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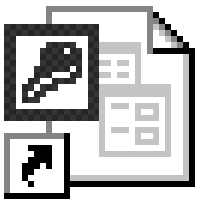
Using Access 2000
Foundation



Cheltenham Computer Training
Crescent House
24 Lansdown Crescent Lane
Cheltenham
Gloucestershire
GL50 2LD UK

Tel: + 44 (0)1242 227200 Fax: + 44 (0)1242 253200
Email: info@cctglobal.com
Internet: http://www.cctglobal.com/

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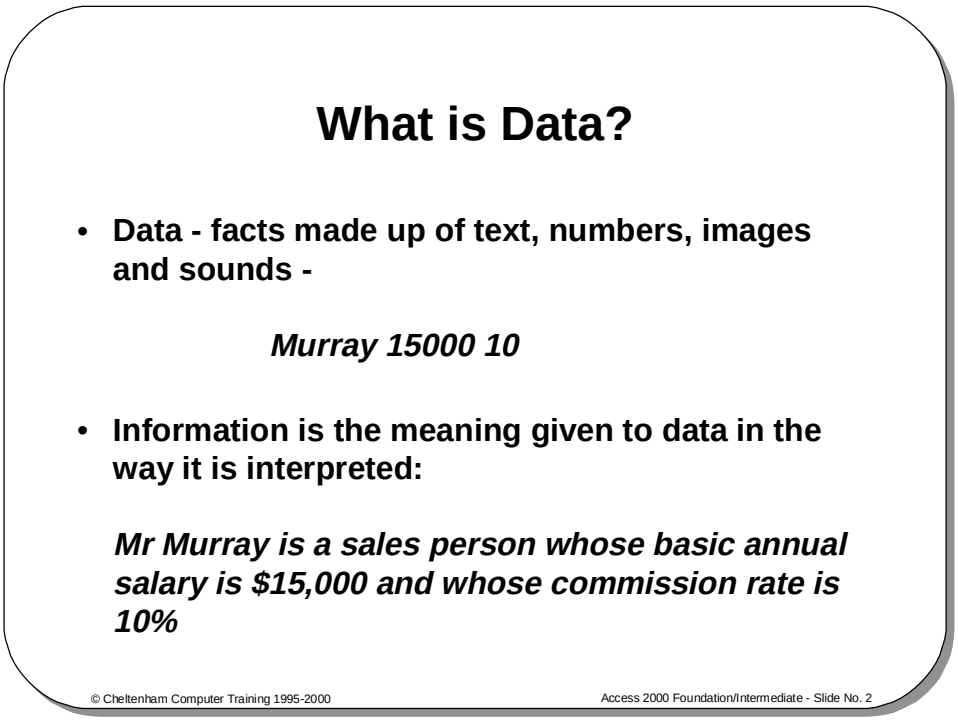
Introduction to Database Concepts and Access

Learning Module Objectives

When you have completed this learning module you will have:

- Understood the basic concepts of databases, tables and relationships
- Understood the terms 'Flat File Database' and 'Relational Database'
- Understood the benefits of an electronic database
- Had a brief introduction to Access including forms, queries and reports
- Seen how to start Access and understand the basic components of the Access Application Window



What is Data?

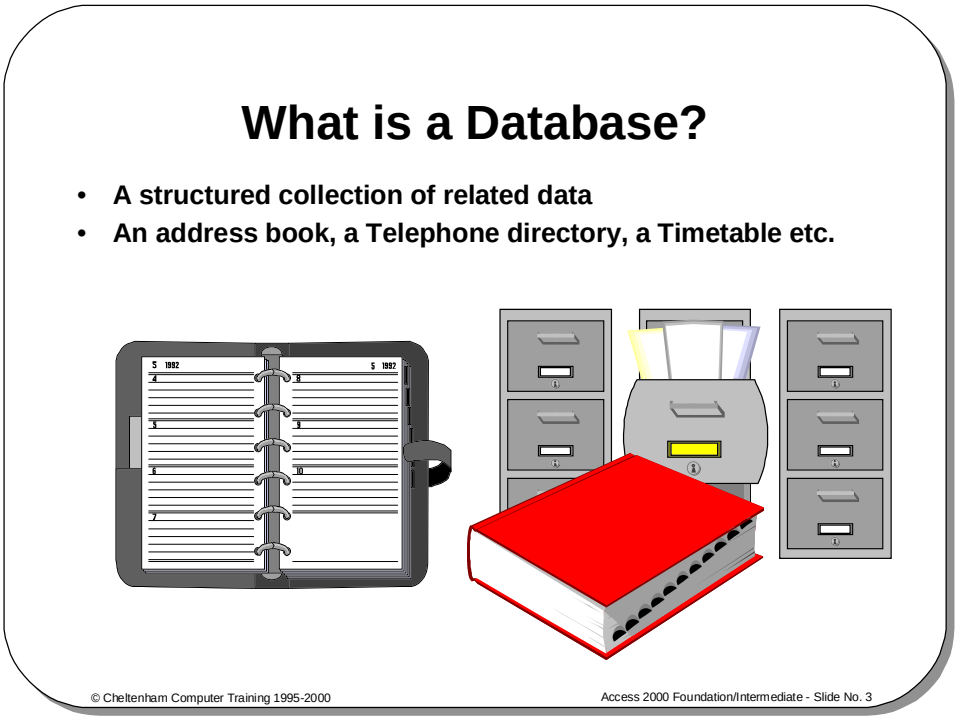
Background

Data is made up of text, numbers, images and in some cases, sounds which can be processed or stored by a computer. By itself, data might not mean very much. In order to understand it, it needs to be interpreted (or processed) to become information.

Information is the meaning given to data by the way in which it is interpreted.

To illustrate the difference, **Murray**, **15000** and **10** mean little as data. But if we were able to interpret them as the name of a salesman, Murray, his annual basic salary of $15,000 and his commission rate of 10%, it would assume more meaning and could be called information. This is not necessarily the end of the story as this information could be included in another set of data and used to provide other information. Alternatively, the same data could be interpreted in another way.

It is often helpful to think of data as the raw ingredients of a recipe that when processed and mixed in different amounts by differing techniques produce different results.



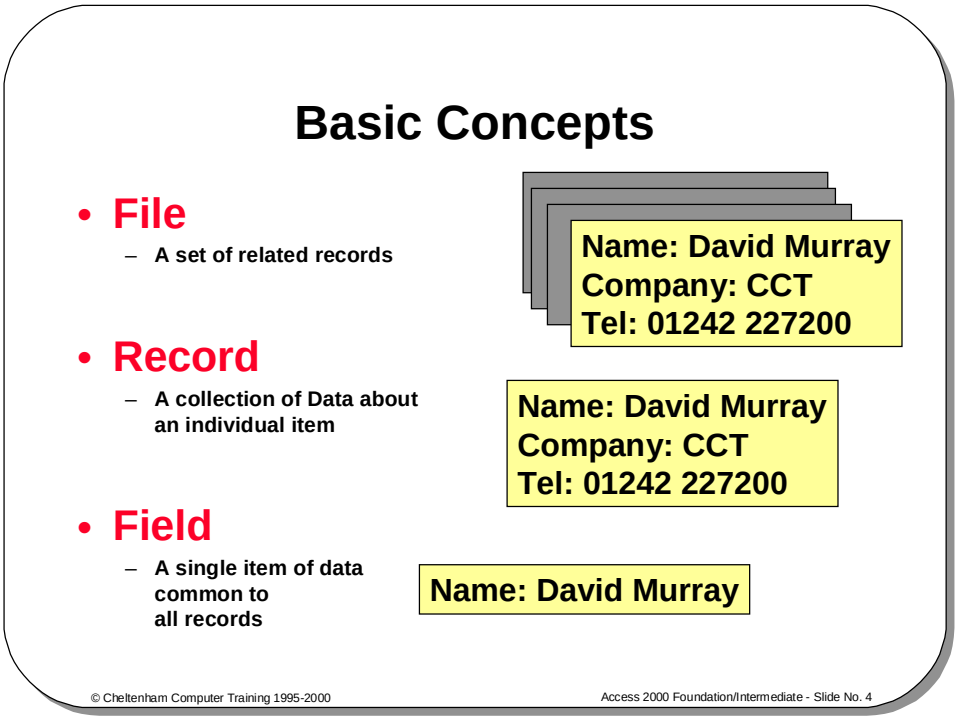
What is a Database?

Background A simple definition of a database is:

A structured collection of related data about one or more subjects.

In normal daily life we make frequent use of databases, and probably don't realize it. Here are a number of simple examples:

- The telephone directory
- Bus or train timetable
- Personal address book
- Rolodex of customers information
- Filing cabinet



Basic Concepts

Background

File: a collection of records related by subject.

- Customers list.
- Product list.
- Train Times.

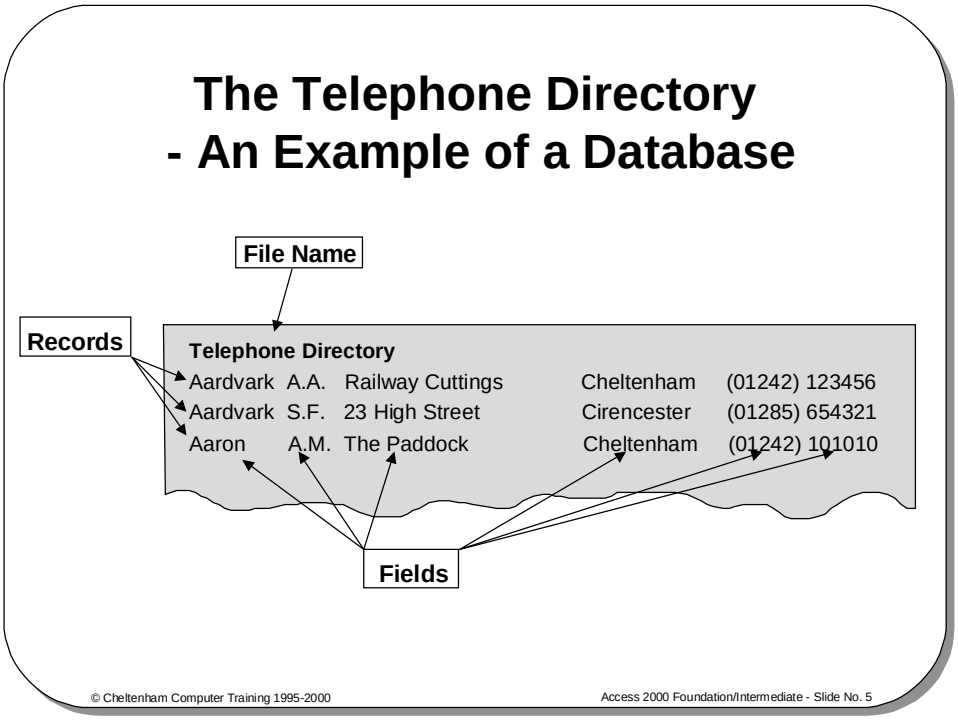
Record: Information about a single item (entity).

- The customer - “R.A. Jones Engineering”
- The product - “Oil Filter”
- The train - “10:15 - Paddington”

Field: The individual data items held for each record.

- The customer - Name, Business, Address, Telephone Number Contact Name.
- The product - Part Number, Description, Cost Price, Sales Price, etc.
- The train - Route, Driver, Number of carriages, Buffet Car.

Fields are further defined in terms of **size** and the **type** of information that they contain.



The Telephone Directory - An Example of a Database

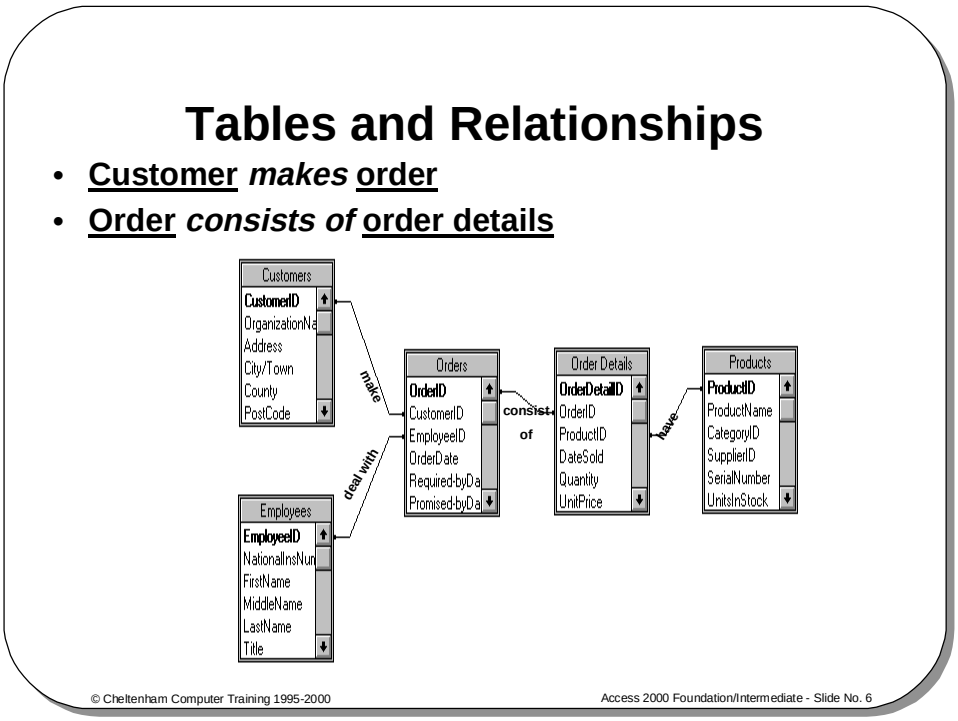
Background

In the above slide we have an example from the telephone directory where you can see three records of information.

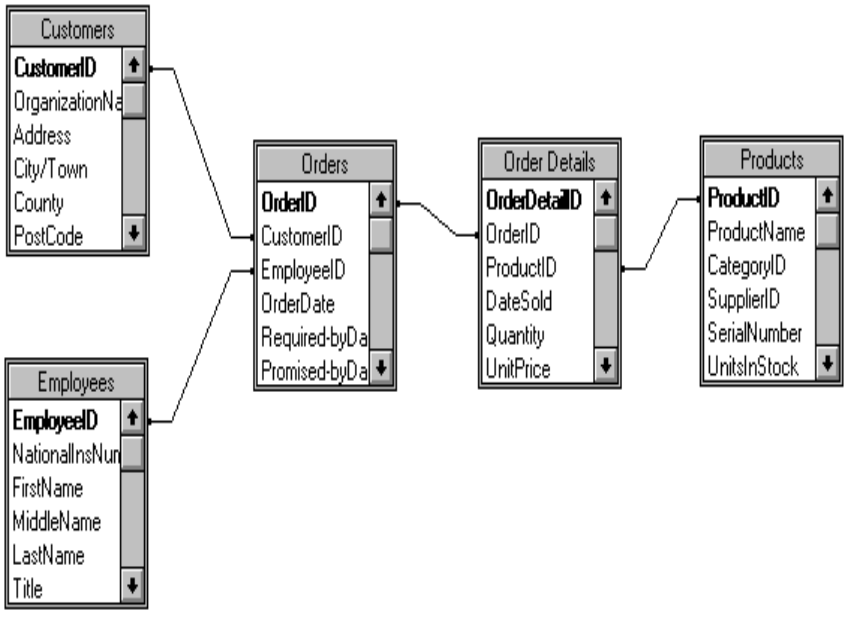
1. Aardvark
2. Aardvark
3. Aaron

Each of the above records has the following fields of information:

- Surname
- Initials
- Address
- Town
- STD Code
- Telephone Number



Tables and Relationships



Databases generally come in one of two styles.

Flat File Database

Flat File Databases are basically used for simple lists and may have duplication of data much like a simple record card system.

Relational Database

Relational Databases are those where the data is held in a number of cross-referenced files in order to reduce duplication. They make it easier to find, analyze, maintain and protect your data because it is all held in one place.

Think of any company, at the very least it has employees, customers, and a product or service to sell. To obtain these products or services, the customer must place an order.

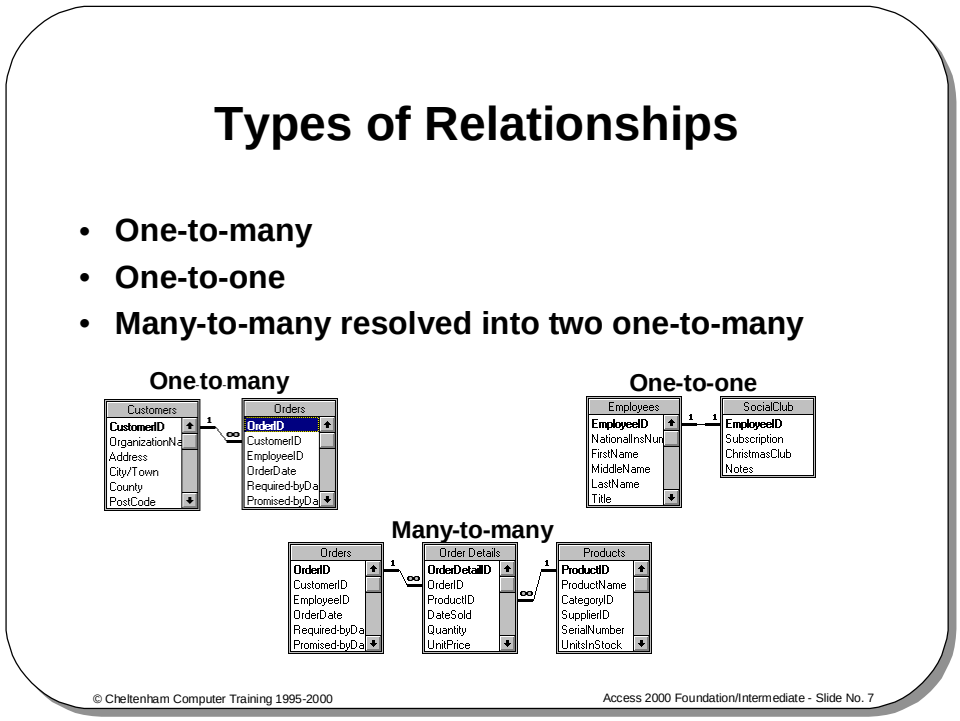
We have already identified the subjects of five separate files or tables:

- Employee
- Customer
- Product
- Order
- Order details

There are likely to be orders with more than one product and so we actually require a linking table for order details.

The above tables are said to have relationships that link them together:

- The employee sells to the customer
- The customer orders a product
- The order contains a number of order details



Types of Relationships

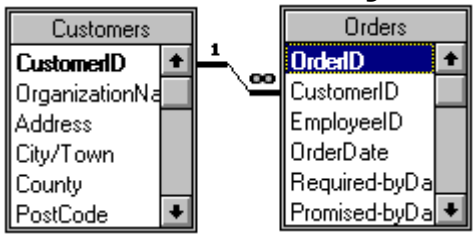
Background

When a customer makes an order, it may be for more than one product. In other words there could be many products in one order. This is known as a one-to-many relationship. A less common relationship is one-to-one. Many-to-many relationships are not allowed in Access: they are resolved into one-to-many relationships by setting up additional linking tables.
In the example above, the **1** indicates the "one" side of the relationship and the infinity symbol ∞ represents the "many" side.

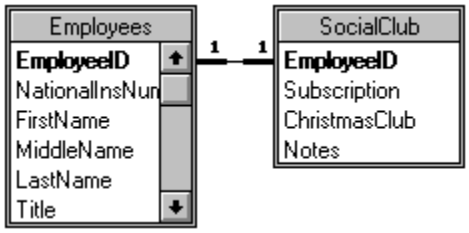
In the one-to-many example, the field linking the two tables is the CustomerID. In the Customers table, it acts as the *primary key*. The *primary key* uniquely identifies each record in the table. In some cases a primary key may be just one field (e.g. CustomerID) or it may be a combination of any number of fields (e.g. OrderID + LineNo will uniquely identify a record in an Order Details table). You know the data in your table and therefore you must specify the field or combination of fields that will uniquely identify records in that table.

In the Orders table CustomerID acts as a foreign key linking it to the primary table in the relationship - the Customer table.

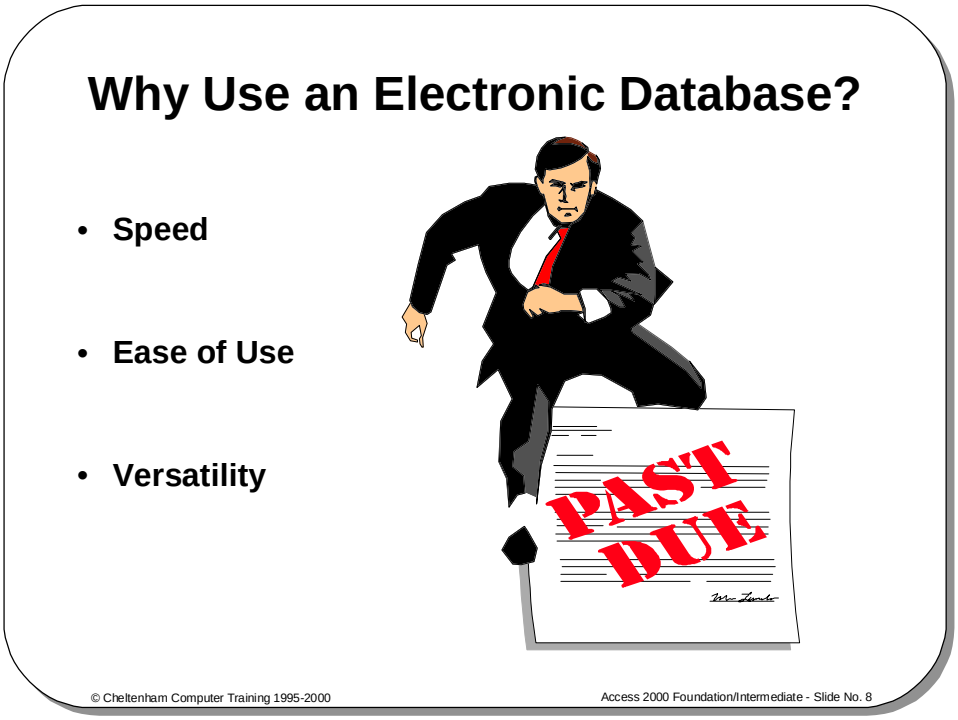
One-to-many



One-to-one



Many-to-many

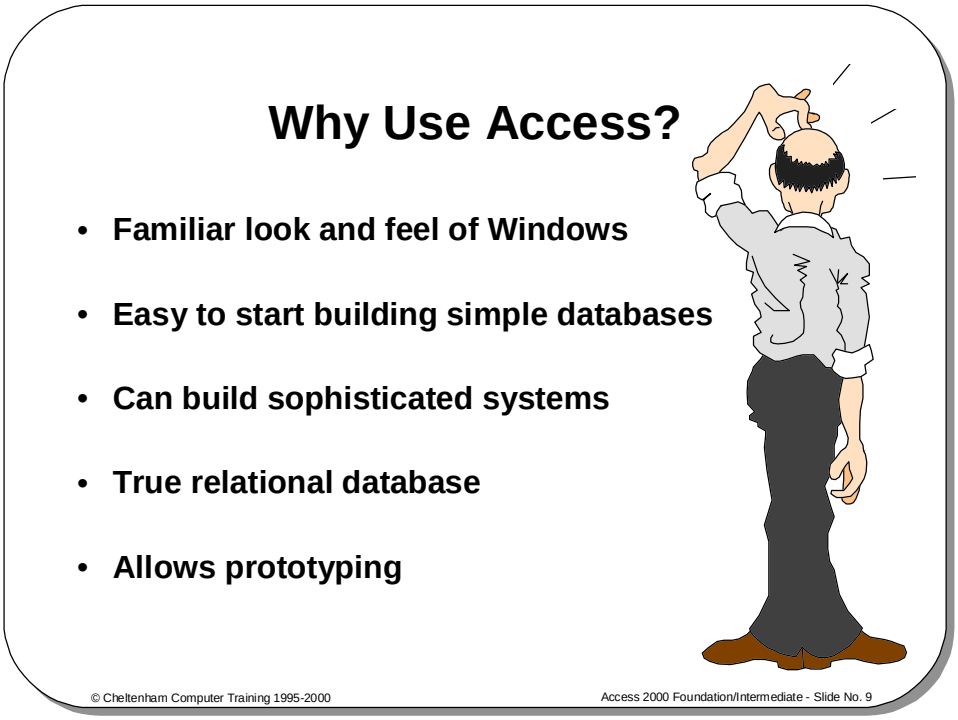


Why Use an Electronic Database?

Background

Electronic databases allow the user to carry out the same tasks as paper-based databases but with the following advantages:

- Increased speed.
- Easy to use.
- Store very large amounts of data.
- Allow for easy inputting and editing of data.
- Automatic updating and recalculating of data.
- Allow for easy sorting of data.
- Allow for easy searching and selection of data.
- Format, arrange and present information in the way that you want it.
- Share the information with other software applications/programs.
- On networks, electronic databases allow you to share one set of information amongst many users and therefore reduce duplication.
- Reduction of duplication prevents the problem of keeping several copies of the same database up to date and in-line with each other.



Why Use Access?

Background

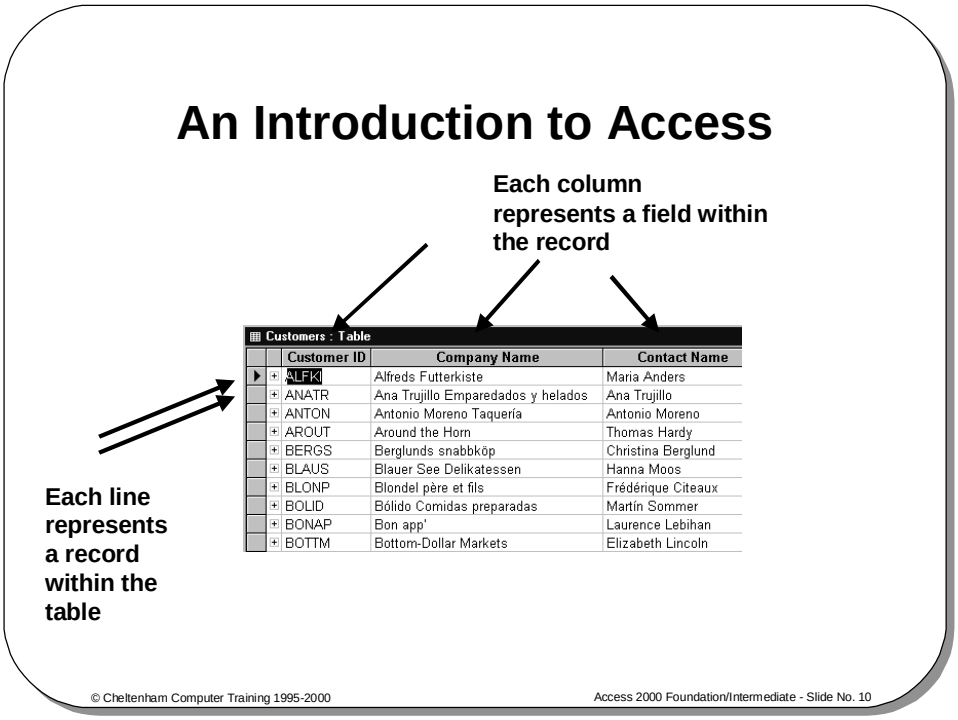
Microsoft Access is a relational database management system which together with Word, Excel, PowerPoint and Mail, makes up Microsoft Office Professional.

It provides a powerful way of storing, sorting, manipulating and retrieving data.

As it is developed by the same company that developed Windows, it has a familiar feel.

The power of Access is that it is easy for beginners, using basic functions, to start developing simple databases straight away. It is also used for the development of sophisticated application systems.

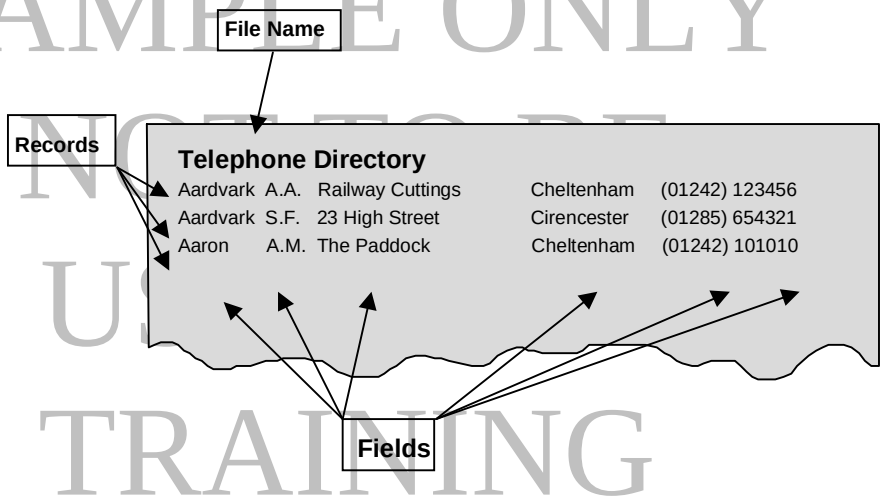
Access is very forgiving in allowing you scope to modify fields and tables after you have entered data.



An Introduction to Access

Background

Access, with only one exception, uses the same terms as described previously. That exception is the change of **Files** to **Tables**; this makes very good sense as most information we use is tabular in nature.

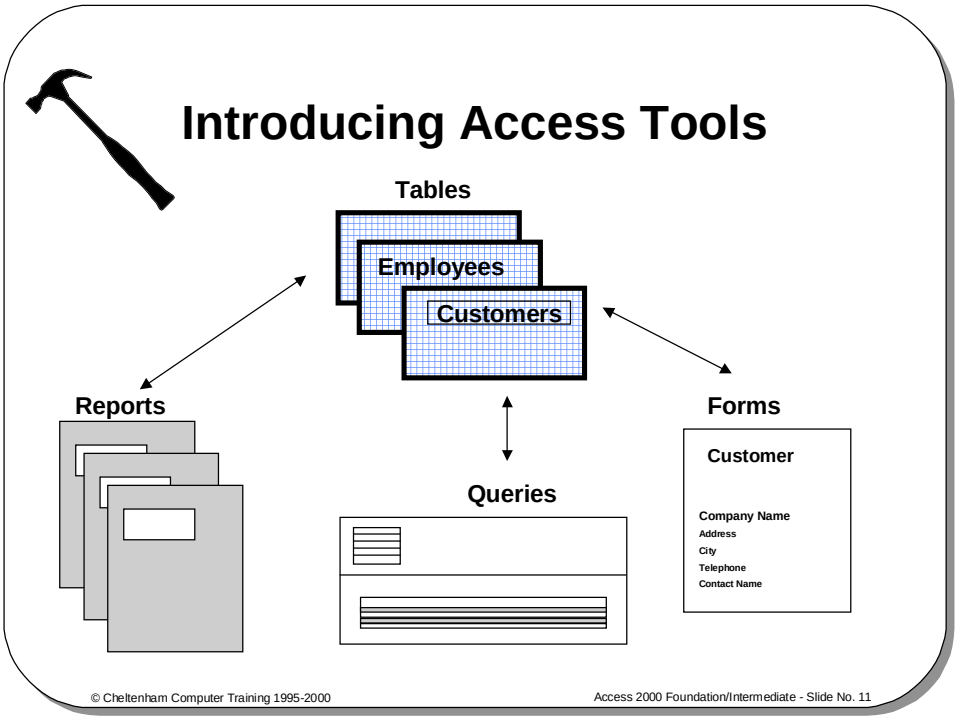



Customers : Table

Customer ID	Company Name	Contact Name
ALFKI	Alfreds Futterkiste	Maria Anders
ANATR	Ana Trujillo Emparedados y helados	Ana Trujillo
ANTON	Antonio Moreno Taquería	Antonio Moreno
AROUT	Around the Horn	Thomas Hardy
BERGS	Berglunds snabbköp	Christina Berglund
BLAUS	Blauer See Delikatessen	Hanna Moos
BLONP	Blondel père et fils	Frédérique Citeaux
BOLID	Bólido Comidas preparadas	Martín Sommer
BONAP	Bon app'	Laurence Lebihan
BOTTM	Bottom-Dollar Markets	Elizabeth Lincoln
BSBEV	B's Beverages	Victoria Ashworth
CACTU	Cactus Comidas para llevar	Patricio Simpson
CENTC	Centro comercial Moctezuma	Francisco Chang

Record: 1 of 91

This view of the table is called a Datasheet and is the way Access commonly presents data. A database can be very small such as a simple personal address book, or it can be a huge collection of data encompassing all the activities and transactions of a large business.



Introducing Access Tools

Background

When working with a database you require more than just the data. In order to manipulate, process and present your data as information you require a set of utilities or tools.

What are forms?

You can use a form to input, edit or view information in your database record by record.

It will allow you to see what you want in the way that you want to see it.

Forms can be created to imitate your paper documents.

What is a query?

A query is a question you ask about your data:

- How many accounts are overdue?
- What customers do we have in Birmingham?

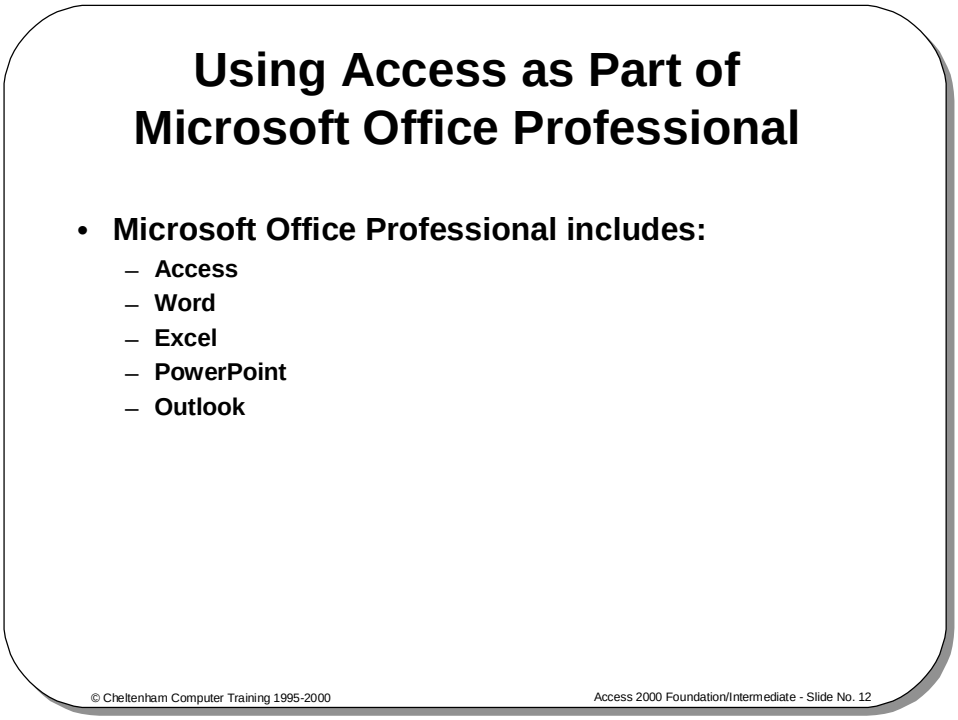
Whenever you ask a query of your database you get the latest up to date information.

What are reports?

You use reports to print and view information from your database.

Reports allow you to produce your information in the way that you want and enable you to:

- Group information.
- Calculate totals and averages.



Using Access as Part of Microsoft Office Professional

Background

Access is often installed as part of Microsoft Office and is located within the Programs Group in Windows. The group will include an icon for each of the applications which make up Office, i.e. Word, Excel, PowerPoint and Mail as well as Access. Microsoft Office provides additional cohesion and maneuverability between the different applications.

On some machines, you may find that Microsoft Office starts automatically; on others you may optionally load it yourself by clicking on it's program icon.

Access actually comes as part of Microsoft Office Professional Edition and is the additional component which distinguishes this suite from the standard Microsoft Office suite.

Starting Microsoft Access

- **Click on "Microsoft Access" in the Start menu**

Or if you have set up a shortcut on your Desktop, click on the Access shortcut icon

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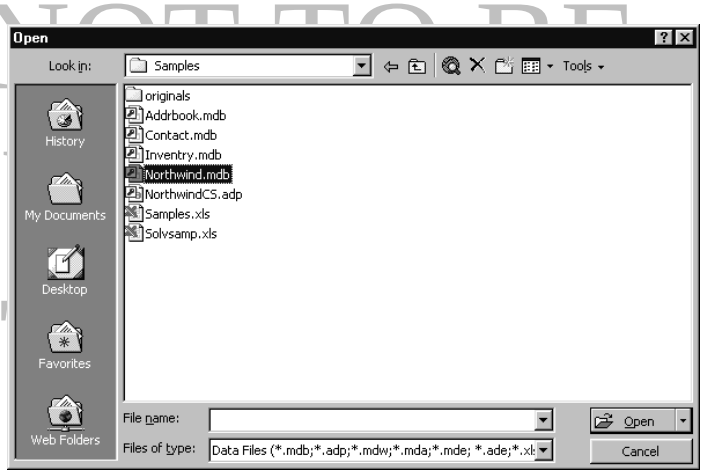
Starting Microsoft Access

To start Access

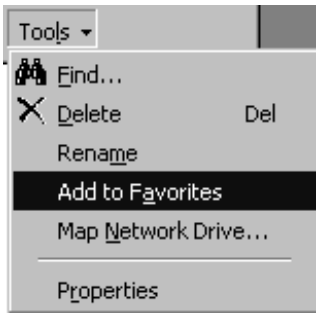
- Locate the **Microsoft Access** icon from within the Windows **Start** Menu.
- Click the **Microsoft Access** icon and Access will open.

To add a database to your 'Favorites' folder

- Start Access and display the **Open** dialog box. Locate and select the item that you wish to add to your Favorites folder. In the example below the **Northwind** database file has been selected.



- Click on the **Tools** drop down menu (in the **Open** dialog box toolbar) and the select **Add to Favorites** command.

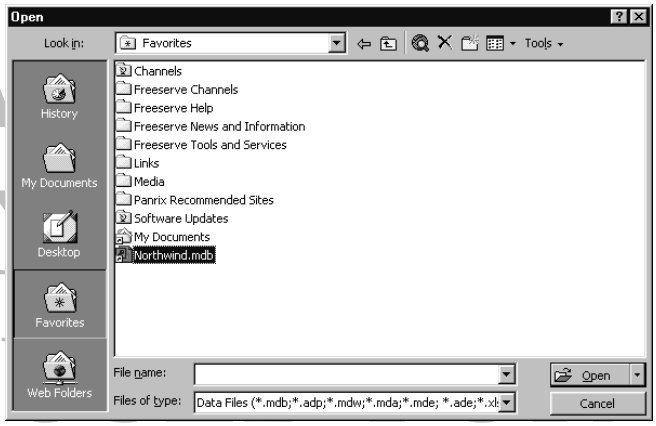


The item is now contained within your favorites folder.

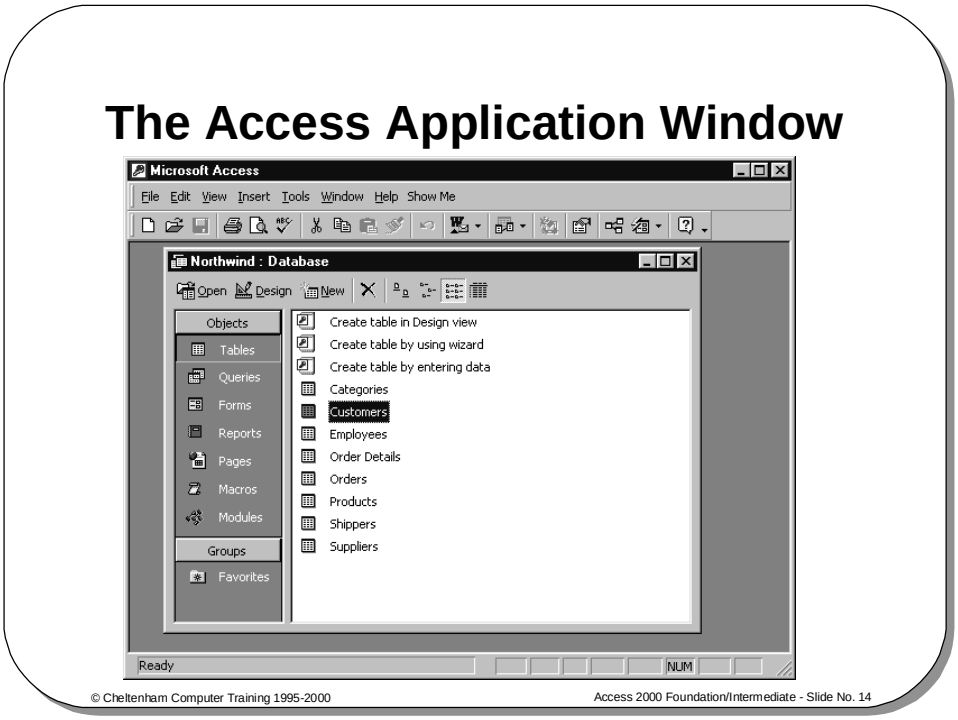
Opening a database from your Favorites folder

- To open a file contained within your favorites, first display the **Open** dialog box.
- Click on the **Favorites** icon displayed down the left hand side of the **Open** dialog box.

- Any items that you added to your Favorites will be displayed within the dialog window, as illustrated.



- Click on the required item, in this case **Northwind.mdb**, and then click on the **Open** button to open the file.



