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EXERCISE PACK

Access 2000 – Foundation/Intermediate

PLEASE NOTE:

- **Where working through these exercises you will need additional information:**

1. In the first case refer to your training manual
2. In you cannot find the information you require, try using the on-line Help available within the program
3. If you still have a problem, consult your tutor.
   Remember that your tutor is there to help YOU. Do not be afraid to ask questions!

Contents

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EXERCISES -
Access - Concepts, Terminology and Usage

Starting Microsoft Access

- Switch on your PC and start the Access program.
- Open the **Northwind** database. You may need to either ask your tutor for the location of this database or use the **Find** facility to locate the file. The file name for this database is **NORTHWIND.MDB**. By default you should find it in the following folder (directory) location:

  C:\Program Files\Microsoft Office\Office\Samples\Northwind.MDB

The Access Application Window

- Examine the Access application window and see how many of the on-screen components you can identify.
- Examine the Access toolbars and use the on-line Help available to identify the function of as many of the icons as possible. Experiment a bit!

Closing a Database

- Close the Northwind database, but leave the Access program still running.

Opening a Table

- Re-open the **Northwind** database.
- Click on the **Tables** icon.
- Experiment with opening the different tables contained within the database, i.e. **Categories, Customers, Employees, Order Details, Orders, Products, Shippers and Suppliers.**

The Table Window

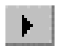
- Examine the toolbar icons and other features of the table window.

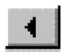
Exploring the Table

- Experiment with moving from field to field within a table using the following shortcuts:

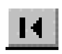
  Tab - Goes to the next field
  Shift+Tab - Goes to the previous field
  Home - Goes to the first field of the current record
  End - Goes to the last field of the current record
  ↓ - Goes to the next record
  ↑ - Goes to the previous record
  Ctrl+Home - Goes to the first field of the first record
  Ctrl+End – Goes to the last field of the last record
  Page Up - Scrolls up one page
  Page Down - Scrolls down one page

- Experiment with navigating through the database using the scroll bar and mouse.

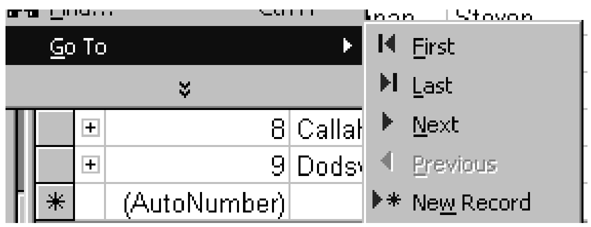
 to the next record

 to the previous record

 to the last record

 to the first record

- Experiment with navigating through the database using **Go To** from the **Edit** menu, as illustrated below.



- Experiment with moving to a specific record using the keyboard. Press **F5** to highlight the record number on the scroll bar. Type the number of the record you want and press the **Enter** key.

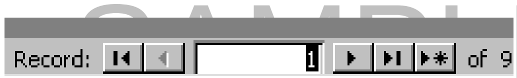


Table Design View

- Switch to **Design** View, by clicking on the **Design View** icon on the toolbar. Examine the features displayed in this view.
- Switch to **Datasheet** View, by clicking on the **Datasheet View** icon on the toolbar.
- Close all tables that you have opened, but leave the database open (do not save any changes that you may have made).

Introducing Queries

- Click on the **Query** tab within the Northwind database.
- Experiment with opening queries, such as **Alphabetical List of Products**, **Invoices** etc
- Switch to **Design** View and examine the way the information is presented.
- Switch back to your original view.
- Close all queries that you have opened, but leave the database open (do not save any changes that you may have made).

Introducing Forms

- Click on the **Forms** icon within the Northwind database and experiment with opening and examining forms.

- Switch to **Design** View and examine the way the information is presented.
- Switch back to your original view.
- Close all forms that you have opened, but leave the database open (do not save any changes that you may have made).

Introducing Reports

- Click on the **Reports** icon within the Northwind database and experiment with opening reports.
- Switch to **Design** View and examine the way the information is presented
- Switch back to your original view.
- Close all reports that you have opened (do not save any changes that you may have made).

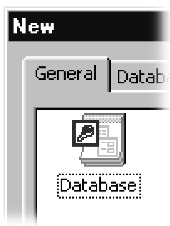
Finishing Up

- Close all open windows, without saving any changes that you have made.

EXERCISES - Database Design and Table Creation

Creating a Database

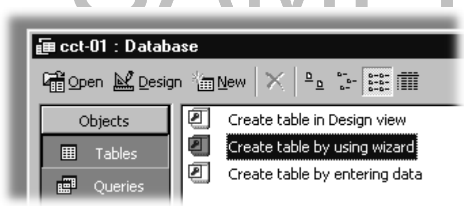
- Click on the **File** drop down menu and select **New**. Create a new database (using the **Database** template).



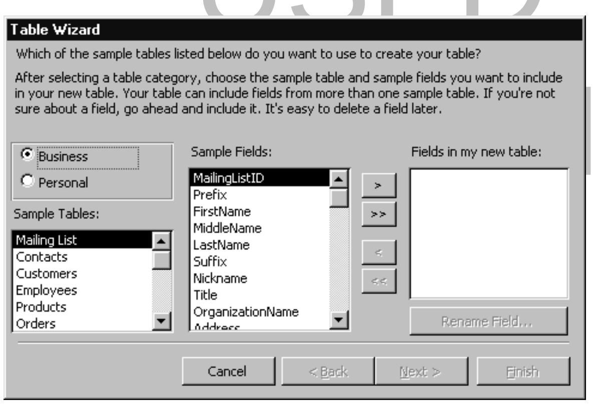
- Save the new database as **CCT-01**. This database will be completely empty. It will not contain any data.

Using the Table Wizard to Create a Table

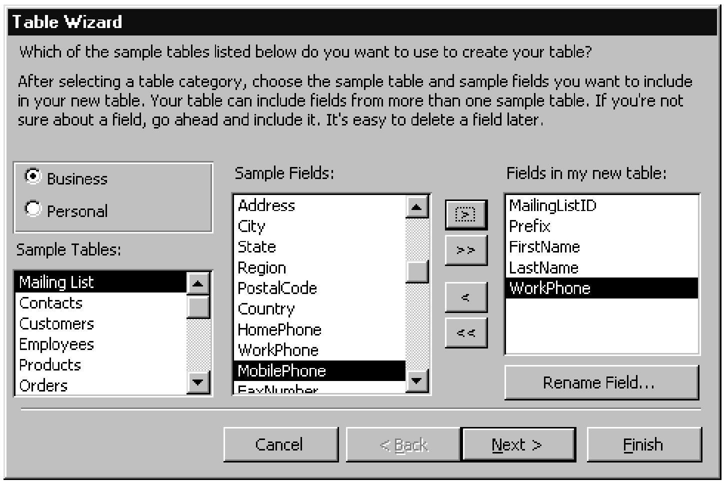
- Double click on **Create table by using wizard**.



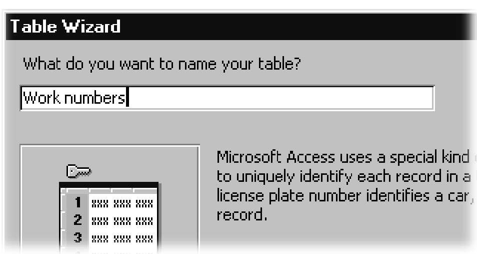
- This will display the following screen.



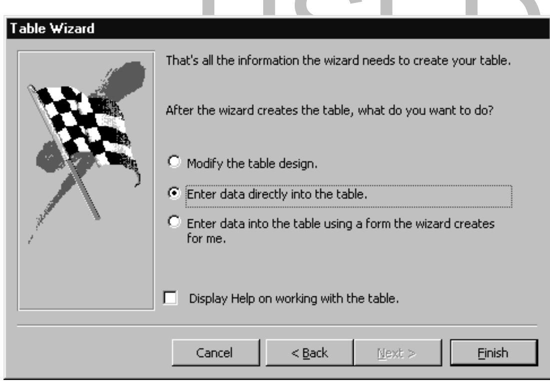
- Ensure that the **Business** option is selected (NOT personal) and add the following fields by clicking on the fields in the **Sample Fields** section and then clicking on the **Add** arrow.



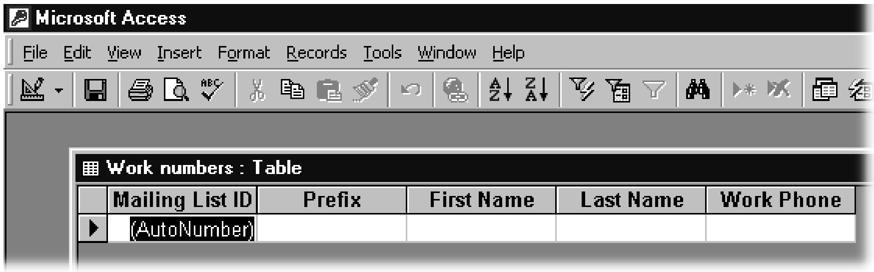
- When you have added the fields as illustrated above, click on the **Next** button.
- Give your table a name, in this case **Work numbers**, as illustrated.



- Click on the **Next** button and you will see the following screen.



- Click on the **Finish** button, and you will see the following.

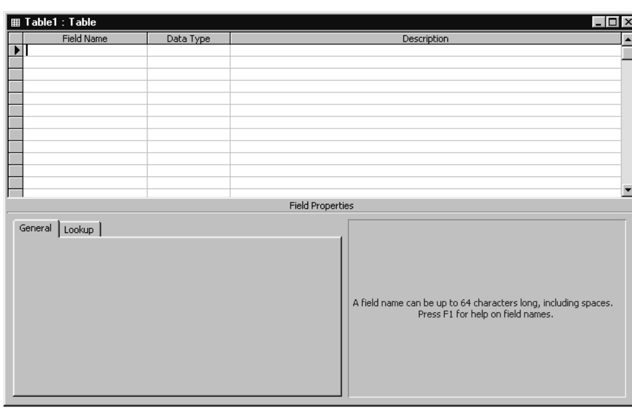


- Enter some sample data, i.e. in the **Prefix** field enter **Mr**, then press the **Tab** key to jump to the next field and in the **First Name** field enter **David**, and so on.
- Enter data for 5 records using different names and phone numbers.
- Close the table.

Creating a table without using the Table Wizard

- In the **Database Window**, click the **Table** icon. Click on the **New** icon. In the **New Table** dialog box, select **Design View** and then click on the **OK** button.

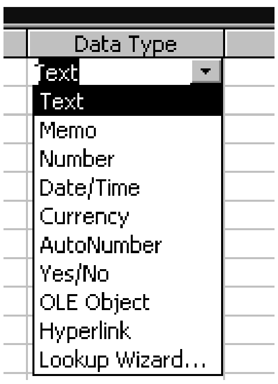
- The Table will be displayed in Design view, as illustrated.



Adding a Field Name: Enter the name of the required field into the empty cell immediately below the Field Name Header.

For instance you could add a field name called **First Name**.
Press the **Tab** key to move to the next cell.

Setting the data type: The next cell is called Data Type. This allows you to control what type of data is to be entered into the field. Click on the **down arrow** to display a list of available options.

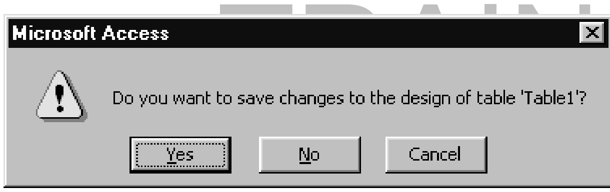


If for instance you select **Number**, then only numeric data may be added. If you select **Text**, then only text may be entered, and so on. Press the **Tab** key to move to the next cell.

Adding field description: This is an optional field property that allows you to explain the function of the field to someone who will later be using the database table. Later when a user clicks within a field that contains a description, then this description will be displayed within the Status Bar.

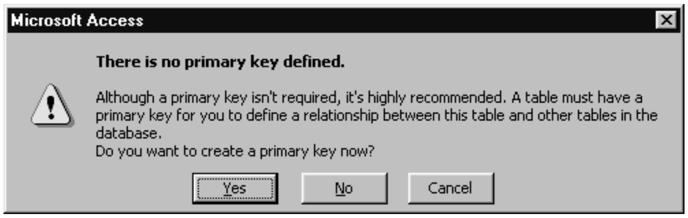
Adding more fields to a new database table: Press the **Tab** key and you will be able to add further field names, properties and descriptions, as required.

Saving the new table: Click on the **Close** icon at the top-right or the table design window and when you see the dialog asking if you wish to save you changes click on the **Yes** button.



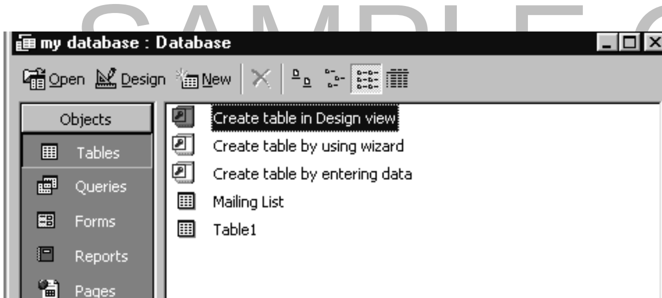
- If you click on **Yes**, you will then be asked to supply a table name.

- Enter the name required, and then click on the **OK** button.
- The system will then offer to supply a primary key.



- Click on the **Yes** button to create a primary key now. If you click on Yes, Access will add another field to your table: a counter field which will act as a unique id for each record in the table. This can be useful but it is normally better practice to decide which existing field or combination of fields makes a record unique and specify the primary key yourself before saving the table design.

  You will then see the table stored as an item within the **Tables** tab of your database (in the example illustrated we keep the default name of **Table1**).



Field Properties

- Experiment with using field properties, and also use the on-line Help to learn more about the following properties.

  Field Size - Defines the length of a text field. The range limit of a numeric field - there are five to choose from. Look at the information opposite the **Field Property** section. If you are joining the field to a **Counter** field in a many-to-one relationship, you must choose **Long Integer**.

  Format - Governs the display of dates and numbers. Choose a format from the drop down list.

  Input Mask - Provides a visual mask to guide input. You can use an **Input Mask Wizard** for certain standard formats.

Caption - Appears instead of the field name in column headings, labels on forms headings in reports etc.

