find the products whose "Unit Cost" is more than \$30 and sort the list by "Type" in ascending order. View the recordset in Datasheet view and notice your results:

Product ID	Name	Description	Type	Unit Cost
3	Outdoorsman	8 man Tent	Camping	\$115.00
11	Glacier Grip	Deluxe 24 inch	Climbing	\$59.00
10	Thermal2000	1 man all-weath	Climbing	\$65.00
6	Ice Grip	Super 12 inch Ic	Climbing	\$39.00
2	Pro Basketball	Regulation Bas	Equipment	\$35.00
12	WeatherBeater	Leather weather	Shoes	\$59.00
8	Shoe2	Next Generation	Shoes	\$150.00
5	Mt Olympus	Double retread	Shoes	\$85.00
1	AG 1000	Basketball Sho	Shoes	\$65.00

**SAVE:** the query as *qryProductByTypeOver\$30*, then close the query

**CREATE:** a new query in Design view based on the "tblProducts" table that lists the "ProductID," "Name," "Description" and "UnitCost" fields

**TYPE:** *[Please enter Item ID Number]* (including the brackets) on the Criteria line in the "ProductID" field on the QBE grid to have the parameter prompt you for the item ID

**SWITCH:** to Datasheet view and type 3 as the ID Number. Notice your results:

Product ID	Name	Description	Unit Cost
3	Outdoorsman	8 man Tent	\$115.00
*	(AutoNumber)		

**SAVE:** the query as *qryProductByID*, then close the query

**CREATE:** a new form using the FORM WIZARD to assist you. Base the form on the "tblProducts" table and include all fields.

**CLICK:** on NEXT and choose the COLUMNAR layout, then click on NEXT and choose the BLENDS style

(Continued on next page)

# Review Exercise

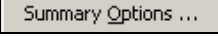
## PRACTICE

You're almost done! Let's continue working with forms and reports in the REVIEW2002.MDB database.

**CLICK:** on NEXT and type *frmProducts* as the form title, then click on FINISH. Notice your results, then close the form.

**CREATE:** a new report using the REPORT WIZARD to assist you. Base the report on the "tblProducts" table and include all the fields.

**CLICK:** on NEXT and group the products by "Type"

**CLICK:** on NEXT, then click on  and choose to calculate the AVG for the "Unit Cost" field. Click on OK, then click on NEXT.

**CHOOSE:** the STEPPED layout, then click on NEXT. Choose the CORPORATE style, then click on NEXT.

**TYPE:** *rptProductByType* as the report title, then click on FINISH

**NOTICE:** the report shows the results grouped by "Type" and the average "Unit Cost" for each type:

Type	Product ID	Name	Description	Unit Cost	Unit Price	Vendor	In Service Date
<i>Back Pack</i>							
	7	Dakar Backit	Back pack with 2	\$28.00	\$39.95	NoLeaks, Inc.	02/28/1995
Summary for 'Type' = Back Pack (1 detail record)				Avg	\$28.00		
<i>Camping</i>							
	13	Night Light	High output Kero	\$24.95	\$29.95	Gladders, Inc.	03/04/1996
	3	Outdoorsman	8 man Tent	115.00	\$139.95	NoLeaks, Inc.	02/15/1995
Summary for 'Type' = Camping (2 detail records)				Avg	\$69.98		

**CLOSE:** the report, then close the REVIEW2002.MDB database

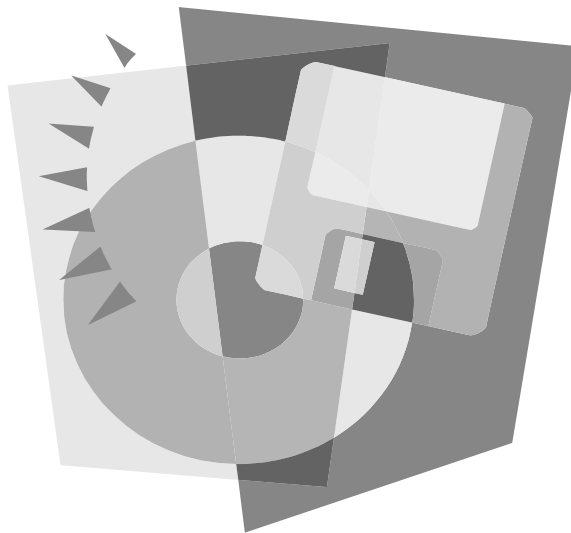
# Section One: Working with Advanced Queries

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## ***Objectives***

By the end of this section, you should be able to:

- Set query properties
- Find the top values using a query
- Find blank or non-blank entries using a query
- Create calculated fields and use expressions in queries
- Calculate totals in a query and use crosstab queries
- Create action queries



# Reviewing Queries

## CONCEPTS

Performing a **QUERY** on your database information is one of the most powerful features of Access. A query allows you to select and display records that meet a specified set of criteria; e.g., all customers in California. You can use queries to view, change and analyze data, as well as perform calculations. Queries can also provide the foundation for a form or report in the database.

**Queries: What they are and how they work**

You use queries to view, change, and analyze data in different ways. You can also use them as the source of records for forms, reports, and data access pages.

Bring together data from multiple tables and sort it in a particular order.

Perform calculations on groups of records.

Products and Suppliers : Select Query		
Product Name	Supplier	Phone
Alice Mutton	Pavlova, Ltd.	(03) 444-2343
Aniseed Syrup	Exotic Liquids	(71) 555-2222
Camembert Pierrot	Gai pâturage	38.7
Carnarvon Tigers	Pavlova, Ltd.	(03) 444-2343
Chai	Exotic Liquids	

Sales Totals : Select Query		
Name	Total Orders	Total Sales
Andrew Fuller	125	\$197,110.84
Anne Dodsworth	53	\$86,737.34

Calculate a sum, count, or another type of total, and then group the results by two types of information — one down the left side of the datasheet and another across the top.

Quarterly Orders by Product : Crosstab Query					
Category Name	Qtr 1	Qtr 2	Qtr 3	Q	
Beverages	\$7,696.11	\$26,942.16	\$13,800.18	\$3	
Condiments	\$2,666.22	\$5,449.50	\$5,988.40	\$1	
Confections	\$7,737.14	\$6,175.75	\$17,118.93	\$1	
Dairy Products	\$13,665.87	\$10,494.94	\$15,921.14	\$2	
Grains/Cereals	\$11,624.00	\$9,160.84	\$3,685.07	\$1	

When you create a query, you may base the query on a table, on multiple tables, or on other queries. The tables or queries providing the supporting records can be added to the query's Design view by using the Show Table dialog box, or dragging and dropping the table or query names from the Database window to the top half of the Query Design window.

**Queries: What they are and how they work**

You create a query with a wizard or from scratch in query Design view. In Design view, you specify the data you want to work with by adding the tables or queries that contain the data, and then by filling in the design grid.

Field lists show the fields in the tables or queries you add to your query.

A join line tells Microsoft Access how data in one table or query is related to data in another table or query.

You add fields to the design grid by dragging them from the field lists.

The fields, sort order, and criteria you add to the design grid determine what you will see in the query's results.

Products and Suppliers : Select Query		
Product Name	Supplier	Phone
Alice Mutton	Pavlova, Ltd.	(03) 444-2343
Aniseed Syrup	Exotic Liquids	(71) 555-2222
Carnarvon Tigers	Pavlova, Ltd.	(03) 444-2343

# Reviewing Queries

## CONCEPTS

The results of a query, called the **RECORDSET**, display as a datasheet. Recordsets can be viewed and printed just like a table datasheet. You can also edit data in a recordset; however, because data is stored in tables, not in queries, if you make changes to a record displayed in a query, *you are actually making changes to the data stored in the table.*

In Access, there are several types of queries. The most common type of query is the **SELECT QUERY**. The select query displays a recordset of all the records matching the criteria you entered in the **QUERY BY EXAMPLE (QBE)** grid without changing any of the data.

**Queries: What they are and how they work**

The most common type of query is a select query. A select query retrieves data from one or more tables by using criteria you specify and then displays it in the order you want.

When you run the query, Microsoft Access retrieves the records you specify...

... and then displays the combined data in the order you want.

Products : Table		Suppliers : Table		
Product Name	Units	Supplier	Supplier ID	Phone
Alice Mutton		Exotic Liquids	1	(71) 555-2222
Aniseed Syrup		Forêts d'érables	29	(514) 555-2955
Boston Crab Meat		Formaggi Fortini s.r.l.	14	(0544) 60323
Camembert Pierrot		G'day Mate	24	(02) 555-5914
		Pavlova, Ltd.	62	(03) 444-2343
				(06) 431-7877
				(503) 555-9931
				(03) 444-2343

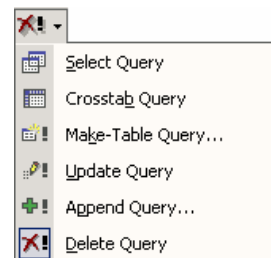
  

Products and Suppliers : Select Query		
Product Name	Supplier	Phone
Alice Mutton	Pavlova, Ltd.	(03) 444-2343
Aniseed Syrup	Exotic Liquids	(71) 555-2222
Boston Crab Meat	New England Seafood	(617) 555-3267
Camembert Pierrot	Gai pâturage	38.76.98.06

Another commonly used query type is a **PARAMETER QUERY**. A parameter query is used to prompt the user for the criteria each time the query is run.

The third type of query is called a **CROSTAB QUERY**. This type of query computes summary totals based on values for each row or column. If, for example, you wanted a total of all the loans listed by type and state, you would create a crosstab query.

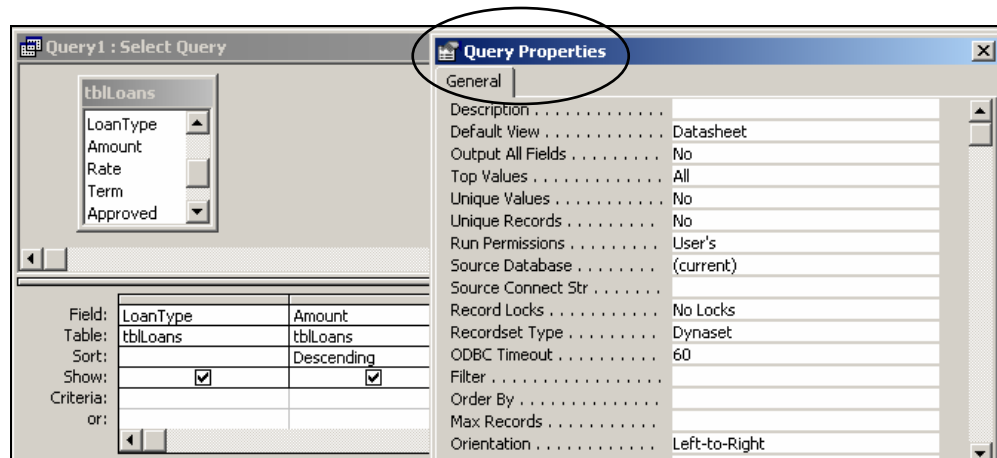
The fourth type of query is called an **ACTION QUERY**. An action query is a query that makes changes to many records in just one operation. There are four types of action queries: **MAKE-TABLE**, **UPDATE**, **APPEND**, and **DELETE**. An action query modifies the data in the table based on the criteria you specified. As an example, suppose you want to delete all the records for everyone living in California. You would create a *delete query*, where the criteria for the "State" field would specify California. When you run the query, it would go through all the records and delete those that met the criteria; i.e., the California records.



# Working with Query Properties

## CONCEPTS


As you create your queries, you may find that you want to customize your queries by changing the **QUERY PROPERTIES**. Query properties determine the behavior of the query as a whole and allow you to control query output; e.g., you use the Unique Values property to show only one occurrence of a record if the field is a duplicate. Each type of query (crosstab, action, etc.) has its own set of properties; however, several of the properties are common across various queries.



In addition to query properties, you can also specify properties for an individual field or Field List within a query. **QUERY FIELD PROPERTIES** affect the characteristics of the data in a field. You can, for example, set a property to display the values in a field as currency. The properties you set affect all values in that field. You can set properties for any field except the asterisk field or fields for which the Show box is not selected. It is important to note that the query field properties only affect the Datasheet view of the query recordset; not the actual design of the table's structure.


## STEPS

To display the Properties sheet in the query's Design view:

1. For query properties, click on the top part of the Query window (above the QBE grid). For field properties, select the desired field by clicking on the long grey bar at the top of the column.
2. Click on the PROPERTIES button  on the toolbar, or choose VIEW, PROPERTIES.

To view query properties, you can also double-click in a blank area at the top of the Query window (above the QBE grid).

## NOTES

 You can also access common query commands, such as viewing the Query Properties sheet and changing your view, by right-clicking in a blank area above the QBE grid.

# Working with Query Properties

## CONCEPTS

Descriptions of some of the query properties are shown in the table below:

Property:	Description:
Description	Specifies the text that describes the query.
Output All Fields	Shows all fields regardless of whether the Show checkbox is selected in the QBE grid.
Top Values	Specifies how many of the highest or lowest values the query should return (e.g., top ten customers).
Unique Values	Shows only the records in which the values of all fields displayed in Datasheet view are unique.
Unique Records	Shows only one occurrence of a record if the record is a duplicate.
Run Permissions	Specifies what the user or group can do to the query (e.g., read, write, etc.).
Source Database	Specifies the external database in which the supporting tables or queries reside.
Source Connect Str.	Specifies the name of an application used to create an external database.
Record Locks	Determines whether records in the query are locked in a multi-user environment.
Recordset Type	Shows the results of the query as a recordset or snapshot.
ODBC Timeout	Specifies the number of seconds Access waits before an error is given when accessing an ODBC database.
Filter	Specifies a subset of records to be displayed.
Order By	Specifies how you want to sort the records.

## NOTES

☞ Using the TOOLS, SECURITY, USER AND GROUP PERMISSIONS command, you can control whether or not other users can create and/or edit tables, queries, and other database objects.

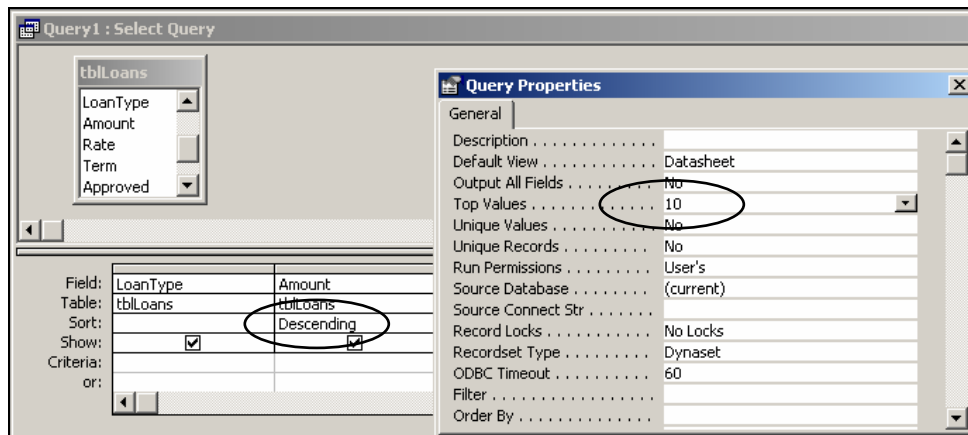
# Setting the Top Values Query Property

## CONCEPTS

The **TOP VALUES** query property allows you to specify how many of the highest or lowest values a query should show. These values may be a number or a percentage. As an example, suppose you wanted to see a list of your top 10 customers. To show this, you would create a query, specify a sort order, then set the Top Value query property to 10. If you wanted to display the values that fall in the top 10 percent, you would type 10%.

When you design your query, the field for which you want to display top values must be the leftmost field in the QBE grid by which you wish to sort. In the field's Sort box, select **DESCENDING** to display the highest values or **ASCENDING** to display the lowest values. You can also sort on other fields in case the query returns multiple records with the same value in the first field. If you want to avoid duplicate values in your top value results, you can set the **UNIQUE VALUES** property to **YES**.

Let's suppose you want to create a recordset of the customers that have the top ten highest loan amounts. You can set the Top Value query property to "10" and the sort order for the "Amount" field to **DESCENDING**.



## STEPS

To set the Top Values control property for a query:

1. In Design view, add the fields for the query to the QBE grid and confirm that the field for which you want the top values is the leftmost field by which you will sort.
2. In the Sort box for the desired field, choose **DESCENDING** to display the highest values or **ASCENDING** to display the lowest values. Set any other desired secondary sort conditions for fields to the right.
3. Show the Query Properties sheet.
4. Click in the **TOP VALUES** box and type the desired top value.
5. To return the highest or lowest values without displaying duplicate values, set the **UNIQUE VALUES** control property to **YES**.
6. Switch to Datasheet view or run the query to view the recordset.

# Setting the Top Values Query Property


## PRACTICE

Let's create a select query, then change the Top Values property.

**OPEN:** the LOANS.MDB database


**CLICK:** on  under Objects, then click on 

**CLICK:** on DESIGN VIEW, then choose OK

**CLICK:** on the "tblLoans" table, click on , then close the Show Table dialog box

**ADD:** the "LoanType," "Amount," "Rate" and "Term" fields to the QBE grid

**CLICK:** in the SORT box under "Amount," then click on the  and select DESCENDING

**CLICK:** on the top part of the Query window, then click on the PROPERTIES button to open the Query Properties sheet 


**TYPE:** 10 in the TOP VALUES box to show the top ten values for the "Amount" field. (Note: Be sure to delete the extra zero that displays.)

**CLICK:** on the DATASHEET VIEW button  to view the recordset

	LoanType	Amount	Rate	Term
▶	HOUSE	\$425,000.00	6.25%	360
	HOUSE	\$350,000.00	6.25%	360
	HOUSE	\$250,000.00	7.00%	360
	HOUSE	\$200,000.00	7.12%	360
	HOUSE	\$180,000.00	5.50%	180
	HOUSE	\$160,000.00	6.50%	360
	HOUSE	\$150,000.00	6.50%	360
	CAR	\$60,000.00	5.62%	36
	HOUSE	\$55,000.00	9.13%	360
	BOAT	\$50,000.00	6.50%	60

**CLICK:** on the DESIGN VIEW button 

**CLICK:** on the top part of the Query window to show the Query Properties sheet, then change the TOP VALUES property to 10%

**CLOSE:** the Properties sheet, then click on the DATASHEET VIEW button to view the three records in the new recordset 

**SAVE:** the query as *qryLoansTopTenPercent*, then close the query

# Showing Blank or Non-Blank Entries

---

## CONCEPTS

Now that we have looked at the query properties, let's look at other types of criteria you might include in a query. For example, there may be times you want to query based on whether or not your records contain a value in a specified field. You can use the expressions **NOT NULL** and **NULL** to select records based on the presence or absence of data within the specified field.

<b>Expression:</b>	<b>Result:</b>
IS NOT NULL (or NOT NULL)	Selects records that contain data in a specified field.
IS NULL (or NULL)	Selects records that are blank in a specified field.

Let's suppose you want to find every loan for which the approval process has been completed, either approved or denied, but do not want the records that are missing a value in the "Approved" field. You can use **IS NOT NULL** in the Criteria box for the "Approved" field to find all the non-blank records.


As another example, let's suppose you want to find the loans for which an approval decision has not yet been made; i.e., loans for which the approval field is blank. In this example, you can use **IS NULL** as the criteria for the "Approved" field.

## STEPS

To show blank or non-blank entries in a query:

1. In the query's Design view, click in the Criteria box for the field that contains the blank entries.
2. Type *IS NULL* to select records for which the field is blank; or type *IS NOT NULL* to select records for which the field contains data.
3. Switch to Datasheet view or run the query to view the recordset.


## NOTES

 As a default, if a record is duplicated in your table, it will appear twice in the result of a query. You can tell Access to display the record only once by choosing YES in the Unique Records box on the Properties sheet. If your query does not include all fields from a table, then choose YES in the Unique Values box instead.

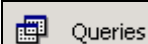
# Showing Blank or Non-Blank Entries

## PRACTICE

Let's work with IS NOT NULL and IS NULL expressions to query for all the customers whose phone numbers are missing.

CLICK: on  Tables in the Database window

DOUBLE-CLICK: on the "tblCustomers" table to open it in Datasheet view. Browse through the records and notice some of the "Phone" fields are blank. Close the table.

CLICK: on , then create a new query in Design view based on the "tblCustomers" table

ADD: the "LastName," "FirstName," "State" and "Phone" fields to the QBE grid

CLICK: in the CRITERIA box for the "Phone" field and type *Is Not Null*

CLICK: on the DATASHEET VIEW button  to view the recordset

	LastName	FirstName	State	Phone
▶	Doe	John	WA	253-563-6985
	Doe	Cookie	OR	503-963-9658
	Raines	Sunny	WA	360-589-6523
	Lean	Mable	OR	503-589-9852
	Aneer	Buck	WA	509-521-4526
	Ness	Happy	OR	503-563-5632
	Fredo	Al	CA	471-582-6598

CLICK: on the DESIGN VIEW button  and change the criteria for the "Phone" field to *Is Null*

CLICK: on the DATASHEET VIEW button  to view the recordset

	LastName	FirstName	State	Phone
▶	Holiday	Nita	WA	
	Lee	Brock	CA	
	Mercedes	Ivanna	WA	
	Day	Sonny	WA	

SAVE: the query as *qryCustomersNoPhone*, then close the query

# Using a Calculated Field in a Query

## CONCEPTS

In addition to using the fields already in your database, you can create **CALCULATED FIELDS** in a query. A calculated field displays the result of a calculation *based on* data from a table. Calculations can be performed on numeric fields, on date fields, or by combining two or more values from text fields. As with any other field in a query, you can enter a sort order or criteria for a calculated field.

The results of a calculated field only appear in the query's recordset; they are not actually stored in the underlying table. Each time you run the query, Access recalculates the field so the results are always based on the most current data in the database. Therefore, you cannot manually update the calculated results except by changing the data in the underlying table.

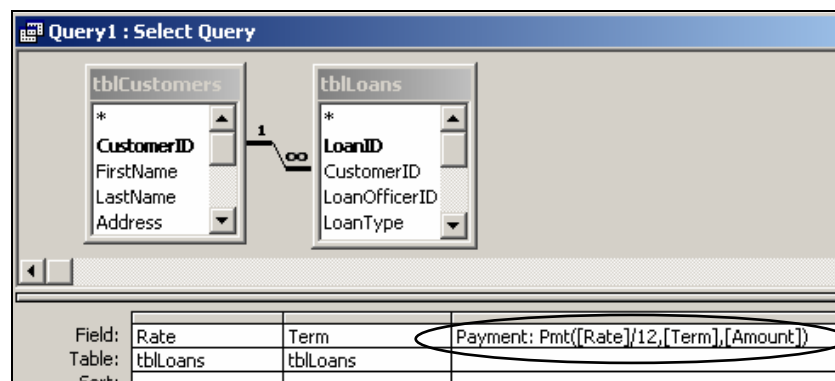
A calculated field is created by entering an **EXPRESSION** in the Field box of a blank column on the QBE grid. An expression is a combination of symbols and values that produce a result. It can include operators to add (+), subtract (-), multiply (\*) and divide (/). The syntax for the calculated field is:

**NewFieldName: [field1] operator [field2]**

Let's suppose you want to know how many days to process each loan after it was entered into the database. You can create a calculated field in the query by clicking in the Field box of a blank column on the QBE grid and typing:


**DaysToProcess: [OriginationDate]-[EntryDate]**

You can also use any of the built-in **FUNCTIONS** available in Access in the expression. For example, you can calculate the monthly loan payment for each customer using the Payment function (PMT) by creating a calculated field using *Payment: PMT([RATE]/12,[TERM],[AMOUNT])* as the expression.



## NOTES

☞ To see an entire expression without scrolling, use SHIFT + [F2] to show the Zoom window.

☞ For help in creating complex expressions like those using built-in functions, you can click on the BUILD button to start the **EXPRESSION BUILDER**. 

# Using a Calculated Field in a Query

## STEPS

To create a calculated field in a query:

1. In the query's Design view, click in the Field row of a blank column on the QBE grid.
2. Type the new field name followed by a colon, then type the existing field names to use in the calculation and whatever operators you need. The field names *must* be enclosed in brackets [ ].
3. Switch to Datasheet view or run the query to view the results of the calculation.

## PRACTICE

Let's add a calculated field to our query to determine our customers' loan payments.

**CREATE:** a new query in Design view based on the "tblCustomers" and "tblLoans" tables

**ADD:** the "LastName" and "FirstName" fields from the "tblCustomers" table to the QBE grid. Add the "LoanType," "Amount," "Rate" and "Term" fields from the "tblLoans" table to the QBE grid.

**CLICK:** in the Field box of the blank column next to "Term" and type:

*Payment: pmt([rate]/12,[term],[amount])*

**CLICK:** on the DATASHEET VIEW button  to view the recordset

Query1 : Select Query							
	LastName	FirstName	LoanType	Amount	Rate	Term	Payment
▶	holiday	Nita	HOUSE	\$150,000.00	6.50%	360	-948.10201172
	Doe	John	HOUSE	\$160,000.00	6.50%	360	-1011.3088125
	Doe	John	CAR	\$30,000.00	5.00%	60	-566.13701034
	Doe	John	CAR	\$30,000.00	7.60%	120	-357.6730152
	Doe	Cookie	BOAT	\$10,000.00	10.00%	36	-322.67187264
	Doe	Cookie	BOAT	\$8,000.00	6.00%	36	-243.37549913
	Lee	Brock	HOUSE	\$250,000.00	7.00%	360	-1663.256243
	Lee	Brock	CAR	\$24,000.00	12.75%	48	-640.88593914
	Mercedes	Ivanna	CAR	\$25,000.00	5.50%	60	-477.52905395
	Mercedes	Ivanna	HOUSE	\$425,000.00	6.25%	360	-2616.7981018
	Mercedes	Ivanna	BOAT	\$50,000.00	6.50%	60	-978.30740535
	Mercedes	Ivanna	CAR	\$35,000.00	7.00%	60	-693.04194940
	Raines	Sunny	CAR	\$36,000.00	6.50%	36	-1103.3640996
	Raines	Sunny	HOUSE	\$350,000.00	6.25%	360	-2155.0102015
	Lean	Mable	HOUSE	\$180,000.00	5.50%	180	-1470.7502155
	Lean	Mable	CAR	\$18,000.00	11.50%	60	-395.86693463

**SAVE:** the query as *qryLoanPayments*, then close the query

## NOTES

☞ User-supplied input can be requested for calculated fields using parameter prompts. For example: NewRate: [RATE]\*[Increase rate by how much?]

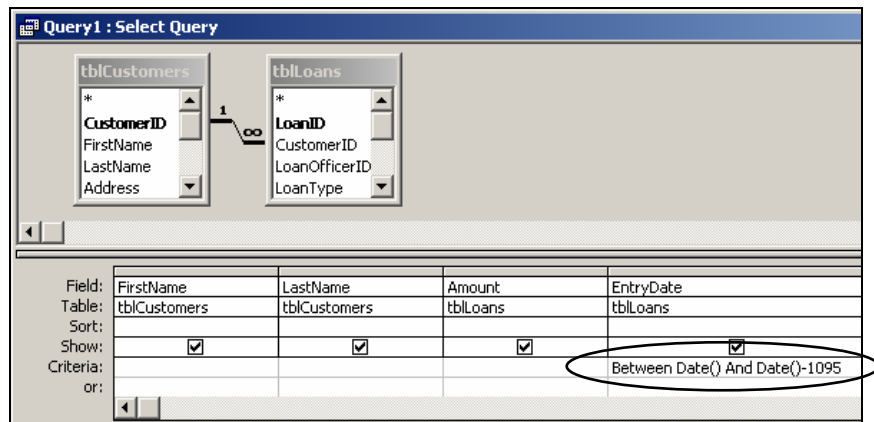
☞ If a report is based on a query containing a calculated field, the results of the calculated field can appear in the report.

# Using Expressions with Date Fields

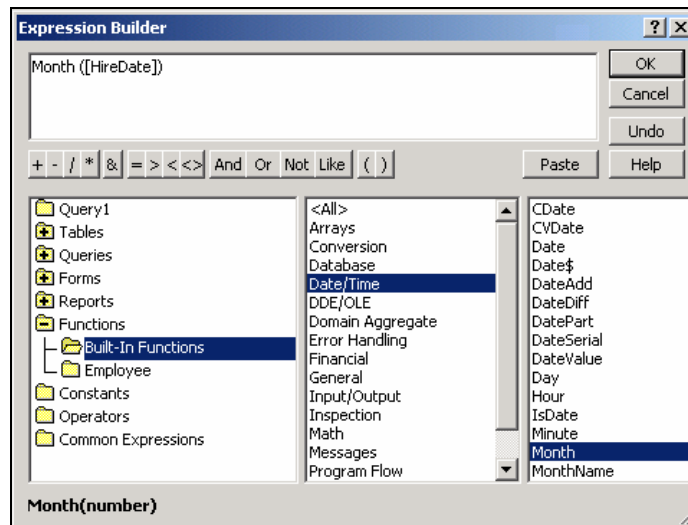
## CONCEPTS

Expressions can be used as the criteria for Date fields to create a query that filters records for a specific date and/or to perform calculations in a query. By combining the **TODAY'S DATE** and **BETWEEN** expressions, you can create a query that locates records within a variable date range.

As an example, let's suppose you want to find all of the loans applied for in the last three years (1095 days). You can quickly locate these records without having to modify the query each time it is run by typing *Between Date() And Date()-1095* in the Criteria box for the "EntryDate" field.




There are a variety of additional functions you can use to perform calculations on Date/Time fields. For example, you can use the **YEAR** function to return only the year that a loan was originated, or the **MONTH** function to return only the month of an employee's hire date. The Expression Builder is a useful tool for working with these functions. Once you find the function you want, you can display the corresponding help topic by clicking on the HELP button.



# Using Expressions with Date Fields

## STEPS

To specify a date or date range in a query:

1. In the query's Design view, click in the Criteria box for the field that the date or date range is to be specified.
2. Type the date or expression to be used to filter the records, or click on the BUILD button to use the Expression Builder. 
3. Switch to Datasheet view or run the query to view the recordset.

## PRACTICE

Let's include a date expression in a query.

**CREATE:** a new query in Design view based on the "tblCustomers" and "tblLoans" tables

**ADD:** the "LastName" and "FirstName" fields from the "tblCustomers" table to the QBE grid. Add the "Amount" and "EntryDate" fields from the "tblLoans" table to the QBE grid.

**CLICK:** in the CRITERIA box for the "EntryDate" field and type `<=1/1/98` to see the loans entered prior to January 1, 1998

EntryDate
tblLoans
<input checked="" type="checkbox"/>
<code>&lt;=1/1/98</code>

**SWITCH:** to Datasheet view to view the recordset

Query1 : Select Query				
	LastName	FirstName	Amount	EntryDate
▶	Aneer	Buck	\$15,000.00	05/08/1997
	Ness	Happy	\$55,000.00	08/01/1996
	Mercedes	Ivanna	\$50,000.00	01/01/1998
	Lee	Brock	\$24,000.00	08/01/1996
	Mercedes	Ivanna	\$35,000.00	10/10/1994
	Raines	Sunny	\$350,000.00	02/14/1992
	Fredo	Al	\$25,000.00	06/01/1995
	Doe	John	\$30,000.00	07/01/1995

**SWITCH:** to Design view, then delete the criteria for the "EntryDate" field

**TYPE:** `Between Date() and Date()-1095` in the CRITERIA box for the "EntryDate" field to see the loans entered in the last three years

**SWITCH:** to Datasheet view. Notice the recordset only includes loans with an "EntryDate" within three years of today's date.

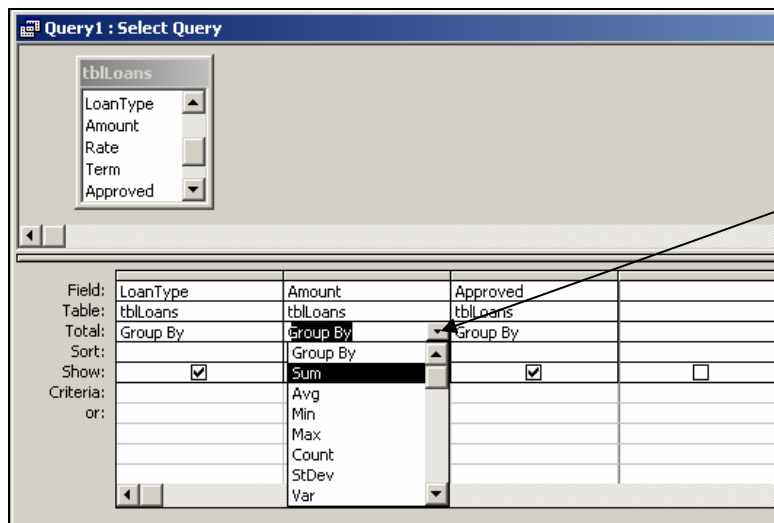
**SAVE:** the query as `qryLoansLast3Years`, then close the query

# Calculating Totals in a Query

## CONCEPTS

You can also use a query to **CALCULATE TOTALS** for all records, or for groups of records. For example, you can count the number of house loans or calculate the sum for car loans in your database.

Access calculates totals based on the *aggregate function* you select in the Total row of the QBE grid. For example, to add the selected values together, select **SUM**; or to find the average of the selected values, select **AVG**. You can also specify criteria to limit the groups for which totals are calculated, limit the records included in the calculation, or limit the results that are displayed after the calculation is performed.



Select the aggregate function by which you want to total.

When you use a function in a field, Access combines the function and the field names to name the field in the datasheet (e.g., “AvgOfFreight”). You can rename these fields if you want.

## STEPS

To calculate totals in a query:

1. In the query’s Design view, add the fields for which you want to calculate totals and group by to the QBE grid.
2. Choose **VIEW, TOTALS**, or click on the **TOTALS** button on the toolbar.
3. For each field you want to calculate, click on the  next to **GROUP BY** in the Total box and choose the desired function from the drop-down list. For the remaining field(s), leave **GROUP BY** in the Total box.
4. (Opt.) Enter criteria or a sort order for the appropriate fields.
5. Switch to Datasheet view or run the query to view the recordset.



# Calculating Totals in a Query

## PRACTICE

Let's calculate totals for groups in a query.

**CREATE:** a new query in Design view based on the "tblLoans" table

**ADD:** the "LoanType," "Amount" and "Approved" fields to the QBE grid

**CLICK:** on the TOTALS button  on the toolbar

**CLICK:** in the TOTAL box for the "Amount" field. Click on the  next to GROUP BY and choose SUM from the drop-down list.

**SWITCH:** to Datasheet view. Notice the "SumOfAmount" field is grouped by "LoanType," then by Approved and Not Approved.

**SWITCH:** to Design view and change SUM to AVG

**CLICK:** on the PROPERTIES button  to open the Field Properties sheet

**CLICK:** in the FORMAT box on the GENERAL tab, then click on the  and select the CURRENCY format. Close the Properties sheet.

**SWITCH:** to Datasheet view. Notice the new calculation and the formatting:

	LoanType	AvgOfAmount	Approved
▶	BOAT	\$20,000.00	<input checked="" type="checkbox"/>
	BOAT	\$22,666.67	<input type="checkbox"/>
	CAR	\$28,875.00	<input checked="" type="checkbox"/>
	CAR	\$29,500.00	<input type="checkbox"/>
	HOUSE	\$260,833.33	<input checked="" type="checkbox"/>
	HOUSE	\$102,500.00	<input type="checkbox"/>

**SAVE:** the query as *qryLoansAvgByTypeByApproval*, then close the query

## NOTES

☞ The functions you can use in your calculations include: SUM, AVG, MIN, MAX, COUNT, STDEV, VAR, FIRST, LAST, and WHERE. You may also use expressions with calculated totals.

☞ You cannot add the asterisk (\*) option to a Field box on the QBE grid in a query in which you are calculating totals.

☞ A blank row may appear in your query if some of the records do not have an entry in the "Group By" field.

# Calculating Totals using Crosstab Queries

## CONCEPTS

When you calculate totals in a select query, the results are grouped vertically by each specified field. This sometimes results in so many records it becomes hard to compare the totals quickly. An alternative is to use a **CROSSTAB QUERY** to compute a summary total for a specified field. A crosstab query groups the results both vertically and horizontally based on values for fields that you designate as the row or column headings.

Last Name	Category Name	SumOfSubtotal
Buchanan	Beverages	\$46,302.09
Buchanan	Condiments	\$16,789.95
Buchanan	Confections	\$36,182.13
Callahan	Beverages	\$111,047.76
Callahan	Condiments	\$49,566.21
Callahan	Confections	\$80,005.35

This select query only groups the totals vertically by employee and category. This results in more records, making comparisons between different employees' totals more difficult.





Last Name	Beverages	Condiments	Confections
Buchanan	\$46,302.09	\$16,789.95	\$36,182.13
Callahan	\$111,047.76	\$49,566.21	\$80,005.35
Davolio	\$135,575.82	\$57,312.91	\$103,961.31
Dodsworth	\$55,931.04	\$37,270.00	\$30,342.63
Fuller	\$135,209.93	\$51,675.89	\$82,459.47
King	\$105,355.83	\$38,878.32	\$72,023.27

A crosstab query displays the same information, but groups it both horizontally and vertically so the datasheet is more compact.

