ACCESS 2002 (XP)

LEVEL 3: USEFUL QUERIES AND REPORTS

December 19, 2005

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Knowledge Products Division
475 Allendale Road, Suite 102

King of Prussia, PA 19406
1-610-337-8878
http://www.kp.globalknowledge.com

LEVEL 3: USEFUL QUERIES AND REPORTS

LESSON 1 -
DESIGNING ADVANCED QUERIES

In this lesson, you will learn how to:

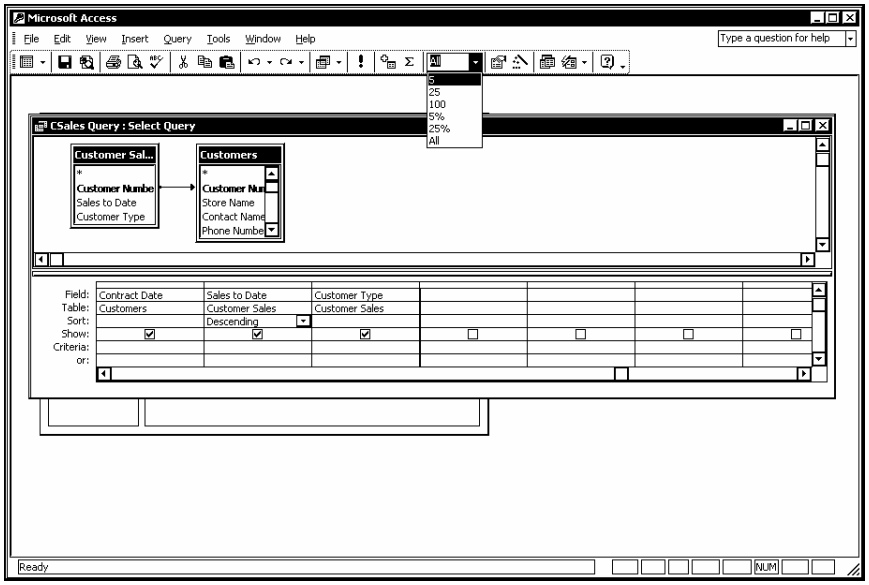
- Set top values in a query
- Create a calculated field
- Format a calculated field
- Create a function query
- Create a parameter query
- Create a concatenation in a query
- Filter a query

SETTING TOP VALUES IN A QUERY

Discussion

You can limit the results of a query so that only the highest or lowest values in a field appear in the recordset. For example, you can set the top values of a **Quantity Sold** field to 10 to find the top ten best-selling products.

You can also limit the number of records to a specific number or percentage of all records being queried (i.e. the top 25%). The field for which you are setting the top or bottom values must be sorted. If the field is sorted in descending order (Z to A, 9 to 0), the top values will be found. If the field is sorted in ascending order (A to Z, 0 to 9), the bottom values will be found.



Setting top values in a query

> If other fields in the query are sorted, they must appear to the right of the field for which you are finding top or bottom values in the design grid.

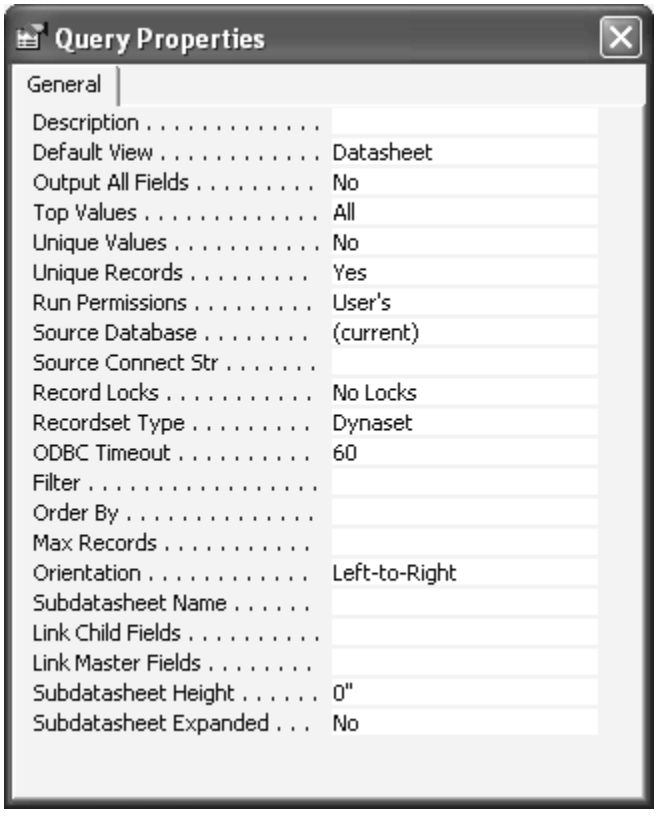
> You can also type a value into the **Top Values** box on the **Query Design** toolbar.

Procedures

1. Open the desired query in **Design** view.
2. Select the **Sort** row of the desired field.
3. Select the **Sort** list.
4. Select the desired sort order.
5. Select the **Top Values** list on the **Query Design** toolbar.
6. Select the desired option.

SETTING QUERY PROPERTIES

Each query has property settings that you can change to alter the way the query behaves and how the query results look.



To display the Query Properties dialog box shown above, you can do one of the following:

- Select **View … Properties** from the menu bar in the Query window
- Point at the top half of the query window and select Properties from the shortcut menu
- Click in the top half of the query window and click on the Properties button on the toolbar
- Double-click in the top half of the query window

You can also set properties for the individual fields in the query. Slightly different options are available for fields. To see the Properties dialog box for a field, click in the field you want and use the shortcut menu.

★ *Description*
This works best with fields, rather than the general query. In the Description property, type the description you want the status bar to display for that field in the query's results. Users will see the new description in the status bar when they click in the field in query Datasheet view.

★ *Output All Fields*
Use to show all fields in the query's underlying data. This is an easy way to show all fields in the query while only moving those you are setting criteria for or sorting on down to the query grid.

Yes	Displays all the fields in the underlying tables and in the field list of a form or report.
No	(Default) Displays only fields having the Show box selected in the query design grid.

★ *Top Values*
Use to return a specified number of records or percentage of records that meet the criteria specified. For example, you might want to return the bottom 5 values or the top 10% of values in a field.

Use together with sorted fields. The field you want to display top values for should be the leftmost field that has the Sort box clicked in the query design grid. An Ascending sort returns the bottommost records, and a Descending sort returns the topmost records. If you specify that a specific number of records be returned, all records with values that match the value in the last record are also returned.

★ *Unique Values*
Use when you want to omit records that contain duplicate data in the fields displayed in Datasheet view. For example, if a query's output includes more than one field, the **combination of values from all fields must be unique** for a given record to be included in the results. This property uses all the fields which have been moved to the query grid.

Yes	Displays only the records in which the values of all fields displayed in Datasheet view are unique.
No	(Default) Displays all records.

★ *Unique Records*
Use to specify whether to return only unique records based on all fields in the underlying data source, not just those fields present in the query itself.

Yes	(Default) Doesn't return duplicate records.
No	Returns duplicate records

★ *Run Permissions*
Used in a multi-user environment with a secure workgroup to override the existing user permissions.

Owner's	All users are allowed the owner's permissions to view or run the query.
User's (Default)	Users have only their own permissions to view or run the query.

★ *Records Locks*

Use to set what happens when two users try to edit the same record at the same time. When you edit a record, Microsoft Access can automatically lock that record to prevent other users from changing it before you are finished. You can use this property to specify whether records in a query (typically an action query in a multi-user database) are locked while the query is run.

No Locks (Default)	In queries, records aren't locked while the query is run.
All Records	All records in the underlying table or query are locked while the query is run. Although users can read the records, no one can edit, add, or delete any records until the query has finished running.
Edited Record (Forms and queries only)	A page of records is locked as soon as any user starts editing any field in the record and stays locked until the user moves to another record. Consequently, a record can be edited by only one person at a time. This is also called "pessimistic" locking.

SET PROPERTIES FOR A QUERY, ITS FIELDS, OR ITS FIELD LISTS

You can set properties for queries, field lists in a query, and fields you add to the design grid in a query.

1. In query Design view, select the field, field list, or query.
   - To select a field, click the cell in the Field row.
   - To select a field list, click anywhere in the list.
   - To select the whole query, click anywhere in query Design view outside the design grid and the field lists.
2. Click on the toolbar to display the property sheet for the selected object.
3. In the property sheet, click the property you want to set, and then do one of the following:
   - If an arrow appears in the property box, click the arrow and then click a value from the list.
   - Type a setting or expression in the property box.
4. If a Build button appears next to the property box, click it to display a builder.
5. If you need more space to enter or edit a property setting, press SHIFT+F2 to open the Zoom box.

Tip: When you click a property in the property sheet, a short description of the property appears in the status bar. For more information on the property and its settings, click the property and then press F1.

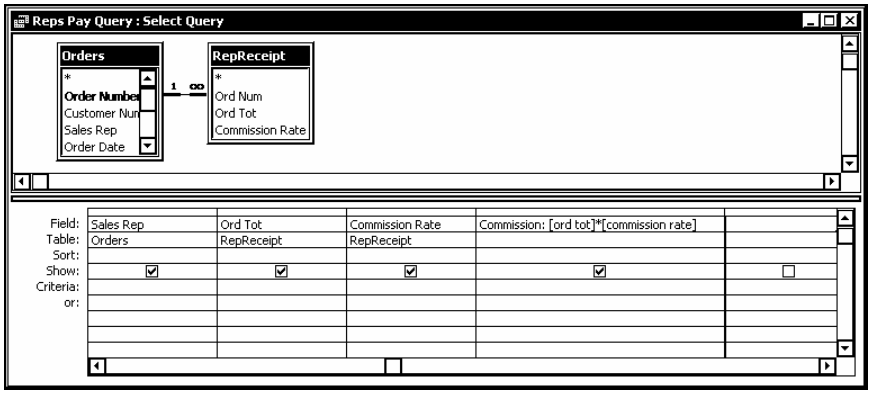
CREATING A CALCULATED FIELD

Discussion

Access allows you to create expressions that calculate new field values; for example, you can create an expression that multiplies the value in the **Quantity** field by the value in the **Price** field to calculate total sales. You can also create an expression that adjusts a value in a single field, such as doubling a **Wholesale Price** field to calculate values for a **Retail Price** field.

In expressions, field names are enclosed in square brackets (**[ ]**); numbers are not. For example, to calculate 20% of sales and display the results in a column named **Commission**, you would enter **Commission:.2*[Sales]** in the design grid. (The colon separates the column name from the expression.)

Calculated fields are created in queries. You can also use criteria to remove nonessential records, thereby allowing the query to run faster. The results of your query can then be used to generate a report.



Creating a calculated field

> The field names used in an expression must be the same as the field names that appear in the table.

> You can also use the Expression Builder to create a calculated field by selecting any blank **Field** row and clicking the **Build** button on the **Query Design** toolbar.

Procedures

1. Open the desired query in **Design** view.
2. Select any blank **Field** row.
3. Type the desired field name and a colon (**:**).
4. Type the expression required to perform the calculation.
5. Press **[Enter]**.

FORMATTING A CALCULATED FIELD

Discussion

Once you have created a calculated field, you can change its properties as you would any other field on the design grid. The **Format** property determines how data appears in **Datasheet** view. For example, you can change the properties of a calculated field so that the field values display as currency.

> You can also change the format of a calculated field by right-clicking anywhere in it and selecting the **Properties** command.

Procedures

1. Open the desired query in **Design** view.
2. Select the **Field** row for the calculated field you want to format.
3. Select the **Properties** button  on the **Query Design** toolbar.
4. Select the **General** page in the Field Properties box.
5. Select the **Format** box.
6. Select the **Format** list.
7. Select the desired format.

CREATING A FUNCTION QUERY

Discussion

Access allows you to create a query that groups records by a selected field and then applies a function that calculates a value within the grouped fields. For example, you could group records by state and then select the **Count** function to find out how many customers (records) are in each state (field), or you could group records by customer name and then calculate the **Sum** of each customer's orders.

Access allows you to perform more than one calculation on a field. For example, you can group records by weekly sales and then find both the minimum and maximum values.