Default Value - Is automatically inserted into the field when the record is created. The user can type in another value which replaces the default.

Validation Rule - An expression which governs the way in which data has to be input.

Validation Text - The text that is displayed if the **Validation Rule** is broken.

Required - Data must be entered in this field.

Allow Zero Length - Applies to text and memo fields. It allows a value of space. This is different to a null value which a field has if nothing has been entered.

Indexed - This speeds up searching. If you believe you will make frequent searches on this field, you should index it. The values are No (the default), Yes (Duplicates OK) and Yes (No Duplicates). Primary key fields are automatically assigned as Indexed (No Duplicates).

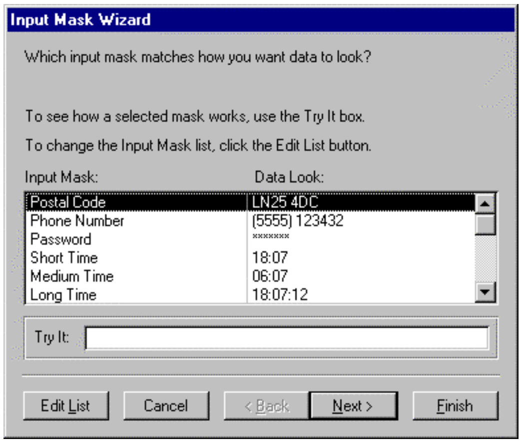
Unicode Compression - This option is available for Text, Memo and Hyperlink data types. When enabled it reduces the amount of storage space require by these data types. In the majority of cases this option should be enabled.

Running the Input Mask Wizard

- Within the Design layout of a table, select the field that you wish to set an Input Mask for. From the properties, select Input Mask, and then click on the three dots, at the end of the Input Mask line, as illustrated below.

- This will display the **Input Mask Wizard** dialog box.

  Note: This wizard may not be installed, consult your tutor for assistance. If you see the following message you will need to install this part of your program.



- Select the required format type and then click on the **Next** button. Follow through the on-screen instructions and when you reach the final screen and then click on the **Finish** button.

  Editing the Input Mask: To edit any of this input masked displayed within the **Input Mask Wizard**, select the **Input Mask** that you wish to edit the format of, and then click on the **Edit List** button. Make any changes as required (you should use the on-line help to achieve this) and then apply and save your changes.

  Details of Input Mask Codes: For a detailed explanation of the Input Mask codes, click on the Access, **Help** drop down menu.

- Select **Contents and Index**.
- Select the **Index** tab.
- Enter **InputMask Property**.
- Click on the **Display** button.

Setting a Primary Key

- To set one field as a primary key, in Table Design View, select the field you want to assign as the primary key. You can either click somewhere in the field or click on the field selector to the left of the field name. Choose **Primary Key** from the **Edit** menu (***OR*** click on the **Primary Key** icon on the standard toolbar).

Finishing Up

- Close all open windows, without saving any changes that you have made.

EXERCISES - Formatting a Table

Setting up

- Open the **Northwind** database and click on the **Table** icon.

Selecting Records

- Open a table within this database.

  To select a record using the record selector: Click in the record selector.

  To select a group of adjacent records: Click on a record selector and drag over the rest of the group ***OR*** click on a record selector and while holding down the **SHIFT** key, click on the last record in the range.

  To select all records in a Datasheet: Click the record selector that forms the intersection of the column and row selectors.

Selecting Fields

- **To select a field by dragging**: Click at one end of the field and with the mouse button depressed, drag to the other end of the field.

  To select a field by pointing: Place the mouse pointer at the beginning of the field. The pointer will change into the shape of a cross. Click the mouse button.

  To select adjacent fields: Select a field. Hold down the **Shift** key and press the arrow keys to select fields in the direction of the arrow.

Selecting Columns

- **To select a column:** Move the mouse pointer over the column selector. It will change to a black, downward pointing arrow. Click the mouse button.

  To select adjacent columns: Click on a column selector and drag the mouse over the other column selectors ***OR*** click on a column selector and whilst holding down the **SHIFT** key, click on the last column selector in the range.

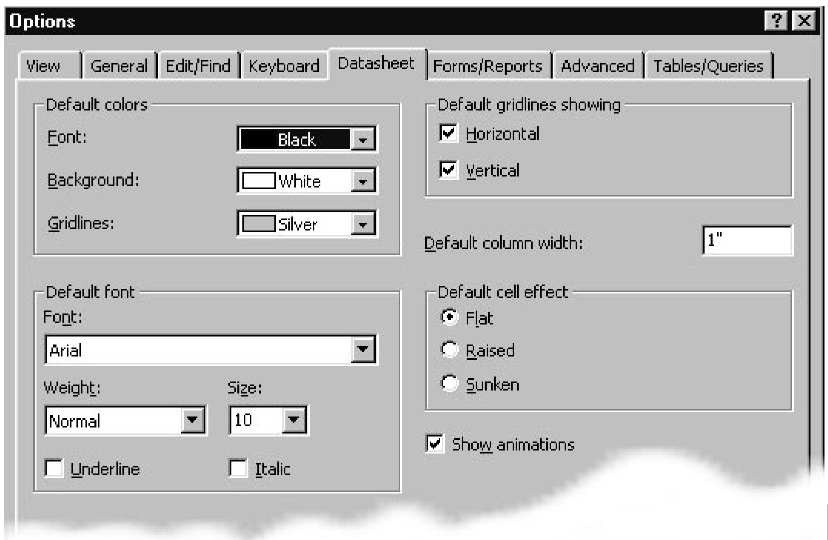
Deleting Records and Fields

- **To delete a record**: Select the record. Press the **DELETE** key. Click on **No** to undo the changes, or click on **Yes** to accept the changes. **Beware:** The **Undo** icon is not available after you have deleted a record.

To delete the contents of a field: Select the field and press the **DELETE** key. To replace the entire contents of a field. Select the field and type in the new value.

Viewing Datasheet Default Values

- Click on the **Tools** drop down command, select **Options** and select the **Datasheet** tab in the dialog box displayed.



Change any options that you wish to alter the defaults for and then click on the **OK** button.

Reordering Columns Within a Table

- Select the column(s) and release the mouse button. Click on the field selector and drag the column(s) to the new location. As you drag the columns a solid bar between columns indicates the current position of the columns being moved.

Re-Ordering Fields in the Table

- Change to **Design View** and select the field you wish to move, by clicking on the **Field Selector** button. Drag and drop the field to its new position (a thick black bar between fields shows the new location). When you release the mouse button, the field is in its new position. Save the table to make changes permanent.

Changing Column Width and Row Height

- **To change the width of a column:** Change to **Datasheet View**. Move the mouse pointer to the line at the right of the field (column heading). It will change to resemble a solid vertical bar intersected by a double headed arrow. Drag the column border to the size you want.

  To change the width of a group of adjacent columns: Select the columns. Drag the edge of the right most field selector to the new size ***OR*** click the right-hand mouse button, select **Column Width** from the drop down menu and enter a new column width.

To change a column to the "best fit": Move the mouse pointer over the line at the right of the field selector. Double click with the mouse button.

To change a group of adjacent columns to "best fit": Select the columns. Click the right-hand mouse button in one of the selected columns. Choose **Column Width** from the pop-up menu. Click on **Best Fit**.

To change the height of a row: Move the mouse pointer over the line separating two record selectors. Drag the row to the new height ***OR*** click the right-hand mouse button, select **Row Height** from the drop down menu and enter a new row height. All rows will change to the new height.

Hiding and Un-hiding Columns

- **To hide a column:** You can hide columns so that only those of interest are visible for a particular view of the Datasheet. Select the column that you wish to hide. Click on the **Format** drop down menu and then select the **Hide Columns** command. The column will then be hidden from view, but the data contained within the column will not be affected!

  To un-hide a column: Click on the **Format** drop down menu and then select the **UnHide Columns** command and a dialog box will be displayed, as illustrated.

In the example illustrated, the **Description** column has been hidden. To un-hide it, select the **Description** field check box and then click on the **Close** button.

Freezing Columns

- **To freeze a column or columns:** Select the column or columns. Choose **Freeze Columns** from the **Format** menu ***OR*** click on the right-hand mouse button in a column and choose **Freeze Columns**.

  To unfreeze all the columns: Choose **Unfreeze All Columns** from the **Format** menu.

Formatting Datasheet Cells

- **To apply Cell Effect formatting:** From the **Format** menu select **Datasheet**. This will display the **Datasheet Formatting** dialog box.

To display or hide gridlines: In the **Gridlines Shown** section of the dialog box, select the required options.

To change the color of the table gridlines: In the **Gridline Color** section of the dialog box, click on the down arrow and select the color required.

To choose Flat, raised or sunken cell effects: In the **Cell Effect** section of the dialog box, select the required option, **Flat**, **Raised** or **Sunken**.

To change the background color of selected cells: In the **Background Color** section of the dialog box, click on the down arrow and select the color required.

Changing Datasheet Fonts

- Choose **Font** from the **Format** menu to display the following dialog box. Select the desired options from each section of the dialog box. Click on the **OK** Button.

Printing - To preview a form or Datasheet

- Choose **Print Preview** from the **File** menu (***OR*** click on the **Print Preview** icon on the toolbar). The first page of the Datasheet or form will be shown. Use the navigation buttons at the bottom left of the window to move between the pages.

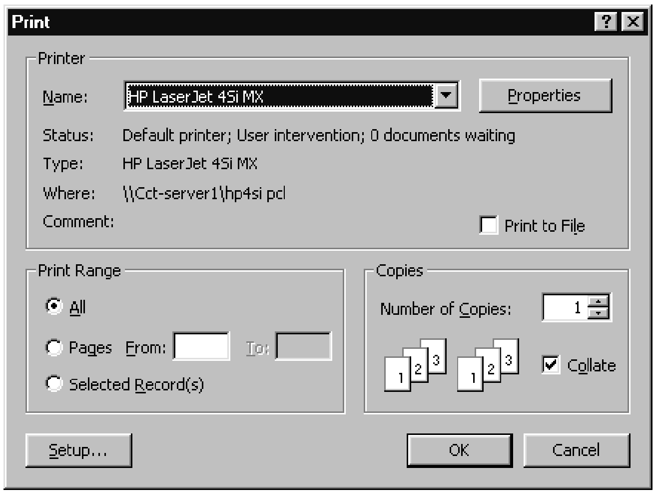
Viewing a section of a Datasheet in close-up

- Open the Datasheet in **Print Preview**. Move the mouse pointer to an area of the Datasheet. The pointer will change to resemble a magnifying glass. Click the left-hand mouse button. Access will magnify the area selected. Click the mouse button again to view the whole page.

  Note: You can also use the **Zoom** button on the toolbar to zoom in and out.

To print a form or Datasheet

- If you want a partial print only, select the records you want to print. Choose **Print** from the **File** menu (***OR*** click on the **Print** icon). This will display the **Print** dialog box as displayed below.



Choose the print range and number of copies. If you want to print certain pages only, enter the range. If you are printing more than one copy indicate whether you want the copies collated. Finally, make any necessary adjustments to print setup. Click on **OK**.

Finishing Up

- Close all open windows, without saving any changes that you have made.

EXERCISES - Relationships

Setting up

- Open the **Northwind** database.

Opening the Relationship Window

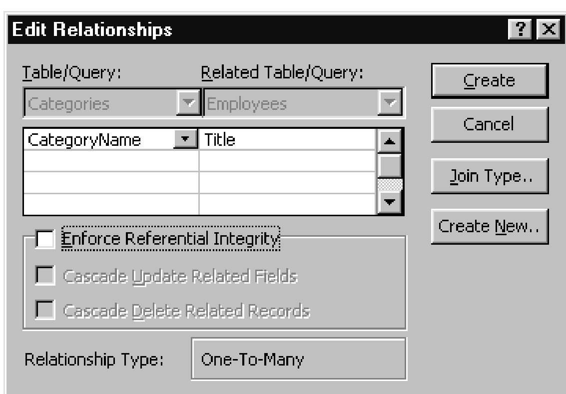
- Click on the **Relationships** icon on the standard toolbar and view the relationships.

Adding Tables to the Relationship Window

- Experiment with adding tables to the Relationships window using the **Show Table** dialog box. If the **Show Table** dialog box is not already displayed click on the **Show Table** icon on the **Relationships** toolbar. Select the table you want to add from the **Table** list. Use the **Ctrl** key to add more than one table or the **SHIFT** key to add a block. Click the **Add** button. Click the **Close** button.

Making Relationships

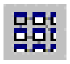
- Experiment with creating a relationship between two tables. Drag the field name from the first table to the second table. If the field in one table is a primary key (it will appear in bold), drag the primary key to the corresponding key in the other table. The table from which you drag the field is called the primary table; the table in which you drop it is called the related table. The **Edit Relationships** dialog box will appear as shown below.



Click on the **Create** button. The relationship will be displayed in the **Relationships** window.

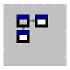
Editing Relationships - Showing all existing relationships

- Choose **Show All** from the **Relationships** menu ***OR*** click on the **Show All Relationships** icon on the **Relationship** toolbar.



Showing the relationship for a particular table

- Click on the **Show Direct Relationships** icon on the **Relationship** toolbar ***OR*** choose **Show Direct** from the **Relationship** menu.



Deleting a Relationship

- Click the relationship line (between two tables) you want to delete. Press the **Delete** key.

Removing a table from the Relationships window

- Click on the table you want removed. Press the **Delete** key.

Finishing Up

- Close all open windows, without saving any changes that you have made.

EXERCISES - Locating and Replacing Information

Setting up

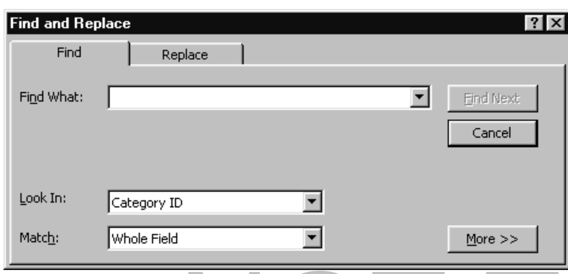
- Open the **Northwind** database.
- Open the **Customers** table.

Finding and Replacing Information

- Experiment with searching for words that you can see are contained within the **Customers** table, such as **Owner** or **Sales Associate**.