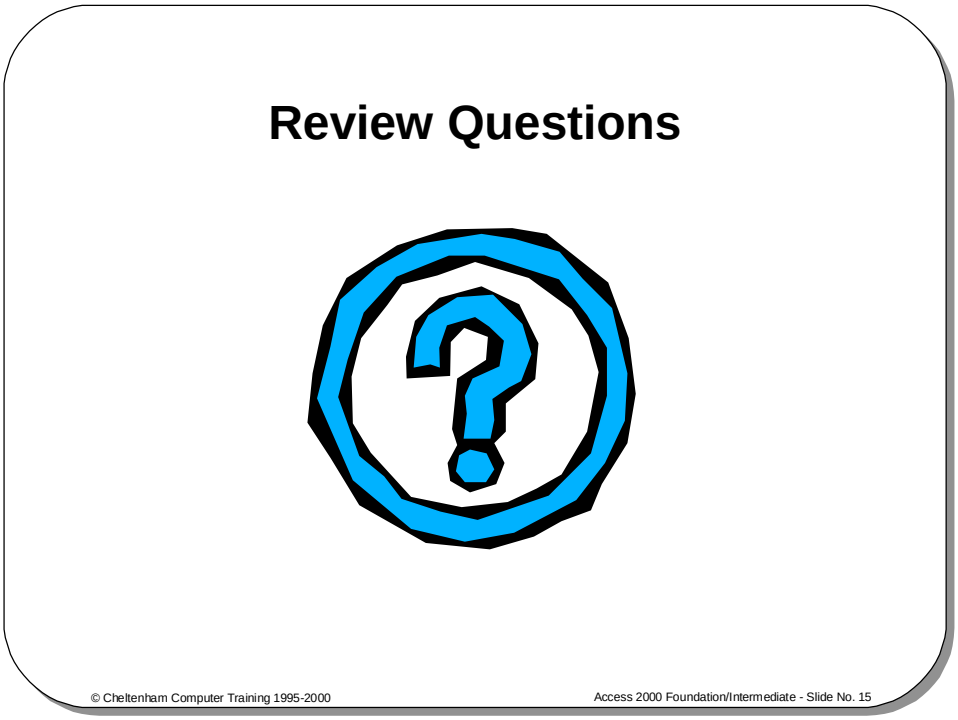
The Access Application Window

The Access Application Window

The Access Window follows the standard layout for all Microsoft Windows applications. A **Title Bar** is displayed at the top of the window with a **Control Menu** box to the left and **Minimize**, **Restore** and **Close** buttons to the right. Underneath is the **Menu** bar and below that the toolbars. When you start Access, only the **File** and **Help** menus are available and most of the buttons on the toolbar are grayed out. This is because there is no database open.

The Access Toolbar

The Microsoft Access toolbar contains buttons that provide shortcuts for commands found in the menu bar. There are several toolbars available, they can be displayed by selecting **Toolbars** from the **View** menu.
If you are unsure of what command a button will carry out when clicked, hold the mouse pointer over the button to get a short description of the button's function.



Review Questions - How Would You ...

1. Explain the terms database, tables and relationships?
2. What is the difference between a 'Flat File Database' and 'Relational Database'?
3. Explain the terms forms, queries and reports?
4. How would you start Access?
5. Examine the Access Application windows and see how many of the screen components you can identify at this stage? Use the on-line Help to get more information!

Access - Concepts, Terminology and Usage

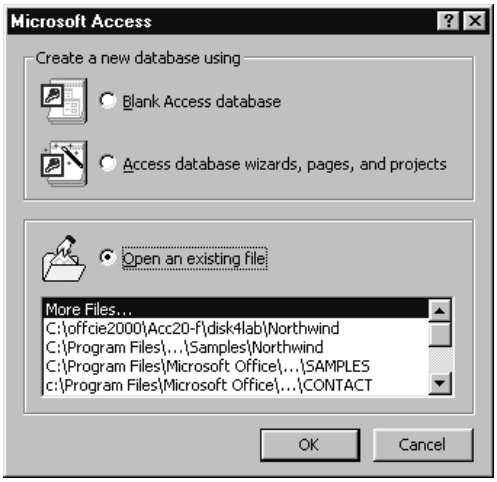
Learning Module Objectives

When you have completed this learning module you will have:

- Seen how to open a database when you start Access
- Seen how to open an Access database, once Access has already started
- Seen how to open a database created with a previous version of Access
- Seen how to close a Database
- Seen how to open a Table and navigate through the table
- Seen how to view a table in Design View
- Understood the principle of using a query
- Seen how to open and use Forms
- Seen how to view a form in Design View
- Understood the principle of using Reports

Opening a Database

- **To open a database when you start Access**
  - **Choose the Open an existing file option on the opening dialog, as illustrated**
- **To open a database once you have already started Access**
  - Choose Open from the File menu
  - OR press CTRL+O
  - OR click on the Open icon on the toolbar



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Opening a Database

To open a database when you start Access

- From the opening dialog, select the **Open an existing file** option, and then click on the **OK** button.

To open an Access database, once Access has already started

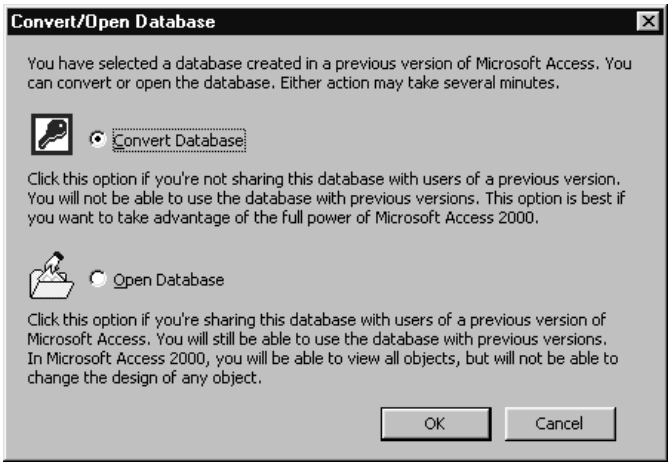
- From the **File** menu choose **Open**

  Note: Recently used databases may be listed at the bottom of the file menu. If the database you require is included in the list, click once on the list entry.

  OR click on the **Open** icon on the **Standard** toolbar.
- Select the **File name** from the list on the left-hand side of the box. You might need to change folders in order to find the required database.
- Click on **Open** to complete the operation.

To open a database created with a pervious version of Access

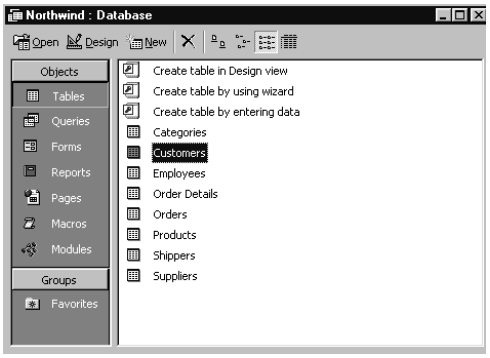
- Open the file as you would any file created and saved by Access. You will see a dialog box indicating that the file was created using a previous version of Access.



If you open the database (without converting it to Access 2000 format), then you can edit the data in the database, but you cannot alter the design of tables, forms, reports or any other objects. After any modification of data in the file within Access 2000 you can save it in the existing format and return the file to a user of previous versions of Access. The **Convert Database** option will convert the file format to Access 2000 file formats, which are by default not recognized by earlier versions of the program.

The Access Database Window

- **Icons down the left hand side provide access to all database objects**
  - **Select the object by clicking the icon**



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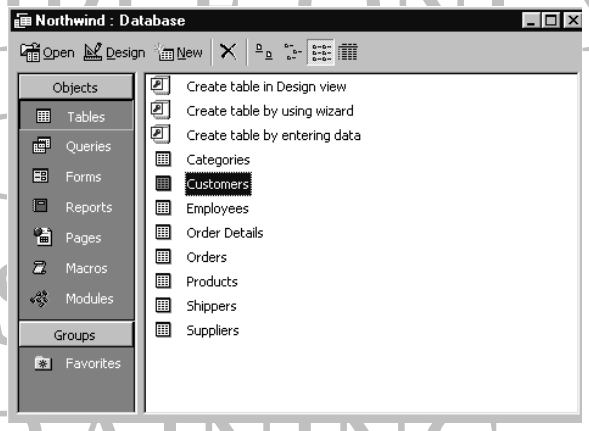
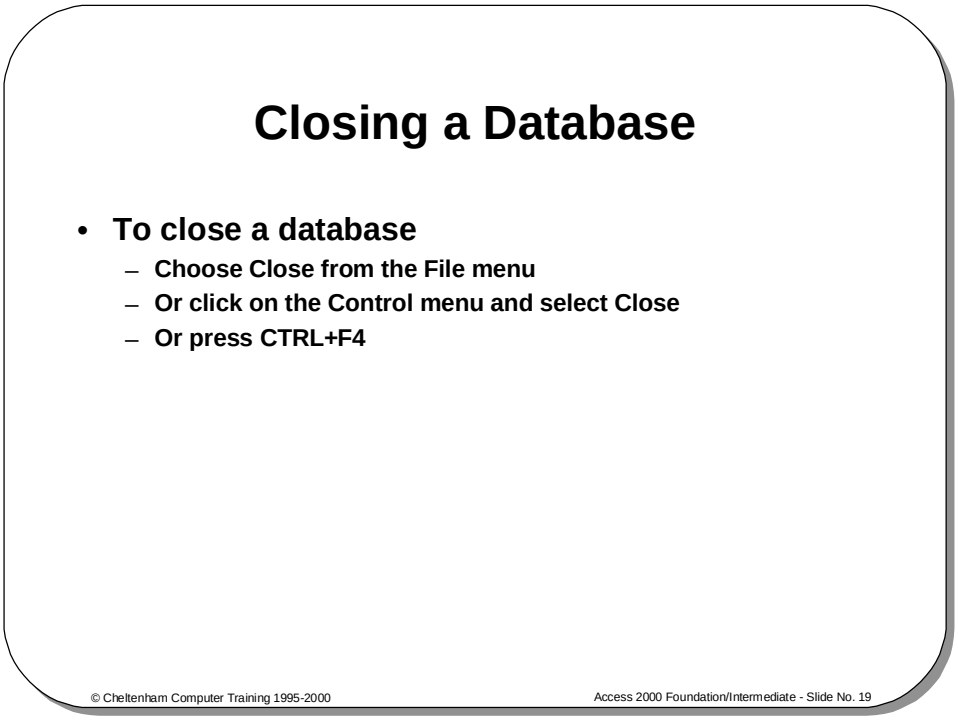
The Access Database Window

Background

The **Access Database Window** appears within the Access application window when a database is opened. It provides an easy way of accessing all database objects.



Icons down the left hand side provide access to tables, queries, forms, reports, macros and modules. We shall examine some of these, in detail, later on in this course. You can select an object by clicking once with the mouse pointer. An object can also be selected by choosing it from the **View** drop-down menu.



Closing a Database

To close a database

- Choose **Close** from the **File** menu

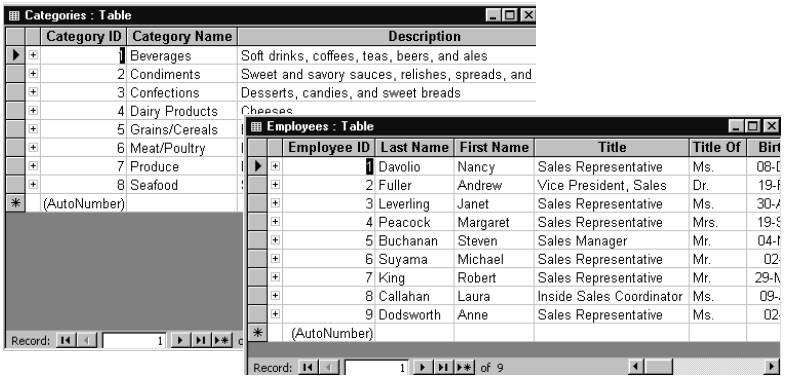
  OR click in the **Control** menu box in the database window and choose **Close**

  OR double click in the **Control** box

  OR press **Ctrl+F4**.

Opening a Table

- **To open a table**
  - **Click on the Table icon in the Database window**
  - **Select the table you want**
  - **Click on the Open icon**



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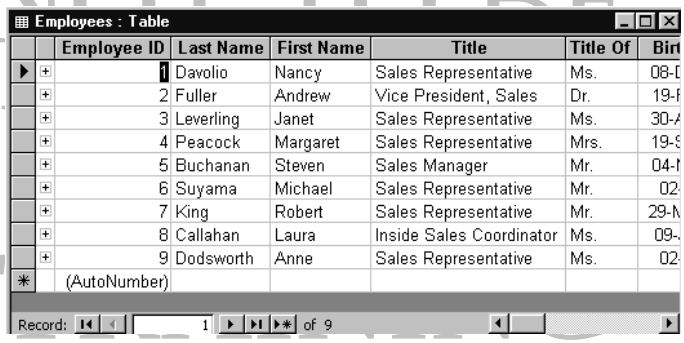
Opening a Table

To open a table

- In the Access **Database Window** click once on the **Tables** icon.
- In the list of tables, double click on the name of the table you want to open

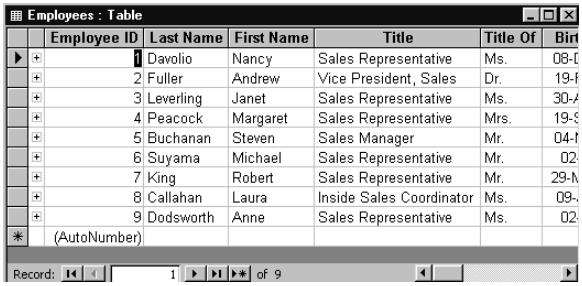
OR click on the name of the table you want to open and click on the **Open** button.

- A Datasheet view of the table you have selected will be displayed.



The Table Window

- **A table opened from the database window appears as a datasheet**
- **Each row contains a separate record**
- **Each column contains a separate field**



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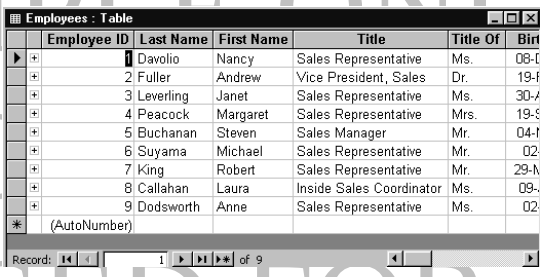
The Table Window

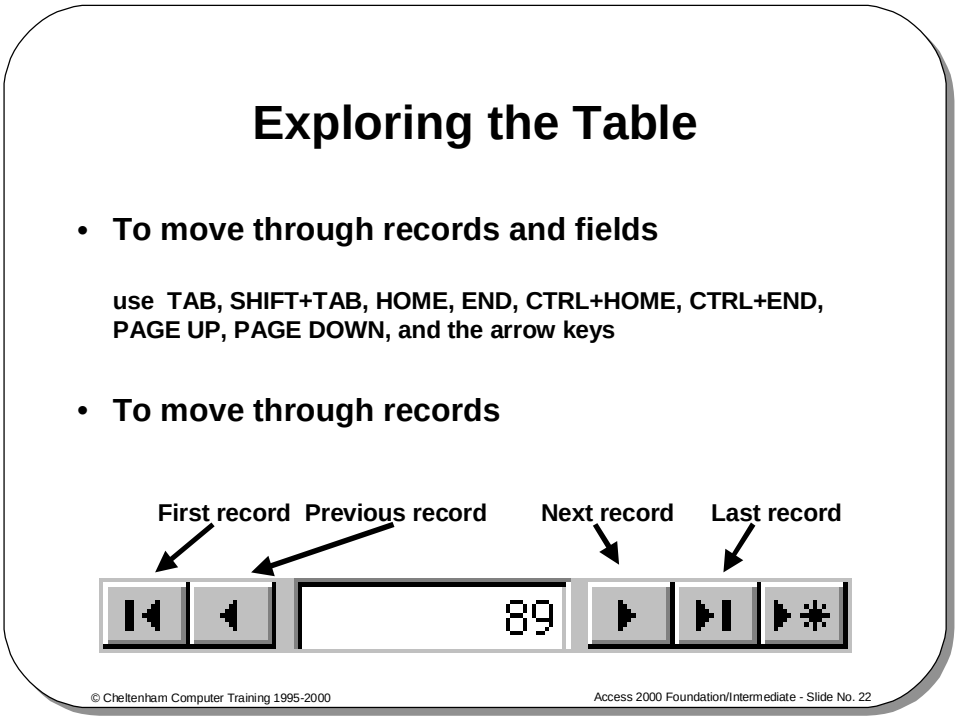
Background A table opened from the Database Window appears as a Datasheet. The menu bar and toolbar change to include options relevant to working with tables.



Column headings, immediately beneath the title bar, denote field names. Each row contains a separate record.

The table might have more columns than can be displayed in the window in which case only the left most ones are visible. The shaded boxes to the left of the records are known as record selectors. An arrow symbol in the selector indicates the record currently selected. An asterisk occupies the selector of the next available empty record.

At the bottom of the window, immediately above the status line, a scroll bar provides navigation buttons and boxes showing the number of the current record and the total number of records in the table. When opening a file, this would normally indicate the first record.



Exploring the Table

To move to a field using the mouse

- Move the mouse pointer over the required field and click. The pointer changes shape depending on the field type.

Note: If you click in the leftmost position in the field, the whole field is selected.

To move through the table using the keyboard

- To move from field to field and record to record, use one of the following methods:

Press this:	To move:
Tab	to the next field
Shift+Tab	to the previous field
Home	to the first field of the current record
End	to the last field of the current record
↓	to the next record
↑	to the previous record
Ctrl+Home	to the first field of the first record
Ctrl+End	to the last field of the last record
Page Up	scroll up one page
Page Down	scroll down one page

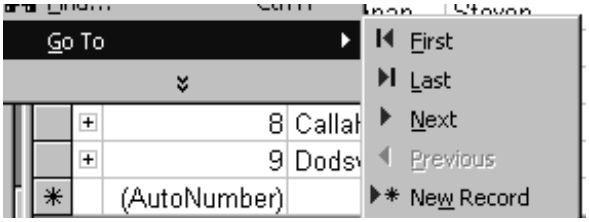
To move from record to record using the scroll bar and mouse

- To move from record to record:

Click on this:	To move:
	to the next record
	to the previous record
	to the last record
	to the first record

To move to a specific record using the Edit menu

- Choose **Go To** from the **Edit** menu and select **First**, **Last**, **Next**, **Previous** or **New Record**.



To move 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.

- Press **Enter**.

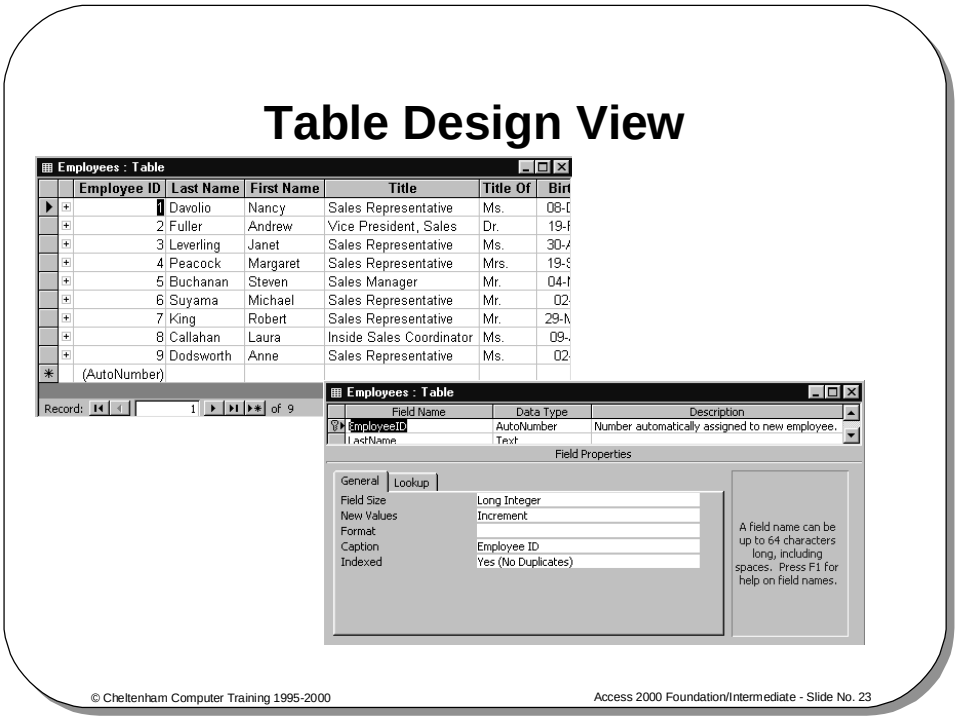
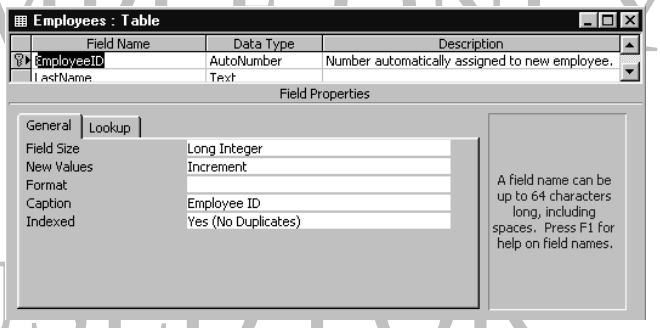


Table Design View

Background When you open a table, you see it in Datasheet view. When creating a new table you see it in design view. To modify a table you must first switch to design view.



To switch to Design View

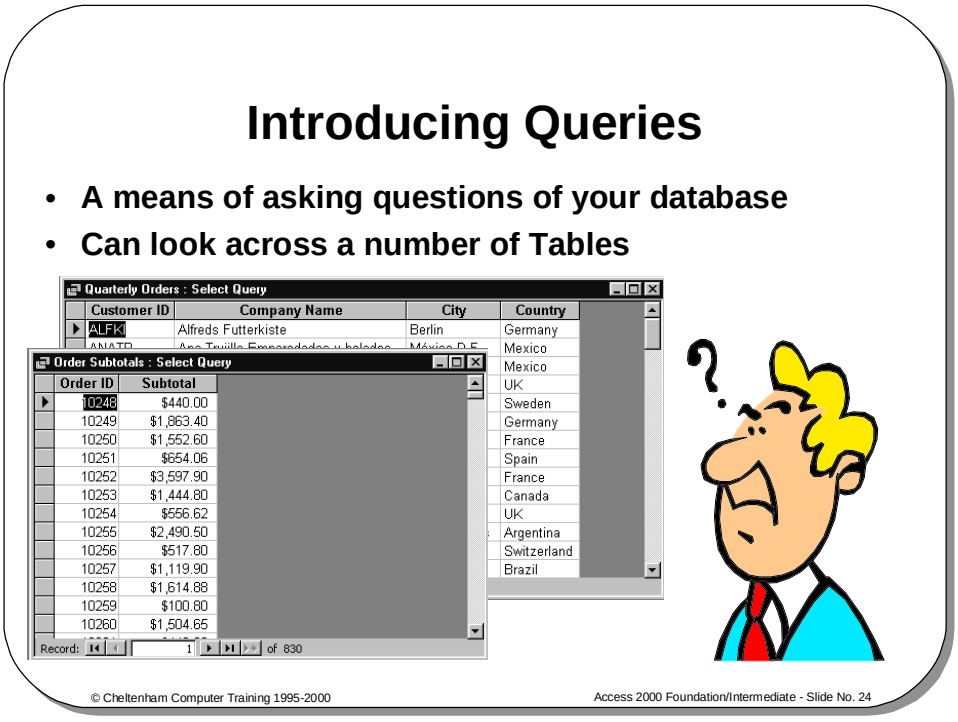
- Choose **Design View** from the **View** menu

  OR click on the **Design View** icon on the toolbar.

To switch to Datasheet View

- Choose **Datasheet View** from the **View** menu

  OR click on the **Datasheet View** icon on the toolbar.

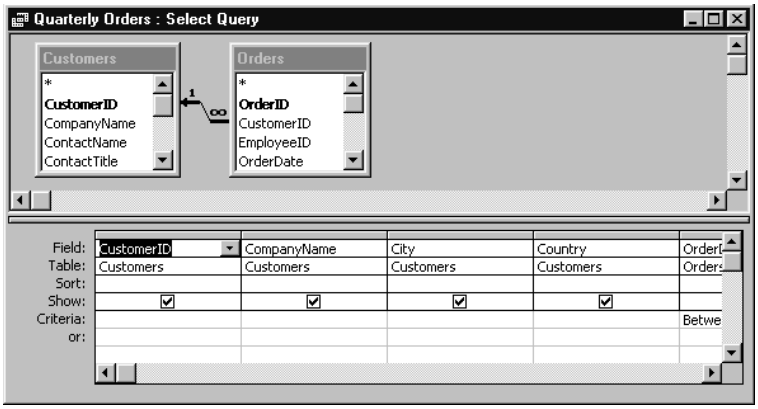


Introducing Queries

Background

Queries provide a way to gather selected information from your database. You can take data from different tables and combine them together. You can specify criteria to limit the number of records and perform calculations to produce information not directly held in the underlying tables.

You can look at queries in Datasheet View or Design View.



What Is a Parameter Query?

A Parameter Query is one that asks for criteria to be inserted by the user interactively. When the user runs the query, it displays a dialog box or boxes requesting the criteria. A simple example would be the range of dates for a quarterly sales report.

To open a query in Design View

- Open the **Database Window**.
- Click on the **Queries** icon.
- Click on the **Design** button in the database window.

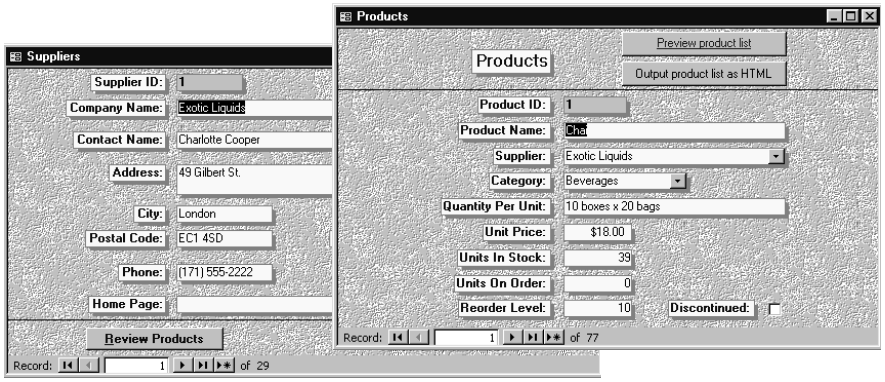
To change views

- From **Datasheet View**, click on the **Design View** icon on the toolbar

  OR from **Design View**, click on the **Datasheet View** icon on the toolbar.

Introducing Forms

- **A friendlier view of the database**
- **Used for data input, menus, display and printing**



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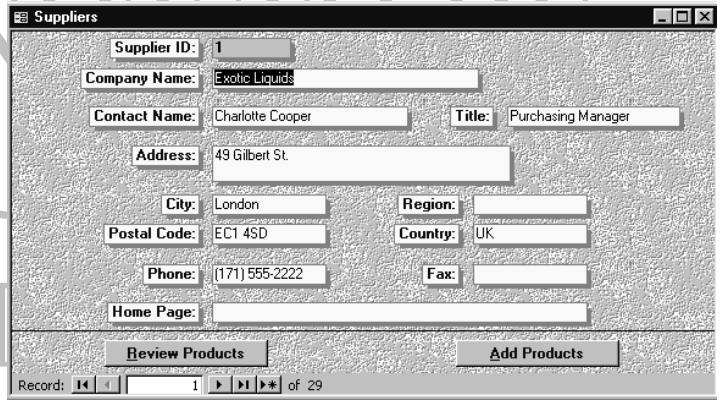
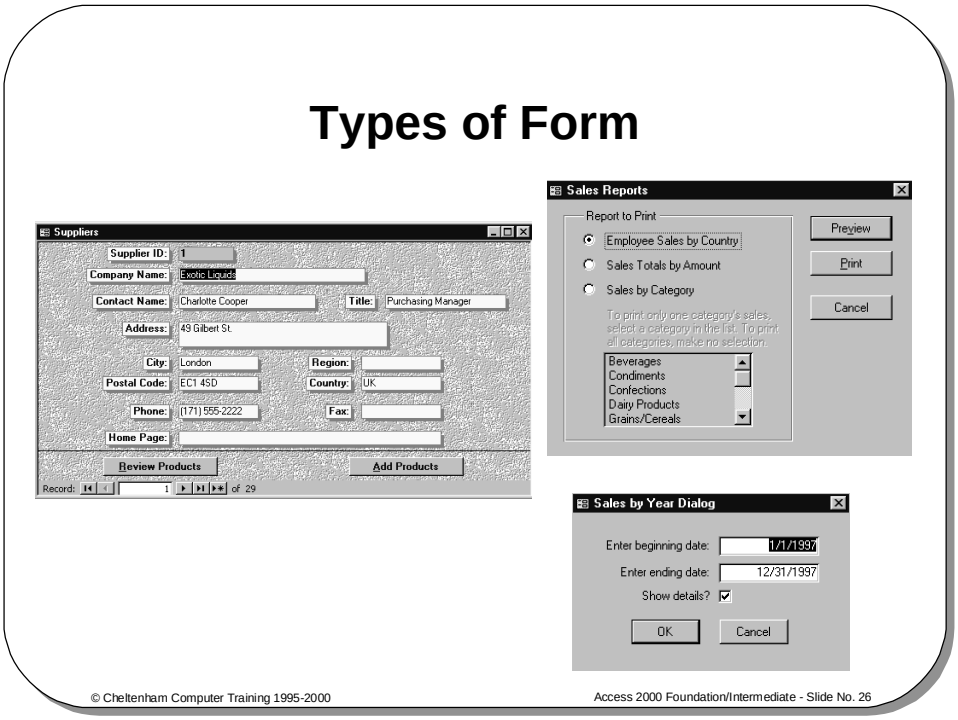
Introducing Forms

What are forms? Forms present the user with a friendlier, more acceptable view of the database. Forms can be used in a variety of ways including: adding, deleting and modifying data; displaying data; controlling the way and order in which users access the database; displaying messages; and printing information. You can use forms to develop menus to guide the user through any desired operation. All forms are based on one or more underlying tables whose structure is unaffected by the form design.



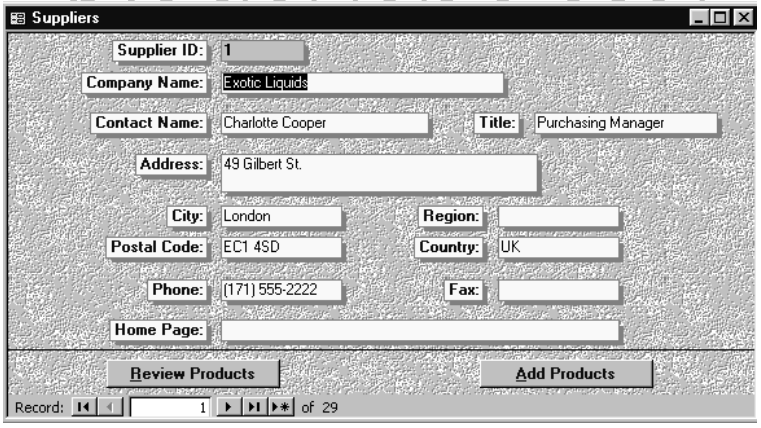


Types of Form

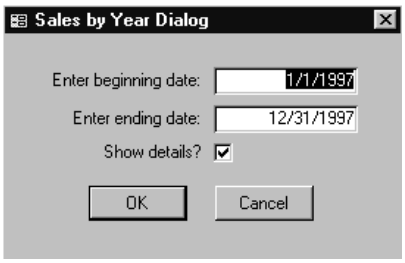
Background

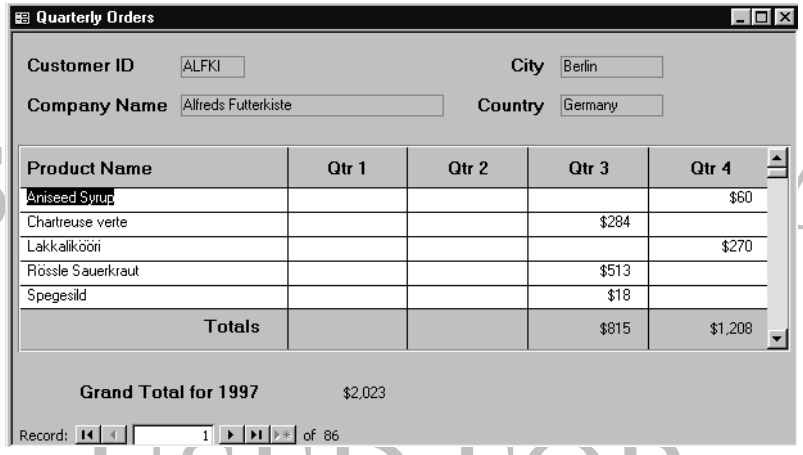
A form can be almost an exact replica of a paper form such as an order form or a time sheet. A variety of design techniques allow you to use different fonts, scanned images and clip art, command buttons and graphs in a variety of colors.

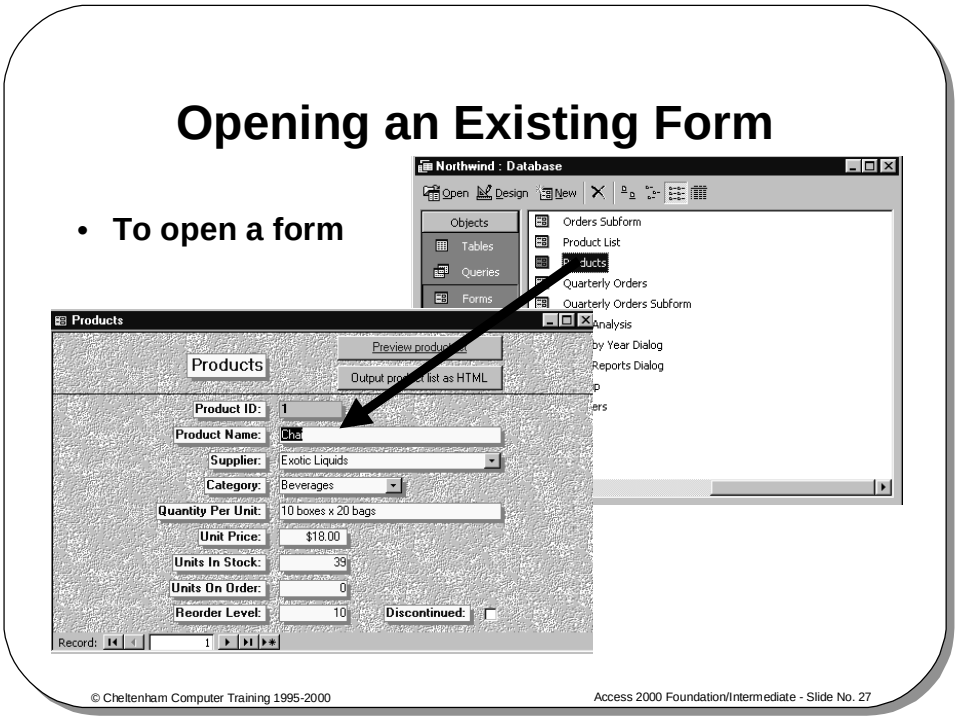
With Form Wizard you can create forms quickly and simply. A few examples taken from the Northwind database are illustrated on the next few pages.



More examples of forms taken from the Northwind database





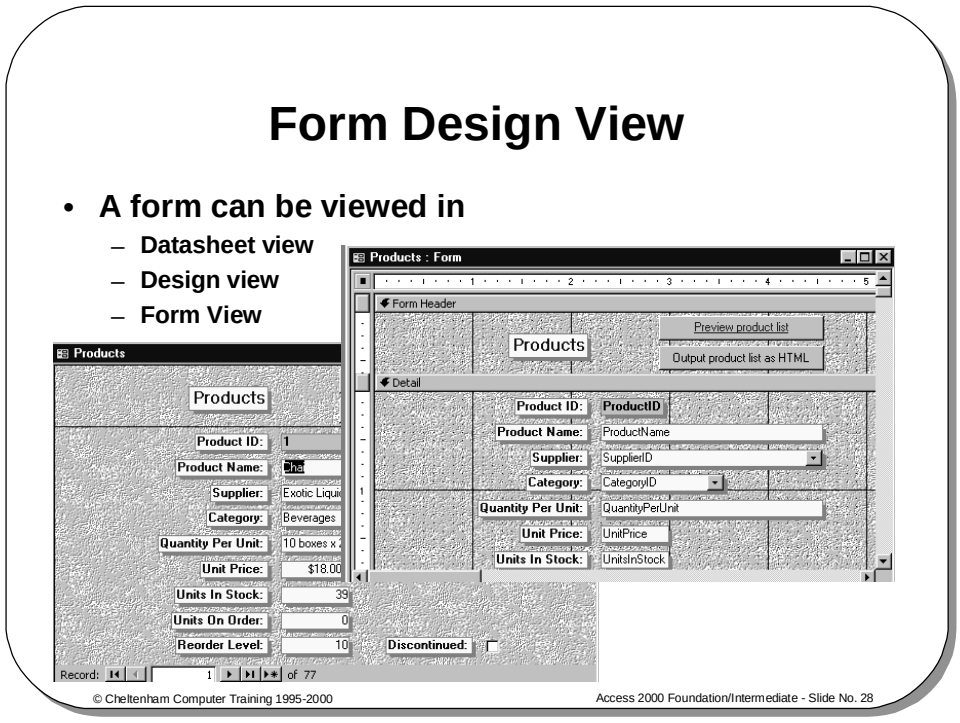


Opening an Existing Form

To open a form

- Open a database.
- Select the **Forms** icon in the **Database Window**.
- Select the form that you wish to open.
- Double click on the selected form.

OR click on the **Open** button in the database window and the form will open and be displayed on screen.



Form Design View

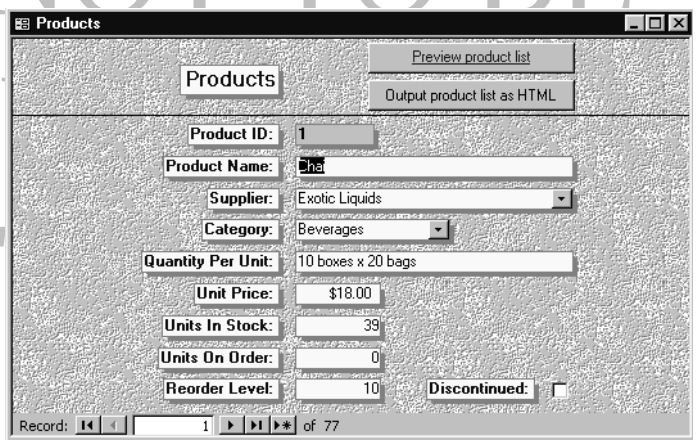
Background

A form might be derived from a complete table or tables, part of a table, or composites of more than one. By switching to Datasheet View, you can see the underlying data as it would appear in a table Datasheet. When designing or modifying a form you must use Design View.

To switch to Datasheet View

- Click once on the **Datasheet View** button on the standard toolbar

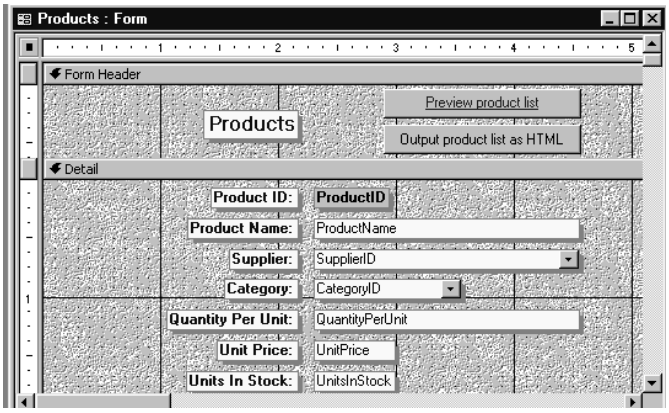
OR choose **View, Datasheet View** from the menu bar in the Access application window.



To switch to Design View

- Click once on the **Design View** icon on the standard toolbar

  OR choose **View**, **Design View** from the menu bar in the Access application window.



To close a form

- Click on the form's **Close** icon

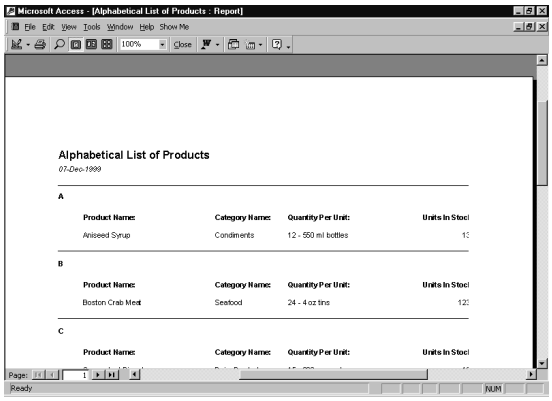
  OR choose **File**, **Close** from the menu bar in the Access application window

  OR choose **Close** from the **Control** menu within the form

  OR press **Ctrl+F4**.

Introducing Reports

- **Output of information from your database in the form of a printed report**
- **Allows you to group and summarize information**
- **Can be previewed to the screen prior to printing**
- **Can include logos, graphs and drawings**



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Introducing Reports

Background

Reports are the traditional form of computer output. Although they can be previewed on the screen, we generally think of reports as being hard copy. There are still a lot of people for whom a piece of paper is psychologically more acceptable than a computer screen. Reports needn't be boring. You can incorporate company logos and other kinds of pictures, graphs and drawings. The major benefit is being able to group, sort and summarize huge amounts of information and present it in a readable format. Before printing a report, you can preview it on screen. At the bottom left of the report window is a set of navigation buttons. Use the arrows to move back or forward a page. Use the arrows with bars to move to the first and last pages. The report will be displayed on-screen. When you move the mouse pointer over the report, it will display as a magnifying glass. Click once and the whole page will be displayed. Click again over any part of the page to magnify that particular area.