There are several types of functions from which you can choose. The most commonly used functions are listed in the following table:

Function	Description
Sum	Totals the values in the calculated field
Average	Averages the values in the calculated field
Count	Counts the number of records in the calculated field
Max	Finds the highest value in the calculated field
Min	Finds the lowest value in the calculated field

To perform more than one calculation on a field, you must add the field to the design grid a second time and create the desired expression.

You can also add a **Total** row by right-clicking in the design grid and then selecting the **Totals** command.

Procedures

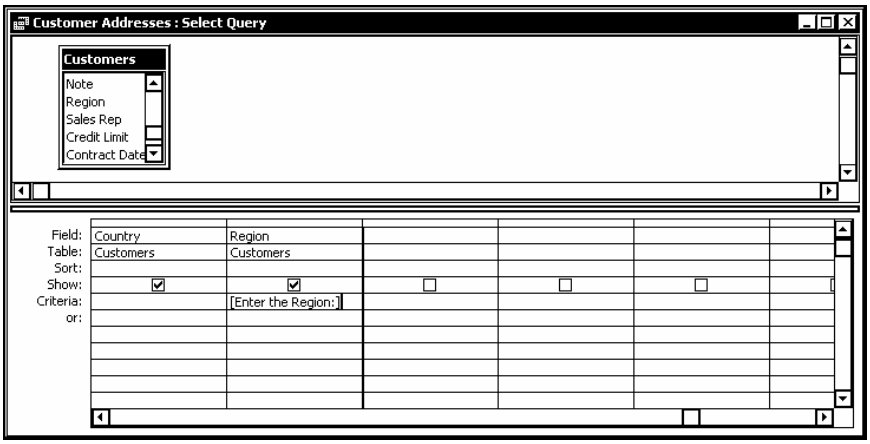
1. Open the desired query in **Design** view.
2. Select the **View** menu.
3. Select the **Totals** command.
4. Select the **Total** row in the field you want to calculate.

5. Select the **Total** list.
6. Select the desired function.

CREATING A PARAMETER QUERY

Discussion

You can create a query to which you add different criteria each time you run it; such a query is called a parameter query. A parameter query is designed to prompt the user for input each time it is run; Access then runs the query based on the criterion (parameter) entered. A parameter query allows you to quickly and easily change query criteria without having to redesign the query.



Creating a parameter query

> You can add multiple parameters to a query; when you run the query, a prompt will appear for each parameter in it.

Procedures

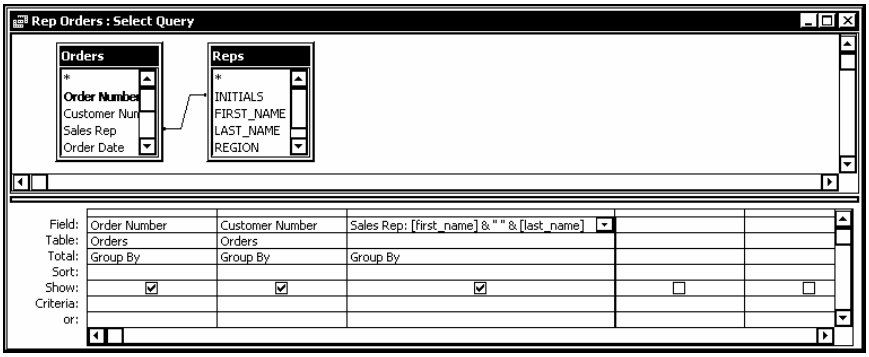
1. Open the desired query in **Design** view.
2. Select the **Criteria** row in the desired field.
3. Type an open bracket (**[**), the desired prompt, a colon, and the close bracket (**]**).
4. Press **[Enter]**.

CREATING A CONCATENATION IN A QUERY

Discussion

A concatenation query allows you to combine two or more text fields into one field. In other words, concatenation enables you to append one text string to another. In addition, you can insert characters between the text strings as needed. For example, you can concatenate the **City**, **State**, and **Postal Code** fields and store the concatenated text string in a fourth field, the **Address** field, adding commas and spaces between the text strings as needed.

When typing a concatenation expression, the first part of the expression defines the name of the new field and the second part of the expression defines the fields which are to be concatenated. All field names must be surrounded by brackets. The concatenation character (the ampersand - **&**) appears between field names, and you must enclose any additional characters in double quotes. For example, the expression **Names: [Last Name]&", "&[First Name]** concatenates the **Last Name** and **First Name** fields and inserts the concatenated text string into a field called **Names**. The new field displays the last name, a comma, a space, and the first name for each record in the table.



Creating a concatenation expression

You can also use concatenation to create text strings in forms and reports.

To use the Expression Builder to concatenate text, select any blank **Field** row and click the **Build** button on the **Query Design** toolbar.

Procedures

1. Open the desired query in **Design** view.
2. Select any blank **Field** row in the design grid.
3. Type the desired concatenation expression.
4. Press **[Enter]**.

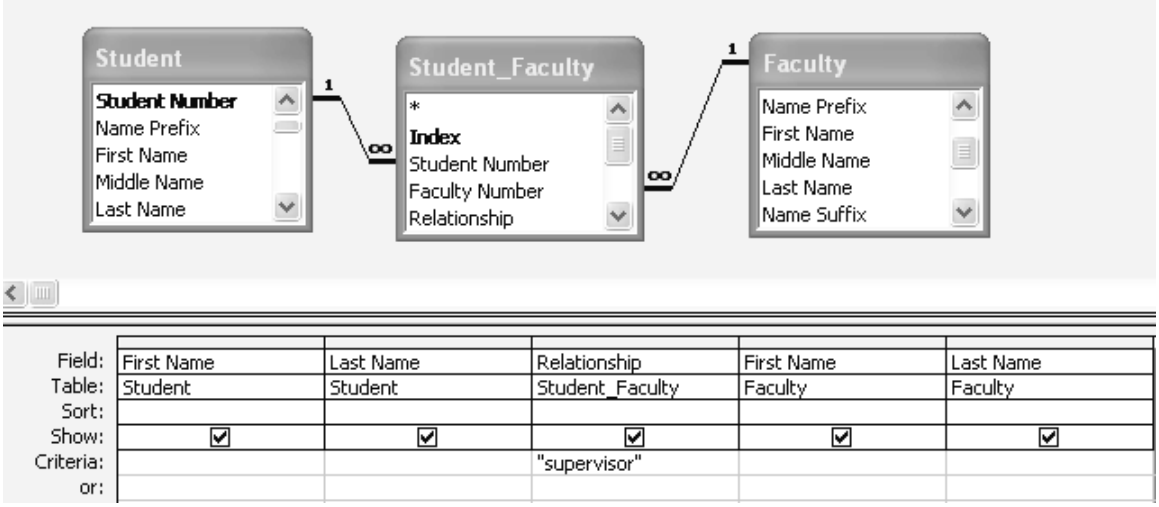
JOIN TYPES IN A QUERY

When you add more than one table or query to a query, you need to make sure their field lists are joined to each other with a join line so that Microsoft Access knows how to connect the information. An association between a field in one table or query and a field of the same data type in another table or query is defined as a **JOIN**. A join tells Microsoft Access how data in each of the tables or queries is related to the other tables or queries.

If you previously created relationships between tables in the Relationships window, Access automatically displays join lines when you add related tables in query Design view. If referential integrity is enforced, Access also displays a "1" above the join line to show which table is on the "one" side of a one-to-many relationship and an infinity symbol (∞) to show which table is on the "many" side.

If relationships were not previously defined and if one of the fields is a primary key, Access automatically creates a join between fields with the same names and data types. The chances are good that this will be the correct join but you should always check. There will not be a “1” or infinity sign displayed when this happens.

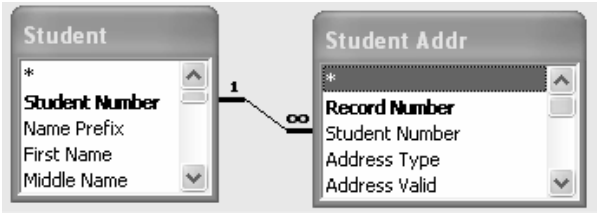
If the tables you add to the query don't include any fields that can be joined, you will need to add one or more extra tables or queries to serve as a link between the tables with the data you need. For example, with the Graduate Student database, you would need to add the Student_Faculty table to be able to select a list of graduate student names with their supervisor names.



Field:	First Name	Last Name	Relationship	First Name	Last Name
Table:	Student	Student	Student_Faculty	Faculty	Faculty
Sort:					
Show:	☑	☑	☑	☑	☑
Criteria:			"supervisor"		
or:					

If you add tables to a query and there no join lines appear, the resulting dataset will include every permutation of records between the two tables as Access doesn't know which records in the first table are associated with which records in the second table. If one table had 50 records in it and the other had 10, the query's results will contain 50x10 or 500 records. These queries usually take a long time to run and do not produce meaningful results.

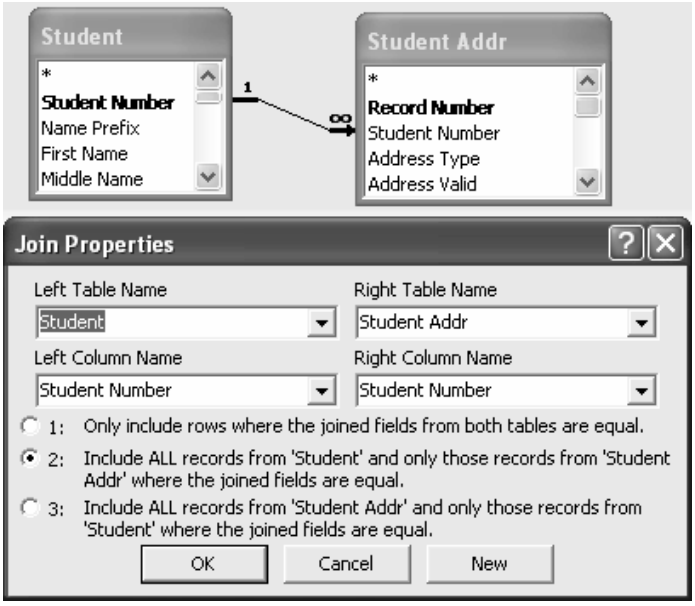
You can also create joins manually. There are three Join Types to choose from.

Join Type	Description
Inner Join (Default)	A join in which records from two tables are combined and added to a dataset only if the values of the joined fields match and meet any conditions specified. *Example*: When looking for student addresses, the only records which would be displayed would be records where there was a matching student number in the both tables. You would not see students who did not take courses, nor would you see courses for which there was no current student.  If there are records in the Master table for which there are no detail records OR if there are records in the Detail table for which there is no record in the Master table, those records will not appear in the resulting dataset.
Outer Join	With an outer join, Access retrieves records from one of the tables whether a matching record is found in the other table or not.

Left Outer Join

A left outer join includes all of the records from the first (left) of two tables, even if there are no matching values for records in the second (right) table. A left outer join is indicated by a join line arrow pointing from left to right.

Example: When looking for addresses, all records would be displayed from the Student table (on the left) whether or not there was a matching record in the Student Addr table (on the right). <u>You would not see courses for which there was no current student.</u>

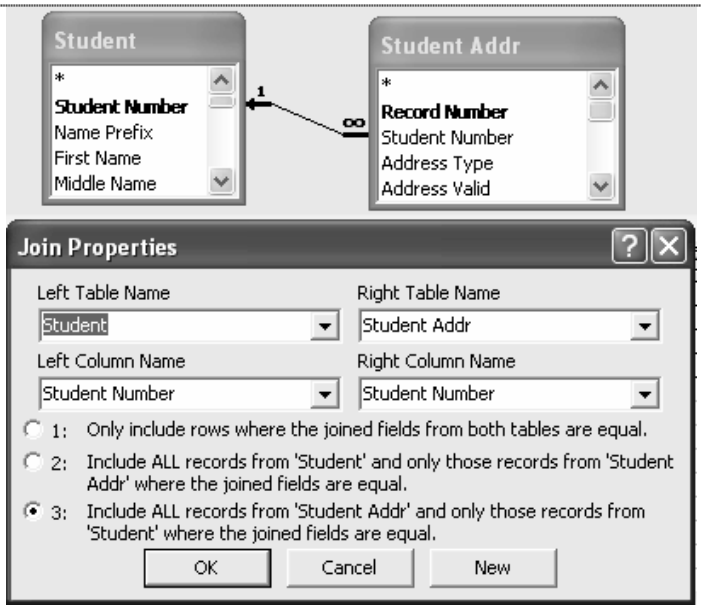


Records from the table on the right will only be included if there is a match in the joined field. Therefore, there may be some records in the table on the right which are not displayed.