  To begin a search: Click in the field on which you want to search. Choose **Find** from the **Edit** menu (***OR*** click on the **Find** icon on the standard toolbar - ***OR*** press **CTRL+F**.)

  This brings up a dialog box headed **Find and Replace**.



  Enter the value you want to find in the box marked **Find What:**. Click on the **Find Next** button and Access will search the table and highlight any fields that math the search criteria. To continue the search click the **Find Next** button again.

Wildcards

- Experiment with searching for parts of word (using Wildcard characters) that you can see contained within the table, such as **Sale**. The wildcard characters are as follows:

  Question mark ? Any single character in the same position as the question mark.

  Asterisk * Any group of characters in the same position as the asterisk.

  Hash sign # Use this for a single digit in the same position as the hash sign.

  Square brackets [ ] Use these around two or more characters when you want your search field to include any of them.

Find and Replace

- Experiment with searching for words that you know are contained within the table, and replace them with another word, i.e. replace **Marketing Manager** with **Marketing Director**.

  Click in the field where you want to search. Choose **Replace** from the **Edit** menu (***OR*** press **Ctrl+H**.) In the **Find What** box, enter the text you want to replace. In the **Replace With** box, enter the text you want to substitute. Change any options as necessary and then click on the **Find Next** button. If the value searched for exists, Access will find the first occurrence of the record and highlight the field. Click the **Replace** button.
  If the record is not the one you wanted, click on the **Find Next** button again to find the next occurrence.

Sorting Records

- Experiment with sorting records in a table datasheet. Sort the table by **Contact Title**. (Try ascending and descending order)

  Select the column or columns on which you want to sort your records. Choose **Sort** from the **Records** menu and select **Sort Ascending** or **Sort Descending** from the sub-menu (***OR*** click on the **Sort Ascending** or **Sort Descending** icon on the standard toolbar.)

Sorting Records On More Than One Field

- Experiment with sorting records in a form (on more than one field). Sort by **Company Name** and then by **City**. In this case, select the **Company Name** and **City** columns. Choose **Sort** from the **Records** menu and select **Sort Ascending** or **Sort Descending** from the sub-menu (***OR*** click on the **Sort Ascending** or **Sort Descending** icon on the standard toolbar.)

Filtering records in a table datasheet by Selection

- Display a database table. Click in a cell containing the item that you wish to filter on. In the example shown we have clicked on a cell containing the word "car"

Table1 : Table

Field1	Field2
Car	1985
Van	7485
Car	0285
Van	1235
Truck	2432
Truck	7475
Car	1048
car	3426
Van	3348
Van	1200

Click on the **Filter by Selection** icon in the toolbar. In this example only fields containing the word "car" will be displayed, as illustrated.

Table1 : Table

	Field1	Field2
▶	Car	1985
	Car	0285
	Car	1048
	car	3426
*		

Removing remove a filter: Click on the **Remove Filter** icon.

Filtering records in a table datasheet by form

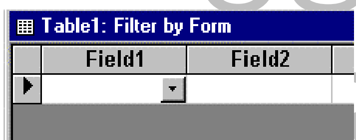
- Open a database table. In the example shown, **Field1** contains the items **Car**, **Van** and **Truck**.

Table1 : Table

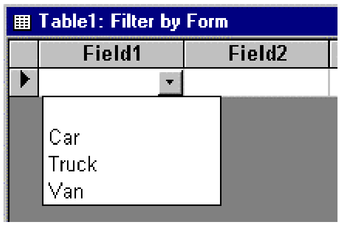
	Field1	Field2
	Car	1985
	Van	7485
▶	Car	0285
	Van	1235
	Truck	2432
	Truck	7475
	Car	1048
	car	3426
	Van	3348
	Van	1200

Click on the **Filter by Form** icon and the table will change, as illustrated.

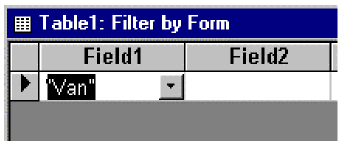
Notice the drop down arrow in **Field1**.



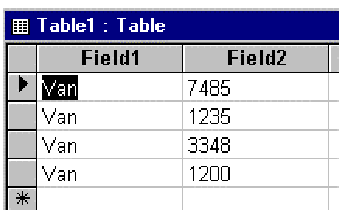
Click on the this drop down arrow and you may select one of the items displayed to filter this field on.



In the example shown we have chosen **Van**.



To apply the filter: Click on the **Apply Filter** icon, and only cells within Field1 containing the item **Van** will be displayed.



To remove the filter: Click on the **Remove Filter** icon.

Finishing Up

- Close all open windows, without saving any changes that you have made.

EXERCISES - Creating Queries

Setting up

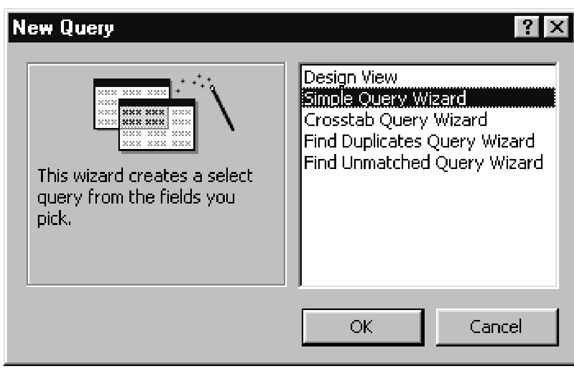
- Open the **Northwind** database.

Opening an Existing Query

- Experiment with opening the pre-existing queries that are available within the Northwind database. When the **Database Window** is displayed, select the **Queries** icon. Double click on the query that you wish to view.

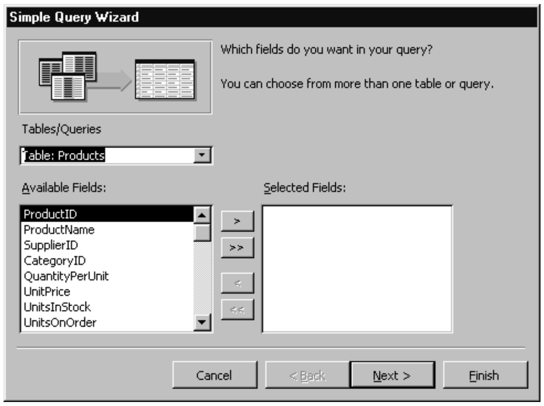
Creating Queries, Using the Simple Query Wizard

- In the database window, click the **Queries** tab. Click the **New** icon to display a **New Query** dialog box.



Select the **Simply Query Wizard** option, and then click on the **OK** button to move to the next Wizard page.

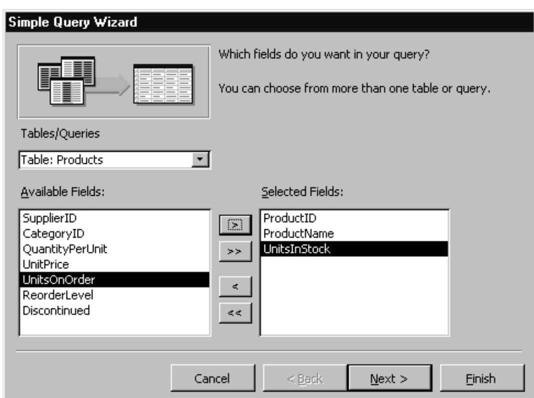
To select fields that you wish to add to your simple query: The dialog box should resemble that illustrated below.



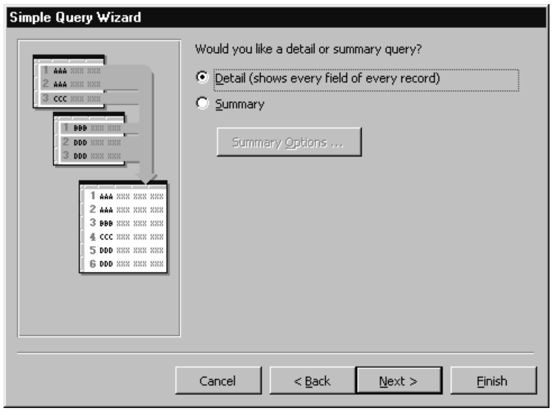
Click on the down arrow in the **Tables/Queries** text box to illustrate available queries and tables from which you can select the fields of interest to you. In the example above, we have selected the Northwind **Products** table.

To add a field, select the field and click on the right-pointing arrow.

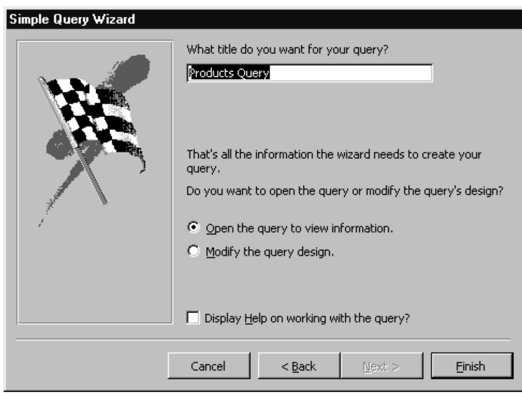
In the example below, we have added **ProductID**, **ProductName** and **UnitsInStock**.



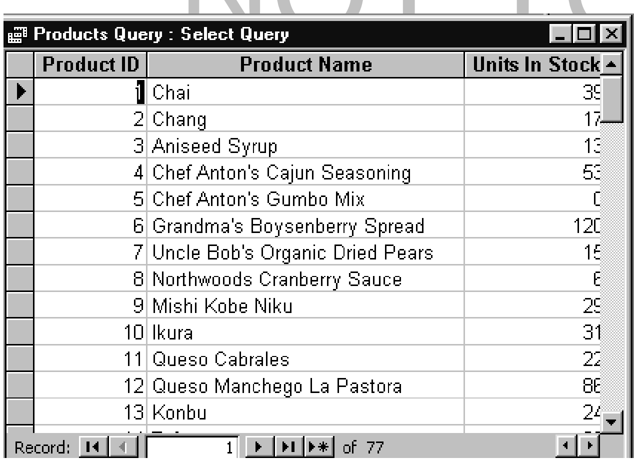
When you have finished adding fields, click on the **Next** button, and the dialog box below is displayed.



Click the **Next** button to continue. Give the query a name, using the dialog box illustrated below.



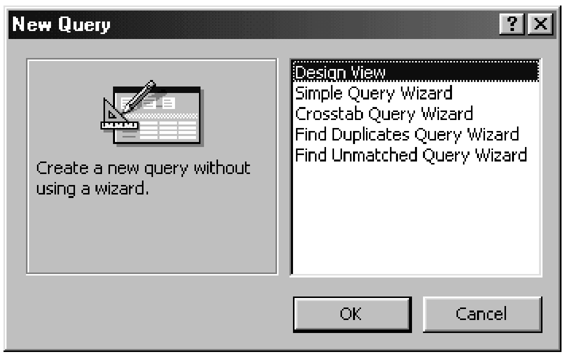
Click on the **Finish** button to complete the query. The results are displayed as illustrated.



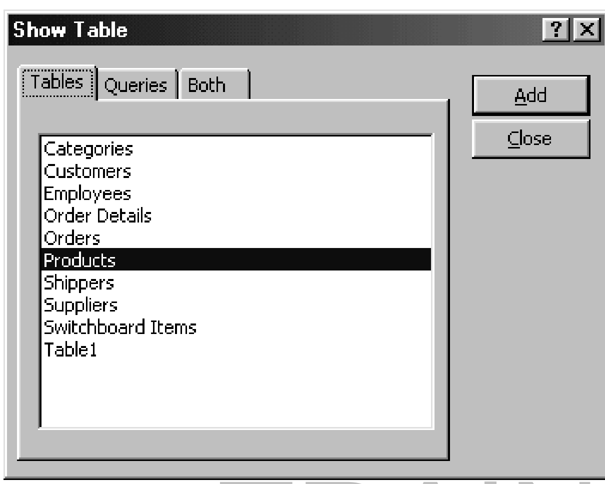
NOTE: In the above example, fields from only one table were selected. This illustrates the principle. Remember that you can select additional fields from other queries and tables, not just from a single table!

Creating A Query Without Using The Wizard

- Create a query to list all the products whose name begins with the letter C without using the wizard.
- In the **Database** window, click on the **Queries** icon.
- Click on the **New** icon to display the **New Query** dialog box.

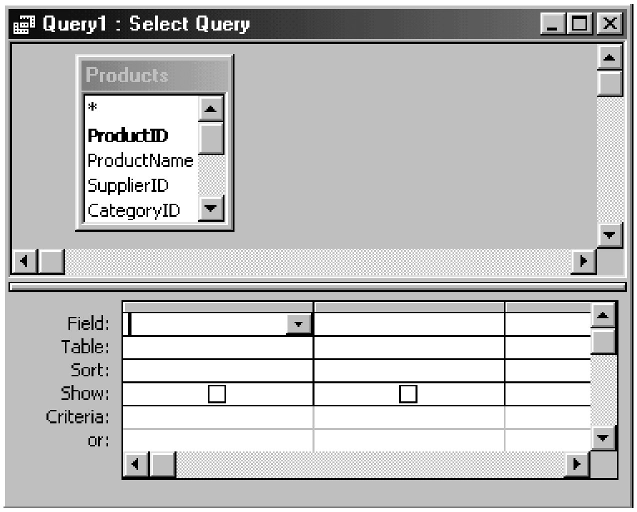


- Ensure that **Design View** is selected and click on the **OK** button. The **Show Table** dialog box will be displayed.

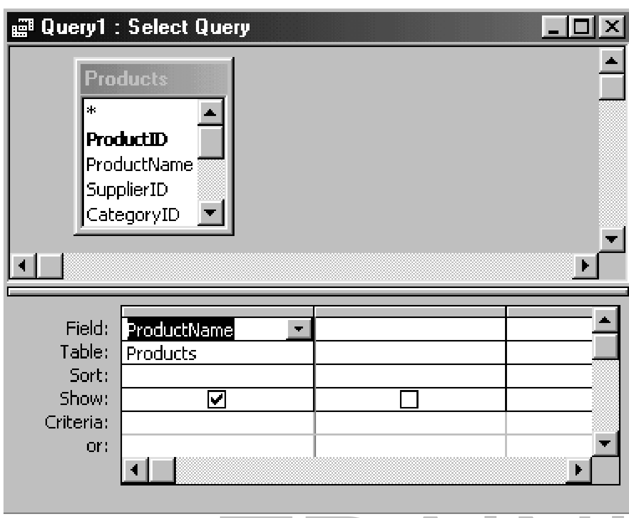


- Select the table you wish to base the query on, in this case we have selected the **Products** table.
- Click on the **Add** button to add the table to the query, then close the **Show Table** dialog box.