Review Questions

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Review Questions - How Would You ...

1. Open a database when you start Access?
2. Open an Access database, once Access has already started?
3. Open a database created with a pervious version of Access?
4. Close a Database?
5. Open a Table and navigate through the table?
6. View a table in Design View?
7. Open and use a query?
8. Open and use forms?
9. View a form in Design View?
10. Open and use a report?

Database Design and Table Creation

Learning Module Objectives

When you have completed this learning module you will have:

- Understood the need for good design and documentation of a database
- Seen how to create a new database using the Table Wizard
- Seen how to add fields using the Table Wizard
- Seen how to add Fields
- Seen how to rename a field using the Table Wizard
- Seen how to create a table without a Wizard
- Seen how to add a Field Name
- Seen how to set the data type
- Seen how to add a field description
- Seen how to save a new table
- Seen how to run the Input Mask Wizard
- Seen how to edit the Input Mask
- Seen how to set a Primary Key
- Seen how to add records to a Table Datasheet

Design and Document Your Database

- **A designers best tools are a pencil and paper**
  - **It is important to plan what you are going to do**
- **The sooner you touch the computer the sooner you'll make a mistake**
  - **If you don't plan you will often have to start again**
  - **Document what you are doing, will you remember what you did in three months time?**

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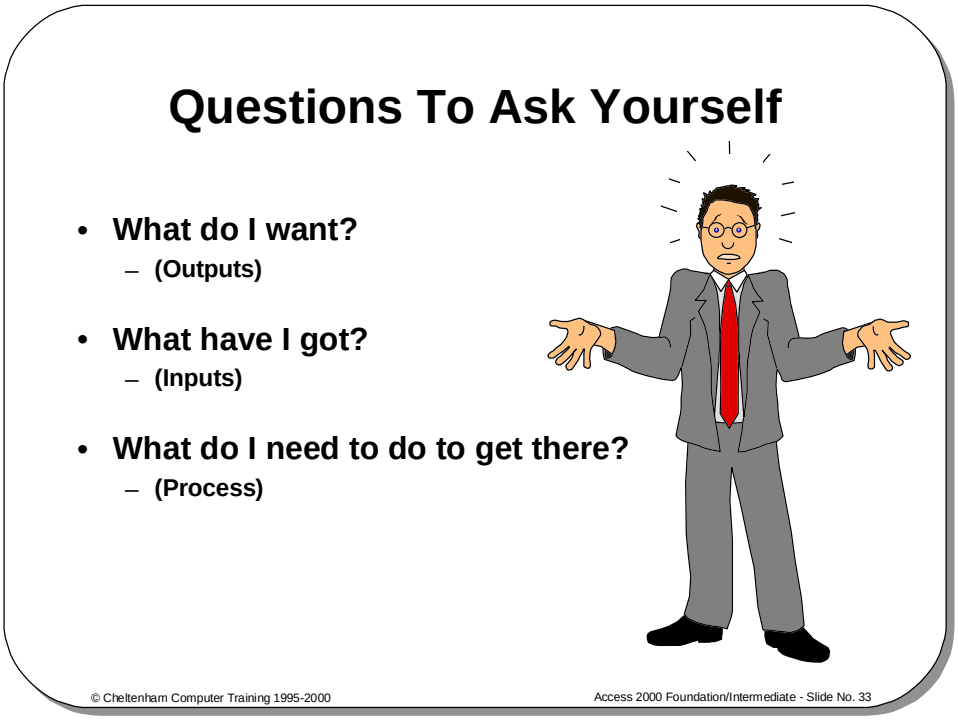
Design and Document Your Database

Background It is extremely important to spend time designing your database as time spent here will often pay dividends later on in the process, as you know where you are going and what you are trying to do.

How do you know if you've got there if you don't know where you are going?



Questions To Ask Yourself

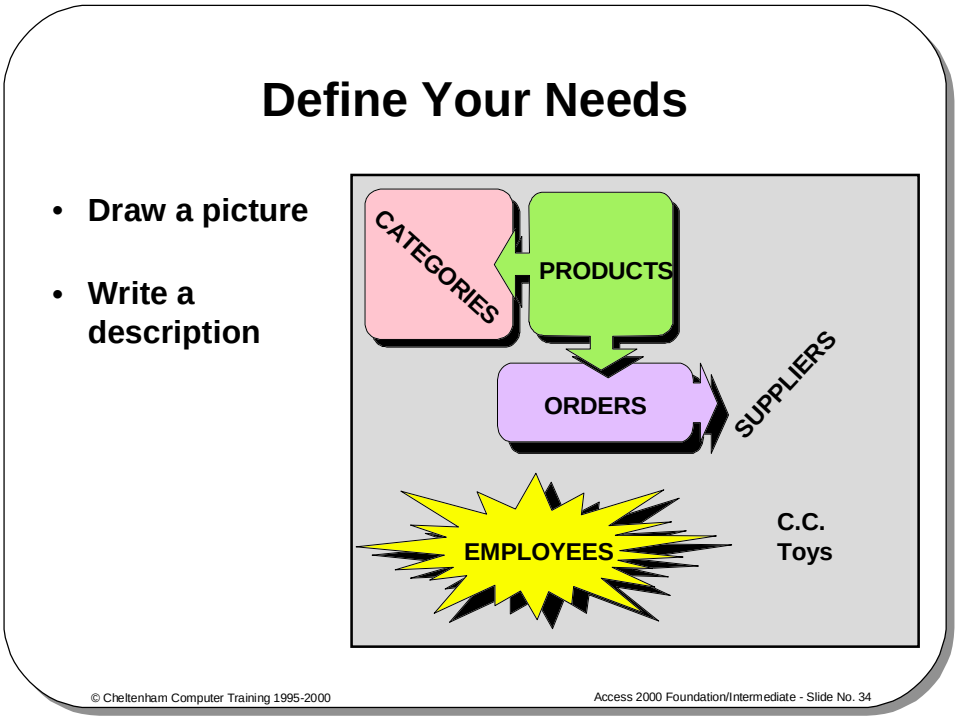
Background When setting out on the difficult design stage of producing the database there are a number of questions that you should ask yourself or your user.

What do I want? You must first establish why you require your database and what you expect to get from it. It is most important to define your output needs first.

Mistakes are often made because people try to decide what to put into their database before they know what they want from it.

What have I got? Knowing what you want then allows you to look critically at what data you have and make decisions as to how it should be structured in terms of fields and tables.

What do I need to do? This question asks you to look at any manipulation you need to carry out in order to achieve your information output: searches, sorts, and calculations.



Define Your Needs

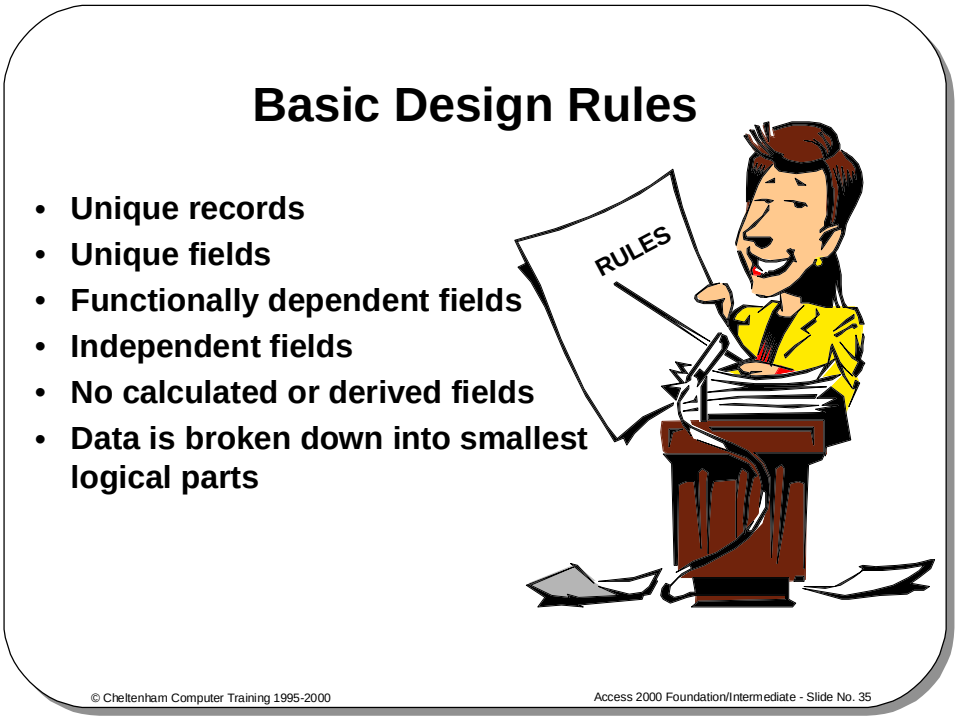
Background

In order to clarify your needs it is often useful to draw a simple diagram and/or write a short narrative. If the database is being designed for others, show them your sketch/narrative and use it to check your understanding of their requirements.

Example:

C.C.Toys is a retailer of toys for children of all ages. It buys its toys from a number of suppliers. It employs four staff. The store is laid out according to themes under a number of categories (e.g. Soft toys, Games Software etc.). Orders to suppliers can be for either single or multiple products.

The sketch on the slide shows the tables needed for C.C. Toys.



Basic Design Rules

Make each record unique

Each table should be allocated a primary key. A primary key is simply a field or a combination of fields which makes a record unique. Give your table a primary key to ensure you have no duplicate records. Select the primary key yourself. If you let Access define the primary key, it will add a counter field at the beginning of each record. The counter will be incremented on every new record added to the table. Although this guarantees the uniqueness of the record, it does mean that two records could contain identical data (apart from the key itself).

Make each field unique

If you have repeated the same kind of information in a table, you should put it into another table.

Make fields functionally dependent

Each field in the record should relate to the subject of the record. If it doesn't, it's either redundant or it belongs in another table!

Ensure each field is independent

You should be able to alter any one field in a record without affecting any of the others.

Ensure fields don't contain calculated or derived data

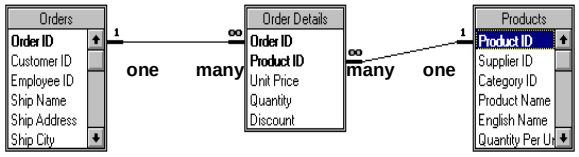
As an example, you need only hold gross pay and deductions on a person's salary record. Net pay can be calculated when it is required, when printing the pay slip for instance.

Ensure data is in its smallest logical parts

It might be useful, for instance, to keep customers' post codes separate from the rest of their addresses so that you can analyze sales based on postal regions.

Determine Relationships

- **Customer makes many orders: one-to-many**
- **Order contains many products and products can appear on many orders: many-to-many**
- **Employee belongs to social club: one-to-one**
- **Get rid of many-to-many by introducing another table, e.g. Order Details**



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Determine Relationships

Background

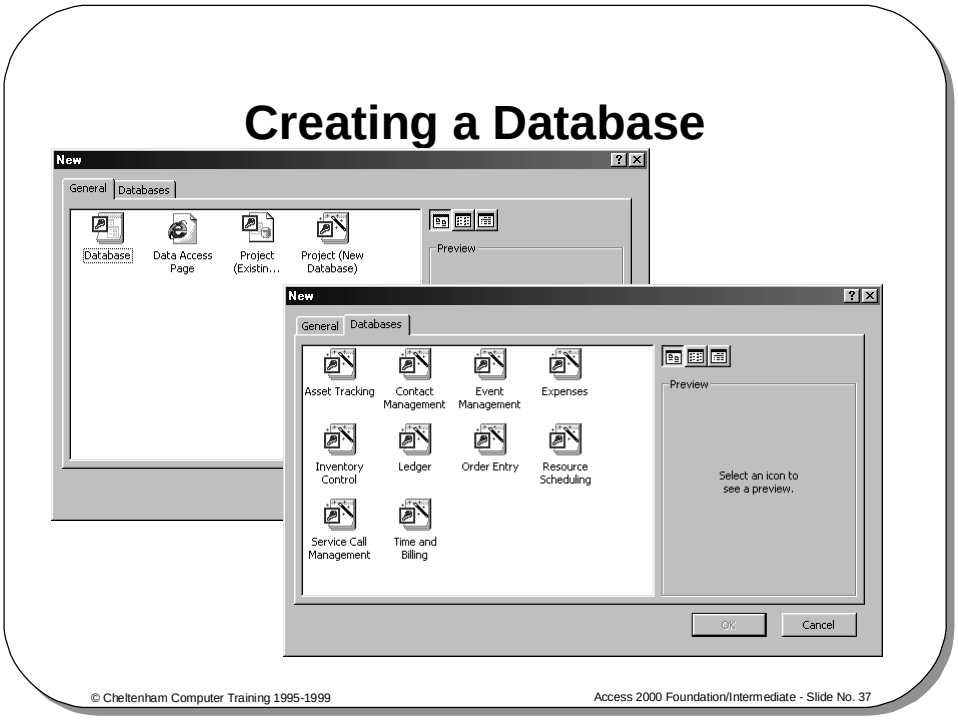
Once you know what tables you need, you must decide how to relate them. Your diagram from the preceding section should help you with this process.

The three types of relationship are: one-to-many; one-to-one; and many-to-many. However, for the final design, many-to-many relationships should be removed by creating an additional table and having two one-to-many relationships. Different notations are used by systems analysts to describe relationships. Microsoft Access uses the following:

- A line indicates a relationship between two tables.
- A figure 1 at the end of a line indicates the one side of a relationship.
- The infinity symbol at the end of a line indicates the many side of a relationship.

A one-to-many is the most common kind of relationship. Take the Orders and Order details tables from the last section. Each order can contain one or more detail lines, so there can be many order details for each order. This is a one-to-many relationship.

The process of sorting out relationships in your database design is called normalization and can be the subject of a course in its own right. The steps shown here are a summary of the rules of normalization, but please refer to the Access User Guide or Help for a complete review of normalization.



Creating a Database

Background

As we have seen the difficult part of building a new database is the design stage. Creating it is a fairly simple business.

For some standard applications, you can use a Wizard to create all your tables, and you can start entering data straight away into the new tables. The Table Wizard will actually offer to create an input form! Even if your application is standard, and you have used Wizards to create your tables, you will want to make some modifications.

Microsoft has assumed that every country in the world, including the UK, has the same geographical divisions, the same telephone format and the same postal code structure as America.

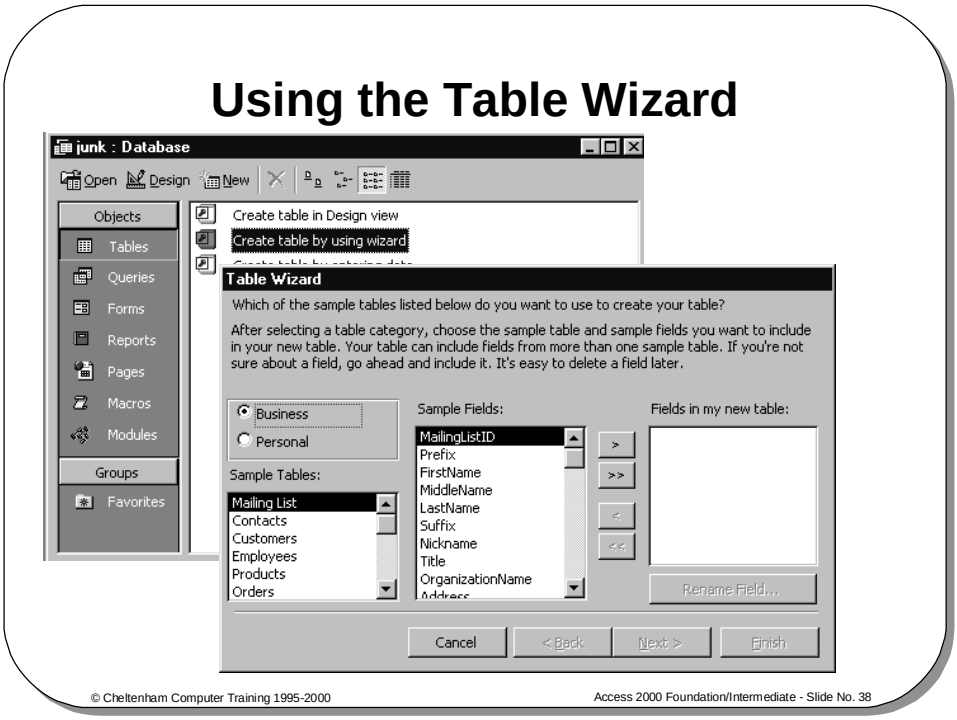
Whether you are creating new tables from scratch, or using Wizards, you will need to understand data types and table and field properties. You will also need to understand about Primary Keys and Indexes. These probably constitute the most difficult aspect of creating and maintaining tables.

To create a new database

- From the **File** menu choose **New**

  OR press **Ctrl+N**

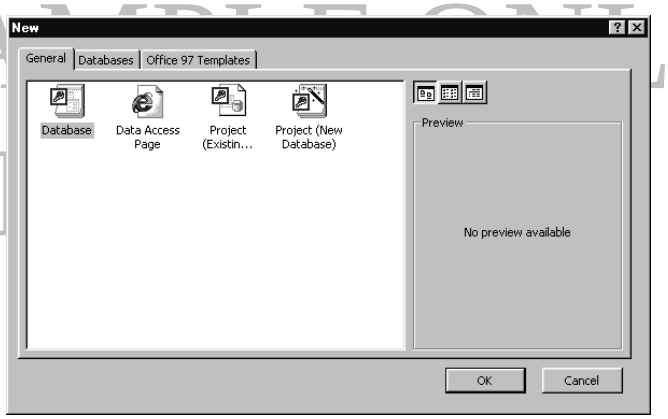
  OR click on the **New** icon on the **Standard** toolbar.



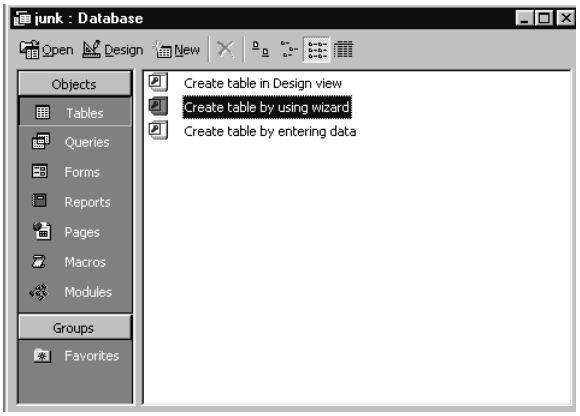
Using the Table Wizard

To create a table using Table Wizard

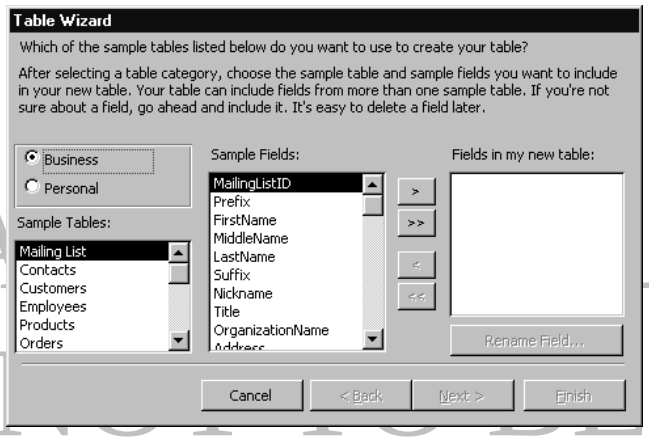
- If you click on the **File** drop down menu within the Access window and then click on the **New** command, you will see the following dialog box.

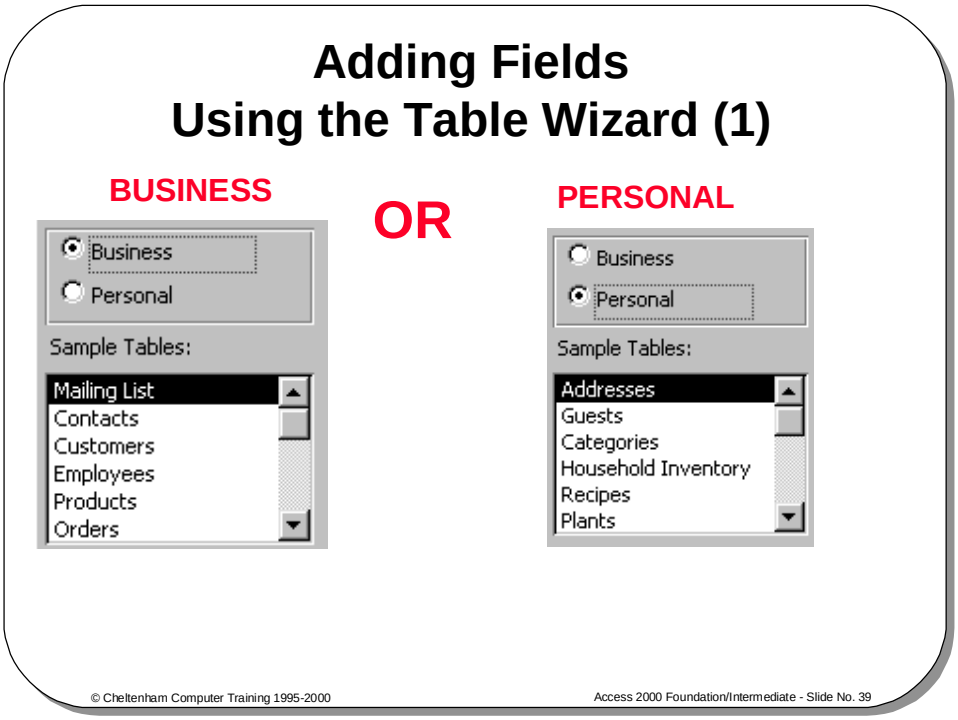


- Select the **Database** icon and click on the **OK** button, supply a file name when prompted. Once you click on the **Create** button you will see the following.



- Make sure that the **Tables** icon (down the left hand side of the window) is selected, and then double click on the **Create table using wizard** command. You will see the **Table Wizard** dialog box displayed.

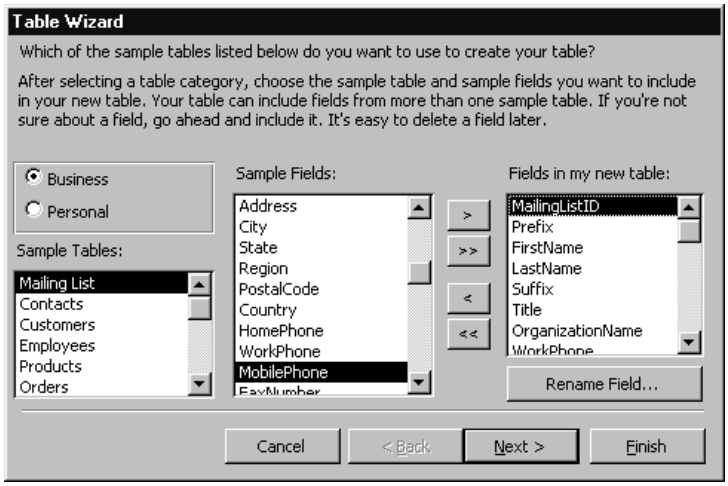




Adding Fields Using the Table Wizard (1)

- Click on one of the option buttons in the bottom left of the dialog box to choose either **Business** or **Personal**.

Adding Fields Using the Table Wizard (2)



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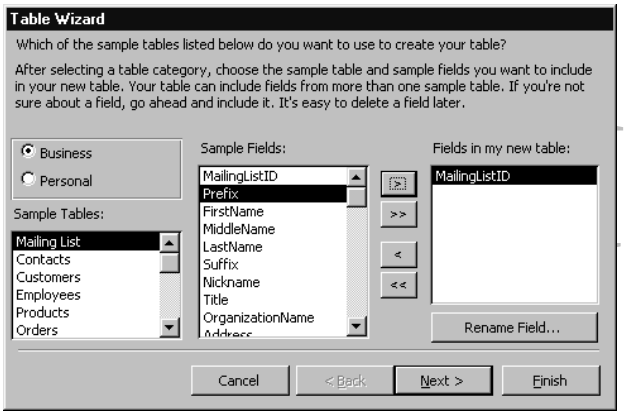
Adding Fields Using the Table Wizard (2)

To select a sample table

- Select a sample table from the **Sample Tables** list.

To add Fields

- Select a field that you wish to add by clicking on the field name in the **Sample Fields** list.
- Click on the right pointing arrow  to add the field to the **Fields in my new table** list. In the illustration, the **Business** databases have been selected, and from the list displayed, the **Mailing List** database has been selected. Then the **MailingListID** field was added.

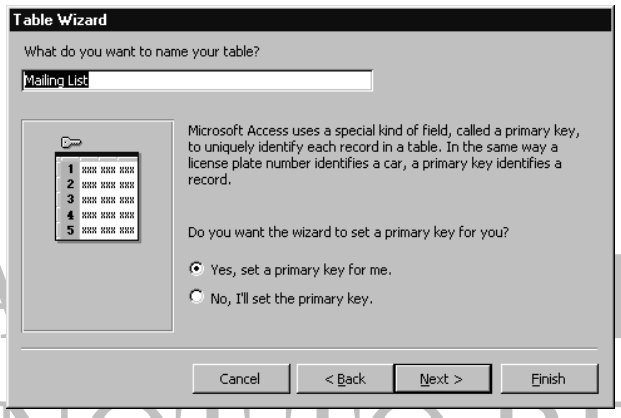


- When you add a field the selected item within the **Sample Fields** lists will automatically move down one item. To add more fields select the desired field from the **Sample Fields** section and click on the right pointing arrow.

To rename a field within the Field using the Table Wizard

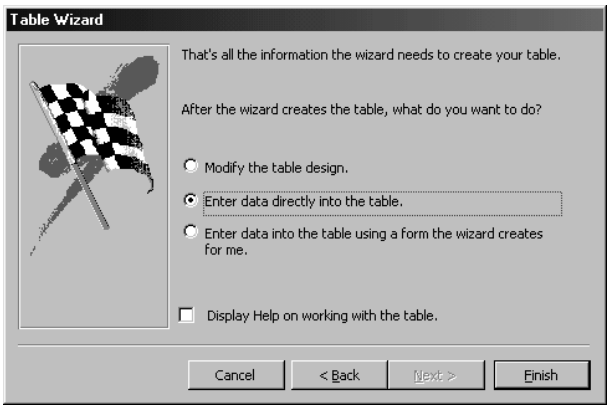
- Select the field that you wish to rename within the **Fields in my new table** section of the **Table Wizard** dialog box.
- Click on the **Rename Field** button, which displays the **Rename field** dialog box.

- Enter the new name of the field and then click on the **OK** button.
- When you have added all the fields that you require, click on the **Next** button, which will display the next page of the **Table Wizard**.

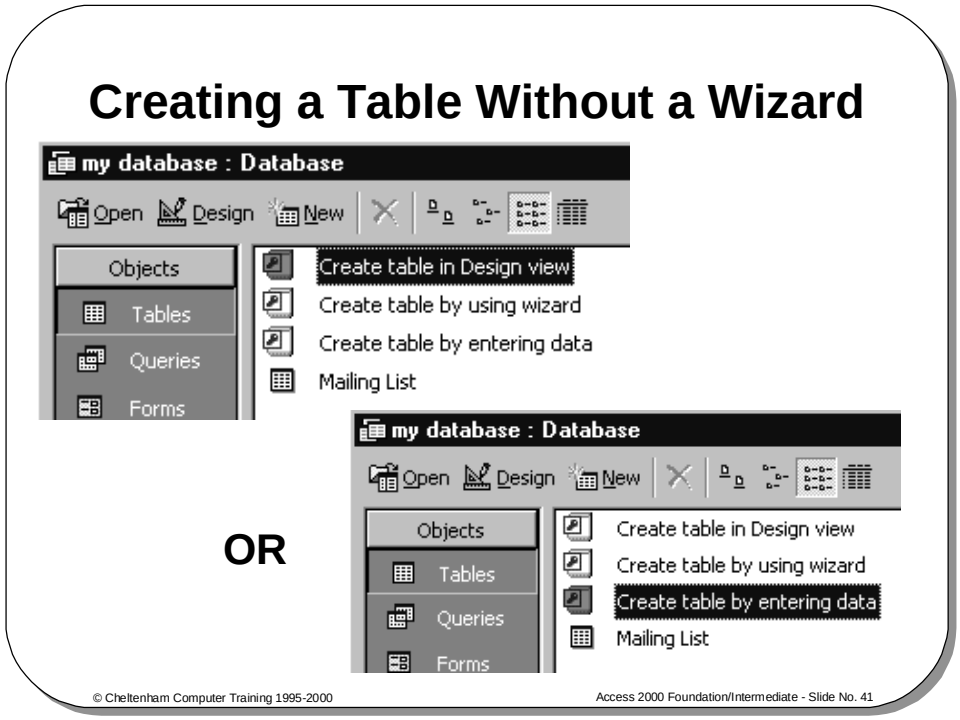


- In the **What do you want to name your table?** text box, enter a name for your table.
- Normally you will let the wizard set a primary key for you, but if you wish you can set the primary key.

- Click on the **Next** button to continue to the next Wizard page.



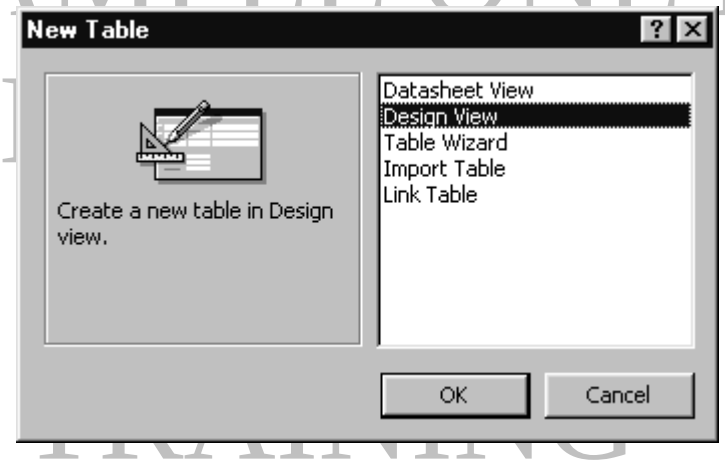
- Here you can choose how to proceed once the table has been created.
- Click on the **Finish** button to close the **Table Wizard** and create the table.
- The **Table** is displayed.



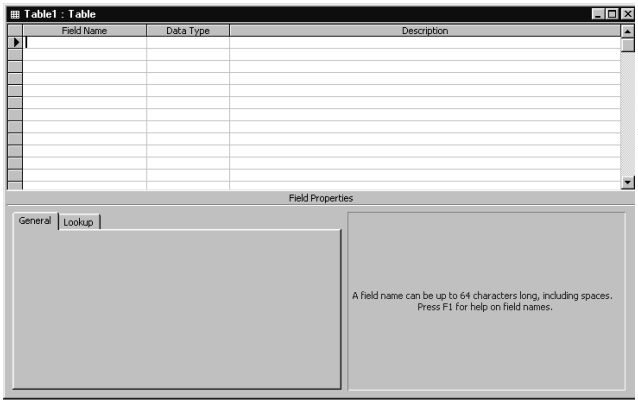
Creating a Table Without a Wizard

To create a table without Table Wizard

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

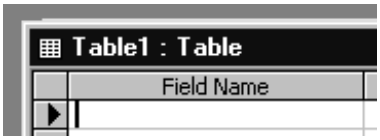


- The Table will be displayed in Design format, as illustrated.



To add a Field Name

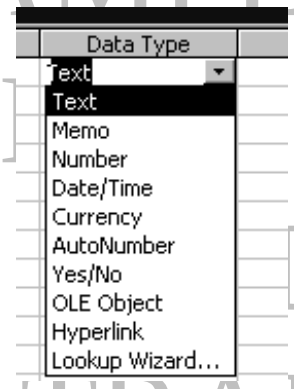
- Enter the name of the required field into the empty cell immediately below the Field Name Header.



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

To set 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

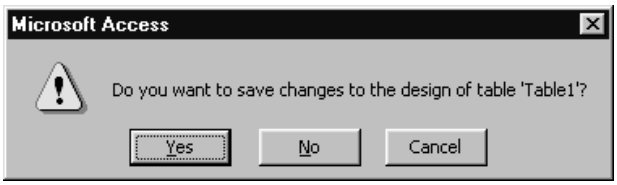
- This is an optional field property that allows you to explain the function of the field to someone who will later be using the database table. Later when a user clicks within a field that contains a description, then this description will be displayed within the Status Bar.

Adding more fields to a new database table

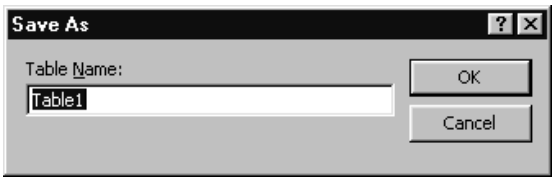
- Press the **Tab** key and you will be able to add further field names, properties and descriptions, as required.

Saving the new table

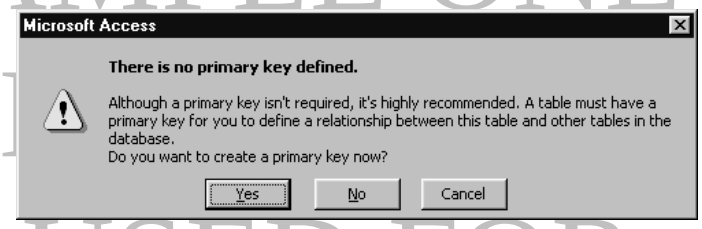
- Click on the **Close** icon at the top-right of the table design window and when you see the dialog asking if you wish to save you changes click on the **Yes** button.



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

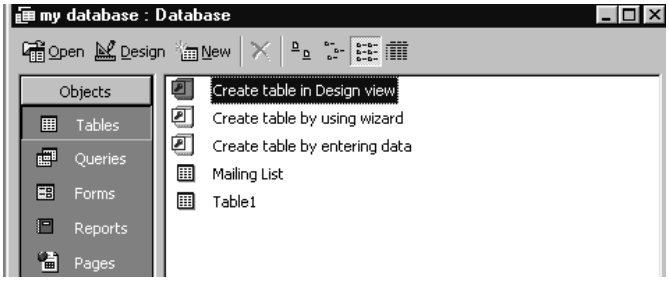


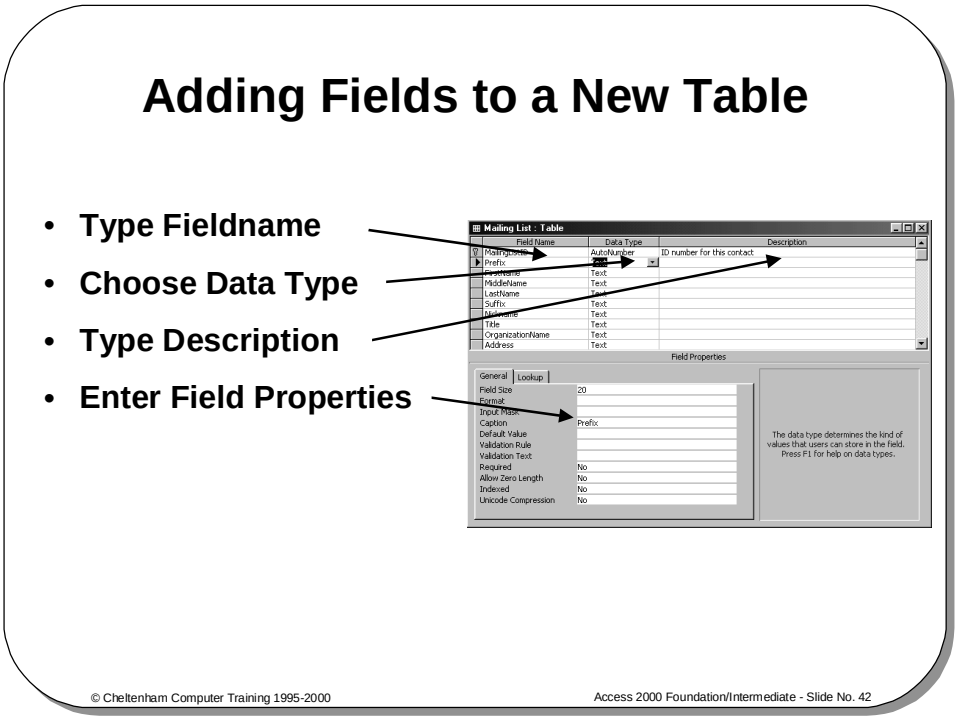
- Enter the name required, and then click on the **OK** button.
- The system will then offer to supply a primary key.



- 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 that 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**).





Adding Fields to a New Table

Background There are many different types of data. When viewing a database field in Design View, you can see a drop down list of data types.

Text What are known as alphanumeric characters but can actually include any other characters.

Memo Alphanumeric characters like in a text field. However, whereas text fields are of a fixed length, memo fields can vary in length from record to record. You use a memo data type for things like comments and notes whose lengths are indeterminate.

Number As the name suggests, the field can only contain numbers which can be integers or fractional values. The different types of number are detailed below.

Field Size	Range of Values	Decimal Places	Storage Size
Byte	0 to 255	None	1 byte
Integer	-32768 to 32767	None	2 bytes
Long Integer	-2147483648 to 2147483647	None	4 bytes
Single	-3.4×10^{38} to 3.4×10^{38}	7	4 bytes
Double	-1797×10^{308} to 1797×10^{308}	15	8 bytes

If your number has decimal points then use a Single or a Double datatype.

Date/Time As it says, a date or a time. A variety of date and time formats can be specified as field properties.

Currency Dollars, Pounds, Yen etc.

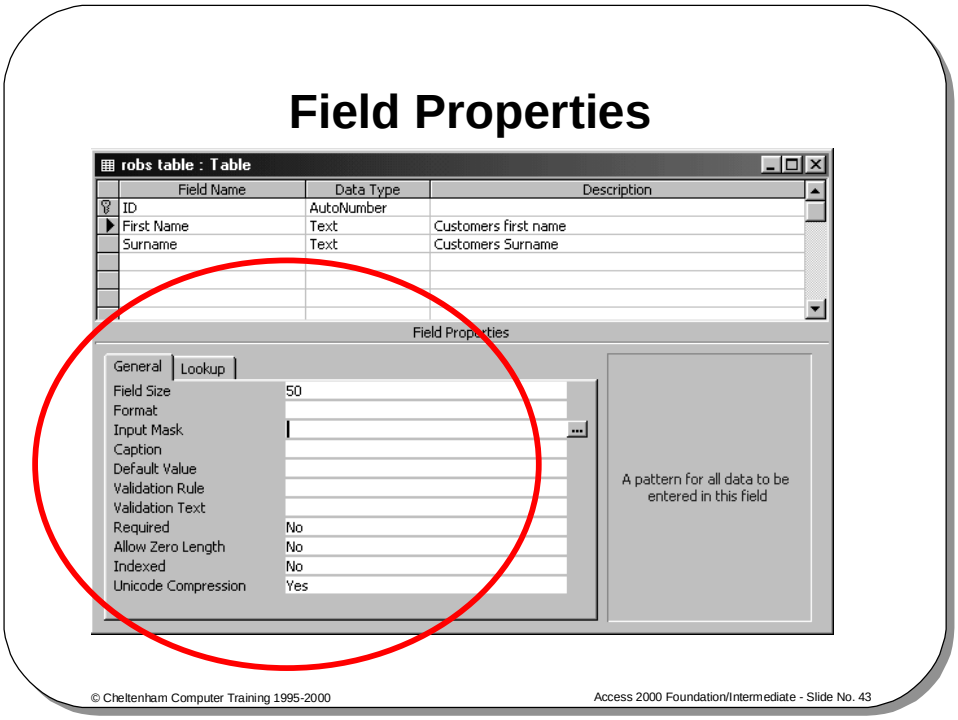
AutoNumber This is a numeric value starting at one and incrementing automatically for each new record. AutoNumbers are often used as primary keys.

Yes/No A logical data type. Also True/False, On/Off etc.

OLE Object OLE stands for Object Linking and Embedding. These objects are pictures, graphs, sounds etc. from other applications that are placed in Access fields. When a linked field is updated in either Access or in the originating application, the changes are universal. When an embedded object is updated only the version in the updated application is changed.

HyperLink Allows hyperlinks URLs.

LookUp Wizard Allows you to create a field that will enable the user to select a value from a different table or from a list of values. This choice will be select by the used via a dialog list box or combo box.



Field Properties

Background As you decide the data type for each field, you should also consider its properties. The number and nature of field properties varies according to the data type. In certain cases, clicking to the right of the field property box will reveal a down arrow or **Expression Builder** button. Click on the down arrow to reveal a drop down selection list.

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.

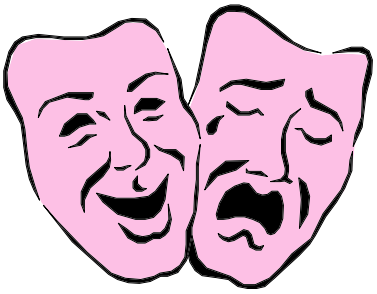
Caption Appears instead of the field name in column headings, labels on forms headings in reports etc.

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

Validation Rule	An expression that 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.

The Input Mask Property

- **Allows you to specify the format of input**
- **Useful if input always follows a standard format**
  - **ZIP or Post codes**
  - **Telephone Numbers**
  - **National Insurance codes**
- **UK Post code**
  - **>LL09\ 0LL**
- **UK Telephone Number**
  - **\(99999") "000000**



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The Input Mask Property

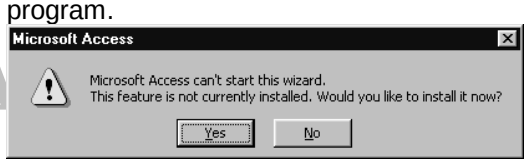
Background Provides a visual mask to guide input. You can use an **Input Mask Wizard** for certain standard formats.