When creating a crosstab query, you use the Crosstab row on the QBE grid to specify one or more fields whose values will become the row headings, one field whose values will become the column headings, and one field whose values will be calculated. If you do not specify anything in the Crosstab box for a field, it will not show in the query results.

## STEPS

To create a crosstab query in Design view:

1. Create a select query in Design view. Add the tables whose records you want to total, then add the fields you want to use as your row headings, column headings, and summary totals to the QBE grid.
2. Choose QUERY, CROSSTAB QUERY, or click on the QUERY TYPE button and choose CROSSTAB QUERY from the list. Access adds the Crosstab row to the QBE grid of the Crosstab Query window. 
3. For the fields you want as headings, click in the Crosstab box, then click on the  and choose either ROW HEADING or COLUMN HEADING. (Note: You can have multiple fields as row headings, but only one field can be the column heading.)
4. For the field you want to calculate, click in the Crosstab box, then click on the  and choose VALUE.
5. Click on the  next to GROUP BY in the Total box and choose the desired function from the drop-down list.
6. (Opt.) Enter criteria or a sort order for the appropriate fields.
7. Switch to Datasheet view or run the query to view the recordset.

# Calculating Totals using Crosstab Queries

## PRACTICE

Let's create a crosstab query from an existing select query.

**OPEN:** the "qryLoansSumByTypeByLoanCenter" query. Notice this is a select query with summary totals and the recordset contains multiple records for some of the loan centers:

LoanCenter	LoanType	SumOfAmount
Bellevue	BOAT	8000
Bellevue	CAR	49000
Bellevue	HOUSE	935000
Eugene	HOUSE	180000
Olympia	BOAT	10000
Portland	CAR	18000

**SWITCH:** to Design view, then click on **QUERY, CROSSTAB QUERY**

**CLICK:** in the **CROSSTAB** box for the "LoanCenter" field, click on the , then choose **ROW HEADING**

Field:	LoanCenter	LoanType	Amount
Table:	tblLoanOfficers	tblLoans	tblLoans
Total:	Group By	Group By	Sum
Crosstab:			
Sort:	Row Heading		
Criteria:	Column Heading		
or:	Value		
	(not shown)		

**CLICK:** in the **CROSSTAB** box for the "LoanType" field, click on the , then choose **COLUMN HEADING**


**CLICK:** in the **CROSSTAB** box for the "Amount" field, click on the , then choose **VALUE**

**SWITCH:** to Datasheet view and notice the results were consolidated:

LoanCenter	Boat	Car	House
Bellevue	8000	49000	935000
Eugene			180000
Olympia	10000		
Portland		18000	150000
Salem			55000

**SAVE:** the query, then close it

## NOTES

 You can also create a crosstab query using the **CROSSTAB QUERY WIZARD**.

 In the Database window, a crosstab query is identified by an  icon.





# Overview of Action Queries

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## CONCEPTS

In addition to select, parameter, and crosstab queries, you can also create **ACTION QUERIES**. An action query is used to modify or copy the actual data in one or more tables. Action queries do not produce a recordset that you can view in a datasheet. Rather, you must open the table(s) on which the action query was based to see the changes that have been made.

There are four types of action queries: **UPDATE**, **MAKE-TABLE**, **DELETE**, and **APPEND**. You can identify the type of action query by the icon that appears to the left of the query name in the Database window. The table below describes each type of action query:

Action Query Type:	Icon:	Description:
Update Query		Makes global changes to a group of records in one or more tables.
Make-Table Query		Creates a new table from all or part of the data in one or more tables.
Delete Query		Deletes a group of records from one or more tables.
Append Query		Adds a group of records from one or more tables to the end of one or more tables.

To protect your data from being modified erroneously, it is a good idea to create a select query first, then convert it to an action query. By first creating the select query, you can see the records that will be modified or deleted before you actually perform the action query. This ensures that you have correctly specified your criteria, chosen the right fields to display, etc. If necessary, you can make changes to your select query, confirm that the correct records will be affected, then convert it to an action query and run it.

An alternative to creating a select query and converting it to an action query is to create your action query, then view the query recordset in Datasheet view. This will display the records that would be modified if the actual action query had been run, without actually making any changes to the data. Once you are satisfied that the recordset is correct, you can use the **QUERY, RUN** menu command, or the **RUN** button to execute the action query.

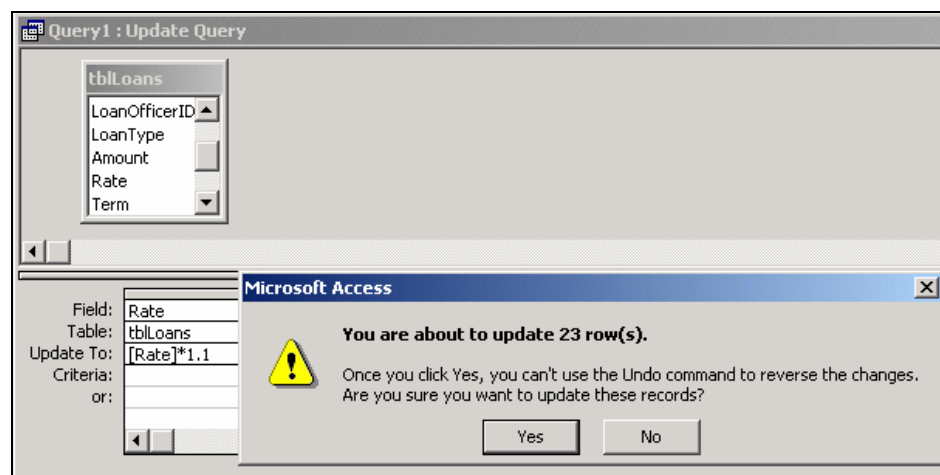


# Overview of Action Queries

## CONCEPTS

When you create and run an action query, Access displays a dialog box confirming the number of records that will be modified. This is a good precaution because once you run an action query, *you can't reverse the changes with the UNDO command.*

Let's suppose you want to change the rate on all loans that have a rate of 7.5% to 8.0%. First, you would create a select query to display all records that have a rate of 7.5. Next, you would change the type of query to an update query, then type 8.0 in the Update To box for the "Rate" field. When you run the query, Access will ask you if you want to update the records. Choose YES to update the recordset or NO to cancel the query.



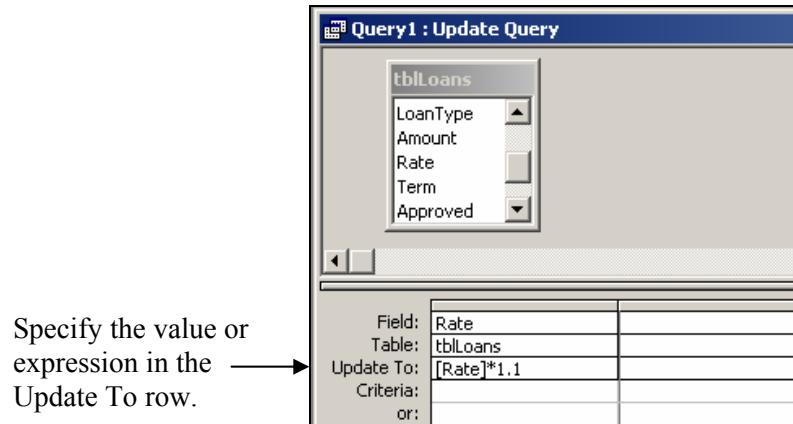
As another example, let's suppose the Marketing department is creating a new database to track responses to a promotional mailer on home equity loans. For security purposes, they do not have access to the confidential records stored in the Loans database. As a result, they want you to export a table that lists the names and addresses for all the bank customers who have house loans.

To provide the table for the Marketing department, you can create a select query that finds all the customers with house loans and only includes the fields needed by the Marketing department. Next, you can convert the select query to a make-table query. When you run the make-table query, you will create a table of data you can give to the Marketing department without breaching the security of other data in your loans database.

# Updating Records as a Group

## CONCEPTS


You can quickly update a group of records with an **UPDATE QUERY**. This type of query requires that you specify criteria that will be used to update a field or fields in your database. For example, in the Loans database, you can increase the rate for all the loans by 10% by multiplying the amount in the “Rate” field by 1.1 or 110%.




As with any type of action query, you should first create a select query to test the criteria for the update query. The select query can include a calculated field to let you see the results of the calculation you plan you use in the update query. For example, you can create a calculated field in the select query to see the result of multiplying the current contents of the “Rate” field by 1.1. However, you should delete the calculated field before converting the select query to an update query.


## STEPS

To update records as a group:

1. Create a select query to select the records you want to update, then view the recordset. When you are satisfied with the recordset, return to Design view.
2. If you have created a calculated field in the select query, delete it.
3. Choose QUERY, UPDATE QUERY, or click on the  next to the QUERY TYPE button on the toolbar. Access adds the Update To row to the QBE grid of the Update Query window.
4. In the Update To box for the field you want to update, enter an expression or a value to change the data.
5. Click on the RUN button on the toolbar. Access displays a confirmation box that tells you how many records will be updated in the table. Choose YES.

## NOTES

 If you want to delete values in a specific field, use an update query and change the values to empty values. Do not use a delete query because it deletes entire records, not just data in specific fields.

 You can use the EDIT, REPLACE command (in a datasheet or form) rather than an update query when you want to confirm each change or change only a text string in your records. For example, to change a title from Salesperson to Sales Representative, using the REPLACE command may take less time than running an update query.

# Updating Records as a Group

## PRACTICE

Let's increase the loan rate by 10% by multiplying the rate by 1.1.

**CREATE:** a new query in Design view based on the "tblLoans" table and add the "Rate" field to the QBE grid

**CLICK:** in the Field row of a blank column in the QBE grid to create a calculated field to test your update criteria

**TYPE:** *NewRate: [Rate]\*1.1*

**SWITCH:** to Datasheet view to make sure the criteria is set properly. (Note: The values in the "NewRate" field will be formatted as a general number, not as a percentage.)

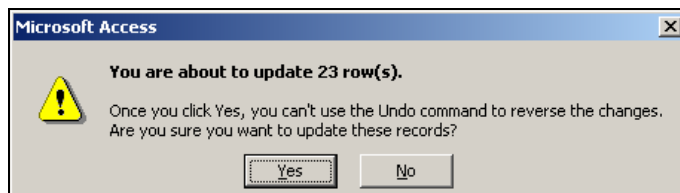
**SWITCH:** to Design view, then delete the "NewRate" field

**CLICK:** on QUERY, UPDATE QUERY

**CLICK:** in the UPDATE TO box for the "Rate" field, and type *[Rate]\*1.1*

Field:	Rate
Table:	tblLoans
Update To:	[Rate]*1.1

**CLICK:** on the RUN button  to run the query, then click on YES to update the recordset



**SAVE:** the query as *qryUpdateRate*, then close the query

**CLICK:** on  Tables in the Database window, then double-click on "tblLoans" to view the updated "Rate" field values

LoanID	CustomerID	LoanOfficerID	LoanType	Amount	Rate
1	5	1	CAR	\$25,000.00	6.06%
2	1	3	HOUSE	\$150,000.00	7.15%
3	8	4	BOAT	\$15,000.00	10.45%
4	3	5	BOAT	\$10,000.00	11.00%
5	4	4	HOUSE	\$250,000.00	7.70%
6	5	6	HOUSE	\$425,000.00	6.88%

**CLOSE:** the "tblLoans" table


# Creating a Table from Query Results

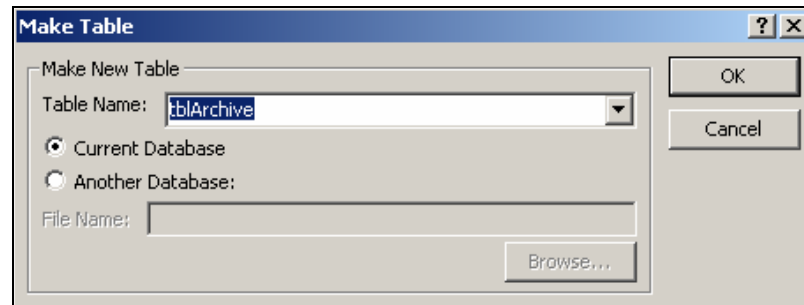
## CONCEPTS


To create a new table from the recordset of a query, you can define a **MAKE-TABLE QUERY**. Make-table queries allow you to archive old records, make backup copies, or make copies to export to another database. You can also use make-table queries as a basis for reports that display specific data.

## STEPS

To create a table from query results:

1. Create a select query to select the records you want in the new table, then view the recordset. When you are satisfied with the recordset, return to Design view.
2. Choose QUERY, MAKE-TABLE QUERY, or click on the QUERY TYPE button and choose MAKE-TABLE QUERY from the list. 
3. Type the name of the new table in the Table Name box, or select the table from the drop-down list if you want to replace the existing data in the selected table. If the table name you type or select is the same as the name of an existing table, Access replaces the structure and data of the old table with those of the new table.



4. Choose OK. Access displays the Make-table Query window.
5. Click on the RUN button on the toolbar. Access displays a confirmation box that tells you how many records will be added to the new table. Choose YES to create the new table. 

## NOTES

☞ A make-table query does not delete records from the current table. To delete the records, run a delete query.

☞ If you run the same make-table query a second time, Access will attempt to override the previously created table. Use an append query to add additional records after the new table is created.

# Creating a Table from Query Results

## PRACTICE

Let's create a table containing the loans issued prior to January 1, 1996.

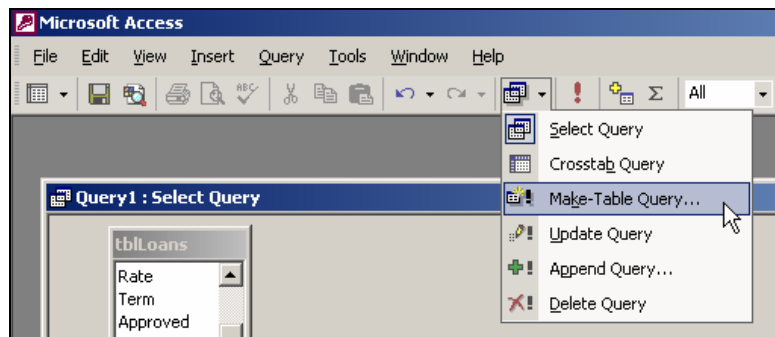
**CLICK:** on , then create a new query in Design view based on the "tblLoans" table

**ADD:** the "LoanType," "Amount" and "EntryDate" fields to the QBE grid

**CLICK:** in the CRITERIA box for the "EntryDate" field and type <1/1/96

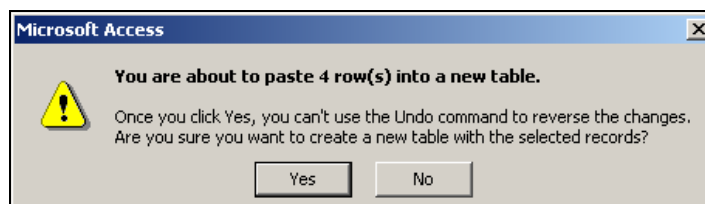
**SWITCH:** to Datasheet view and notice the four records in the recordset, then return to Design view

**CLICK:** on the  next to the QUERY TYPE button  on the toolbar, then choose MAKE-TABLE QUERY from the list



**TYPE:** *tblArchive* as the table name, then choose OK

**CLICK:** on the RUN button , then choose YES to paste the records into the new table



**CLOSE:** the query without saving it

**CLICK:** on  in the Database window. Notice the addition of "tblArchive."

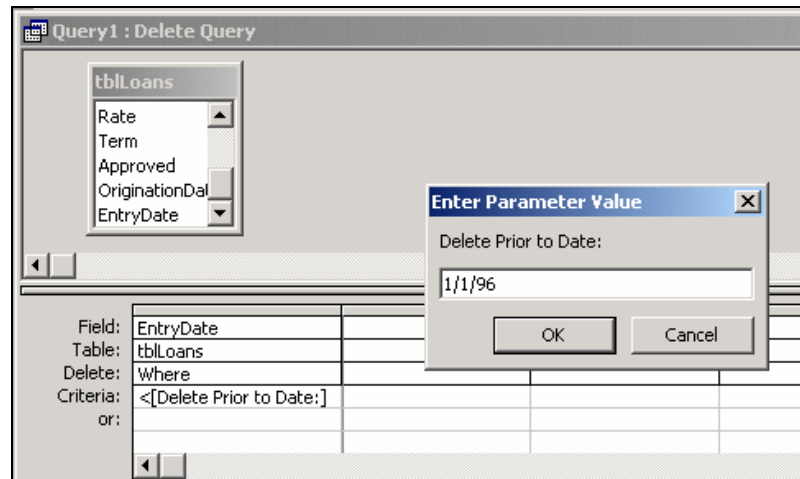
**OPEN:** the "tblArchive" table in Datasheet view to view the records

**CLOSE:** the table to return to the Database window

# Deleting Records as a Group

## CONCEPTS



You can use a **DELETE QUERY** to delete a group of records that you specify with set criteria. Running a delete query typically takes much less time than deleting records individually. For example, you might want to delete customers with loans prior to a specific date all at once using a delete query rather than deleting one record at a time.




Once you delete records using a delete query, *you can't undo the operation*. You should always verify the records to be deleted in Datasheet view before you actually run the delete query. Also, it is a good idea to make backup copies of your data before you delete the records. If you delete the wrong records, you can retrieve them from your backup copies.

## STEPS

To delete a set of records as a group:

1. Create a select query to select the records you want to delete, then view the recordset. When you are satisfied with the recordset, return to Design view.
2. Choose QUERY, DELETE QUERY, or click on the QUERY TYPE button and choose DELETE QUERY from the list. Access adds the Delete row to the QBE grid. 
3. In the Delete row, “Where” will display beneath field names to indicate that you can set criteria to limit the records. If you need to specify the table from which to delete the records, add the entire table to the QBE grid using the asterisk (\*). “From” will display beneath the table name to indicate that the records will be deleted from that table.
4. Click the RUN button on the toolbar. Choose YES to delete the records. 

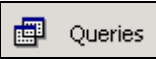
## NOTES



 You can use a delete query to delete records from a single table or from multiple tables in a one-to-one relationship only. To delete records from multiple tables in a one-to-many relationship (e.g., all customers from the Customers table and all their loans from the Loans table), you must either run two queries, or you must specify **CASCADE DELETE RELATED RECORDS** in the Relationships window.

# Deleting Records as a Group

## PRACTICE

Let's create a delete query that prompts the user for a specific date to delete records from our database, then use the query to delete the records we archived in the previous exercise.

**CLICK:** on  under Objects, then create a new query in Design view based on the "tblLoans" table

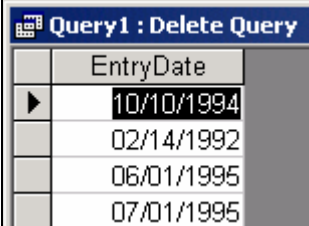
**CLICK:** on the  next to the QUERY TYPE button , then choose DELETE QUERY from the list

**ADD:** the "EntryDate" field to the QBE grid

**TYPE:** <[Delete Prior to Date:] in the CRITERIA box for the "EntryDate" field

Field:	EntryDate
Table:	tblLoans
Delete:	Where
Criteria:	<[Delete Prior to Date:]
or:	

**SWITCH:** to Datasheet view to test the criteria, enter 1/1/96 at the prompt, then choose OK to view the recordset



EntryDate
10/10/1994
02/14/1992
06/01/1995
07/01/1995

**SWITCH:** to Design view, then click on the RUN button 

**TYPE:** 1/1/96 at the prompt, then choose OK

**CLICK:** on YES to delete the four records

**SAVE:** the query as *qryArchiveToDelete*, then close the query

## NOTES

☞ With delete queries, you always delete entire records, not just selected fields within records.

☞ Access does not recognize the Unique Values Only property when a select query is converted to a delete query. When you run the delete query, Access will delete all records that match the set criteria including any duplicates. This may result in deleting records you did not intend to delete.

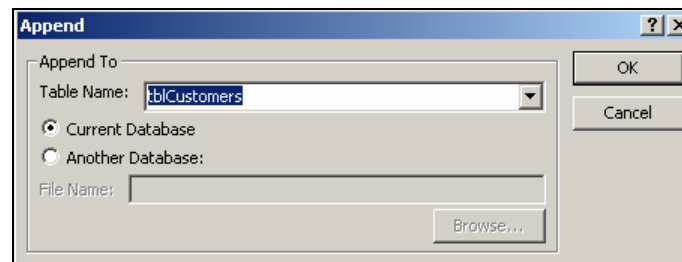
# Appending Records to a Table

## CONCEPTS

Another type of action query is an **APPEND QUERY**. An append query adds records from a table or query in the current database to the end of another table in either the current database or another database. For example, you might want to append a new table of customer records to your active “tblCustomers” table. Using an append query allows you to do this and is faster than copying a large number of records.

In an append query, the two tables must have some fields in common. If the table to which you are appending records includes a primary key field, the records you are appending must have the same field or an equivalent field of the same data type. Access will not append the records if either duplicate or empty values will appear in the primary key field.

When you create an append query, Access will prompt you for the name of the table to which you want to add the records. If you are appending records to a table in a different database, be sure you know the name and location of the database prior to making an append query.



## STEPS

To append records to a table:

1. Create a select query to select the records you want to append, then view the recordset. When you are satisfied with the recordset, return to Design view.
2. Choose QUERY, APPEND QUERY, or click on the QUERY TYPE button and choose APPEND from the list.
3. Select the table name from the drop-down list.
4. Choose CURRENT DATABASE or ANOTHER DATABASE. If you choose Another Database, click on BROWSE, locate and select the file, then choose OK.
5. Click on OK. Access adds the Append To row to the QBE grid, which identifies the table to which the specified data will be appended.



Field:	tblNewCustomers.*
Table:	tblNewCustomers
Sort:	
Append To:	tblCustomers.*
Criteria:	

6. Click on the RUN button, then click on YES twice to run the query and append the records.



# Appending Records to a Table

## PRACTICE

Let's create a query to append new customers to the main customer table.

**CREATE:** a new query in Design view based on the "tblNewCustomers" table

**CLICK:** on the \* (asterisk) in the Field List, then drag it to the QBE grid to add all the fields (or double-click on the \*)

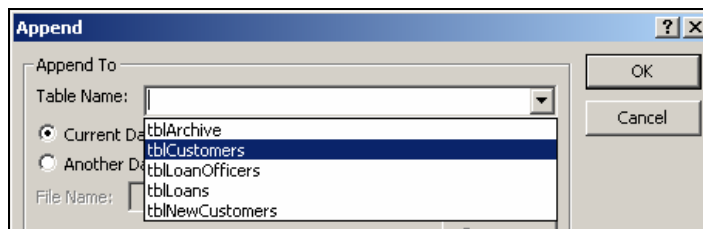
**SWITCH:** to Datasheet view and notice the fields and records that display:



CustomerID	FirstName	LastName	Address	City
100	Rose	Gardener	123 Lettuce A	Seattle
200	Sue	Chef	789 Cook Dr.	Tacoma
300	Phil	Adendron	789 Ivy St	Bellevue

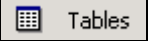
**SWITCH:** to Design view, then click on the  next to the QUERY TYPE button on the toolbar and choose APPEND QUERY

**CLICK:** on the  beside Table Name, select "tblCustomers," then choose OK



**CLICK:** on the RUN button , then choose YES to append the records

**SAVE:** the query as *qryNewCustomersAppend*, then close the query

**CLICK:** on , then open the "tblCustomers" table in Datasheet view and notice the three added records

**CLOSE:** the "tblCustomers" table and the LOANS.MDB database

## NOTES

☞ If you append records to a table with an AutoNumber field, do not include the AutoNumber field in your query if you want Access to renumber the appended records. Only include the AutoNumber field in the query if you want to retain the original values from the field. If there are duplicate values, however, Access won't append the records.

☞ If you added the asterisk (\*) and one or more individual fields to set criteria, delete those individual fields from the Append To row; otherwise, the query won't run, as you are appending to those fields twice.

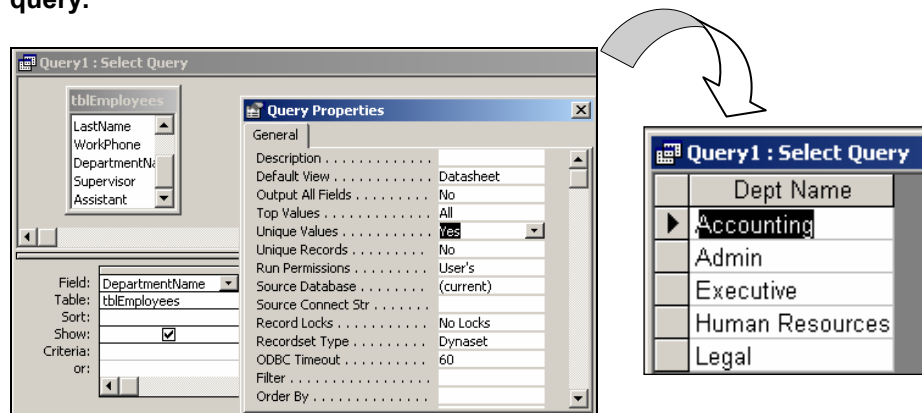
# On Your Own

In this section, we:

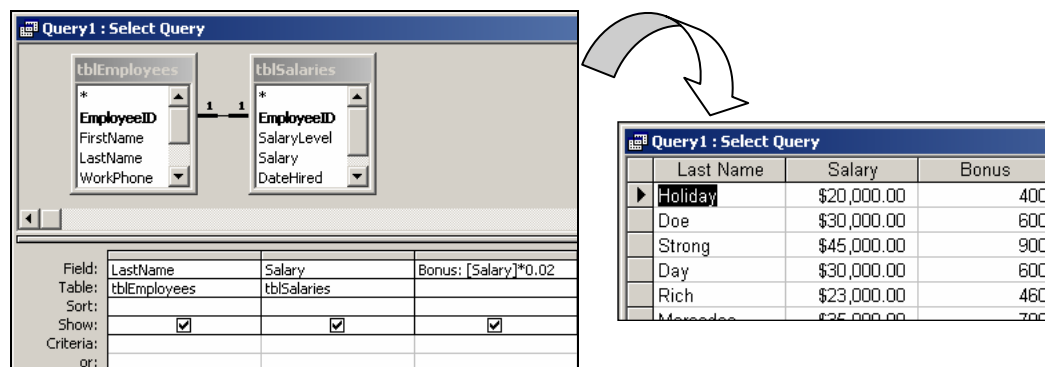
- Set query properties
- Found the top values and blank or non-blank entries using a query
- Created calculated fields and used expressions in queries
- Calculated totals in a query and used a crosstab query
- Created action queries

To practice what you have learned so far, complete the steps listed below. Work at your own pace, and let your instructor know if you have any questions.

1. **Open the EMPLOYEE.MDB database.**
2. **Create a new query in Design view using the "tblEmployees" table that includes only the "DepartmentName" field. Change the query properties to select UNIQUE VALUES only. View the recordset. Save the query as *qryDeptList*, then close the query.**



3. **Create a new query in Design view based on the "tblEmployees" table and the "tblSalaries" table that includes the "LastName" and "Salary" fields. Give each employee a 2% bonus on their base salary. (Hint: Bonus: [Salary]\*0.02). View the recordset. Save the query as *qryEmployeeBonus*, then close the query.**



(Continued on next page)

# On Your Own

4. Create a new query in Design view based on the "tblEmployees" table. Include all fields in the query. Display only the records that do not have an assistant. (Hint: Use IS NULL.) View the recordset. Save the query as *qryEmployeesNoAssistant*, then close the query.

Query1 : Select Query							
	Employee ID	First Name	Last Name	Work Phone	Dept Name	Supervisor	Assistant
▶	2	Cookie	Doe	765-0987	Accounting	Brown	
	3	Phil	Strong	234-7896	Legal	Anderson	
	4	Sunny	Day	234-3456	Admin	Anderson	
	6	Iona	Mercedes	456-8765	Human Resources	Smith	
	7	Peggy	Banks	456-6543	Accounting	Brown	
	9	Holly	Day	563-8907	Legal	Anderson	
	10	Laurel	Hurst	876-5678	Human Resources	Smith	
	11	Ginger	Lee	435-9865	Legal	Anderson	
	12	Sandy	Beach	252-5656	Legal	Anderson	
	14	Henry	Nice	676-7878	Admin	Johnson	

5. Create a new query in Design view based on the "tblEmployees" and "tblPensions" tables. Include the "EmployeeID," "LastName" and "ContributionAmount" fields. Use a calculated total to sum each employee's pension contributions. View the recordset. Save the query as *qryEmployeeSumContributions*, then close the query.

Field:	EmployeeID	LastName	ContributionAmount
Table:	tblEmployees	tblEmployees	tblPensions
Total:	Group By	Group By	Sum
Sort:			
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			

	Employee ID	Last Name	SumOfContribut
▶	1	Holiday	\$600.00
	2	Doe	\$500.00
	3	Strong	\$300.00
	4	Day	\$550.00
	5	Rich	\$1,200.00

6. Create a new query in Design view based on the "tblPensions" table. Include all the fields and set the criteria to prompt the user for the "EmployeeID" number. (Hint: This will be a parameter query.) View the recordset and type 23 when prompted for the ID number.

Query1 : Select Query				
	Pension ID	Employee ID	Contrib Date	Contrib Amount
▶	23	23	01/01/1995	\$100.00
	47	23	01/01/1996	\$100.00
	65	23	01/01/1997	\$100.00
*	(AutoNumber)		11/12/2001	\$100.00

7. Convert the query to a delete query. Run the delete query using 23 as the ID number to delete the three (3) records. Save the query as *qryDeleteContributionsByEmpID*, then close the query.
8. Close the EMPLOYEE.MDB database.

# Notes

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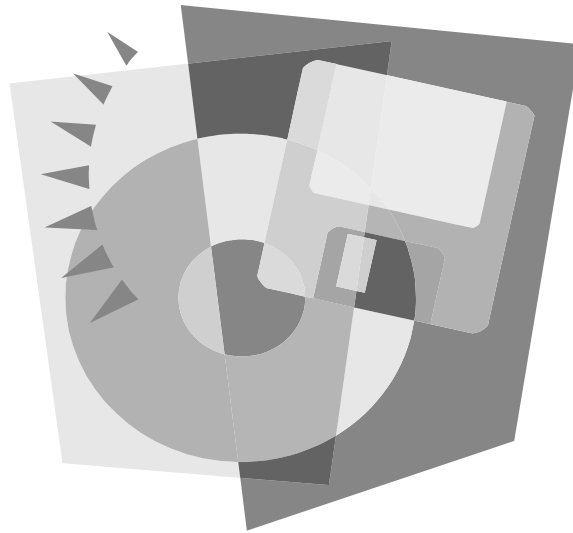
# Section Two: Working with Forms

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## ***Objectives***

By the end of this section, you should be able to:

- Design a custom form
- Work with form controls
- Add headers and footers to a form
- Work with form properties
- Create calculations in forms



# Overview of Forms

## CONCEPTS

As you develop more complicated database applications in Access, you will find that **FORMS** are an effective tool for entering, displaying, and editing data. Forms are typically the primary interface between end users and an Access database because they allow you to add, view, and modify data in a more user-friendly, graphical, “window-like” environment than the spreadsheet-like Datasheet view.

Tables display many records at the same time, but you may have to scroll to see a whole record, and you can't update data from more than one table at the same time.

Order ID	Customer ID	Required Date	Employee
11022	HANAR	09-May-96	Dodsworth, Anne
11023	BSBEV	10-May-96	Davolio, Nancy

Add buttons that print, open other objects, or otherwise automate tasks.

Forms focus on one record at a time, and they can display fields from multiple tables, pictures, and more.

**INVOICE**

**Orders : Form**

**Bill To:** B's Beverage  
Fauntleroy Circus  
London EC2 5NT  
UK

**Salesperson:** Davolio, Nancy

**Order ID:** 11023    **Required Date:** 25-May-96

Product	Unit Price	Quantity	Extended Price
Ipoh Coffee	\$46.00	30	\$1380.00
Uncle Bob's Dried Pears	\$30.00	4	\$120.00

Most of the information in a form comes from the underlying record source; i.e., a table or query. Other information like descriptive text, calculations, and graphic elements are stored in the form's design.

Formview

**Employee Prices**

Product ID: 1    Product Name: Chai    Unit Price: \$18.00

**Employee Price:** \$13.50

Please pay the accounting clerk for your purchases.

Descriptive text is stored in the form's design.

Graphic elements, such as lines and rectangles, are stored in the form's design.

Data comes from the fields in the underlying record source.

A calculation comes from an expression, which is stored in the form's design.

## NOTES

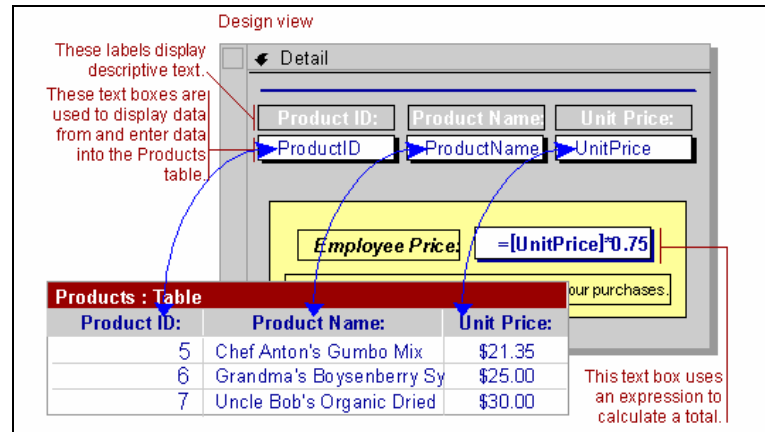
Although the most common use of forms is to work with data, forms can also be used to display messages or to provide a flow to your application.

You can create a special form referred to as a “switchboard” window where users can click on command buttons to access, or print, tables, queries, forms, or reports. See “Appendix E: Creating a Switchboard” for more details.

# Overview of Forms

## CONCEPTS

You create the link between a form and its record source by using graphical objects called **CONTROLS**. Controls are also used when creating reports. One of the most common controls used to display and enter data is a text box.



There are three ways to create a form:

- **AUTOFORM** very quickly builds a form, but aside from choosing the table or query the form will be based on, it does not allow you any choices about the format or content of the form.
- **FORM WIZARDS** are also easy and quick, allowing you to make some choices about format and content as you answer the wizard's questions.
- **CUSTOM DESIGNING** a form allows you to create your form any way you like. You can control the contents of the form, the formatting, and what kind of special controls are included. In this section, we will design custom forms.

When you create a blank form, the form is displayed in **DESIGN VIEW**. You can use this view to create a new form or modify an existing form, whether it was created from scratch or using a wizard.

As a default, when you enter Design view, the **DETAIL SECTION** will show on the screen. You can add controls to other parts of a form by using the **VIEW** menu to show sections for form and page headers and footers. You can also use the **VIEW** command to show rulers and grids on different sections of the form to help you align your controls.

# Using Form Controls

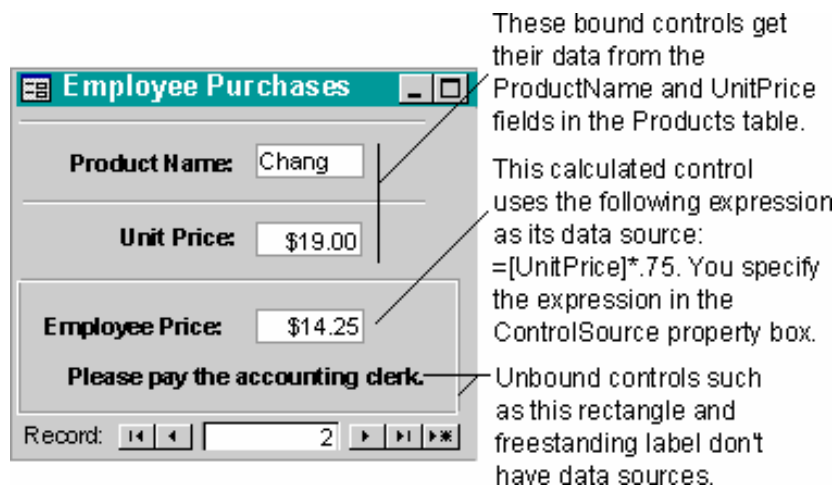
## CONCEPTS

Forms are especially useful if you are designing a database that will be used by people who have little experience working in Access. By including special **CONTROLS** within forms, you can automate data entry, create command buttons to perform specific actions, and automate opening other forms, queries and reports.

Some controls allow you to add graphical objects, such as lines and rectangles, to your form. Once you have added the controls, you can format them to include different fonts and font sizes, as well as different colors and shading patterns.