Right Outer Join

A right outer join includes all of the records from the second (right) of two tables, even if there are no matching values for records in the first (left) table. A right outer join is indicated by a join line arrow pointing from right to left.

Example: When looking for addresses, all records would be displayed from the Student Addr table (on the right) whether or not there was a matching records in the Student table (on the left). You would not see students for which there was no matching student number in the Student Addr table.



Records from the table on the left will only be included if there is a match in the joined field. Therefore, there may be some records in the Student table which are not displayed.

DEFINE JOIN TYPES

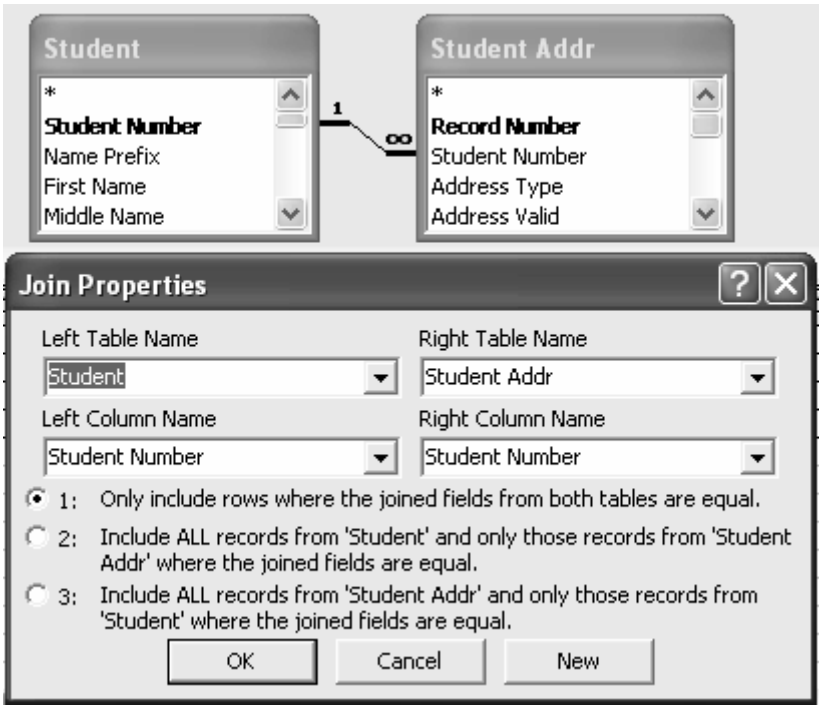
Defining the join type for a relationship in the Relationships window doesn't affect the relationship itself; it sets the kind of join that will be used by default when creating queries based on the related tables. You can always override the default join type later when defining a query. By default, Microsoft Access creates an inner join between related tables.

1. Create the relational joins that you need between the tables by dragging the common field or fields from one table to another. Just as when you define relationships, you are connecting the primary key of one table (the field(s) shown in bold in the Table Lists) to a field of another table in the query.

   If the join lines are overlapping or crossing tables, you should just reposition the tables by dragging them to a better location in the window.

2. In the Query-By-Example screen, double-click on the line joining the field lists of the tables in the query.

3. Click the desired join type.
   Option 1 defines an inner join. This is the default.
   Option 2 defines a left outer join.
   Option 3 defines a right outer join.



4. Click on **OK**.

DELETING JOINS AND TABLES

If Access adds a join which you don't want, you can delete the join.

1. Click on the join line to select it – the line will appear bolded.

2. Press Delete.

Once the join is removed, you can remove the tables from the QBE grid as well. Click anywhere in the table's Field List and press Delete.

FILTERING A QUERY

Discussion

You can filter a query in the same way you filter a table or form. Since the data you want to filter sometimes appears in two or more tables, you might need to create a multiple table query. Once the query has been created, you can apply a filter to temporarily isolate the records you want to view.

The **Filter By Selection** feature allows you to quickly and easily filter a query to display only those records in which the selected value appears. Conversely, the **Filter Excluding Selection** feature filters out the selected value, leaving only those records that do not contain the selected value.

The **Filter By Form** feature allows you to create more complex filters by filtering on multiple values and/or by creating filter expressions. In the Filter by Form window, for example, you can create And and Or filters, use wildcards, and filter by ranges.

> To filter a query, you can also right-click the field on which you want to filter and then either select the **Filter Excluding Selection** command or type the desired filter into the **Filter For** box.

Procedures

1. Open the desired query in **Datasheet** view.
2. Select the value by which you want to filter.
3. Click the desired filter button on the **Query Datasheet** toolbar.
4. Enter the desired filter(s) in the Filter By Form window, if applicable.
5. Click the **Apply filter** button  in the Filter By Form window, if applicable.

LESSON 2 -
USING ACCESS DATA IN WORD AND EXCEL

In this lesson, you will learn how to:

- Use Access Data in a Word Merge
- Use Access Data to Create a Worksheet
- Use Access Data to Create a Workbook

USING ACCESS DATA IN A WORD MERGE

Discussion

If you have your names and addresses stored in an Access table, it is possible to use them to generate a form letter in Word.

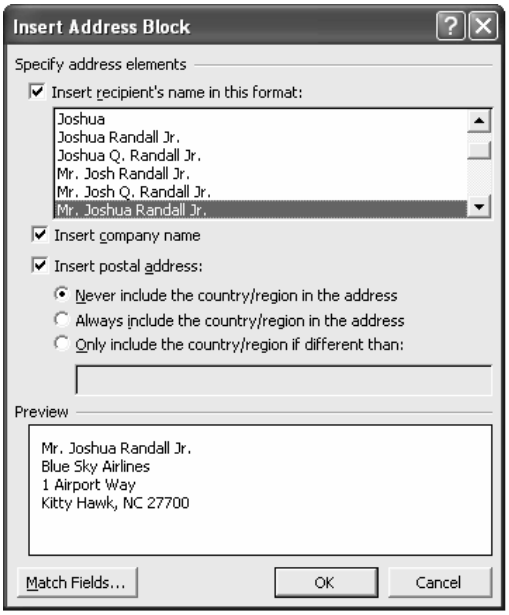
Alternatively, you can use the **Merge It with Microsoft Word** button on the toolbar.

Procedures

1. Open the desired Access database.
2. Click on the table or query you want to use in your merge letter.
3. Select **Tools**.
4. Select **Office Links**.
5. Select **Merge it with Microsoft Word**.
6. Select from the options – use an existing Word document or create a new one.
7. Select the desired Document Type. For our purposes here, select Form Letters.
8. Click on **Next: Starting Document**.
9. Select the *Starting Document* option: **Use the Current Document**
10. Click on **Next: Select Recipients** to confirm the data source.

11. Click **Next: Write your letter.**
12. If you have not already done so, in the main document, type the text that you want to appear in every form letter.
13. Use one of the following methods to insert merge fields where you want to merge names, addresses, and other data from the data source.

☑ Address Block with Name, Address, and Other Information



a. Click **Address block**.

b. In the *Insert Address Block* dialog box, select the address elements you want to include and the formats you want.

c. Click **OK**.

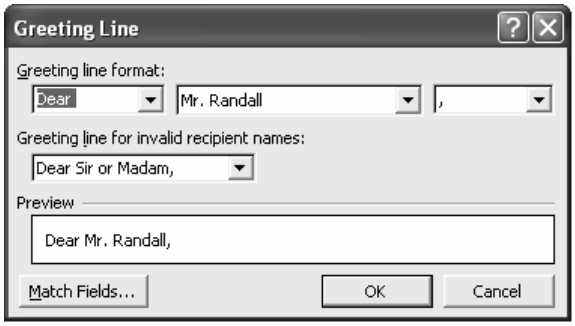
d. If the *Match Fields* dialog box appears, Microsoft Word may have been unable to find some of the information it needs for the address block.

Click the arrow next to *(not available)*, and then select the field from your data source that corresponds to the field required for the mail merge.

☑ Greeting Line

a. Click **Greeting line**.

b. Select the greeting line format, which includes the salutation, name format, and following punctuation.



c. Select the text you want to appear in cases where Microsoft Word can't interpret the recipient name, for example, when the data source contains no first or last name for a recipient, but only a company name.

d. Click **OK**.

e. If the *Match Fields* dialog box appears, Microsoft Word may have been unable to find some of the information it needs for the address block.

Click the arrow next to *(not available)*, and then select the field from your data source that corresponds to the field required for the mail merge.

☑ Other Fields of Information

a. Click **More items**.

b. Do one of the following:

- To select from address fields that will automatically map to corresponding fields in your data source, even if the data source's fields don't have the same name as your fields, click **Address Fields**.
- To select from fields that always take data directly from a column in a database, click **Database Fields**.
  - In the *Fields* box, click the field you want.
  - Click **Insert**
  - Click **Close**.

c. If the *Match Fields* dialog box appears, Microsoft Word may have been unable to find some of the information it needs for the address block.

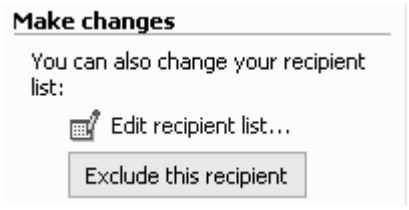
Click the arrow next to (not available), and then select the field from your data source that corresponds to the field required for the mail merge.

14. Format the letter in the fashion you would like. To format any of the merged fields, you must format in the main document. Formatting in the data source is not retained when you merge the data into the document.

- Be sure that you include the surrounding merge field characters («« »») when you select the field you want to format.

15. After you've completed the main document and inserted all of the merge fields, save the document.
16. When you have entered all the merge fields, click on Next: Preview Your Letters.
17. Check that the fields have been properly place. If you need to make any changes, return to the previous step.
18. To preview the items in order, click the arrow buttons.
19. To locate and preview a specific item, click **Find a recipient**, and then enter the search criteria in the **Find Entry** dialog box.

20. If necessary, fine-tune the recipient list.



- To exclude a particular recipient from the merge, click **Exclude this recipient** while looking at the recipient's letter.
- To change the list of recipients, click **Edit recipient list**, and then make your changes in the Mail Merge Recipients dialog box.

21. Click on **Next: Complete the Merge**.
22. Complete the merge by selecting one of the following:

☑ Personalize Individual Letters

To personalize individual documents, you actually complete the merge, and then edit the information you want in the resulting merged document.

a. Click **Edit individual letters**.

b. In the *Merge to New Document* dialog box, select the records you want to merge.

c. Click **OK**.

Microsoft Word creates and opens a new merged document. Your main document also remains open, and you can switch back to it if you want to make a change to all the documents.

d. Scroll to the information you want to edit, and make your changes.

e. Print or save the document just as you would any regular document.

☑ Print the Letters

Do one of the following:

If you personalized the items and the merged document is active

1. Select **File … Print**.
2. Select the options you want.
3. Click on **OK**.

If you want to print directly from the Mail Merge Wizard

1. Click **Print**.
2. In the *Merge to Printer* dialog box, select one of the following:
   - Click **All** to print all the documents.
   - Click **Current record** to print the document that you see in the document window.

- Click **From**, and type in the record numbers in the From and To boxes to print a range of documents.

3. Click on **OK**.
4. In the Print dialog box, select the options you want.

Save the Merged Letters for Later Use

If you want to edit merged letters or save them for later use, you can collect them into a single document.

1. Click **Edit individual letters**.
2. In the *Merge to a New Document* dialog box, do one of the following,
   - Click **All** to print all the documents.
   - Click **Current record** to print the document that you see in the document window.
   - Click **From**, and type in the record numbers in the From and To boxes to print a range of documents.
3. Click on **OK**.

Microsoft Word opens a single new document that contains all the individual letters. You can then save the document for later use, just as you would any regular document.

USING ACCESS DATA TO CREATE A WORKSHEET

Discussion

You may want to create a worksheet in an existing Excel workbook using Access data. You can easily send a table or query from the source file in Access to the destination file in Excel. The exported data appears automatically on the last worksheet in the workbook and the tab reflects the name of the Access table and query. Once the data is exported to Excel, it becomes part of the destination file and can only be edited using Excel features.