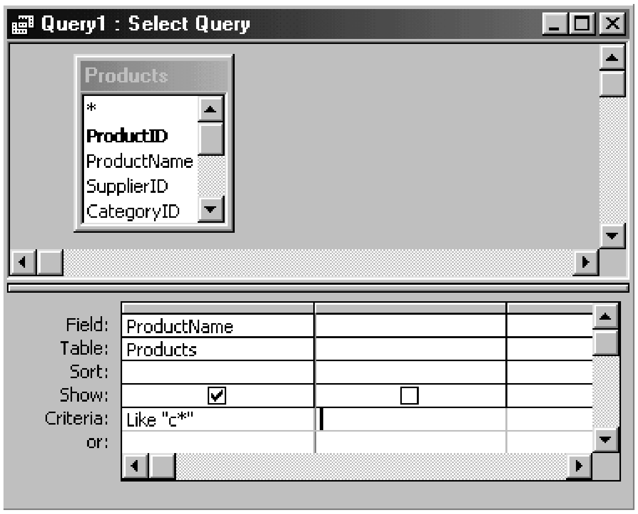
- The Select Query window should now be displayed as illustrated below.



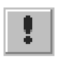
- Click within the **Field** text box, click on the down arrow in the right of the text box to display a menu. Select the required field from the menu. In this example we have selected ProductName.



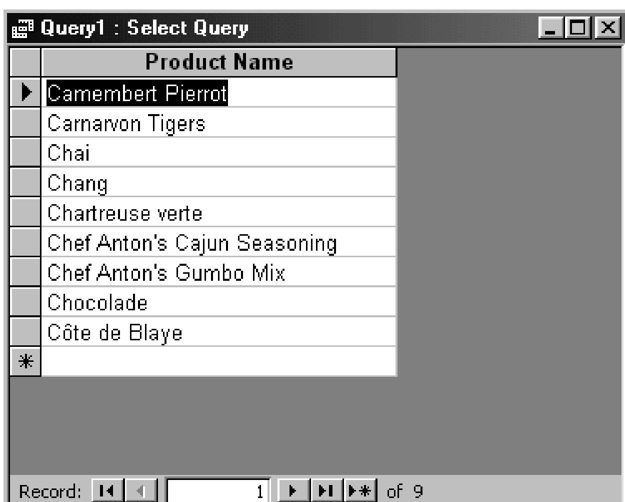
- Now we need to specify the criteria by which the records will be selected. For this example, click within the **Criteria** box and type **c*** followed by the **Enter** key. This tells Access we are only interested in products beginning with the letter c. The **Select Query** window should now resemble that below.



- You can now run the query by clicking on the **Run** icon located on the toolbar.



- The result of the query will now be displayed.

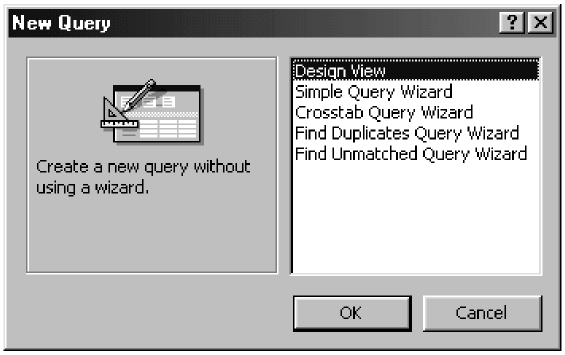


- Create a query that lists all the products that have a ReorderLevel over 15.
- Experiment with using other criteria to limit the list of records displayed.

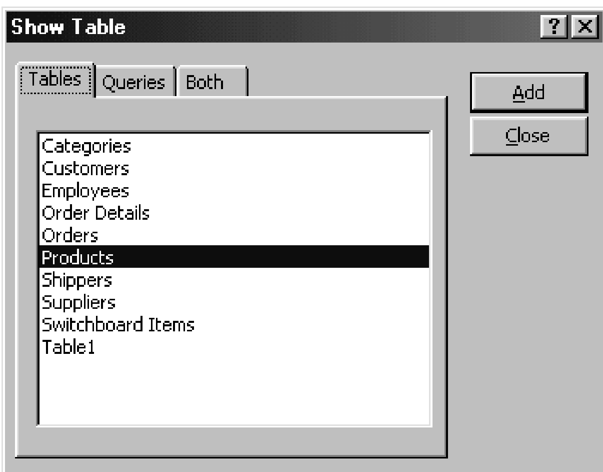
Calculated Fields

- Create a query which lists the name and reorder level of each product and also the reorder level plus 10.
- In the **Database** window, click on the **Queries** icon.

- Click on the **New** icon to display the **New Query** dialog box.

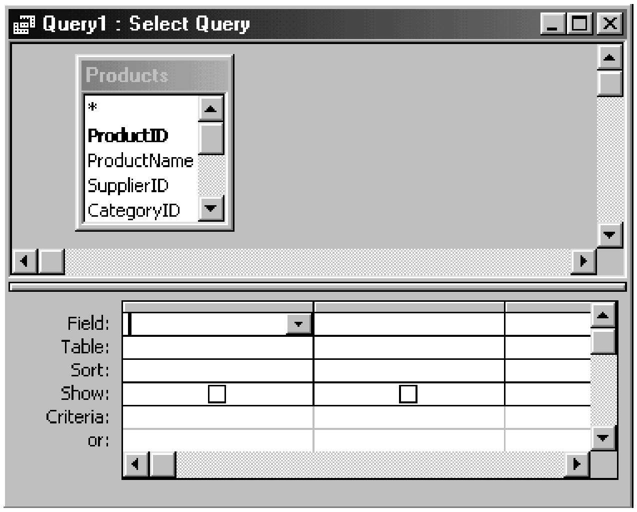


- Ensure that **Design View** is selected and click on the **OK** button. The **Show Table** dialog box will be displayed.

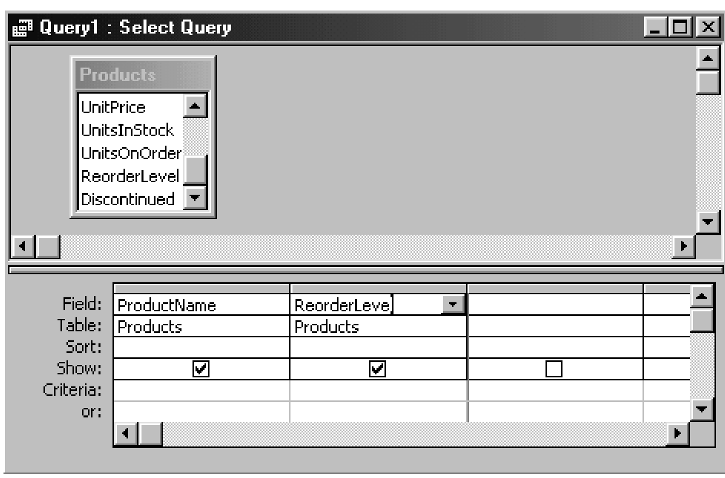


- Select the table you wish to base the query on, in this case we have selected the **Products** table.
- Click on the **Add** button to add the table to the query, then close the **Show Table** dialog box.

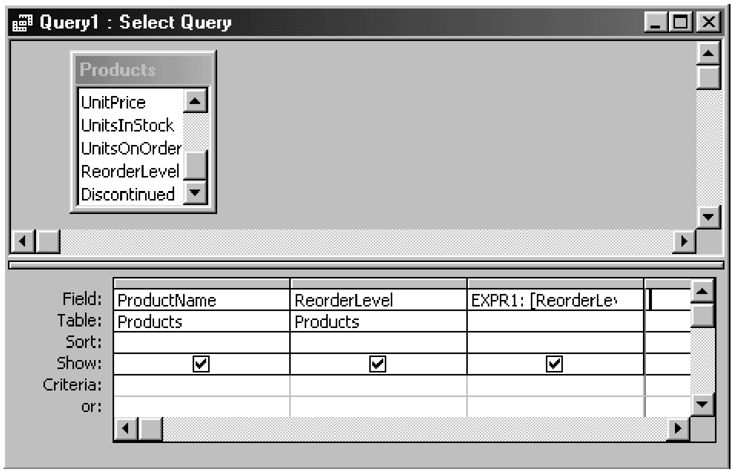
- The **Select Query** window should now be displayed as illustrated below.



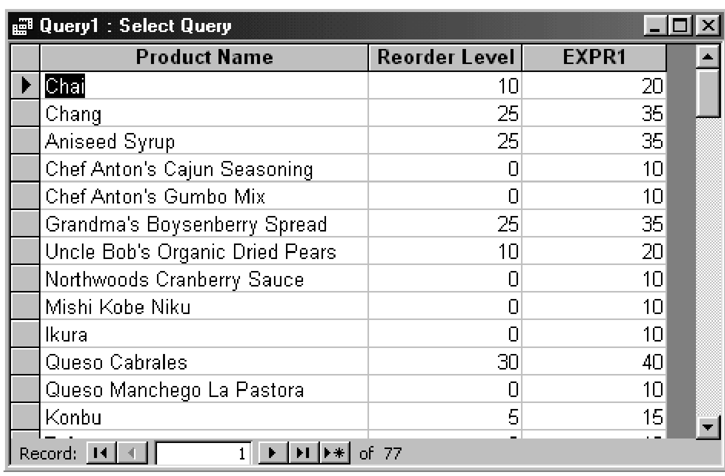
- Click within the **Field** text box, click on the down arrow in the right of the text box to display a menu. Select the required field from the menu. In this example we have selected ProductName and ReorderLevel.



- Now we need to enter the expression that will add 10 to the ReorderLevel. Click within the **Field** text box of the third column and enter the following **EXPR1: [ReorderLevel]+10** and press **Enter**.



- The **Select Query** window should now resemble the above. Click on the **Run** icon located on the toolbar to run the query. The results will be displayed.



- Repeat the query only showing products which begin with the letter S.

Update Queries

- Create a query which increases the reorder level of all products by 10%.
- Create a query which sets the reorder level of all products to 10.
- Create a query which sets the UnitPrice of all products to double the current price.

Summary Queries

- Create a query which totals all the sales figures broken down by country. Use the information from the Order Details table along with other tables as required.
- Perform the same query with a slight modification to see the average sales by country.
- Experiment with other summary queries.

Make-Table Query

- Create a query which selects all the products beginning with the letter C and then use the query to make a new table called TempProduct with these products in it.

Append Query

- Create a query which appends all the products beginning with the letter B to the new TempProduct table.

Finishing Up

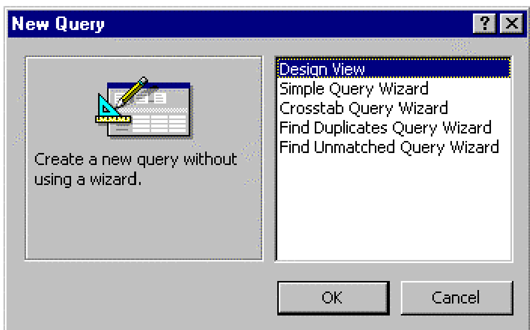
- Close all open windows, without saving any changes that you have made.

EXERCISES - Creating Calculated Fields

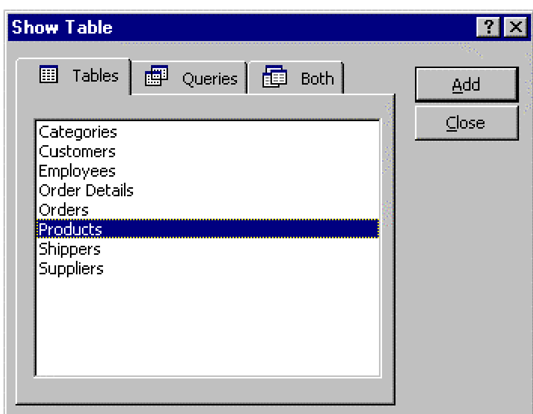
Using the Expression Builder

The **Expression Builder** is a useful tool if you are not quite sure how to enter expressions directly.

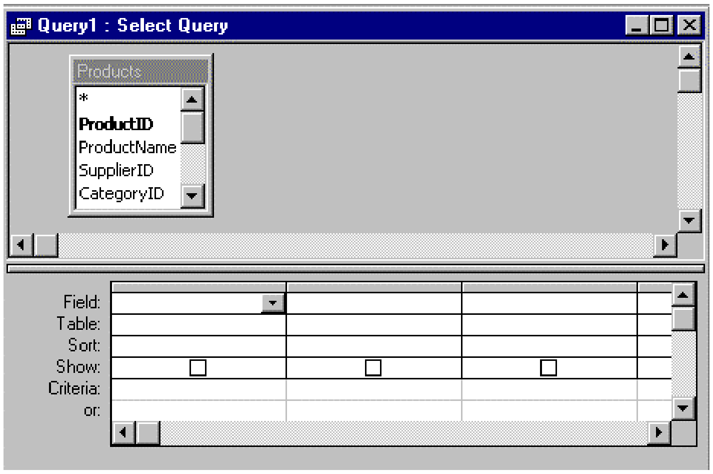
- Open the **Northwind** database. Click on the **Queries** icon. Click on the **New** icon and then select **Design View**, as illustrated below.



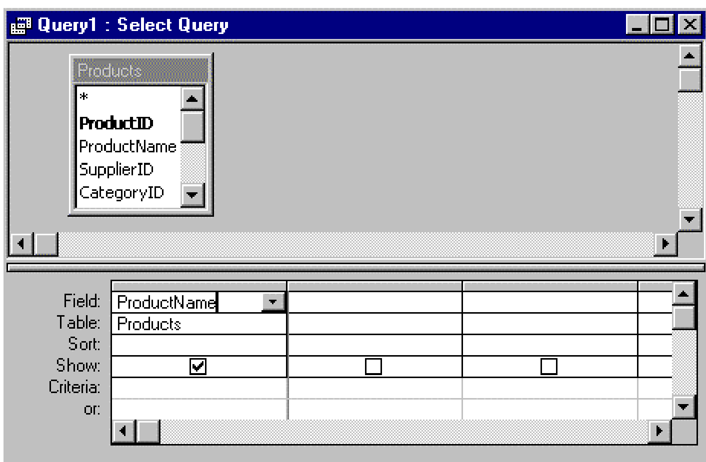
Click on the **OK** button and the **Show Table** dialog will be displayed as illustrated.