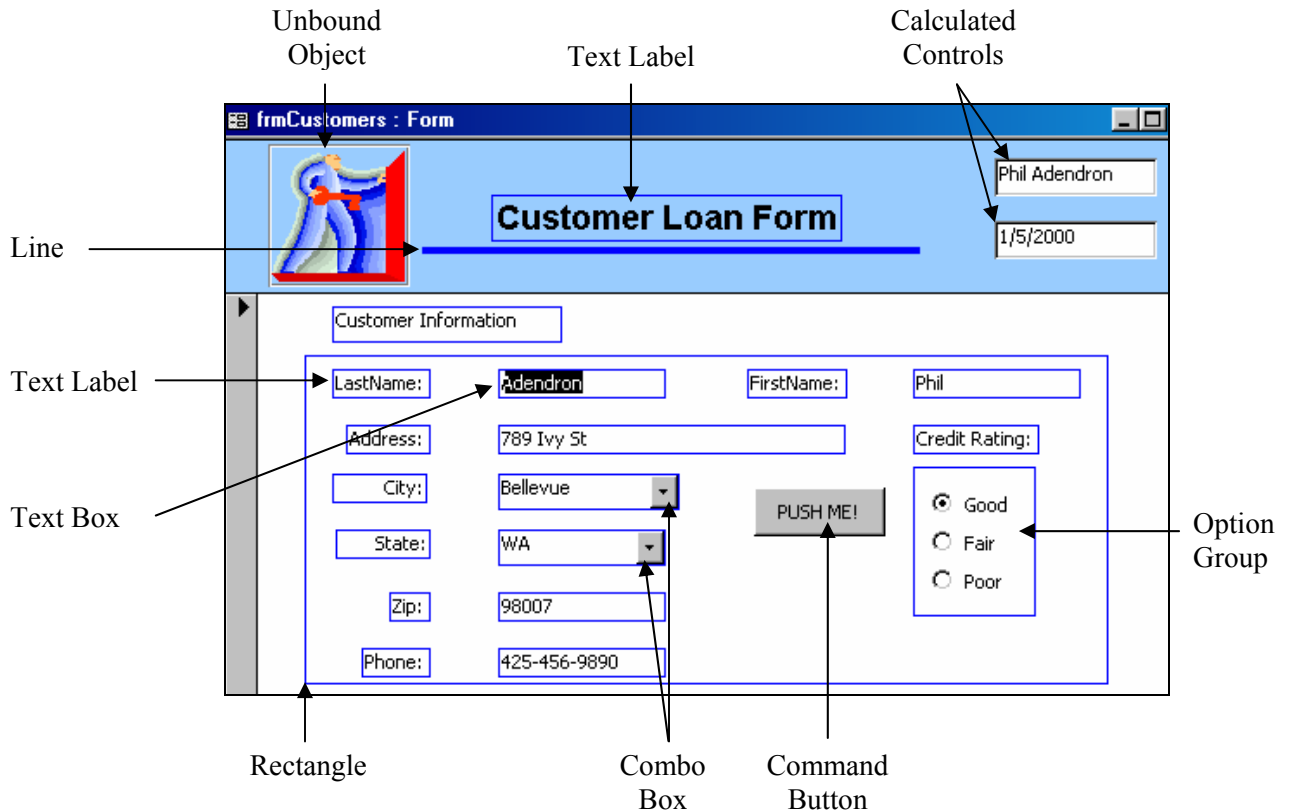
When you design a form, you will add and change controls within the form. There are three types of controls:

- A **BOUND CONTROL** on a form or report is linked to a field in the underlying table or query. You can use a bound control to display, enter, and update data in a field. When you update data in a form, the corresponding fields in the tables in the database are automatically updated. Field text boxes, option buttons, and combo boxes are examples of bound controls.
- An **UNBOUND CONTROL** is not associated with a field in the record source. This may be descriptive text you add to a form, such as a title, or a graphics object, such as a picture or logo.
- A **CALCULATED CONTROL** is an unbound control that is attached to a mathematical expression. If, for example, you create a form with fields for the quantity and price of an item, you can create a calculated control that multiplies the fields to obtain the total cost.



# Using Form Controls

**CONCEPTS** The form below shows examples of controls you can add to a form:



In the sample form above, bound controls include text boxes, an option group, a command button, and combo boxes. These controls are accessing data from the table to which they are bound - the “tblCustomers” table.

The unbound controls include the text labels, the clip art picture, the rectangle, and the line under the “Customer Loan Form” title in the Form Header section.

Within the form, the label and the text box together are considered a control.

## NOTES

☞ You use the same procedures for adding and formatting controls on both forms and reports.

☞ You can assign **MACROS** to the controls in your forms. This allows you to create a control that automatically carries out a specific series of instructions when you click on the control.

☞ For a complete list of controls and their corresponding descriptions, see “Appendix B: Control Descriptions.”

# Designing a Form

## CONCEPTS

While using an AutoForm or the Form Wizard is the easiest way to create a form, it may not offer the design flexibility you need. If you want to design a form yourself, you can create a blank form, then customize it to meet your requirements. You can also start with an AutoForm or the Form Wizard to create a basic form, then customize it in Design view. (See “Appendix C: Using Form Wizards.”)

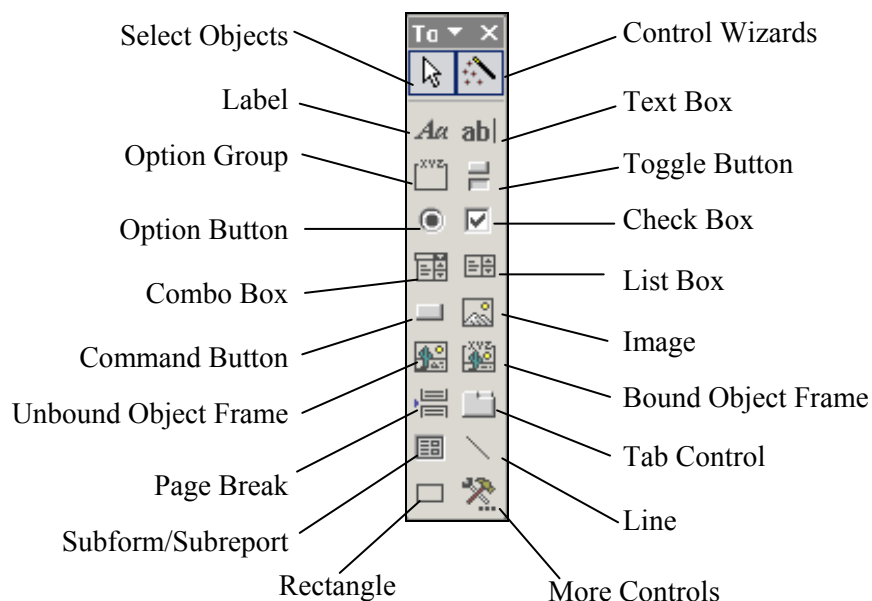
Most forms are based on either a table or a query that provide the underlying data for the form. When you update data in a form, you are modifying the actual data stored in the associated table. If you base a form on a parameter query, Access will prompt you with a dialog box prior to displaying the form.

As you work with forms in Design view, you can use tools to aid in the design or modification of your forms. Some of the form tools on the Access toolbar are shown below:

- The **PROPERTIES** sheet allows you to set and display properties for the selected control, section or entire form. To show the Properties sheet, you can click on the PROPERTIES button or choose VIEW, PROPERTIES. If you are in Design view, you can also double-click on an individual control.
- The **FIELD LIST** allows you to create controls bound to fields in the underlying table or query. To show your Field List click on the FIELD LIST button, or choose VIEW, FIELD LIST.
- The **CODE** button opens a module window for writing Visual Basic code.
- The **TOOLBOX** is a special toolbar used to place controls on the form. To display the Toolbox if it is not showing, click on the TOOLBOX button, or choose VIEW, TOOLBOX.



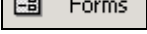
When you show on the TOOLBOX, the following tools show on the screen:



# Designing a Form

## STEPS

To create a form in Design view:

1. In the Database window, click on , then choose the NEW button. Select DESIGN VIEW.
2. Choose (or type the name) of the form's source table or query.
3. Choose OK. Access displays the Form window in Design view where you can create a custom layout.

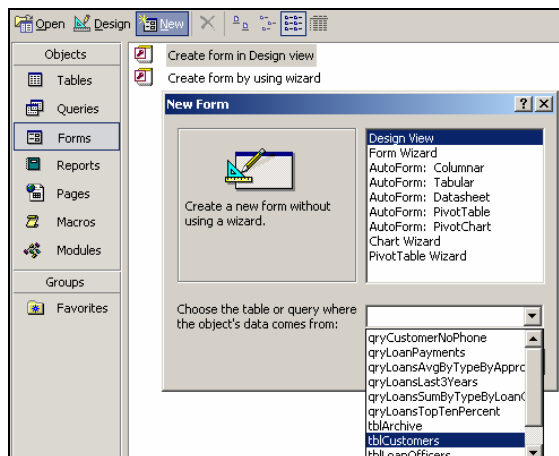
## PRACTICE

Let's create a form in Design view.

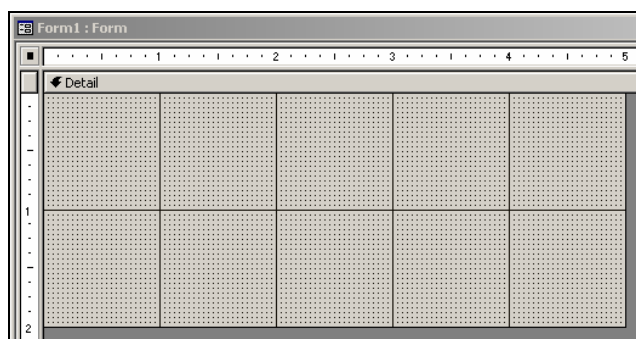
**OPEN:** the LOANS2.MDB database

**CLICK:** on  in the Database window and choose 

**CLICK:** on DESIGN VIEW, then click on the  in the dialog box and select "tblCustomers"



**CLICK:** on OK and notice the blank form design screen is now displayed. Click on VIEW, GRID to display the gridlines (if necessary).

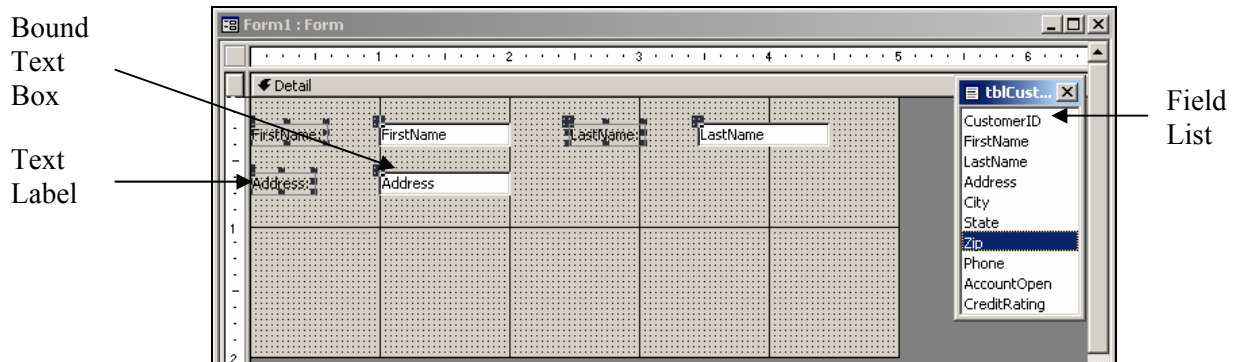


# Adding Bound Controls

## CONCEPTS


There are two primary ways to create **BOUND CONTROLS**: by using the Field List; or by adding an unbound control, then setting the Control Source property to make it bound. You use the Field List when you want Access to automatically create a control bound to the field in the underlying table or query (usually a text box).

When controls are added to a form or report, regardless of whether they are bound or unbound, they will include a label alongside the text box. This label identifies the control. If the control is a bound control, the label will be that field's name. For example, if you drag the "FirstName" field from the Field List and place it on the form or report, you will get a bound text box and a label that says "FirstName" next to it.



## STEPS

To create a bound control using the Field List:

1. Show the Field List by clicking on the FIELD LIST button .
2. Click on the desired field name, then drag it to the form or report area. When you drag fields from the Field List, Access automatically creates a text box control unless you first choose a different type of control from the Toolbox.
3. Drag the upper-left corner of the field icon where you want the upper-left corner of the main control (not its label) positioned, then release the mouse button to place the field control.

## NOTES

☞ Some bound controls, like combo boxes and option buttons, have wizards that can be used to help you create the bound control.

☞ To give you more screen space to design your form, you may find it helpful to maximize the Form window. You can quickly switch back to the main Database window by pressing [F11], or by choosing the appropriate button in the Windows taskbar.

# Adding Bound Controls

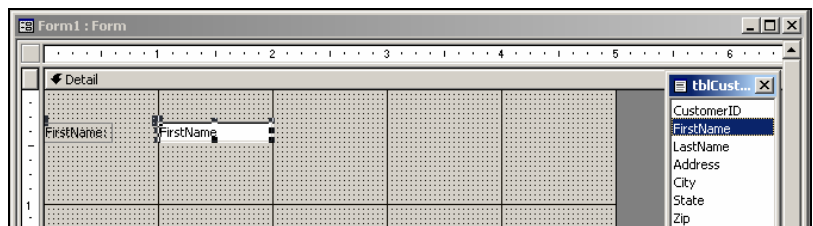
## PRACTICE

Let's add some bound controls to our form.

**CLICK:** on the FIELD LIST button  on the toolbar, or choose VIEW, FIELD LIST (if the Field List is not already displayed)

**CLICK:** on "FirstName" in the Field List and drag it to the form so the left corner of the field icon is 1" from the left edge of the form and 1/2" from the top. Use the horizontal and vertical rulers as a guide.

**NOTICE:** a text box and a label appear:



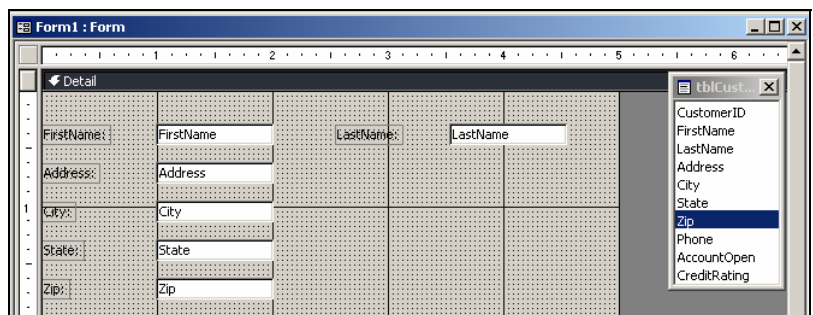
**CLICK:** on "LastName" in the Field List, then drag the field so the left corner of the field icon is approximately 3.5" from the left edge of the form and even with the "FirstName" control

**CLICK:** on "Address" in the Field List, then drag it about 1/4" below the "FirstName" control

**CLICK:** on "City" in the Field List, then drag it about 1/4" below the "Address" control

**CLICK:** on "State" in the Field List, then drag it about 1/4" below the "City" control

**CLICK:** on "Zip" in the Field List, then drag it about 1/4" below the "State" control. (Note: You may have to expand the grey grid area first.)




# Viewing a Form

## CONCEPTS

Once you have added the fields you want to your form, you can use the VIEW menu or the VIEW button on the toolbar to switch to **FORM VIEW**. This view displays your data in the new form you created. In Form view, you can add records to your database, delete, find, and modify information.




The screenshot shows a form window titled "Form1 : Form". It contains several text input fields with the following data: First Name: Nita, Last Name: Holiday, Address: 123 Main Street, City: Seattle, State: WA, and Zip: 98102.

When you are in Form view, clicking on the VIEW button returns you to Design view. You can also access **DATASHEET VIEW** by clicking on the  next to the VIEW button on the toolbar.

	FirstName:	LastName:	Address:	City:	State:	Zip:
▶	Nita	Holiday	123 Main Street	Seattle	WA	98102
	John	Doe	456 Elm Avenue	Tacoma	WA	98408
	Cookie	Doe	876 Oak Street	Portland	OR	98721
	Brock	Lee	5454 Garden Street	San Jose	CA	95110
	Ivanna	Mercedes	123 Apple Street	Seattle	WA	98121
	Sunny	Raines	654 B Street	Olympia	WA	98501
	Mable	Lean	543 Rose Ave	Portland	OR	98727
	Buck	Aneer	9965 Hemlock Lane	Yakima	WA	98902
	Sonny	Day	9876 Pine Ave	Seattle	WA	98102
	Happy	Ness	6543 Fuscia Blvd.	Salem	OR	98302
	Al	Fredo	597 Spring	Los Angel	CA	90034

Many of the navigation keys and toolbar buttons you used in datasheets also work in Form view. For example, you can use your HOME, END, PAGE UP, PAGE DOWN, and [F5] (GO TO) keys to move from record to record. You can also use your TAB and SHIFT + TAB keys to move between fields in a record. The FIND, SORT, FILTER, and NEW RECORD buttons on the toolbar are also the same as those used in a datasheet.

## NOTES

 The **PIVOTTABLE VIEW** and **PIVOTCHART VIEW** are also available to help you quickly summarize and analyze data in a form. Commonly used in Excel, PivotTables and PivotCharts are flexible tools that allow you to rotate fields around a core set of data, resulting in different ways to view the same data.

# Viewing a Form

## PRACTICE

Let's see how our form is going to look.

**CLICK:** on the **VIEW** button , or choose **VIEW, FORM VIEW**. Notice the form is now displayed in Form view:





Form1 : Form

FirstName:	<input type="text" value="Nita"/>	LastName:	<input type="text" value="Holiday"/>
Address:	<input type="text" value="123 Main Street"/>		
City:	<input type="text" value="Seattle"/>		
State:	<input type="text" value="WA"/>		
Zip:	<input type="text" value="98102"/>		

**TAB:** between the fields, then press **PAGE DOWN** and **PAGE UP** to navigate through a few of the records

**CLICK:** in the "LastName" field, then click on the **SORT ASCENDING** button on the toolbar 

**PRESS:** **PAGE DOWN** several times and notice the data is sorted by "LastName"

**CLICK:** on the  next to the **VIEW** button , then choose **DATASHEET VIEW**. Notice the same data is displayed in a datasheet format:



	FirstName:	LastName:	Address:	City:	State:	Zip:
▶	Phil	Adendron	789 Ivy St	Bellevue	WA	98007
	Buck	Aneer	9965 Hemlock Lane	Yakima	WA	98902
	Sue	Chef	789 Cook Dr.	Tacoma	WA	98101
	Sonny	Day	9876 Pine Ave	Seattle	WA	98102
	Cookie	Doe	876 Oak Street	Portland	OR	98721
	John	Doe	456 Elm Avenue	Tacoma	WA	98408
	Al	Fredo	597 Spring	Los Angel	CA	90034
	Rose	Gardener	123 Lettuce Ave	Seattle	WA	98107
	Nita	Holiday	123 Main Street	Seattle	WA	98102
	Mable	Lean	543 Rose Ave	Portland	OR	98727
	Brock	Lee	5454 Garden Street	San Jose	CA	95110
	Ivanna	Mercedes	123 Apple Street	Seattle	WA	98121
	Happy	Ness	6543 Fuscia Blvd.	Salem	OR	98302
	Sunny	Raines	654 B Street	Olympia	WA	98501

**CLICK:** on the **VIEW** button  to return to Design view

# Selecting Controls

## CONCEPTS

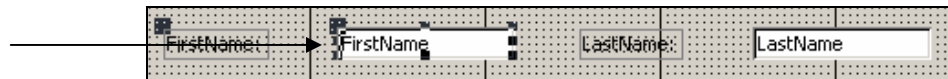
Before you can modify, move, or resize controls, you must first **SELECT** them. You can select one control or multiple controls on a form or report. If you select multiple controls, any command you choose will affect all of the selected controls.

## STEPS

You have several methods of selecting controls:

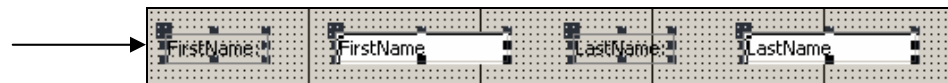
- Click on the control. Handles will appear around the selected object.

Selected control.

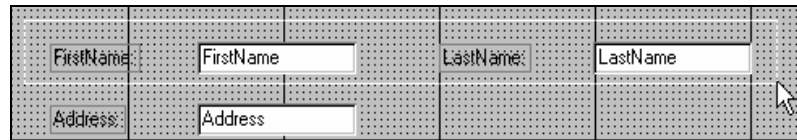


- To select more than one control, select the first control, then **SHIFT + CLICK** on the rest of the controls you want to select.

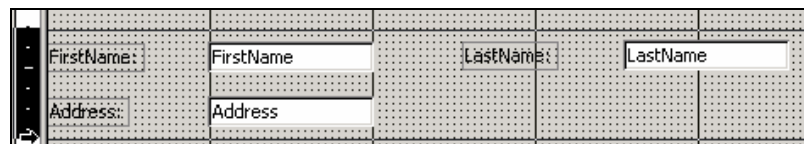
All of these controls are selected.



- To select adjacent controls, click above and to the left of the controls, then drag a box around the controls you want to select and release the mouse.



- To select all controls within a certain measurement, click and drag in the Horizontal or Vertical ruler.

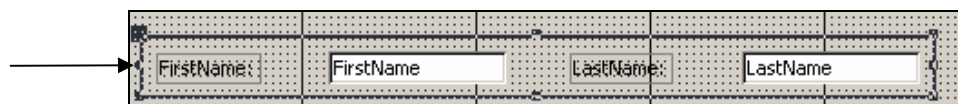


- To select all the controls on a form, choose **EDIT, SELECT ALL**, or press **CTRL + A**. Once selected, you can deselect individual controls by using **SHIFT + CLICK**.

## NOTES

☞ If you have several controls on a form that you always want to be formatted the same or moved and sized together, you can select the controls, then choose the **FORMAT, GROUP** menu command. Once grouped, Access treats the controls as one unit. To select the group, click on any control within the group. To ungroup the controls, select the group, then choose **FORMAT, UNGROUP**.

These controls are grouped.



# Selecting Controls

## PRACTICE

Let's practice selecting some of the controls on our form.

**CLOSE:** the Field List and the Properties sheet (if necessary), then click on the "FirstName" text box

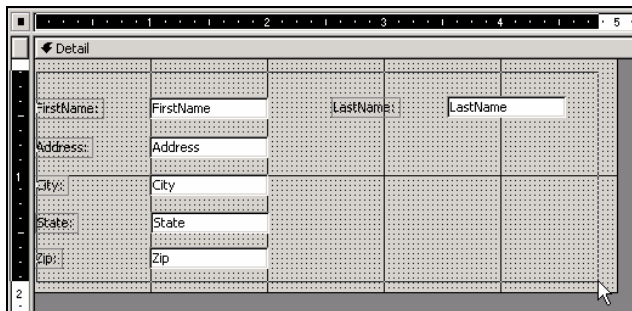


**SHIFT + CLICK:** on the "FirstName" label, the "LastName" label and the "LastName" text box

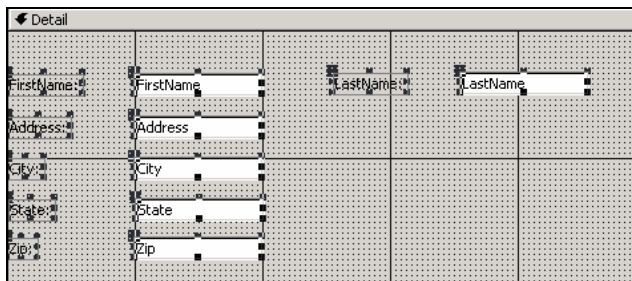


**SHIFT + CLICK:** on the "LastName" text box again to deselect it

**CLICK:** above and to the left of the "FirstName" label, then drag the mouse down and to the right until all the controls are within the box




**RELEASE:** the mouse and notice the selected controls:



**CLICK:** on an empty area of the form to deselect all the controls

## NOTES

If you have selected a single control or section on a form or report in Design view, the name of the selected object will display in the SELECT OBJECT box on the far left of the Formatting toolbar. You can click on the  to change the selected object. To change the name of the selected object, you must type the new name (no spaces) in the NAME box on the OTHER tab of the Properties sheet.

# Moving and Sizing Controls

## CONCEPTS

Once you have added controls and labels to a form or report, you can easily move them around or change their size. You can **MOVE** or **SIZE** both the control and its associated label, or you can adjust each one independently. If you select multiple controls, you can also move and size multiple controls at the same time.

## STEPS

To move a control *and* its label:

1. Select the control(s) or the label(s) to be moved.
2. Position the mouse on the border of the label or control. An outspread hand will appear.
3. Click and drag the label and control to a new location, then release the mouse.



To move just the control *or* the label:

1. Select the control or the label to be moved.
2. Position your mouse on the large handle in the upper left corner of the selected object. A pointer hand will appear.
3. Click and drag the object to a new location, then release the mouse.



To manually size a control or label:


1. Select the control or label to be resized.
2. Position your mouse on any of the sizing handles that appear when the control is selected. A double-headed arrow will appear.
3. Click and drag until the object is the desired size.



To automatically size a control relative to its contents, select the control and choose **FORMAT, SIZE, TO FIT**. You can also automatically size an individual control or label to “fit” its contents by double-clicking on any of its sizing handles.

To automatically size controls relative to other controls, select the controls to be resized, then choose **FORMAT, SIZE**, and select the desired option (**TO TALLEST**, **TO SHORTEST**, **TO WIDEST**, or **TO NARROWEST**).

## NOTES

 To move a selected control using the keyboard, press **CTRL** + any of the four arrow keys. To size a control using the keyboard, press **SHIFT** + any of the four arrow keys.

# Moving and Sizing Controls

## PRACTICE

Let's move and size some of the controls on our form.

**CLICK:** on the "FirstName" text box, then position the mouse on the border of the text box. Notice a full hand shows.



**CLICK:** and drag the mouse around to move the control around, then return the control to its original location

**REVERSE:** the positions of the "FirstName" and "LastName" controls

**CLICK:** on the "FirstName" text box, then position the mouse pointer on the selection handle on the top left-hand corner. Notice an index finger shows.




**DRAG:** the text box to a new position. Notice only the text box moves:

**DRAG:** the text box back to the original location


**CLICK:** on the "Address" text box, then position the mouse pointer on one of the right-hand sizing handles for that box. Drag the sizing handle to the right to increase the size of the control, then release the mouse.



**CLICK:** on the VIEW button  to view your changes in Form view

**RETURN:** to Design view

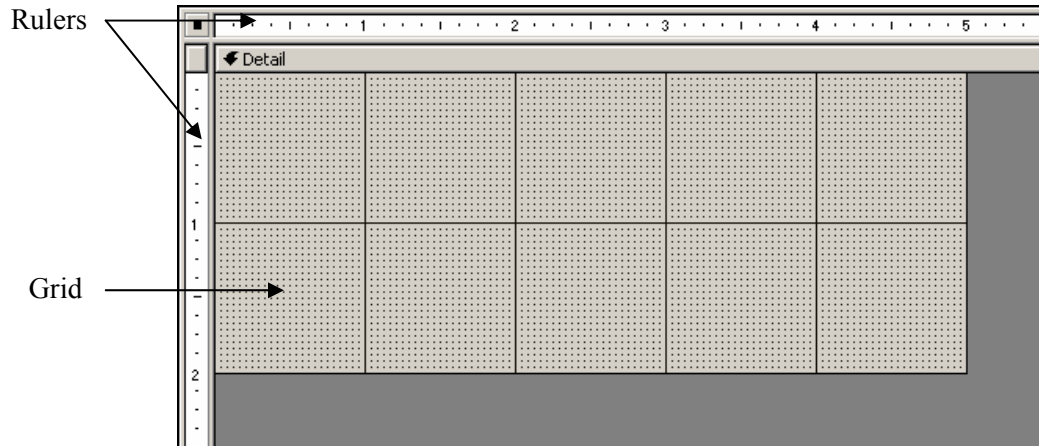
## NOTES

 As you work in the Design view of an Access object (e.g., a form or report), you can “undo” up to your last 20 actions using the UNDO button on the toolbar.



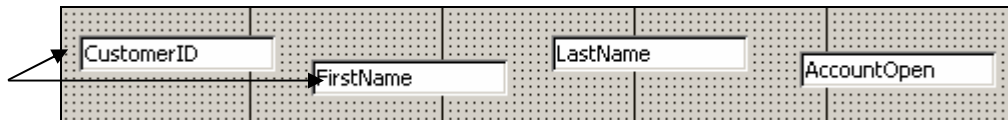
# Aligning Controls

**CONCEPTS** Accurately placing controls on a form or report can be a little tricky. To help you manage where controls are placed, you can use the **RULERS** and the **GRID**. The rulers can help you place controls at precise measurements. The grid is a series of dots in gridlines on your screen. You can use the grid to make sure your control borders are aligned. These tools can be turned on and off using the **VIEW, RULERS** and **VIEW, GRID** menu commands.



In addition to aligning the controls yourself, you can have Access automatically align controls for you. Using the **FORMAT, ALIGN** command, you can automatically align controls using their top, bottom, left or right sides.

Notice these labels are not aligned with each other.

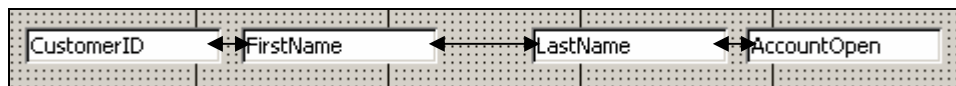


These labels are aligned along their top borders.

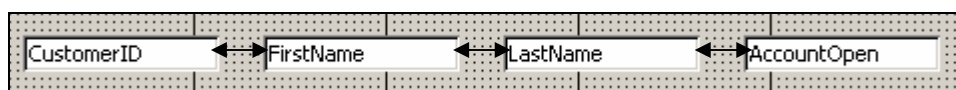


Using **FORMAT, HORIZONTAL SPACING** or **FORMAT, VERTICAL SPACING**, you can automatically set equal spacing between multiple fields.

Notice the uneven spacing between fields.



The spacing is now even between the fields.



# Aligning Controls

## STEPS

To automatically align controls:

1. Select the controls to be aligned. Labels and text boxes must be individually selected.
2. Choose FORMAT, ALIGN.
3. Select TOP, BOTTOM, LEFT, RIGHT or TO GRID. The controls will automatically align. Choosing TOP, BOTTOM, LEFT or RIGHT will align the selected border of each object. Choosing TO GRID aligns the control with the closest grid markers on your screen.

## PRACTICE

Let's align our fields in the Detail section.

**CLICK:** on the "LastName" label, then SHIFT + CLICK to select the "LastName" text box, the "FirstName" label, then the "FirstName" text box (all four should be selected)

**CHOOSE:** FORMAT, ALIGN, TOP. Notice the tops of the text boxes and their labels are aligned.

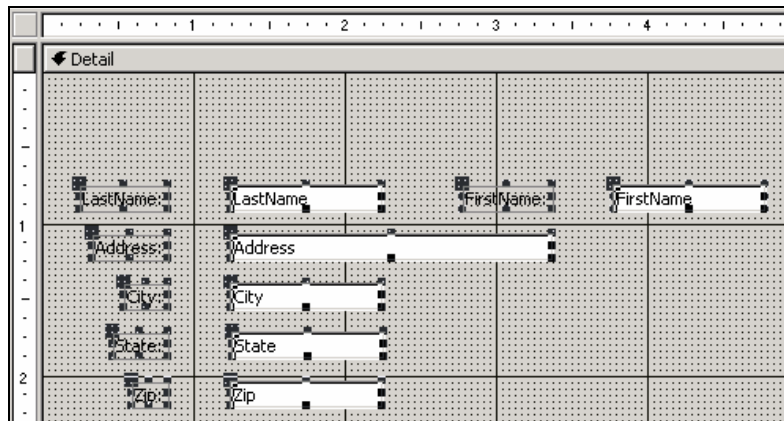
**SELECT:** the "LastName," "Address," "City," "State" and "Zip" labels

**CHOOSE:** FORMAT, ALIGN, RIGHT

**SELECT:** the "LastName," "Address," "City," "State" and "Zip" text boxes

**CHOOSE:** FORMAT, ALIGN, LEFT, then choose FORMAT, VERTICAL SPACING, MAKE EQUAL

**PRESS:** CTRL + A to select all the controls, then move the controls down and to the right as shown below:

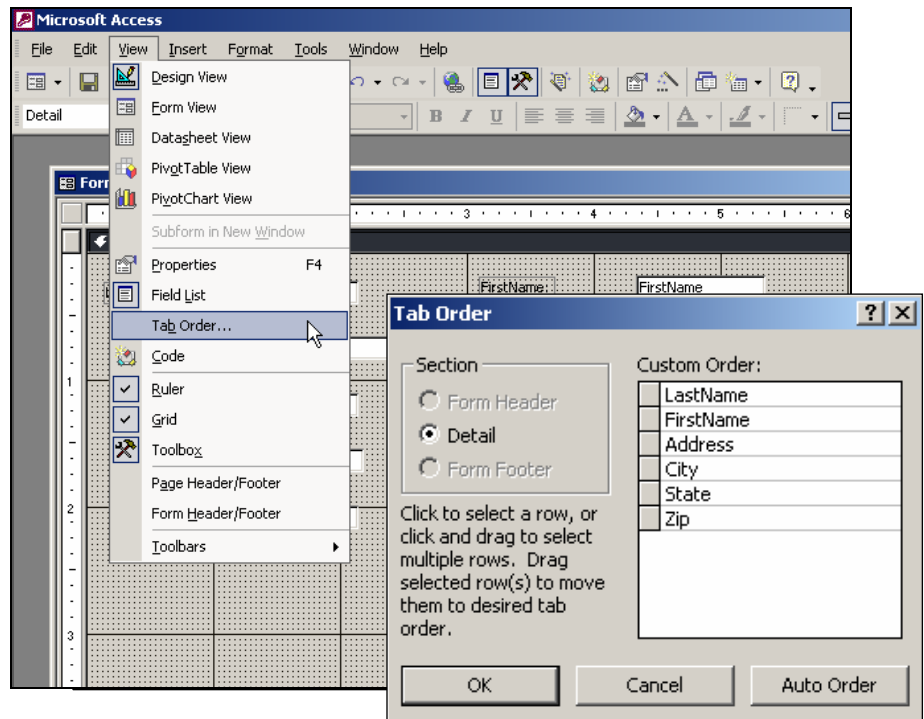


**CLICK:** on the VIEW button  to see the form in Form view


# Changing the Tab Order in a Form

**CONCEPTS** Once you have moved controls within a form, you may notice the TAB key no longer moves through the form in the correct order. Unless you change your tab order, Access uses the order in which fields were placed on the form as the default tab order.

Using the **VIEW, TAB ORDER** command from the form's Design view, you can change the order the insertion point moves through controls when you tab through a form in Form view. You can set the tab order for the Form Header, Form Footer, and Detail sections.



**STEPS** To create left-to-right, top-to-bottom tab order:

1. In the form's Design view, choose **VIEW, TAB ORDER**. Access displays a dialog box with all the controls from the Detail section of the form listed in the current tab order.
2. Choose the section for which you want to specify a tab order. (If the form doesn't have a header and footer, these sections aren't available in the dialog box.)
3. In the Tab Order dialog box, choose the  button.
4. Choose **OK**.

# Changing the Tab Order in a Form

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## STEPS

To customize the tab order:

1. In the form's Design view, choose VIEW, TAB ORDER, then choose the section for which you want to specify a tab order.
2. Click the selector box to the left of the controls you want to move in the list. (To select contiguous controls, drag up or down.)
3. Click on the selector again and drag the controls to the desired location in the list. Repeat steps 2 and 3 until the fields are listed in the tab order you want.

To test the tab order, return to Form view, then press TAB and SHIFT + TAB to move through the form.

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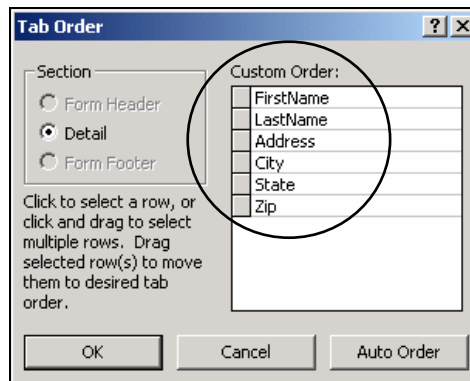
## PRACTICE

Let's change the tab order for our form.

**PRESS:** the TAB key several times, and notice the tab order is incorrect because we reversed the order of the "FirstName" and "LastName" fields

**SWITCH:** to Design view

**CLICK:** on VIEW, TAB ORDER. Notice the "FirstName" is listed before the "LastName" field in the Custom Order list:



**CLICK:** click on the  button. Notice the "LastName" is now listed before the "FirstName" field in the Custom Order list.

**CLICK:** on OK, then switch to Form view

**PRESS:** the TAB and SHIFT + TAB keys several times to check the tab order

**SAVE:** the form as *frmCustomers*

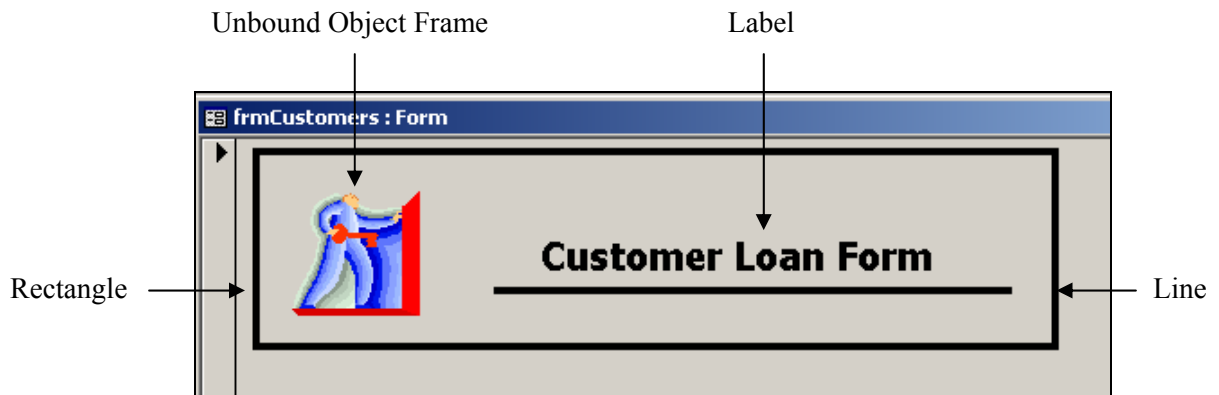
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# Adding Unbound Controls

## CONCEPTS

So far, we have added bound controls to our form design. These controls were automatically linked to data within the database. In addition to adding bound controls, we can also add **UNBOUND CONTROLS**, such as descriptive text or graphics to a form or report.