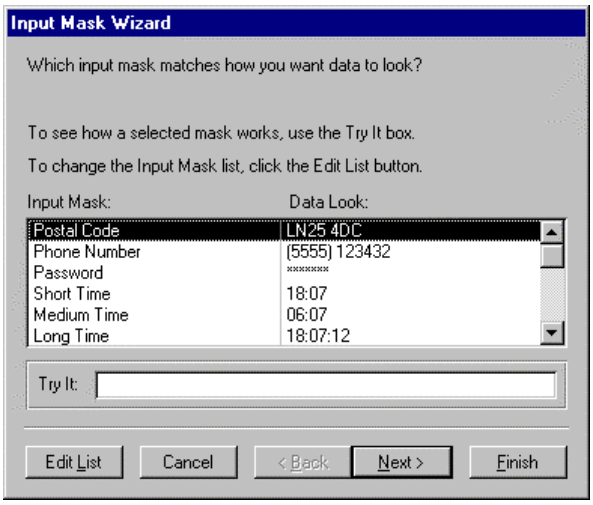
To run the Input Mask Wizard

- 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.





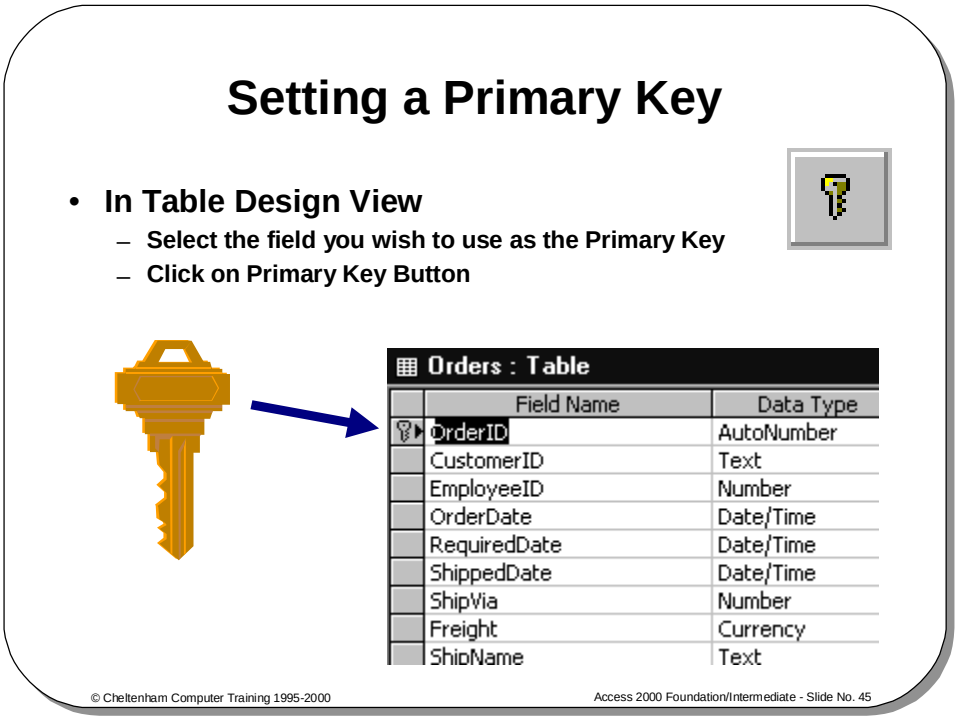
- Select the required format type and then click on the **Next** button. Follow through the on-screen instructions and when you reach the final screen and then click on the **Finish** button.

Editing the Input Mask

- To edit any of this input mask 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**.
- Press the **Enter** key.



Setting a Primary Key

Background

Primary keys uniquely identify each record in your table and provide the following advantages:

- An index is automatically created for the primary key. This speeds up data retrieval and sorting. Also, the primary key is often used in establishing relationships.
- Records in a form or Datasheet are displayed in primary key order.
- Duplicate records are not allowed. Therefore all records are unique.

A primary key can be made up of one or more fields.

To set one field as a primary key

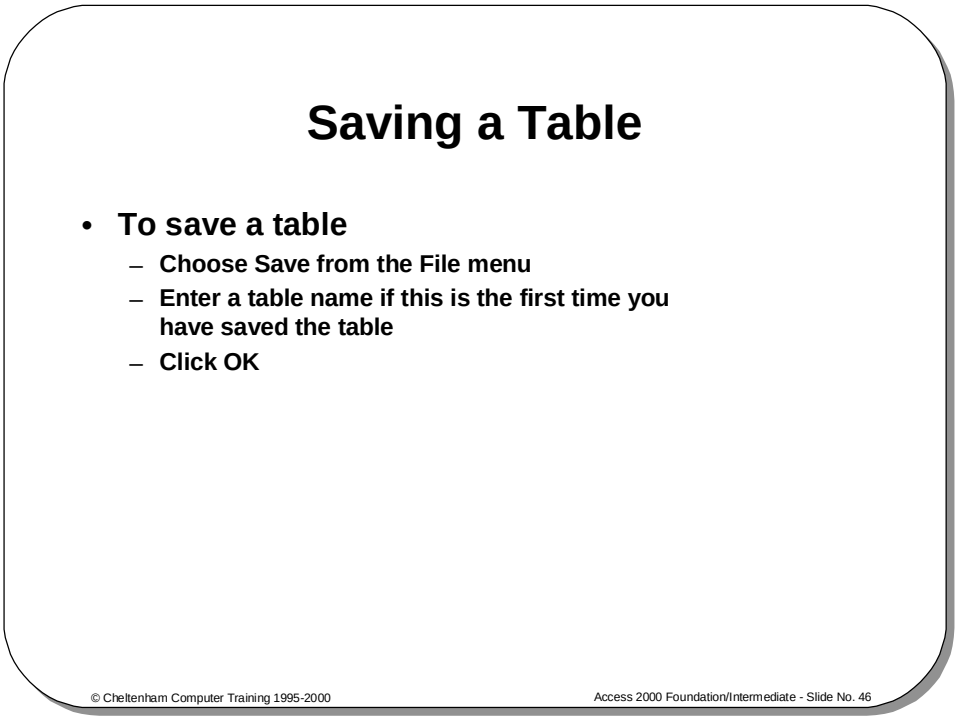
- In Table Design View, select the field you want to assign as the primary key. You can either click somewhere in the field or click on the field selector to the left of the field name.
- Choose **Primary Key** from the **Edit** menu

OR click on the **Primary Key** icon on the standard toolbar.

To set more than one field as a primary key

- In Table Design View click on the field selector to the left of the first field name. Hold down the **Ctrl** key and click the field selector to the left of each of the other fields.
- Choose **Primary Key** from the **Edit** menu

OR click on the **Primary Key** icon on the standard toolbar.



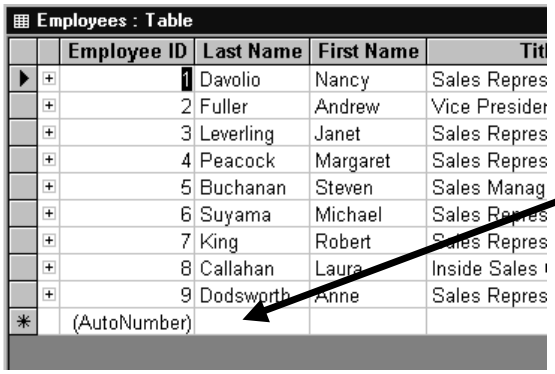
Saving a Table

To save a table

- Choose **Save** from the **File** menu.
- If you are saving the table for the first time, type a name into the **Table Name** box and press **Enter** or click on **OK**.

If you close the table for the first time without saving it, Access will ask you if you want to save it anyway.

Adding Records to a Table Datasheet



- **Click here and start typing**

Pressing TAB moves you to the next field
When in the last field of the record pressing TAB moves you to the next record

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Adding Records to a Table Datasheet

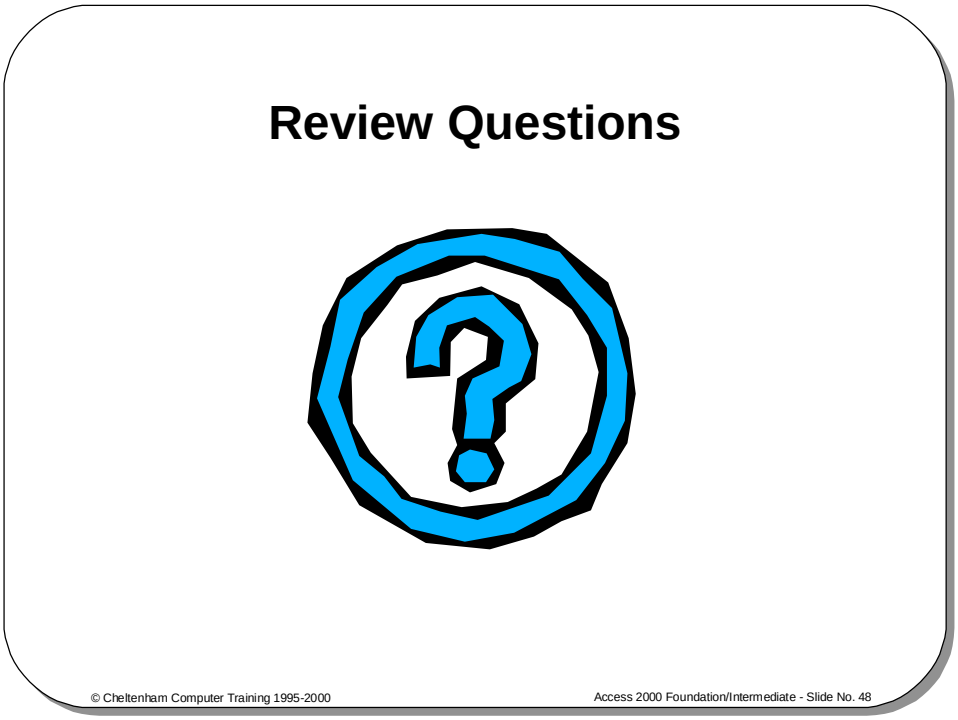
Background

Once you have finished designing your table, you can add records by switching to Datasheet View.

If you have not already saved your table design, Access will ask you if you want to anyway. All datasheets and forms have a blank last record indicated by an asterisk in the record selector to the left of the first field. On a newly designed and saved Datasheet it is the only record.

To add records to a table Datasheet

- Put the insertion point in the first field of the blank record.
- Type a value in each field and press **TAB** to move to the next.
- When you reach the last field, pressing **TAB** puts your insertion point into the first field of the new, last blank record. Access saves the completed record as soon as you move on to the next.



Review Questions - How Would You ...

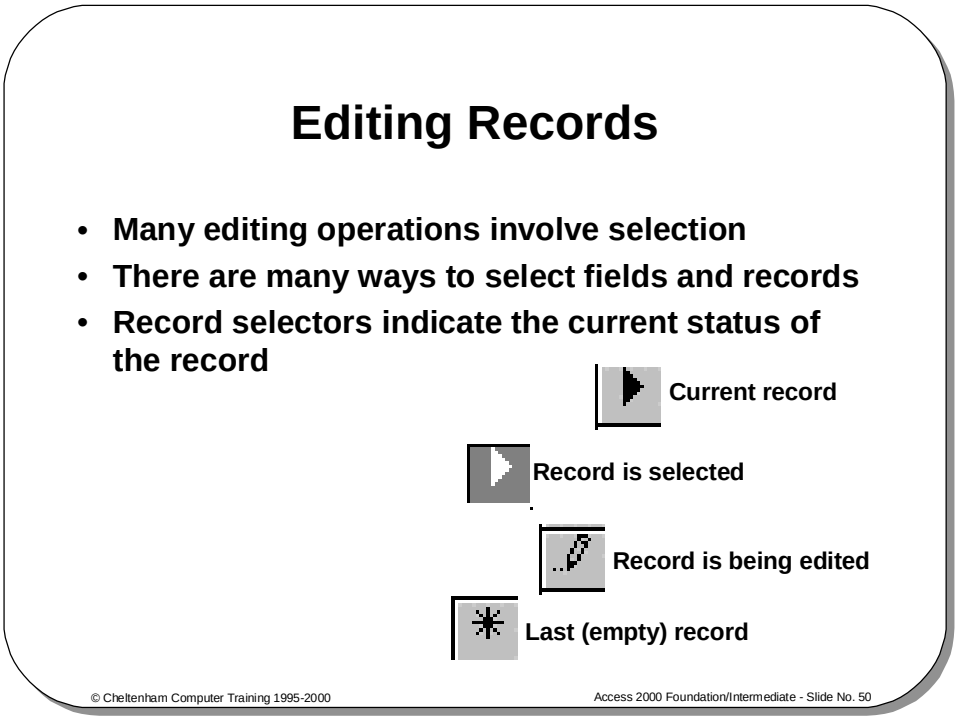
1. Create a new database using the Table Wizard?
2. Add fields using the Table Wizard?
3. Rename a field using the Table Wizard?
4. Create a table without a Wizard?
5. Add a Field Name?
6. Set the data type?
7. Add a field description?
8. Save a new table?
9. Run the Input Mask Wizard?
10. Edit the Input Mask?
11. Set a Primary Key?
12. Add records to a Table Datasheet?

Formatting a Table

Learning Module Objectives

When you have completed this learning module you will have:

- Seen how to Edit Records
- Seen how to Select Records
- Seen how to select a record using the record selector
- Seen how to select a group of adjacent records
- Seen how to select all records in a Datasheet
- Seen how to select a column
- Seen how to select adjacent columns
- Seen how to delete a record
- Seen how to delete the contents of a field
- Seen how to replace the entire contents of a field
- Seen how to view or set Datasheet options
- Seen how to re-order columns within a table
- Seen how to hide and un-hide columns
- Seen how to freeze columns
- Seen how to format Datasheet cells
- Seen how to copy and move fields and records
- Seen how to preview a form or Datasheet



Editing Records

Background Whether you edit your records through a Datasheet or a form, there is, as usual, a variety of ways to do it. As far as your user is concerned, you should make it as straightforward and uncomplicated as possible: for the user, there should only be one right way.

Many editing operations first involve selection. To replace a field, you first select it and then type in the new value.

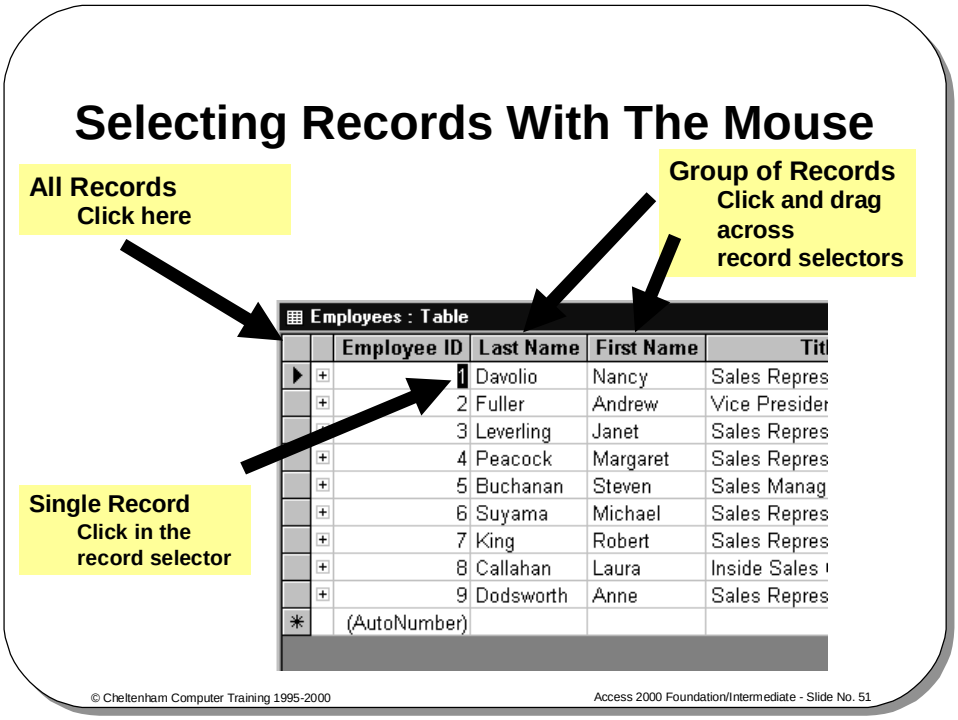
The gray area to the left of each record in the Datasheet is called the record selector. The following symbols indicate the status of the record:


Current record.


Record is selected.


Record is being edited.


Last (empty) record.



Selecting Records With The Mouse

To select a record using the record selector

- Click in the record selector.

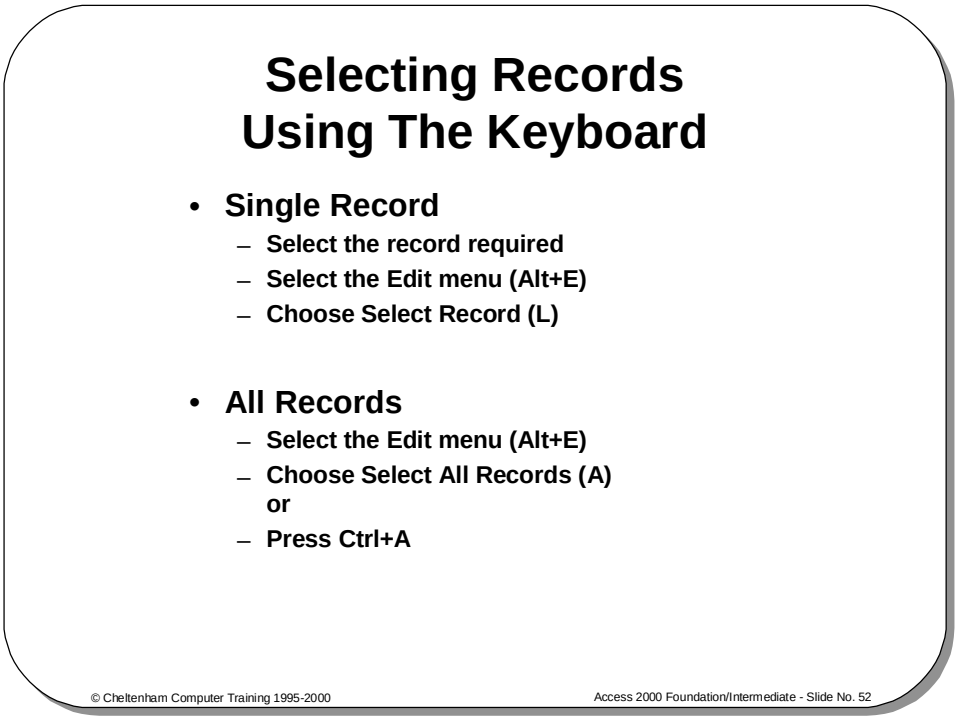
To select a group of adjacent records

- 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.



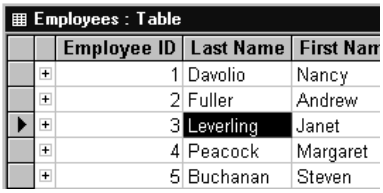
Selecting Records Using The Keyboard

To select all records

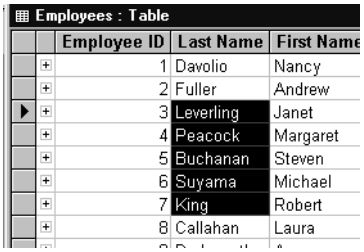
- Press **Ctrl+A**.

Selecting Fields With The Mouse

- **Single Field**
  - **place the mouse at the beginning of the field (cross pointer) and click once**



- **Group of Fields**
  - **Select 1st field**
  - **Hold [Shift] + select last field or**
  - **Select and Drag**



Selecting Fields With The Mouse

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

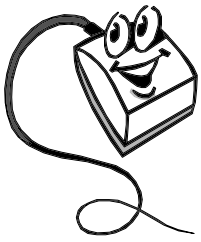
- Place the mouse pointer at the beginning of the field. The pointer will change into the shape of a cross.
- Click the mouse button.

To select adjacent fields

- Select a field.
- Hold down the **Shift** key and press the arrow key to select fields in the direction of the arrow.

Selecting Columns With The Mouse

- **To select a Field Column**
  - **Click the button above the column**
- **To select Adjacent Columns**
  - **Click the button above the column and drag across the columns required**



Employees : Table

	Employee ID	Last Name	First Name
▶	1	Davolio	Nancy
	2	Fuller	Andrew
	3	Leverling	Janet
	4	Peacock	Margaret
	5	Buchanan	Steven
	6	Suyama	Michael
	7	King	Robert
	8	Callahan	Laura
	9	Dodsworth	Anne
*	(AutoNumber)		

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Selecting Columns Using the Mouse

To select a column using the mouse

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

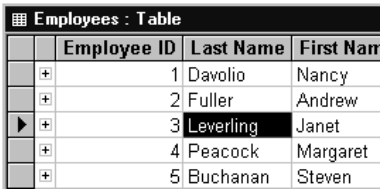
To select adjacent columns using the mouse

- Click on a column selector and drag the mouse over the other column selectors

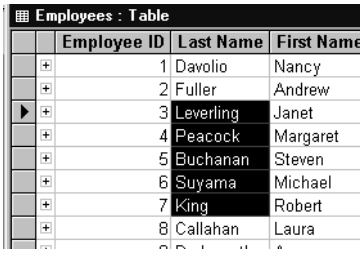
  OR click on a column selector and whilst holding down the **SHIFT** key, click on the last column selector in the range.

Selecting Fields and Columns Using the Keyboard

- **Single Field**
  - **Use the TAB key until the required field is selected (left to right)**
  - **Use Shift+TAB (right to Left)**



- **Adjacent Fields**
  - **Select the first field (as above)**
  - **Hold the Shift key**
  - **Move in the required direction using the cursor keys**



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Selecting Fields and Columns Using the Keyboard

To select a field using the TAB key

- Press **TAB** to select the field to the right

  OR press **Shift+TAB** to select the field to the left.

To select a field using the arrow keys

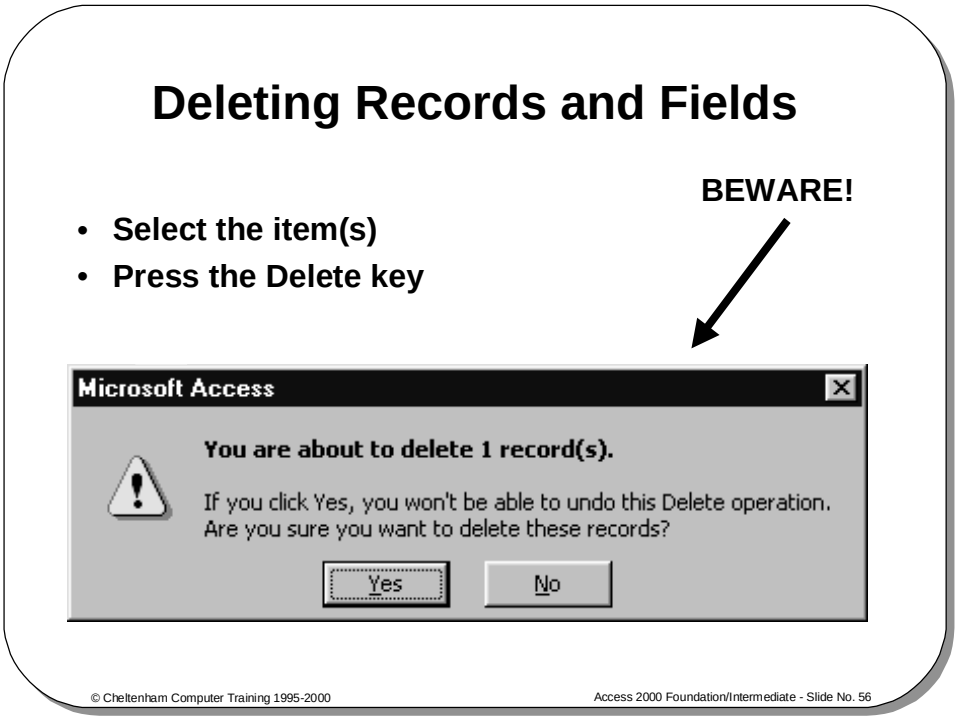
- Hold down the **Shift** key.
- Pressing any arrow key will select the next field in the direction of the arrow.

To select a field using F2

- Click somewhere in the field and press **F2**.

To deselect a field

- Press **F2**.



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

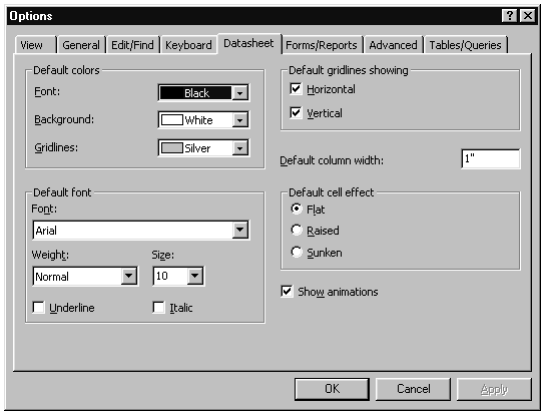
- Select the field and press the **DELETE** key.

To replace the entire contents of a field

- Select the field and type in the new value.

Viewing or Setting Datasheet Default Values

- **To set defaults**
  - **Select the Tools drop down menu**
  - **Select the Options command**
  - **Select the Datasheet tab**

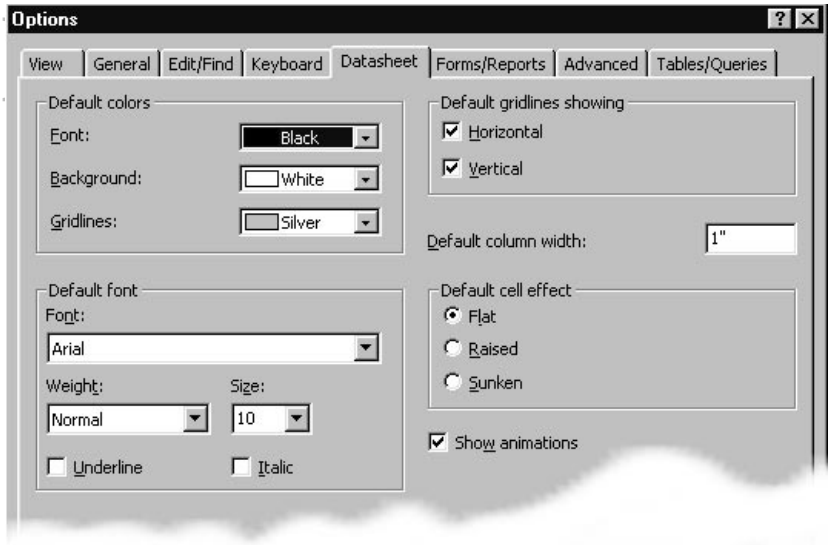


Viewing or Setting Datasheet Default Values

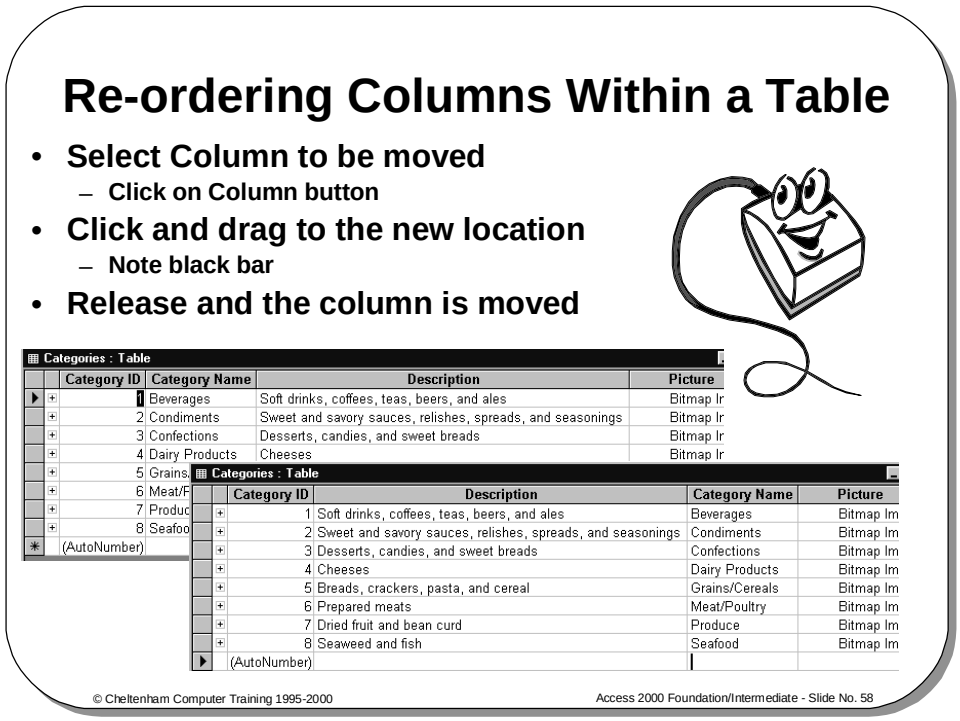
To view or set Datasheet options

When you create a table the Datasheet assumes certain defaults. For instance, there will be a default column width for all columns and a standard row height. There is also a default font.

- Click on the **Tools** drop down menu, 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.



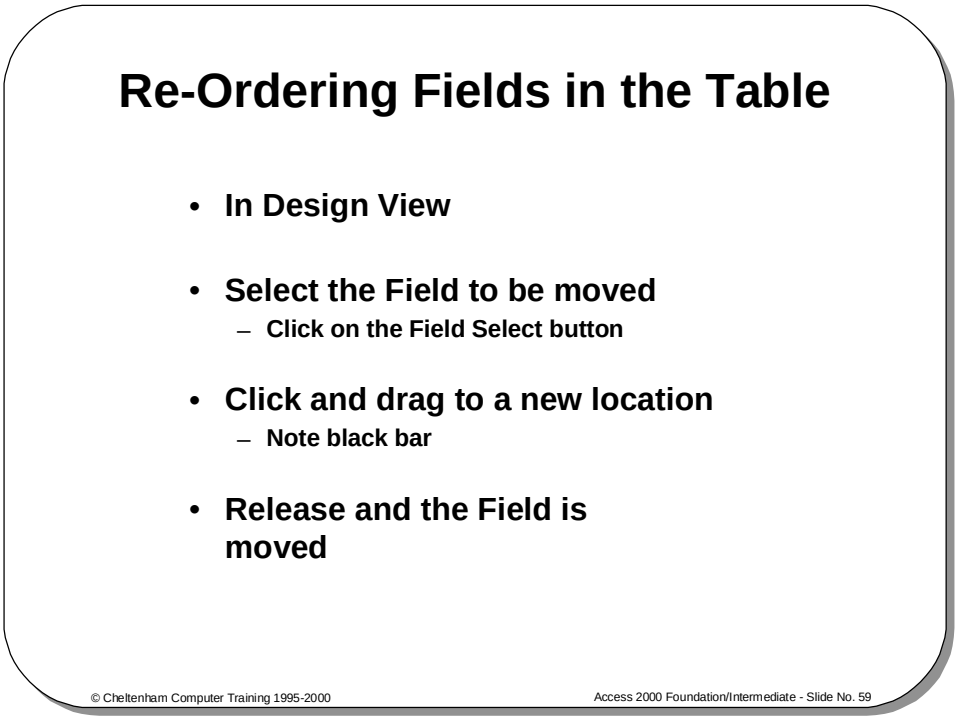
Re-ordering Columns Within a Table

Background

You may wish to change the order in which the columns of your table are displayed. Access allows you to do this in a very easy manner.

To move a column(s)

- 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.

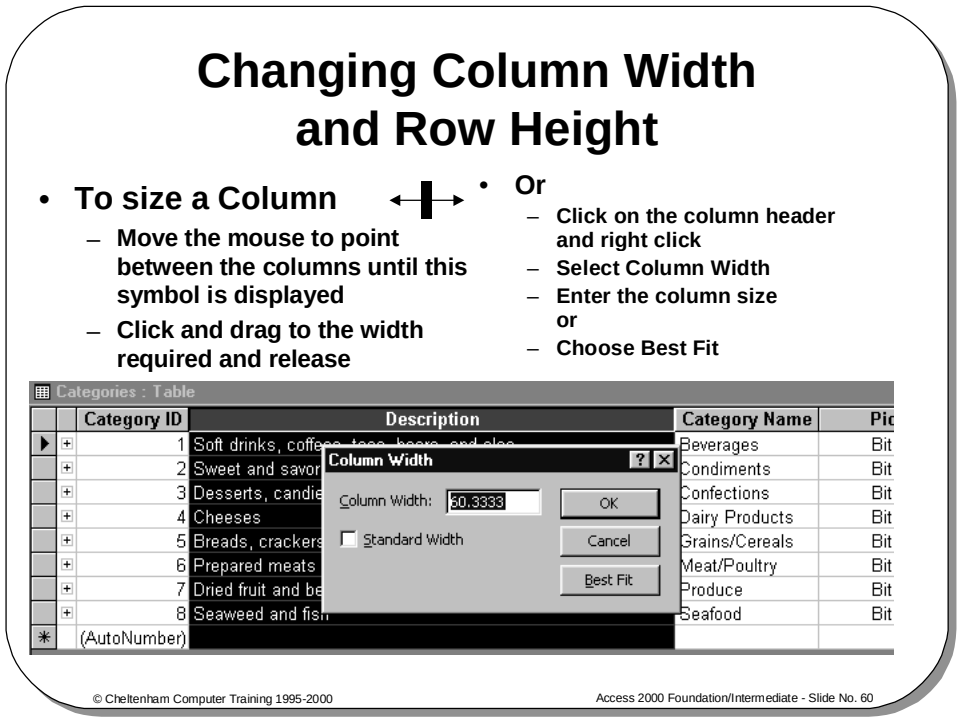


Re-Ordering Fields in the Table

Background Having set up your table you may wish to alter the order in which your fields are arranged.

To re-order your fields

- Change to **Design View** and select the field you wish to move, by clicking on the **Field Select** 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

- 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 drop down menu.
- Click on **Best Fit**.

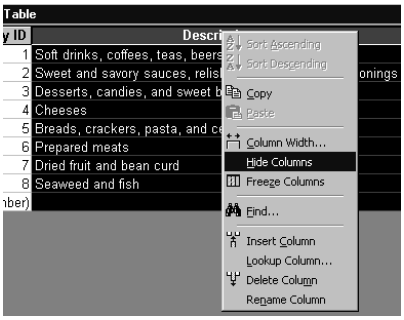
To change the height of a row

- 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**
  - **Select the column(s) you wish to hide**
  - **Click the right mouse button**
  - **Select Hide Columns**
- **To show a Column**
  - **Select the Format menu**
  - **Choose Unhide Columns**
  - **Select the fields you wish to show**
  - **Select Close to action choices**



Hiding and Un-hiding Columns

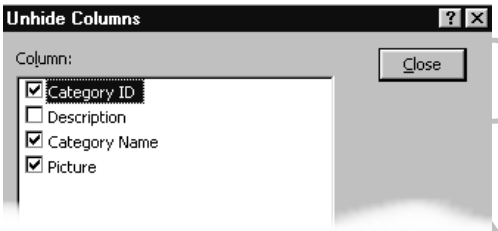
To hide a column

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

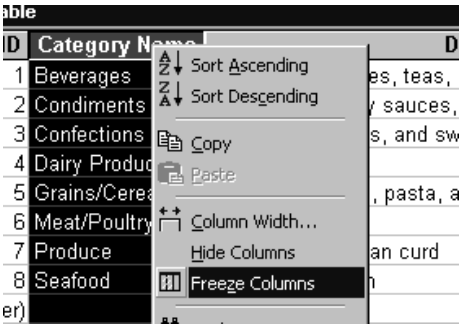
- Click on the **Format** drop down menu and then select the **Unhide Columns** command and a dialog box will be displayed, as illustrated.



- 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

- **Freezing Columns**
  - **Allows you to keep selected columns visible on-screen whilst you view columns off the screen**
- **To Freeze Columns**
  - **Select Columns**
  - **Click the right mouse button or Select the Format menu**
  - **Click Freeze Columns**
- **To Unfreeze Columns**
  - **Select the Format menu**
  - **Click Unfreeze All Columns**



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Freezing Columns

Background

Tables frequently have a larger width than the screen. When this is the case you will lose sight of the left most fields as you move to the right of the table. Freezing columns causes the columns chosen to remain on screen as you scroll through the other columns of the table.

To freeze a column or columns

- Select the column or columns.
- Choose **Freeze Columns** from the **Format** menu

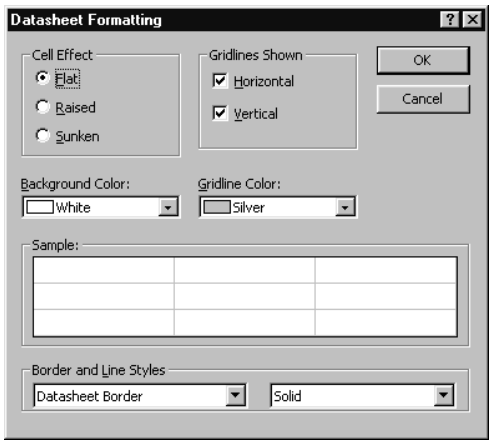
OR click on the right-hand mouse button in a column and choose **Freeze Columns**.

To unfreeze all the columns

- Choose **Unfreeze All Columns** from the **Format** menu.

Formatting Datasheet Cells

- **Cell Effects include:**
  - **Horizontal and vertical gridlines**
  - **Gridline and background colors**
  - **Cell effects - Flat, Raised and Sunken**



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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

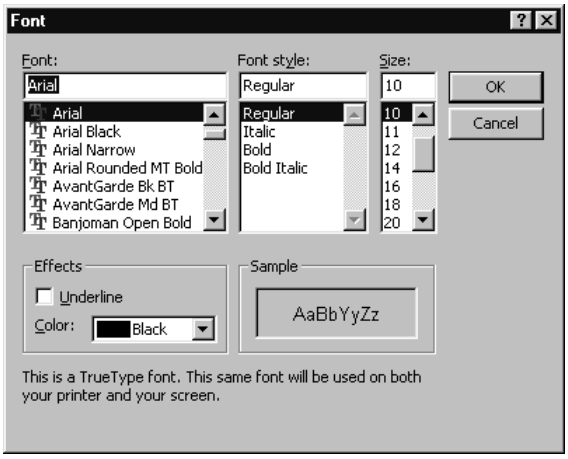
- In the **Cell Effect** section of the dialog box, select the required option, **Flat**, **Raised** or **Sunken**.

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

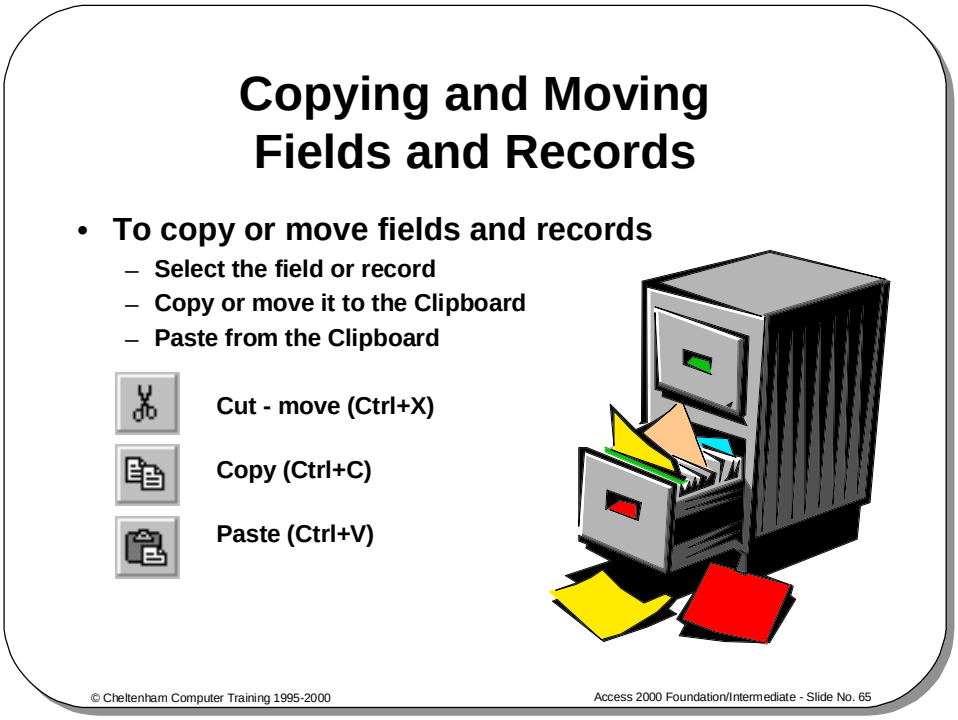
- **Select Font from the Format drop down menu**



Changing Datasheet Fonts

To change the font for a Datasheet

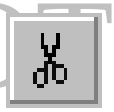
- Choose **Font** from the **Format** menu to display the following dialog box.
- Select the desired options from each section of the dialog box.
- Click on the **OK** Button.



Copying and Moving Fields and Records

Background

Copying and moving data uses the familiar technique of ***Select, then Manipulate!*** You select the data you want to move or copy, you cut or copy it to the Clipboard and you paste it in its new destination. As with all Access functions, you can use the keyboard or the mouse. The options are as follows:

Edit Menu	Toolbar Icon	Editing Keys	Action
Cut		**Ctrl+X**	Moves the selected data and puts it on the Clipboard.
Copy		**Ctrl+C**	Copies the selected data to the Clipboard.
Paste		**Ctrl+V**	Pastes the selected data from the Clipboard into the newly selected area or at the location of the insertion point.

When you copy or move records to a Datasheet, Access pastes the data into the receiving fields in the order in which the columns appear in the Datasheet. It takes no notice of field names (column headings). When you copy or move to a form, then Access pastes the data into the fields according to the field names. It takes no notice of the order of the fields on the form.