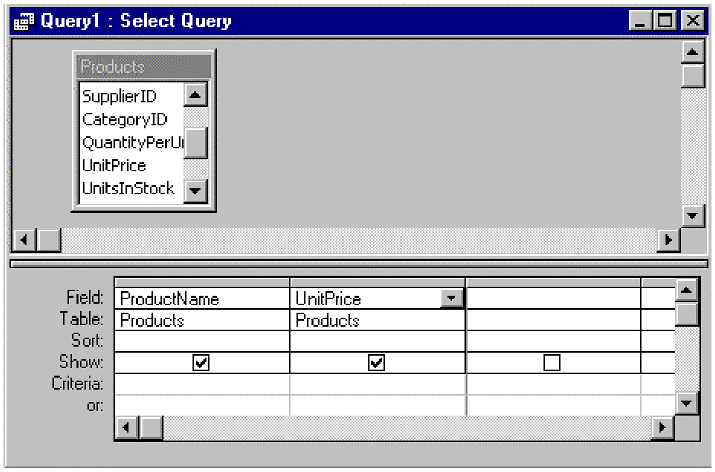
- Click on the table that you wish to extract information from. In this case **Products**.
- Click on the **Add** button and then click on the **Close** button and the screen will resemble that shown below.



- Next we need to drag and drop the required fields into the query. Drag **ProductName** into the first field column and the screen will be as illustrated.

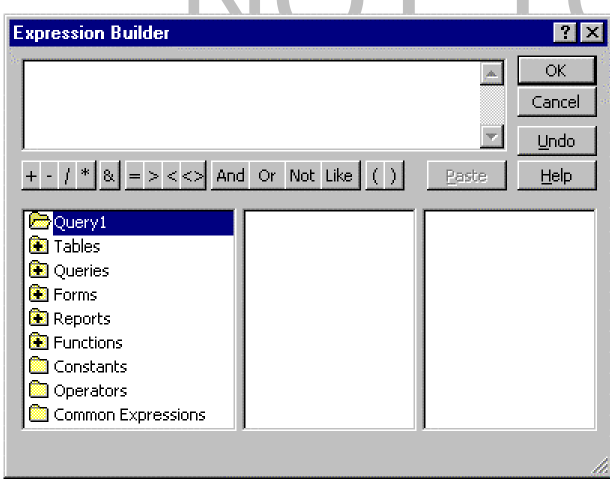


- Also drag **UnitPrice** into the second column, as illustrated.

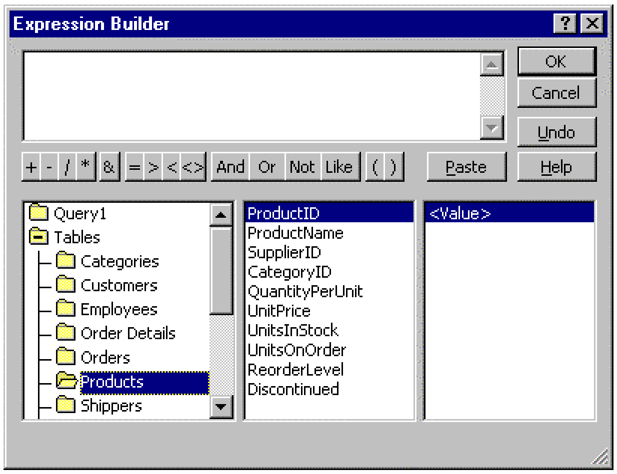


To open the Expression Builder: Click in the first cell of the third column. Click once using the right-hand mouse button to display a pop-up menu. Select the **Build** command, as illustrated.

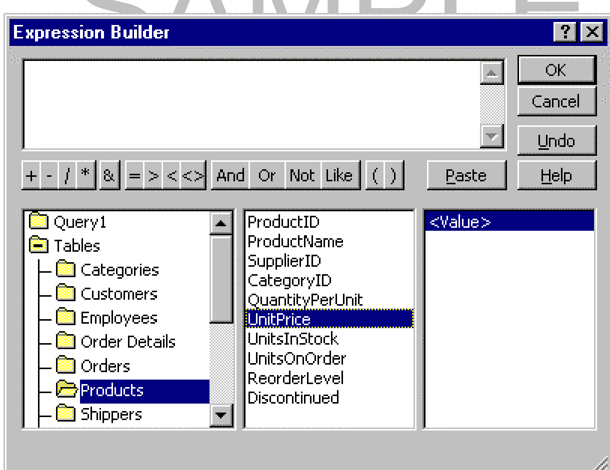
- The **Expression Builder** window will be displayed.



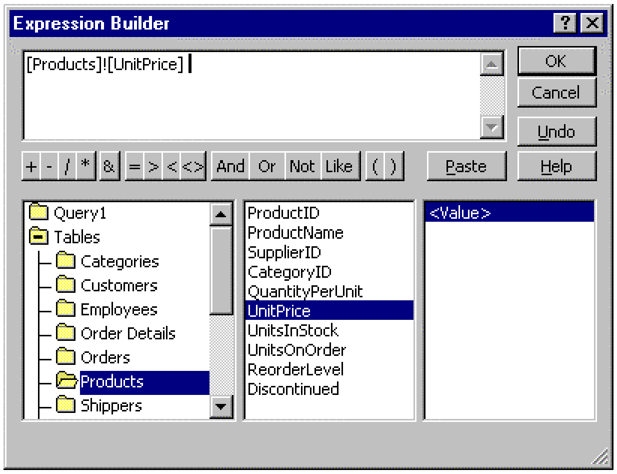
- Lets say that we wish to discount the Unit Price by 5% and wish to know the value that the item will be reduced by. A 5% discount is equivalent to dividing a value by 20. So what we need to do is to add a new field that take the UnitPrice field from the Products table, and then divides it by 20.
- First we need to select the right table. Double click on **Tables** as displayed in the **Expression Builder** dialog box. Select **Products**, as illustrated below.



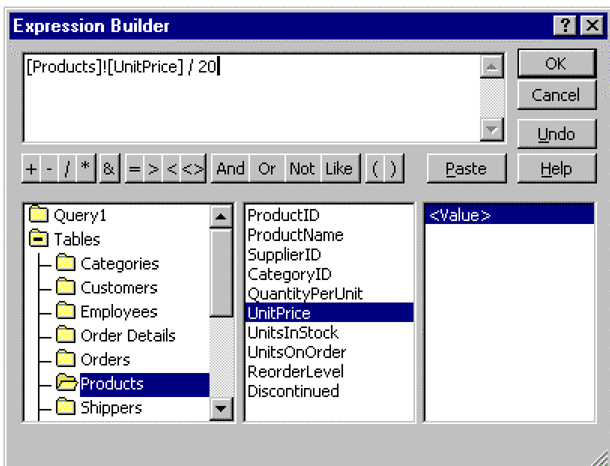
- Next we need to select the required field from the **Products** table, as illustrated below.



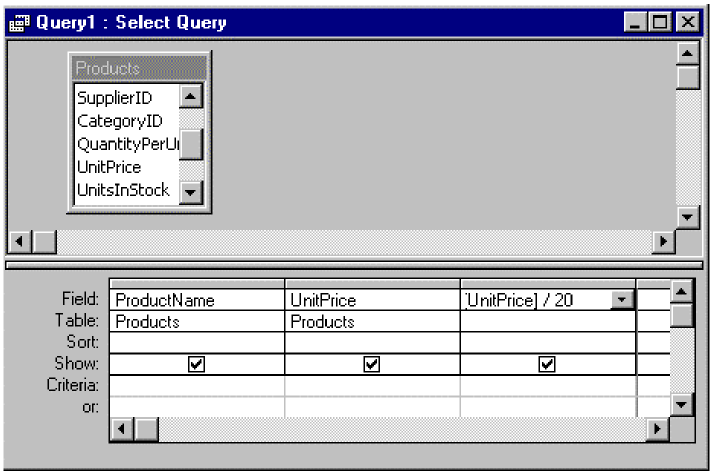
- Click on the **Paste** button (displayed within the **Expression Builder** window) and the screen will be as illustrated below.



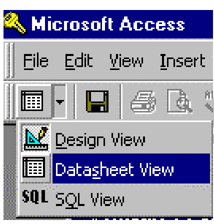
- Next we need to divide this value by 20. To do this click on the divide symbol . The division symbol will be added to the end of the expression that we have built.
- Enter the number **20** at the end of the expression line, as illustrated below.



- To finish, click on the **OK** button and the screen will be as illustrated below.



- Remember that we have been working in **Design View**. Now we can switch to **Datasheet View**.
- To do this click on the **View** drop down menu, and select **Datasheet View**.



- The screen will be as illustrated below.

- You should find that the values in the third column do in fact represent 5% of the second column. We could also have formatted this column so that it displayed the currency symbol, and also we could have headed the column with a more inspiring name!

Finishing Up

- Close all open windows, without saving any change that you have made.

EXERCISES -
Introducing Forms

Setting up

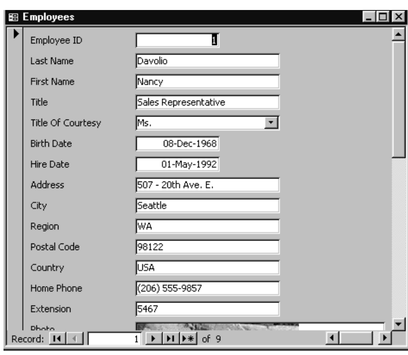
- Open the **Northwind** database and then click on the **Forms** icon.

Viewing Forms

- Experiment with viewing the forms available within the **Northwind** database.

Creating a Form Using AutoForm

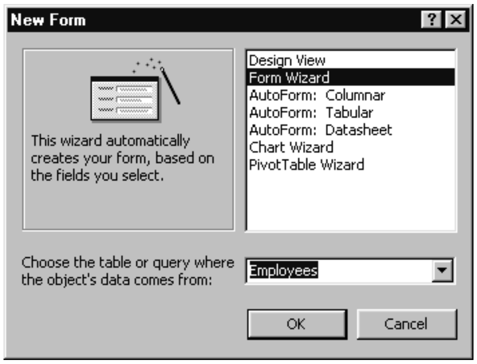
- **To create a form using AutoForm Wizard**: In the **Database Window** click on the **Table** or **Queries** icon. Click on a Table or Query to select it. Click the **AutoForm** button on the **Standard** toolbar.



You can now use this form to enter the information into the table or query.

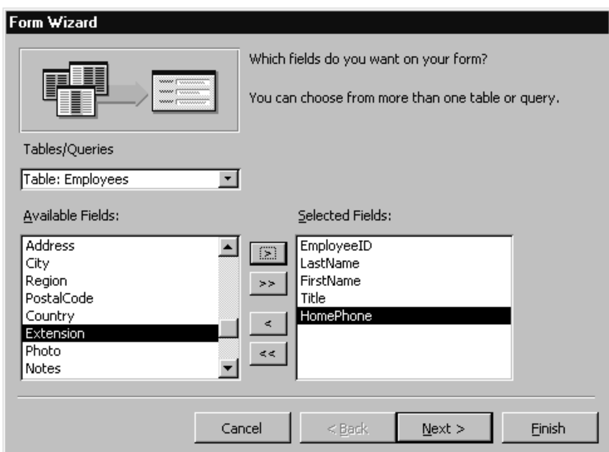
Creating a form using Form Wizard

- In the **Database Window** click on the **Forms** tab. Choose the **New** icon, which will display the **New Form** dialog box.



Select the **Form Wizard**. Choose the table or query where the objects data will come from.

- Click on the **OK** button to display the next page of the **Form Wizard**.

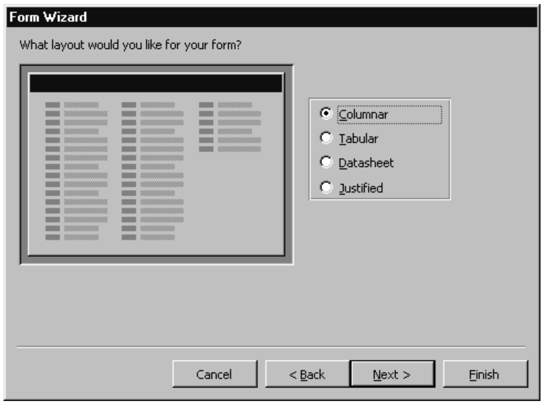


- Click on the field that you wish to add to the form, and then click on the right printing arrow button to add it to the **Selected Fields** section of the dialog box.
- Repeat this procedure so that all the required fields are added.

  Remember that you can use the down arrow in the **Tables/Queries** section of the dialog box to select a different data source which will contain other fields.

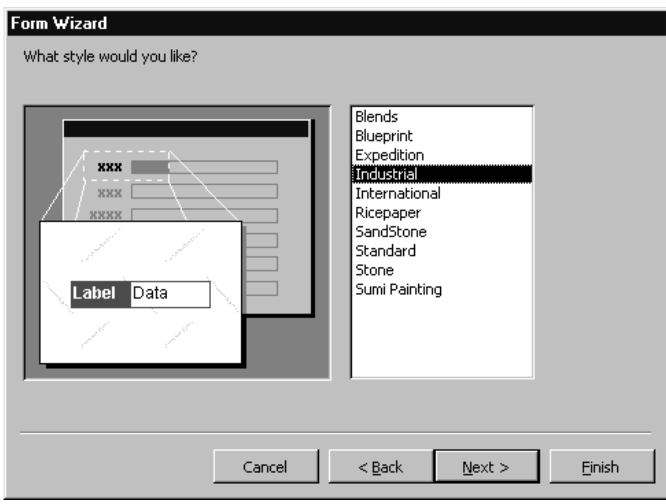
- When you have added the required fields click on the **Next** button.

- The next page of the dialog allows you to define the layout of the form.