When you export Access data to Excel, the destination file to which you are exporting needs to be closed or you cannot export the data. Once the data is exported, you can open the destination file in Excel to view and edit the Access information.

Procedures

1. Close the Excel file to which you want to send the Access data.
2. Open Access.
3. Open the Access database containing the desired data.

4. Select the **Tables** or **Queries** tab.
5. Click on the desired table or query.
6. Select the **File** menu.
7. Select the **Export** command.
8. Select the **Save as type** list and change to **Microsoft Excel 97-2002 (*.xls)**.
9. Locate the desired Excel file to which you want to send the table or query.
10. Click on **Export**.

USING ACCESS DATA TO CREATE A WORKBOOK

Discussion

You may have Access data you want to use to create a new Excel workbook. Rather than copy and paste the information, you can send it to Excel to create a new workbook. Once the data is sent to Excel, you can edit it using features of the source application, just as you would edit a workbook created in Excel.

- You can also access the **Analyze It with MS Excel** command from the **OfficeLinks** submenu on the **Tools** menu.

Procedures

1. Open the desired Access database.
2. Select the **Table** or **Queries** tab.
3. Select the desired data.
4. Click the arrow on the **OfficeLinks** button. 
5. Select the **Analyze It with MS Excel** command.

LESSON 3 -
CREATING BASIC REPORTS

In this lesson, you will learn how to:

- Use reports
- Use the Report Wizard
- Use print preview - reports
- Print pages of a report
- Group and summarize report data
- Base a report on a query
- Use AutoReport

USING REPORTS

Discussion

Although you can print records from a table or form, a report provides more precise control over the final output. Reports can include page headers and footers, calculated totals and subtotals, and even graphics. In addition, reports can be used for invoices, orders, presentations, and mailing labels.

There are two basic types of reports: columnar and tabular. In a columnar report, the field names are listed on the left side of the page, and the field values are listed on the right. If space on the page permits, there can be more than one column. In a tabular report, the field names are listed across the top of the report, and the field values appear in the corresponding columns.

Reports can include data from a single table or related tables. Reports can also be based on queries.

> You cannot edit data in a report.

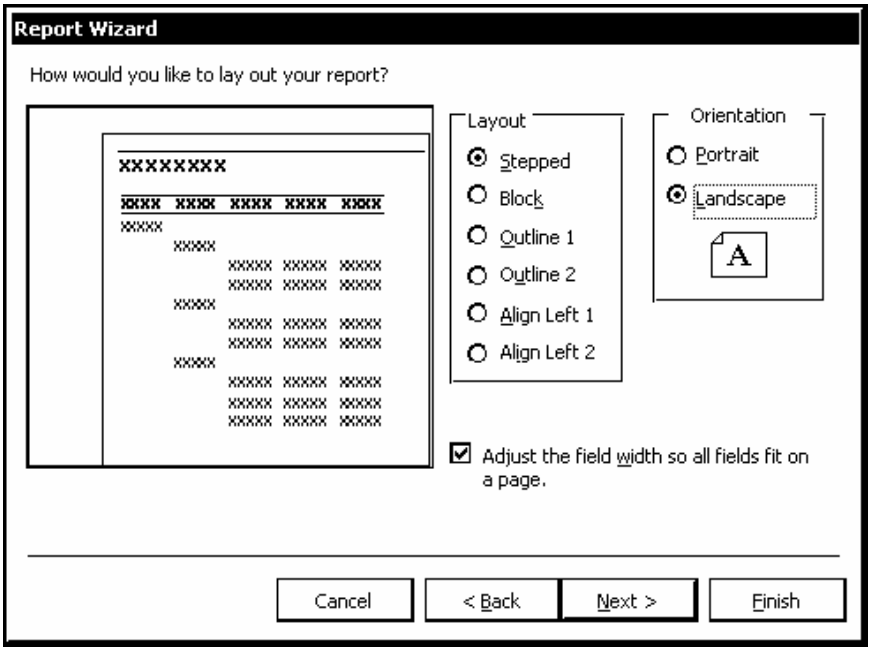
USING THE REPORT WIZARD

Discussion

You can use the Report Wizard to quickly and easily create a report. The basic steps needed to create a report using the Report Wizard are as follows:

1. Select the table(s) you want to use.
2. Select the fields you want to include.
3. Group the data.
4. Add grouping levels.
5. Sort the data.
6. Select a layout.
7. Select a style.
8. Name the report.

When you have finished creating a report, the Report Wizard displays it in print preview. Print preview allows you to view the report before you print it.



Using the Report Wizard

	If you base a report on only one table, the Report Wizard does not ask you to specify a table on which to group the data.

	If you include fields from unrelated tables in the report, Access closes the Report Wizard and opens the Relationships window so that you can create the necessary relationship.

	You can also activate the Report Wizard by double-clicking the **Create report by using wizard** option in the **Reports** object list in the Database window, by selecting the **Insert** menu and the **Report** command, or by clicking the **New Object** button on the **Database** toolbar and selecting the **Report** command.

Procedures

1. Display the **Reports** object list.
2. Select the **New** button on the Database window toolbar.

3. Select **Report Wizard**.
4. Select **OK**.
5. Select the **Tables/Queries** list.
6. Select the table or query on which you want to base the report.
7. Add the desired fields to the **Selected Fields** list box.
8. To add another table to the report, select the **Tables/Queries** list.
9. Select the desired table or query.
10. Add the desired fields to the **Selected Fields** list box.
11. Select **Next** >.
12. Select the desired option in the **How do you want to view your data?** list box.
13. Select **Next** >.
14. Select the desired grouping level in the **Do you want to add any grouping levels?** list box.
15. Select **Next** >.
16. To sort the records, select the **1** list.
17. Select the field by which you want to sort.
18. Select **Next** >.
19. Select the desired report layout.
20. Select the desired report orientation.
21. Select **Next** >.
22. Select the desired report style.
23. Select **Next** >.
24. Type the desired report name.
25. Select **Finish**.

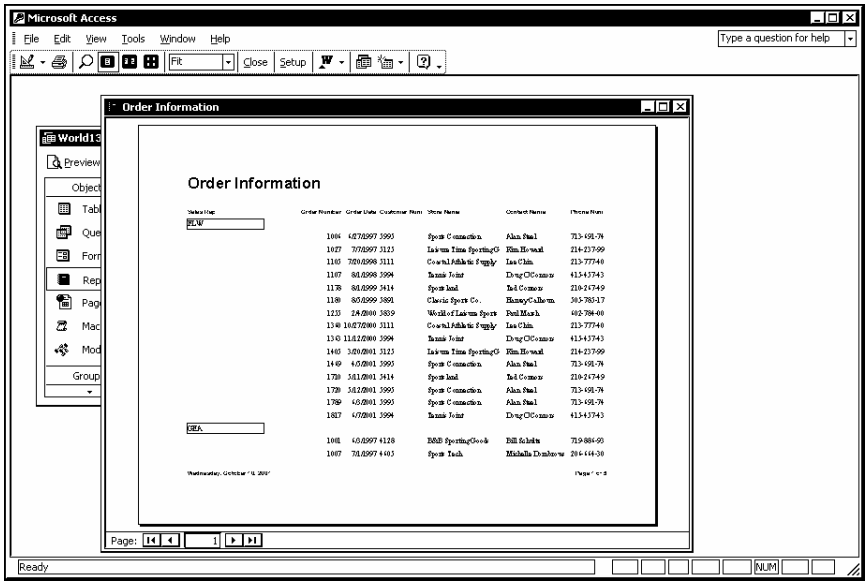
USING PRINT PREVIEW - REPORTS

Discussion

When you open a report, it appears in print preview. Print preview allows you to see how the printed report will look before you print it.

Print preview provides options for viewing the report. By default, the report appears magnified at 100%, the same size as the printout. You can zoom out to see more of the report or zoom in to see a portion of the report in more detail. The **Zoom** list in print preview allows you to choose from several magnification options, from as small as 10% to as large as 500% or 1000%.

You can display a report in **One Page**, **Two Pages**, or **Multiple Pages** view. The buttons at the bottom of the window allow you to navigate pages, and the scroll bars allow you to view different areas of a page.



Using print preview

> You can also access print preview by right-clicking a report in the Database window and selecting the **Print Preview** command.

> You can also use the **Zoom** list on the **Print Preview** toolbar to switch the magnification between 100% and to fit the window.

Procedures

1. Display the **Reports** object list.
2. Select the report you want to preview.
3. Select the **Preview** button on the Database window toolbar.

4. Click the area of the report page you want to magnify to 100%.
5. Click anywhere in the report page to change the magnification back to fit the window.
6. Click the **Two Pages** button  on the **Print Preview** toolbar to display two pages of the report.
7. Click the **One Page** button  on the **Print Preview** toolbar to display one page of the report.
8. Click the **Next Page** button  at the bottom of the report window to display the next page of the report.
9. Click the **Last Page** button  at the bottom of the report window to display the last page of the report.
10. Click the **Previous Page** button  at the bottom of the report window to display the previous page of the report.
11. Click the **First Page** button  at the bottom of the report window to display the first page of the report.

PRINTING PAGES OF A REPORT

Discussion

You can print specific pages of a report. This option is useful if the report contains numerous pages, and you only need information from one or more particular pages. The Print dialog box allows you to specify the pages you want to print.

	You can print a report from the Database window or from print preview.
	To print an entire report, select it and click the **Print** button on the **Database** toolbar.
	You can also open the Print dialog box by right-clicking the report you want to print and selecting the **Print** command.

Procedures

1. Display the **Reports** object list.
2. Select the report you want to print.
3. Select the **File** menu.
4. Select the **Print** command.
5. Select the **Pages** option.
6. Type the number of the first page you want to print.
7. Select the **To** box.
8. Type the number of the last page you want to print.
9. Select **OK**.

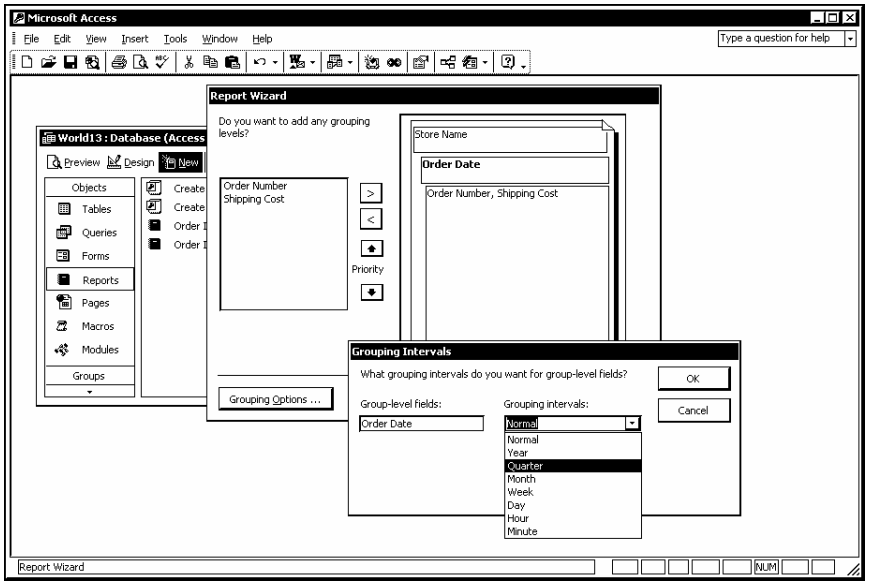
GROUPING AND SUMMARIZING REPORT DATA

Discussion

The Report Wizard provides options for grouping and summarizing report data. You can organize your report by selecting the fields into which you want to group data. If you create more than one group, you can prioritize the groups into levels.

In addition to grouping data by a field, you can add grouping intervals. Grouping intervals vary, depending upon the selected field. For instance, a date field can be grouped by month, quarter, year, etc.; a numeric field can be grouped by numeric intervals of 10s, 50s, 100s, etc.; and a text field can be grouped by its first letter, second letter, etc.

If you have included a field with numeric data in your report, you can add summary calculations. Summary calculations include **Sum**, **Avg** (average), **Min** (minimum), and **Max** (maximum). If you select the **Sum** calculation, you can include a calculated percentage of the total for each group. You can also display just the summary calculations in the report or both the field data (details) and the summary calculations.



Adding a grouping interval

	If you are grouping on multiple fields, you can use the up and down **Priority** buttons to change the order of the groups in the Report Wizard.