To copy data from a field into the Clipboard

- Select the data you want to move or copy.
- Choose **Copy** from the **Edit** menu

OR click the **Copy** icon on the toolbar

OR press **Ctrl+C**.

To cut data from a field into the Clipboard

- Select the data you want to move.
- Choose **Cut** from the **Edit** menu

OR click the **Cut** icon on the toolbar

OR press **Ctrl+X**.

To insert the contents of the Clipboard into another field

- Click in the destination field where you want to insert the data.
- Choose **Paste** from the **Edit** menu

OR click the **Paste** icon on the toolbar

OR press **Ctrl+V**.

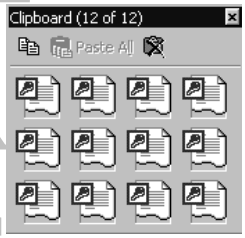
To copy the contents of multiple fields or columns to the Clipboard

- Select the fields or columns to copy.
- Choose **Copy** from the **Edit** menu

OR click the **Copy** icon on the toolbar

OR press **Ctrl+C**.

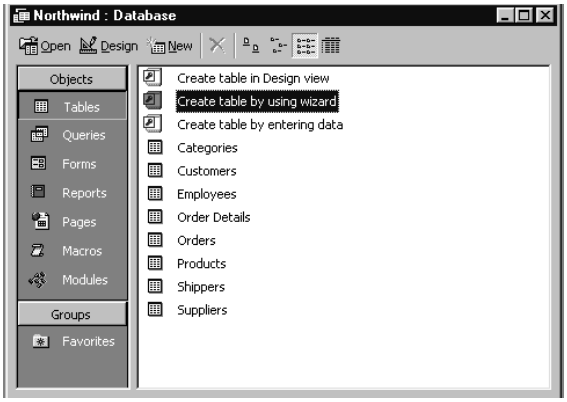
Pasting multiple items from the Clipboard



- If the **Clipboard** toolbar is not displayed, then you can display it by clicking on the **View** drop down menu, selecting **Toolbars**, and then selecting **Clipboard**.
- Icons on this toolbar include **Copy**, **Paste All** and **Clear Clipboard**. If you move the mouse over one of the icons held within the Clipboard toolbar, then you will see the first 50 characters displayed. If the item is a picture, then the pictures will be labeled in the order in which they were copies to the Clipboard.
- To **Paste** an item simply click on the appropriate icon on the Clipboard toolbar.

Another Look at the Database Window

- **From the Database Window you can:**
  - **Copy, Rename and Delete objects**
  - **When you copy and paste a table you give it a different name**



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Another Look at the Database Window

Background All the following instructions assume you are starting from the database window and that you have selected the object type by clicking on the appropriate tab.

To copy a table

- Select the table you want to copy.
- Choose **Copy** from the **Edit** menu

  OR click on the **Copy** icon on the toolbar.

- Choose **Paste** from the **Edit** menu

  OR click on the **Paste** icon on the toolbar.

- In the dialog box, enter the name of the new table.
- Select one of the paste options. **Structure Only** pastes the structure but no data. **Structure and Data** pastes the table and all the data it contains. **Append Data to Existing Table** appends the data to the named table.

To copy an object other than a table

- Select the object you want to copy.
- Choose **Copy** from the **Edit** menu

  OR click on the **Copy** icon on the toolbar.

- Choose **Paste** from the **Edit** menu

  OR click on the **Paste** icon on the toolbar.

- Enter a name for the new object in the dialog box.
- Click on the **OK** button or press **Enter**.

To rename an object

- Select the object you want to rename.
- Choose **Rename** from the **Edit** menu.
- Enter a new name for the object (this is entered over the existing name).
- Press the **Enter** key.

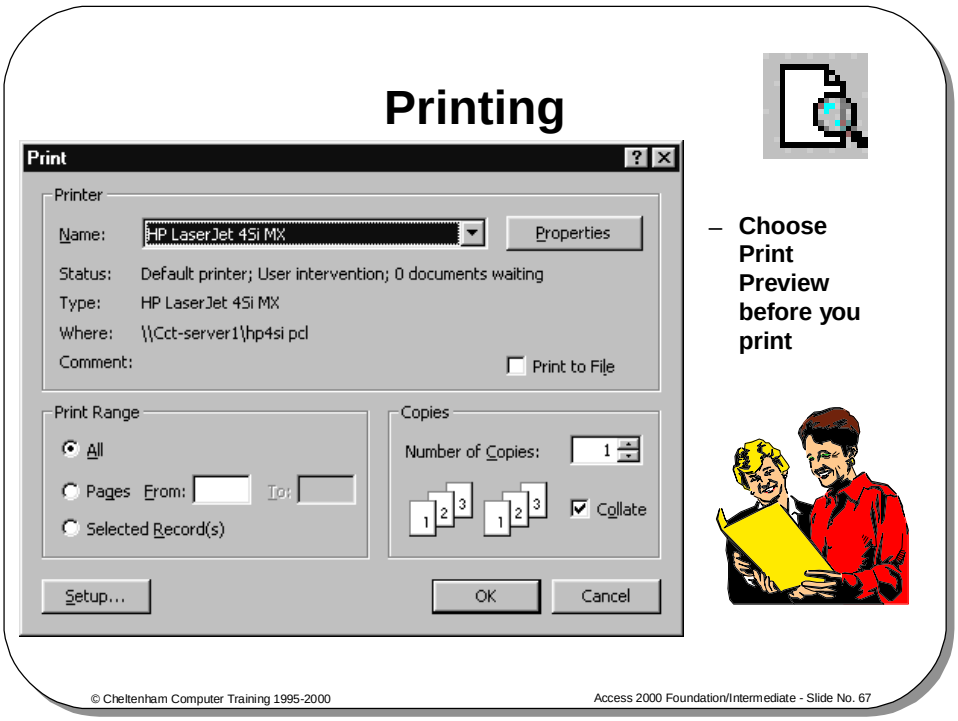
Alternatively you can select the object you want to rename, then click on it a second time and the name will become editable.

To delete an object

- Select the object you want to delete.
- Choose **Delete** from the **Edit** menu. The box illustrated below will be displayed.

- Click **Yes** to accept the deletion or click on **No** to abort the operation.

Note: If you try and delete a table which is participating in a relationship with other tables, Access will display an error and the deletion will not take place.



Printing

Background

Virtually anything you create in Access you can print. This section concentrates on previewing and printing datasheets (from tables and queries), forms, and object definitions. For detailed instructions on printing reports, you should refer to the chapter on Reports.

The following instructions assume that you either have the appropriate object open or you have selected the object in the Database window.

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.

To view 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.

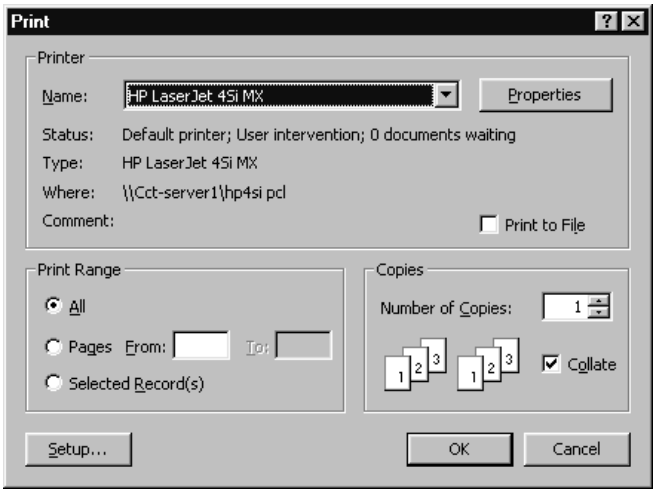
Note: You can also use the **Zoom** button on the toolbar to zoom in and out.

To print a form or Datasheet

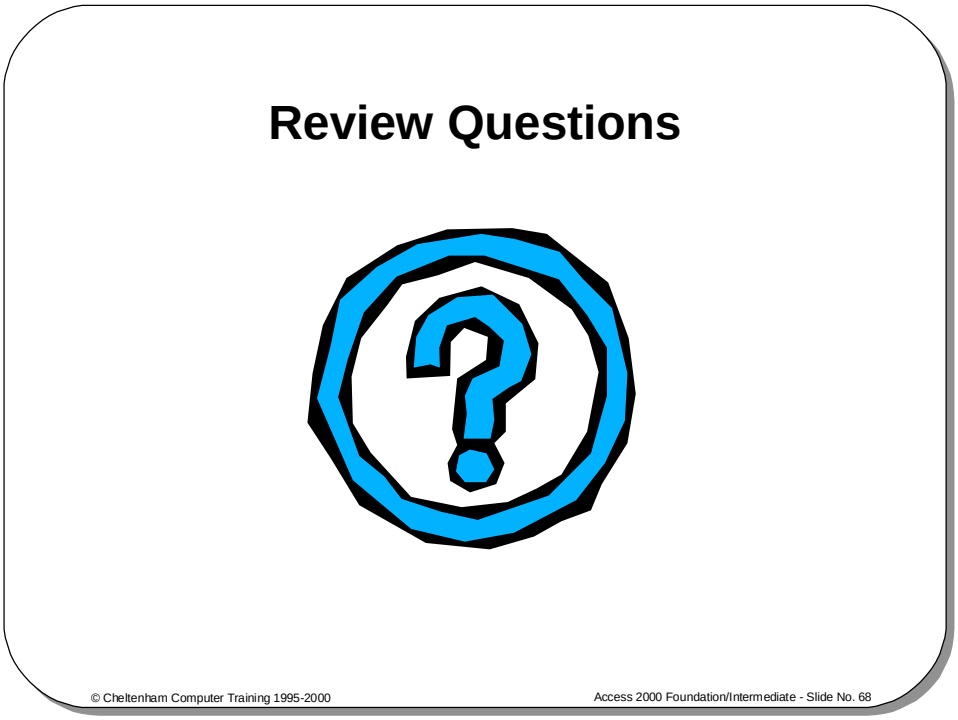
- If you want a partial print only, select the records you want to print.
- Choose **Print** from the **File** menu

  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**.



Review Questions - How Would You ...

1. Edit Records?
2. Select a record using the record selector?
3. Select a group of adjacent records?
4. Select all records in a Datasheet?
5. Select a column?
6. Select adjacent columns?
7. Delete a record?
8. Delete the contents of a field?
9. Replace the entire contents of a field?
10. View or set Datasheet options?

11. Re-order columns within a table?

12. Hide and un-hide columns?

13. Freeze columns?

14. Format Datasheet cells?

15. Copy and move fields and records?

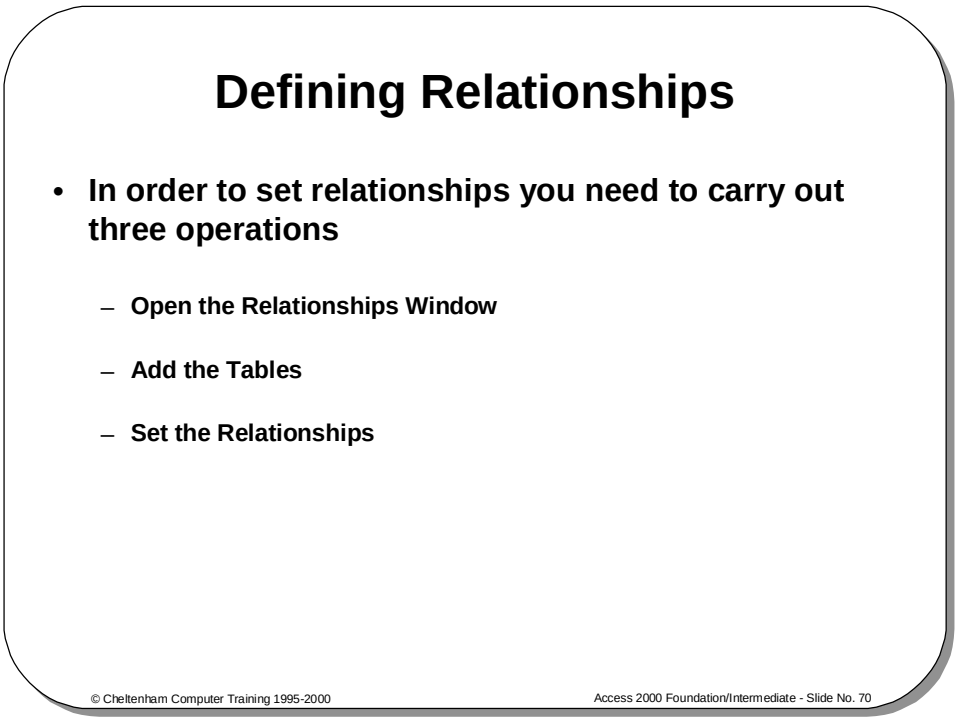
16. Preview a form or Datasheet?

Relationships

Learning Module Objectives

When you have completed this learning module you will have:

- Understood the concepts behind defining relationships
- Seen how to open the Relationships window
- Seen how to add tables to the Relationships window
- Seen how to create a relationship between two tables
- Understood the concept of Referential Integrity
- Seen how to show all existing relationships
- Seen how to show the relationship for a particular table
- Seen how to delete a relationship
- Seen how to remove a table from the Relationships window



Defining Relationships

Background

All being well, you will have determined what tables you want and the relationships between them at the design stage as covered in the chapter on Database Design. In doing this, you will also have decided on what types of relationships to have.

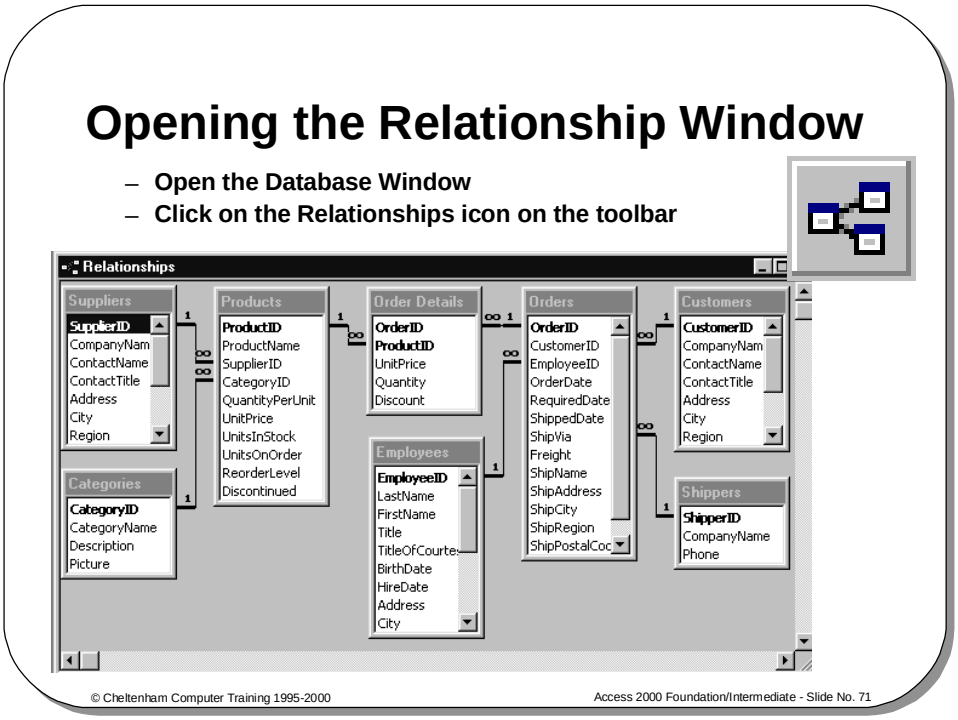
Having created your tables, you will now want to create the relationships between them. To do this you must first open the Relationships window.

If you design your database efficiently, you will guarantee the uniqueness of all your records by giving your tables primary keys. You will then use these primary keys as foreign keys in other tables in order to establish relationships. When you create a relationship between two tables, the table linked by its primary key is called the primary table and the table using a foreign key is called the related table. The related table will have its own primary key which it can use, in another relationship, to become the primary table.

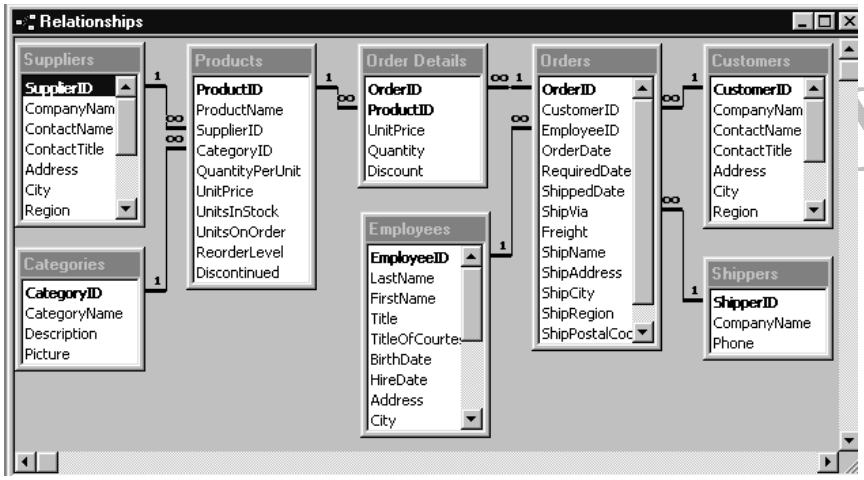
Why?

A good database design is based on the definition of relationships between the tables. There will be many instances where you will want to print out reports which incorporate data from two or more tables, or you may need to display data from two tables on a form.

In order for Access to display data from multiple tables in forms, reports and queries, you must tell Access how it can link the data. For example if you need to print a report which lists all the customers with all their orders, you must first tell Access that it is the CustomerID in the Order table that is to be used to link the data back to the Customer table.



Opening the Relationships Window



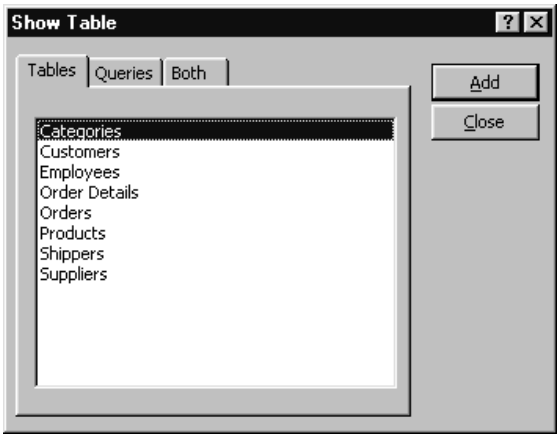
To open the Relationships window

- If it is not already available, open the **Database** window.
- Click on the **Relationships** icon on the standard toolbar.

If you have created or changed any relationships already, the **Relationships** window will appear as you last saw it. Otherwise it will appear with the **Show Table** dialog box superimposed.

Adding Tables to the Relationships Window

- **Click on the Show Table icon**
- **Select the table(s) required in order to build the relationship click on Add**



Adding Tables to the Relationships Window

To add a table(s) to the Relationships window using the Show Table dialog box

- Open the **Relationships** window.
- 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

- **Click on the field in the primary table and drag to the corresponding field in the secondary table**
- **The Edit Relationships window appears**
- **Click on the Create button**

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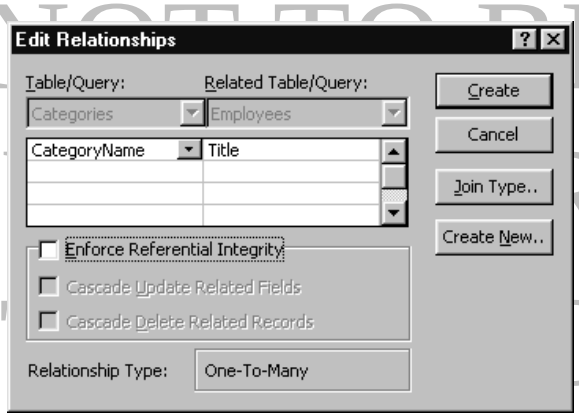
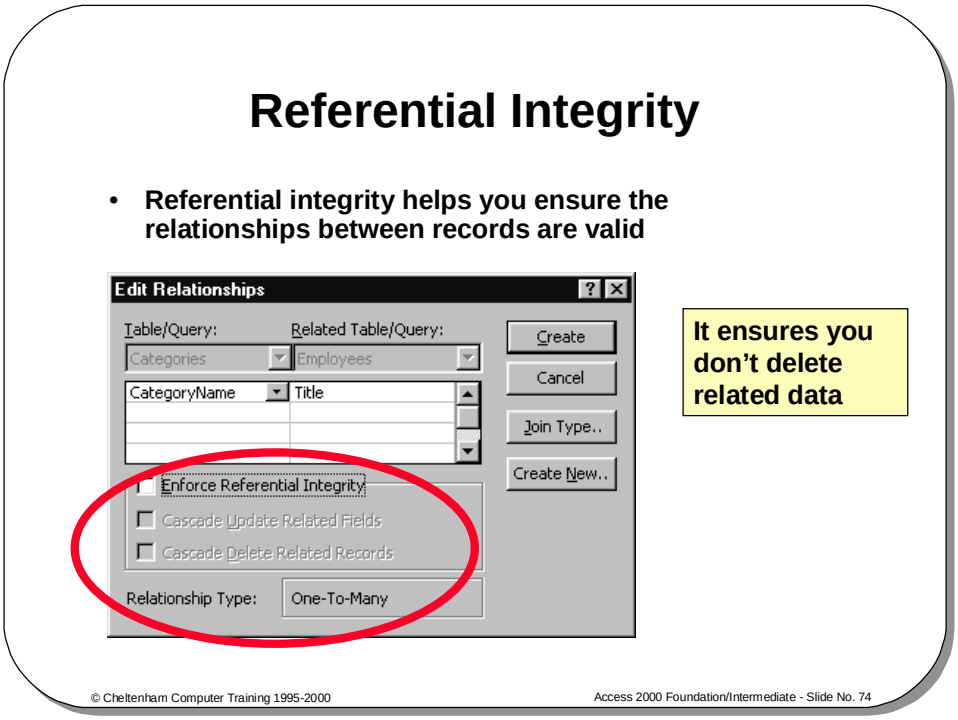
Making Relationships

To create 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 **Relationships** dialog box will appear as shown below.



Click on the **Create** button. The relationship will be displayed, as illustrated.



Referential Integrity

If a primary key and matching foreign key are used to join two tables, they are said to enjoy **Referential Integrity**. This means the following conditions are enforced:

1. To add a record to a related table, the primary table must hold a record whose primary key value matches the corresponding foreign key value in the new record of the related table.
   Example: To add an **Order Detail** record, you must first have an **Order** record whose primary key (the order number) is the same as the order number on the order detail record.

2. You cannot delete a record from a primary table if there are matching records in a related table.
   Example: You cannot delete an **Order** record if there are **Order Details** records containing the matching order number.

In most cases, you would be advised to enforce Referential Integrity.

Cascade Update Related Fields

Selecting **Cascade Update Related Fields** means that if you change the primary key in the record of a primary table, Access updates the corresponding fields in related records with the new value.
Example: If you change the number of an order, i.e. the primary key of the **Orders** record, Access will update the order number field on all of the associated **Order Details** records.

Cascade Delete Related Records

Selecting **Cascade Delete Related Records** means that if you delete a primary record, the corresponding records in related tables will be deleted.

Example: If you delete an **Order** record, all of the **Order Detail** records relating to that order will be deleted.

Warning: Both of these options overcome **Referential Integrity** and should be used with care.

Editing Relationships

- **You can:**
  - **Display all relationships**
  - **Display only direct relationships**
  - **Delete a relationship**
  - **Remove a table from the Relationships window**

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Editing Relationships

To show all existing relationships

- Open the **Relationships** window.
- Choose **Show All** from the **Relationships** menu

OR click on the **Show All Relationships** icon on the **Relationship** toolbar.

To show the relationship for a particular table

- Open the **Relationships** window.
- Click on the **Show Direct Relationships** icon on the **Relationship** toolbar

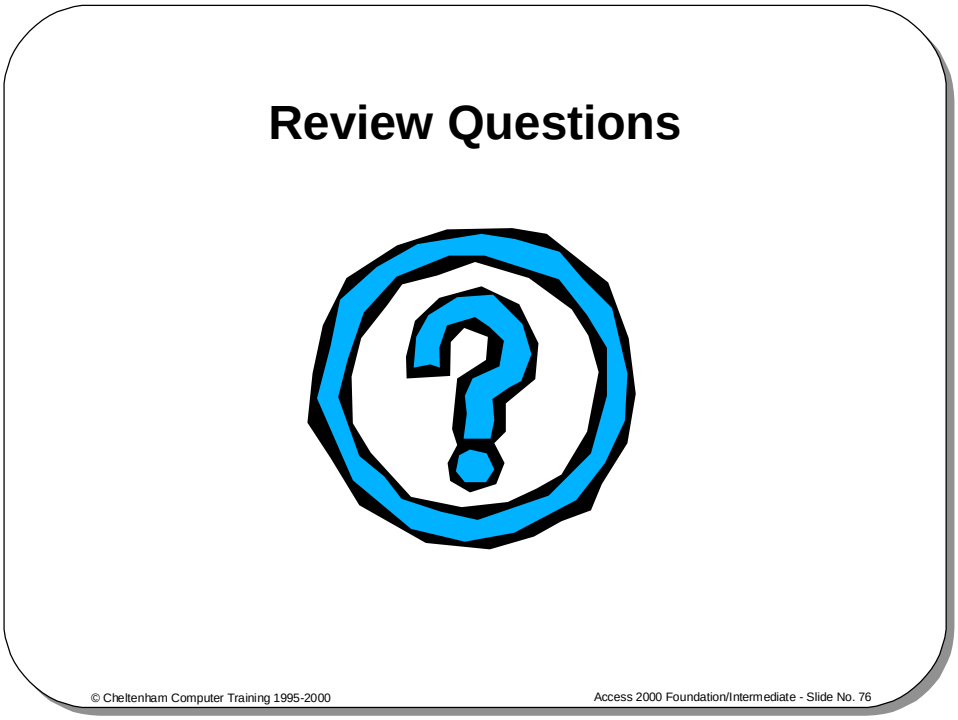
OR choose **Show Direct** from the **Relationship** menu.

To delete a Relationship

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

To remove a table from the Relationships window

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



Review Questions - How Would You ...

1. Explain the concepts behind defining relationships?
2. Open the Relationships window?
3. Add tables to the Relationships window?
4. Create a relationship between two tables?
5. Explain the concept of Referential Integrity?
6. Show all existing relationships?
7. Show the relationship for a particular table?
8. Delete a relationship?
9. Remove a table from the Relationships window?

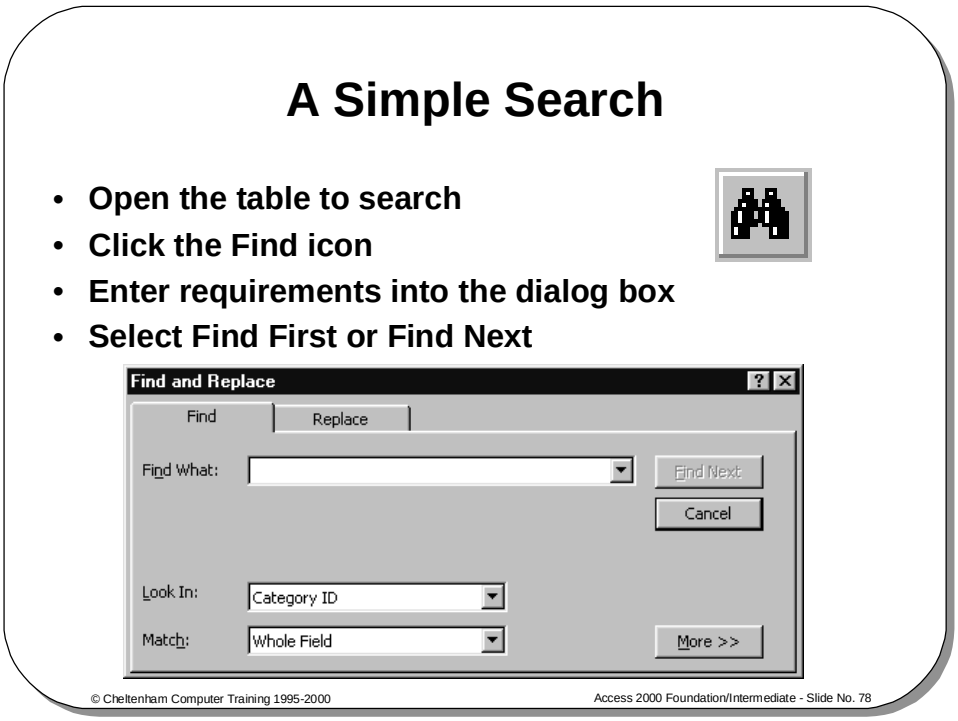
And finally, **why** would you need to define relationships for your database?

Locating and Replacing Information

Learning Module Objectives

When you have completed this learning module you will have:

- Seen how to begin a search
- Seen how to search using Wildcard characters
- Seen how to find a specific value
- Seen how to find and replace a value
- Seen how to sort records in a table Datasheet
- Seen how to sort records in a form
- Seen how to filter records in a table datasheet
- Seen how to remove a filter



A Simple Search

Background

Finding information in a small table can be relatively simple but when the columns or rows of your Datasheet extend beyond the screen, it can be something of a task. Microsoft Access provides a number of ways of retrieving and editing information. Two of these are Find and Replace. In a later chapter, we shall be looking at queries which provide a powerful way of both retrieving and sorting data. If the operation you want to carry out is likely to be repeated or is anything but straightforward, the chances are you would be better writing a query. Finding information in an Access table is quicker if you search on a field which is the primary key or which has an index. You can use the Edit menu, the toolbar or shortcut keys to find information. Before that, you must be sure to click in the field on which you want your search to be based.

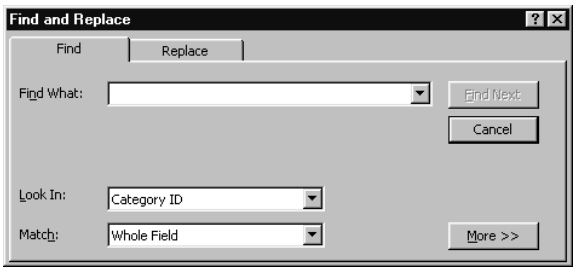
To begin a search

- 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

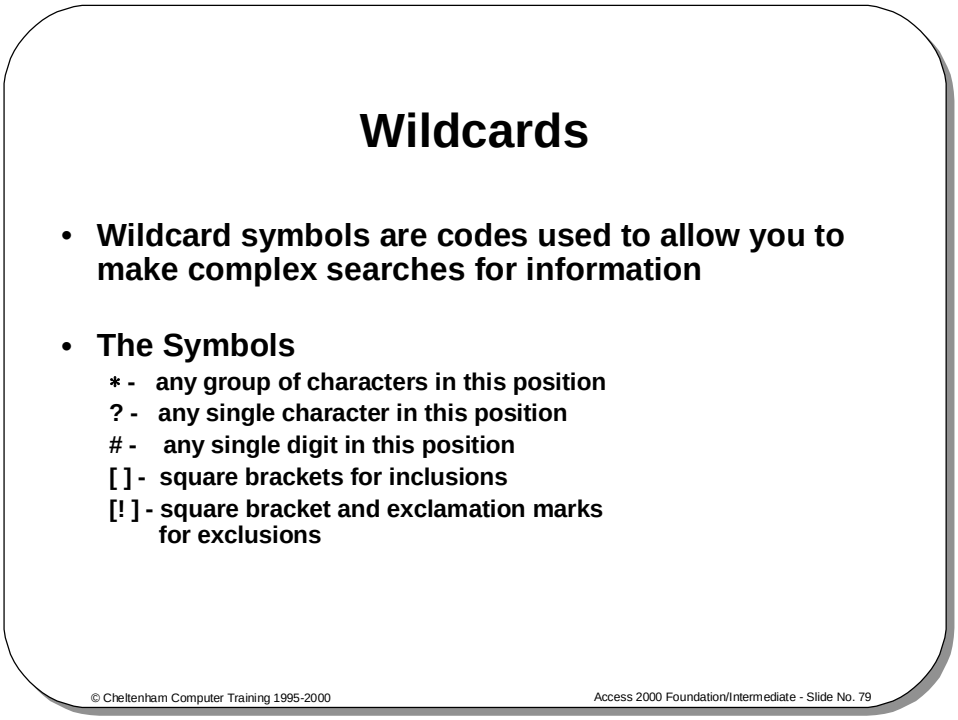
OR press **CTRL+F**.

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



- Enter the value you want to find in the box marked **Find What:**. There are a number of options you can use to refine your search as follows.

Find Option	Function
Look In	Allow you to specify whether the whole table or an individual field should be searched.
Match	The default is **Match Whole Field**. The other options are to match **Any Part of Field** and the **Start of Field**.
Search	You can select the direction of the search from **Up**, **Down** or **All**. The default is **All**.
Match Case	If this box is checked, Access will only find instances of the value where the case matches.
Search Fields as Formatted	You can select this option if you want to search the data as it is formatted rather than how it is held in the table.

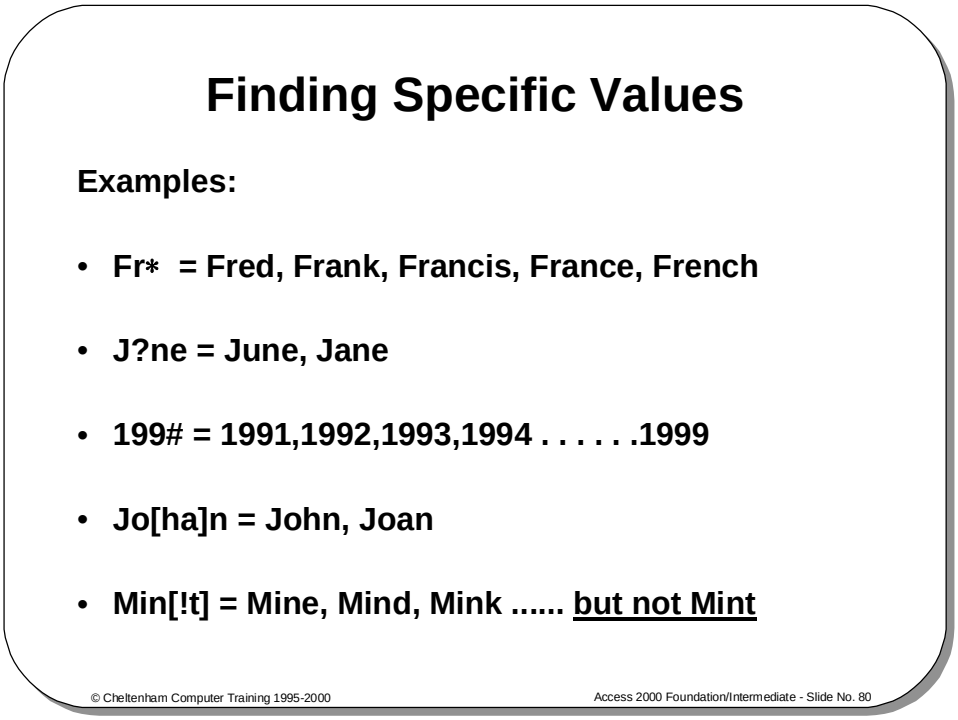


Wildcards

To search using Wildcard characters

If you are not sure of all of the characters in your search string (i.e. the value you enter in the **Find What** box) you can use wildcard characters as a substitute. They are as follows:

Use this:	For this:
Question mark ?	Any single character in the same position as the question mark. **Example:** J?ne finds June and Jane.
Asterisk *	Any group of characters in the same position as the asterisk. **Example:** B*ge finds Baggage, Barge and Brokerage etc.
Hash sign #	Use this for a single digit in the same position as the hash sign. **Example:** 199# will find all years between 1990 and 2000.
Square brackets [ ]	Use these around two or more characters when you want your search field to include any of them. **Example: Jo[ha]n** finds **John** and **Joan**. Include an exclamation mark **!** after the first square bracket to exclude the characters following it. **Example: Min[!t]** finds **Mine** and **Mind** but excludes **Mint**.



Finding Specific Values

To find a specific value

- Type the value you want to find into the **Find What** box.

Note: If when adding a record to a table you do not enter anything in a field, Access stores a null value in the field. If, on the other hand, you type a space or "", Access counts this as a zero length string.

If you want to find a null value, type in the text **Is Null**. If you want to find a zero length string, type **""**.

- Click on the **Find Next** button or press **Enter**.

Access moves to the first record in which the value exists and highlights the field.

- Click on **Find Next** to find another occurrence of the same value

  OR click on **Close** to complete the operation.

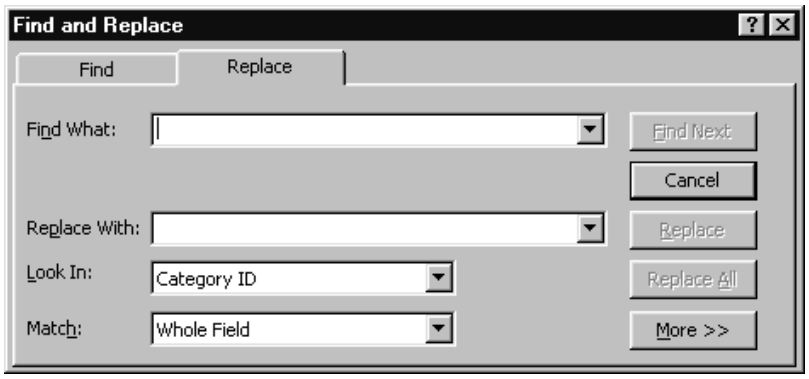
To find another occurrence of the same value after you have closed the dialog box

- Press **SHIFT+F4**

  OR click on the **Find Next** icon (if it is available) on the standard toolbar.

Find and Replace

- **Click on the Replace command under the Edit drop down menu**



Find and Replace

To find and replace a value

- 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.

- Click on the **Close** button to complete the operation.

To find and replace all occurrences of a value

- Click in the field where you want to replace the value.
- Choose **Replace** from the **Edit** menu

  OR press **Ctrl+H**.

- In the **Find What** box type the text you want to replace.
- In the **Replace With** box type the new text.
- Click on the **Replace All** button.

Note: Take care with this option particularly if you opted not to **Match Whole Field**.

Sorting Records

- **Quick Sort allows you to quickly sort the table by your selected field**
- **The sort can be either ascending or descending**

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Sorting Records

Background

If you want your records in a different order, you can use **Quick Sort**. You might, for instance, hold your employee records by employee reference number but want to view them in alphabetical order of surname.

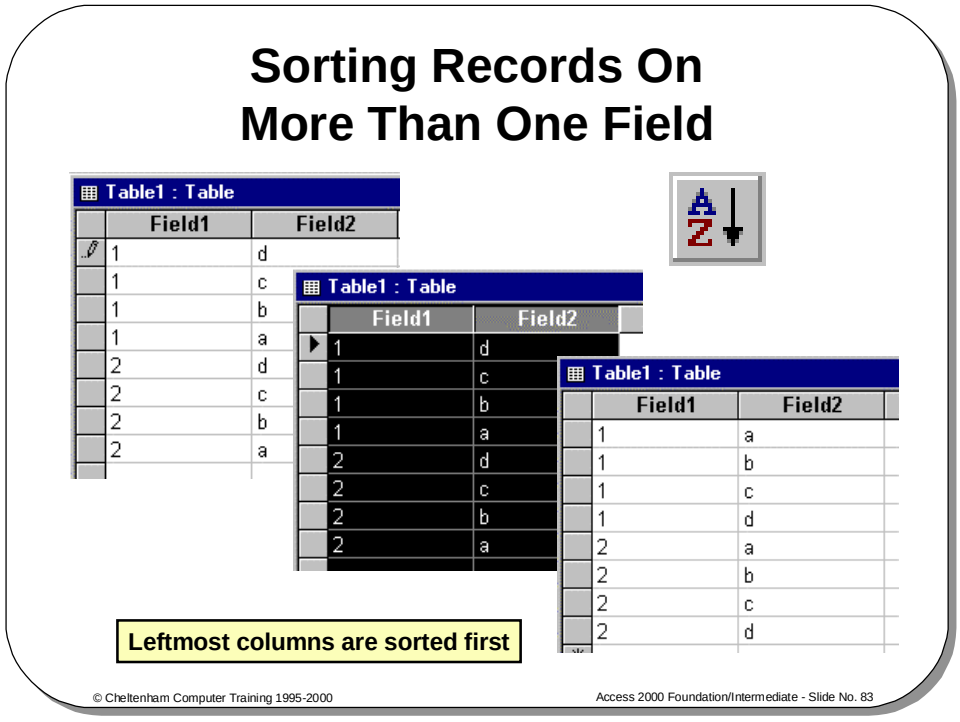
In a table Datasheet, you can use more than one adjacent sort field but in a form you are limited to one sort field only. If you select more than one field in a Datasheet, the leftmost field is the primary sort field. Therefore you might need to rearrange the order of your columns before sorting.

To sort records in a table Datasheet

- 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.