The unbound tools that are available are: Labels, Unbound Object Frames, Lines, and Rectangles:



You use the **LABEL** button to create label controls that contain text. Typical uses would be for form titles and headings or instructions on your form. Remember, most controls have a label automatically attached to them when created; e.g., the text box control.

The **UNBOUND OBJECT FRAME** button is used to add an object from another application. Examples of unbound objects include sounds, pictures, graphs, etc. The object becomes part of your form design and is not stored with the underlying table or query. For more information on adding objects to forms and reports, see "Inserting Graphic Images."

The **LINE** and **RECTANGLE** buttons are used to create lines and rectangles on your form. You can use lines to visually separate different parts of your form and rectangular boxes to group controls together.

## STEPS

To place an unbound control on a form or report:

1. In Design view, click on the desired control on the Toolbox.
2. Position your mouse where you want to add the control, then click to add a default size control, or click and drag the control to the desired size.

## NOTES

To draw a perfectly straight line on a form or report, hold down the **SHIFT** key as you click and drag.


# Adding Unbound Controls

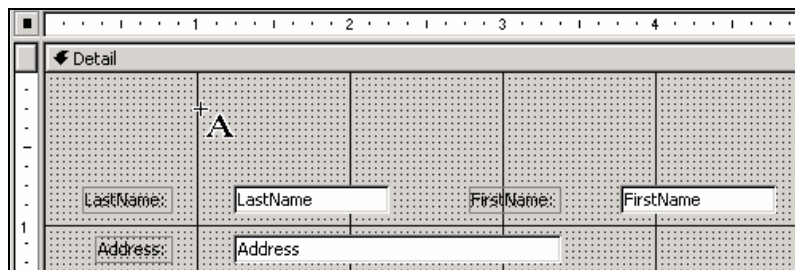
## PRACTICE

Let's add some unbound controls to the "frmCustomers" form.

**SWITCH:** to Design view and expand the grid area approximately ½" to the right and ½" on the bottom


**CLICK:** on the TOOLBOX button  on the toolbar, or choose VIEW, TOOLBOX to show the Toolbox (if not already displayed)

**CLICK:** on the LABEL button  on the Toolbox, then click in the top of the form at the 1" mark on the Horizontal ruler

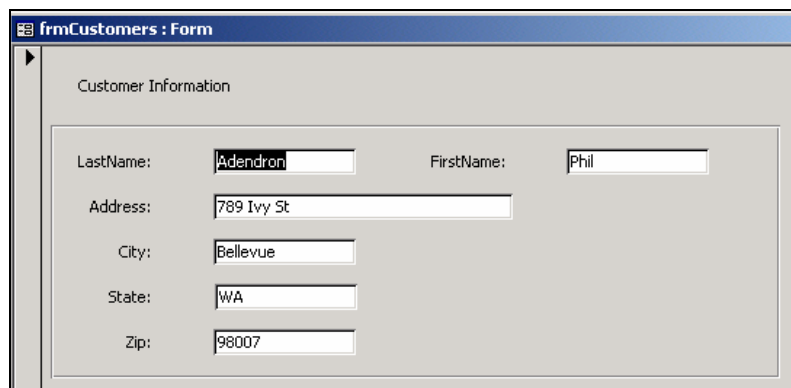


**TYPE:** *Customer Information*, then press ENTER

**SELECT:** the "Customer Information" and "LastName" labels, then choose FORMAT, ALIGN, LEFT

**CLICK:** on the RECTANGLE button  on the Toolbox and drag a rectangle around all of the text boxes and their labels, except the "Customer Information" label

**SWITCH:** to Form view and notice your changes:



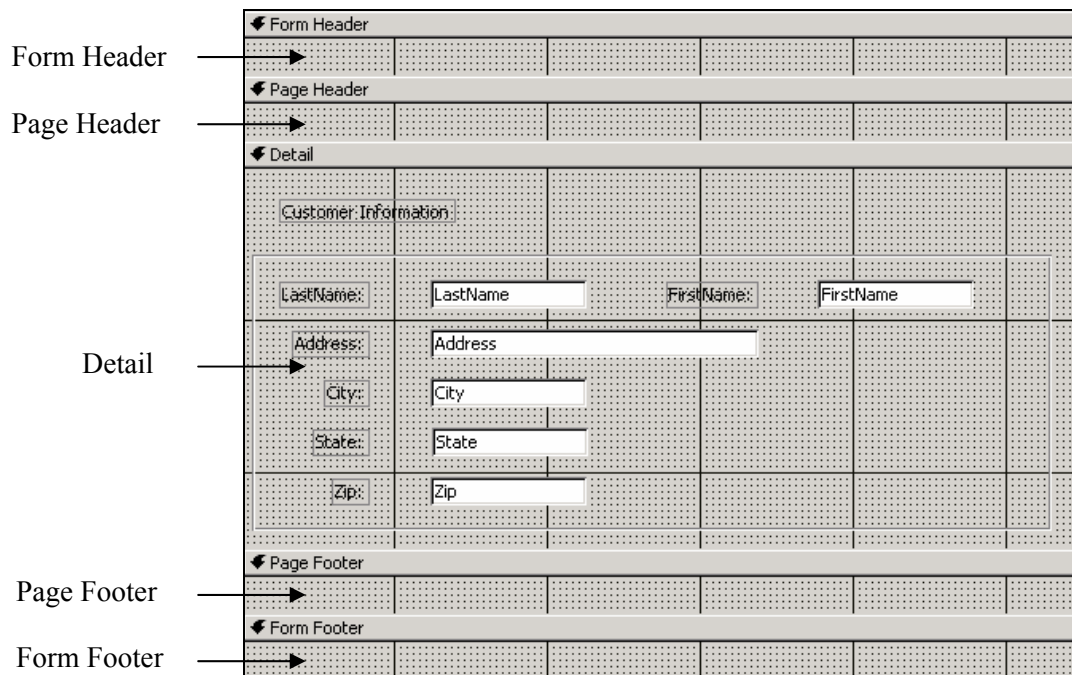
**SWITCH:** to Design view


# Adding Headers and Footers to a Form

**CONCEPTS** Your form design can be divided into several sections. When you first create a form in Design view, only the **DETAIL** section displays. You can add other sections like **HEADERS** and **FOOTERS**. The different sections in forms are described in the table below:

Element:	Description:
Detail section	Contains the main body of the form, including text boxes and controls related to your tables.
Form Header/Footer sections	Contains information, such as a title, a date, or column headings, that you want to appear only at the top or bottom of a form, either online or when printed.
Page Header/Footer sections	Contains information, such as column headings or a page number, that you want to appear at the top or bottom of each page in a printed form only.

To show or hide form sections, choose **VIEW, PAGE HEADER/FOOTER** or **VIEW, FORM HEADER/FOOTER**.



**NOTES**  A form has one width. If you change the width of any form section, you change the width for the whole form.

# Adding Headers and Footers to a Form

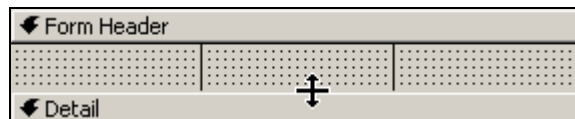
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## PRACTICE

Let's add a header to the "frmCustomers" form.

**CHOOSE:** VIEW, FORM HEADER/FOOTER. Notice the Form Header and Footer areas that display.

**POSITION:** your mouse at the bottom of the Form Header section so your cursor changes to a line with a double-headed arrow



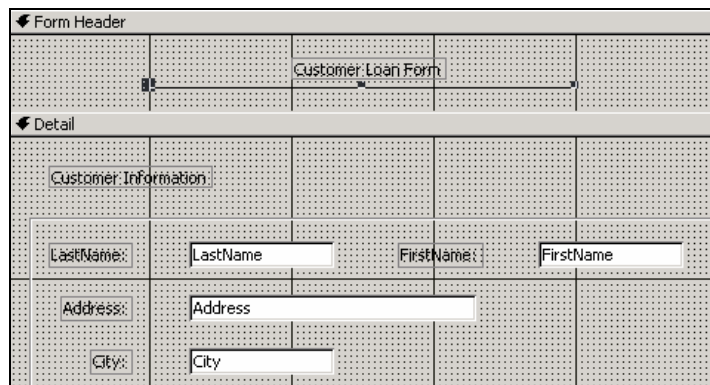
**CLICK:** and drag down approximately 1" to increase the height of the section

**CLICK:** on the LABEL button  on the Toolbox, then click at the top of the Form Header section

**TYPE:** *Customer Loan Form*, press ENTER, then move the label to the 2" mark on the Horizontal ruler

**CLICK:** on the LINE button  on the Toolbox

**SHIFT + CLICK:** and drag a line underneath "Customer Loan Form" that extends from the 1" mark to the 4" mark on the Horizontal ruler. (Note: Using SHIFT helps you draw straight lines.)



**SWITCH:** to Form view to see your changes

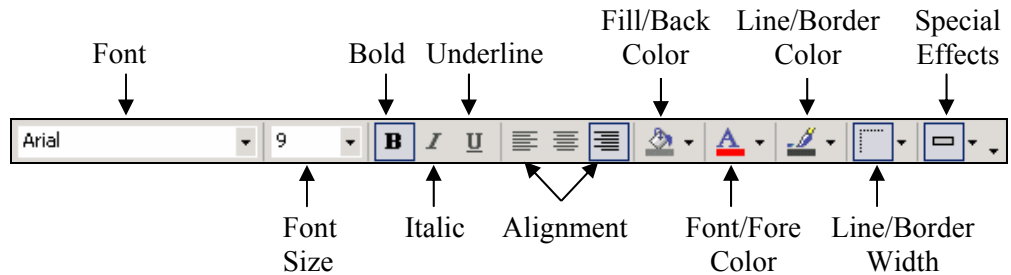
**SAVE:** the form, then return to Design view

# Formatting Controls

## CONCEPTS

Once you have placed controls on your form or report, you can format the controls to look the way you want. You can change the appearance of both bound and unbound controls.


Common formats can be applied to labels, text boxes, objects, and other controls in your form or report by selecting different options from the Formatting toolbar:





A box will show around each control as a default. You can use the **LINE/BORDER COLOR** button to remove borders or add color. Or, you can use the **SPECIAL EFFECTS** button to make the box appear flat, raised, sunken, etched, shadowed, or chiseled.


Access limits how you can use these tools together by assigning automatic line/border color, width and style settings to all special effects, except flat and shadowed. These automatic settings may override any selections you previously made; e.g., if you choose the etched special effect, Access will ignore or reset any previous line/border settings.

If you change the formatting for a control, the size of the control does not automatically adjust. To size a control yourself, position your mouse on one of the handles for the control, then drag to increase and decrease the control's size. You can also select the control, choose **FORMAT, SIZE, TO FIT**. This will size the control to fit its contents.

In addition to applying formatting manually, Access has predefined formats that you can use to quickly format the entire form or report, a section of the form or report, or individual controls. You can access these **AUTOFORMATS** in Design view by selecting what you want to format, then clicking on the AUTOFORMAT button on the toolbar. 

## NOTES

 To remove the border around controls in a form or report, select the control(s), then click on the  next to the LINE/BORDER COLOR button and choose TRANSPARENT.


 You can also format controls in Form view. This can save you the extra step of switching from Design view to see the results of your formatting choices.

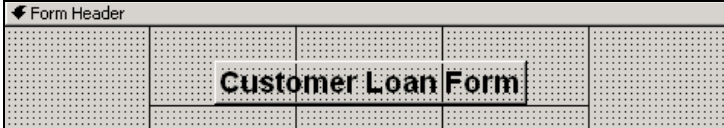
# Formatting Controls


## PRACTICE

Let's add some pizzazz to our form using the formatting tools.

**SELECT:** the CUSTOMER LOAN FORM label in the Form Header section, then change the font to ARIAL, the Font Size to 14, and add BOLD

**CLICK:** on the  next to the SPECIAL EFFECT button and choose RAISED. Choose FORMAT, SIZE, TO FIT, drag the label to center it over the line in the Form Header section, then click in a blank area.




**CHOOSE:** EDIT, SELECT ALL, then click on the  next to the LINE/BORDER COLOR button on the toolbar and select BLUE as the line/border color. (Note: Access automatically changes the special effect to FLAT when you choose a line color.)




**CLICK:** in a blank area of the form to deselect the controls

**SELECT:** the LINE in the Form Header section. Click on the  next to the LINE/BORDER WIDTH button on the toolbar and choose the 3 pt width option.



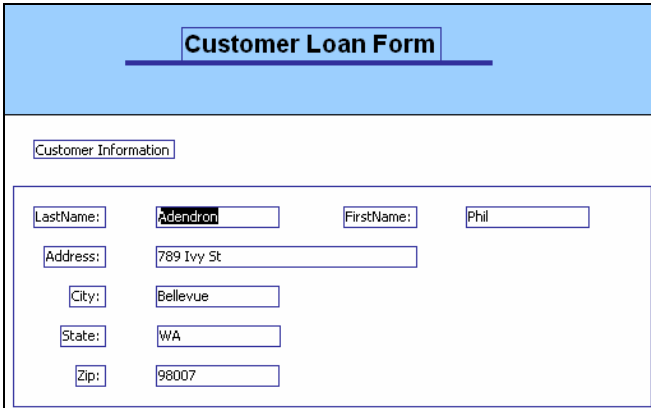
**CLICK:** on the Form Header section, then click on the  next to the FILL/BACK COLOR button and choose LIGHT BLUE as the fill/back color



**CLICK:** on the Detail section, then click on the  next to the FILL/BACK COLOR button on the toolbar and choose WHITE as the fill/back color



**SAVE:** the form, then switch to Form view



# Setting Properties

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## CONCEPTS

Each form, each section of the form, and each control within the form has **PROPERTIES**. You can change these property settings to alter the way the form looks and behaves. We have already set many properties just by using the Formatting toolbar. You can also view and change properties by displaying and editing the **PROPERTIES SHEET**. The Properties sheet displays all the properties for the selected object.


There are four categories of properties. In general, the **DATA** tab specifies where the underlying data is coming from. The **FORMAT** tab controls the size, color, borders, fonts, and printing characteristics of the control. The **EVENT** tab is used to specify what you want to have happen if you do something to the control; e.g., click on a command button. The category of **OTHER** includes text that will appear in the Status Line when you click on one of the controls. Commonly used properties are listed below:

<b>Properties:</b>	<b>Description:</b>
Name	Access automatically assigns a unique name for each control that is used to refer to the control in an expression, a macro, or in VBA code; e.g., Label4, Line9. You can change this name as long as you follow Access object naming rules.
Caption	This is the text that will be displayed on the form or report.
Control Source	Defines the source of data, commonly a field in a table or query. Any control that can be bound (e.g., have a source of data) will have a Control Source property.
Format	Allows you to choose a format for displaying your data. These are the same choices you have when creating the table fields; i.e., general number, currency, percent, etc.
Enabled, Locked	Allows you to disable and lock fields you do not want the user entering; e.g., a field defined as an AutoNumber.
Scroll Bar	Adds scroll bars to a field, usually used for memo fields that contain lots of text.
Left, Top	Shows in inches (as default) where the control is in relation to the top right corner of the form.
Width, Height	Shows width and height in inches (as default) of the control.
Back Color	Shows the background color of the selected object.
Special Effects	Adds special effects to the borders and height of a control; e.g., raised, shadowed, sunken.
Border Color, Style, Width	Allows you to specify a border color, style, and width. These settings will reflect any choices made using the toolbar.
Font properties	Shows font type, size, color, etc., for your form or control.
Control Tip Text	Allows you to add a tool tip-style note to a specified field.

# Setting Properties

## STEPS

To set properties:

1. In Design or Form view, select the control(s), section, or form whose properties you want to set.
2. Display the Properties sheet, if necessary, by clicking on the PROPERTIES button, choosing VIEW, PROPERTIES; or right-clicking on the control, then choosing PROPERTIES from the shortcut list. If you are in Design view, you can also double-click on the control.
3. Select the type of property you want to set, then make the desired changes. If a BUILD button  appears next to the property box, click on it to display a builder or to display a dialog box.



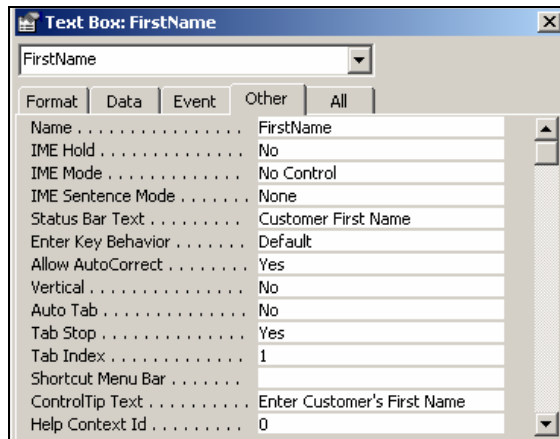
## PRACTICE

Let's set the properties for a text box to display a "tool tip."

**CLICK:** on the "FirstName" text box in the Form view


**CLICK:** on the PROPERTIES button  on the toolbar to display the Properties sheet, then click on the OTHER tab


**CLICK:** in the CONTROL TIP TEXT box, type *Enter Customer's First Name*, then press ENTER



**CLOSE:** the Properties sheet, then click on the "FirstName" field, if necessary. Hold the mouse pointer steady over the field for a moment to view the tool tip text.

## NOTES

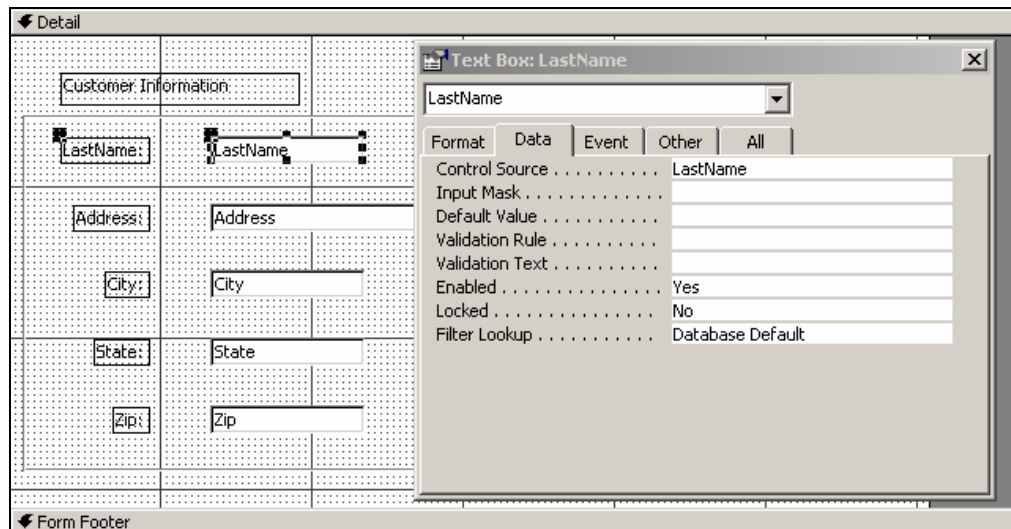
 You can use SHIFT + [F2] to open the Zoom window. This provides a larger area in which you can view the text you are typing.

 If you want to set a property setting for several controls at once, select them using SHIFT + CLICK, then set the appropriate property. Any properties that are common across several controls, like font, height, color, etc., can be set this way.

# Working with a Control Source

## CONCEPTS

Sometimes you will want to check or change the source for a bound control in your form or report. The **CONTROL SOURCE** property specifies what data will appear in a control. The control source will either be a field name or an expression. For example, the control source for the “LastName” text box in our form is the “LastName” field in the “tblCustomers” table.



Changes to the data inside the Control Source box change the corresponding data in the field. For example, if you changed the Control Source for the “LastName” text box to the “FirstName” field, the change would immediately be reflected in Form view. Instead of seeing customers’ last names in the “LastName” field, you would see their first names.

If a control is bound to an expression, the calculation generates data for the control. For example, =DATE()+7 displays a date seven days from today. *This data is read-only and is not saved in the database.* (See “Creating a Calculated Control” in this section for information on how to bind a control to an expression.)

## STEPS

To check or change the Control Source of a field:

1. Select the control, then display the Properties sheet, if necessary.
2. Select the DATA tab, then click in the CONTROL SOURCE box and type the name of the field to which you want the control linked. You can also choose the field from the drop-down list.

## NOTES

☞ Dragging a field from the Field List is the easiest way to create a text box control that is already bound to a field.

☞ When a property provides a limited list of choices, you can double-click on the current setting in the Properties sheet and it will toggle to the other choices.

# Working with a Control Source

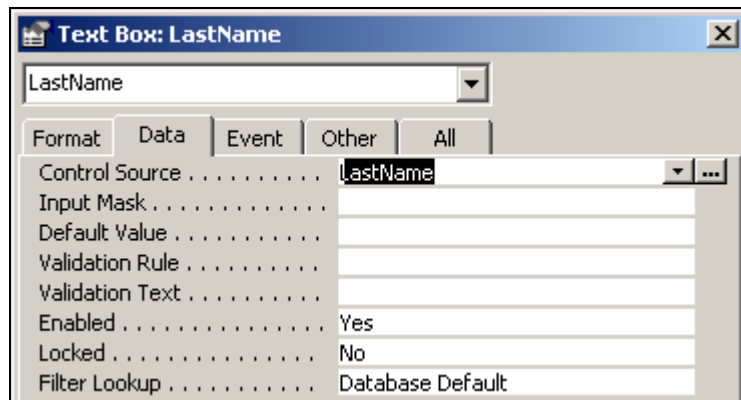
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## PRACTICE


Let's look at the control source for some of our controls.

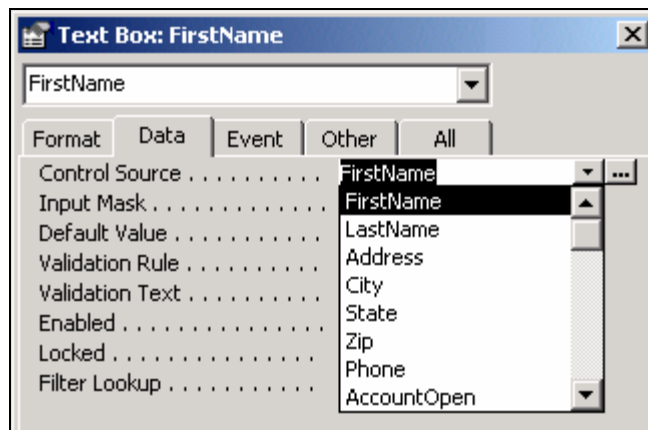
**SWITCH:** to Design view, then double-click on the "LastName" text box to display the Properties sheet

**CLICK:** on the DATA tab in the Properties sheet and notice the CONTROL SOURCE box indicates the source for the selected control:



**CLICK:** on the text box for the "FirstName" field in the form and notice the Control Source is different

**CLICK:** in the CONTROL SOURCE box in the Properties sheet, then click on the  to see a list of available fields to which you can bind the control:




**PRESS:** the ESC key to close the drop-down list without making any changes

# Creating a Calculated Control

---

## CONCEPTS

In addition to using bound and unbound controls, you may also want to add a **CALCULATED CONTROL** to a form or report. Calculated controls are used when you want Access to generate the value for a particular field automatically so you do not have to enter or calculate a new value each time you use the form or generate a report.

A calculated control is a text box that uses an expression as its source of data. This expression is entered in the text box control's Control Source property. You can create the expression yourself, or you can click on the BUILD button  to use the Expression Builder.


To create an expression, you combine control names, field names, functions, constant values, and operators into a unit that produces a result. Expressions in calculated controls must begin with an *equal sign* (=). When referring to field names, you must use *square brackets* around the name; e.g., [FirstName].


Expressions can be as simple as an arithmetic expression that produces a numeric result; e.g., =(1 + 1). They can also be complex combinations of functions and other elements. For example, =RIGHT([LastName],2) will display the last 2 characters of the value in the "LastName" field. Access has many built-in functions that you can use. Some common examples are listed below:

Sample expression:	Will display:
=Date()	Current date in mm-dd-yy format
=[Page]	1, 2, 3, etc.
="N/A"	N/A
=[FirstName]& " " & [LastName]	FirstName LastName
=Left([LastName],3)	First 3 characters of LastName
=[Rate]*[Amount]	Product of rate and amount
=[Amount]*1.06	Product of amount multiplied by 1.06

You can use a calculated control to **CONCATENATE** (or combine) information from multiple fields. The ampersand (&) symbol is used to tell Access to concatenate. For example, to display the first name and last name together (with a space in between) in a single text box, type =[FirstName]& " "&[LastName].

## NOTES

 In a calculated control, Access recomputes the expression results each time the record is displayed, so the calculation is *not* saved as part of the data table.

 To quickly add page numbers or the date to your form, you can choose INSERT, PAGE NUMBERS or INSERT, DATE AND TIME. For more information, see "Adding Page Numbers" and "Adding the Current Date/Time" in this section.

# Creating a Calculated Control

## STEPS

To create a calculated control:

1. In Design view, add a text box to the form or report.
2. In the Properties sheet for the new text box, click on the DATA tab and type the appropriate expression in the CONTROL SOURCE box, starting with an “=” sign. (Note: You can also click in the text box and type your expression.)

## PRACTICE


Let's create a calculated control in our form. You should be in Design view.

**CLICK:** on the TEXT BOX button  on the Toolbox, then click in the top right side of the Form Header section

**CLICK:** in the CONTROL SOURCE box on the DATA tab in the Properties sheet


**TYPE:** `=[FirstName]&" "&[LastName]` (press ENTER)

**CLICK:** on the label for the new text box and delete it

**CLICK:** on the TEXT BOX button , then add a new text box in the Form Header section below the one we just created

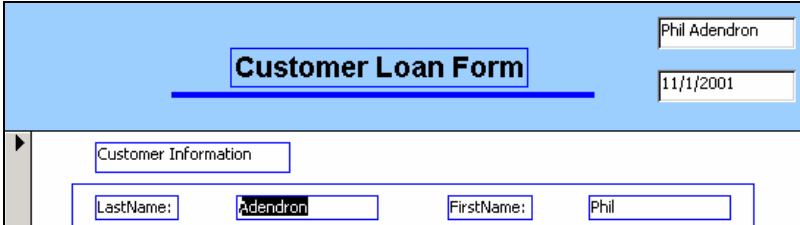
**CLICK:** in the CONTROL SOURCE box on the DATA tab in the Properties sheet

**TYPE:** `=Date()`, then press ENTER

**CLICK:** on the FORMAT tab in the Properties sheet. Click on the TEXT ALIGN box at the bottom of the Properties sheet, then click on the  and choose LEFT.

**CLICK:** on the label for the new text box and delete it. Close the Properties sheet.

**SWITCH:** to Form view and scroll through several records



The screenshot shows a form titled "Customer Loan Form" in Design view. The form has a blue header section with a title bar and two text boxes containing "Phil Adendron" and "11/1/2001". Below the header is a section titled "Customer Information" with two text boxes: "LastName: Adendron" and "FirstName: Phil".

**SAVE:** and close "frmCustomers," then close the LOANS2.MDB database

# On Your Own

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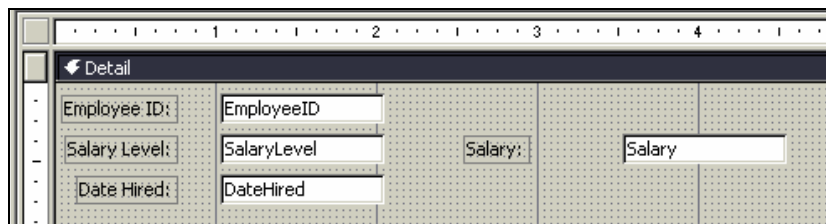
In the previous section, we:

- Designed a custom form
- Worked with form controls
- Added headers and footers to a form
- Worked with form properties
- Created calculations in forms

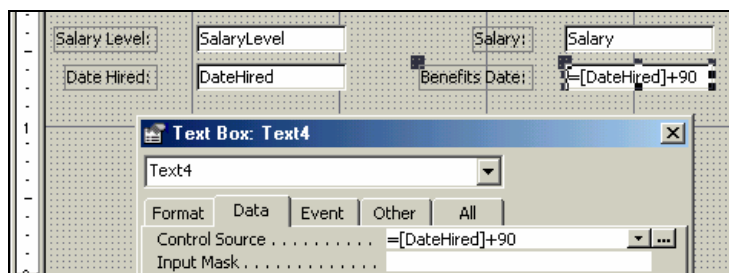
To practice what's been covered in this section, complete the exercise shown below. Work at your own pace, and let your instructor know if you have questions.

---

1. **Open the EMPLOYEE2.MDB database.**
2. **Create a new form based on the "tblSalaries" table. Add and align the "EmployeeID," "SalaryLevel," "Salary" and "DateHired" fields as shown below:**



3. **Create a calculated control below the "Salary" field whose control source is an expression that adds 90 days to "DateHired" (Hint: =[DateHired]+90). Change the label to read *Benefits Date*:. Align the label and text box as needed, then right-align the contents of the text box.**



4. **Add a label to read *Employee Salary Information* to the center of the Form Header section.**
  5. **Add some pizzazz to your form by changing the fonts, font sizes and colors of several controls on the form, changing the back color of form sections, and adding a line under the "Employee Salary Information" label in the Form Header section.**
  6. **Switch to Form view to see your changes, then save the form as *frmEmployeeSalaryInfo*. Close the form and the EMPLOYEE2.MDB database.**
-

# On Your Own

The completed On Your Own exercise is shown below in Form view. Your form may look different depending on your font and color choices.

The screenshot shows a Microsoft Access form window titled "frmEmployeeSalaryInfo : Form". The form has a light blue header with the title "Employee Salary Information". Below the header, there are five data entry fields arranged in two columns. The first column contains "Employee ID:" (with a small '1' in the text box), "Salary Level:" (with "A1" in the text box), and "Date Hired:" (with "01/01/1994" in the text box). The second column contains "Salary:" (with "\$20,000.00" in the text box) and "Benefits Date:" (with "4/1/1994" in the text box). At the bottom of the form, there is a record navigation bar that says "Record: 1 of 23" with navigation icons for first, previous, next, and last records.

# Notes

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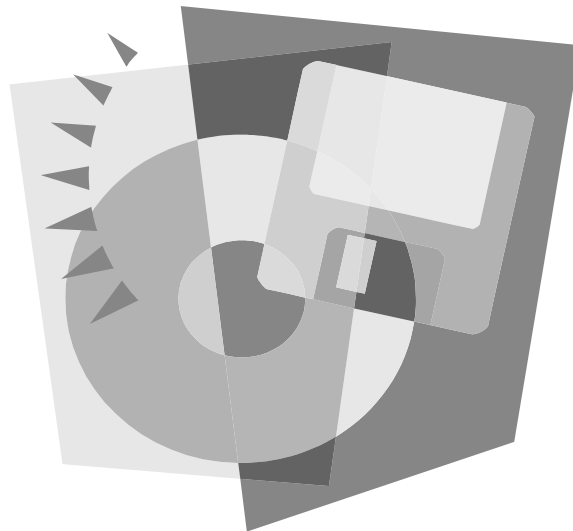
# Section Three: Dynamic Forms

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## **Objectives**

By the end of this section, you should be able to:

- Apply conditional formatting
- Add list boxes and combo boxes using value lists and queries
- Customize control properties
- Add option groups
- Add command buttons and hyperlinks
- Insert objects into forms
- Create and use subforms



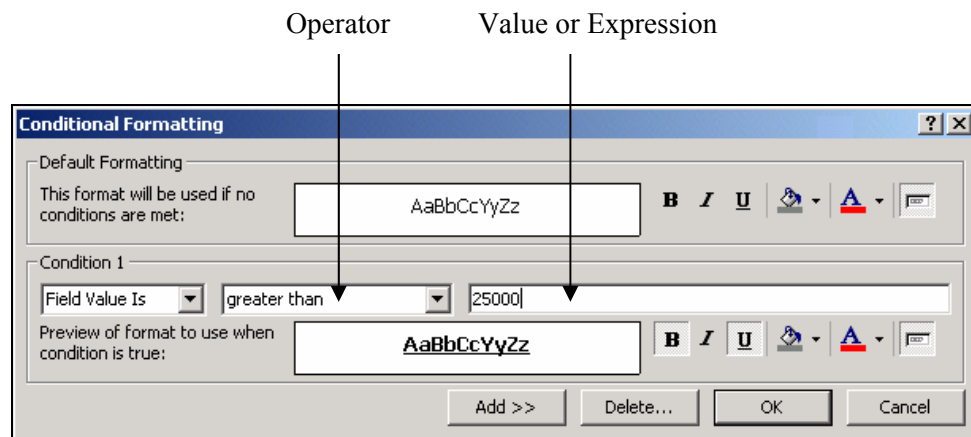
# Using Conditional Formatting

## CONCEPTS

You can have the formatting of a control change automatically on a form or report when the value in the control meets specified criteria. This option, called **CONDITIONAL FORMATTING**, can be very useful for quickly identifying certain values that display in a field on a form or report. Some common uses of conditional formatting are to determine what products in an inventory form are running low or which salespeople are outperforming the rest in a report.

When you use conditional formatting, you need to start by specifying a condition that must be true for the formatting to be applied. The condition includes an operator (e.g., greater than) and a value or expression. You then set the formatting for those fields that match the given criteria.

Let's suppose you have a form that shows loan information and you want the value in the "Amount" field to display as bold and underlined if it exceeds \$250,000. You can set a conditional formatting condition for the "Amount" field.



When you view the form or report, the values in the selected field will be tested using the criteria you specified. If the condition is true, the conditional formatting will be applied automatically.

You can specify up to three conditions for conditional formatting. If none of the specified conditions are true, the control keeps its existing formatting. If more than one specified condition is true, Access applies only the formatting of the first true condition.


## NOTES

☞ If you use an expression in your conditional formatting, the equal sign (=) should not be used. For example, if you want the condition to be greater than one year before today's date, you would type *DATE()-365* in the Value/Expression box.

# Using Conditional Formatting

## STEPS

To apply conditional formatting to a control:

1. In the form's Design view, select the control; or, in Form view, click in the control.
2. Choose **FORMAT, CONDITIONAL FORMATTING**.
3. Choose the operator you want to use, such as greater than or equal to.
4. Enter a value or expression for the condition you want to format.
5. Choose your formatting; e.g., bold, font color.
6. For additional conditions, click on the  button and repeat steps 3-5.
7. Choose **OK**.

## PRACTICE

Let's create a conditional format for the "State" field. We want to use bold and color to alert us when we are viewing the record of a customer in WA state.

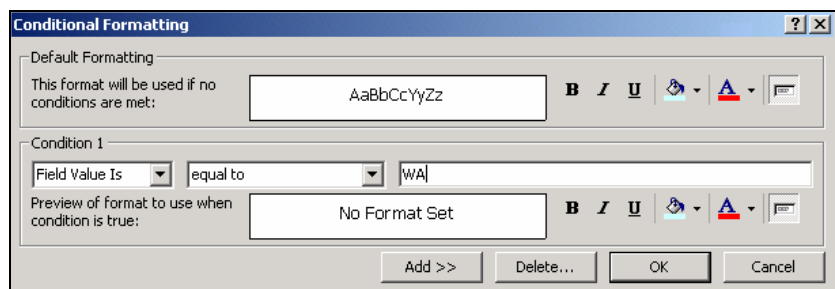
**OPEN:** the **LOANS3.MDB** database

**OPEN:** "frmCustomers" in Design view

**CLICK:** on the "State" text box, then click on **FORMAT, CONDITIONAL FORMATTING**

**CLICK:** on the  next to **Between** and choose **EQUAL TO**

**CLICK:** in the **Value** box and type **WA**



**CLICK:** on  to choose **BOLD**, then click on the  next to the **FONT/FORE COLOR** button and choose **RED** 

**CLICK:** on **OK**

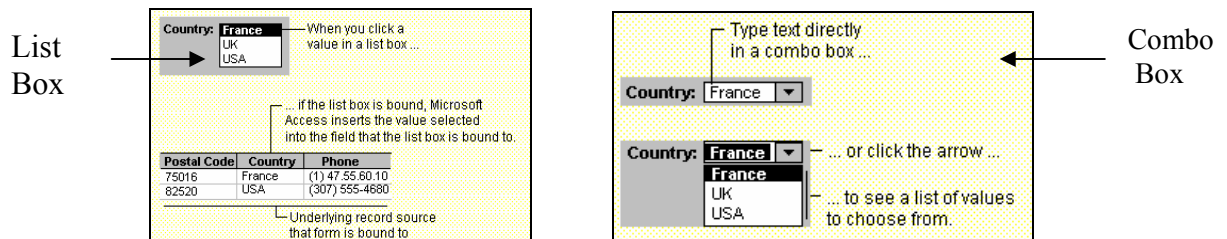
**SWITCH:** to Form view, then scroll through the records and notice all the "WA" in the "State" field are **BOLD** and **RED**

# Overview of Combo Boxes and List Boxes

## CONCEPTS

To make data entry more accurate and intuitive, you can use controls that suggest and/or limit what should be entered in a field. In addition to text boxes and labels, there are many types of controls you can add to your forms, including list boxes and combo boxes.