	You can add a new field to a specific location in a report by first selecting the field in the **Selected Fields** list box below which you want to insert the new field.

	You must use **Design** view to add grouping levels and summaries to an existing report.

Procedures

1. Display the **Reports** object list.
2. Select the **New** button on the Database window toolbar.
3. Select **Report Wizard**.
4. Select **OK**.
5. Select the **Tables/Queries** list.
6. Select the table or query on which you want to base the report.
7. Add the fields you want to include in the report to the **Selected Fields** list box.

8. Select **Next >**.
9. Select the desired grouping option from the **How do you want to view your data?** list box.
10. Select **Next >**.
11. Select the desired grouping level from the **Do you want to add any grouping levels?** list box, if applicable.
12. Select **Grouping Options**.
13. Select the **Grouping intervals** list.
14. Select the desired interval.
15. Select **OK**.
16. Select **Next >**.
17. If you have included a **Number** data type field, select **Summary Options**.
18. Select the desired summary options.
19. Select **OK**.
20. When you have finished selecting options from the Report Wizard, select **Finish**.

BASING A REPORT ON A QUERY

Discussion

You can use a query as the basis for a report. The query recordset appears as the report data. The report is updated each time it is opened or printed to reflect changes made to queried data.

> You can also activate the Report Wizard by double-clicking the **Create report by using wizard** option in the **Reports** object list in the Database window, by selecting the **Insert** menu and the **Report** command, or by clicking the **New Object** button on the **Database** toolbar and selecting the **Report** command.

Procedures

1. Display the **Reports** object list.
2. Select the  **New** button on the Database window toolbar.
3. Select **Report Wizard**.
4. Select **OK**.
5. Select the **Tables/Queries** list.
6. Select the query on which you want to base the report.
7. Add the desired fields to the **Selected Fields** list box, or add all fields.
8. Select **Next** >.
9. Select the desired grouping option from the **How do you want to view your data?** list box.
10. Select **Next** >.
11. Select the desired grouping level from the **Do you want to add any grouping levels?** list box, if applicable.
12. Select **Next** >.
13. Select the **1** field list.
14. Select the first field by which you want to sort.
15. Select additional sort fields, if desired.
16. Select **Next** >.
17. Select the desired report layout.
18. Select the desired report orientation.
19. Select **Next** >.
20. Select the desired report style.
21. Select **Next** >.
22. Type the desired report name in the **What title do you want for your report?** box.
23. Select **Finish**.

USING AUTOREPORT

Discussion

You can use AutoReport to create a report quickly. AutoReport automatically creates a simple columnar or tabular report from the selected table or query without displaying any dialog boxes or needing any input. You must, however, first select the table or query. All fields in the table or query will appear in the report, and the report title will be the same as the table or query name.

AutoReport does not automatically save a report; the first time you close the report, Access prompts you to save it.

	The AutoReport Wizard creates the report using the most recently used report settings. You can switch to **Design** view to change the formatting of an existing report.

	You can also activate the AutoReport Wizard by first selecting the table or query you want to use, and then selecting the **Insert** menu and the **AutoReport** command or clicking the **New Object** button on the **Database** toolbar and selecting the **AutoReport** command. When you use either of these methods, the report appears in a standard columnar format, with no formatting, headers, or footers.

Procedures

1. Select the **Reports** object list.
2. Select the **New** button on the Database window toolbar.
3. Select the desired **AutoReport** option.
4. Select the **Choose the table or query where the object's data comes from** list.
5. Select the desired table or query.
6. Select **OK**.

LESSON 4 -
USING ADVANCED REPORT DESIGN

In this lesson, you will learn how to:

- Add report sections in Design view
- Create a calculated control
- Group data in a report
- Create group headers and footers
- Create a running summary
- Insert a date/time control
- Insert a page break
- Change the report margins
- Use the Label Wizard
- Create a report without using a wizard

ADDING REPORT SECTIONS IN DESIGN VIEW

Discussion

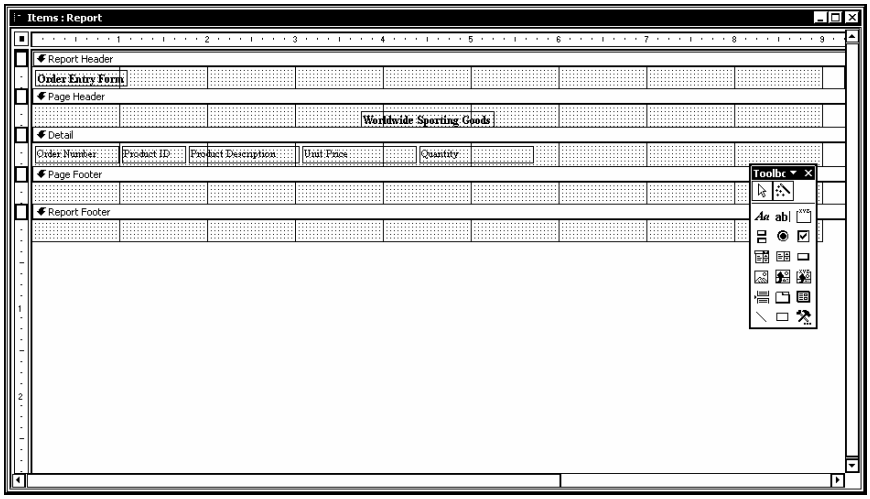
You can create or customize a report in **Design** view. A report has three basic sections: **Detail**, **Report Header**/**Footer**, and **Page Header**/**Footer**.

The **Detail** section contains the information from the table or query. You create controls in the **Detail** section that display information. You can display either one record per page or multiple records per page.

The **Report Header** and **Report Footer** sections display at the top and bottom of the report in **Design** view. When you print the report, these sections appear at the beginning and the end of the report only. The header can be used for report titles, while the footer can be used for report totals or other summaries.

The **Page Header** and **Page Footer** sections display at the top and bottom of the report in **Design** view. When the report is printed, these sections appear at the top and bottom of every page. Page headers and footers can contain images, lines, text, or any other controls you want printed on every page.

When you enable the display of either header and footer section, both the header and the footer appear. You can drag the header and footer sections to size them.



Adding report sections

Procedures

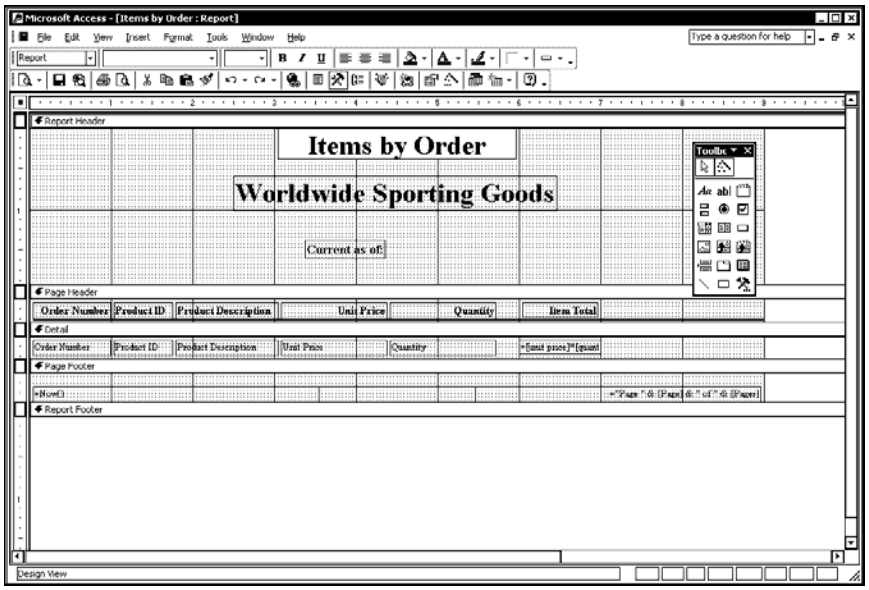
1. Open the desired report in **Design** view.
2. Select the **View** menu.
3. Select the **Page Header/Footer** or **Report Header/Footer** command.

CREATING A CALCULATED CONTROL

Discussion

You can add a calculated control to a form or report. A calculated control is not bound to a field. It contains an expression that uses information from fields to calculate a result. The result is not stored in a table. It is calculated when the report or form is run.

You can type the expression that calculates the result directly into the control or open the property sheet and type the expression into the **Control Source** property box on the **Data** page.



A calculated control created in a report

> You can also create an expression using the Expression Builder. You can open the Expression Builder by clicking the **Build** button on the **Report Design** toolbar, selecting **Expression Builder** and then **OK**. The **Expression Builder** button also appears to the right of the **Control Source** property on the **Data** page in the property sheet.

> A calculated control in a form or report cannot be based on another calculated control in the form or report. However, you can base a calculated control on a calculated field in a query.

Procedures

1. Open the desired report in **Design** view.
2. Display the toolbox.
3. Click the **Text Box** tool  in the toolbox.
4. Click in the desired location for the control.
5. Type the desired calculated control expression.
6. Press **[Enter]**.
7. Select the label box paired with the control.
8. Press **[Delete]**.

GROUPING DATA IN A REPORT

Discussion

You can group data in reports that have a common field. It is often easier to read a report when data is grouped, since you can then easily find the pertinent data. For example, you can group a sales report by region so that regional personnel can easily locate the data for their region.

A grouped report automatically sorts the table by the data in the grouped field. You can nest groups inside one another, up to ten levels. For example, in the regional report, you may want to group by state within each region.

When you group data, you can display a group header and footer that can be used to display information at the top or bottom of each group. For example, you can add a

calculated control in a group footer that calculates summary information, such as a total or an average for each group. Additionally, you can control page breaks by specifying how group heading and records should be kept together.

> You can also use the Sorting and Grouping dialog box to specify multiple fields on which to sort. You do not have to display group headers or footers for all sort fields. For example, you can group an order form by order number and sort within the group by order date.

Procedures

1. Open the desired report in **Design** view.
2. Click the **Sorting and Grouping** button  on the **Report Design** toolbar.
3. Select the **Field/Expression** list.
4. Select the desired field.
5. Select the corresponding **Sort Order** field.
6. Select the **Sort Order** list.
7. Select the desired sort order.
8. Select the **Group Header** property.
9. Select the **Group Header** list.
10. Select the desired option.
11. Select the **Group Footer** property.
12. Select the **Group Footer** list.
13. Select the desired option.
14. Select the **Group On** property.
15. Select the **Group On** list.
16. Select the desired option.
17. Click the **Close** button.

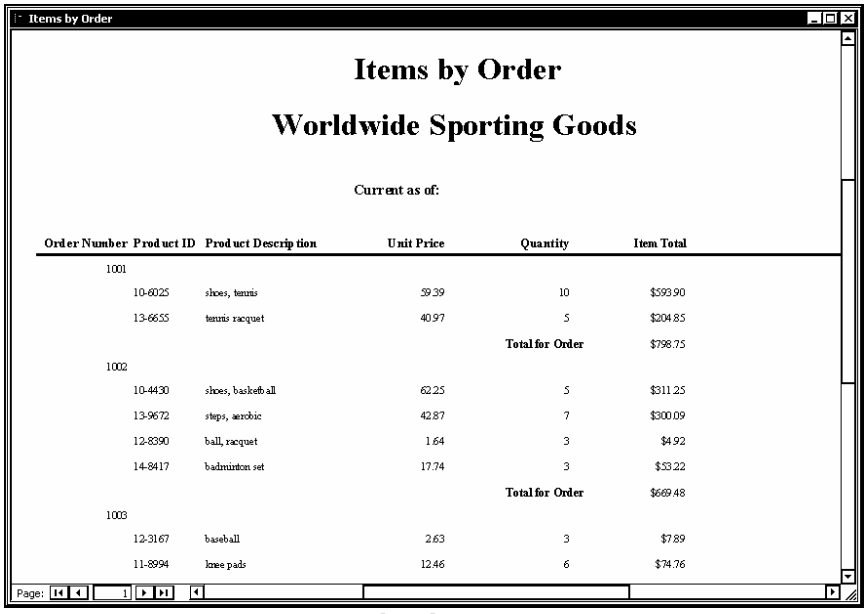
CREATING GROUP HEADERS AND FOOTERS

Discussion

You can create a header and footer for each group that appears in a grouped report.