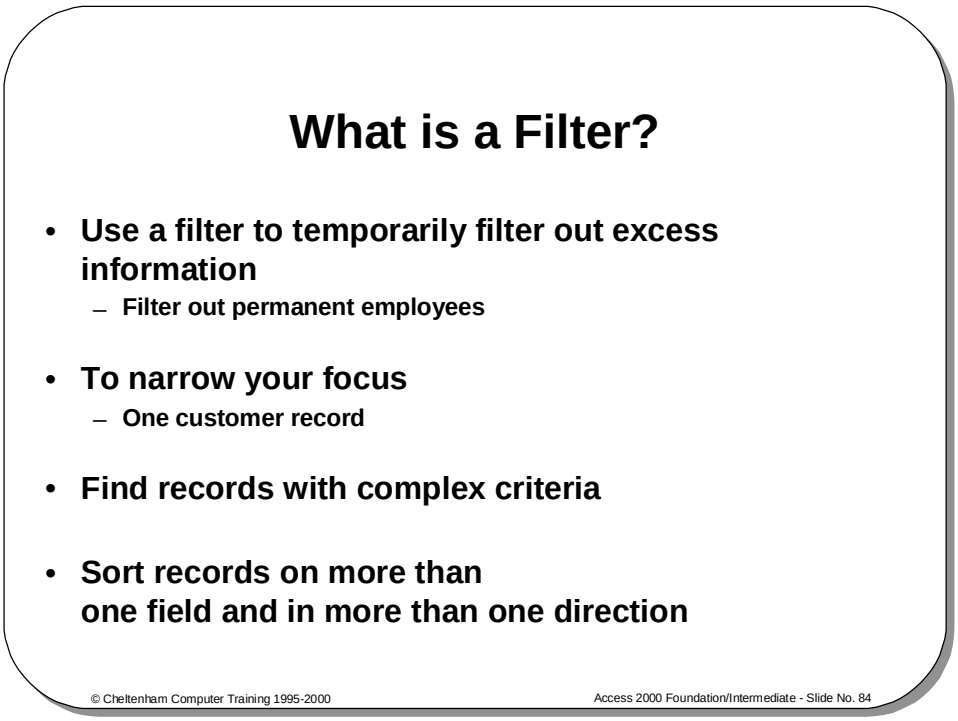
Note: An ascending sort arranges the Datasheet with the lowest value first, i.e. 0 to 9 and A to Z. A descending sort does the opposite.



Sorting Records On More Than One Field

To sort records on multiple fields

- Select the fields on which you want to base your sort.
- Click on the **Sort Ascending** or **Sort Descending** icon on the standard toolbar.



What is a Filter?

Background

Filters are basically simple queries but they only apply to open tables or forms.

Filters are best used for temporarily altering the view of the data in a table:

- For filtering out records that we don't want.
- For narrowing the focus of our view (one year out of many).
- For viewing records that meet complex criteria.
- For sorting records on the content of several fields.
- For sorting fields in differing directions (one ascending another descending).

Filtering Records By Selection

- **Use Filters to get a subset of records sharing a common attribute**

Table1 : Table

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

Filter by Selection

Table1 : Table

Field1	Field2
Car	1985
Car	0285
Car	1048
car	3426

Filtering Records By Selection

To filter 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

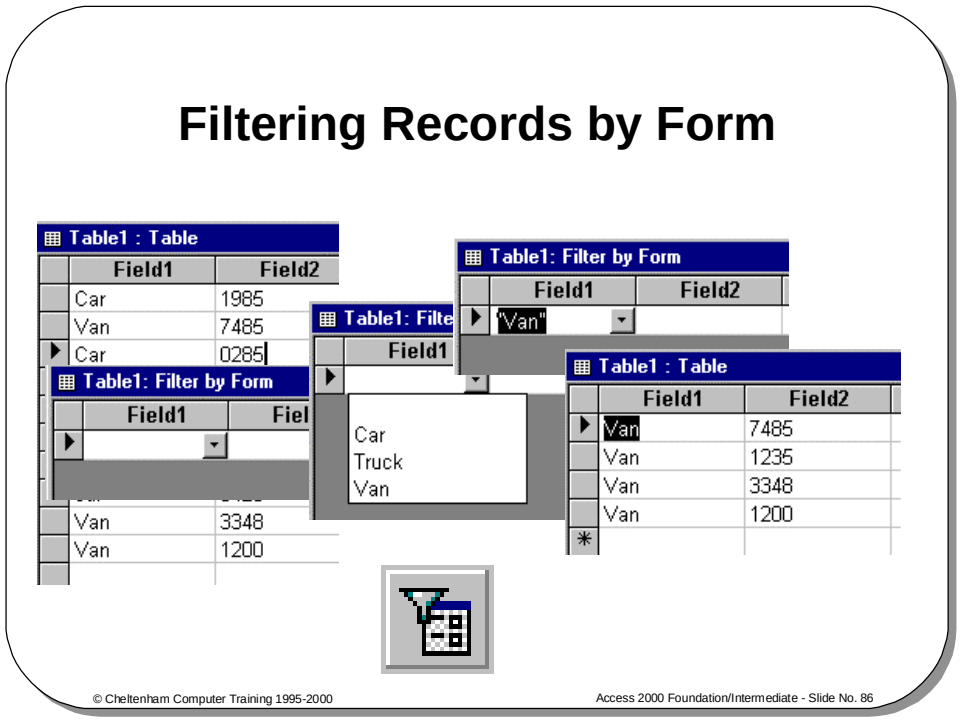
- Click on the **Filter by Selection** icon in the toolbar. In this example only fields containing the word "car" will be displayed, as illustrated.

Table1 : Table

Field1	Field2
Car	1985
Car	0285
Car	1048
car	3426

To remove a filter

- Click on the **Remove Filter** icon.



Filtering Records By Form

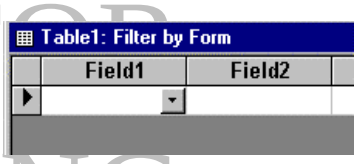
To filter records in a table datasheet by form

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

Table1 : Table

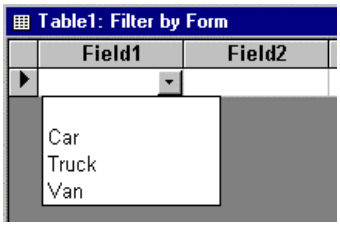
Field1	Field2
Car	1985
Van	7485
Car	0285
Van	1235
Truck	2432
Truck	7475
Car	1048
car	3426
Van	3348
Van	1200

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

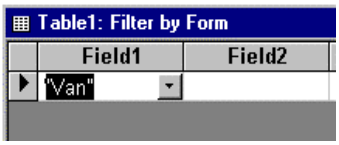


Notice the drop down arrow in **Field1**.

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

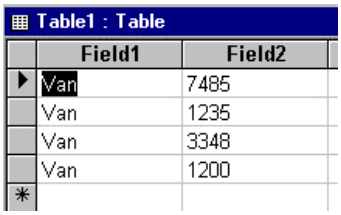


- In the example shown we have chosen **Van**.



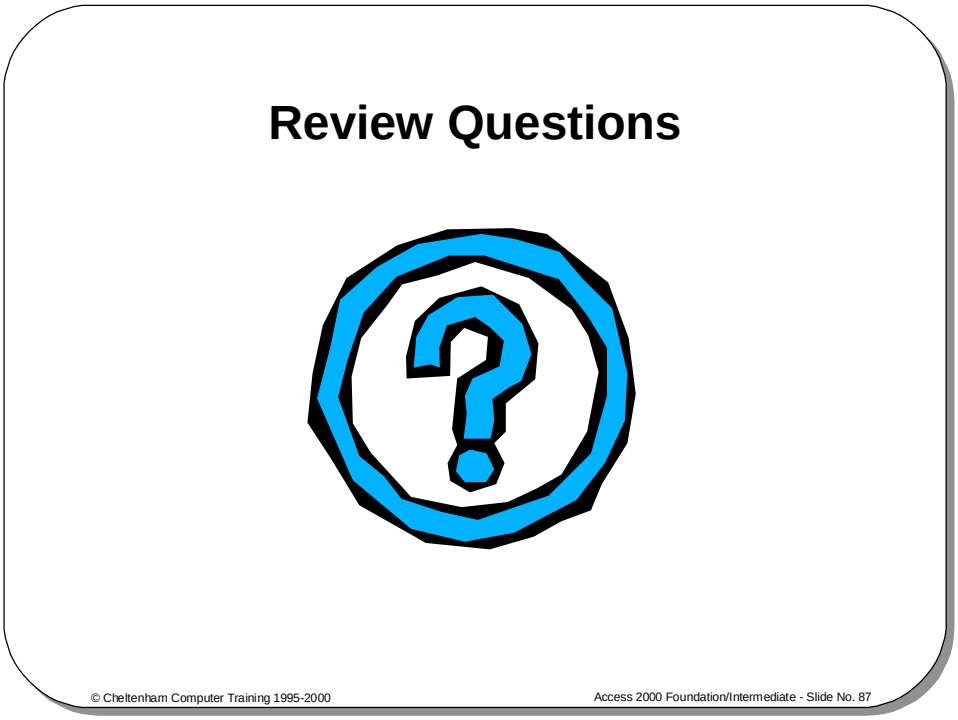
To apply the filter

- 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.



Review Questions - How Would You ...

1. Begin a search?
2. Search using Wildcard characters?
3. Find a specific value?
4. Find and replace a value?
5. Sort records in a table Datasheet?
6. Sort records in a form?
7. Filter records in a table datasheet?
8. Remove a filter?

Creating Simple Queries

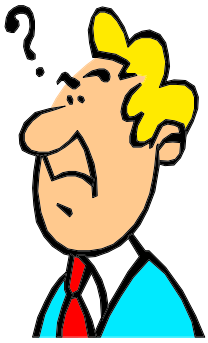
Learning Module Objectives

When you have completed this learning module you will have:

- Understood the concepts behind the use of queries
- Seen how to open an existing query
- Seen how to create queries, using the Query Wizard
- Seen how to select fields that you wish to add to your simple query
- Seen how to build queries in design view
- Seen how to build queries which calculate totals
- Seen how to use a query to append records to a table
- Seen how to update data using a query
- Seen how to make a new table using the output of a query

What are Queries?

- **Queries help you select information from tables or queries for a specific purpose**
- **You can select fields from records**
- **You can select records from a table or query**
- **You can select, summarize, update, delete, make new tables and append records to another table**



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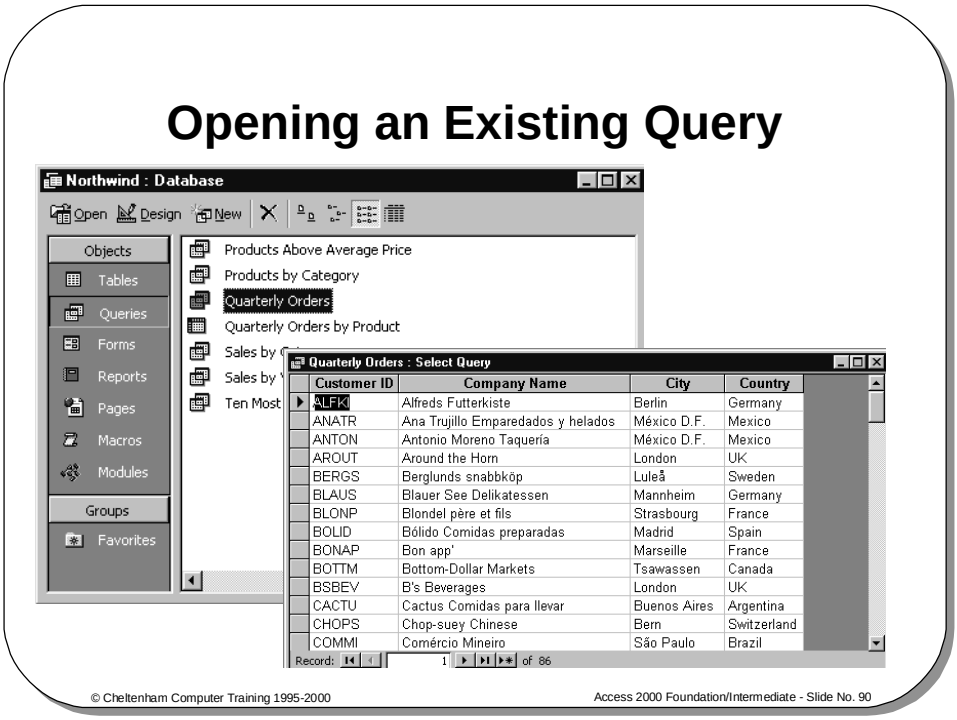
What are Queries?

Background

A Database Management System is used mainly for storing and retrieving information. For convenience, efficiency, and to avoid duplication of data, it is stored not in one large table but in separate, smaller tables that can be related. We often need to retrieve information, not as one table of complete records, but as a subset of one or more tables.

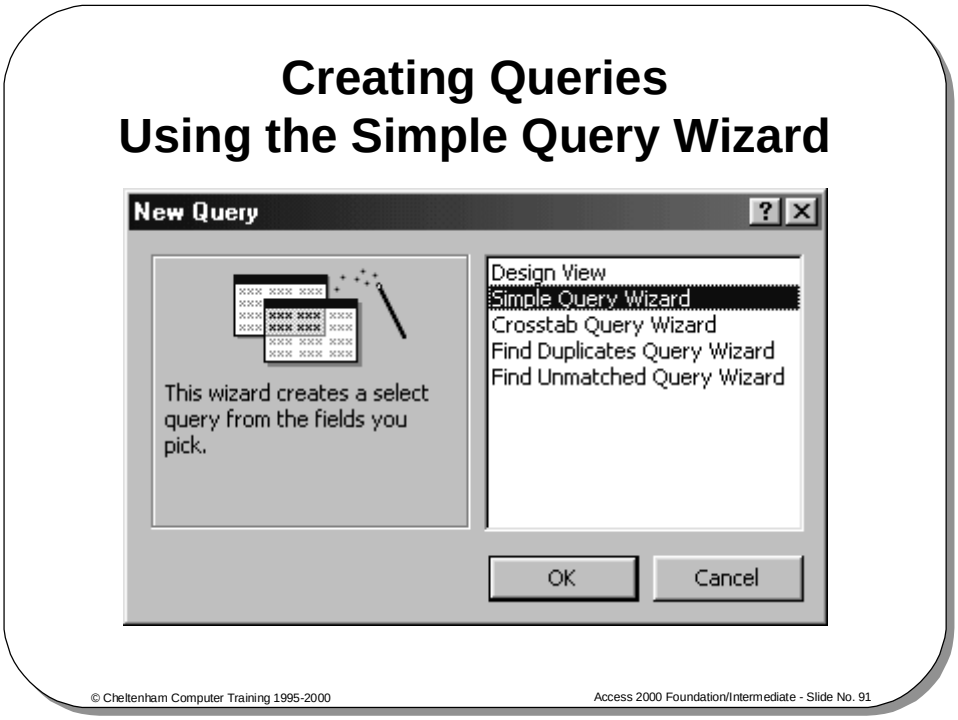
Suppose you wanted to know how your sales staff had been performing during a particular period. You would probably need to extract information from three tables: Employees, Orders and Order Details. You would need the Employee table for the salesperson's name; the Order table for the dates of the orders; and the Order Details table for the amounts sold. Employee and Order records would be linked by employee number; Order and Order Detail records would be linked by order number. You would want to limit your results to Order and Order Detail records that fell in the specified period. Also, you would only be interested in people employed during that period as sales staff. Ideally you would want to present the information in a report, but first you would need to retrieve it with a query.



Opening an Existing Query

Background

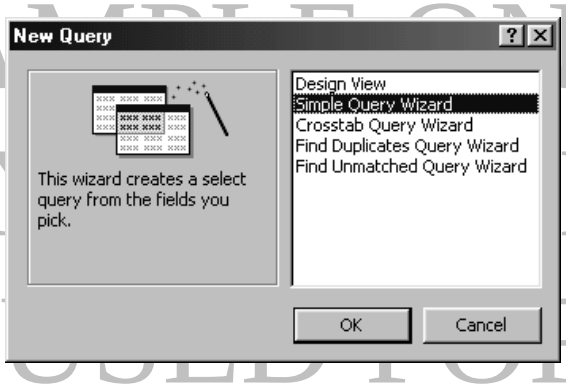
- Open the database.
- When the **Database Window** is displayed, select the **Query** icon.
- Double click on the query that you wish to view.



Creating Queries, Using the Simple Query Wizard

To create a query using the Simple Query Wizard

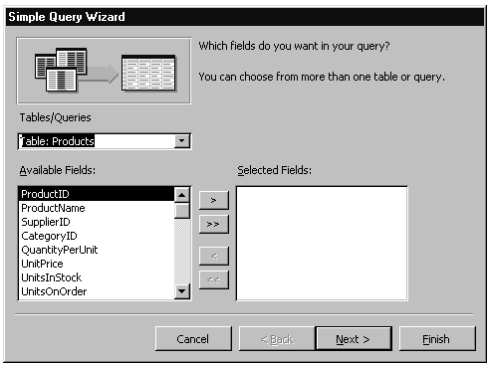
- In the database window, click the **Query** tab.
- Click the **New** button to display a **New Query** dialog box.



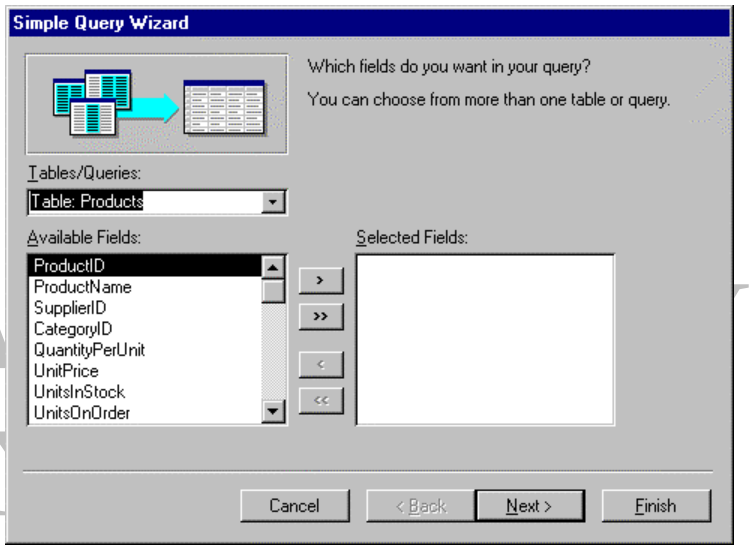
- Select the **Simply Query Wizard** option, and then click on the **OK** button to move to the next Wizard page.

To select fields that you wish to add to your simple query

- The dialog box should resemble that illustrated below.

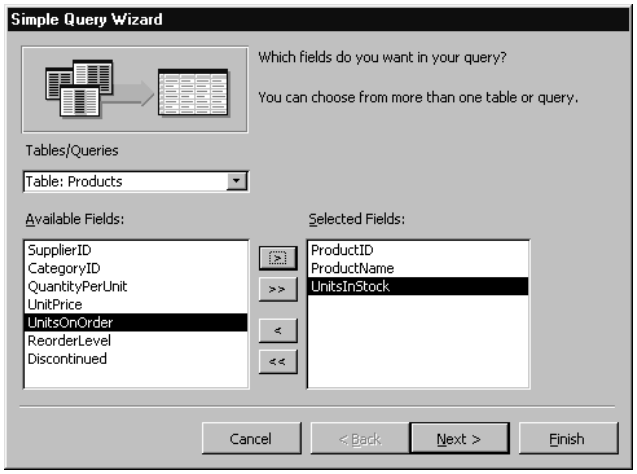


- Click on the down arrow in the **Tables/Queries** text box to illustrate available queries and tables from which you can select the fields of interest to you. In the example below, we have selected Northwind's **Products** table.

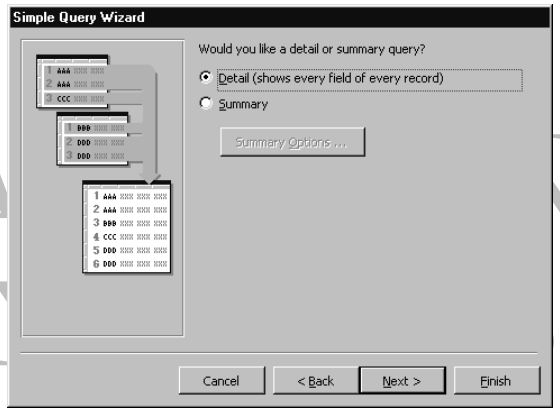


- To add a field, select the field and click on the right-pointing arrow.

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

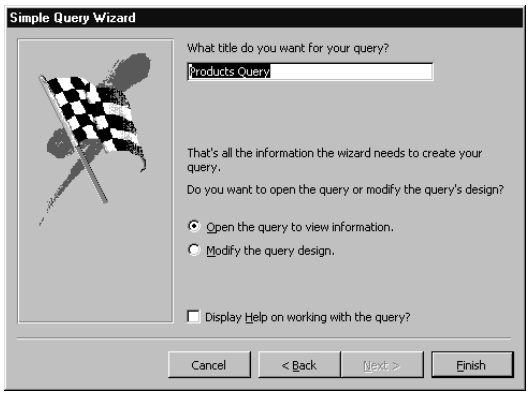


- When you have finished adding fields, click on the **Next** button, and the dialog box below is displayed.

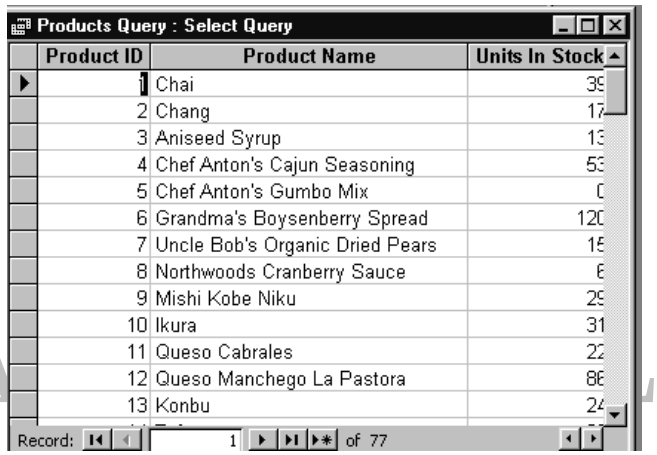


- Click on the **Next** button to continue.

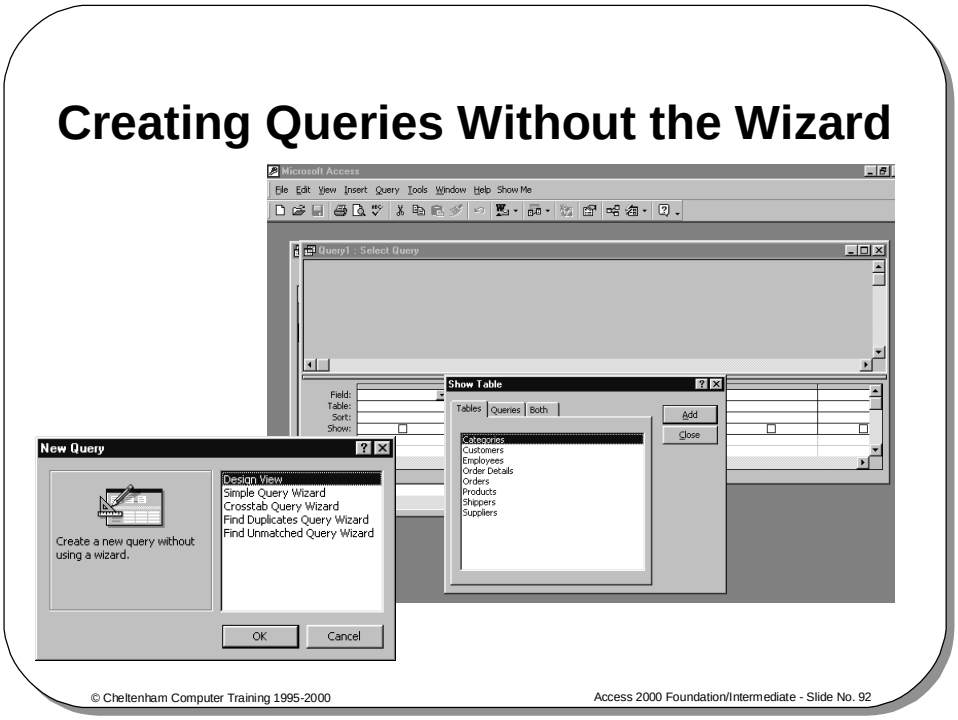
- Give the query a name, using the dialog box illustrated below.



- 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!

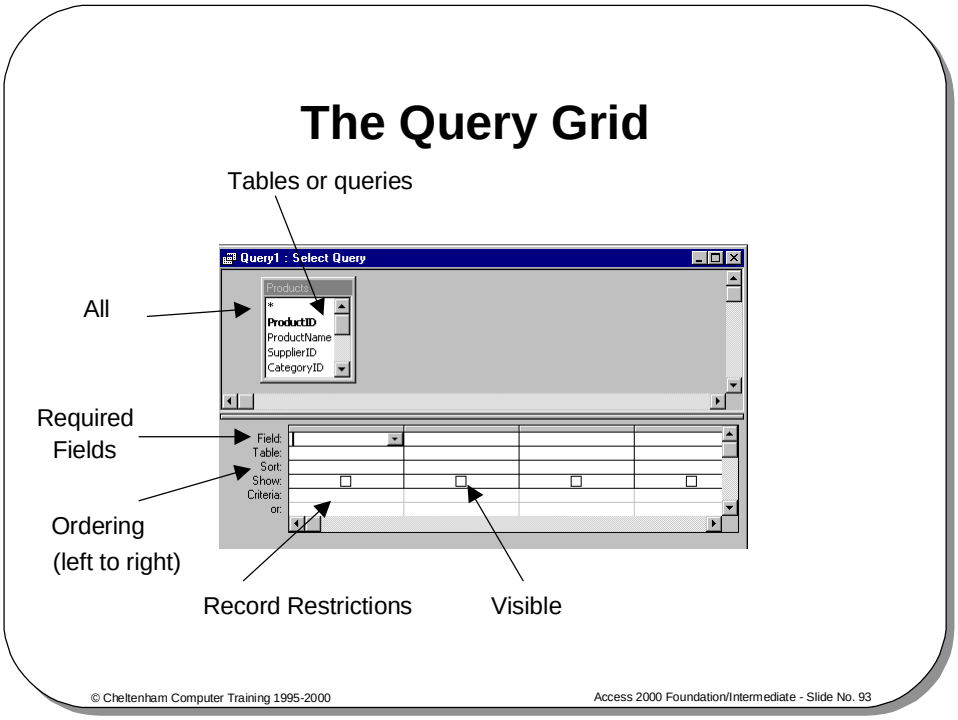


Creating Queries Without the Wizard

Background

Access provides a number of wizards to help you with the definition of your queries. However there are many instances where a wizard is not applicable and you will need to create a query in design view. This view allows you to specify which fields you want to see and what criteria to use in the query.

Select **Design View** from the **New Query** dialog box. Access then opens the Query Grid and displays the Show Tables window on top. The Show Tables window allows you to select the table (or tables) upon which you wish to perform a query.



The Query Grid

Using the query grid

One or more tables can be included in your query. In addition other queries can be included in the new query you are creating. A combination of tables and queries can also be used. The required fields can be selected by dragging them onto the grid, double-clicking on them or by selecting them from the Field row. Query output can be restricted by specifying criteria or filters for specific fields.

Queries can be sorted by one or more fields using the Sort row. Click on the Sort row to select from the options of Ascending or Descending. Sorting works from the left to right if you have more than one column specified. If you wish to return a column to its natural order, select 'not sorted' from the Sort options.

The order of fields displayed in the answer to the query can be changed by highlighting columns and dragging.

You may wish to include some fields in the query but not in the answer. This may be useful if you need to specify criteria or a sort order for a particular column, but do not need to see the data displayed for that column in the answer. The Show tickbox will be ticked by default when you add a field to the query grid, but you can de-select the field by clicking on this tickbox.

Running the query

When you have built up all the elements of you query, you can run it by clicking on the Run tool: **!**

Logical Operators in Criteria

- **When setting criteria for queries you use logical operators to define what you require**
  - **= (Equals/Same)**
  - **< (Less Than/Lower)**
  - **> (Greater Than/Higher)**
  - **<= (Less than or equal to)**
  - **>= (Greater than or equal to)**
  - **<> (Not equal to)**
  - **And**
  - **Or**
  - **Like**

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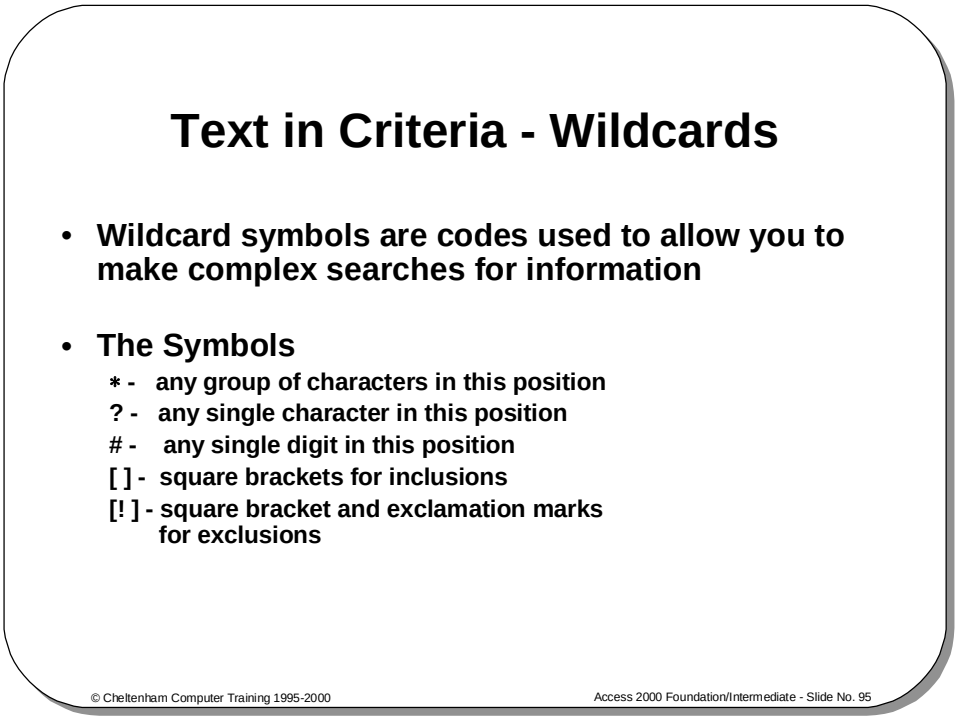
Logical Operators In Criteria

Background The use of logical operators allow us to specify complex criteria for searching our tables. Whilst they are fairly straightforward to understand it makes good sense to clarify how they can be used in Access.

Criteria Expression	Field Applied To	Meaning
89	CustomerID	Finds information for the customer whose ID is 89
<89	CustomerID	Finds information for the customers whose ID is between 1 and 88 inclusive (not 89)
>89	CustomerID	Finds information for the customers whose ID is above 89 (not 89)
<=89	CustomerID	Finds information for the customers whose ID is between 1 and 89 inclusive
>=89	CustomerID	Finds information for the customers whose ID is 89 and above
<>89	CustomerID	Finds information for the customers whose ID is not 89
"Leeds" Or "Bristol"	City	Finds information for Leeds or Bristol
Like "Mc*"	Surname	Finds information about people whose names begin with "Mc"
Between 1/12/94 And 15/12/94	JoinDate	Finds information about persons who joined the company during the first 15 days of December 1994

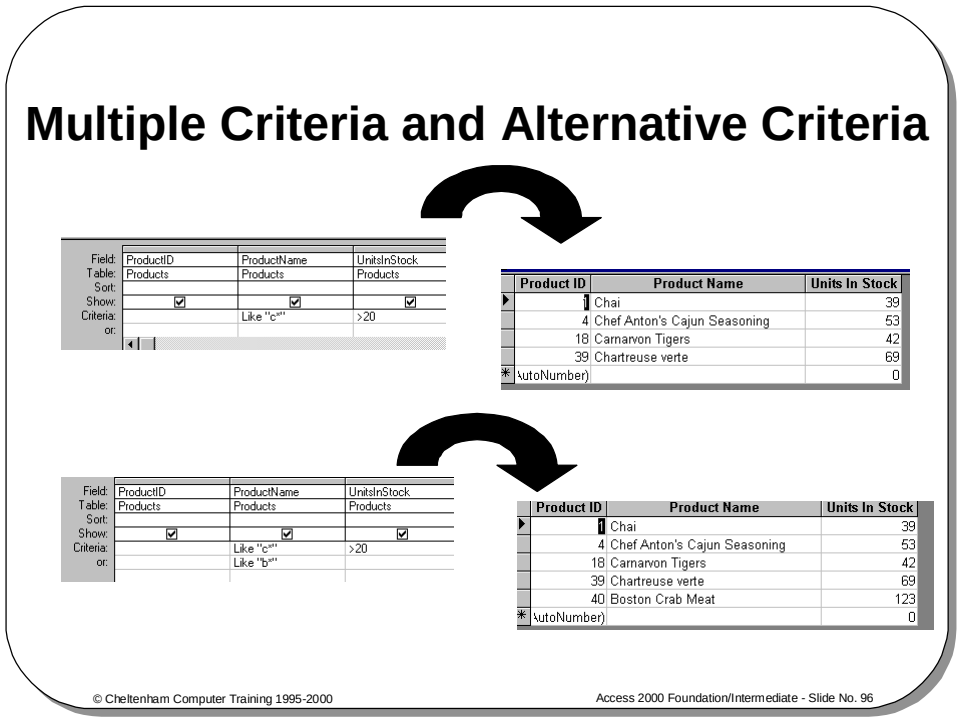


Text in Criteria - Wildcards

To search using Wildcard characters

If you are not sure of all of the characters in your search string (i.e. the value you enter in the **Find What** box) you can use wildcard characters as a substitute. They are as follows:

Use this:	For this:
Question mark ?	Any single character in the same position as the question mark. **Example:** J?ne finds June and Jane.
Asterisk *	Any group of characters in the same position as the asterisk. **Example:** B*ge finds Baggage, Barge and Brokerage etc.
Hash sign #	Use this for a single digit in the same position as the hash sign. **Example:** 199# will find all years between 1990 and 2000.



Multiple Criteria and Alternative Criteria

Specifying more complex criteria

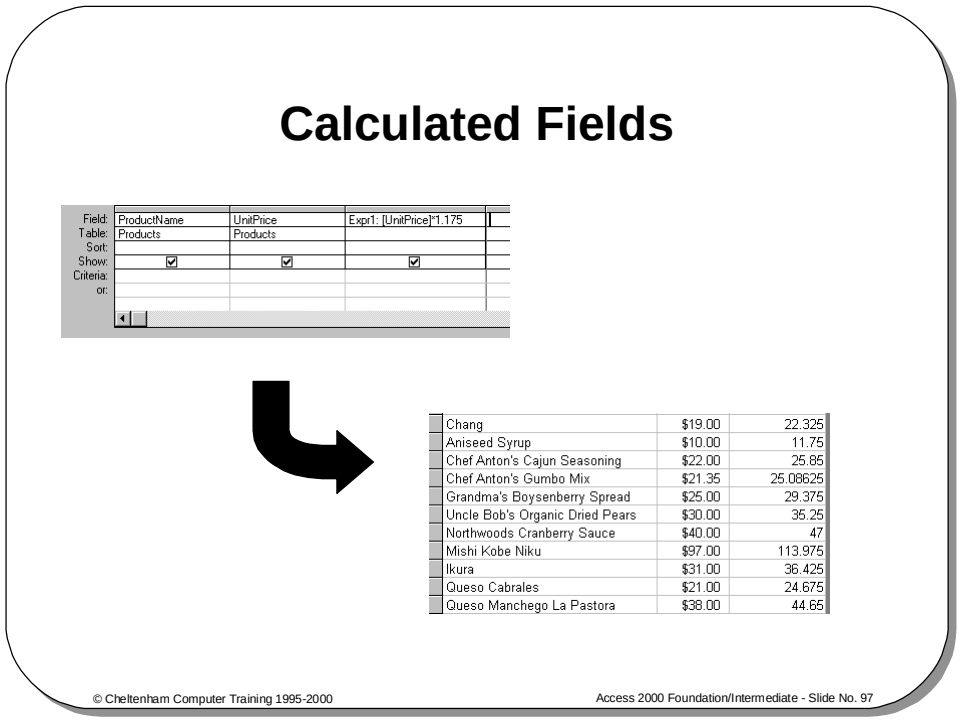
The query grid also allows you to specify complex search criteria.

You may enter criteria on more than one field: for example, you may wish to list all products which have a name beginning with the letter C and have a stock level of over 20. It is the combination of these two criteria that is applied when you run the query. You can enter criteria on as many columns as you wish.

In addition you may wish to specify two or more alternative criteria. For example, you may wish to see all the products that begin with the letter B or the letter C. You can specify as many alternative criteria as you wish.

Combining criteria

You can also have a combination of multiple criteria and alternative criteria. For example you may wish to see all the products which begin with the letter C and have a stock level of over 20 or begin with the letter B regardless of their stock level. Note that the Or row applies to the whole query not just one column: for example if you wish to see all the products which begin with the letter C and have a stock level of over 20 **or** begin with the letter B and also have a stock level of over 20 (note the slight difference to the previous example) then you would need to **repeat** the >20 criterion under UnitsInStock in the Or row.



Calculated Fields

To enter a calculated field

It is sometimes useful to perform calculations upon each row that is in the answer to your query. For example you may wish to see the price inclusive of sales tax for each product. The Product table may only contain the net price so you will need to add a calculated field to your query.

Instead of selecting a field name in the query grid, click on the field box in an empty column in the grid and type in the arithmetic expression for your calculation. When you press return or move out of the field box, Access will prefix your calculation with a label, e.g. 'Expr1'. This label is used as the column heading in the answer to your query. However you can change this label to a more meaningful expression, e.g. Price With Tax.

The full syntax for calculated fields is as follows:

Expr1: *expression*

Where Expr1 is the column heading and *expression* is any arithmetic expression using the following components:

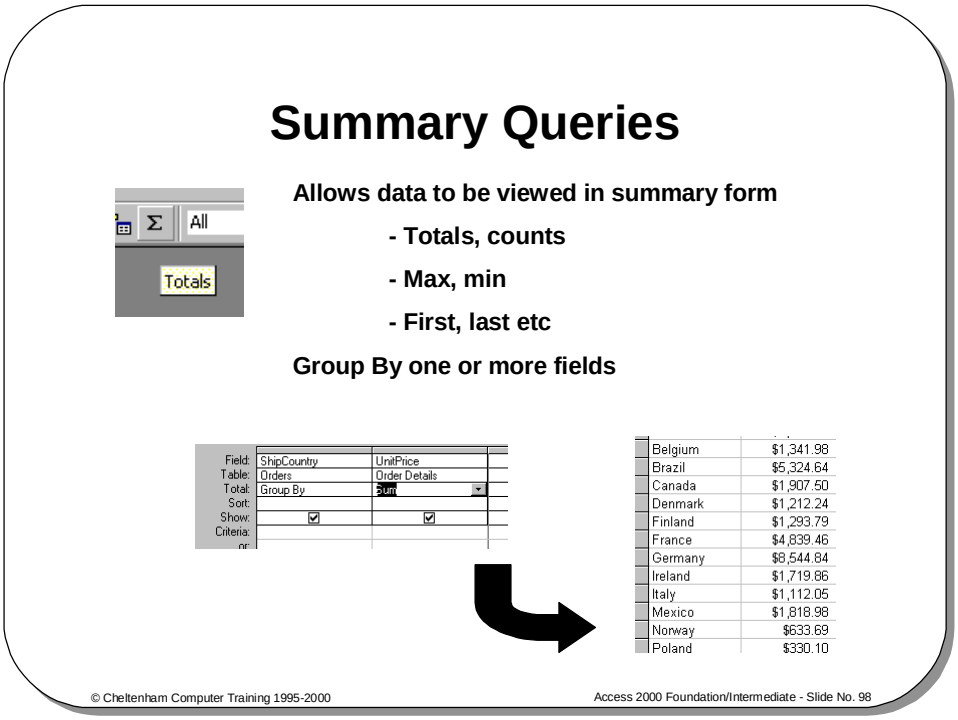
[*fieldname*]	A valid field from one of the tables selected for the query, enclosed by square brackets
*	Multiply
/	Divide
+	Add
-	Subtract
()	Parentheses are used to indicate order of precedence in a complex expression

You can also use any other constants (i.e. numbers) or functions that are in the Access library (e.g. you can use the Format function to format a calculated field as currency or a special layout of date).

Examples

Price Plus VAT: [Price]*1.175
Total Sales Price: [UnitPrice]*[OrderQuantity]
Total Available: [StockLevel]-[QuantityOrdered]

The next section explains how to use the Expression Builder, which can be very useful in building not only calculated fields but other expressions in Access.



Summary Queries

Calculated fields are calculations which are operate across a row, i.e. they are applied to each record individually. It is also useful to perform calculations which span a group of records or which span all the records in a table. These types of queries are called summary queries. You can use summary queries to calculate the total for a particular column or sub-totals for a column depending on the values in another column, for example sub-totals for sales in each country.

By clicking on the Totals tool, an extra line entitled Totals is added to the query grid. This line is used to specify what calculation should be applied to each column in the query: for example, sum, average, maximum, group by.

Note:

Summary queries operate in a slightly different way to normal queries: they do not list all the records that match the criteria with the totals at the bottom - they **only** show the totals.

In addition the fields that are included in the query are more important: you should only include the fields which are needed, i.e. the fields you wish to perform a calculation on and the fields you want to order by. Including other fields will just confuse the calculation.