A **LIST BOX** provides a list of choices from which you can select to eliminate repetitive typing. List boxes usually have several choices displayed with a scroll bar on the right side. A **COMBO BOX** is a combination of a list box and a text box. Examples of a list box and combo box appear below:



List boxes and combo boxes have different uses. You should use a list box when you want a list that appears at all times and when you want to limit the options to only those choices in the list. A combo box conserves screen space because a list appears only when you click its down arrow. Also, a combo box allows you to select from a list *or* type in your own data.

In addition to adding controls manually, you can use **CONTROL WIZARDS** to help you add more advanced controls to your forms. The control wizards can be turned on and off by clicking on the CONTROL WIZARDS button on the Toolbox.

## STEPS

To create a combo or list box using a Control Wizard:

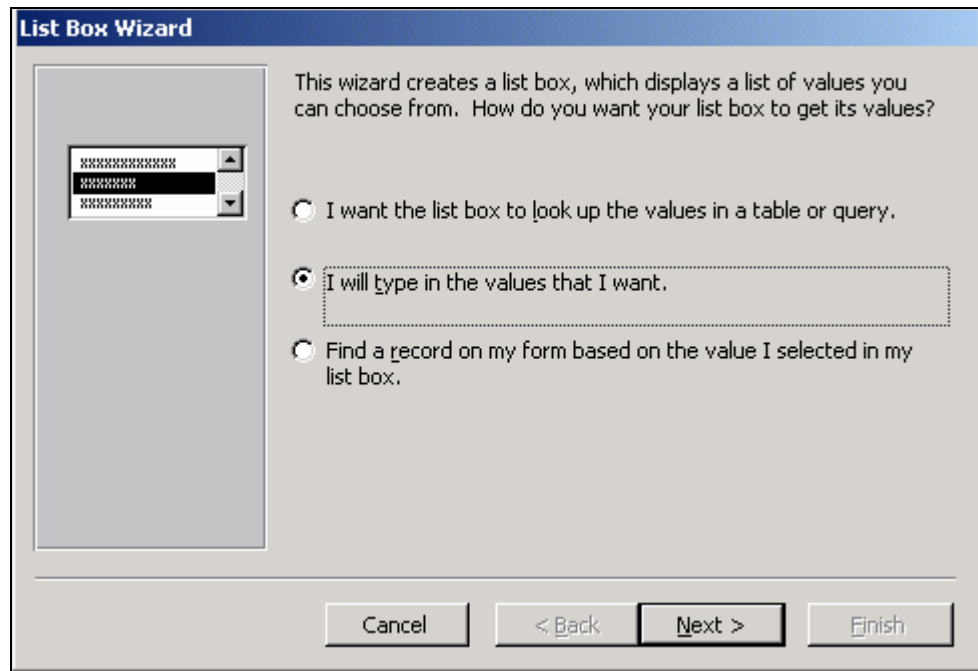
1. From the form's Design view, click on the CONTROL WIZARDS button on the Toolbox to turn it on, if necessary. (Note: If the button shows a border, the Control Wizards are on.)
2. On the Toolbox, click on the button to create the combo box or list box.
3. On the form, click where you want to place the control. Access displays the first step of the wizard.
4. Follow the directions in the wizard. In the last dialog box, click on the FINISH button to display the control in Design view.

## NOTES




To move quickly to a desired value in a combo or list box, type the first letter. Access will move to the first value that starts with that letter. If the AUTO EXPAND control property is set to YES, Access will select the closest matching entry when you type some leading characters in a combo or list box.


# Creating a Combo/List Box from a Value List

**CONCEPTS** As you create a combo or list box using the control wizards, you have a choice in the first step to type in a set of values (called a **VALUE LIST**), or to use an existing table or query as the source for data. If you choose to type the values in yourself, the information becomes fixed and will not update as information in your table updates. This method is very useful for lists that are stable and unlikely to change.



**STEPS** To create a list or combo box from a value list using the wizard:

1. From the form's Design view, click on the CONTROL WIZARDS button on the Toolbox to turn it on, if necessary. 
2. On the Toolbox, click on the button to create the combo box or list box.  
3. On the form, click where you want to place the control. Access displays the first step of the wizard.
4. Choose I WILL TYPE IN THE VALUES THAT I WANT. Choose NEXT.
5. Choose how many columns you want in the list, then type the values in each column, pressing TAB after each. Choose NEXT.
6. Choose the field where you want Access to store the selected value, if desired. By choosing a field, Access adds the value to the current record in the underlying table. Choose NEXT.
7. Type a label for the control, then choose FINISH. Access will display the control in Design view.

**NOTES**  To change the options in a value list, you need to change the Row Source property for the control. See "Customizing Control Properties."

# Creating a Combo/List Box from a Value List

**PRACTICE** Let's create a combo box from a value list.

**SWITCH:** to Design view

**CLICK:** on the "State" text box and delete it from the Detail section

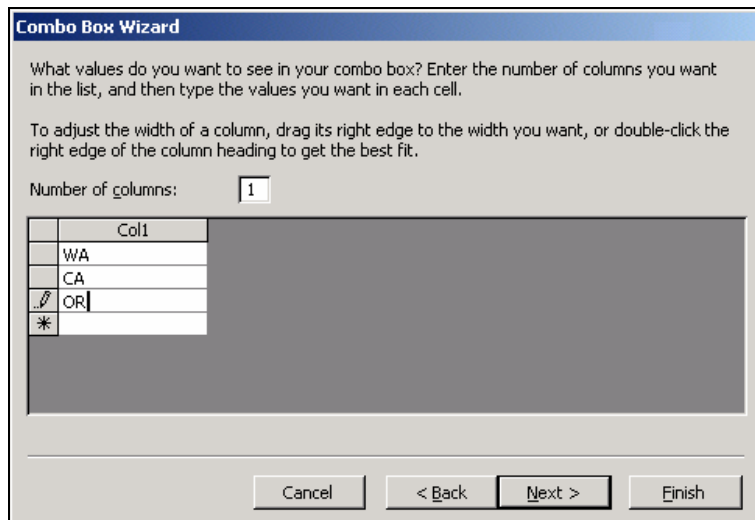
**CLICK:** on the CONTROL WIZARDS button  in the Toolbox to turn the wizards on, if necessary. (Note: If the button shows a border, the Control Wizards are ON.)

**CLICK:** on the COMBO BOX button , then click in the empty space where the "State" field used to be in the Detail section. Notice this starts the Combo Box Wizard.

**CLICK:** on I WILL TYPE IN THE VALUES THAT I WANT in the first step of the wizard, then choose NEXT

**PRESS:** TAB

**TYPE:** WA in column 1      press TAB  
CA                              press TAB  
OR



**CLICK:** on NEXT

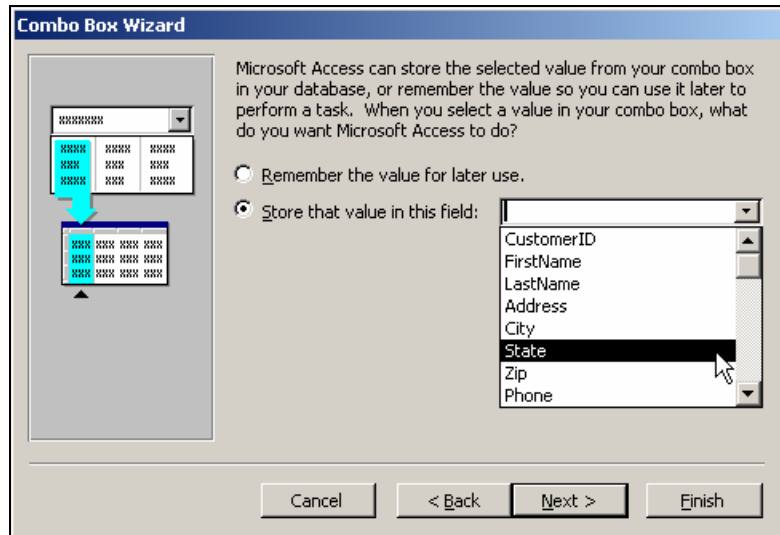
(Continued on next page)

# Creating a Combo/List Box from a Value List

## PRACTICE

Let's continue creating a combo box from a value list.

**CLICK:** on STORE THAT VALUE IN THIS FIELD. Click on the  and choose "State."



**CLICK:** on NEXT

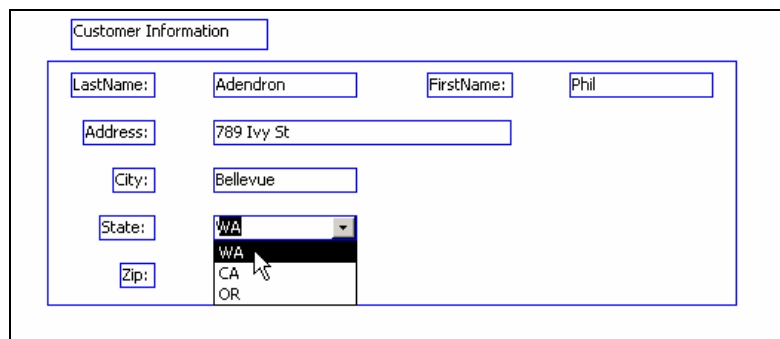
**TYPE:** State: as the label, then choose FINISH

**ALIGN:** the new label and text box with the other controls

**SELECT:** the "State" label and corresponding text box and add a blue border to match the other controls

**SAVE:** the form

**SWITCH:** to Form view. Click on the  next to the "State" field to see the list.



# Customizing Control Properties

---

## CONCEPTS


As you enter data through a form, you may decide you want to limit the entry choices. Suppose, for example, you are entering loan information into a database. You want to input the type of the loan, but want to make sure an incorrect loan type is not accidentally entered. Typing “home” instead of “house,” for example, would affect your queries and reports.

When you create a control using a wizard, you may already be setting **CONTROL PROPERTIES** that limit the data that can be entered. For example, when you choose to specify a value list to display in a list or combo box, you set the Row Source Type and Row Source properties.

Listed below are some of the control properties that can be used to suggest and limit what data can be entered into the form:

Property:	Description:
Input Mask	Supplies a pattern to be followed for all data entered in a field. An example would be a Phone Number Input Mask: (____) ____-____
Row Source Type	Specifies the type of source the options in a control are coming from. You can choose between Table/Query, Value List, or Field List.
Row Source	Specifies the name of the table or query if the Row Source Type is set to Table/Query or Field List. Specifies the entries in the list, separated by semicolons, if the Row Source Type is set to Value List.
Default Value	Specifies a value that is automatically entered in a field when a new record is created.
Validation Rule	Specifies requirements for data entered into a record, field, or control.
Validation Text	Specifies the text that displays as an error message when data is entered that violates the Validation Rule setting.
Limit to List	If YES, limits the entries to the available values in a Combo box. The default is NO.
Locked	If YES, the control is read-only and can't be edited. The default is NO.


## NOTES

 The input mask, default value, validation rule, and validation text control properties only apply to the form, not the underlying table. However, if you set these properties as field properties in the table's design, they will also apply to the form.

# Customizing Control Properties

## STEPS

To customize control properties to limit entry options:

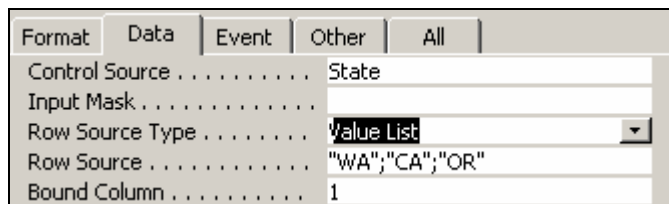
1. Select the control in the form.
2. Click on the PROPERTIES button on the toolbar. 
3. Click on the DATA tab in the Properties sheet. Enter the appropriate text or choose an option for the desired control properties.

## PRACTICE

Let's customize the combo box for the "State" field.

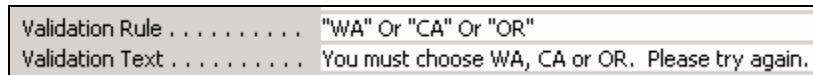
**SWITCH:** to Design view, then click on the "State" text box. Click on the PROPERTIES button to display the properties, if necessary. 

**CLICK:** on the DATA tab in the Properties sheet and notice the ROW SOURCE TYPE and ROW SOURCE were set automatically when we created the combo box using the wizard:



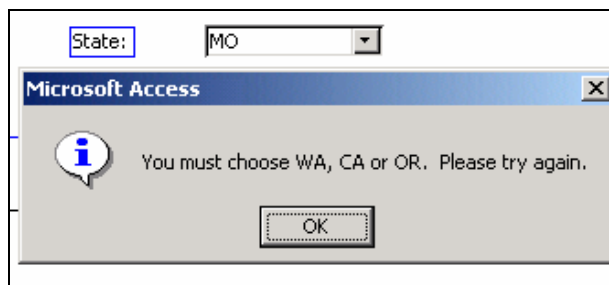
**CLICK:** in the VALIDATION RULE box and type: *WA or CA or OR*

**CLICK:** in the VALIDATION TEXT box and type: *You must choose WA, CA or OR. Please try again.*



**SWITCH:** to Form view

**CLICK:** in the "State" field and type *MO*, then press TAB. Notice the dialog box or Office Assistant message:

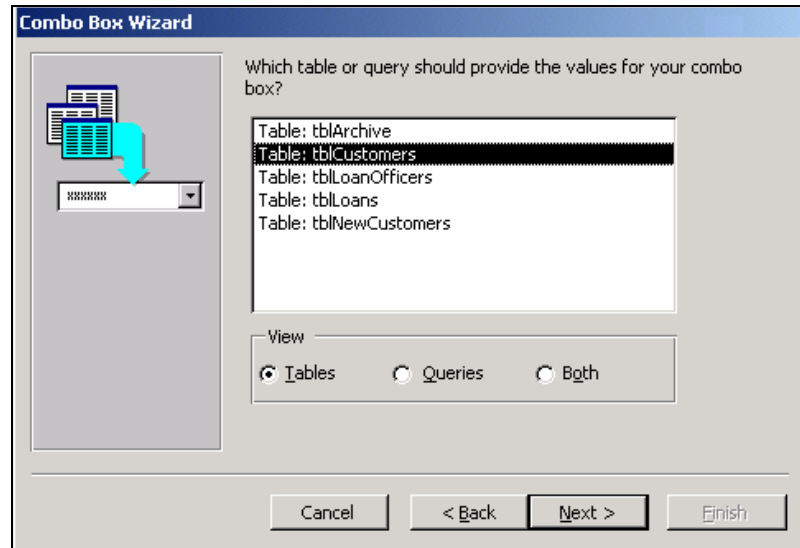


**CLICK:** on OK. Type *WA* in the "State" field, then press TAB.

# Creating a Combo/List Box from a Query

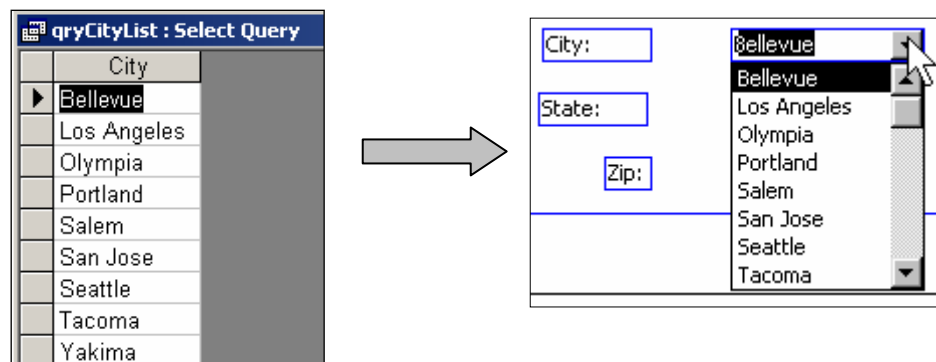
## CONCEPTS

The limitation of using a value list is that the choices are fixed and unrelated to your tables. If, instead, you use an existing table or query as the source of information, the choices in the combo or list box will be updated automatically as information is updated in your table.



The choice to base your combo box or list box on a table or query will depend on what type of data is in the field. Tables work well if the field only contains unique values and is sorted in the desired order. If your field contains repetitive values or is out of order, then it is better to use a query. In a query you are able to sort, filter out irrelevant entries, or set the query property to Unique Values or Unique Records.

It is a good idea to create a special table or query that contains only the information you want for the combo box or list box prior to beginning the wizard. For example, if you wanted a combo box of all the cities currently contained in your database, you might create a query that only uses the “City” field. You can then sort it, and set the property of the query to Unique Values so there is only one occurrence of each city in the recordset.



# Creating a Combo/List Box from a Query

## STEPS

To create a combo or list box using a table or query for a source:

1. From the form's Design view, click on the CONTROL WIZARDS button on the Toolbox to turn it on, if necessary.
2. On the Toolbox, click on the button to create the combo box or list box.
3. On the form, click where you want to place the control. Access displays the first step of the wizard.
4. Choose I WANT THE COMBO BOX TO LOOK UP THE VALUES IN A TABLE OR QUERY, then choose NEXT.
5. Choose the table or query that contains the desired values. Choose NEXT.
6. Choose the fields where the desired values are stored. Choose NEXT.
7. Verify the list of values and set your column widths. Choose NEXT.
8. Choose the field where you want Access to store the selected value, if desired. By choosing a field, Access adds the value to the current record in the underlying table. Choose NEXT.
9. Type a label for the control, then choose FINISH. Access will display the control in Design view.



## PRACTICE

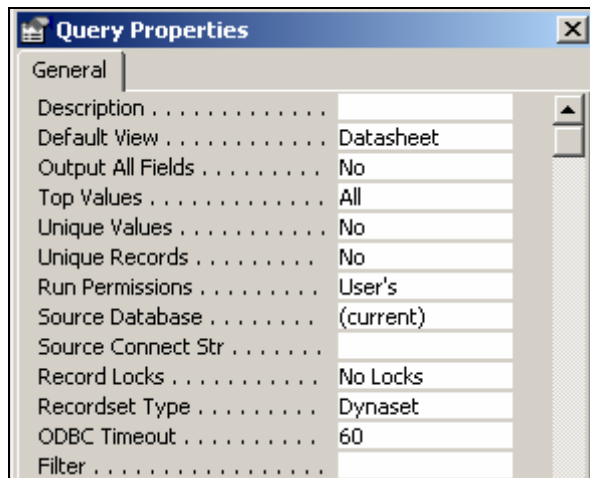
Let's create a query to use as the basis for a combo box.

**PRESS:** [F11] to switch to the Database window. (Note: Leave "frmCustomers" open.)

**CREATE:** a new query in Design view based on the "tblCustomers" table

**ADD:** the "City" field to the QBE grid

**CLICK:** in the upper part of Query window, then click on the **PROPERTIES** button to show the Query Properties sheet




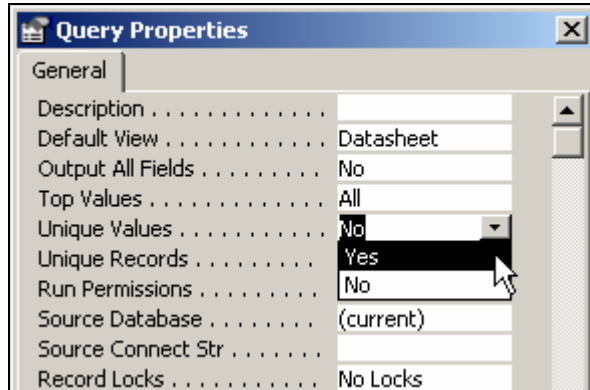
(Continued on next page)

# Creating a Combo/List Box from a Query

## PRACTICE

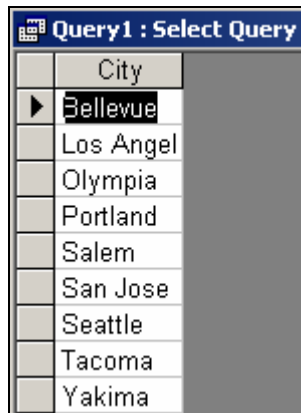
Let's continue creating a combo box from a query.

**CLICK:** in the **UNIQUE VALUES** box on the **GENERAL** tab of the Properties sheet, then click on the  and choose **YES**



**CLOSE:** the Properties sheet

**RUN:** the query. Notice there are no duplicates and the cities are sorted alphabetically:



**SAVE:** the query as "qryCityList," then close the Query window

**RETURN:** to "frmCustomers," then switch to Design view (if necessary)

**CLICK:** on the **COMBO BOX** button , then click in a blank area of the form

**CHOOSE:** **I WANT THE COMBO BOX TO LOOK UP THE VALUES IN A TABLE OR QUERY** in the first step of the wizard, then click on **NEXT**

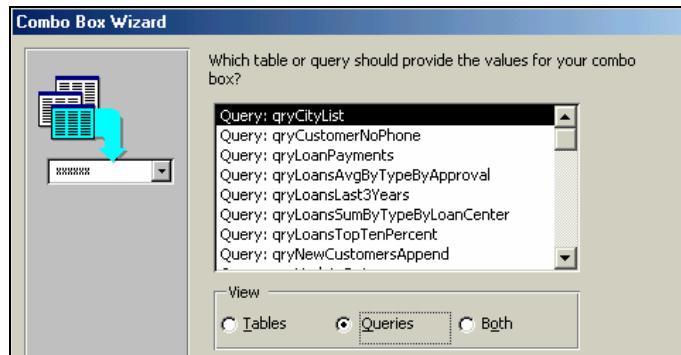
(Continued on next page)


# Creating a Combo/List Box from a Query

## PRACTICE

Let's continue creating a combo box from a query.

**CHOOSE:**      **QUERIES** under View, then select "qryCityList"



**CLICK:**      on NEXT. Click on the  to add the "City" field to the Selected Fields list, then click on NEXT.

**CONFIRM:**      the list shown is the correct list, then click on NEXT to accept the default column width

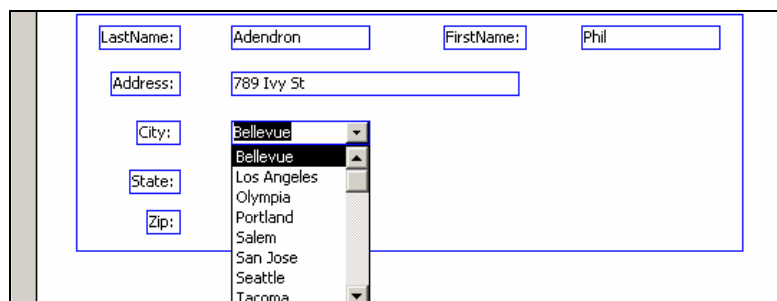
**CHOOSE:**      STORE THAT VALUE IN THIS FIELD, then click on the  and choose CITY. Click on NEXT.

**TYPE:**      *City:* as the label, then click on FINISH

**DELETE:**      the old "City" field and replace it with the one you just created. Align the new label and text box with the other controls.

**SELECT:**      the "City" label and the corresponding text box and add a blue border to match the other controls

**SWITCH:**      to Form view, then click on the  next to the "City" field to see the list



**SAVE:**      the changes to the "frmCustomers" form

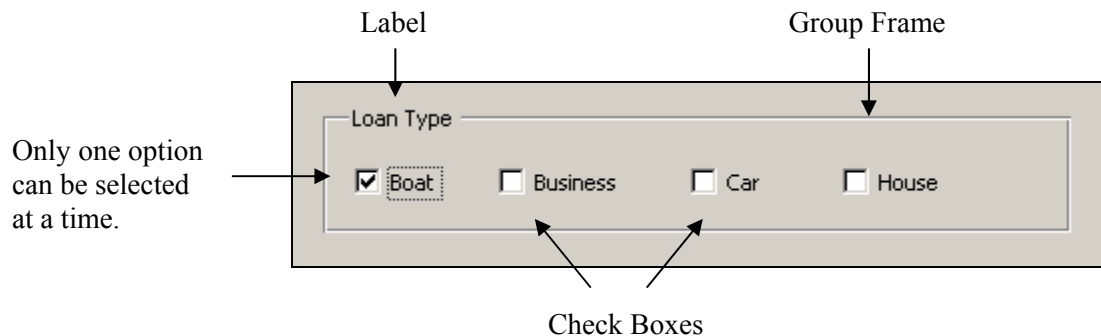
**SWITCH:**      to Design view

# Creating an Option Group

## CONCEPTS



When entering data, it is usually easier to select from a list of existing choices rather than having to remember valid entries and typing them in correctly. In addition to creating combo or list boxes to limit data entry, you can create an **OPTION GROUP**.

In a form, an option group consists of a group frame and a set of check boxes, option buttons, or toggle buttons. Both visually and functionally, the option group frame combines the options together and makes them mutually exclusive. The group frame is typically bound to a field. For example, if the underlying table has a “LoanType” field, your option group can be bound to that field. The options within that frame might be check boxes labeled: Boat, Business, House and Car. When you pick one of these choices, the value is placed in the “LoanType” field.



## STEPS

To create an option group using a Control Wizard:

1. From the form's Design view, click on the CONTROL WIZARDS button on the Toolbox to turn it on, if necessary. 
2. From the Toolbox, choose the OPTION GROUP button. 
3. Follow the steps in the wizard, clicking on FINISH when you are done.

## NOTES

☞ If you create the option buttons outside the frame first, you have to cut and paste buttons into the frame.

☞ To create an option group frame with buttons, you create the group and bind it to a field; e.g., “LoanType.” Next, you create the buttons, and place them in the frame. The option buttons are each given a numeric value in their OptionValue property. When the user clicks on one of the option buttons, that button's *numeric value is the value that is put in the “LoanType” field*. If you want to store a textual value, like “House,” rather than the number “1,” you would need to create a LOOKUP table that would correlate the value “1” with the value “House.”

☞ For the best results, you should create option groups only for fields whose data type is YES/NO, INTEGER, or LONG INTEGER. For fields with other data types, or to present more than a few options, use a list or combo box instead.

# Creating an Option Group

## PRACTICE

Let's create an option group in "frmCustomers" using a wizard.

**CLICK:** on the OPTION GROUP button  on the Toolbox, then click below the "FirstName" text box to create the option group frame. Notice the Option Group Wizard appears.

**TYPE:** *Good*                      press TAB  
*Fair*                              press TAB  
*Poor*                              click on NEXT

**CHOOSE:** NO, I DON'T WANT A DEFAULT, then click on NEXT

**TYPE:** *1*                              press TAB  
*0*                                  press TAB  
*-1*                                 click on NEXT

**CLICK:** on STORE THE VALUE IN THIS FIELD, click on the  and choose CREDITRATING as the field to store the value in, then click on NEXT

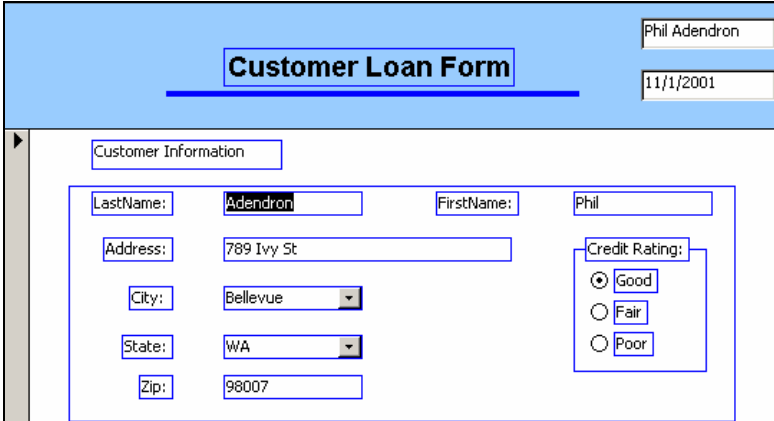
**CLICK:** next to OPTION BUTTONS, then click on NEXT

**TYPE:** *Credit Rating:* as the label, then choose FINISH

**ALIGN:** the option group as necessary

**SELECT:** the entire option group and add a blue border to match the other controls

**SWITCH:** to Form view, then assign a credit rating to a few customers by clicking on an option button



**SAVE:** the form, then return to Design view

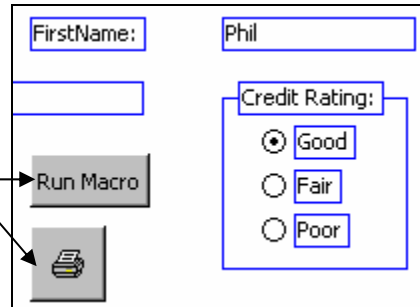
# Creating Command Buttons

## CONCEPTS

In addition to adding controls to forms that help with data entry, you can also add **COMMAND BUTTONS**. When you click a command button, you can trigger hyperlinks, macros or VBA procedures, which may print a report, link to another form, update data in a query, or perform some other common action.



Use command buttons to automatically run macros, print the form, use a hyperlink, or perform other common actions.



One of the quickest methods to add a command button to a form is to use the Command Button Wizard. Using the wizard, you can choose the action you want to occur when a button is pressed, as well as indicate the text or a graphic you want to appear on the button.

## STEPS

To add a command button using the Command Button Wizard:

1. From the form's Design view, click on the CONTROL WIZARDS button on the Toolbox to turn it on, if necessary.
2. On the Toolbox, click on the COMMAND BUTTON tool, then click on the form where you want the command button to appear. The first step of the wizard appears.
3. Follow the directions in the wizard. In the last dialog box, click on the FINISH button to display the control in Design view.
4. Switch to Form view and test the new command button by clicking it.



## NOTES

☞ You can also click and drag the desired macro from the Database window onto your form's Design view. A command button with the appropriate properties will be created automatically.

☞ If you created a command button without the wizard, you can use the Properties sheet to change the caption (FORMAT tab, CAPTION property) or the response when a button is clicked (EVENT tab, ON CLICK property).

☞ An important property to be aware of as you create command buttons is the TAB STOP property. This property determines whether you can use the TAB key to move the focus to a control in a form. It is advisable to change this property to NO if you have a habit of pressing ENTER to navigate through fields. This will prevent accidental selection of a command.

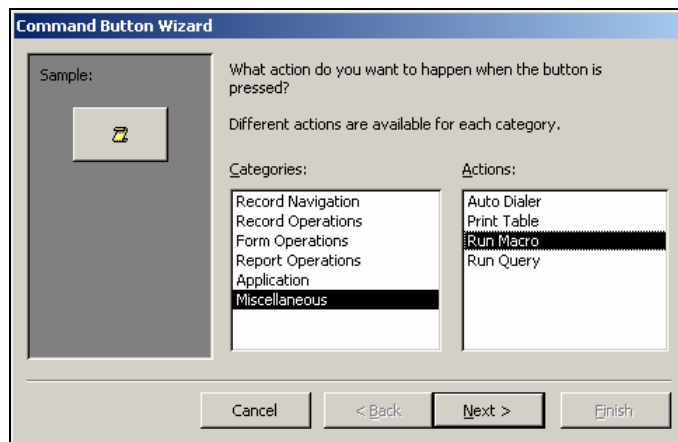
# Creating Command Buttons

## PRACTICE

Let's create a command button on the "frmCustomers" form.

**CLICK:** on the **COMMAND BUTTON** tool  on the Toolbox, then click on the form in the blank area to the left of the "CreditRating" option group

**CLICK:** on **MISCELLANEOUS** under **Categories**, choose **RUN MACRO** under **Actions**



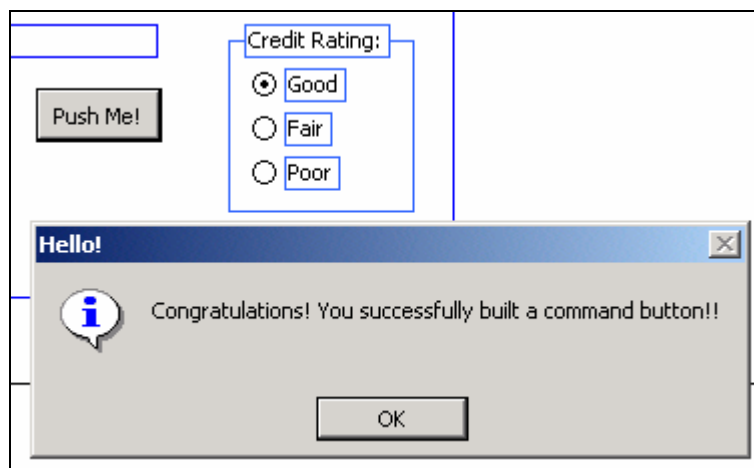
**CLICK:** on **NEXT**

**SELECT:** **MCRMESSAGE** from the list, then click on **NEXT**

**CLICK:** on **TEXT**, then click in the box to the right and type *Push Me!*

**CLICK:** on **FINISH**, then switch to Form view

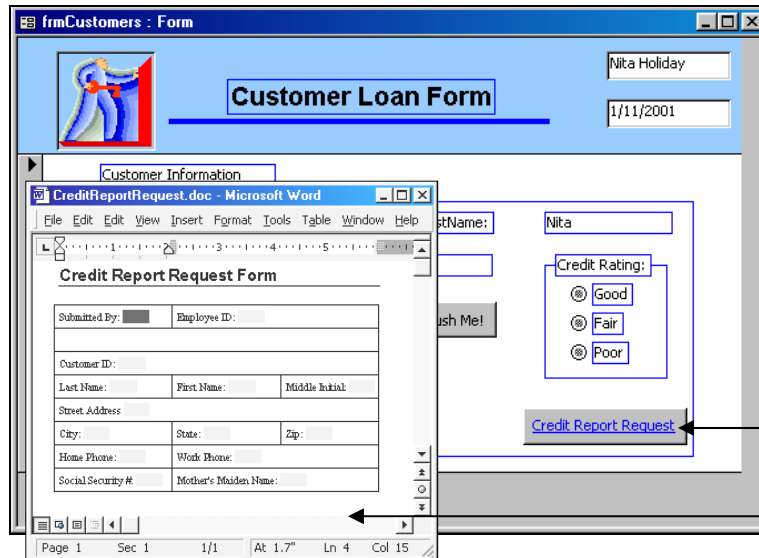
**CLICK:** on the **PUSH ME!** command button, then choose **OK** when prompted by each of the message boxes



# Using Command Buttons and Hyperlinks

## CONCEPTS


A useful feature is the ability to create a command button that follows a hyperlink path to a designated location. For example, you can open a Word document from a command button in an Access form.



You click on this command button...  
...to jump to this Word document.

## STEPS

To add a command button that you click on to follow a hyperlink:


1. From the form's Design view, turn off the Control Wizards, if necessary, by clicking on the CONTROL WIZARDS button on the Toolbox.
2. On the Toolbox, click on the COMMAND BUTTON tool, then click on the form where you want the command button to appear.
3. Select the new command button, then click on the PROPERTIES button to open the Properties sheet for the control and choose the FORMAT tab.
4. Click in the Hyperlink Address box, then click on the BUILD button . The Insert Hyperlink dialog box will display.
5. Choose EXISTING FILE OR WEB PAGE under Link To. Type the file path or web address (URL), or choose a file or web address from the desired folder in the Look In drop-down list. You can also click on the BROWSE FOR FILE button next to the Look In box to locate the file.
6. (Opt.) To specify a specific location or object in the selected file, click on the BOOKMARK button, make a selection, then choose OK.
7. Choose OK to close the Insert Hyperlink dialog box.
8. Set the CAPTION property using the text you want displayed as the hyperlink on the button.
9. Save the form. To test the link, switch to Form view and click on the command button.



# Using Command Buttons and Hyperlinks

**PRACTICE** Let's create a command button in the "frmCustomers" form that is attached to a hyperlink address.

**SWITCH:** to the Design view of the "frmCustomers" form

**CLICK:** on the CONTROL WIZARDS button  on the Toolbox to turn the wizards OFF. (Note: If the button shows a border, the Control Wizards are ON.)

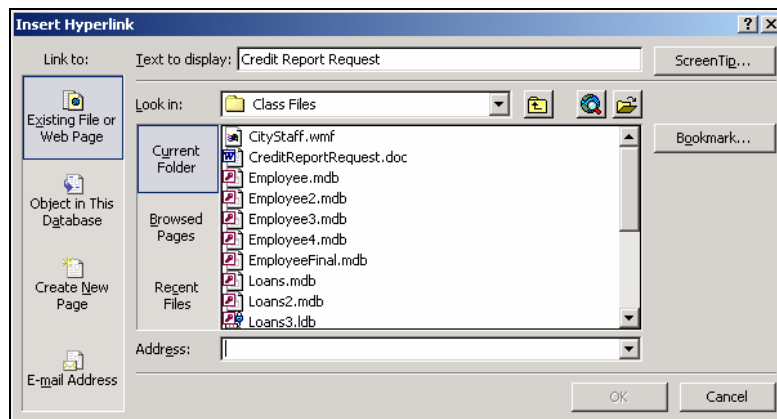
**CLICK:** on the COMMAND BUTTON tool  on the Toolbox, then click below the "Credit Rating" option group

**CLICK:** on the PROPERTIES button  to open the Properties sheet, if necessary, then click on the FORMAT tab

**CLICK:** in the CAPTION box and change the caption to *Credit Report Request*

**CLICK:** on the HYPERLINK ADDRESS property, then click on the BUILD button 

**NOTICE:** the Insert Hyperlink dialog box displays. Locate the Class Files folder as directed by your instructor.



**CHOOSE:** CREDITREPORTREQUEST.DOC from the list, then click on OK

**CLICK:** on FORMAT, SIZE, TO FIT to show all the hyperlink text, then position the command button as desired

**SWITCH:** to Form view, then click on the CREDIT REPORT REQUEST command button. Notice the CREDITREPORTREQUEST.DOC file opens in Word.