The header displays at the top of each group. Often, the group header contains the control for the grouped field, meaning that the common value on which the grouping is based, such as the region, appears only once at the top of each group.

A group footer is often used to display summary information about the group, such as total or average sales. You create a group summary by inserting a calculated control into the group footer and create an expression using an aggregate function such as **Sum** to display group totals or **Avg** to display group averages. Group aggregate functions can also be placed in a group header.


Items by Order

Items by Order

Worldwide Sporting Goods

Current as of:

Order Number	Product ID	Product Description	Unit Price	Quantity	Item Total
1001					
	10-6025	shoes, tennis	59.39	10	$593.90
	13-6655	tennis racquet	40.97	5	$204.85
				Total for Order	$798.75
1002					
	10-4430	shoes, basketball	62.25	5	$311.25
	13-9672	steps, aerobic	42.87	7	$300.09
	12-8390	ball, racquet	1.64	3	$4.92
	14-8417	badminton set	17.74	3	$53.22
				Total for Order	$669.48
1003					
	12-3167	baseball	2.63	3	$7.89
	11-8994	knee pads	12.46	6	$74.76

Page: 1

A group header in a report

You can also create an expression using the Expression Builder. You can open the Expression Builder by clicking the **Expression Builder** button to the right of the **Running Sum** property on the **Data** page in the property sheet. You can also use the **Build** button on the **Report Design** toolbar to open the Expression Builder.

Procedures

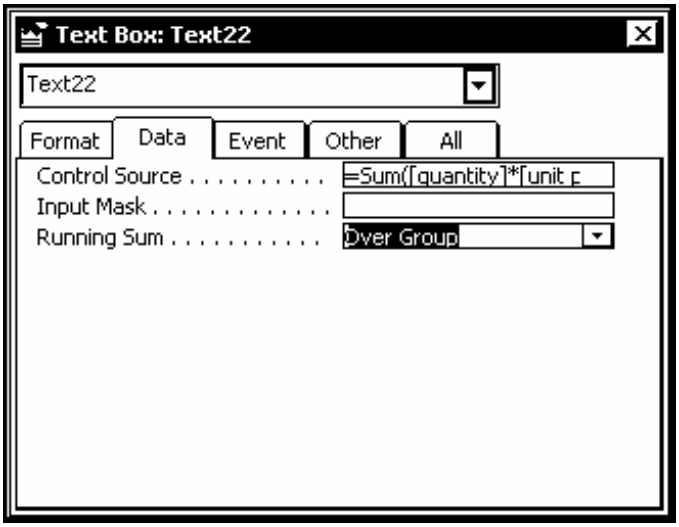
1. Open the desired report in **Design** view.
2. Select the control you want to insert into the group header.
3. Drag the control to the corresponding group header section.
4. To create a group summary, click the **Text Box** tool in the toolbox.
5. Click in the location for the control.
6. Type the desired summary expression for the calculated control.
7. Press **[Enter]**.
8. Select the label box paired with the control.
9. Double-click the text in the label box.
10. Type the desired label text.
11. Press **[Enter]**.

CREATING A RUNNING SUMMARY

Discussion

In a grouped report, you can create a running summary of the items in the group. A running summary provides a cumulative total for all the groups above.

Often, the running summary is positioned in the group footer, which appears at the bottom of every group. For example, in a sales report grouped by region, you can create a calculated field that displays information in a running summary. After each group, a cumulative total for all the groups above appears.



Using an expression to create a running summary

Procedures

1. Open the desired report in **Design** view.
2. Create the group summary calculated control expression.
3. Select the calculated control.
4. Click the **Properties** button on the **Report Design** toolbar.
5. Select the **Data** tab.
6. Select the **Running Sum** property.
7. Select the **Running Sum** list.
8. Select the desired option.
9. Click the **Close** button to close the property sheet.

INSERTING A DATE/TIME CONTROL

Discussion

You can insert controls that display the current date and/or time in a report. Each control updates automatically every time the report is previewed or printed. By default, a date/time control is inserted into the **Report Header** section. However, you

can easily move it to another section. For example, you could place the date in the **Report Footer** section so that it would be readily visible on the last page of the report.

	The Date and Time dialog box inserts a control that uses the **=Date()** function to display the current date.

	If you create a report with the Report Wizard, Access automatically inserts a date/time control in the **Page Footer** section with the **=Now()** function, formatted to show the date only in **Long Date** format.

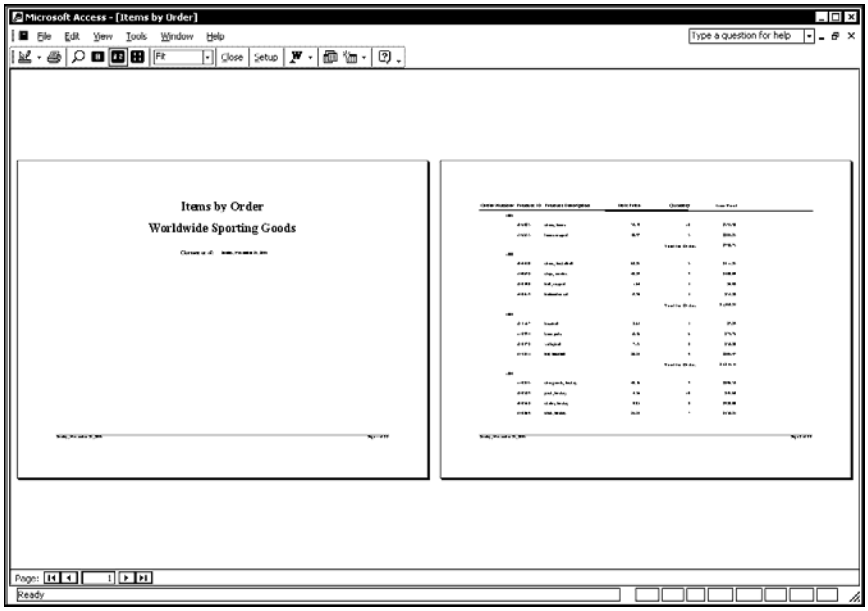
Procedures

1. Open the desired report in **Design** view.
2. Select the **Insert** menu.
3. Select the **Date and Time** command.
4. Select or deselect options as desired.
5. Select **OK**.
6. Drag the date control to the desired position in the report.

INSERTING A PAGE BREAK

Discussion

When you print a report, Access automatically starts a new page when necessary. You can control the pagination by inserting a page break. You can insert a page break in the **Group Footer** section to place each group on its own page, or you can insert a page break in the **Report Header** section to create a separate title page for a report.



Previewing a page break

Procedures

1. Open the desired report in **Design** view.
2. Display the toolbox.
3. Click the **Page Break** tool  in the toolbox.
4. Click in the location for the page break.

CHANGING THE REPORT MARGINS

Discussion

By default, the margins for a report are one inch on all sides. You can control the margin settings to fit more or less data on a page as necessary. The margins you set for a report are saved and applied each time you print the report.

Procedures

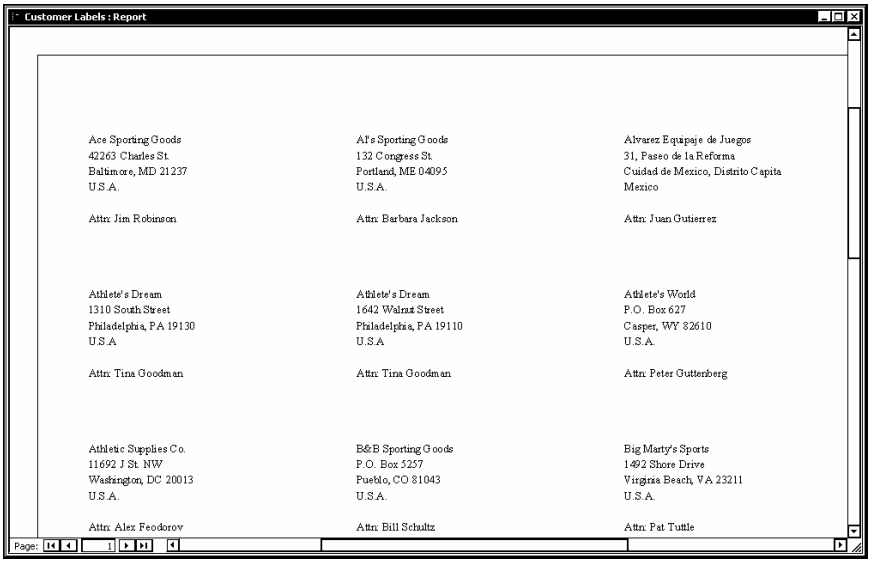
1. Open the desired report in **Design** view.
2. Select the **File** menu.
3. Select the **Page Setup** command.
4. Select the text in the **Top** box.
5. Type the new measurement for the top margin.
6. Select the text in the **Bottom** box.
7. Type the new measurement for the bottom margin.
8. Select the text in the **Left** box.
9. Type the new measurement for the left margin.
10. Select the text in the **Right** box.
11. Type the new measurement for the right margin.
12. Select **OK**.

USING THE LABEL WIZARD

Discussion

Access has a Label Wizard that guides you through the process of creating a report that prints labels. You can choose from many standard types of labels, or you can create your own custom label definition.

The Label Wizard provides a sample label into which you insert the fields you want to print in their desired order. You can also type additional text that you want to appear on each label. For example, if you are creating an address label, you may want to include the text **Attn:** before the name of the addressee.



Labels created using the Label Wizard

Procedures

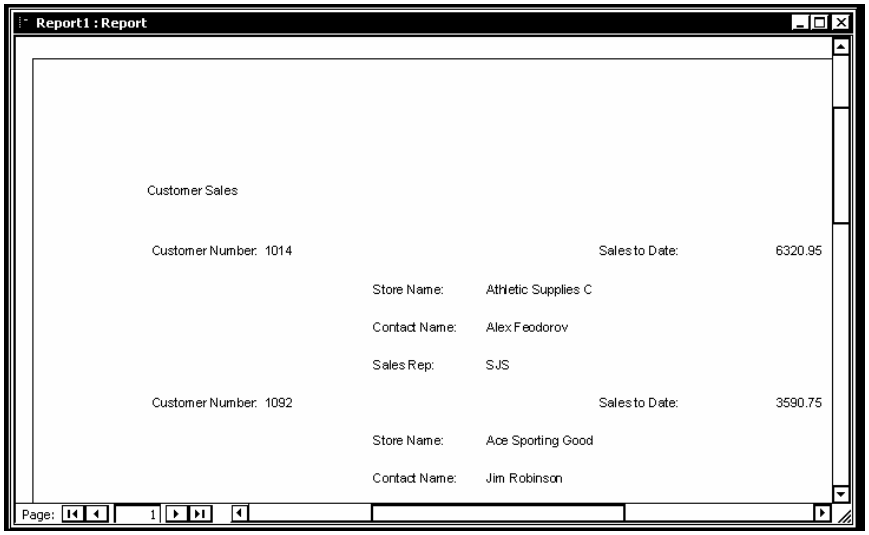
1. Display the **Reports** object list in the Database window.
2. Select the **New** button on the Database window toolbar.
3. Select **Label Wizard**.
4. Select the **Choose the table or query where the object's data comes from** list.
5. Select the desired table or query.
6. Select **OK**.
7. Select the desired unit of measurement under **Unit of Measure**.
8. Select the **Filter by manufacturer** list.
9. Select the desired label manufacturers.
10. Select the desired label type under **Product number** in the **What label size would you like?** list box.
11. Select **Next**.
12. Select the desired font and color options.
13. Continue selecting the desired font and color options.
14. Select **Next**.
15. Select the field for the first row from the **Available fields** list box.

16. Press **[Enter]**.
17. Continue adding fields from the **Available fields** list box, as appropriate.
18. Select **Next**.
19. Add the field by which you want to sort from the **Available fields** list box.
20. Select **Next**.
21. Type a name for the report.
22. Select **Finish**.

CREATING A REPORT WITHOUT USING A WIZARD

Discussion

You can create a report from scratch in **Design** view. For example, if a report does not currently exist for a particular table or query, you can create one using the fields in the selected table or query. You can then determine the design of the report by adding fields, control, and options.



A report created without using a wizard

Procedures

1. Display the **Reports** object list.
2. Select the  **New** button on the Database window toolbar.
3. Select **Design View**.
4. Select the **Choose the table or query where the object's data comes from** list.
5. Select the table or query on which you want to base the report.
6. Select **OK**.
7. Add items to the report as desired.