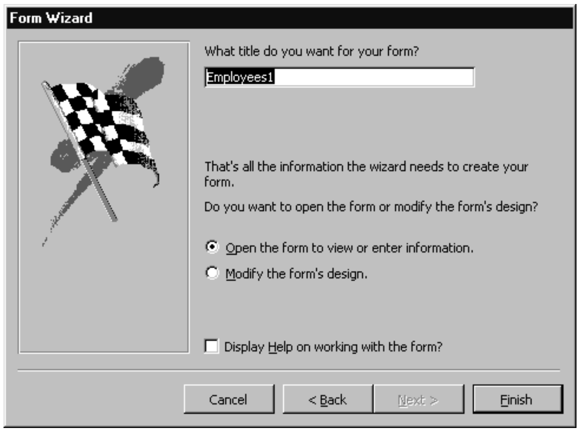
- Chose the desired option and then click on the **Next** button.

- The next page of the **Form Wizard** allows you to choose a pre-defined style.



- Select the required option and click on the **Next** button to continue.

- This next page of the **Form Wizard** allows you to name the form and set final options for using the form.



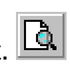
- Click on the **Finish** button to create the form.

- If you choose to "**Open the form to view or enter information**", then the form will be displayed as illustrated.

Different Ways of Viewing Forms

- To see the form in **Design View**, click on the **View** icon in the toolbar, and then select **Design View**.

  To see the form in **Form View**, click on the **View** icon in the toolbar, and then select **Form View**.

  Click on the **Print Preview** icon on the toolbar to preview how the form will print. 

Finishing Up

- Close all open windows, without saving any changes that you have made.

EXERCISES - More About Creating Forms

Setting up

- Open the **Northwind** database.

Form Design View

- Experiment with opening an existing form in design view. In the **Database** window, click on the **Forms** icon. Double click on the form you wish to view and select **Design View** from the **View** drop down menu.
- Experiment with showing and hiding the rulers. Select the **Ruler** command from the **View** drop down menu.
- Experiment with displaying the property list. Double click on a form object to display its properties.
- Experiment with displaying the field list. Select **Field List** from the **View** drop down menu.
- Display the toolbox. Select the **Toolbox** command from the **View** drop down menu.
- Experiment with viewing the code behind the form. Select the **Code** command from the **View** drop down menu.

Manipulating Form Design

- Experiment with selecting a control with the mouse.
- Experiment with making controls snap to grid. Select the **Snap to Grid** command from the **Format** drop down menu.
- Experiment with moving controls or labels.
- Experiment with resizing controls.
- Experiment with deleting a control.
- Experiment with duplicating a control and its label.
- Experiment with aligning controls to each other.
- Experiment with changing the spacing between controls.
- Experiment with changing the width of the form.

The Toolbox

- Experiment with opening the toolbox and use the on-line Help to get more information about each icon contained within it. Select the **Toolbox** command from the **View** drop down menu.

Creating a Combo Box Control Using the Toolbox

- Experiment with creating a form containing a combo box.

Changing Form Properties

- Experiment with changing the properties for a form.

Creating a Form With a Subform

- Experiment with adding a subform to a main form.

Controlling Data Input

- Experiment with setting the DefaultValue for a control.
- Experiment with setting the ValidationRule for a control.
- Experiment with setting the ValidationText for a control.
- Experiment with setting the an InputMask.

Changing Tab Order

- Experiment with changing the tab order.

Adding Command Buttons

- Experiment with using command buttons within a form.
- Experiment with adding a command button to a form.

Adding Page Breaks

- Experiment with adding a page break.

Switchboards

- Experiment with creating a switchboard.
- View the switchboard that you have created.

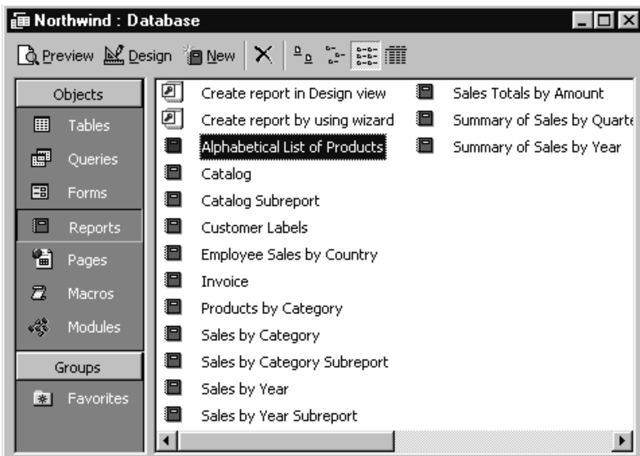
Reports

Setting up

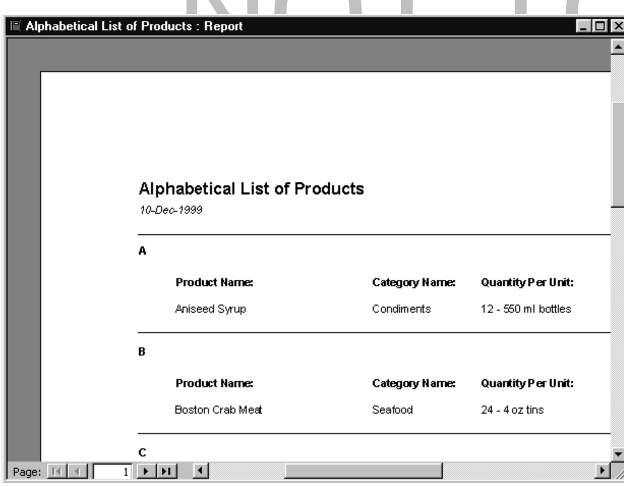
- Open the **Northwind** database.

Opening and Viewing Existing Reports

- Click on the **Reports** icon, as illustrated.



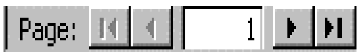
- Double click on the report that you wish to view, in this case we have double clicked on the **Alphabetical List of Products** report.



To move around the page: Use the scroll bars at the right-hand side and bottom of the window to move to different parts of the page.

To see the whole page: Move the mouse pointer over any area of the report. The pointer should change to represent a magnifying glass. Click the left-hand mouse button. The report display will change so that the whole of the page is displayed. Click again on the left-hand mouse button to display the report full size. The position of your mouse pointer determines the area of the page which will be viewed.

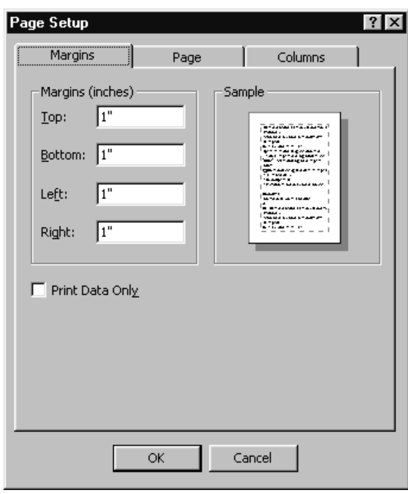
To move to another page: Use the navigation buttons in the lower left-hand corner of the report window to view the pages of the report.



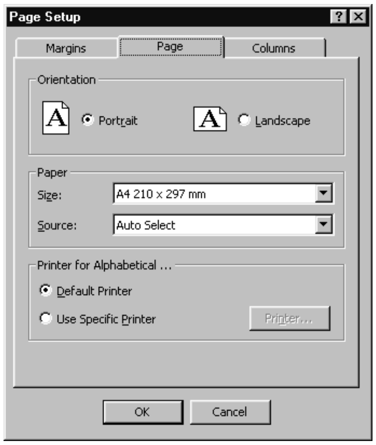
Click on the right arrow to go to the next page.
Click on the right arrow and bar to go to the last page.
Click on the left arrow to go to the previous page.
Click on the left arrow and bar to go to the first page.

Printing Reports

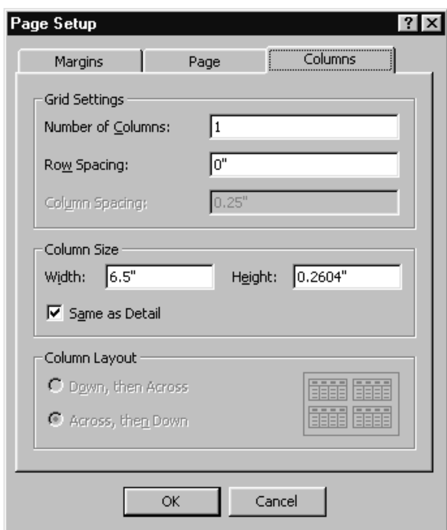
- **To set print margins:** Click on the **File** drop down menu and select **Page Setup**. Select the **Margins** tab. Set your options as required and then click on the **OK** button.



- **To setup Page printing options:** Click on the **File** drop down menu and select **Page Setup**. Select the **Page** tab. Set your options as required and then click on the **OK** button.

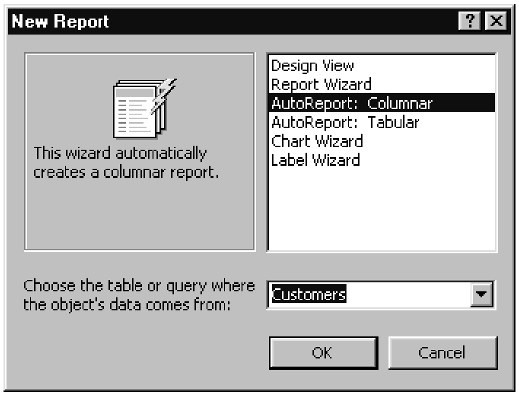


- **To set column printing options**: Click on the **File** drop down menu and select **Page Setup**. Select the **Columns** tab. Set your options as required and then click on the **OK** button.



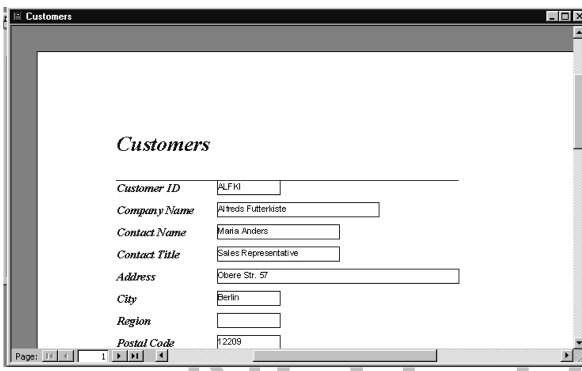
Creating a Report Using AutoReports

- Open a database and click on the **Reports** icon. Click on the **New** icon.

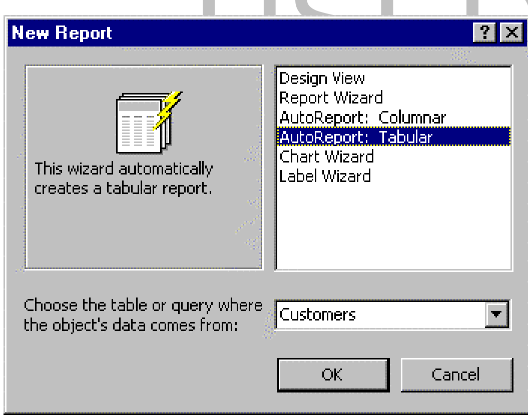


- Select the table or query where the objects data comes from. In the example shown we have selected **Customers** from the **Northwind** database. Select **AutoReport: Columnar**.

- Click on the **OK** button and the column formatted report will be generated and displayed on the screen.



- **To create a Tabular report using AutoReport Wizard:** Open a database and click on the **Reports** icon. Click on the **New** icon.

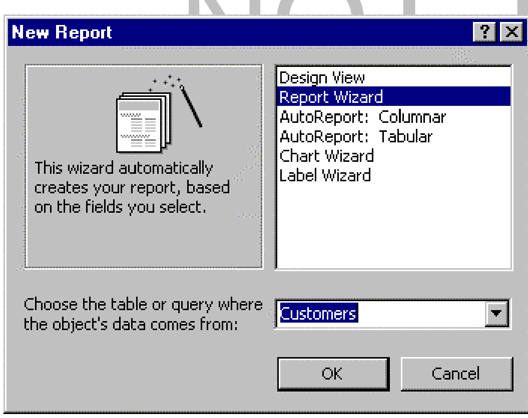


- Select the table or query where the objects data comes from. In the example shown we have selected **Customers** from the **Northwind** database.

- Select **AutoReport: Tabular**. Click on the **OK** button and the table formatted report will be generated and displayed on the screen.

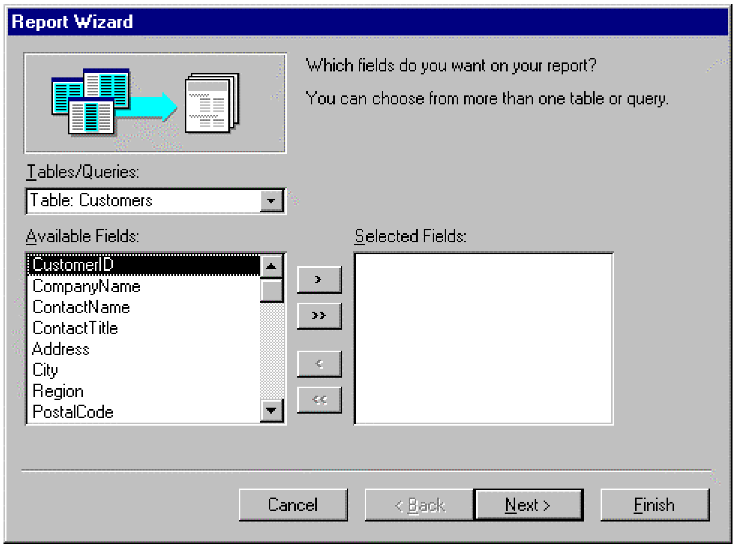
Creating Reports Using the Report Wizard

- Open the **Database** Window. Click on the **Reports** icon. Click on the **New** icon, which displays the **New Report** dialog box.



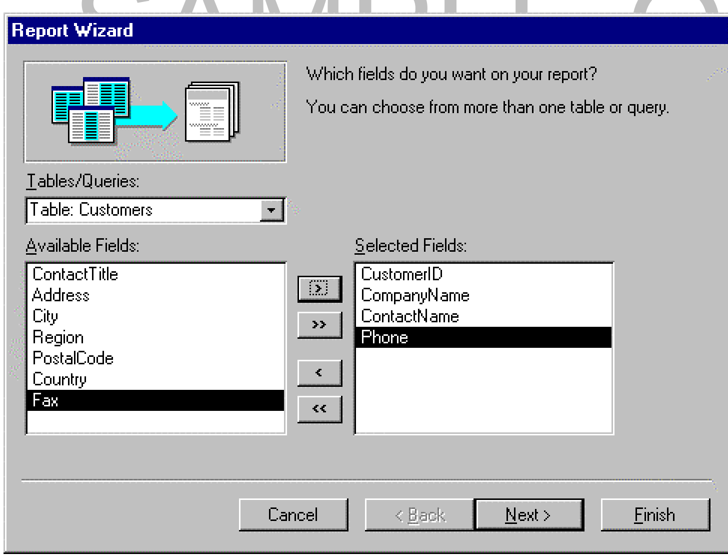
- Select the table or query on which you want the form based. Click on the **Report Wizard**. Click on the **OK** button.