**CLOSE:** CREDITREPORTREQUEST.DOC and Word and return to the "frmLoans" form

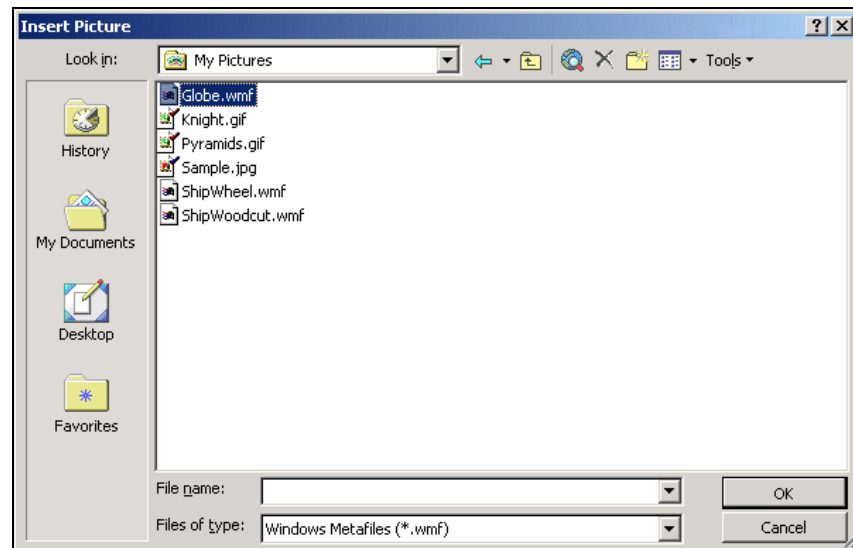
# Inserting Graphic Images

**CONCEPTS** You can insert **GRAPHIC IMAGES** (e.g., bitmaps, metafiles) into a form or report. Often, these objects come from a source other than the tables in your database and are unbound. For example, you can display a company logo created in another application, or insert a picture you downloaded from the Internet.

When you add an object to a form or report, it is placed in a frame. Like a label, an unbound object frame displays the picture or other image in Design view. When you use the form in Form view or print the form, the image stays the same for every record.

**STEPS** To add a graphic image to a form or report:

1. On the Toolbox, click on the IMAGE button , or choose INSERT, PICTURE.
2. On the form or report, click where you want to place the upper-left corner of the object frame to create a default-sized object; or click and drag to customize the size of the object.
3. When the Insert Picture dialog box opens, navigate to and select the graphics file you want to insert.



4. Choose OK.

**NOTES** You can also display bound objects, such as pictures stored in fields, on a form or report. For example, you can display a picture of every product in your product line or every employee in your company in a form. This involves setting the data type of the field to OLE OBJECT and using a bound object frame. This creates a bound control that is a picture field associated with a record in your database.

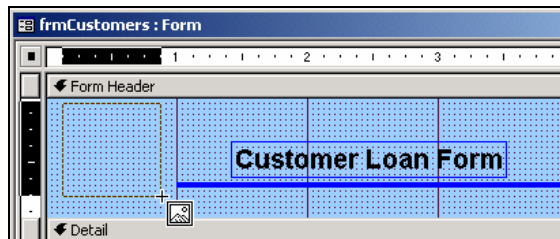
# Inserting Graphic Images

## PRACTICE

Let's add a picture to the "frmCustomers" form.

**SWITCH:** to Design view


**CLICK:** on the **IMAGE** button  on the Toolbox, then click and drag a 3/4" square in the upper left corner of the Form Header section

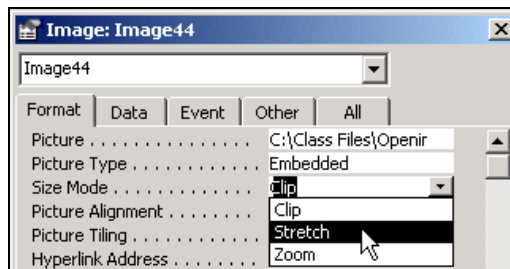


**NAVIGATE:** to the Class Files folder as directed by your instructor, then select **OPENINGDOORS.WMF**

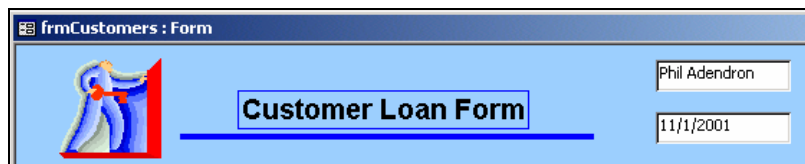
**CLICK:** on **OK**. Notice the picture now appears on your form.

**SELECT:** the picture you just inserted (if necessary), then click on the **FORMAT** tab of the Properties sheet

**CLICK:** in the **SIZE MODE** box, then click on the  and choose **STRETCH**. Resize your picture until it looks proportional.





**SWITCH:** to Form view to see your results



**SAVE:** and close the form, then return to the Database window

## NOTES

 The **UNBOUND OBJECT FRAME** button  on the Toolbox (or the **INSERT, OBJECT** menu command) enables you to create unbound objects using other applications; e.g., Excel, Visio, as well as insert existing objects from a file.

# Overview of Subforms

## CONCEPTS

Basic forms generally display information about one record at a time; however, you can also design more complex forms that display information from a related table or query in a **SUBFORM**. Subforms give you the ability to work with data from multiple tables in one form.

Essentially, a subform is a form within a form. The primary form is called the **MAIN** form (also referred to as the **PARENT** or **MASTER** form) and the form within the form is called the **SUBFORM** (or **CHILD** form). You can view, edit, delete, and add data in both the main form and subform. For subforms to work properly, the record source for a main form should be the “one” side of a one-to-many relationship with the record source for the subform.

Let’s suppose you wanted to see each customer record and all the loans for that customer on one form. In this example, the main form would be based on the “tblCustomers” table, and the subform would be based on the “tblLoans” table. Because these tables are joined by a one-to-many relationship, you can view multiple loan records for each customer.

The main form shows data from a record in the “tblCustomers” table.

The subform shows data from the “tblLoans” table that is related to the record displayed in the main form.

LoanType	Amount	EntryDate
CAR	\$25,000.00	10/01/1998
HOUSE	\$425,000.00	01/05/1998
BOAT	\$50,000.00	01/01/1998

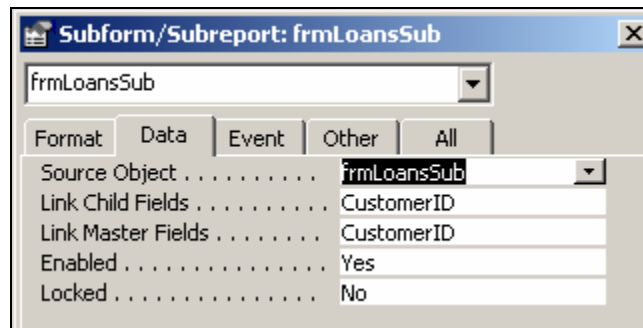
Once the main form and subform have been created, you can move from field to field by pressing the **TAB** key. To move to the next record in the main form from inside the subform, press **CTRL + TAB**. To move between records, you can also use the navigation tools at the bottom of the main form and subform.

# Overview of Subforms

## CONCEPTS

While a main form can be displayed only as a single form, a subform can be displayed as a continuous form or as a datasheet. In Form view, you can switch between a subform's Datasheet and Form. To switch views, click the subform, then choose VIEW, SUBFORM DATASHEET.

To ensure that data in the subform remains current with data in the main form, the subform is linked to the main form through the LINK CHILD and LINK MASTER field properties. If the main form and the subform are based on tables for which you have defined a relationship, Access will automatically link the main form and subform using fields common to both forms; e.g., "CustomerID," or an already established relationship.



If Access does not automatically link the forms, then you must set the link manually. The linking fields or controls you choose must contain the same kind of data and have the same, or a compatible, data type or field size. The linking fields do not need to appear in the main form or in the subform if you include them in the underlying tables or queries.

## NOTES

☞ A main form can have multiple subforms. You can also nest up to ten levels of subforms. This means you can have a subform within a main form and you can have another subform within that subform, and so on.

☞ To create an expression using controls from main and subforms, use the following syntax for the control properties: Forms![main form name]![subform control name].Form![control name].

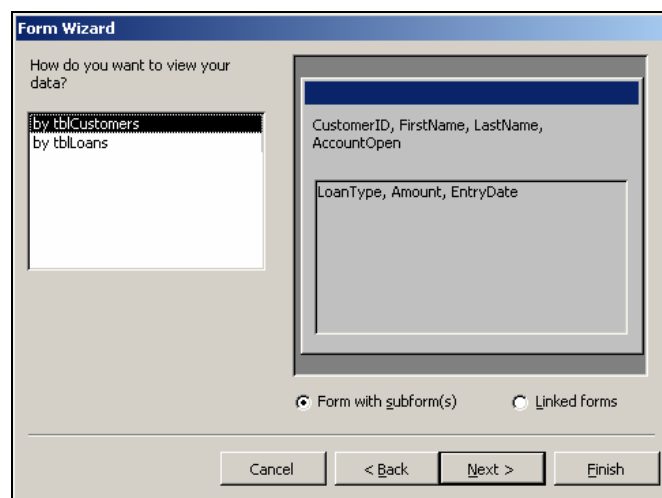
☞ Using the techniques described in this section, you can also create subreports within main reports.

# Creating Subforms

## CONCEPTS

You can create a form with a subform from scratch; or, you can add a subform to an existing form. There are several wizards that can help you create subforms in forms. Using these wizards is most effective when you have correctly set up the one-to-many relationships between your tables.

The **FORM WIZARD** lets you quickly create a new form with a subform. In the first step of the Form Wizard, you can select the fields from the primary table, and any related tables or queries, you want to appear on the form. When you choose to include fields from tables that have a one-to-many relationship, the Form Wizard will add a step to help you set up the subform within the form.



If the main form already exists, you can add subforms using the **SUBFORM WIZARD**. The Subform Wizard lets you choose to add an existing form as a subform, or create a new subform based on a table or query.

## STEPS

To create a new form with a subform using the Form Wizard:

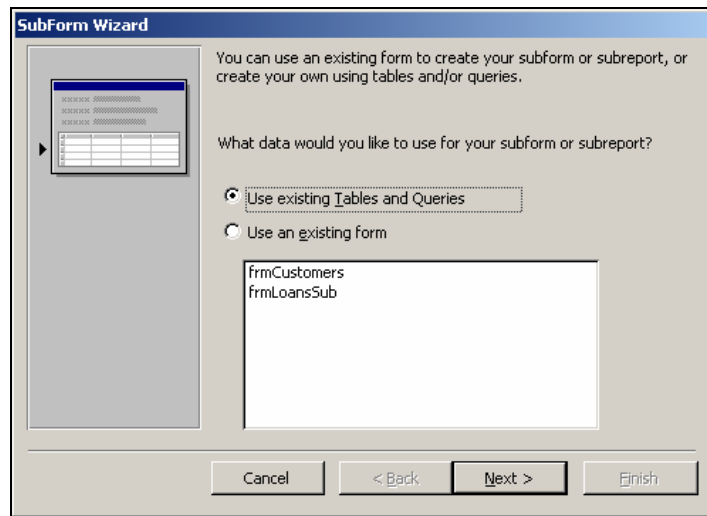
1. Create a new form using the Form Wizard.
2. In the first step of the wizard, click on the  under Select A Table/Query, then choose the primary table containing the information you want to use in the main form.
3. Select the first field you want on the form, then click on . Repeat this for each field you want included. The fields will show in the order in which they appear in the right-hand box.
4. Repeat steps 2 and 3 for each related table or query that includes fields you want to use in a subform. Choose NEXT.
5. Choose which table or query you want to use in the main form and choose FORM WITH SUBFORM(S). Choose NEXT.
6. Choose a layout, then choose NEXT.
7. Choose a style, then choose NEXT.
8. Type a name for your main form and all subforms.
9. Choose FINISH.

# Creating Subforms

## STEPS

To add a subform using the Subform Wizard:

1. From the form's Design view, click on the CONTROL WIZARDS button on the Toolbox to turn it on, if necessary.
2. Using the Toolbox, click on the SUBFORM/SUBREPORT button, then click on the form where you want the subform to appear.
3. In the first step of the wizard, choose whether you want to create a subform using data from an existing table or query, or using an existing form. Choose NEXT.



4. If you choose to create a subform using an existing table or query, click on the under Select A Table/Query, then choose the table or query containing the information you want to use in the subform. Add the desired fields in order by selecting each field name, then clicking on . Repeat this for any additional tables or queries you want to use, then choose NEXT.
5. Choose the fields to link your main form to the subform, then choose NEXT.
6. Type a name for the subform, then choose FINISH.

You can also add an existing form as a subform by selecting it in the Database window, then dragging and dropping it in the desired location on the main form. You may want to use the WINDOW, TILE VERTICALLY command to show the Database and Form windows side-by-side.

## NOTES

Using AUTOFORM is the fastest way to create a new form with a subform; however, this method only works for primary tables in a one-to-many-relationship. To use AutoForm, select the primary table in the Database window, then click on the down arrow next to the NEW OBJECT button on the Access toolbar. Choose AUTOFORM. All the fields from the primary table will display in the main form and all the fields from the related tables will display in subforms. By default, the main form displays in a columnar layout and the subform displays in Datasheet view.



# Creating Subforms

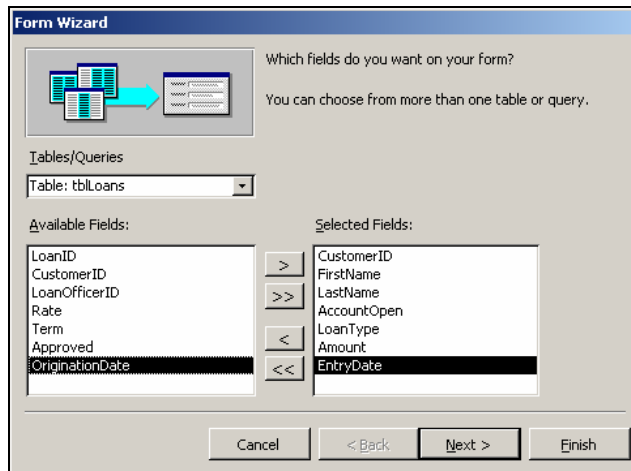
## PRACTICE

Let's create a form that incorporates information from both the "tblCustomers" and "tblLoans" tables using the Form Wizard.

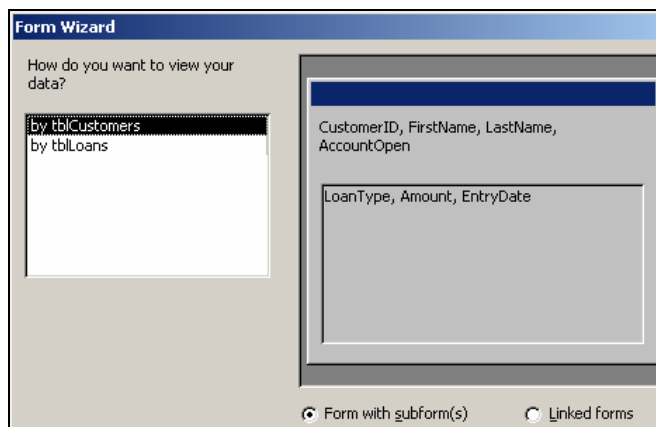
**CLICK:** on  in the Database window (if necessary), then double-click on **CREATE FORM BY USING WIZARD**

**SELECT:** "tblCustomers" from the Tables/Queries drop-down list, then add the "CustomerID," "FirstName," "LastName" and "AccountOpen" fields

**SELECT:** "tblLoans" from the Tables/Queries drop-down list, then add the "LoanType," "Amount" and "EntryDate" fields



**CLICK:** on **NEXT**. Choose **BY TBLCUSTOMERS** and select **FORM WITH SUBFORM(S)**.



**CLICK:** on **NEXT**. Click on **TABULAR** for the layout, then click on **NEXT**.

**CLICK:** on **BLENDS** for the style, then click on **NEXT**

(Continued on next page)

# Creating Subforms

## PRACTICE

Let's continue creating a form with a subform.

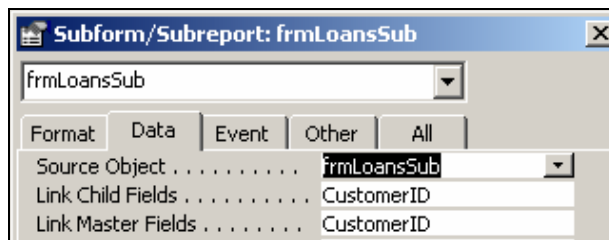
**TYPE:** *frmCustomerLoans* as the name of the main form and type *frmLoansSub* as the name of the subform

**CLICK:** on FINISH. Notice your form displays in Form view.

**SWITCH:** to Design view, then delete the label for the subform

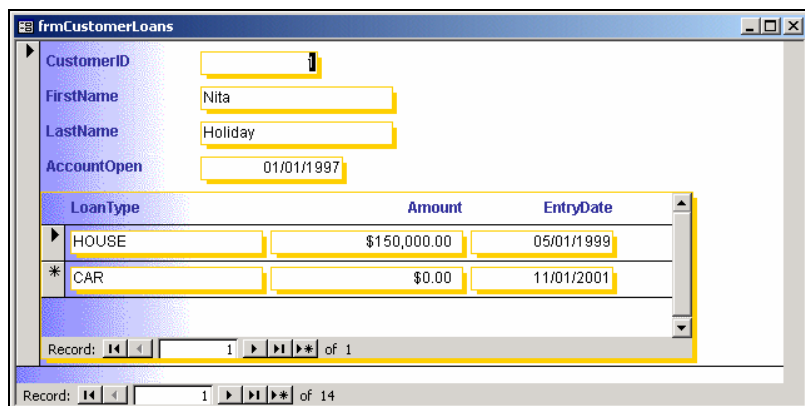
**CLICK:** on the border of the SUBFORM control to select it, then move it to the left side of the main form and resize it to show all the fields

**CLICK:** on the DATA tab in the Properties sheet and notice the "CustomerID" field is specified as the Link Child and Link Master fields



**CLOSE:** the Properties sheet

**SWITCH:** to Form view and notice the changes in your form:



**CLICK:** on the GO TO NEXT RECORD button  for the main form several times to switch between customer records

**PRESS:** TAB several times to move through the fields in the form, then press CTRL + TAB several times from inside the subform. Notice the forms are synchronized.

(Continued on the next page)

# Creating Subforms

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## PRACTICE

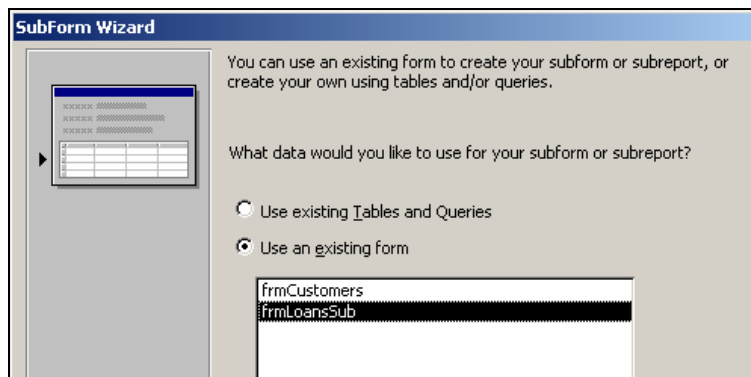
Let's use the SubForm Wizard to create a subform.

**SWITCH:** to Design view and delete the SUBFORM control

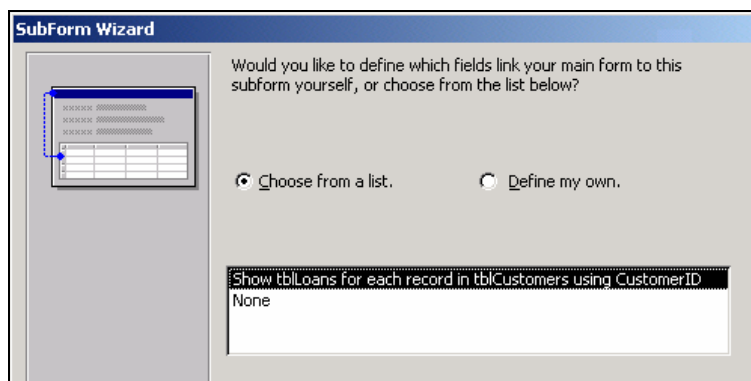
**CLICK:** on the CONTROL WIZARDS button  to turn it on

**CLICK:** on the SUBFORM/SUBREPORT button  on the Toolbox, then click in the Detail section below the "AccountOpen" label

**CLICK:** on USE AN EXISTING FORM in the SubForm Wizard, then choose "frmLoansSub"



**CLICK:** on NEXT, then choose to link the main form to the subform using the "CustomerID" field



**CLICK:** on NEXT, then click on FINISH to keep the existing subform name and close the wizard

**DELETE:** the LABEL for the subform

**SAVE:** the form, then switch to FORM view. Notice the subform.

---

(Continued on the next page)

# Creating Subforms

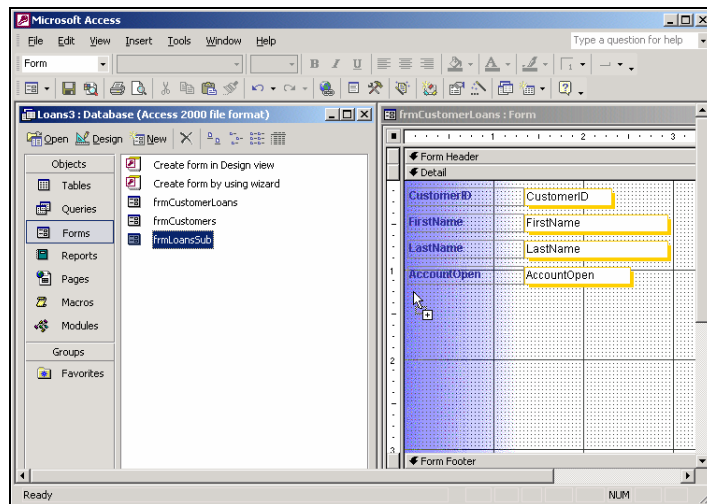
## PRACTICE

Let's use drag and drop to create a subform.

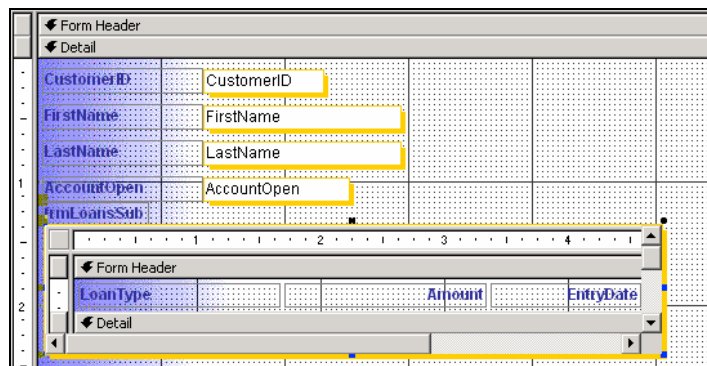
**SWITCH:** to Design view, then delete the SUBFORM control

**PRESS:** [F11] to show the Database window, then click on WINDOW, TILE VERTICALLY

**CLICK:** on the "frmLoansSub" form in the Database window and drag it below the "AccountOpen" label in the "frmCustomerLoans" window



**RELEASE:** the mouse. Maximize the Form window and notice the subform is added:



**DELETE:** the LABEL for the subform

**SAVE:** the form, then switch to FORM view

**CLOSE:** the "CustomerLoans" form, then close the LOANS3.MDB database

# On Your Own

---

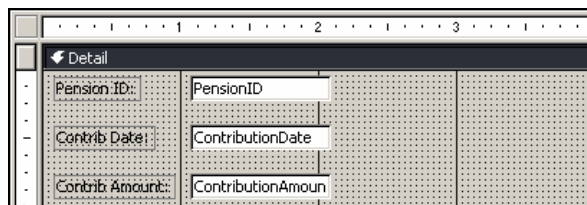
In the previous section, we:

- Applied conditional formatting
- Added list boxes, combo boxes, option groups, command buttons and objects to forms
- Customized control properties
- Created and used subforms

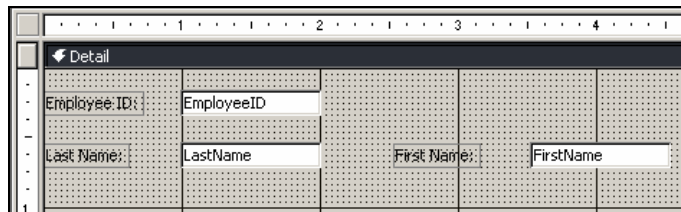
To practice what's been covered in the form design section, complete the exercise shown below. Work at your own pace, and let your instructor know if you have questions.

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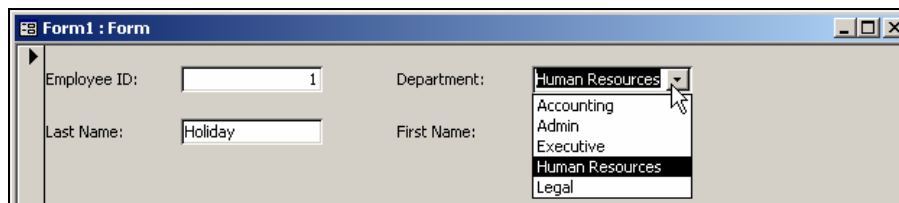
1. **Open the EMPLOYEE3.MDB database.**
2. **Create a new form in Design view based on the "tblPensions" table. Add and align the "PensionID," "ContributionDate" and "ContributionAmount" fields as shown below, then resize the Detail section to be 1" tall.**



3. **Save the form as *frmPensionContributions*, then close the form.**
4. **Create a new form in Design view based on the "tblEmployees" table. Add and align the "EmployeeID," "LastName" and "FirstName" fields as shown below:**



5. **Use a control wizard to create a combo box above the "FirstName" field. Look up the values in the "qryDeptList" query. Store the information in the "DepartmentName" field, then type *Department:* as the label. Align and resize the combo box and its label as needed. View the form and test your combo box.**

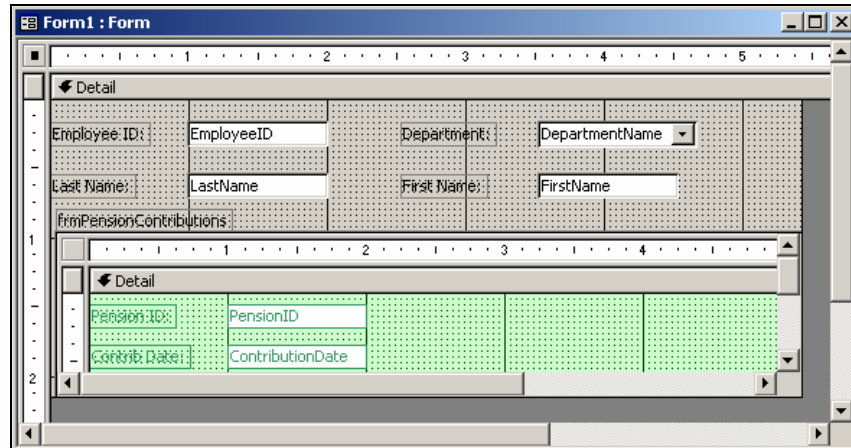


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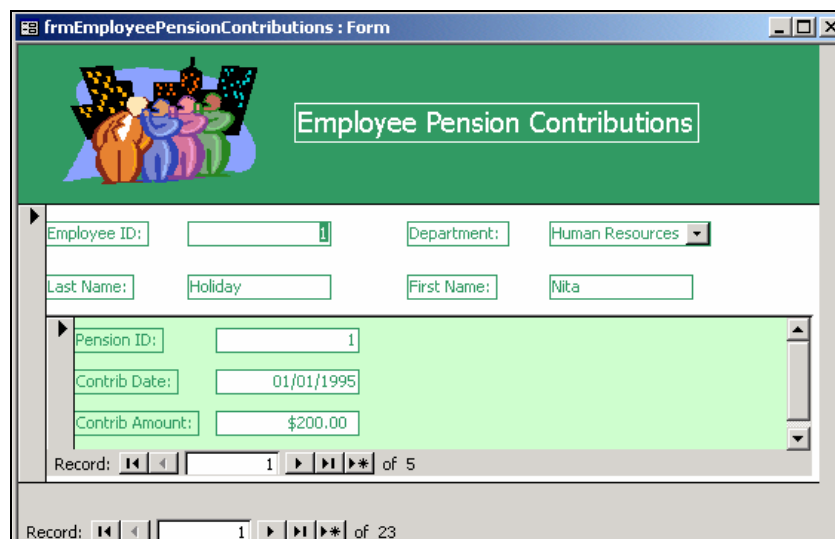
(Continued on next page)

# On Your Own

6. In Design view, use the Subform Wizard (or the drag and drop method) to add the "frmPensionContributions" form as a subform below the "LastName" field.



7. Delete the label for the subform and reposition the subform as needed.
8. Use the Image button on the Toolbox to add the CITYSTAFF.WMF file to the left side of the Form Header section.
9. Add a label to the right side of the picture in the Form Header section that reads *Employee Pension Contributions*.
10. Format the sections and controls in the form as desired.
11. View the form, then scroll through a few records in the subform. Notice the different pension contributions for Nita Holiday:



12. Save the form as *frmEmployeePensionContributions*, then close the form and the EMPLOYEE3.MDB database.

# Notes

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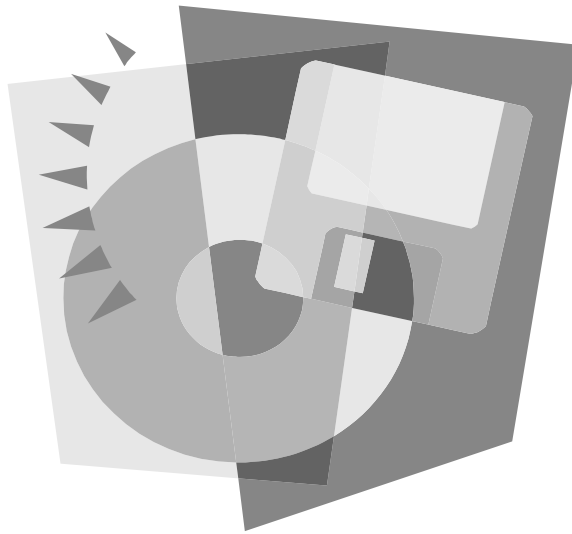
# Section Four: Working with Reports

---

## ***Objectives***

By the end of this section, you should be able to:

- Create custom reports
- Preview and print reports
- Add the date, time, and page numbers to a report
- Sort and group records in a report
- Include calculations on grouped records in reports
- Create subreports

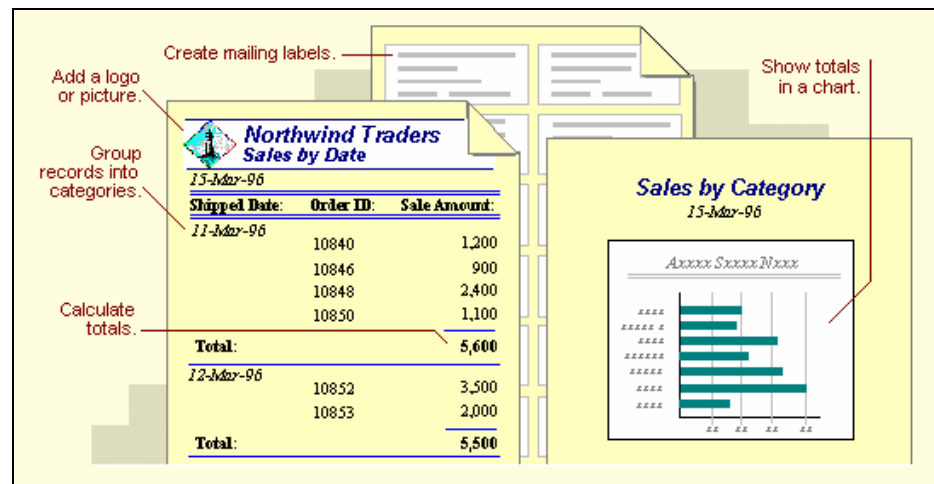


# Overview of Reports

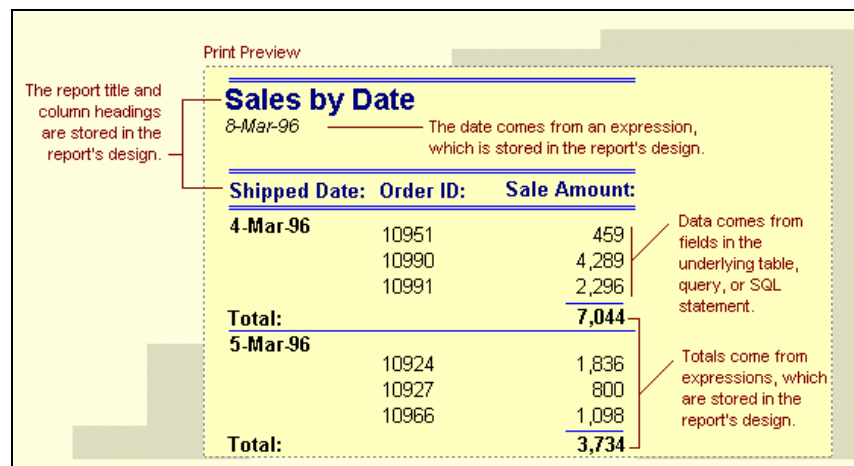
## CONCEPTS

Although you can print your data from both forms and datasheets, these views do not provide an efficient way to organize your printed data. Printing a form does not usually provide much data because forms are oriented towards showing one record (or at most a small number of records) at a time, and they are formatted to be displayed on the screen and not on the printed page. Printing datasheets can be a quick way of obtaining a simple list of records, but does not allow for any grouping or calculations of data.

**REPORTS** are the best method of printing out large amounts of information because they allow you to easily sort, group, summarize and subtotal data. Examples of what you can create include invoices, purchase orders, and mailing labels.



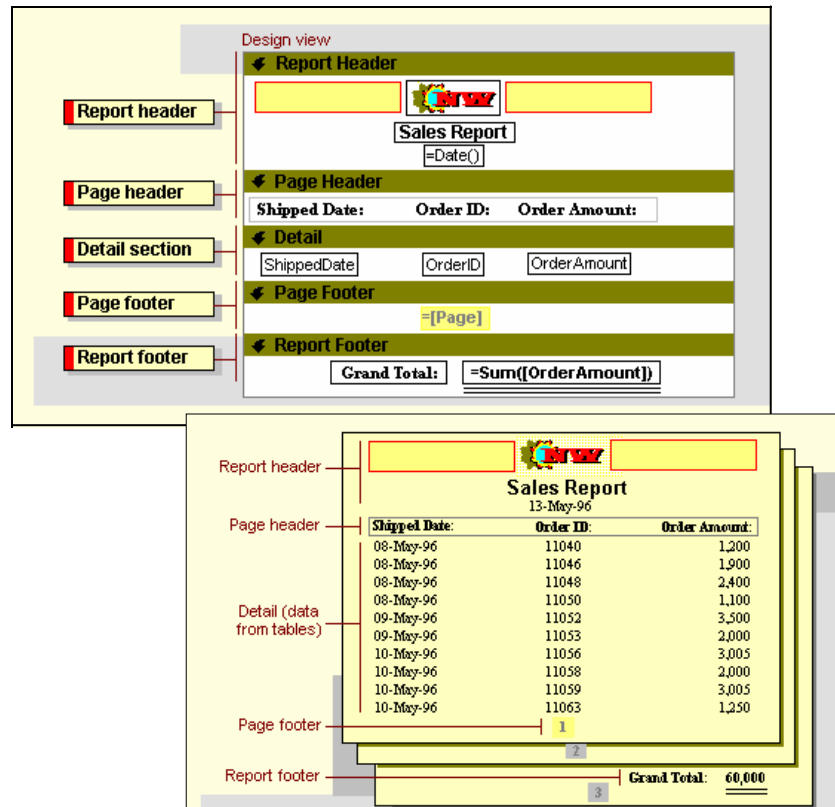
Most of the information in a report comes from an underlying table, query, or SQL statement, which is the source of the report's data. Other information is stored in the report's design.



# Sections of a Report

## CONCEPTS

Once a report is created, either by using a wizard or from scratch, the **DESIGN VIEW** of the report allows you to create and modify your reports. Like a form's Design view, your report Design view is divided into many different sections. The sections of a report are represented as bands; e.g., Report Header, Page Header, Detail. Each section has a specific purpose and prints in a predictable order on the page and in the report.



The **DETAIL** section contains the main body of the report. Text boxes and other controls that display records from the underlying table or query are located in this section. You cannot remove the Detail section, but you can leave it blank or hide it using the Visible property.