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USING ACCESS DATA IN A WORD MERGE

★Discussion

If you have your names and addresses stored in an Access table, it is possible to use them to generate a form letter in Word.

Alternatively, you can use the **Merge It with Microsoft Word** button on the toolbar.

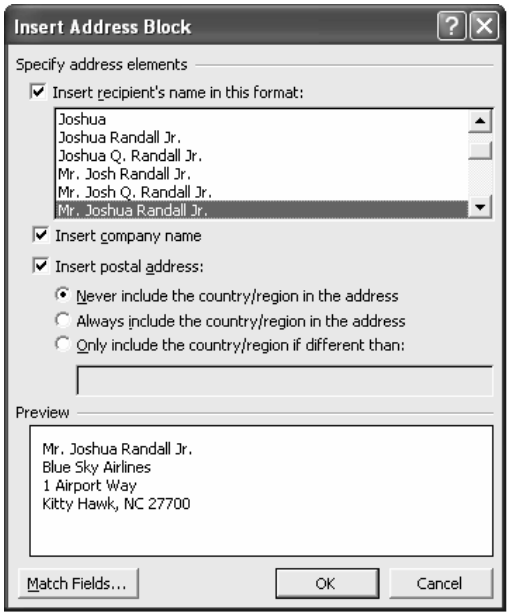
Procedures

1. Open the desired Access database.
2. Click on the table or query you want to use in your merge letter.
3. Select **Tools**.
4. Select **Office Links**.
5. Select **Merge it with Microsoft Word**.
6. Select from the options – use an existing Word document or create a new one.
7. Select the desired Document Type. For our purposes here, select Form Letters.
8. Click on **Next: Starting Document**.
9. Select the *Starting Document* option: **Use the Current Document**
10. Click on **Next: Select Recipients** to confirm the data source.
11. Click **Next: Write your letter.**
12. If you have not already done so, in the main document, type the text that you want to appear in every form letter.
13. Use one of the following methods to insert merge fields where you want to merge names, addresses, and other data from the data source.

Address Block with Name, Address, and Other Information

a. Click **Address block**.
b. In the *Insert Address Block* dialog box, select the address elements you want to include and the formats you want.
c. Click **OK**.
d. If the *Match Fields* dialog box appears, Microsoft Word may have been unable to find some of the information it needs for the address block.

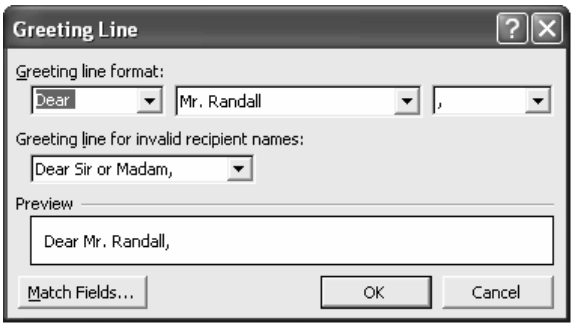
   Click the arrow next to *(not available)*, and then select the field from your data



source that corresponds to the field required for the mail merge.

Greeting Line

a. Click **Greeting line**.
b. Select the greeting line format, which includes the salutation, name format, and following punctuation.



c. Select the text you want to appear in cases where Microsoft Word can't interpret the recipient name, for example, when the data source contains no first or last name for a recipient, but only a company name.
d. Click **OK**.
e. If the *Match Fields* dialog box appears, Microsoft Word may have been unable to find some of the information it needs for the address block.

   Click the arrow next to *(not available)*, and then select the field from your data source that corresponds to the field required for the mail merge.

Other Fields of Information

a. Click **More items**.
b. Do one of the following:

   - To select from address fields that will automatically map to corresponding fields in your data source, even if the data source's fields don't have the same name as your fields, click **Address Fields**.

   - To select from fields that always take data directly from a column in a database, click **Database Fields**.

     - In the *Fields* box, click the field you want.

     - Click **Insert**
     - Click **Close**.

c. If the *Match Fields* dialog box appears, Microsoft Word may have been unable to find some of the information it needs for the address block.

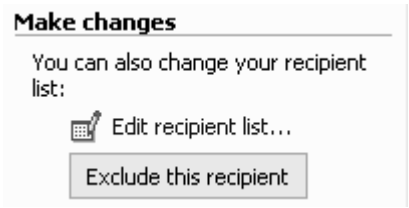
   Click the arrow next to (not available), and then select the field from your data source that corresponds to the field required for the mail merge.

14. Format the letter in the fashion you would like. To format any of the merged fields, you must format in the main document. Formatting in the data source is not retained when you merge the data into the document.

    - Be sure that you include the surrounding merge field characters («« ») when you select the field you want to format.

15. After you've completed the main document and inserted all of the merge fields, save the document.
16. When you have entered all the merge fields, click on Next: Preview Your Letters.
17. Check that the fields have been properly place. If you need to make any changes, return to the previous step.
18. To preview the items in order, click the arrow buttons.
19. To locate and preview a specific item, click **Find a recipient**, and then enter the search criteria in the **Find Entry** dialog box.

20. If necessary, fine-tune the recipient list.



    - To exclude a particular recipient from the merge, click **Exclude this recipient** while looking at the recipient's letter.
    - To change the list of recipients, click **Edit recipient list**, and then make your changes in the Mail Merge Recipients dialog box.

21. Click on **Next: Complete the Merge**.
22. Complete the merge by selecting one of the following:

Personalize Individual Letters

To personalize individual documents, you actually complete the merge, and then edit the information you want in the resulting merged document.

a. Click **Edit individual letters**.
b. In the *Merge to New Document* dialog box, select the records you want to merge.

c. Click **OK**.

Microsoft Word creates and opens a new merged document. Your main document also remains open, and you can switch back to it if you want to make a change to all the documents.

d. Scroll to the information you want to edit, and make your changes.
e. Print or save the document just as you would any regular document.

Print the Letters

Do one of the following:

If you personalized the items and the merged document is active

1. Select **File … Print**.
2. Select the options you want.
3. Click on **OK**.

If you want to print directly from the Mail Merge Wizard

1. Click **Print**.
2. In the *Merge to Printer* dialog box, select one of the following:
   - Click **All** to print all the documents.
   - Click **Current record** to print the document that you see in the document window.
   - Click **From**, and type in the record numbers in the From and To boxes to print a range of documents.
3. Click on **OK**.
4. In the Print dialog box, select the options you want.

Save the Merged Letters for Later Use

If you want to edit merged letters or save them for later use, you can collect them into a single document.

1. Click **Edit individual letters**.
2. In the *Merge to a New Document* dialog box, do one of the following,
   - Click **All** to print all the documents.
   - Click **Current record** to print the document that you see in the document window.
   - Click **From**, and type in the record numbers in the From and To boxes to print a range of documents.
3. Click on **OK**.

Microsoft Word opens a single new document that contains all the individual letters. You can then save the document for later use, just as you would any regular document.

USING ACCESS DATA TO CREATE A WORKSHEET

★Discussion

You may want to create a worksheet in an existing Excel workbook using Access data. You can easily send a table or query from the source file in Access to the destination file in Excel. The exported data appears automatically on the last worksheet in the workbook and the tab reflects the name of the Access table and query. Once the data is exported to Excel, it becomes part of the destination file and can only be edited using Excel features.

When you export Access data to Excel, the destination file to which you are exporting needs to be closed or you cannot export the data. Once the data is exported, you can open the destination file in Excel to view and edit the Access information.

Procedures

1. Close the Excel file to which you want to send the Access data.
2. Open Access.
3. Open the Access database containing the desired data.
4. Select the **Tables** or **Queries** tab.
5. Click on the desired table or query.
6. Select the **File** menu.
7. Select the **Export** command.
8. Select the **Save as type** list and change to **Microsoft Excel 97-2002 (*.xls)**.
9. Locate the desired Excel file to which you want to send the table or query.
10. Click on **Export**.

USING ACCESS DATA TO CREATE A WORKBOOK

★Discussion

You may have Access data you want to use to create a new Excel workbook. Rather than copy and paste the information, you can send it to Excel to create a new workbook. Once the data is sent to Excel, you can edit it using features of the source application, just as you would edit a workbook created in Excel.

- You can also access the **Analyze It with MS Excel** command from the **OfficeLinks** submenu on the **Tools** menu.

Procedures

1. Open the desired Access database.
2. Select the **Table** or **Queries** tab.
3. Select the desired data.
4. Click the arrow on the **OfficeLinks** button. 
5. Select the **Analyze It with MS Excel** command.

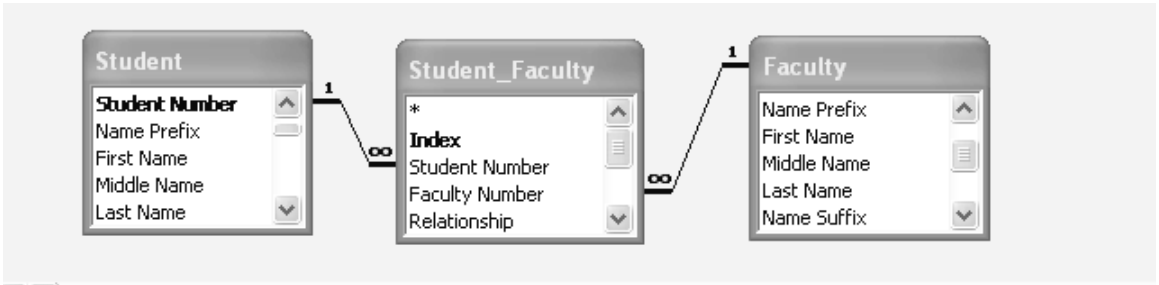
JOIN TYPES IN A QUERY

When you add more than one table or query to a query, you need to make sure their field lists are joined to each other with a join line so that Microsoft Access knows how to connect the information. An association between a field in one table or query and a field of the same data type in another table or query is defined as a **JOIN**. A join tells Microsoft Access how data in each of the tables or queries is related to the other tables or queries.

If you previously created relationships between tables in the Relationships window, Access automatically displays join lines when you add related tables in query Design view. If referential integrity is enforced, Access also displays a "1" above the join line to show which table is on the "one" side of a one-to-many relationship and an infinity symbol (∞) to show which table is on the "many" side.

If relationships were not previously defined and if one of the fields is a primary key, Access automatically creates a join between fields with the same names and data types. The chances are good that this will be the correct join but you should always check. There will not be a “1” or infinity sign displayed when this happens.

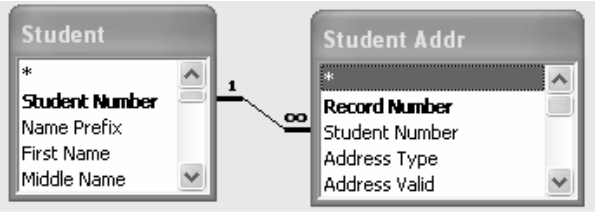
If the tables you add to the query don't include any fields that can be joined, you will need to add one or more extra tables or queries to serve as a link between the tables with the data you need. For example, with the Graduate Student database, you would need to add the Student_Faculty table to be able to select a list of graduate student names with their supervisor names.

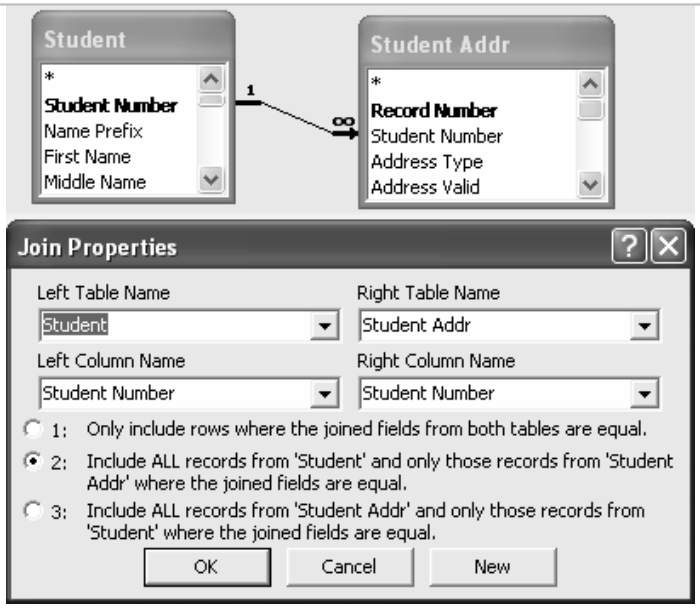


Field:	First Name	Last Name	Relationship	First Name	Last Name
Table:	Student	Student	Student_Faculty	Faculty	Faculty
Sort:					
Show:	☑	☑	☑	☑	☑
Criteria:			"supervisor"		
or:					

If you add tables to a query and there no join lines appear, the resulting dataset will include every permutation of records between the two tables as Access doesn't know which records in the first table are associated with which records in the second table. If one table had 50 records in it and the other had 10, the query's results will contain 50x10 or 500 records. These queries usually take a long time to run and do not produce meaningful results.