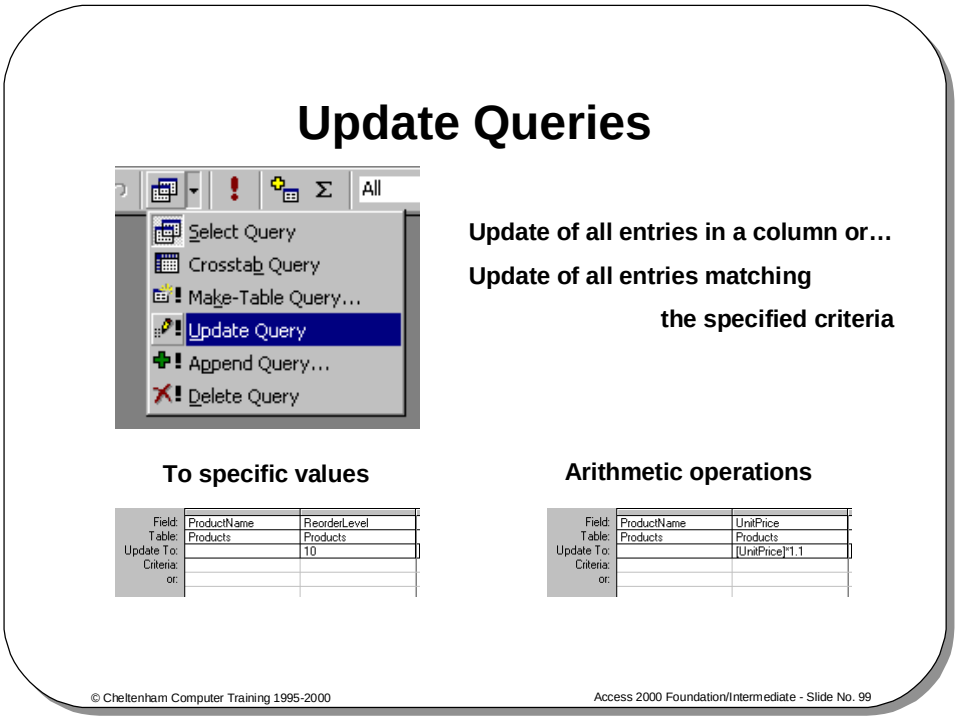
To set up a summary query

The mechanics of setting up a summary query are simple: select the fields and criteria as normal and then specify what should happen in the Totals line for each field. Normally you will select *group by* for one field and then a calculation for another field. In the example shown above, the query is grouped by country and all UnitPrice fields for the records within each country are totaled.

Multiple calculations

You can have any number of calculations in a summary query: you may want to group by country and then sum the UnitPrice field and see the average of the SalesQuantity field.

You can have any number of groups by columns in a summary query: you may want to group by country and within countries group by region. If you have more than one group by column, then Access works from left to right to determine the precedence of the groupings.



Update Queries

What is an update query?

Update queries allow you to quickly update a number of records in a table. The records updated depend on the criteria that you specify. For example, you may wish to set the ReorderLevel to 10 for all the records in the Product table. Alternatively, if you wished to set the ReorderLevel to 10 for only those products beginning with the letter B, then you could specify this in the criteria.

To create an update query, click on the Query Type tool and select Update Query. This adds another line to the query grid, entitled Update To. Specify the rules for updating a column in this line – or leave it blank for columns that you do not wish to change. Sometimes it is useful to include other columns in the query, so that you can specify search criteria etc, but these are columns that you might not wish to change.

When you have specified the update rules, click on the Run tool (**!**) to action the query. Access will display a message saying how many records are to be changed and requesting confirmation that you wish to proceed. NB. If you are performing an update query on a subset of the table, it is good practice to set up the criteria in a normal select query first, look at the answer and check that the right records are being displayed, and then modify the query to include the Update To statements.

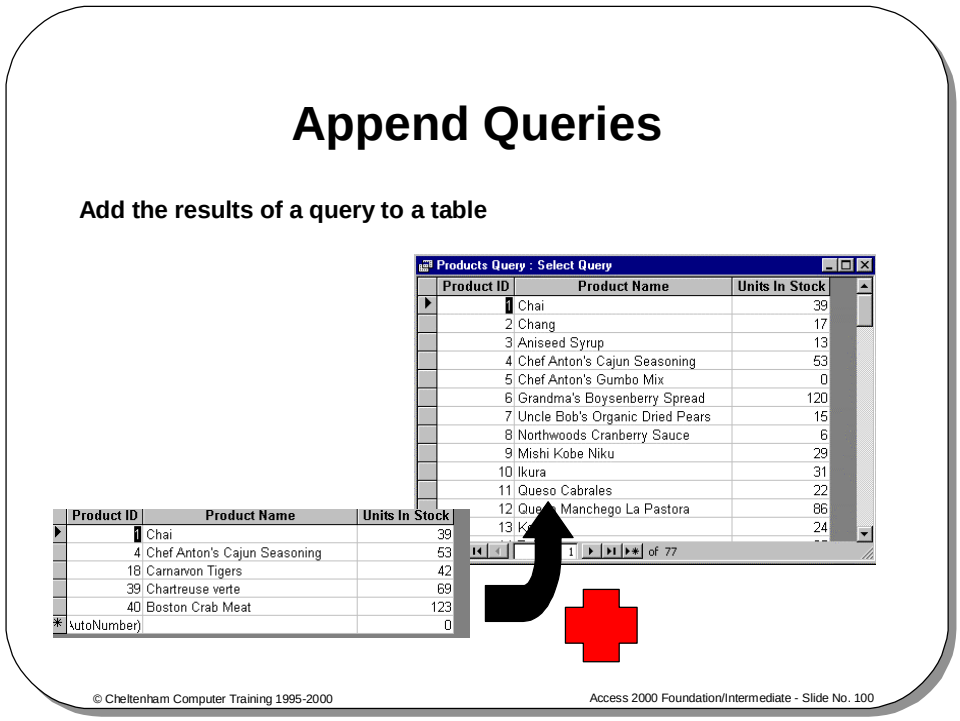
The expression that in the Update To line is built up using the standard Access expression components:

[*fieldname*]	A valid field from one of the tables selected for the query, enclosed by square brackets
*	Multiply
/	Divide
+	Add
-	Subtract
()	Parentheses are used to indicate order of precedence in a complex expression

You can also use any other constants (i.e. numbers) or functions that are in the Access library (e.g. you can use the Format function to format a calculated field as currency or a special layout of date).

Examples

10
[Price]*1.175
[UnitPrice]*[OrderQuantity]
[StockLevel]-[QuantityOrdered]



Append Queries

What is an append query?

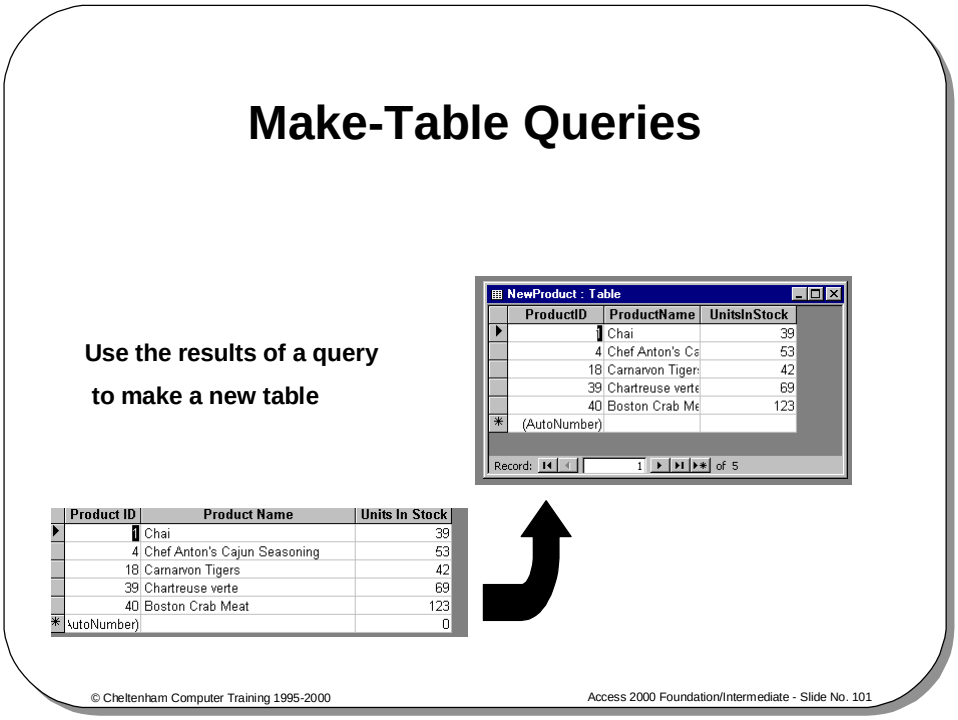
Append queries copy the results of a query to a specified table. The destination table must have the same fields as you have included in the answer to your query. To create an append query, click on the Query Type tool and select Append Query.

To set up an append query

You can specify the table that you wish to append to and whether it is in the current database or in another database file. When setting up an append query, the selection of fields, criteria etc is performed in the normal way. When you have set up the query rules, click on the Run tool (**!**) to action the query. Access will display a message saying how many records are to be appended and requesting confirmation that you wish to proceed.

Tip

If you are performing an append query on a subset of the table, it is good practice to set up the criteria in a normal select query first, look at the answer and check that the right records are being displayed, and then modify the query to include the Append To statements.



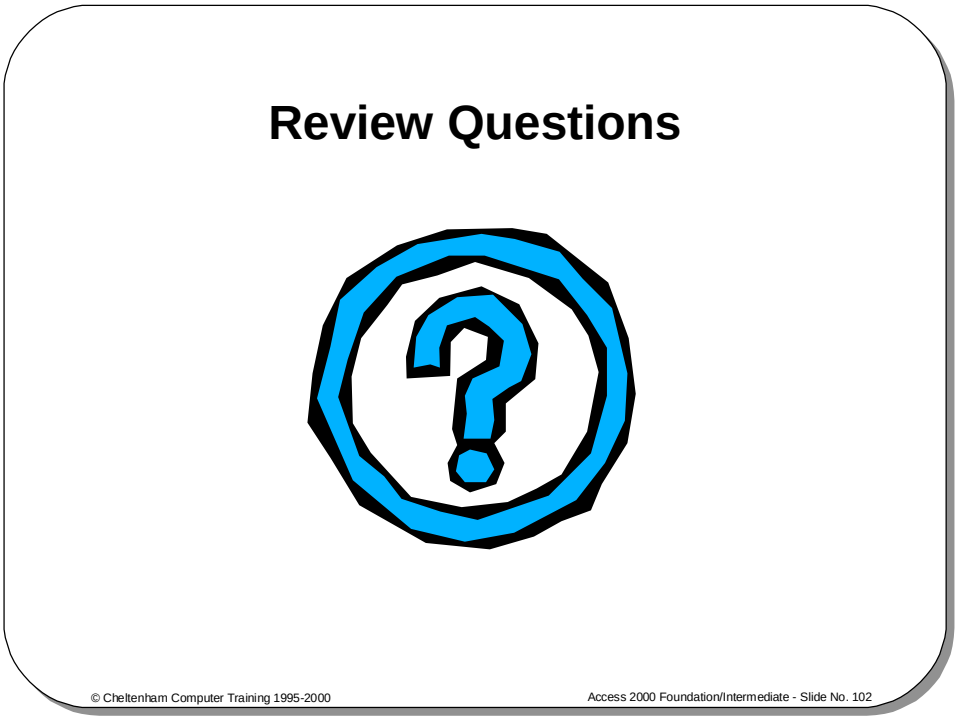
Make-Table Queries

What is a Make-table Query?

Make-table queries create a new table and copy the results of the query to that table. Make-table queries operate in a similar manner to append queries. To create a make-table query, click on the Query Type tool and select Make-Table Query.

The new table name specified can be in the current .mdb file or in another database. When setting up a make-table query, the selection of fields, criteria etc is performed in the normal way. When you have set up the query rules, click on the Run tool (!) to action the query. Access will display a message saying how many records are to be copied to the new table and requesting confirmation that you wish to proceed.

Tip. If you are performing a make-table query on a subset of the table, it is good practice to set up the criteria in a normal select query first, look at the answer and check that the right records are being displayed, and then modify the query to include the Make-Table statements.



Review Questions - How Would You ...

1. Explain the concepts behind the use of queries?
2. Open an existing query?
3. Create a query using the Query Wizard?
4. Select fields that you wish to add to your simple query?
5. Set up a calculated field?
6. Define an update query?
7. Specify an append to query?
8. Set up a make-table query?
9. Check the criteria are correct in an update/append/make-table query before actioning it?

Creating Calculated Fields

Learning Module Objectives

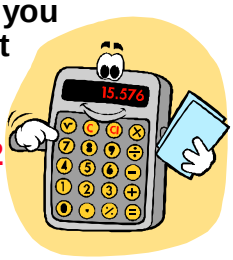
When you have completed this learning module you will have:

- Seen how to open the Expression Builder
- Seen how to create calculated fields, using the Expression Builder

Creating Calculated Fields

- **It is often more efficient to calculate information (e.g. for a report) when it is needed rather than holding it in a table**
- **Instead of having a monthly pay field, you could use an expression to calculate it from Salary divided by 12**

Monthly Pay: [Employees]![Salary]/12



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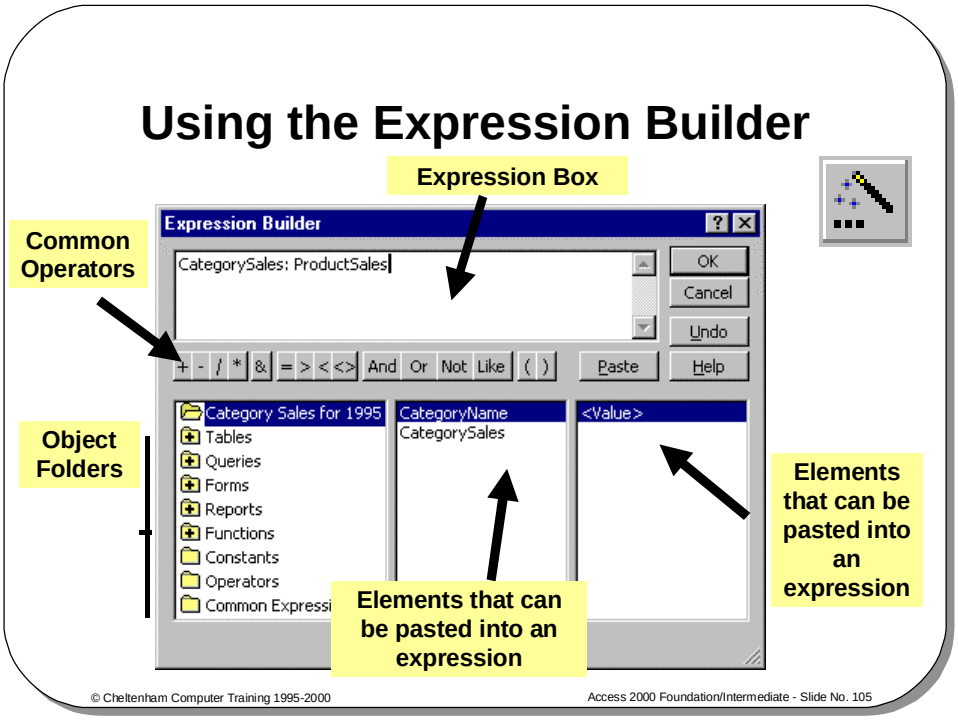
Creating Calculated Fields

Background When designing tables, you avoid creating fields that hold derived or calculated data. Usually it is more efficient to do the calculation when it's wanted. As employees' monthly pay is not held on the database, you could calculate it by running a query to divide the salary by 12 (months in year).

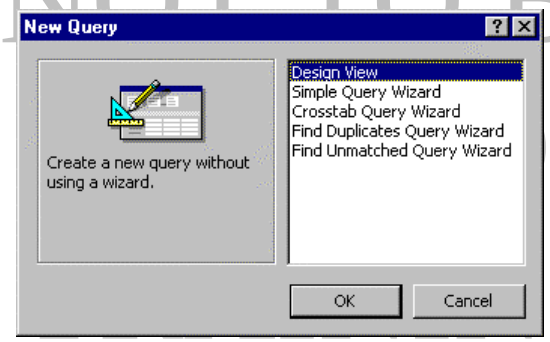


Using the Expression Builder

Background

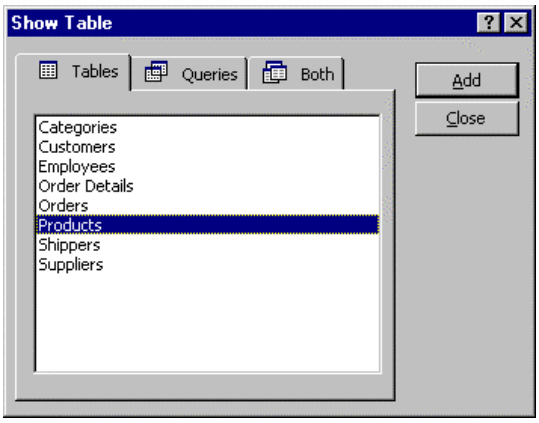
The **Expression Builder** is a useful tool if you are not quite sure how to enter expressions directly.

- Open a database, (in this example we have opened the **Northwind** database).
- Click on the **Query** icon.
- Click on the **New** button and then select **Design View**, as illustrated below.



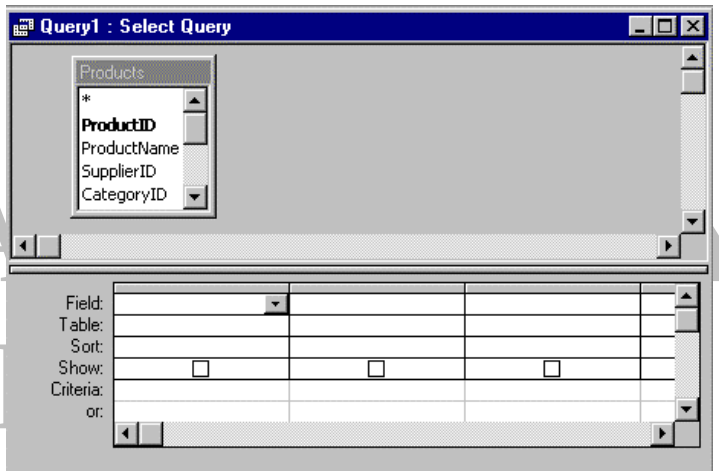
- Click on the **OK** button.

- The **Show Table** dialog will be displayed as illustrated.

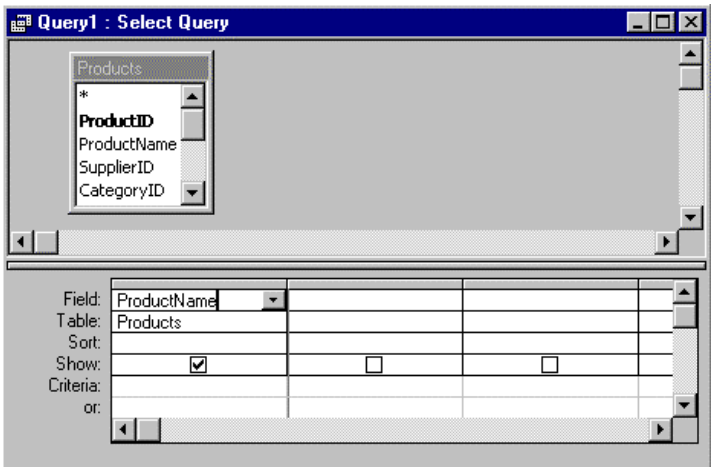


- Click on the table that you wish to extract information from. In this case **Products**.

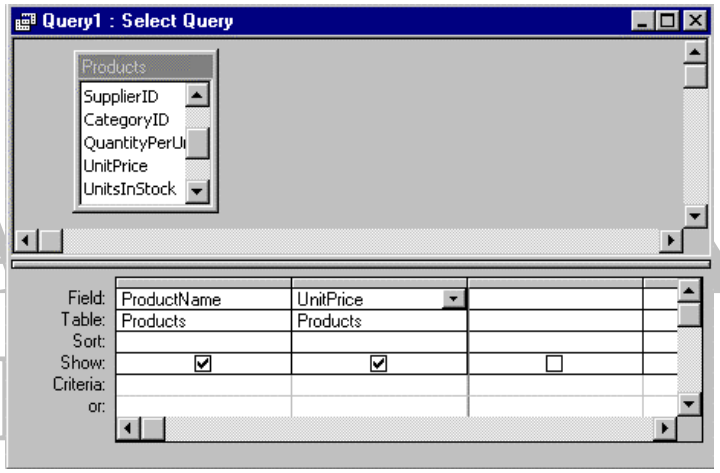
- Click on the **Add** button and then click on the **Close** button and the screen will resemble that shown below.



- 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.

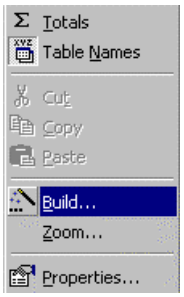


- Also drag **UnitPrice** into the second column, as illustrated.

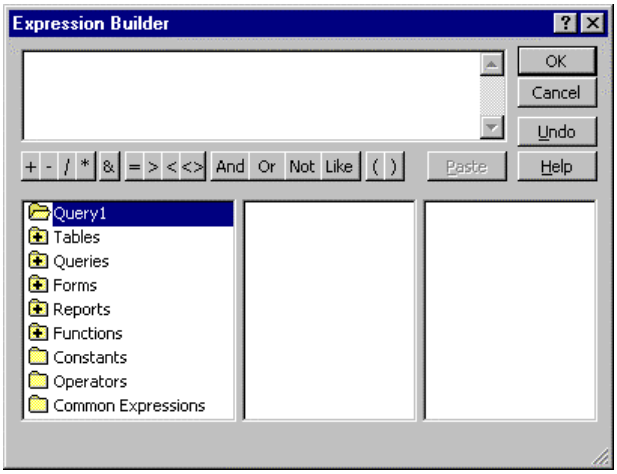


To open the Expression Builder

- 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.

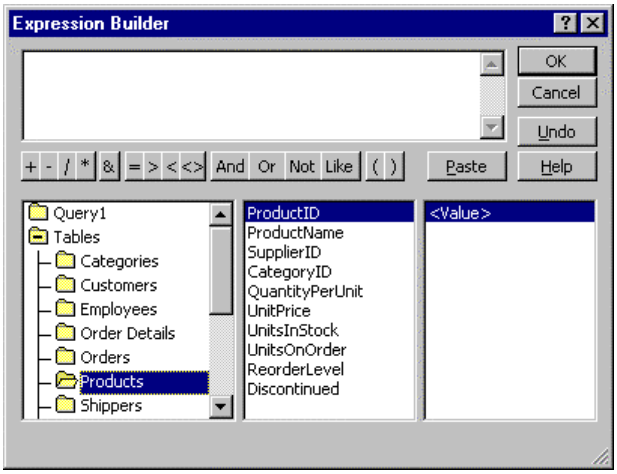


- The **Expression Builder** window will be displayed.

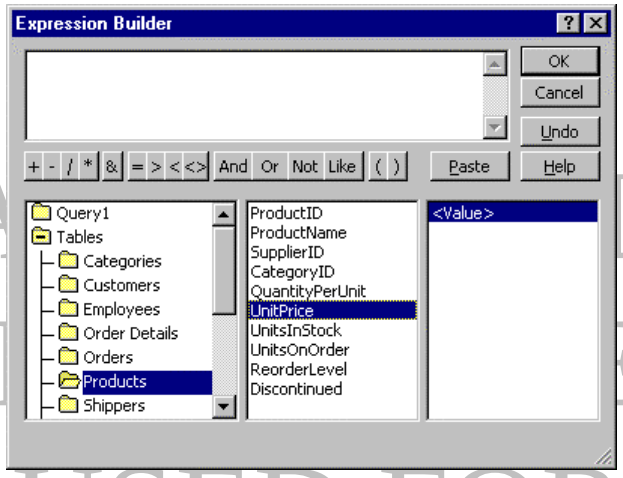


- Lets say that we wish to discount the Unit Price by 5% and wish to know the value that the item will be reduced by. A 5% discount is equivalent to dividing a value by 20. So what we need to do is to add a new field that take the UnitPrice field from the Products table, and then divides it by 20.

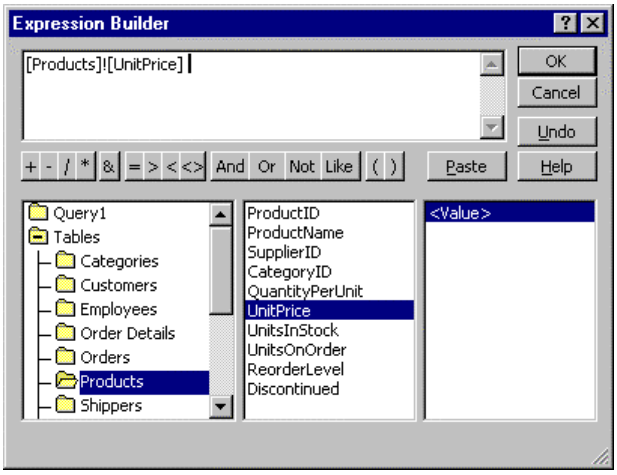
- First we need to select the right table. Double click on **Tables** as displayed in the **Expression Builder** dialog box.
- Select **Products**, as illustrated below.



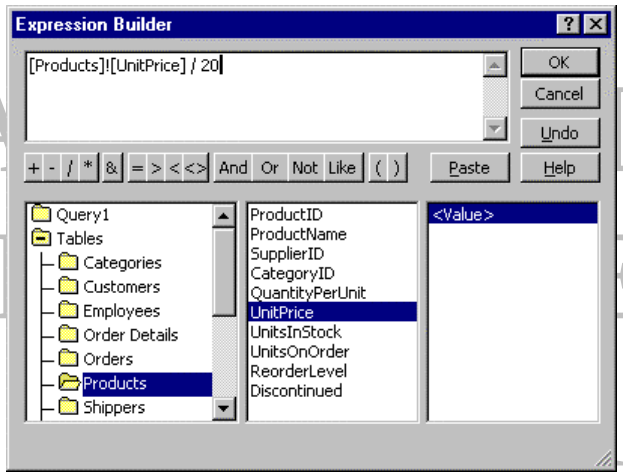
- Next we need to select the required field from the **Products** table, as illustrated below.



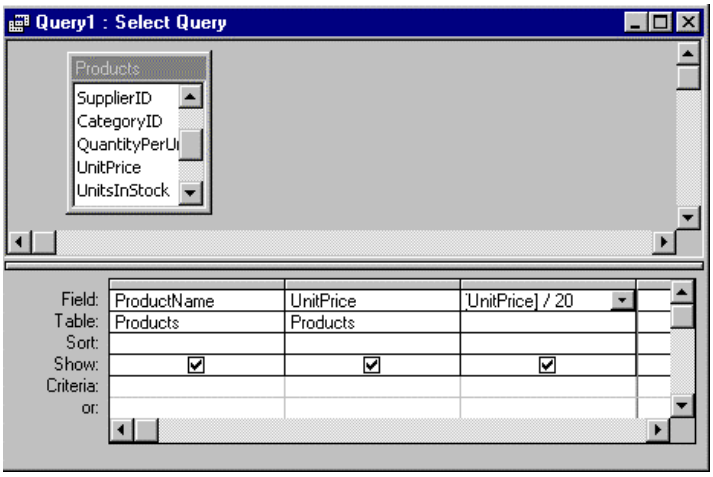
- Click on the **Paste** button (displayed within the **Expression Builder** window) and the screen will be as illustrated below.



- 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.

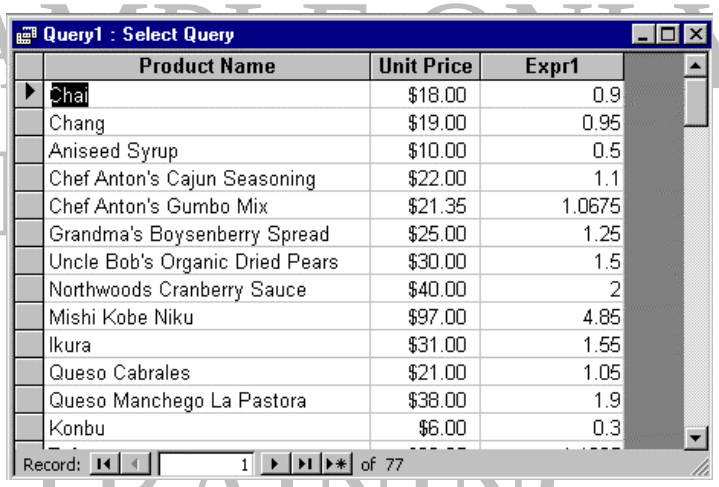


- To finish, click on the **OK** button and the screen will be as illustrated below.

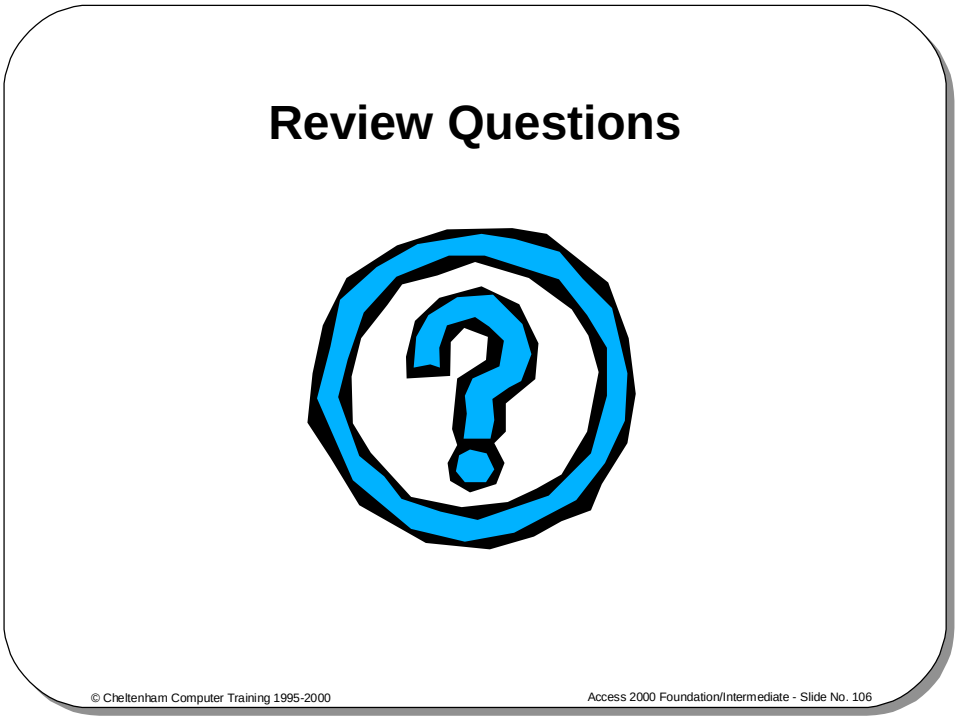


- Remember that we have been working in **Design View**. Now we can switch to **Datasheet View**.
- To do this click on the **View** drop down menu, and select **Datasheet View**.

- 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!



Review Questions - How Would You ...

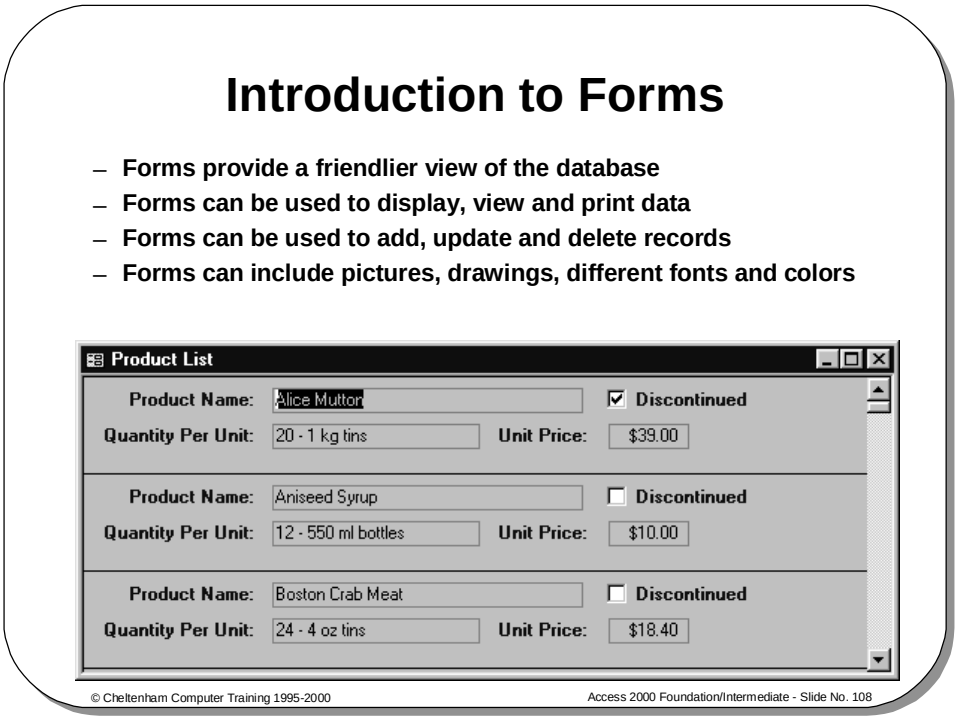
1. Open the Expression Builder?
2. Create calculated fields, using the Expression Builder?

Introducing Forms

Learning Module Objectives

When you have completed this learning module you will have:

- Understood the concepts behind the use of Basic Form Layout Types
- Seen how to create a form using AutoForm
- Seen how to create a form using Forms Wizard
- Seen how to use Design View, Form View and Print Preview



Introduction to Forms

Background

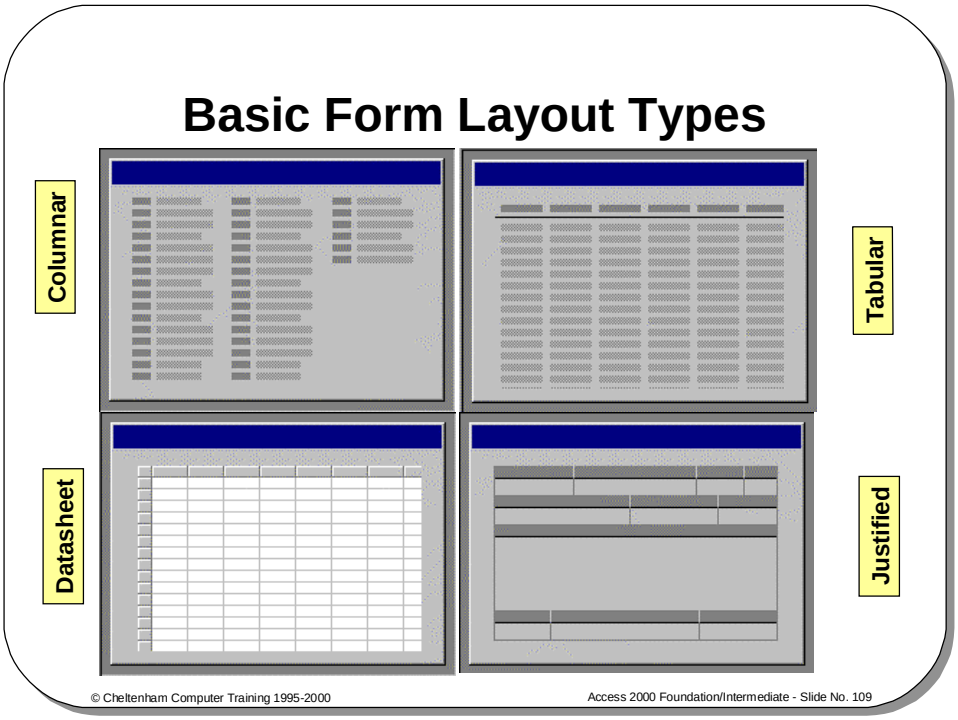
Tables provide a convenient way of storing data, and queries provide a useful way of retrieving data to satisfy particular needs. The Datasheet views of tables and queries provide an ordered means of viewing, displaying and entering data. Forms provide the user with a much friendlier, better controlled and more attractive view of the database.

When designing a form, you can use a variety of techniques such as additional text, font sizes and styles, color, scanned images, clip art, graphs, and command buttons which can be used to open new forms, run queries and set other operations going.

Forms are used for a variety of purposes: they are used to display and view data; they are used for getting data into the database (data entry) and as a means of editing or removing existing data; they can be used to print data or information; and they can provide an easy-to-use menu system for the end-user.

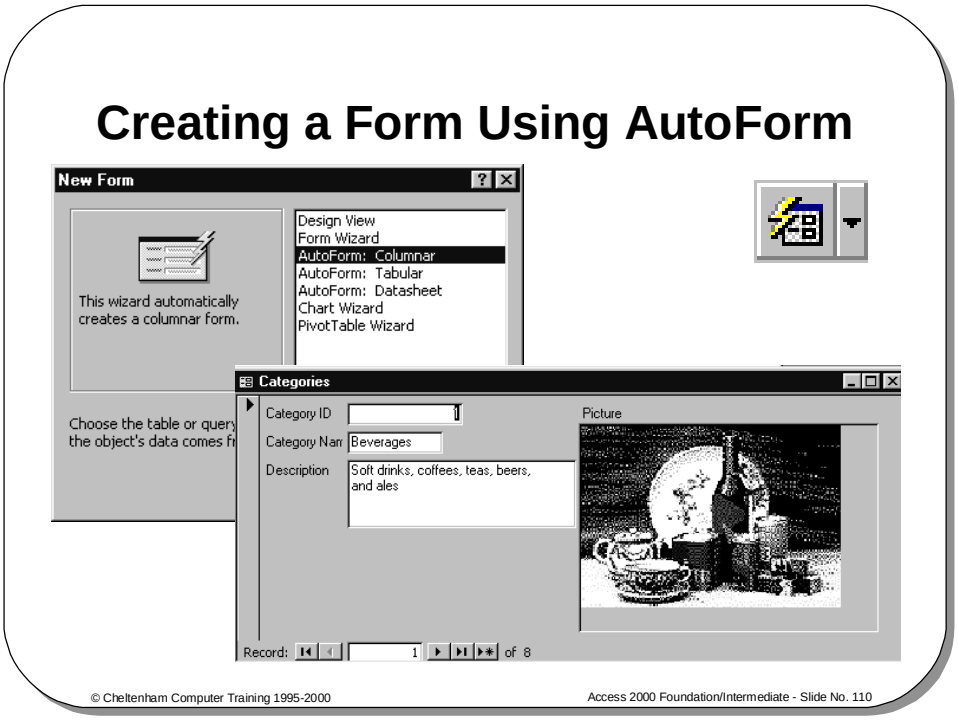
All forms are based on one or more underlying tables. The structure of the tables is unaffected by the form design but the contents may be altered by actions within the forms.

Forms Wizards make basic and initial form design easy.



Basic Form Layout Types

Background There are numerous variations on a theme when it comes to designing forms. The Form Wizard will offer you 4 basic layouts. These can be customized as you see fit to make the form more appropriate for it's particular function.

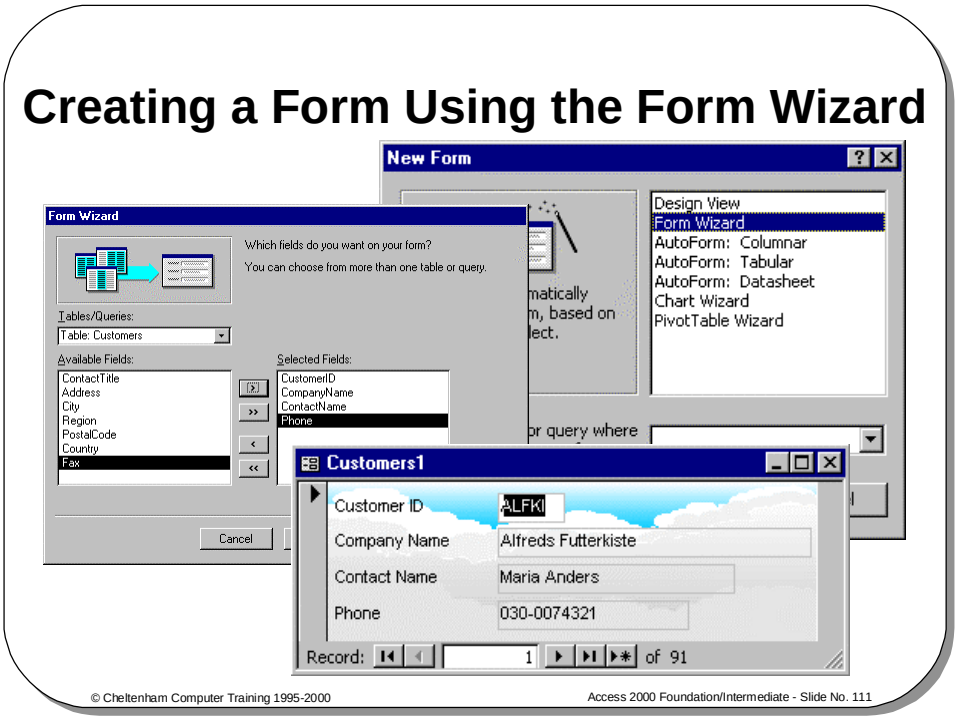


Creating a Form Using AutoForm

To create a form using AutoForm Wizard

- In the **Database Window** click on the **Table** or **Query** 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.



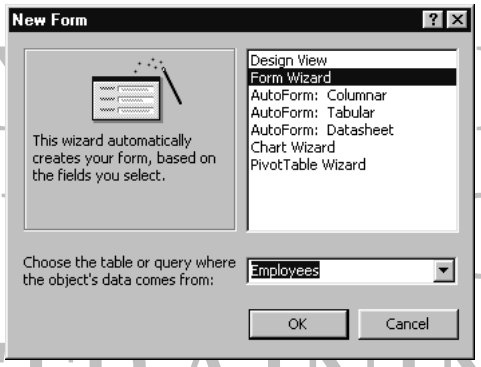
Creating a Form Using the Form Wizard

Background

If possible, use the **Form Wizard** to create your forms. It is easy to use and effective. You can modify the design later if you wish.