The **PAGE HEADER/FOOTER** sections contain information that you want to appear at the top or bottom of each page of a report; e.g., column headings or a page number. To add or remove these sections (as a header-footer pair), choose **VIEW, PAGE HEADER/FOOTER**.

The **REPORT HEADER/FOOTER** sections contain information that you want to appear only once at the top or bottom of a report; e.g., a title, date, or report summary. To add or remove these sections (as a header-footer pair), choose **VIEW, REPORT HEADER/FOOTER**.

# Designing a Custom Report


## CONCEPTS

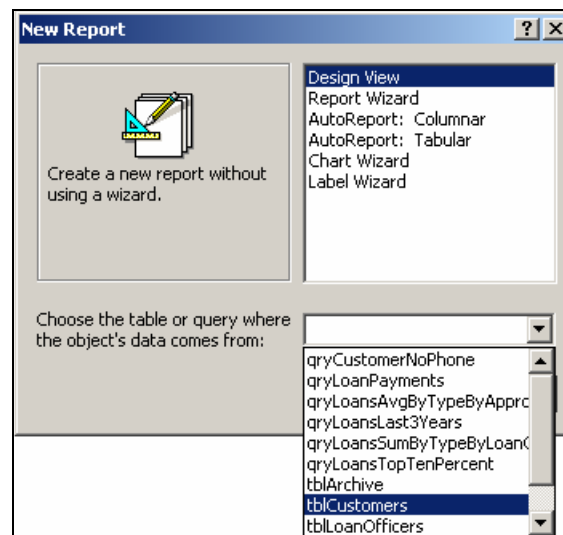
Designing a report is almost exactly the same as designing a form. Like forms, you can either create a report using a Report Wizard, AutoReport, or you can create your own report from scratch.

While using a Report Wizard or an AutoReport is the easiest way to create a report, it may not offer the design flexibility you need. If you want to design forms or reports yourself, you can create a blank one, then customize it to meet your requirements. Often, the best approach is to use the wizard to create the basis of a form or report, then make any changes you want using the tools in the Design view of the form or report.

## STEPS


To design a custom report (without the wizard):


1. From the Database window, choose the REPORTS button, then select the NEW button.
2. Select DESIGN VIEW from the list.
3. Click on the , then select the table or query you want to use to build the report.



4. Choose OK. A blank report displays in Design view.
5. Add the fields you want to use from the Field List, then format the controls.

## NOTES

 For information on working with the Report Wizard, see “Appendix D: Using Report Wizards.”

 You will find many similarities between creating reports and forms. They both have Properties sheets, palettes, Field Lists and controls (although not all form controls are appropriate for reports). Adding fields, moving, sizing, aligning, and formatting controls are exactly the same, whether you are in form design or report design.

# Designing a Custom Report

## PRACTICE

Let's design a custom report.

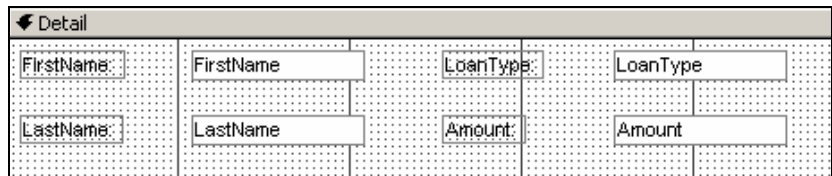
**OPEN:** the LOANS4.MDB database

**CLICK:** on  in the Database window, choose , then click on DESIGN VIEW

**CLICK:** on the  and select "qryLoanPayments" as the query on which to base the report, then choose OK

**CLICK:** on the FIELD LIST button  on the toolbar (if necessary)

**DRAG:** the "FirstName," "LastName," "LoanType" and "Amount" fields to the Detail section of the report



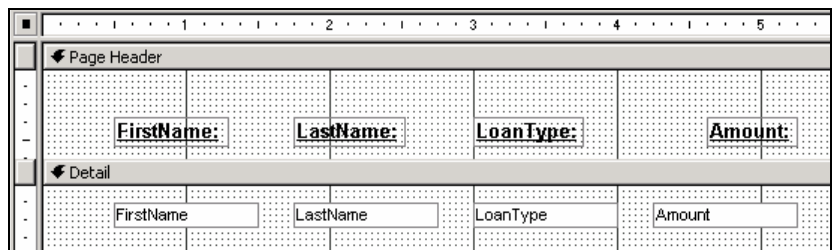
**CLOSE:** the Field List

**RESIZE:** the Detail section to be 5½" wide

**CUT:** the labels from the Detail section, then paste them in the Page Header section

**SELECT:** the labels in the Page Header section, apply BOLD, UNDERLINE, and change the Font Size to 10 pt. Click on FORMAT, SIZE, TO FIT to resize the labels.

**MOVE:** and align the labels and text boxes as needed to appear as shown in the picture below:

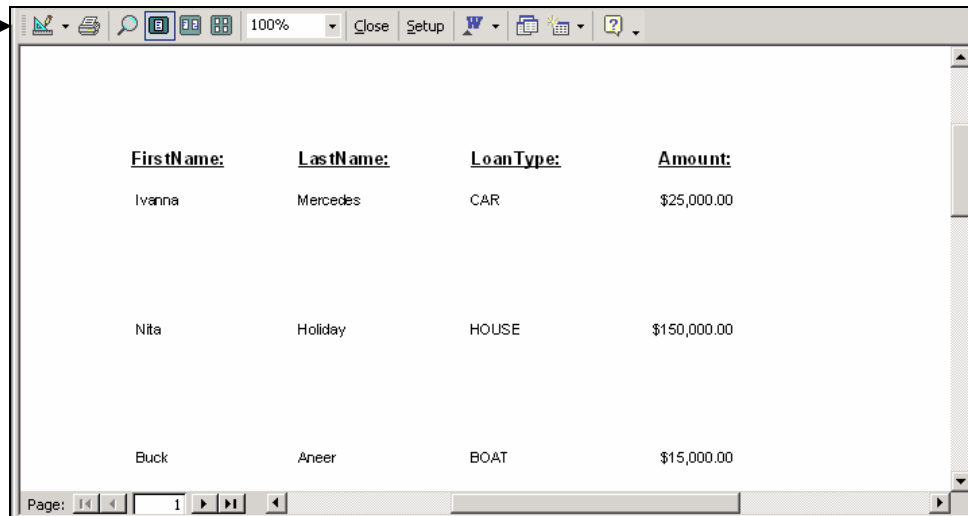


**SIZE:** the Detail section to be 1" high

# Previewing a Report

**CONCEPTS** Once you have added the fields you want to your report, you can use **PRINT PREVIEW** to see how your data will actually print within the report. When you view your report in Print Preview, you can use the options on the Print Preview toolbar to zoom, look at multiple pages, or print.


Print Preview toolbar





As an alternative, you can do a “quick preview” of the layout of the report by using **LAYOUT PREVIEW**. In this view, the report preview shows only a few sample records. If you are working with a large number of records, this view will be faster than Print Preview.

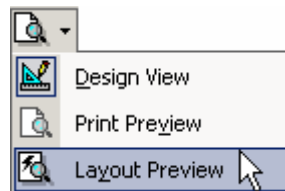
## STEPS

To change from Design view to Print Preview:

1. From Design view, click on the VIEW button  to switch to PRINT PREVIEW, or choose VIEW, PRINT PREVIEW.
2. Click on CLOSE on the toolbar to return to the report’s Design view.

To change from Design view to Layout Preview:

1. From Design view, click on  next to the VIEW button  and choose LAYOUT PREVIEW, or choose VIEW, LAYOUT PREVIEW.



2. Click on CLOSE on the toolbar to return to the report’s Design view.

# Previewing a Report

## PRACTICE

Let's see how our report is going to look.

**CLICK:** on the **VIEW** button  on the toolbar to preview the report

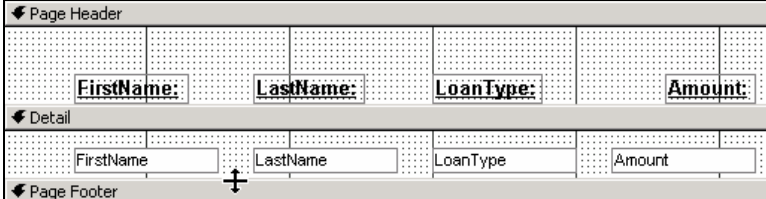
**NOTICE:** the report is now displayed in Print Preview:

<u>FirstName:</u>	<u>LastName:</u>	<u>LoanType:</u>	<u>Amount:</u>
Ivanna	Mercedes	CAR	\$25,000.00
Nita	Holiday	HOUSE	\$150,000.00


**CLICK:** the magnifying glass (your mouse cursor) twice on the page to zoom in and zoom out

**CLICK:** on the **CLOSE** button on the Print Preview toolbar to return to Design view

**CLICK:** and drag the **BOTTOM** borders of the Page Header and Detail sections as close as possible to your fields



<u>FirstName:</u>	<u>LastName:</u>	<u>LoanType:</u>	<u>Amount:</u>
FirstName	LastName	LoanType	Amount

**CLICK:** on the **VIEW** button  and notice the space between each record has decreased:

<u>FirstName:</u>	<u>LastName:</u>	<u>LoanType:</u>	<u>Amount:</u>
Ivanna	Mercedes	CAR	\$25,000.00
Nita	Holiday	HOUSE	\$150,000.00
Buck	Aneer	BOAT	\$15,000.00
Cookie	Doe	BOAT	\$10,000.00
Brock	Lee	HOUSE	\$250,000.00

**CLICK:** on **FILE, SAVE**, type *rptLoanSummary* as the report name, then click on **OK**

# Setting Page or Report Headers and Footers

**CONCEPTS** Occasionally, you may want information to automatically appear in specific areas on your report. For example, you may want text at the bottom of every page, at the top of every page, before or after a group or at the beginning or end of the report. To show this information, you'll add a **HEADER** or **FOOTER** section to your report's Design view by choosing the **VIEW** command.

The different types of headers and footers are shown in the table below:

<b>Type:</b>	<b>Purpose:</b>
REPORT HEADER/FOOTER	Use a report header for information such as a report title, date, and time. Use a report footer for summary information such as report totals. A report header appears once at the beginning of a report; a report footer appears once at the end. You add and remove a report header and footer as a pair.
PAGE HEADER/FOOTER	Use a page header for information such as column headings. Use a page footer for information such as a page number. Page headers and footers appear at the top or bottom of every page in a report unless the page header or page footer property is set to something other than All Pages. You add and remove a page header and footer as a pair.
GROUP HEADER/FOOTER	Use a group header to identify the beginning of a new group of data. Use a group footer for summary information such as group totals. A group header appears once at the beginning of a group; a group footer appears once at the end of the group. You add group headers and footers individually.

There are several options for working with page or report headers and footers:

- To show or hide page or report headers and footers, choose **VIEW, PAGE HEADER/FOOTER** or **VIEW, REPORT HEADER/FOOTER**.
- To size a header or footer, move the pointer to the bottom or right edge of the header or footer area. Drag the bottom edge up or down to change the height, and drag the right edge in or out to change the width.
- To set properties for a header or footer, select the header or footer in Design view, display the Properties sheet, then set the desired properties.

# Setting Page or Report Headers and Footers

---

## PRACTICE

Let's show the Report Header and Footer sections, then we'll add information to these areas of the form.

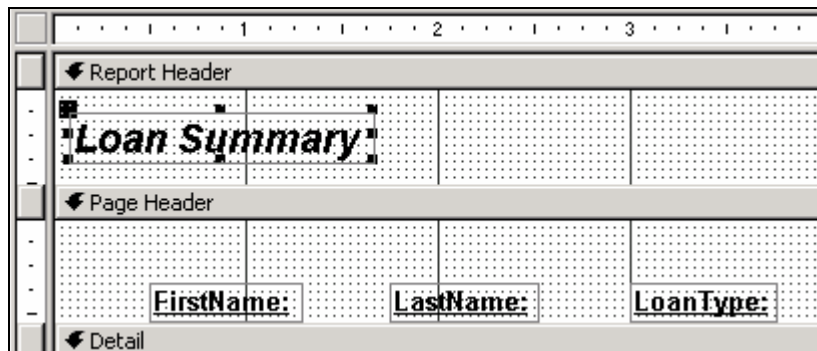
**SWITCH:** to Design view and click on **VIEW, REPORT HEADER/FOOTER**

**SIZE:** the Report Header section to be ½" high

**CLICK:** on the LABEL button  on the Toolbox, then click on the left side of the Report Header section

**TYPE:** *Loan Summary*, then press ENTER

**SELECT:** the label (if necessary), then apply **BOLD** and **ITALIC** and change the Font Size to 14 pt. Size the label to fit the text.



## NOTES

☞ A report has one width. If you change the width of any report section, you change the width for the whole report.

☞ If you want a header but not a footer, or vice versa, drag the bottom edge of the unwanted header or footer up until it has no height. You can size a header or footer to zero height only if there are no controls in it.

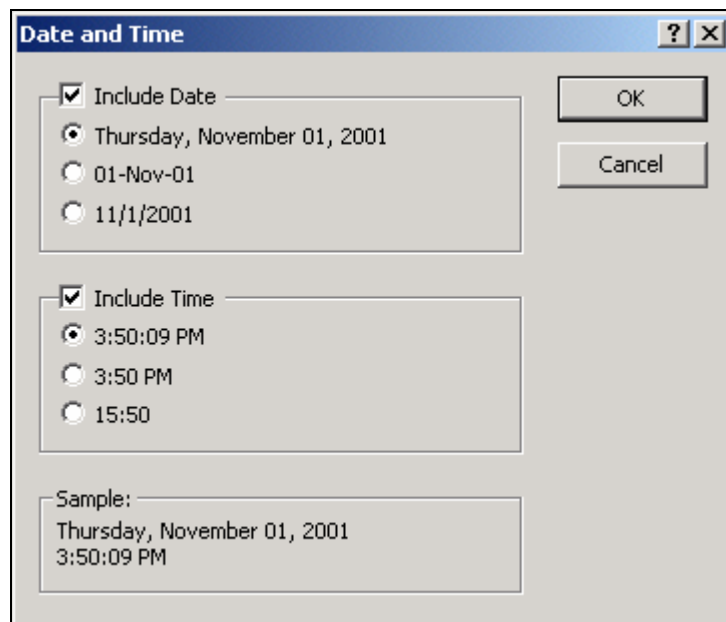
☞ For more information on using group headers and footers in reports, see “Sorting and Grouping Data in Reports.”

# Adding the Current Date/Time

---

**CONCEPTS** You can have Access display the current date and time in a report or form by creating a text box bound to an expression that returns the date and time. Each time you preview or print the report or form, Access will update the result of the expression with your computer's current date and time settings.

The easiest way to add the current date and time to a report or form is to use the **INSERT, DATE AND TIME** menu command. From the dialog box that displays, you can choose to add the date and/or time in the format of your choice.



INSERT, DATE AND TIME dialog box

After you make your selections in the INSERT, DATE AND TIME dialog box, Access adds a text box to the report or form and sets its ControlSource property to the appropriate expression. If the Report or Form Header sections are shown, Access adds the text box to that section; otherwise, it adds the text box to the Detail section. You can use cut and paste to move the text box to another section.

**STEPS** To add the current date or time to a report or form:

1. In Design view, choose INSERT, DATE AND TIME.
2. To include the date, select the INCLUDE DATE check box, then choose a date format. To include the time, select the INCLUDE TIME check box, then choose a time format.
3. Choose OK.

# Adding the Current Date/Time

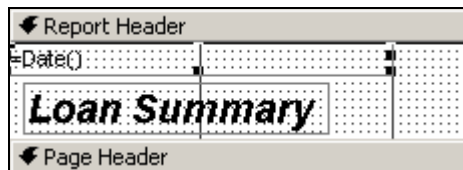
## PRACTICE

Let's add today's date to our report.

**CLICK:** on INSERT, DATE AND TIME

**CLICK:** on the 3<sup>rd</sup> date format (e.g., 11/30/2001), then click next to the INCLUDE TIME check box to remove the checkmark ✓

**CLICK:** on OK and notice the text box was added to the far left corner of the Report Header section:



**MOVE:** the DATE text box to the right of the "Loan Summary" label, apply BOLD and ITALICS, then change the Font Size to 14 pt

**RESIZE:** the DATE text box to be approximately 1" wide and ¼" tall

**MOVE:** the DATE text box to the 4¼" mark on the Horizontal ruler in the Report Header, then align its top with the "Loan Summary" label

**PREVIEW:** the report

<b><i>Loan Summary</i></b>			<b><i>11/01/2001</i></b>
<u>FirstName:</u>	<u>LastName:</u>	<u>LoanType:</u>	<u>Amount:</u>
Ivanna	Mercedes	CAR	\$25,000.00
Nita	Holiday	HOUSE	\$150,000.00
Buck	Aneer	BOAT	\$15,000.00
Cookie	Doe	BOAT	\$10,000.00
Brock	Lee	HOUSE	\$250,000.00
Ivanna	Mercedes	HOUSE	\$425,000.00
Sunny	Raines	CAR	\$36,000.00

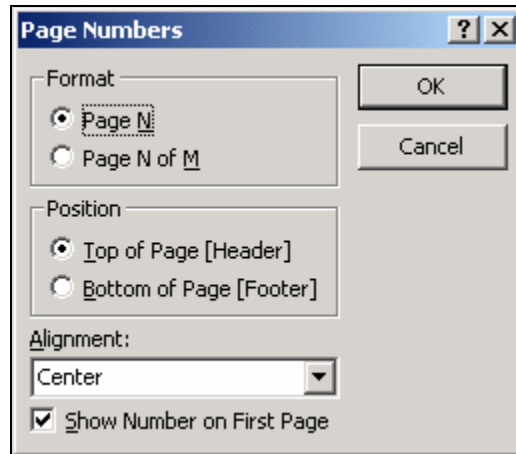
## NOTES

☞ You can also manually add the date and time to a report or form by setting the ControlSource property for a text box to `=Date()` (to show the date) or `=Now()` to show the date and time.

☞ To change the way the date and time display, choose a different format option in the text box's Format property sheet.

# Adding Page Numbers

**CONCEPTS** The **INSERT, PAGE NUMBERS** menu command allows you to add page numbers to a report or form quickly and easily. From the dialog box that displays, you can choose the format, position, and alignment for the page numbers.




INSERT, PAGE NUMBERS dialog box

Based on your selections, Access adds a text box bound to an expression. In addition to the formats available in the Page Numbers dialog box, you can alter the way your page numbers display by changing the expression. Some expressions you can use are listed in the table below:

Expression:	Result:
=Page	1, 2, 3
=Pages	3 (Displays last page number)
=“Page” & Page	Page 1, Page 2, Page 3
=Page & “/” & Pages & “Pages”	1/3 Pages, 2/3 Pages, 3/3 Pages
=[Country] & “ - ” & Page	UK - 1, UK - 2, UK - 3
=“Page” & Page & “of” & Pages	Page 1 of 3, Page 2 of 3, Page 3 of 3
=Format(Page, “000”)	001, 002, 003

## NOTES

 You can create a report or form with multiple pages by adding a **PAGE BREAK** control to a section in Design view. Access marks the page break on the left border of the report or form with a short dotted line. You can move between pages of a multi-page report or form by pressing the **PAGE UP** and **PAGE DOWN** keys in Report or Form view.



# Adding Page Numbers

## STEPS

To add page numbers to a report or form:

1. In Design view, choose INSERT, PAGE NUMBERS.
2. Select the format, position, and alignment for the page number.
3. To show a number on the first page, select the SHOW NUMBER ON FIRST PAGE check box.
4. Choose OK.

## PRACTICE

Let's add page numbers to the Report Footer section.

**SWITCH:** to Design view

**CLICK:** on INSERT, PAGE NUMBERS

**CLICK:** on PAGE N under Format

**CLICK:** on BOTTOM OF THE PAGE [FOOTER] under Position

**CLICK:** on the  under Alignment and choose LEFT

**CLICK:** on SHOW NUMBER ON FIRST PAGE to add a checkmark ✓ (if necessary), then click on OK

**SAVE:** the report, then switch to Print Preview. Notice the page number in the Report Footer:



## NOTES

☞ To reset the page numbers, you can design a grouped report so the page number starts at 1 for each new group of records. You start each group on a new page by setting the ForceNewPage property of the Group Footer section to After Section. You reset the page number to 1 at the start of each group by creating a macro that uses the SetValue action and attaching it to the OnFormat property of the Group Header section.

# Sorting and Grouping Data in Reports

## CONCEPTS

When you print a report, you usually want the data to be **SORTED** in a particular order. For example, you can sort your customers alphabetically by last name.

Once you sort the records, you can summarize the data by **GROUPING** records that share a common field value. Grouping records often makes reports easier to read by organizing similar records together. If your records are grouped, you can add labels and text boxes to be shown with each group and perform calculations on text or numerical values. For example, you can total loan amounts by loan type, count the number of loans by loan officer, or average interest rates by state.

Report with records <i>sorted</i> by state:				Report with records <i>grouped</i> by state:			
<b>State Interest Rate Report</b>				<b>State Interest Rate Report</b>			
Loan #	State	Rate	Amount	<b>State: CA</b>			
11	CA	7.84%	\$200,000.00	<i>Loan #</i>	<i>Rate</i>	<i>Amount</i>	
22	CA	10.18%	\$25,000.00	11	7.84%	\$200,000.00	
18	CA	12.75%	\$24,000.00	22	10.18%	\$25,000.00	
5	CA	7.70%	\$250,000.00	18	12.75%	\$24,000.00	
4	OR	11.00%	\$10,000.00	5	7.70%	\$250,000.00	
17	OR	11.50%	\$18,000.00	Average Rate: 9.62%			
15	OR	6.60%	\$8,000.00	<b>State: OR</b>			
9	OR	6.05%	\$180,000.00	<i>Loan #</i>	<i>Rate</i>	<i>Amount</i>	
10	OR	10.04%	\$55,000.00	4	11.00%	\$10,000.00	
2	WA	7.15%	\$150,000.00	17	11.50%	\$18,000.00	
3	WA	10.45%	\$15,000.00	15	6.60%	\$8,000.00	
6	WA	6.88%	\$425,000.00	9	6.05%	\$180,000.00	
7	WA	7.15%	\$36,000.00	10	10.04%	\$55,000.00	
				Average Rate: 9.04%			

You can sort and group on up to 10 fields. When you group records, you must also specify the sort order for the records in the group. You set your sorting and grouping options using the Sorting and Grouping dialog box:

Choose by which fields or expressions to sort and group. →

→ Set the sort order.

→ Add group headers or footers, or other group properties.

# Sorting and Grouping Data in Reports

**CONCEPTS** You create groups by setting the **GROUP HEADER** or **GROUP FOOTER** property for the field/expression to YES in the Sorting and Grouping dialog box. You can add controls that you want to appear at the beginning or end of a group of records to the Group Header/Footer sections in Design view, such as a group name or group totals.

This Group Header contains a text box that identifies the group (“State”) and labels to print at the start of each new group.

Page Header		
State Interest Rate Report		
State Header		
State:	Loan #	Rate:
Detail		
LoanID	Rate	Amount
State Footer		
Average Rate: =Avg([RATE])		
Page Footer		


This Group Footer contains a text box that returns the average “Rate” for each “State.”

Another useful grouping property is **GROUP ON**. By default, data is grouped using the values in the field or expression. The Group On property makes other grouping options available depending on the data type. If you group on a date field, you can choose to group by year, month, etc. If you group on an AutoNumber, Currency, or Number field, you can group by values within a specified interval.

In conjunction with the Group On property, you can use the **GROUP INTERVAL** property to specify the grouping interval; e.g., group a date field by every three months.

## STEPS


To sort data:

1. In the report’s Design view, click on the SORTING AND GROUPING  button.
2. Enter the fields you want to sort by in the Field/Expression column. Fields will be sorted in the order they appear in the dialog box.
3. Set the sort order. The default is ASCENDING.

To create a group:

1. In the Sorting and Grouping dialog box, click on the field or expression whose group properties you want to set.
2. Set the desired group properties. You must set either the Group Header or Group Footer to YES in order to create a group level.

## NOTES

 To remove a group header or footer once it has been added, open the Sorting and Grouping dialog box, then set these properties to NO.

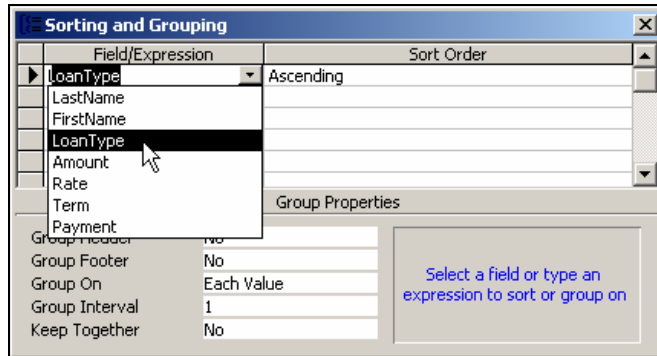
# Sorting and Grouping Data in Reports

**PRACTICE** Let's sort the information in "rptLoanSummary," then add a group footer.

**SWITCH:** to Design view

**CLICK:** on the **SORTING AND GROUPING** button  on the toolbar

**CLICK:** on the  under Field/Expression and choose "LoanType"




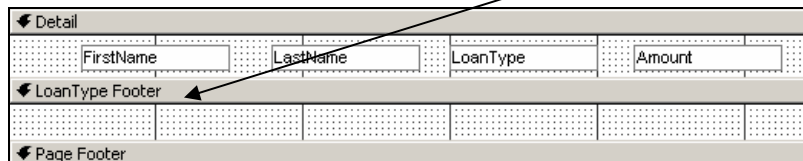
**CLICK:** in the box below "LoanType" under Field/Expression, then click on the  and choose "LastName"

**PREVIEW:** the report and notice the records are sorted ascending by "LoanType," then by "LastName"

<u>FirstName:</u>	<u>LastName:</u>	<u>LoanType:</u>	<u>Amount:</u>
Buck	Aneer	BOAT	\$15,000.00
Cookie	Doe	BOAT	\$8,000.00
Cookie	Doe	BOAT	\$10,000.00
Ivanna	Mercedes	BOAT	\$50,000.00
Buck	Aneer	CAR	\$22,000.00
Sonny	Day	CAR	\$60,000.00

**SWITCH:** to Design view, then click on "LoanType" in the Sorting and Grouping dialog box

**CLICK:** on **GROUP FOOTER** in the Group Properties section, then click on the  and select **YES**. Notice the Group Footer appears:



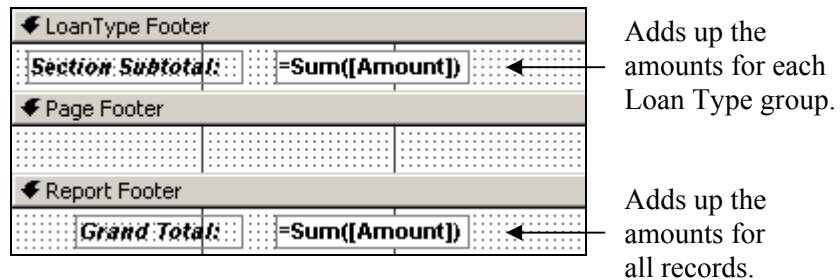
# Calculating Totals in Reports

## CONCEPTS

After you have sorted and grouped your data, you may want to obtain subtotals for each section. For example, suppose you want separate totals of the amount for each loan type group. Using an expression, you can calculate totals by groups or for all of the records in your report.

To obtain a total, you bind a text box control to an expression, such as =SUM or =AVERAGE. You can calculate a total for one record, for a group of records, and for all the records in a report.

Where you place the calculated control in your report determines what values Access uses to compute the total. Calculated controls placed in the Group Header or Footer section will perform the calculation on *each group*. Calculated controls placed in the Report Header or Footer section will perform the calculation for the *entire set of records*.



## STEPS

To calculate totals, make sure Design view is showing, then:

1. To calculate a total for a group, add a text box to the Group Header or Group Footer section. To calculate a total for all the records, add a text box to the Report Header or Report Footer section.
2. Display the Properties sheet for this new text box, then click in the CONTROL SOURCE box.
3. Type an expression. For example: =Sum([Amount]). This formula, placed in the Report Footer section, would calculate the total amount of all loans issued. This formula placed in the Group Footer section would calculate totals for each group.

## NOTES

☞ To include the value from a calculated control when computing a total, you cannot use the name of the control in the =SUM function. You must repeat the expression from the calculated control.

# Calculating Totals in Reports

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## PRACTICE

Let's add subtotals and a grand total to the end of the report.

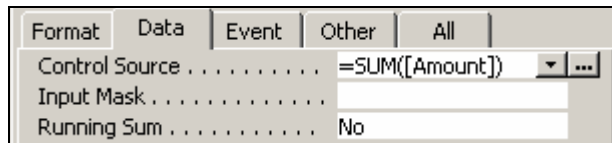
**CLOSE:** the Sorting and Grouping dialog box


**CLICK:** on the TEXT BOX button , then add a text box to the top right side of the LoanType Footer section

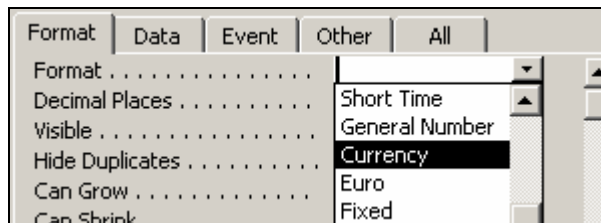
**CLICK:** on the PROPERTIES button  to open the Properties sheet for the text box (if necessary)

**CLICK:** on the DATA tab in the Properties sheet, then click in the CONTROL SOURCE box

**TYPE:** `=SUM([Amount])` (Note: Amount is the field to be totaled.)



**CLICK:** on the FORMAT tab of the Properties sheet, then click in the FORMAT box. Click on the  and select CURRENCY.




**CLICK:** on the label for the text box we just created, delete the existing text, and type *Section Subtotal:*

**CLICK:** on the TEXT BOX button , then add a text box to the top right side of the Report Footer section

**CLICK:** on the DATA tab in the Properties sheet, then click in the CONTROL SOURCE box

**TYPE:** `=SUM([Amount])`

**CLICK:** on the FORMAT tab of the Properties sheet, then click in the FORMAT box. Click on the  and select CURRENCY.

**CLICK:** on the label for the text box we just created, delete the existing text and type *Grand Total:*

(Continued on next page)

# Calculating Totals in Reports

**PRACTICE** Let's continue to add subtotals and a grand total to the end of the report.

**SELECT:** the "Section Subtotal" and "Grand Total" labels, choose **FORMAT, ALIGN, RIGHT**, add **BOLD** and **ITALICS**, then widen the labels to show all the text

**SELECT:** the "Section Subtotal" and "Grand Total" text boxes. Click on **FORMAT, ALIGN, RIGHT**, then choose **BOLD**.

**DRAG:** the bottom borders of the LoanType Footer and Report Footer sections as close as possible to your controls

LoanType Footer				
			<b>Section Subtotal</b>	<b>=Sum([Amount])</b>
Page Footer				
#"Page:" & [Page]				
Report Footer				
			<b>Grand Total</b>	<b>=Sum([Amount])</b>

**CLOSE:** the Properties sheet, then preview the report and scroll to see the totals

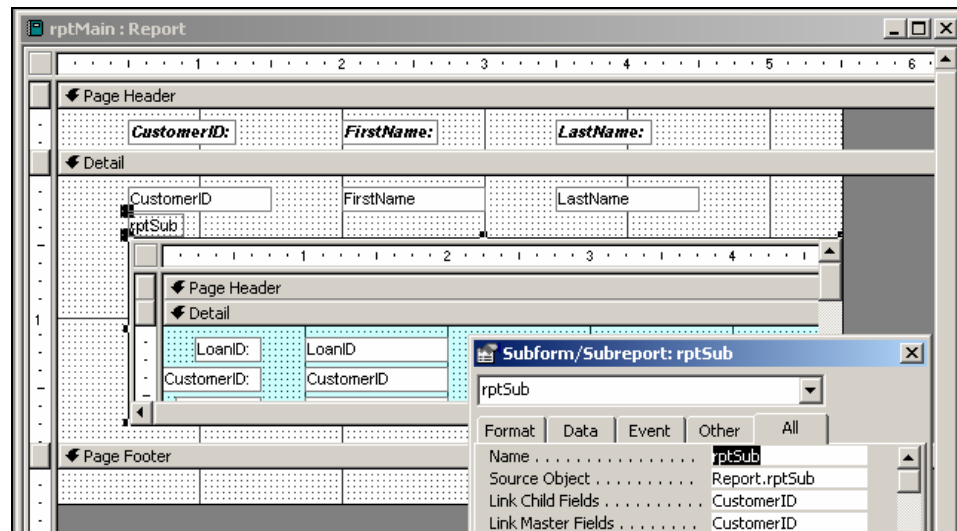
Ivanna	Mercedes	CAR	\$25,000.00
Sunny	Raines	CAR	\$36,000.00
<b>Section Subtotal:</b>			<b>\$225,000.00</b>
John	Doe	HOUSE	\$160,000.00
Al	Fredo	HOUSE	\$200,000.00
Nita	Holiday	HOUSE	\$150,000.00
Mable	Lean	HOUSE	\$180,000.00
Brock	Lee	HOUSE	\$250,000.00
Ivanna	Mercedes	HOUSE	\$425,000.00
Happy	Ness	HOUSE	\$55,000.00
<b>Section Subtotal:</b>			<b>\$1,420,000.00</b>
<b>Grand Total:</b>			<b>\$1,728,000.00</b>

**SAVE:** and close the "rptLoanSummary" report

# Creating Subreports

## CONCEPTS

As with subforms in forms, you can also create subreports in a report. A **SUBREPORT** is a report inserted into another report. You can use subreports to combine two or more related reports in a report, or to display summary data or detail records related to the information in the main report. When the data in the subreport is related to the data in the main report, you ensure that the subreport prints the correct records for each group by linking the subform/subreport control to the main report.



## STEPS

To add a subreport to a main report:

1. From the form's Design view, click on the CONTROL WIZARDS button on the Toolbox to turn it on, if necessary.
2. Using the Toolbox, click on the SUBFORM/SUBREPORT button and click on the report where you want the subreport to appear.
3. In the first step of the wizard, choose whether you want to create a subreport using data from an existing table or query, or using an existing form or report. Choose NEXT.
4. If you choose to create a subreport using an existing table or query, click on the  under Select A Table/Query, then choose the table or query containing the information you want to use in the subreport. Add the desired fields in order by selecting each field name then clicking on . Repeat this for any additional tables or queries you want to use, then choose NEXT.
5. Choose the fields to link your main report to the subreport, then choose NEXT.
6. Type a name for the subreport, then choose FINISH.



# Creating Subreports

## PRACTICE

Let's add a subreport to view data about each customer and their loans.

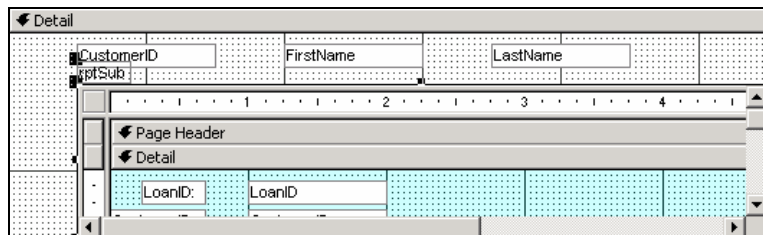
**OPEN:** "rptMain" in Design view

**CLICK:** on the SUBFORM/SUBREPORT button  on the Toolbox, then click in the Detail section below "Customer ID"

**CLICK:** on USE AN EXISTING REPORT OR FORM, then click on "rptSub." Click on NEXT.

**CLICK:** on NEXT to show the data from the "tblLoans" table for each record in "tblCustomers" by "CustomerID"

**CLICK:** on FINISH. Notice your report displays in Design view:





**DELETE:** the label for the "rptSub" subreport, then save the report

**CLICK:** on the VIEW button  to view your report and subreport

<i>CustomerID:</i>	<i>FirstName:</i>	<i>LastName:</i>										
1	Nita	Holiday										
<table border="1"> <tr> <td>LoanID:</td> <td>2</td> </tr> <tr> <td>CustomerID:</td> <td>1</td> </tr> <tr> <td>LoanType:</td> <td>HOUSE</td> </tr> <tr> <td>Amount:</td> <td>\$150,000.00</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Approved</td> </tr> </table>			LoanID:	2	CustomerID:	1	LoanType:	HOUSE	Amount:	\$150,000.00	<input type="checkbox"/>	Approved
LoanID:	2											
CustomerID:	1											
LoanType:	HOUSE											
Amount:	\$150,000.00											
<input type="checkbox"/>	Approved											
2	John	Doe										

## NOTES

 You can also create a new report with a subreport using AutoReport or the Report Wizard. Because the methods used to create subreports are very similar to those used to create subforms, see "Creating Subforms" in Section Three.

 A quick way to add an existing report as a subreport is to select it in the Database window, then drag and drop it in the desired location on the MAIN REPORT.