You can also create joins manually. There are three Join Types to choose from.

Join Type	Description
Inner Join (Default)	A join in which records from two tables are combined and added to a dataset only if the values of the joined fields match and meet any conditions specified.
	Example: When looking for student addresses, the only records which would be displayed would be records where there was a matching student number in the both tables. You would not see students who did not take courses, nor would you see courses for which there was no current student.
	
	If there are records in the Master table for which there are no detail records OR if there are records in the Detail table for which there is no record in the Master table, those records will not appear in the resulting dataset.
Outer Join	With an outer join, Access retrieves records from one of the tables whether a matching record is found in the other table or not.
Left Outer Join	A left outer join includes all of the records from the first (left) of two tables, even if there are no matching values for records in the second (right) table. A left outer join is indicated by a join line arrow pointing from left to right.
	Example: When looking for addresses, all records would be displayed from the Student table (on the left) whether or not there was a matching record in the Student Addr table (on the right). You would not see courses for which there was no current student.

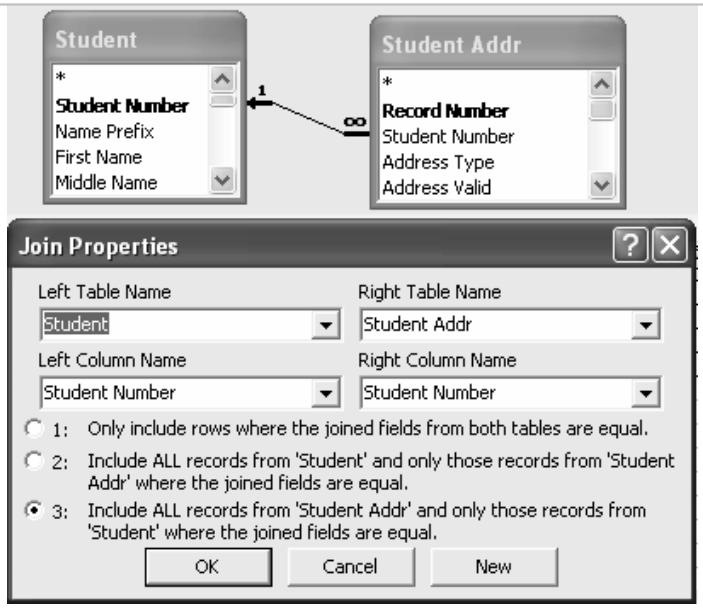


Records from the table on the right will only be included if there is a match in the joined field. Therefore, there may be some records in the table on the right which are not displayed.

Right Outer Join

A right outer join includes all of the records from the second (right) of two tables, even if there are no matching values for records in the first (left) table. A right outer join is indicated by a join line arrow pointing from right to left.

Example: When looking for addresses, all records would be displayed from the Student Addr table (on the right) whether or not there was a matching records in the Student table (on the left). You would not see students for which there was no matching student number in the Student Addr table.



Records from the table on the left will only be included if there is a match in the joined field. Therefore, there may be some records in the Student table which are not displayed.

DEFINE JOIN TYPES

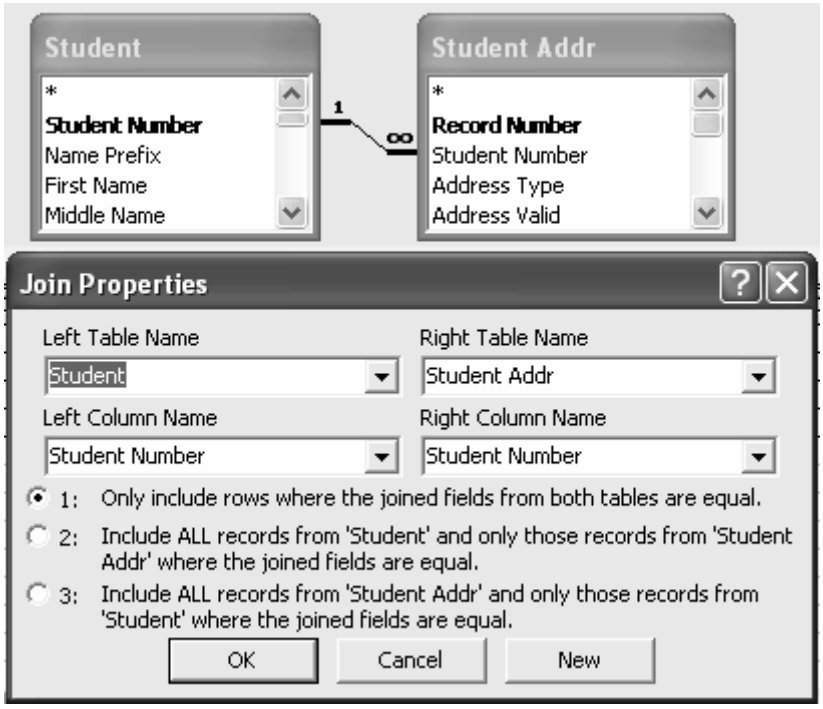
Defining the join type for a relationship in the Relationships window doesn't affect the relationship itself; it sets the kind of join that will be used by default when creating queries based on the related tables. You can always override the default join type later when defining a query. By default, Microsoft Access creates an inner join between related tables.

1. Create the relational joins that you need between the tables by dragging the common field or fields from one table to another. Just as when you define relationships, you are connecting the primary key of one table (the field(s) shown in bold in the Table Lists) to a field of another table in the query.

   If the join lines are overlapping or crossing tables, you should just reposition the tables by dragging them to a better location in the window.

2. In the Query-By-Example screen, double-click on the line joining the field lists of the tables in the query.

3. Click the desired join type.
   Option 1 defines an inner join. This is the default.
   Option 2 defines a left outer join.
   Option 3 defines a right outer join.



4. Click on **OK**.

DELETING JOINS AND TABLES

If Access adds a join which you don't want, you can delete the join.

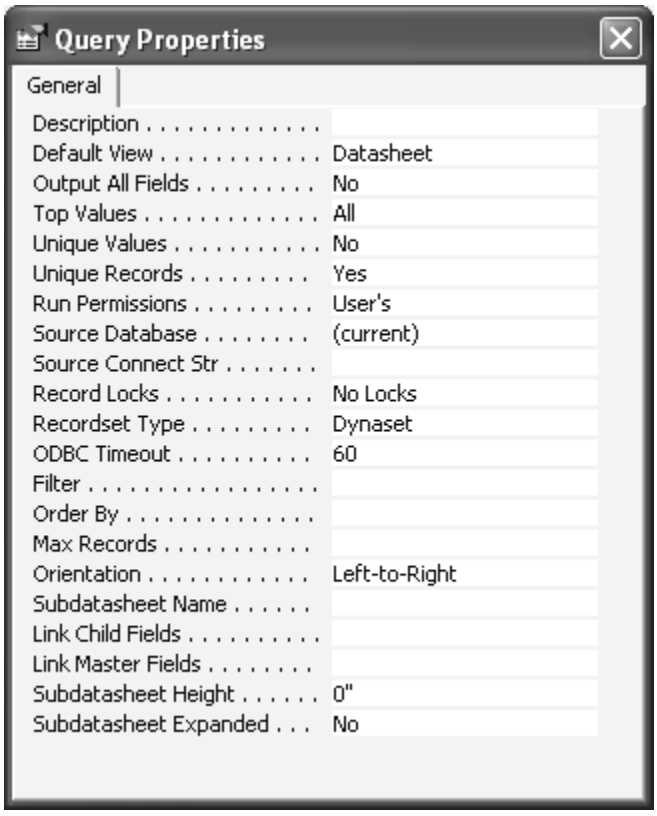
1. Click on the join line to select it – the line will appear bolded.

2. Press Delete.

Once the join is removed, you can remove the tables from the QBE grid as well. Click anywhere in the table's Field List and press Delete.

SETTING QUERY PROPERTIES

Each query has property settings that you can change to alter the way the query behaves and how the query results look.



To display the Query Properties dialog box shown above, you can do one of the following:

- Select **View … Properties** from the menu bar in the Query window
- Point at the top half of the query window and select Properties from the shortcut menu
- Click in the top half of the query window and click on the Properties button on the toolbar
- Double-click in the top half of the query window

You can also set properties for the individual fields in the query. Slightly different options are available for fields. To see the Properties dialog box for a field, click in the field you want and use the shortcut menu.

★ *Description*

This works best with fields, rather than the general query. In the Description property, type the description you want the status bar to display for that field in the query's results. Users will see the new description in the status bar when they click in the field in query Datasheet view.

★ *Output All Fields*

Use to show all fields in the query's underlying data. This is an easy way to show all fields in the query while only moving those you are setting criteria for or sorting on down to the query grid.

Yes	Displays all the fields in the underlying tables and in the field list of a form or report.
No	(Default) Displays only fields having the Show box selected in the query design grid.

★ *Top Values*
Use to return a specified number of records or percentage of records that meet the criteria specified. For example, you might want to return the bottom 5 values or the top 10% of values in a field.

Use together with sorted fields. The field you want to display top values for should be the leftmost field that has the Sort box clicked in the query design grid. An Ascending sort returns the bottommost records, and a Descending sort returns the topmost records. If you specify that a specific number of records be returned, all records with values that match the value in the last record are also returned.

★ *Unique Values*
Use when you want to omit records that contain duplicate data in the fields displayed in Datasheet view. For example, if a query's output includes more than one field, the **combination of values from all fields must be unique** for a given record to be included in the results. This property uses all the fields which have been moved to the query grid.

Yes	Displays only the records in which the values of all fields displayed in Datasheet view are unique.
No	(Default) Displays all records.

★ *Unique Records*
Use to specify whether to return only unique records based on all fields in the underlying data source, not just those fields present in the query itself.

Yes	(Default) Doesn't return duplicate records.
No	Returns duplicate records

★ *Run Permissions*
Used in a multi-user environment with a secure workgroup to override the existing user permissions.

Owner's	All users are allowed the owner's permissions to view or run the query.
User's (Default)	Users have only their own permissions to view or run the query.

★ *Records Locks*
Use to set what happens when two users try to edit the same record at the same time. When you edit a record, Microsoft Access can automatically lock that record to prevent other users from changing it before you are finished. You can use this property to specify whether records in a query (typically an action query in a multi-user database) are locked while the query is run.

No Locks (Default)	In queries, records aren't locked while the query is run.
All Records	All records in the underlying table or query are locked while the query is run. Although users can read the records, no one can edit, add, or delete any records until the query has finished running.
Edited Record (Forms and queries only)	A page of records is locked as soon as any user starts editing any field in the record and stays locked until the user moves to another record. Consequently, a record can be edited by only one person at a time. This is also called "pessimistic" locking.

SET PROPERTIES FOR A QUERY, ITS FIELDS, OR ITS FIELD LISTS

You can set properties for queries, field lists in a query, and fields you add to the design grid in a query.

1. In query Design view, select the field, field list, or query.
    - To select a field, click the cell in the Field row.
    - To select a field list, click anywhere in the list.
    - To select the whole query, click anywhere in query Design view outside the design grid and the field lists.
2. Click on the toolbar to display the property sheet for the selected object.
3. In the property sheet, click the property you want to set, and then do one of the following:
    - If an arrow appears in the property box, click the arrow and then click a value from the list.
    - Type a setting or expression in the property box.
4. If a Build button appears next to the property box, click it to display a builder.
5. If you need more space to enter or edit a property setting, press SHIFT+F2 to open the Zoom box.

Tip: When you click a property in the property sheet, a short description of the property appears in the status bar. For more information on the property and its settings, click the property and then press F1.