- The next page of the **Report Wizard** is displayed.

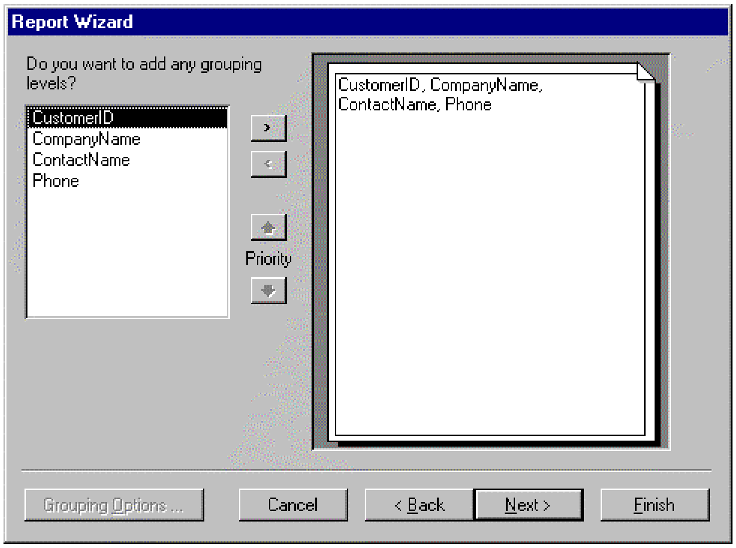


- If necessary select a table or query in the **Tables/Queries** section of the dialog box.
- **To select which fields to add to a report**: Click on the field that you require and click on the right pointing arrow to add the field to the **Selected Fields** section of the dialog box.

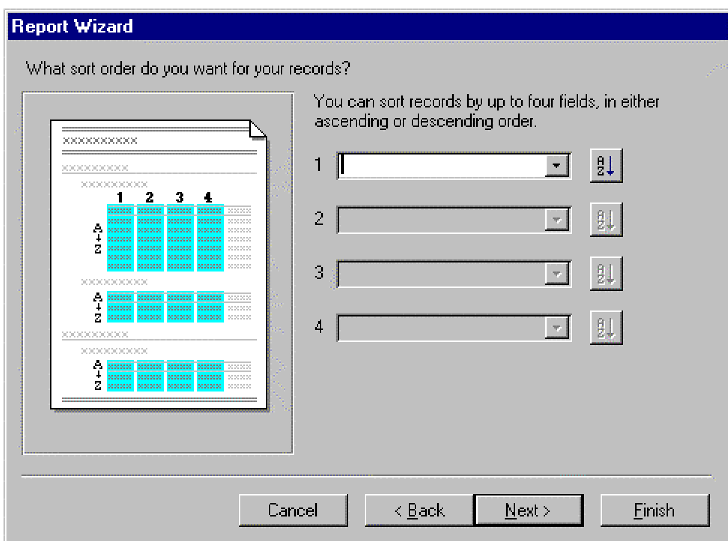
  Repeat this procedure to add the fields that you require within the report. In the illustration below, based on the Northwind database, we have added **CustomerID, CompanyName, ContactName** and **Phone**.



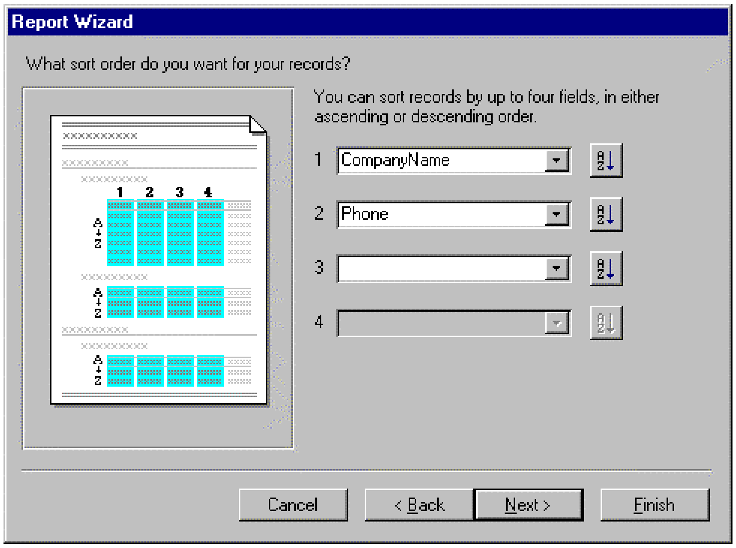
- Click on the **Next** button to continue.
- **To add grouping levels to a report**: The next page that is displayed allows you to add grouping levels.



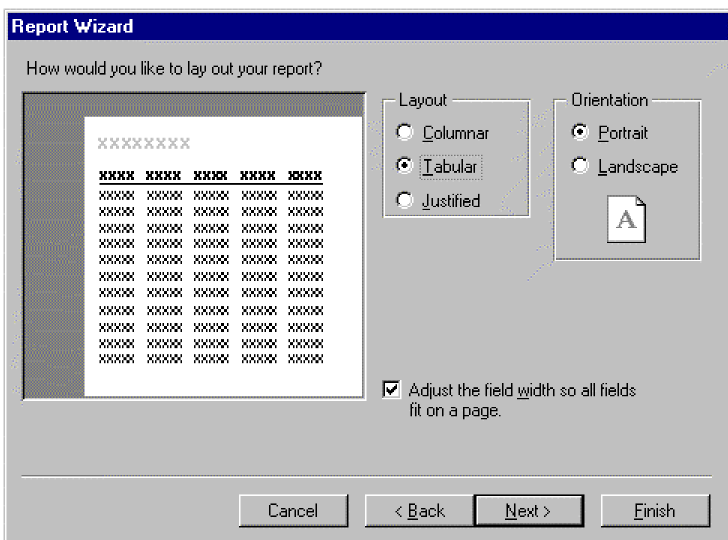
- Grouping is covered later. In this example we have clicked on the **Next** button to continue to the next page of the **Report Wizard**.
- **To sort records within a report:** This page of the **Report Wizard** allows you to sort your records by up to four fields, in either ascending or descending order.



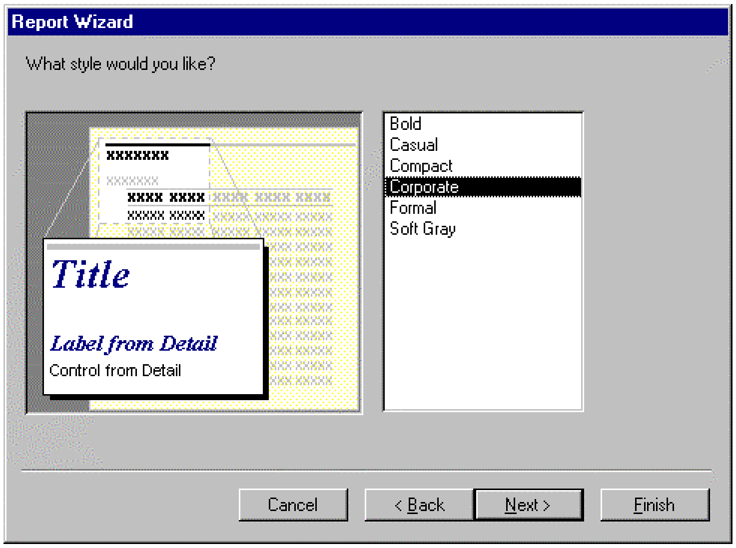
- In this case we have chosen to sort first by **CompanyName** and then by **Phone**, as illustrated.



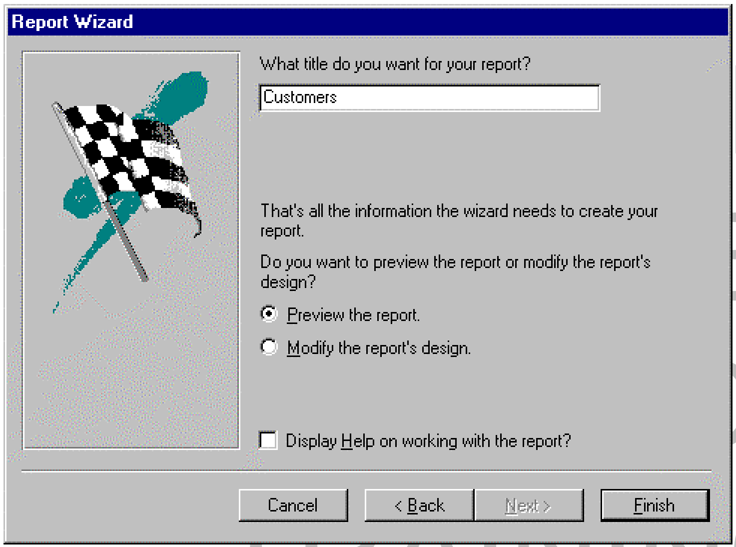
- Click on the **Next** button to continue to the next page.
- To determine the layout of a report: The next page of the **Report Wizard** allows you to determine the layout of the report. You can select a **Columnar**, **Tabular** or **Justified** layout. You can set the page orientation to **Portrait** or **Landscape**. You can **automatically adjust the field width** so that all the fields fit on the page.



- When you have selected the options you require, click on the **Next** button to continue to the next page of the **Report Wizard**.
- To determine the style of a report: The next page of the **Report Wizard** allows you to select from a range of styles, **Bold**, **Casual**, **Compact**, **Corporate**, **Formal** or **Soft Gray**.



- When you have selected the required style, click on the **Next** button to continue to the next page of the **Report Wizard**.
- To name a report: The next page of the **Report Wizard** is the final page, which allows you to give a name to the report.



- Enter the report name in the top text box.
- By default the **Preview this report** button is selected.
- Click on the **Finish** button to generate and preview the report.

- The final report is displayed on the screen, as illustrated.

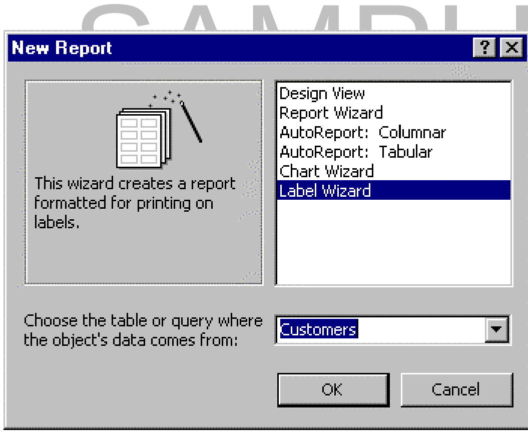

CCT - Customers

CCT - Customers

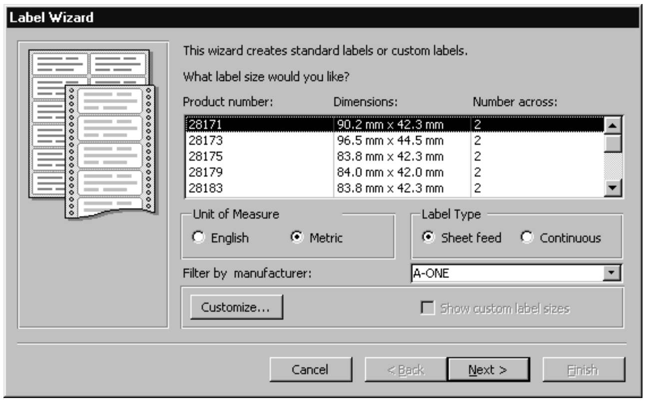
Company Name	Phone	Customer ID	Contact Name
Alfreds Futterkiste	030-0074321	ALFKI	Maria Anders
Ana Trujillo Emparedados y helados	(5) 555-4729	ANATR	Ana Trujillo
Antonio Moreno Taquería	(5) 555-3932	ANTON	Antonio Moreno
Around the Horn	(171) 555-7788	AROUT	Thomas Hardy
B's Beverages	(171) 555-1212	BSBEV	Victoria Ashworth
Berglunds snabbköp	0921-12 34 65	BERGS	Christina Berglund
Blauer See Delikatessen	0621-08460	BLAUS	Hanna Moos
Blondel père et fils	88.60.15.31	BLONP	Frédérique Citeaux
Bólido Comidas preparadas	(91) 555 22 82	BOLID	Martín Sommer

Using the Labeling Wizard

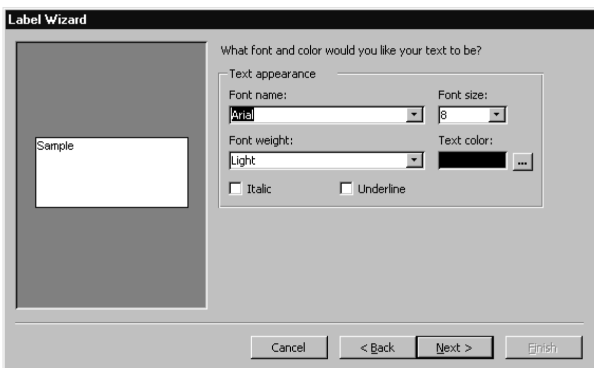
- To create mailing labels: Open the **Northwind** database. Open the **Database w**indow and select **Reports**. Click on the **New** icon, which will display the **New Report** dialog box. Choose the table or query where the object's data comes from. Select the **Label Wizard**.



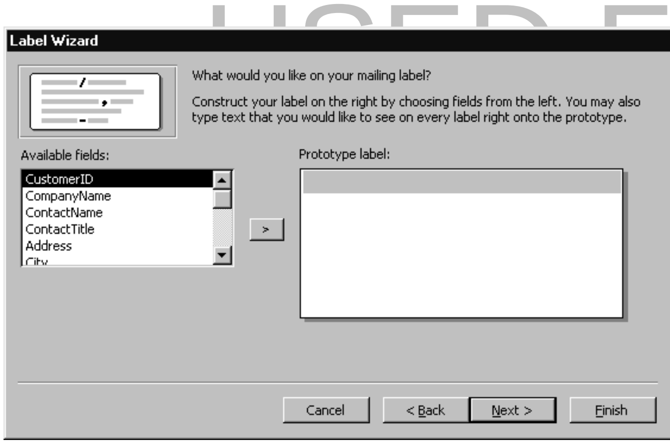
- Click on the **OK** button to continue.
- To set label sizes and type: The next page of the **Label Wizard** allows you to determine the size of your labels, and whether you will use sheet fed or continuous labels. You can also select English or metric sizes. If necessary you can click on the **Customize** button to define special label types.