# Printing Reports

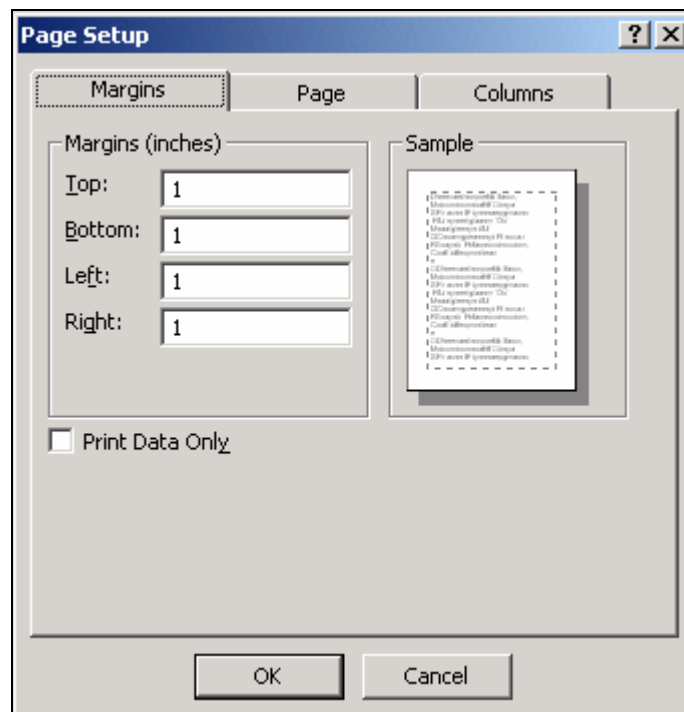
## CONCEPTS

Once you have designed your reports and created all the necessary controls, you will probably want to print a hard copy of your report. Printing a report is very similar to printing other database objects.

To open the Print dialog box, choose **FILE, PRINT**. Within this dialog box, you can specify the range of data you want printed, either the entire report or certain page numbers.

From the FILE menu or from within the FILE, PRINT dialog box, you can choose **PAGE SETUP**. The Page Setup dialog box allows you to specify the printer, orientation, paper size and margins for your reports. To change your default margins, choose **TOOLS, OPTIONS**, then choose the GENERAL category.

You may also select to **PRINT DATA ONLY** from the Page Setup dialog box. This option prints only the data in a datasheet, form, or report without borders, gridlines, or layout graphics. For example, you can use Print Data Only to print to a preprinted form. You can also determine the exact number of columns, the width and height of the columns and row spacing.



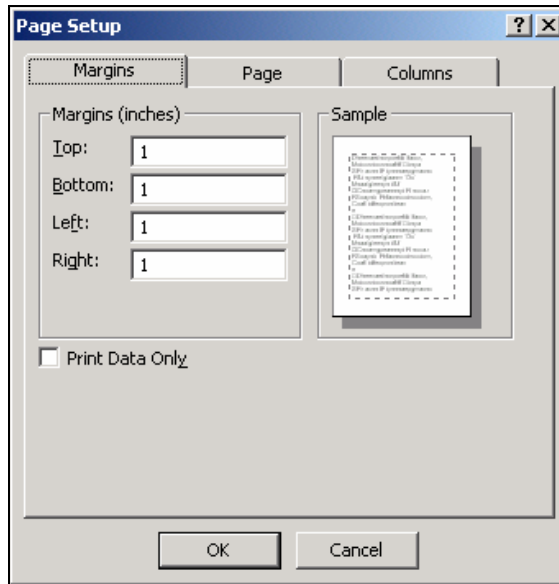
For forms and reports, Access saves the options you specify in the Page Setup dialog box with the form or report. Access uses those options until you change them or delete the form or report. For other objects, like table and query datasheets, the page setup options apply only until you close the object. The next time you open the object, Access uses the default printing options.

# Printing Reports

**PRACTICE** Let's look at the Page Setup options.

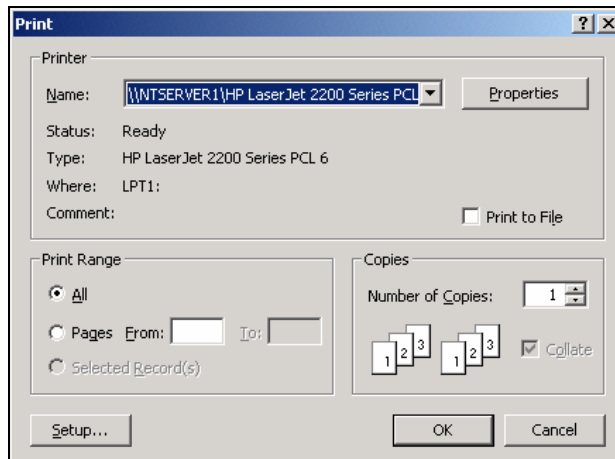
**CHOOSE:** FILE, PAGE SETUP

**NOTICE:** the options on the MARGINS tab:



**CLICK:** on the PAGE and COLUMNS tabs and notice your options, then click on CANCEL

**CHOOSE:** FILE, PRINT



**NOTICE:** the printing options, then choose CANCEL

**CLOSE:** "rptMain," then close the LOANS4.MDB database

# On Your Own

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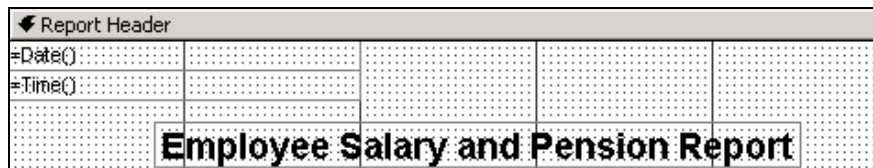
In the previous section, we:

- Created custom reports
- Previewed and printed reports
- Added the date, time, and page numbers to a report
- Sorted and grouped records in a report
- Included calculations on grouped records in reports
- Created subreports

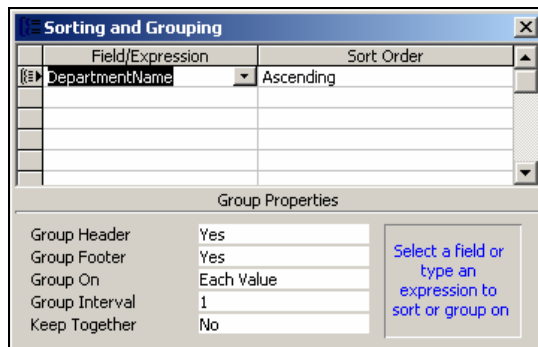
Let's review how to create and work with reports. Complete the steps listed below, working at your own pace. Let your instructor know if you have any questions.

---

1. **Open the EMPLOYEE4.MDB database.**
2. **Create a report in Design view based on the "qryEmployeeSalaries" query. (Note: This query contains fields from both the "tblEmployees" and "tblSalaries" tables.)**
3. **Add the Report Header/Footer sections to the report. In the Report Header section, add the current date and time in the upper left corner. Below the date and time, add a label that reads *Employee Salary and Pension Report*. Change the Font Size to 14 pt and bold the label. Resize the label to display all the text, then center the label.**



4. **Add page numbers to the center of the Page Footer section.**
5. **Add the "LastName," "FirstName" and "Salary" fields to the Detail section.**
6. **Sort and group the report by the "DepartmentName" field, and add a Group Header and a Group Footer.**



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(Continued on the next page)

# On Your Own

7. Add the "DepartmentName" field to the DepartmentName Header section. Delete the label. Position the "DepartmentName" text box in the upper left corner. Change the Font Size to 12 pt, then add BOLD and ITALICS. Resize the text box as needed.
8. Move the labels for the "LastName," "FirstName" and "Salary" fields below the "DepartmentName" text box in the DepartmentName Header section. (Hint: Use cut and paste.) Format the labels to be BOLD and UNDERLINED.

DepartmentName Header

***DepartmentName***

Last Name                      First Name                      Salary

Detail

9. Align the labels in the DepartmentName Header section above the text boxes in the Detail section as shown below. Resize the DepartmentName Header to be as close to the controls as possible.

DepartmentName Header

***DepartmentName***

Last Name:                      First Name:                      Salary:


Detail

LastName                      FirstName                      Salary

10. In the DepartmentName Footer section, add a text box that calculates the average salary for each department with a label that says "Average Salary:". Format the text box to display the results in the Currency format. Add the "DepartmentName" field to the left of the "Average Salary" label and align the controls. Delete the label for "DepartmentName."

DepartmentName Footer

DepartmentName	Average Salary:	=Avg([Salary])
----------------	-----------------	----------------

11. Add a PAGE BREAK control at the bottom of the DepartmentName Footer section. (Hint: Use the PAGE BREAK tool  on the Toolbox and place the Page Break control below the other controls. It will appear as six black dots on the left side of the DepartmentName Footer section.)

DepartmentName Footer

.....

DepartmentName	Average Salary:	=Avg([Salary])
----------------	-----------------	----------------

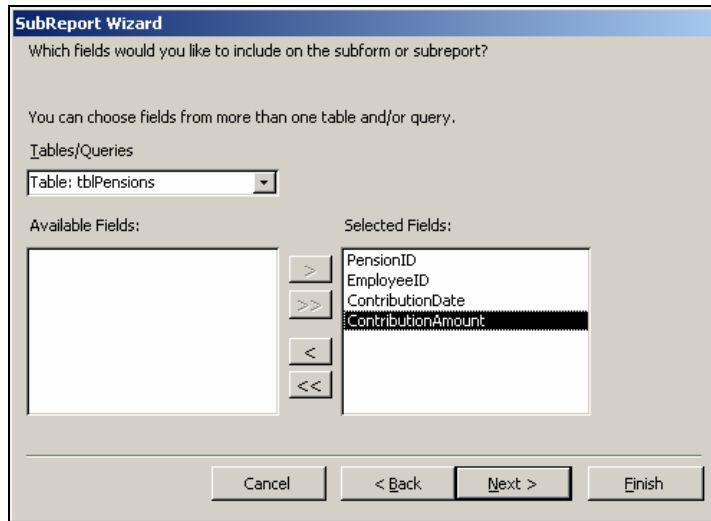
12. Save the report as *rptEmployeeSalaries*.

(Continued on the next page)

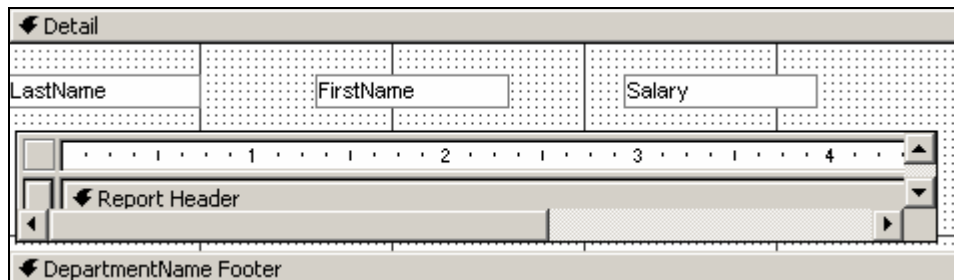
# On Your Own

---

13. Use the Subform Wizard to create a new subreport below the controls in the Detail section of "rptEmployeeSalaries." The subreport should show all the fields from the "tblPensions" table. Type *rptPensionsSubReport* as the name of your subreport.



14. Delete the label for the subreport, then resize the Detail section to be as close to the controls as possible.



15. Preview your report and compare it to the picture on the next page.
16. Save and close the "rptEmployeeSalaries" report, then close the EMPLOYEE4.MDB database.

# On Your Own

Below is the first page of the report created in the previous exercise:

11/1/2001  
2:25:47 PM

### Employee Salary and Pension Report

**Accounting**

<u>Last Name:</u>	<u>First Name:</u>	<u>Salary:</u>
Banks	Peggy	\$43,000.00

<i>Pension ID</i>	<i>Employee ID</i>	<i>Contrib Date</i>	<i>Contrib Amount</i>
7	7	01/01/1995	\$100.00
31	7	01/01/1996	\$100.00
53	7	01/01/1997	\$100.00

Doe Cookie \$30,000.00

<i>Pension ID</i>	<i>Employee ID</i>	<i>Contrib Date</i>	<i>Contrib Amount</i>
2	2	01/01/1995	\$300.00
25	2	01/01/1996	\$100.00
49	2	01/01/1997	\$100.00

Down Phil \$34,000.00

<i>Pension ID</i>	<i>Employee ID</i>	<i>Contrib Date</i>	<i>Contrib Amount</i>
13	13	01/01/1995	\$100.00
37	13	01/01/1996	\$100.00
58	13	01/01/1997	\$100.00
72	13	01/01/1998	\$100.00
82	13	01/01/1999	\$100.00

Accounting Average Salary: \$35,666.67

Page 1

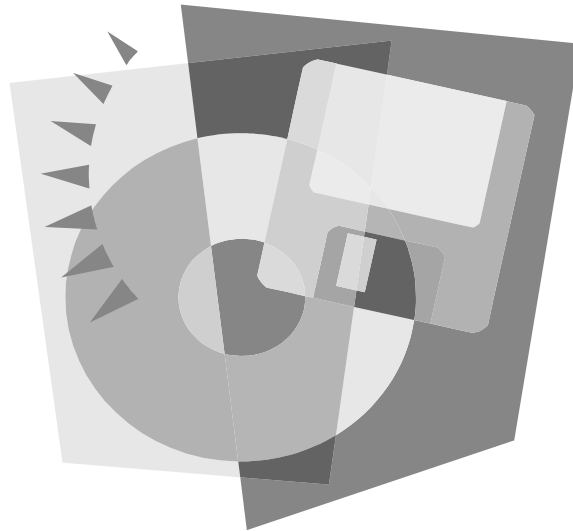
# Notes

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## **Objectives**

The following topics are provided for your reference:

- Appendix A: Frequently Asked Questions
- Appendix B: Control Descriptions
- Appendix C: Using Form Wizards
- Appendix D: Using Report Wizards
- Appendix E: Creating a Switchboard
- Appendix F: Viewing SQL in Queries



# Appendix A: Frequently Asked Questions

---

**Q.** *Why won't Access let me edit data?*

- A. There are several kinds of fields in forms or datasheets that you can't edit. The following fields display values just as regular fields do, but if you try to enter data into them, nothing happens:

<b>Field Type or Setting:</b>	<b>Behavior:</b>
<b>AutoNumber fields</b>	If a field in an Access database has an AutoNumber data type or in an Access project has a numeric data type with the Identity property set, Access automatically assigns a number to this field for each record you add. This type of field is often used as a record ID number or primary key. When you start adding a new record, Access automatically fills in the field's value for you and you can't edit it.
<b>Calculated fields</b>	In an Access database, a calculated field displays values that Access calculates. They are usually based on other fields in your tables, but calculated fields are not stored in tables. You can't edit calculated fields.
<b>Locked or disabled fields</b>	If a control on a form has the Locked property set to Yes or the Enabled property set to No, you can't edit the data in the field.
<b>Fields in a locked record</b>	If you use an Access database in a multi-user environment and a record is locked by another user, you can't edit the data in the record. When you move to a locked record, the locked record indicator is displayed in the record selector.
<b>Field in a read-only form or a locked database</b>	If the form you're using has the Allow Edits property set to No or if the underlying data is read-only or locked by another person, you can't edit data in the form.
<b>Form shown in PivotTable or PivotChart view</b>	You can't edit data in PivotTable or PivotChart view.

**Q.** *I can't open a database object.*

- A. You might not have permission to open the object. If your shared database is secured, access to objects is controlled by the people who create or administer it. You might have permission to view an object, but not to see it in Design view or to update it. Also, your permissions might be determined by the group you are in.

# Appendix A: Frequently Asked Questions

---

**Q. *How can I optimize my queries?***

- A. Access 2002 uses Rushmore, a data-access technology that permits sets of records to be queried very efficiently. Some performance tips that are covered in the Advanced Access class include:
- Index the fields used in sorts and criteria.
  - Index the fields used in joins in both tables.
  - Use multiple-field indexes on fields where there are multiple-column joins between tables.
  - If a table has a single-field primary key, do not add a separate index to the primary key field. If a table has a multiple-field key, it may help to have a separate index on each field.
  - Use outer joins only when necessary - outer joins limit the options for the query optimizer.

**Q. *When I switched from a Select query to a SQL Specific query, the SQL statement disappeared. When I switched back to the Select query, the query disappeared. Where did it go?***

- A. When you switch to a SQL Specific query, the statement from the existing query is deleted. To save some re-typing, create the Select query, then choose VIEW, SQL. Select the entire SQL statement, except for the ending semicolon. Copy the selected text to the Clipboard, then choose QUERY, SQL SPECIFIC. Select a query type, then paste in the text you copied.

**Q. *How do I turn off Control Wizards?***

- A. To turn off Control Wizards, either choose VIEW, CONTROLWIZARDS to clear the checkmark, or choose the CONTROLWIZARD button on the Toolbox to toggle the button off.

**Q. *My form is blank. Why can't I see my data?***

- A. A form may appear blank for any of the following reasons:
- The form may not be bound to an underlying record source (table, query, or SQL statement). To bind a form to an underlying record source, open the form in Design view, then open the Property sheet. In the Record Source property box, choose a record source in the list or click on the BUILD button to open the Query Builder.
  - The form may be bound to an underlying record source that doesn't have any data. Check the underlying record source to make sure that it has data.
  - The form may be based on a query that doesn't return any data. To see if the query returns data, open the form's Property sheet, click on the BUILD button next to the Record Source property box to open the Query Builder, then click on VIEW in the Query Builder.
  - The form may be open in Data Entry mode. When a form is open in Data Entry mode, it displays a blank record so you can add data. To show all the records, choose RECORDS, REMOVE FILTER/SORT.
  - The Form Header or Form Footer section may be so large that there's no room for the Detail section.
  - When you open a form for the first time in PivotTable or PivotChart view, you don't see any data. Using the field list, add fields to the different areas of the view.

# Appendix A: Frequently Asked Questions

---

***Q. Why does #Error? or #Name? appear in a control?***

A. #Error? or #Name? may appear in a control for a number of reasons. To correct the problem, do the following:

- Make sure that the field specified in the control's Control Source property hasn't been removed from the underlying table, query, or SQL statement.
- Check the spelling of the field name in the control's Control Source property.
- If you specified an expression in the control's Control Source property, make sure that there is an equal sign preceding the expression.
- Make sure that there are brackets around references in expressions to control or field names that include spaces. For example, to subtract a Shipped Date field from a Required Date field, enter the following expression: =[Required Date]-[Shipped Date].
- If you are using one of the built-in functions, make sure that you're using the right number of arguments, that the arguments are in the right order, and that you haven't left out any necessary punctuation. To determine the correct syntax to use, see the Help topic for the function you're using.
- Make sure that there isn't a circular reference to a control. For example, if you specify "My Control" in the Name property of a control, then type =[A]+[B]+[My Control] in the Control Source property box for the control, Microsoft Access can't process the expression.

***Q. Why can't I open the property sheet in Form view or Datasheet view.***

A. To be able to open the property sheet when a form is open in Form view or Datasheet view, the Allow Design Changes property of the form must be set to ALL VIEWS.

***Q. Why don't properties I set for a bound control automatically apply to the corresponding field in the underlying table?***

A. Properties that are set in a form or report apply only to the selected control, not the field to which it is bound. However, most field properties that are specified in the table's Design view will also apply to all controls on a form or report that is bound to that field.

***Q. Why can't I type a new value in a combo box on a form?***

A. The Limit To List property is set to "Yes." Change the Limit To List property to "No."

***Q. How can I keep a group of records together on a report?***

A. The Keep Together property for groups allows you to keep groups of like information together. This property is available in the Sorting and Grouping dialog box for reports. Using this property, you can keep an entire group together (including the group header, all records, and the group footer), or keep the group header with the first record.

# Appendix A: Frequently Asked Questions

---

**Q.** *Why are there duplicate values in the same grouping in my report?*

A. Set the Hide Duplicates property to “Yes” for the text box that displays the values you want to hide.

**Q.** *Why does incorrect data show when I display my report in Layout Preview?*

A. Layout Preview displays all the sections of a report and a few detail records. It sorts and groups the data it displays, but ignores any parameters, criteria, or joins in the underlying query. For example, the detail records you see in a group may not be the records that actually belong in that group. To verify the accuracy of the data in a report, use Print Preview.

**Q.** *Why does the report prompt me for unexpected parameters?*

A. Make sure that all field names used in the following areas of the report’s design are spelled correctly and match field names in the underlying table or query:

- Control Source property of any bound controls.
- Field/Expression column in the Sorting and Grouping dialog box.
- Expressions in controls or in the Sorting and Grouping dialog box.

**Q.** *Why does a blank page print at the end of my report?*

A. Make sure the Height property is set to zero for the Report Footer section.

**Q.** *Why is every other page of my report blank?*

A. This problem occurs when the total width of your report exceeds the width of the paper specified in the Page Setup dialog box. You need to change your margins, print on a larger paper size, or move the controls on the report to fit the paper size.

**Q.** *How do I dynamically sort a report?*

A. Create a form with a list box or combo box in which you specify a report field on which to sort. Next, create or modify the report so the control source for a group level changes based on the field you specified on the form. When you open the report in Print Preview, Access sorts the report on the field you specified in the list box or combo box. To display the report with sorting on a different field, select the name of the field in the list box or combo box, then either switch the report to Design view and back to Print Preview, or close the report and reopen it in Print Preview.

# Appendix A: Frequently Asked Questions

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**Q.** *The column headings in my subreport do not print.*

A. Access doesn't print the page header and footer in a subreport, so if you put the labels for the column headings in the subreport's Page Header section, they won't show up when you print the report. If a subreport will always fit on one printed page, you can put the labels for the column headings in the subreport's Report Header section. If a subreport might span several printed pages, put the labels for the column headings in the subreport's Group Header section, and set the Repeat Section property of the Group Header to Yes.

**Q.** *How does Access interact with Microsoft Word and Microsoft Excel when you use object linking and embedding (OLE), dynamic data exchange (DDE), or Open Database Connectivity (ODBC)?*

A. Access can be an OLE container application. You can store OLE objects in tables or embed or link them in the design of a form or report. However, you can't embed or link Access objects in other OLE applications.

Access can be either the application that initiates a DDE conversation (a DDE client) or the application that responds to a DDE client (a DDE server). As a DDE client application, Access can include DDE links in queries, forms, and reports, but not tables. As a DDE server application, Access supports the following DDE topics:

- The System topic.
- The name of a database, table, or query.
- An Access SQL statement.














The Access Word Mail Merge Wizard uses DDE to create a DDE link between Access and Word. Once the link is established, you can open your document in Word at any time and print a new batch of form letters or labels using the current data in Access.

Microsoft Word, Microsoft Excel, and Microsoft Access include ODBC drivers that let you interact with Microsoft Access databases. Although Microsoft Access doesn't include ODBC drivers for Microsoft Word or Microsoft Excel, you can interact with these applications by choosing Import, Export, or Output To from the File menu. You can import or export Microsoft Excel (.XLS) or text (.TXT) files, or you can export Microsoft Word mail merge files. You can use Output To save the output of a table, query, form, report, or module to a file in Microsoft Excel format, text file format, or Rich Text Format (.RTF). You can then open a Microsoft Excel format file in Microsoft Excel, and text file format or Rich Text Format files in Microsoft Word.

# Appendix B: Control Descriptions

## CONCEPTS

The controls most commonly used in forms are listed below. Many of these controls can also be used in reports.

Control:	Description:
 Label	Use to display descriptive text, such as labels, captions or titles. Does not change from record to record.
 Text Box	Displays data that changes from record to record, derived from a table, query or calculation. Fields are automatically added as text boxes.
 Option Group	Displays a frame in which you can add check boxes, option buttons or toggle buttons.
 Toggle Button	Displays command buttons that look pressed when selected and stand out when not selected.
 Option Button (radio button)	Use to provide mutually exclusive options. This type of button is also known as a radio button.
 Check Box	Adds a box that is marked with an X when selected (true) and blank if not selected (false).
 Combo Box	Adds a box with a drop-down arrow list from which you can select an item in the list or by typing in a value.
 List Box	Adds a box that lists items using a vertical scroll bar. You cannot type in your own value using a List Box.
 Command Button	Creates a button that can activate a macro or VBA procedure.
 Image Button	Allows you to display a static picture.
 Unbound Object Frame	Adds an object from another application using OLE.
 Bound Object Frame	Makes available an OLE object from underlying data.
 Subform/Subreport	Embeds another form or a report in the current form or report. Can show data from a table or query related to data in the main form or report.

# Appendix C: Using Form Wizards

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## CONCEPTS

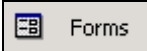




You can use **FORM WIZARDS** to quickly and easily create forms. Form Wizards allow you to make a limited number of choices about formatting and content, then build the form based on your selections. When you create a form using a wizard, you can still edit the form in Design view.

There are three different wizards available to help you create a form. These wizards are listed in the table below:


Use:	To:
<b>Form Wizard</b>	Automatically create your forms, based on fields and layouts you select.
<b>Chart Wizard</b>	Create a custom form containing a graph.
<b>PivotTable Wizard</b>	Create a form with a Microsoft Excel PivotTable.


## STEPS


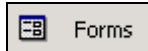
To create a form using the Form Wizard:

1. Click on  in the Database window.
2. Choose NEW, then select FORM WIZARD from the list. Click on the  to choose the table or query containing the data you want to use in the form, then choose OK.
3. A dialog box listing all available fields shows on the left side of the Form Wizard dialog box. To add a field, double-click on the field name under Available Fields, or click on the field name and click on . To add all of the fields at once, click on . To remove a field from the list, click on . Choose NEXT.
4. Select a layout, then choose NEXT.
5. Select the style you want for your form, then choose NEXT.
6. Type the title you want to appear at the top of the form (this will also be the form's name), then choose FINISH.

## NOTES

 You can also start the Form Wizard by double-clicking on CREATE FORM BY USING WIZARD in the Database window. In the first step of the wizard, you choose the table or query you want the form to be based on.

 You can use the Form Wizard to create a form that includes fields from more than one record source. After selecting your first record source and the desired fields, select another table or query from the list and choose the fields you want. Depending on the relationships between the record sources, Access may give you the option to create a form with a subform.

 To use the Chart or PivotTable Wizard, click on  in the Database window, then choose NEW. Next, select the wizard and the record source, then choose OK.

# Appendix C: Using Form Wizards

## CONCEPTS

If your form is going to be based on a single table or query and you want to include all of the fields, you can use a special type of wizard called an **AUTOFORM**. When you create a form in this way, Access instantly creates a form that includes all the fields and records from the selected table or query. If the record source you select has related tables or queries, the form will also include all the fields and records from those record sources.

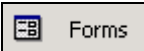
There are three different AutoForms available to help you create a form. Each results in a different layout. These layouts are listed in the table below:

<b>AutoForm:</b>	<b>Layout:</b>
<b>Columnar</b>	Fields display in a single column. Each field appears on a separate line with a label to its left.
<b>Tabular</b>	The fields in each record appear on one line, with the labels displayed once at the top of the form.
<b>Datasheet</b>	The fields in each record appear in row-and-column format, with one record in each row and one field in each column. The field names appear at the top of each column.


AutoForm will format the form using the last style chosen in either a wizard or the **FORMAT, AUTOFORMAT** dialog box. You can choose a different style at any time by choosing **FORMAT, AUTOFORMAT** from the form's Design view.

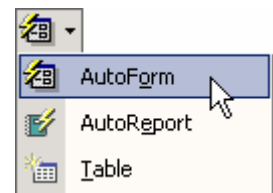
## STEPS


To create a form using an AutoForm:

1. In the Database window, click on  **Forms** under Objects.
2. Choose **NEW**, then choose the desired AutoForm layout (Columnar, Tabular, or Datasheet).
3. Choose the table or query that contains the data you want to base your form on, then choose **OK**. Access will display the form in Form view.
4. Choose **FILE, SAVE**, type a name for your form, then choose **OK**.

## NOTES

 You can also create a columnar AutoForm based on the open table or query or the selected table or query in the Database window. Choose **INSERT, AUTOFORM**, or click the arrow next to the **NEW OBJECT** button on the toolbar, then choose AutoForm.



 When you use AutoForm to create a form, the title that appears at the top of the form will be the name of the table or query it was based on, even if you save the form under another name. You can change the form title by selecting the entire form, then choosing **VIEW, PROPERTIES**. On the **ALL** tab of the Form Properties dialog box, type the title you want in the **CAPTION** box.

# Appendix D: Using Report Wizards

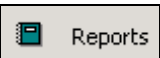






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**CONCEPTS** **REPORT WIZARDS** can help you create a report quickly and easily. Once you have made a limited number of choices about formatting and content, the wizard will build your report automatically. When you create a report using a wizard, you can still edit the report in Design view.

There are three different types of Report Wizards available. These types are listed in the table below:

Report type:	Function:
<b>Report Wizard</b>	Automatically creates your report, based on fields and layouts you select. You can also create reports with grouped and calculated data.
<b>Chart Wizard</b>	Creates a report with a chart.
<b>Label Wizard</b>	Creates a report in mailing labels format.

**STEPS** To create a report using the Report Wizard:

1. Click on  in the Database window.
2. Choose NEW, then select REPORT WIZARD from the list. Click on the  to choose the table or query containing the data you want to use in the report, then choose OK. A dialog box listing all available fields shows on the left side of the Report Wizard dialog box.
3. To add a field, double-click on the field name under Available Fields, or click on the field name and click on . To add all of the fields at once, click on . To remove a field from the list, click on . Choose NEXT.
4. Click on the field by which you want to group the data, click on , then choose NEXT.
5. Click on the field(s) by which you want to sort, then choose .
6. If you have a Number or Currency field in your report, you can click on the SUMMARY OPTIONS button. Choose what calculations you would like made on your summary field. Indicate whether you want DETAIL AND SUMMARY or just SUMMARY. Choose OK.
7. Click on the layout you want, then choose NEXT.
8. Click on the style you want, then choose NEXT.
9. Type a title, choose PREVIEW THE REPORT, then click on FINISH.  
(Note: The title you assign will be the report name.)

**NOTES**  You can also start the Report Wizard by double-clicking on CREATE REPORT BY USING WIZARD in the Database window. In the first step of the wizard, you choose the table or query you want the report to be based on.

# Appendix D: Using Report Wizards

## CONCEPTS

Another option for quickly creating reports is to use a special type of wizard called an **AUTOREPORT**. AutoReports instantly build reports that include all the fields and records in the selected table or query. If the record source you select has related tables or queries, the report will also include all the fields and records from those record sources.

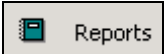

There are two different AutoReports available to help you create a report. Each results in a different layout. These layouts are listed in the table below:

<b>AutoReport:</b>	<b>Layout:</b>
<b>Columnar</b>	Fields display in a single column. Each field appears on a separate line with a label to its left.
<b>Tabular</b>	The fields in each record appear on one line, with the labels displayed once at the top of the report.


AutoReports format the report using the last style chosen in either a wizard or the **FORMAT**, **AUTOFORMAT** dialog box. You can choose a different style at any time by choosing **FORMAT**, **AUTOFORMAT** from the report's Design view.

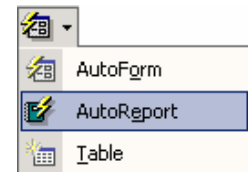
## STEPS


To create a report using AutoReport:



1. Click on  **Reports** in the Database window.
2. Choose **NEW**, then select **AUTOREPORT: COLUMNAR** or **AUTOREPORT: TABULAR** from the list. Click on the  to choose the table or query containing the data you want to use in the report, then choose **OK**.
3. Choose **FILE**, **SAVE**, type a name for your report, then choose **OK**.

## NOTES

 You can also create a columnar AutoReport based on the open table or query or the selected table or query in the Database window. Choose **INSERT**, **AUTOREPORT**, or click the arrow next to the **NEW OBJECT** button on the toolbar, then choose **AUTOREPORT**.



 When you use AutoReport to create a report, the title that appears at the top of the report will be the name of the table or query it was based on, even if you save the report under another name. You can change the report title in Design view.

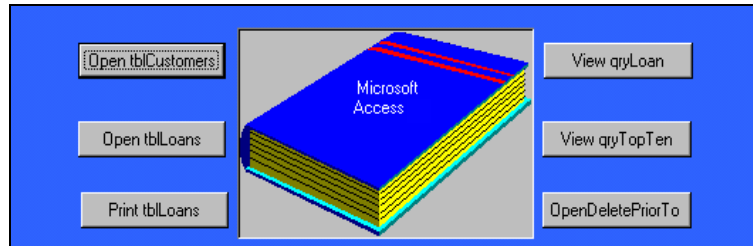
 To use the Chart or Label Wizard, click on  **Reports** in the Database window, then choose **NEW**. Next, select the wizard and the record source, then choose **OK**.

# Appendix E: Creating a Switchboard

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## CONCEPTS

A **SWITCHBOARD** is a form that allows you to easily access other objects in a database. A switchboard is a single form created with many different command buttons attached to it. When a command button is clicked, the macro attached to the command button executes some action. The action may be to open another form, or send a report to the printer, or even print a table, form, or report. A wizard is available to assist you in creating a main form or switchboard.



## STEPS

To create a switchboard using the Switchboard Manager:

1. Choose **TOOLS, ADD-INS**, then click on **SWITCHBOARD MANAGER**.
2. Click on **YES** if Access asks if you would like to create a switchboard.
3. In the Switchboard Manager dialog box, click on **EDIT**.
4. In the Edit Switchboard Page dialog box, type a name for the switchboard in the Switchboard Name box, then click on **NEW**.
5. In the Edit Switchboard Item dialog box, type the text for the first switchboard button in the text box, then click on a command in the Command box. For example, type *Review Products* in the Text box, then click on **OPEN FORM IN EDIT MODE** in the Command box.
6. Depending on which command you click, Access displays another box below the Command box. Click an item in this box, if necessary. For example, if you clicked on **OPEN FORM IN EDIT MODE** in the Command box in step 5, click the name of the form you want to open in the Form box, such as *Review Products*, then click on **OK**.
7. Repeat steps 4 through 6 until you've added all the items to the switchboard. If you want to edit or delete an item, click the item in the **ITEMS ON THIS SWITCHBOARD** box, then click on **EDIT** or **DELETE**. If you want to rearrange items, click the item in the box, then click on **MOVE UP** or **MOVE DOWN**.
8. Click on **CLOSE**.

## NOTES

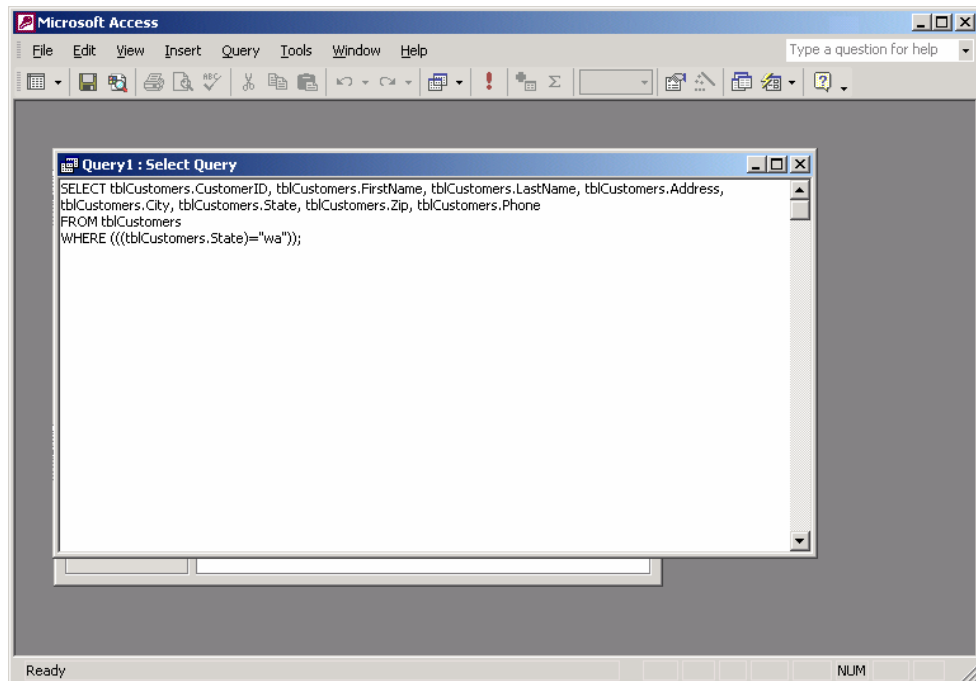
☞ When you create a switchboard with the Switchboard Manager, Access creates a Switchboard Items table that describes what the buttons on the form display and do. If you change the Switchboard form later in form Design view, the application may no longer work. If you expect to customize your switchboard form extensively, it's better to create the form from scratch, then specify it as the startup form.

# Appendix F: Viewing SQL in Queries

## CONCEPTS

SQL, or Structured Query Language, is a language used in querying, updating and managing information in relational databases like Microsoft Access. Each time you create a query, Access builds an SQL statement for you. SQL statements are also used in forms, reports and macros. You can see the SQL code used in a query by choosing VIEW, SQL in the query's Design view or by clicking on the SQL button.


The example below shows the SQL window for a query that finds all of the records from "tblCustomers" for which the "State" field is equal to "WA."



Because Microsoft Access supports SQL, you can use Access to work with tables that are actually stored in another SQL database, for example Microsoft SQL Server or Oracle. These databases are often used in a large networking or mainframe environments. By either importing or attaching SQL tables from an external database, you can use Access as a "front end" to create your queries.

## STEPS

To view a recordset in the SQL view:

1. Create the specified query in Design view.
2. Click on the  next to the VIEW button on the toolbar.
3. Choose SQL VIEW.



# Notes

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