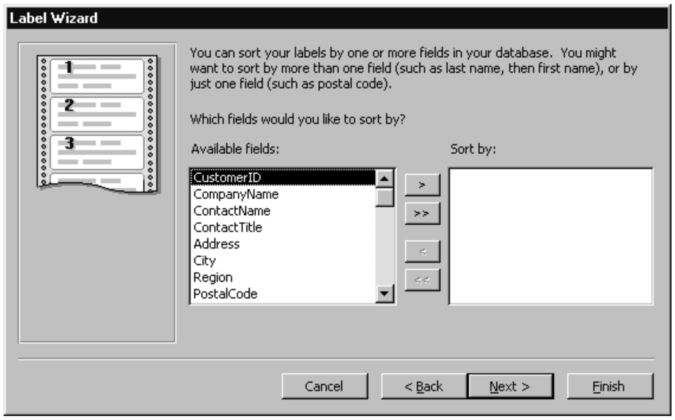
- Select the options that you require and then click on the **Next** button.
- To set the font formats that label will use: The next page of the **Label Wizard** allows you to select the font formats that you wish to use.



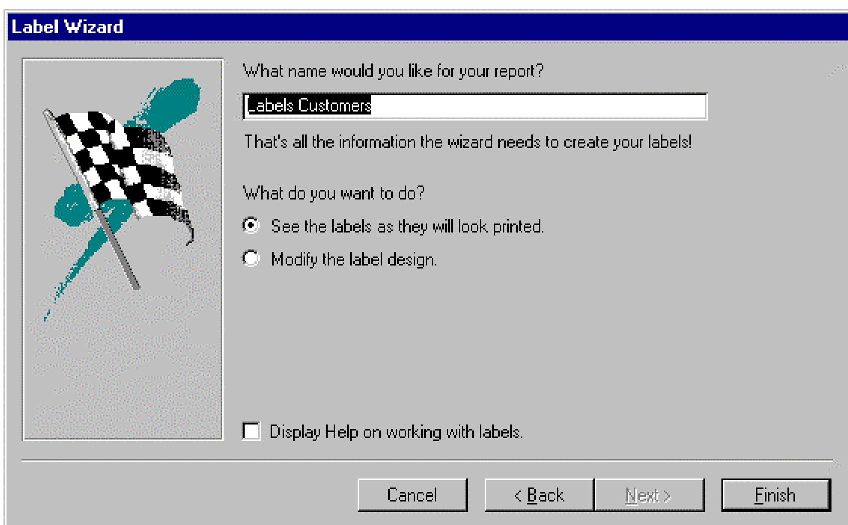
- Select the options that you require and click on the **Next** button to continue.
- To set the information that will be displayed on a label: The next page of the **Label Wizard** allows you to determine what information will be displayed on the labels.



- Click on the **Available fields** that you wish to add, and then click on the right pointing arrow to add the field to the label. Repeat this procedure as required. Click on the **Next** button to continue.
- To sort the fields used by Labels: This page of **Label Wizard** allows you to sort the labels by one (or more) fields.



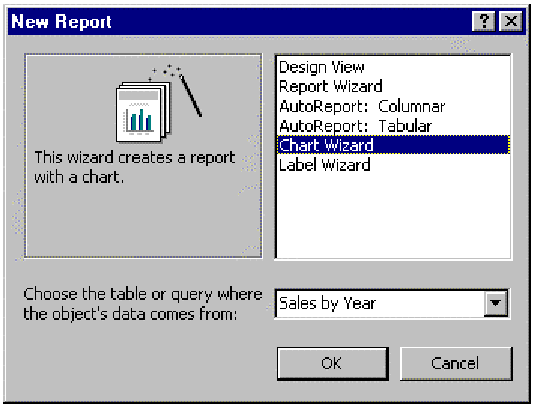
- Select fields to sort on, as required. Click on the **Next** button to continue.
- To name the label report: This page is the final page of the wizard and it allows you to name your report.



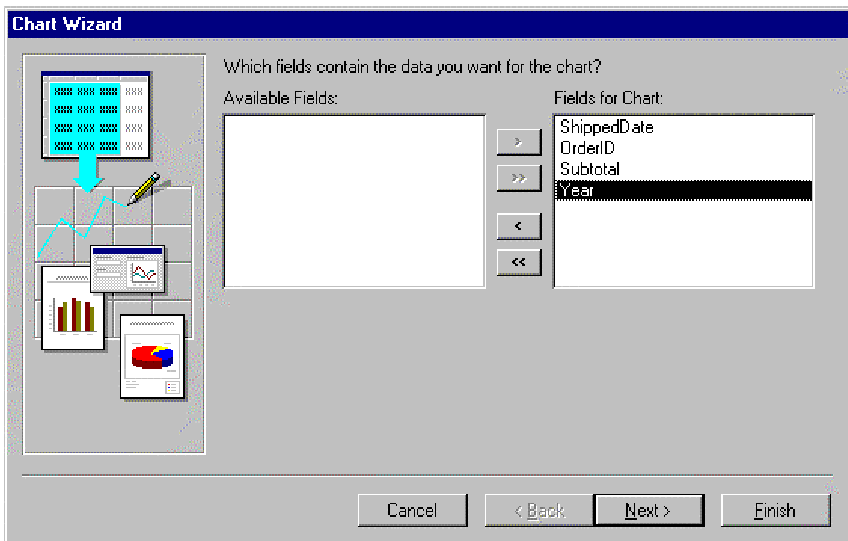
- Click on the **Finish** button to generate the labels and to preview the results.

Using the Chart Wizard

- To create a chart based report: Open the **Database** Window and select **Reports**. Click on the **New** icon, which will display the **New Report** dialog box. Choose the table or query on where the object's data comes form. In the example below we have selected **Sales by Year** from the **Northwind** database. Select the **Chart Wizard**.

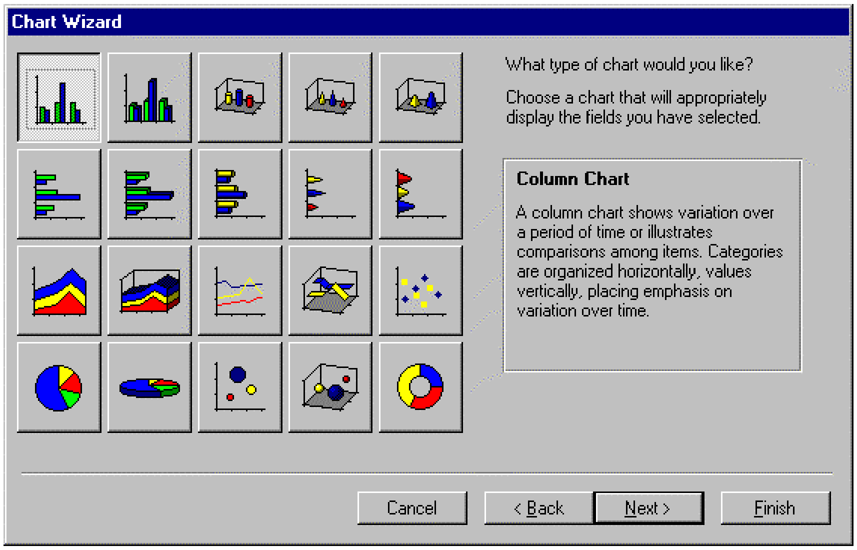


- Click on the **OK** button.
- To add fields to a chart report: Next you need to decide which fields to add to the chart report. In this example we have added all fields, by clicking on the right pointing double arrow.

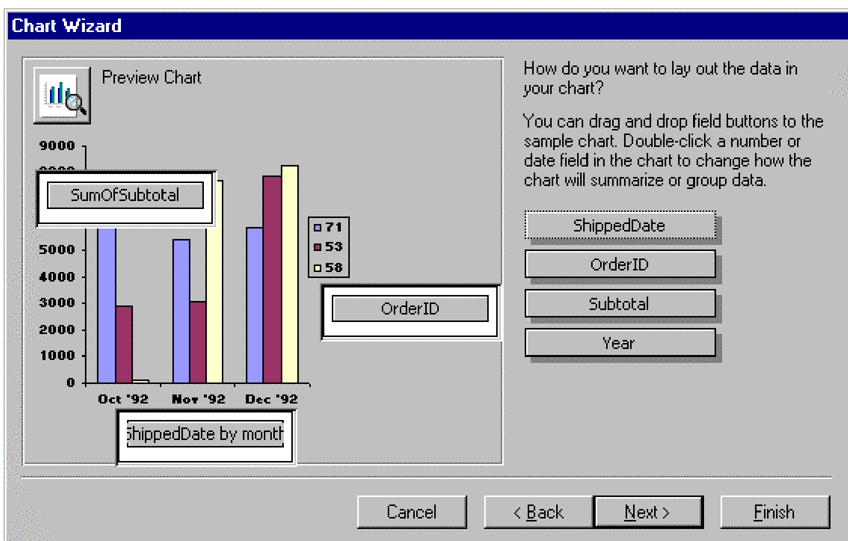


- Once you have added the fields that you require, click on the **Next** button to continue.

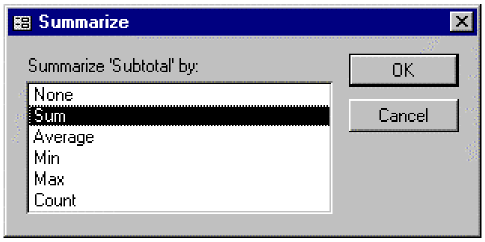
- To select a chart type: Next you need to decide on the type of chart that you wish to create.



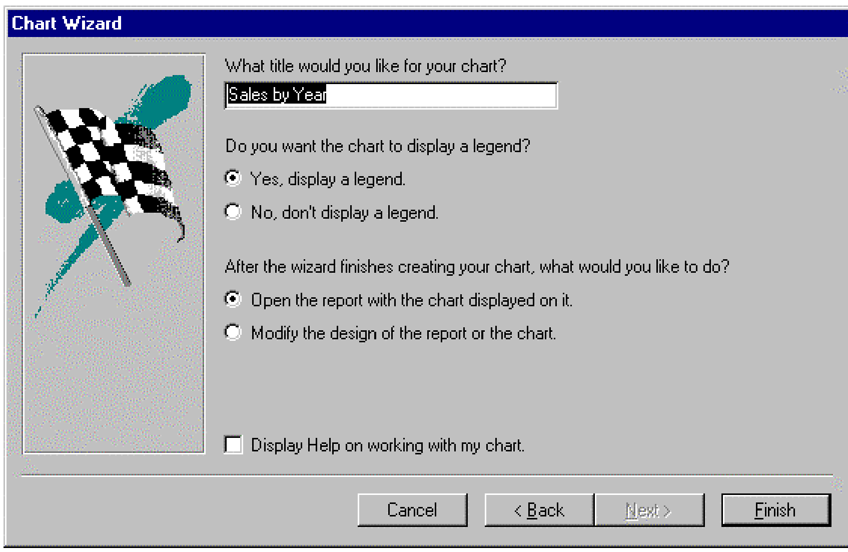
- Click on the chart type that you require, and then click on the **Next** button.
- To determine the chart report layout: Next you need to decide on the layout of the data within the chart.



- You can drag and drop the field button to the sample chart.
- You can double click on a field to change how the chart will summarize or group the data.
- For instance if you double click on the **SumOfSubtotal** button you will see the following dialog box.

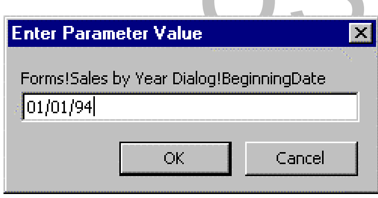


- When you have setup the chart data layout as required, click on the **Next** button to continue.
- To name a chart report: Lastly you need to give the chart report a name.



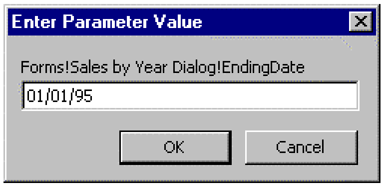
- You can also choose whether or not to display a legend.
- Click on the **Finish** button to complete the Wizard.

- In the example given you will see the following dialog box, which ask for the starting date of the chart. Enter a starting date, in this case we have entered **01/01/94**.
- Click on the **OK** button.

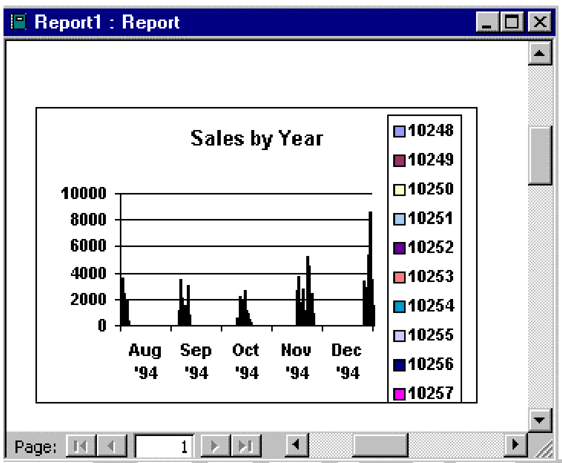


- You will then asked to supply the end date, in this case we have supplied **01/01/95**.

- Click on the **OK** to continue.



- The chart will be displayed as illustrated below.



Creating a Report Without a Wizard

- Experiment with creating a report without using Report Wizard. Click on the **Reports** icon. Click on the **New** icon to display the **New Report** dialog box. Select **Design View**. Click on the drop down list at the bottom of the **New Report** dialog box and select the table/query from which the report will take its data.

Creating Controls

- Experiment with creating a bound text box.
- Experiment with creating a label.

Setting Properties

- Experiment with displaying the Property Sheet of various reports within the Northwind database.

Finishing Up

- Close all open windows, without saving any changes that you have made.