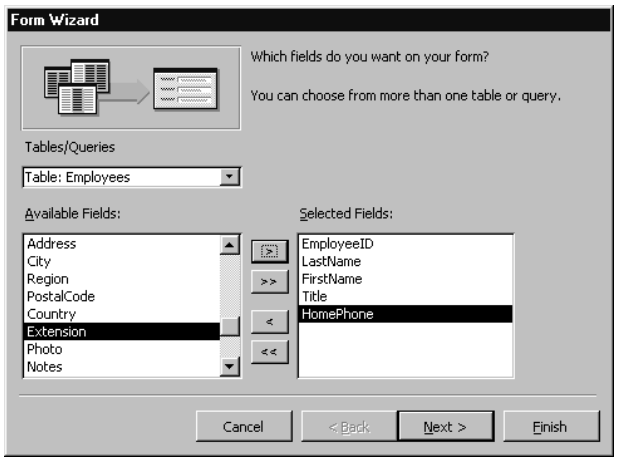
To create a form using Form Wizard

- In the **Database Window** click on the **Forms** icon.
- Choose the **New** button, 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**.

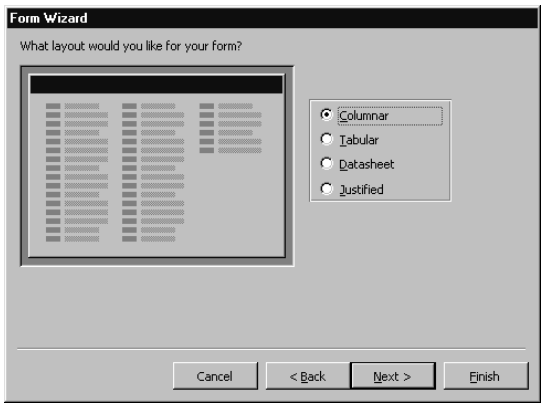


- Click on the field that you wish to add to the form, and then click on the right printing arrow button to add it to the **Selected Fields** section of the dialog box.
- Repeat this procedure so that all the required fields are added.

  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.

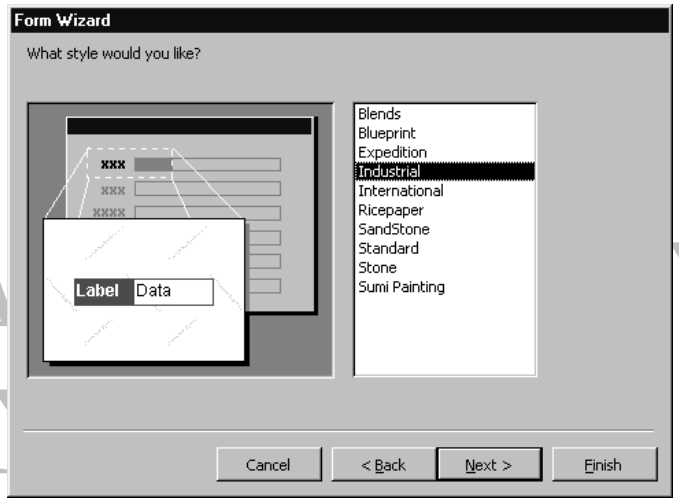
- When you have added the required fields click on the **Next** button.

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



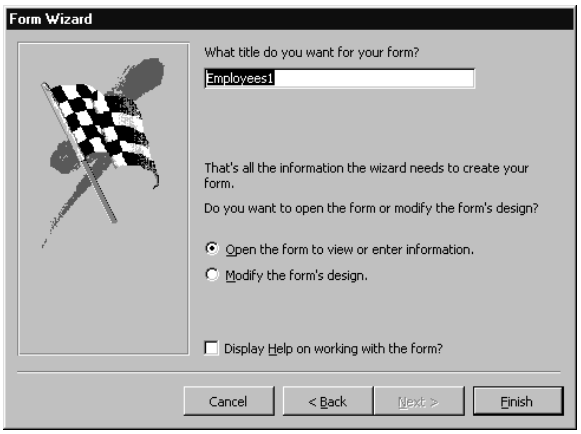
- Chose the desired option and then click on the **Next** button.

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



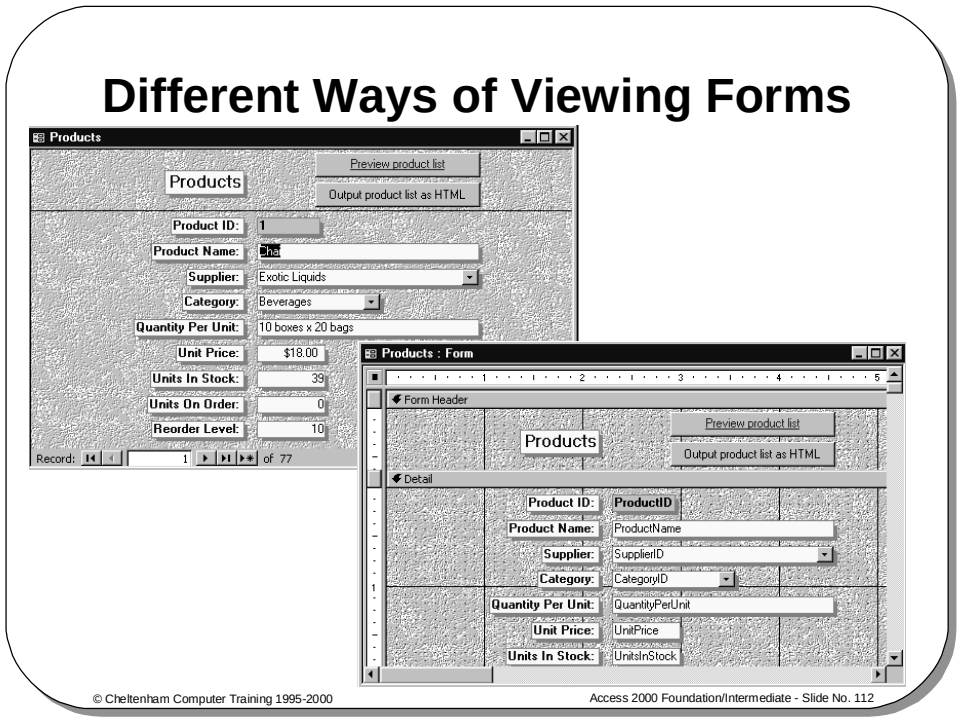
- Select the required option and click on the **Next** button to continue.

- 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.

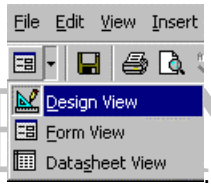
- If you choose to "**Open the form to view or enter information**", then the form will be displayed as illustrated.

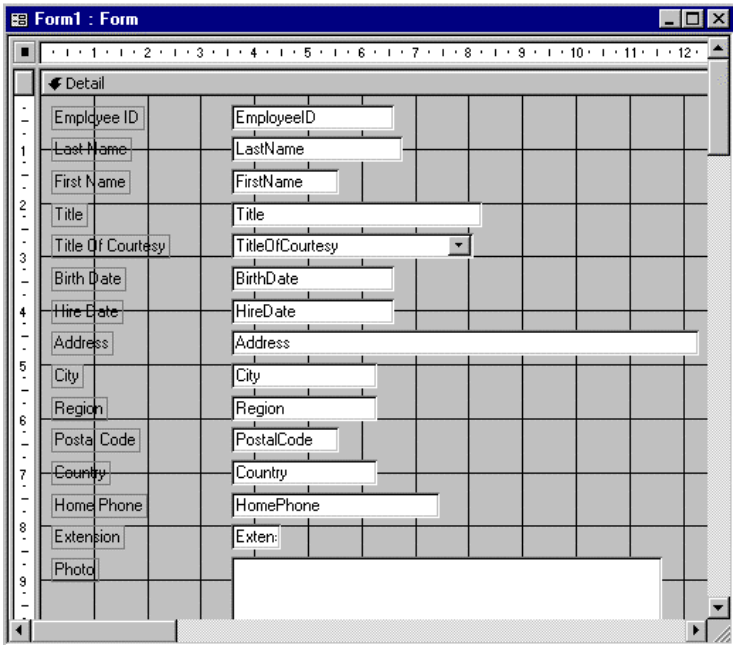


Different Ways of Viewing Forms

Design View

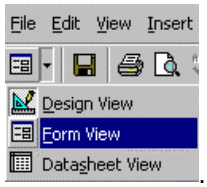
- To see the form in **Design View**, click on the **View** icon in the toolbar, and then select **Design View**.

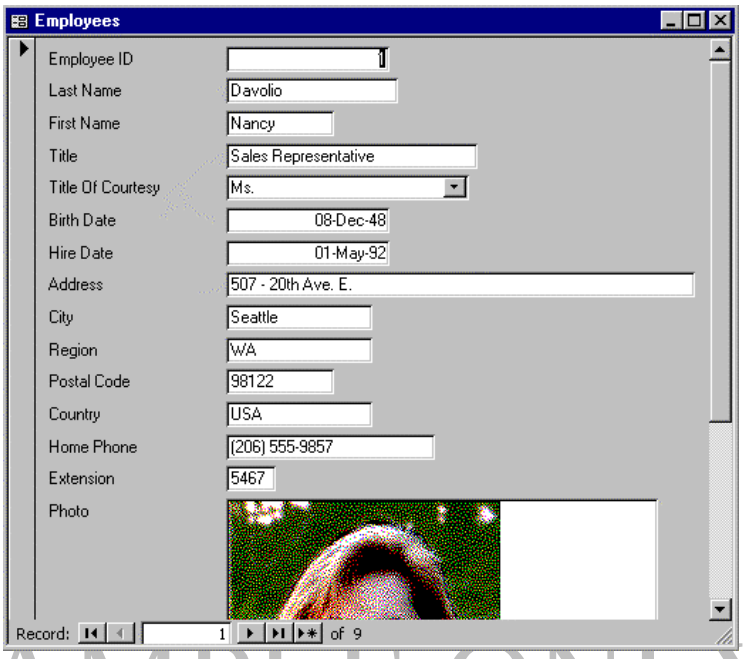




Form View

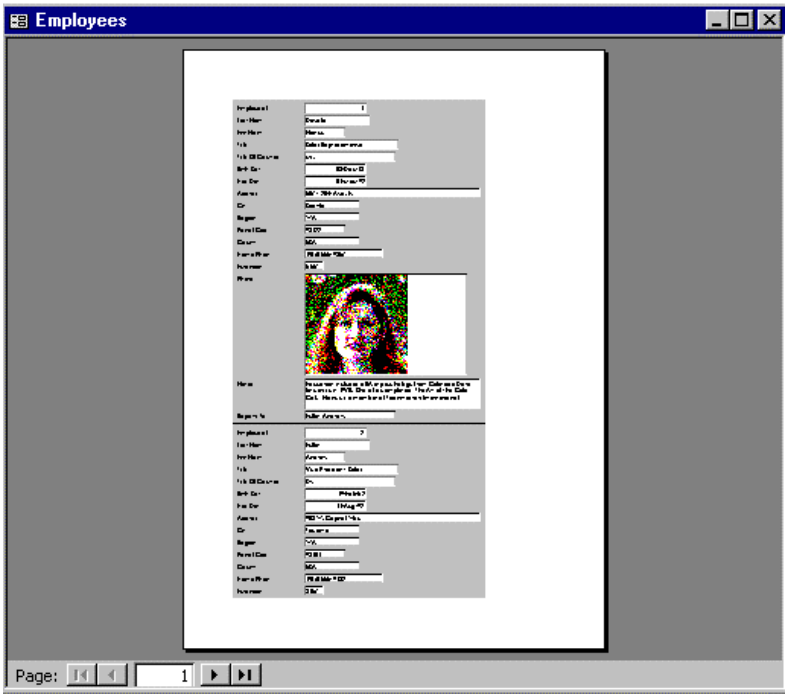
- To see the form in **Form View**, click on the **View** icon in the toolbar, and then select **Form View**.

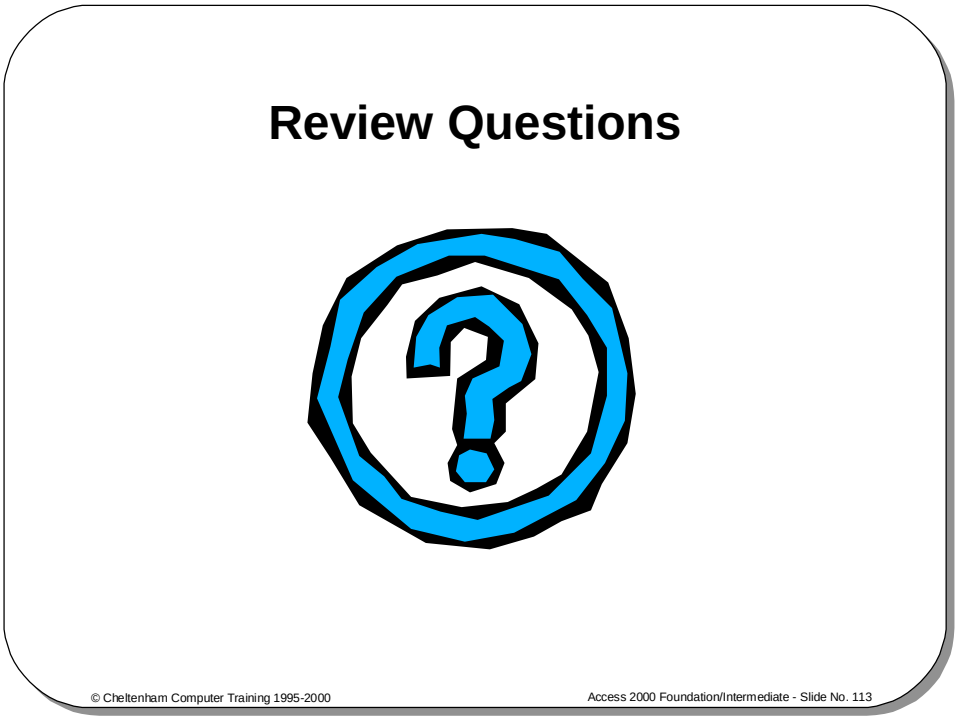




Print Preview

- The illustration below shows the form as printed.
- Click on the **Print Preview** icon on the toolbar.





Review Questions - How Would You ...

1. Explain the concepts behind the use of Basic Form Layout Types?
2. Create a form using AutoForm?
3. Create a form using Forms Wizard?
4. Use Design View, Form View and Print Preview?

More About Creating Forms

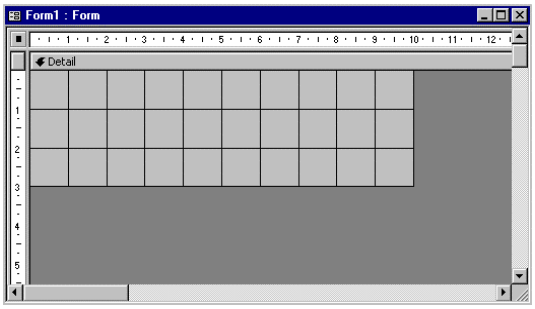
Learning Module Objectives

When you have completed this learning module you will have:

- Seen how to create forms without using the Form Wizard
- Seen how to use the Form Design View
- Seen how to open an existing form in design view
- Seen how to display the property list
- Seen how to display the field list
- Seen how to display the toolbox
- Seen how to display the code behind the form
- Seen how to select and manipulate control and labels
- Seen how to change the size of a section
- Seen how to change the width of the form
- Understood the terms Bound Controls, Unbound Controls and Calculated Controls
- Seen how to open the toolbox
- Seen how to create Combo Box Control using the toolbox
- Seen how to use forms with subforms
- Seen how to create a form with a subform
- Seen how to set Default Value for a control
- Seen how to set a Validation Rule for a control
- Seen how to set Validation Text for a control
- Seen how to set an Input Mask
- Seen how to change the Tab order
- Understood the concepts of Macros and Event Procedures
- Seen how to use command buttons within a form
- Seen how to add a command button to a form
- Seen how to add page breaks
- Seen how to use and create Switchboards

Creating Forms Without Using the Form Wizard

- You can either start with a clean canvas ready to add controls
- Or you can start with a Wizard created form and modify it



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Creating Forms Without Using the Form Wizard

Background

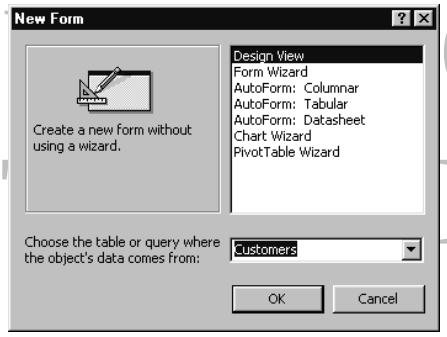
Even if you do not use the Form Wizard to create the whole form, it can still be a useful way of building the basic form.

Nevertheless, there will be occasions when you want to build a form from scratch.

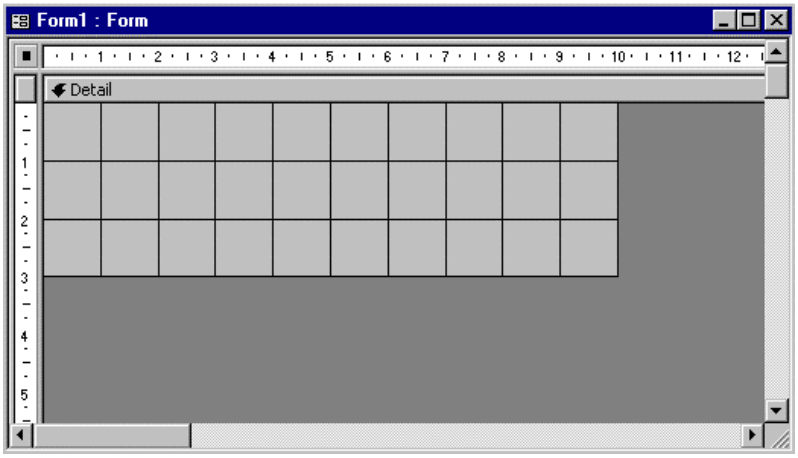
To create a form without Form Wizard

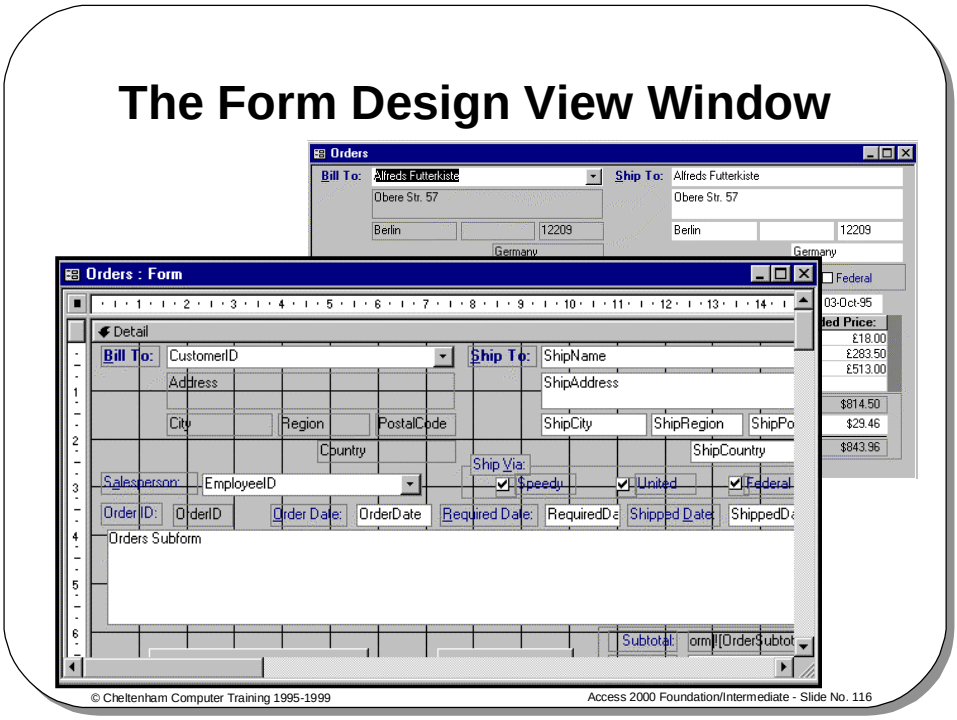
- In the **Database** window click on the **Forms** icon.
- Click on the **New** button which will display the **New Form** dialog box.

In the example shown, we are using the **Northwind** database, and have selected the **Customers** table.



- Select **Design View**, and also click on the down arrow in the bottom part of the dialog box to choose a table or query where the objects data will come from.
- Click on the **OK** button and the Design form will be displayed as illustrated.





The Form Design View Window

To open an existing form in design view

- Open a database so that the **Database Window** is displayed.
- Click on the **Form** icon.
- Open the form you wish to view.
- Click on the **View** drop down menu and select **Design View**.

The Design View window

The Design View window contains a number of different screen elements that you need to be familiar with.

To show or hide the rulers

- Click on the **Ruler** command located under the **View** drop down menu.

To display the property list

- Click on the **Properties** icon on the toolbar.

To display the field list

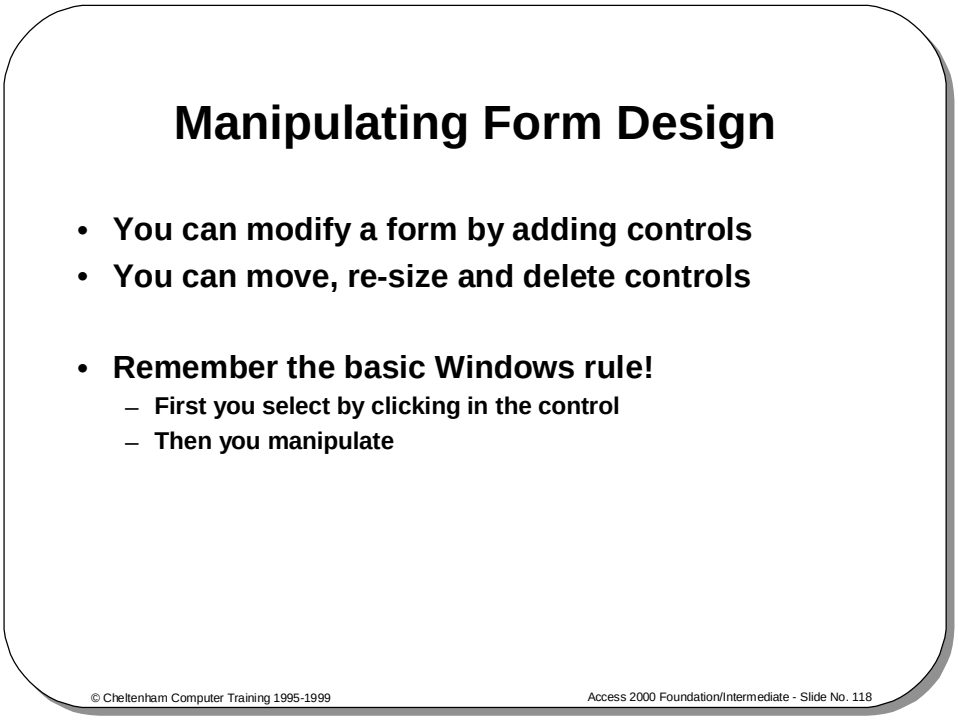
- Click on the **Field List** icon on the toolbar.

To display the toolbox

- Click on the **Toolbox** icon on the toolbar.

To display the code behind the form

- Click on the **Code** icon on the toolbar.



Manipulating Form Design

Background

After you have created a form using Forms Wizard, you might want to move some of the fields around, or add or delete fields. The same basic principles of ***Select then Manipulate!*** apply here as in all other Microsoft applications.

The controls that Access adds to forms you create using Form Wizard are called bound controls. This means that they are bound to the fields in the underlying table or query. Bound controls consist of a Label and a Text box. The label holds the field name, or caption from the field's properties. The text box holds the table data.

To make sizing and positioning of your controls easier, you can use the form grid.

To select a control with the mouse

Click somewhere in the control. If you click on the label, you will notice eight sizing handles at the corner and sides of the label box; you will also see a move handle at the top left of both the label and the text box. If you click in the text box, you will see that the eight sizing handles now appear around the corner and sides of the text box and that the move handles still appear at the top left-hand corners of both the label box and text box. This lets you move label and text boxes together or independently.

You can move from control to control using the tab key but you must click in one of the controls first!

To make controls snap to grid

- Select **Format** from the menu bar.
- Choose the menu item **Snap to Grid**. If you want your controls to snap to grid, this item should be ticked.

To move controls or labels

- Move the mouse pointer over the edge of the control until it changes to an open hand.
- Click the mouse button and keep it depressed while you move the control to its new position and release the mouse button.

To move a text box or label independently

- Move the mouse pointer over the move handle at the top left of the label or text box. It will change to a pointing hand.
- Click the mouse button and drag the text box or label to its new position.

Note: If, when you first click in a control, you keep the mouse button held down, it will appear as an open hand and you can move the control straight away.

To resize a control

- Move the pointer over one of the sizing handles. It will change to a double ended arrow indicating the directions in which you can drag the handle.
- Click the left-hand mouse button and while you keep it depressed, drag the sizing handle to increase or decrease the size.

To delete a control

- Click somewhere in the control.
- Press the **DEL** key.

Note: If you select the label and press delete, just the label will be deleted. However, if you select the text box and press delete, both text box and label will be deleted.

To duplicate a control and its label

- Select the control.
- Choose **Duplicate** from the **Edit** menu. A copy of the control will appear immediately below the original.

Note: If you reposition the duplicated control and then select **Duplicate** again, Access will create a third control and position it so that all three are evenly spaced.

To move or copy controls using the Edit menu

- Select the control.
- Choose **Cut** or **Copy** from the **Edit** menu to place the control on the clipboard.
- Choose **Paste** from the **Edit** menu. Access will put the control in the top left-hand corner of the detail section.
- Move the control to its new location.

Note: As you need the mouse to move the control once you have pasted it, it seems more sensible to use the mouse in the first place.

To select adjacent controls

- Click on a point outside the group and drag the pointer through the controls. As you move the pointer, it draws a rectangle around the selected group.

To select non-adjacent controls

- Hold down the **SHIFT** key as you select each of the controls.

To align controls to each other

- Select the controls you want aligned.
- Choose **Align** from the **Format** menu and then select the desired option from the sub-menu.

To change the spacing between controls

- Select the controls you want spaced.
- Choose **Horizontal Spacing** or **Vertical Spacing** from the **Format** menu.
- Choose **Increase**, **Decrease** or **Make Equal** from the sub-menu.

To save a form

- Choose **Save** from the **File** menu.
- Type in a name for the form.
- Press **Enter** or click on **OK**.

To change the size of a section

After adding and moving controls you might want to change the size of a section.

- Move the mouse pointer over the bottom edge of the section. The pointer will change to a double-headed vertical arrow across a solid horizontal bar.
- Drag the edge of the section until it is the required size.

To change the width of the form

- Move the mouse pointer over the right edge of any section on the form. It will change to a double-headed horizontal arrow across a solid vertical bar.
- Drag the edge of the section until it is the required size.

To change the width of the form and size of a section simultaneously

- Move the pointer over the right-hand corner of the section. It will change to two intersecting double-headed arrows.
- Drag the corner of the section and form until it is the required size.

Types of Control

- **Bound controls are bound to fields in tables or queries**
- **Unbound controls display information not held in the database**
- **Calculated controls are derived from expressions**
- **You can add controls using the toolbox**

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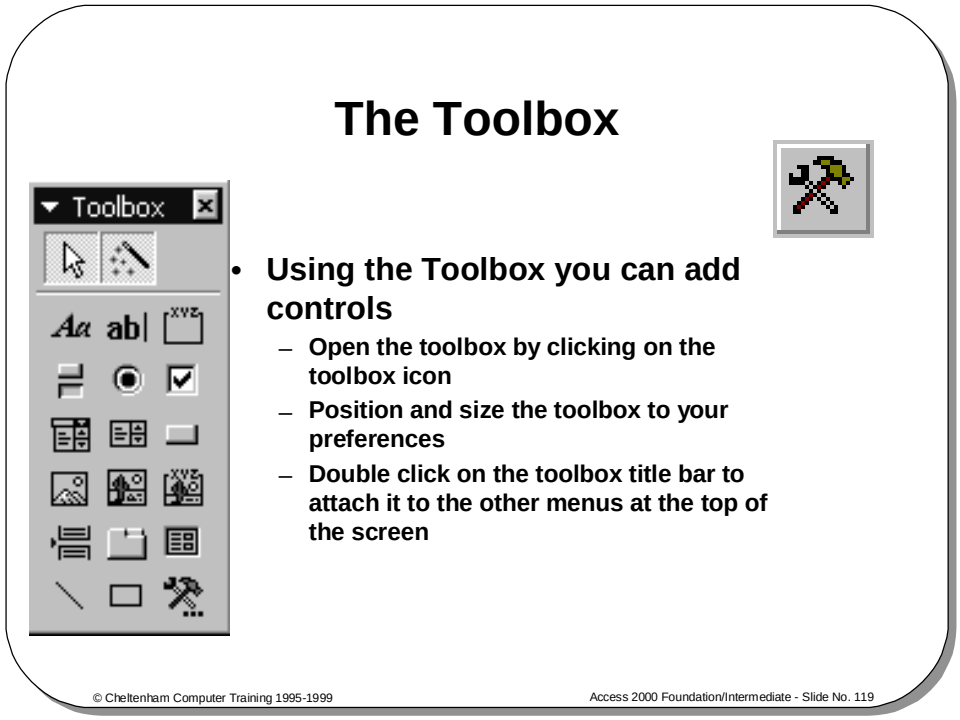
Types of Control

Background This section deals with bound, unbound and calculated controls. Let's start with some definitions.

Bound Controls A control that displays data from a table or query. Bound controls are used to display data and to enter and update data in tables. The most frequently used bound control is a text box. Bound controls inherit field properties from the table. The properties can be altered in the form without affecting the original table properties.

Unbound Controls A control that does not have a source of data. An unbound control can display information such as text, lines, rectangles and pictures. It can also accept input that will not directly go into a table. An unbound control is not derived from a table.

Calculated Controls A control whose data is derived from an expression.



The Toolbox

Background Using the Toolbox you can add the full range of controls available in Access.

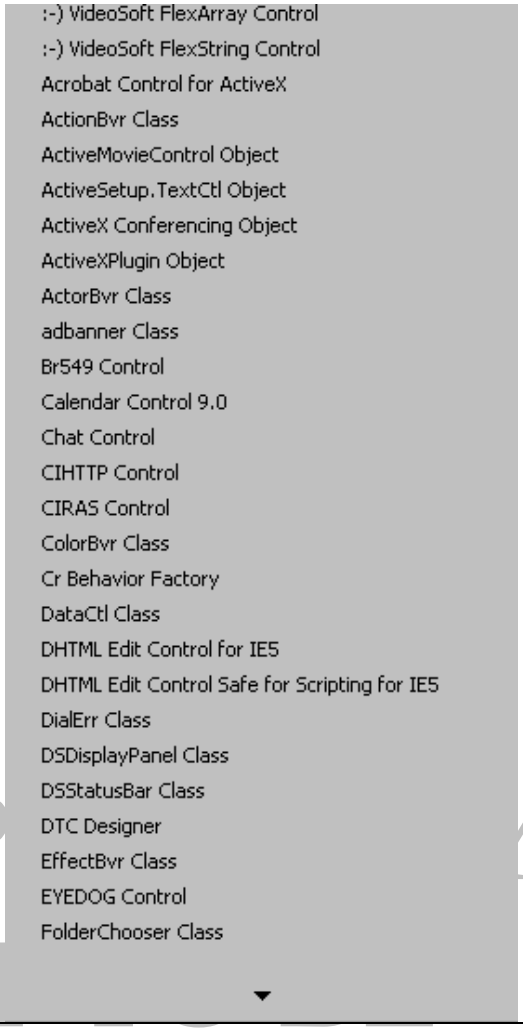
To open the toolbox

- Open the toolbox by clicking on the **Toolbox** icon.
- Position and size the toolbox to your preferences.

Tool name	Icon	Description
Select Objects		When selected, the selection or pointer icon allows you to select, move and size controls.
Control Wizards		Control Wizards allow you to easily create the following types of Controls: • List Box. • Combo Box. • Option Group. • Command Button.
Label		You use this icon to display text that doesn't change. Most controls created in Access are created with a label already attached. This is useful for creating text anywhere on a form.
Text Box		A text box is the most commonly used control on a form. It is used to show the content of a field, and allows you to type new data into it.
Option Group		This control allows you to provide the user with a group of options from which to choose only one item, they are mutually exclusive, i.e. only one can be selected.
Toggle Button		This control allows you to either select or not select an option. Both text and pictures can be put on Toggle Buttons.
Option Button		This control allows you to either select or not select an option, a dot is displayed when this option is selected.
Check Box		This control allows you to either select or not select an option, a check mark is displayed when this option is selected. Check boxes are not mutually exclusive. In other words, you can check more than one box. A check box is selected when there is a cross in it.

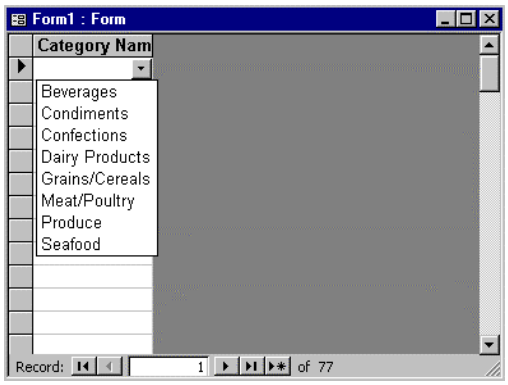
Tool name	Icon	Description
Combo Box		A Combo Box will display a list of options available to you. You have to click on the down arrow key to the right of the box in order to see the list of options. Alternatively you can type in the Text Box as the user types, Access changes the display to the nearest match so far. Provided you have not specified **Limit To List** when creating the Combo box, the user can enter a new value that will then be entered in the table.
List Box		Alternative values are displayed in a scrollable box. Only values available in the list can be selected.
Command Button		Command Buttons are used to carry out an action such as "Print Record". The action is carried out because the button is linked to a series of commands called "Macros".
Image		Allows you to insert a picture into your form.
Unbound Object Frame		If you wish to display an OLE object or picture as part of the form layout/design use an unbound object frame. The object will remain constant and not change as you move from record to record.
Bound Object Frame		The Bound Object Frame will display pictures and OLE objects that are attached to a record. It also allows you to add and edit Pictures/Objects record by record.
Page Break		The page break control defines: • Actions when you press PageUp/PageDown • Defines the top line of a new page when the form is printed.
Tab Control		Allows you to insert a tab control, as illustrated. 
Subform / Subreport		When you want to display a one-to-many relationship you insert a Subform. The **one** is generally the main form and the **many** the subform.
Line		This control allows you add lines to your form to make it more attractive and better organized.
Rectangle		This control allows you add rectangles to your form to make it more attractive and better organized.

More Controls		As the name implies displays yet more controls that you can use!



Creating a Combo Box Control Using the Toolbox

- **Create a new form**
- **Click on the Combo Box icon**
- **Follow the on screen instructions**



Creating a Combo Box Control Using the Toolbox

Background

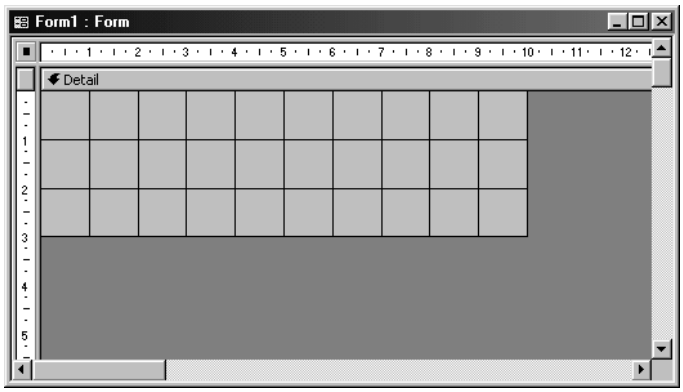
Creating form controls is easy using the toolbox. To illustrate the principle we will create a relatively complex type of control called a combo box. This type of box allows the user to either enter a value or click on the drop down arrow and select from a predefined list.

To create a form containing a combo box

In this example, we will use the Northwind database and create a new form to illustrate the use of form controls.

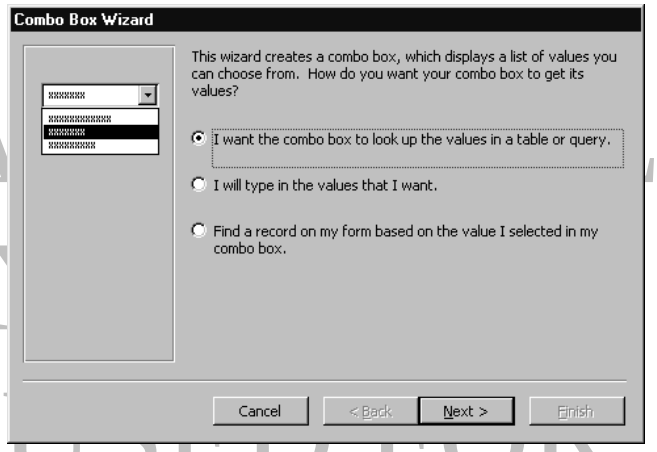
- Open the **Northwind** database.
- Click on the **Forms** icon.
- Click on the **New** button.
- Ensure that **Design View** is selected from the list.
- Select **Products** as the source where your object's data will come from.
- Click on the **OK** button.

- A blank form will be displayed in **Design View**, as illustrated.



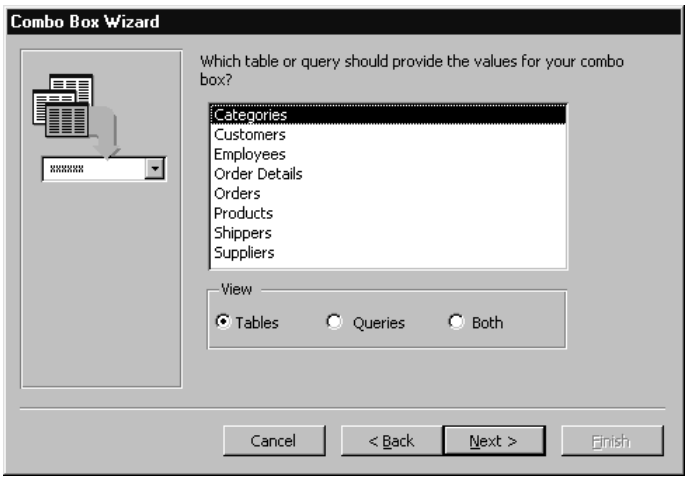
- If not already displayed, click on the **Toolbox** icon located on the toolbar to display the toolbar.

- Click once, on the **Combo box** icon within the **Toolbox** toolbar.
- Move the mouse pointer to the top, center of the form.
- Depress the mouse button and move to the right and down. This will define the size of the box you are creating.
- Release the mouse button and a dialog will be displayed, as illustrated.



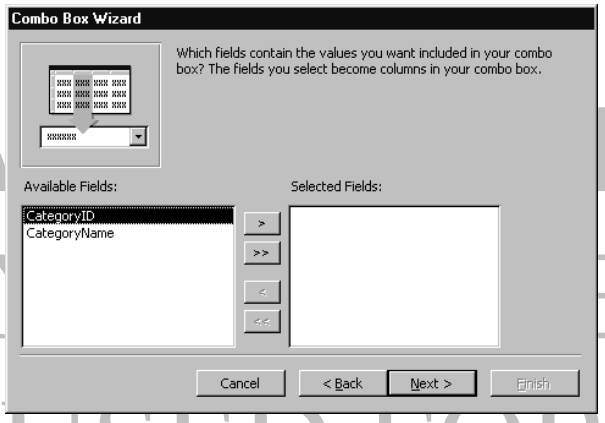
- Click on the **Next** button to continue (which will allow you to use values in the combo box taken from a table).

- The dialog box displayed allows you to define where the data that is displayed in the combo box will be taken from.



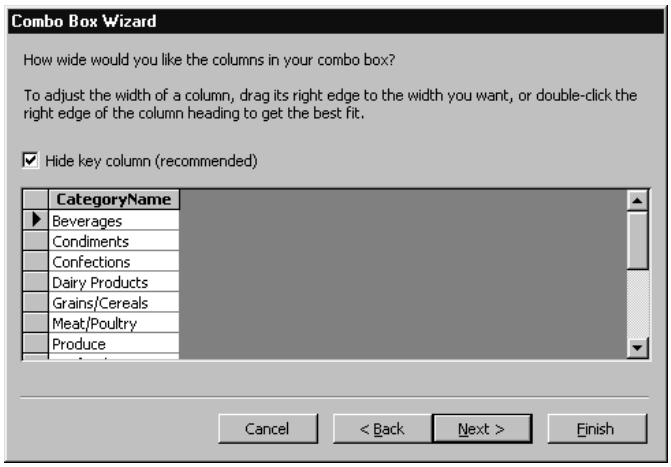
- In this case ensure that the **Categories** table is selected, and then click on the **Next** button.

- The dialog box that is displayed allows you to select a field that will supply the information that is displayed in the combo box.



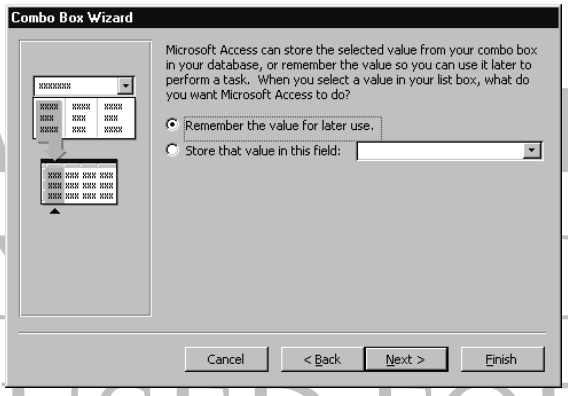
- In this case select **CategoryName**.
- Click on the **right pointing arrow** to add this field to the **Selected Fields**: section of the dialog box.
- Click on the **Next** button to continue.

- The next dialog box that is displayed allows you to control the width of the combo box.



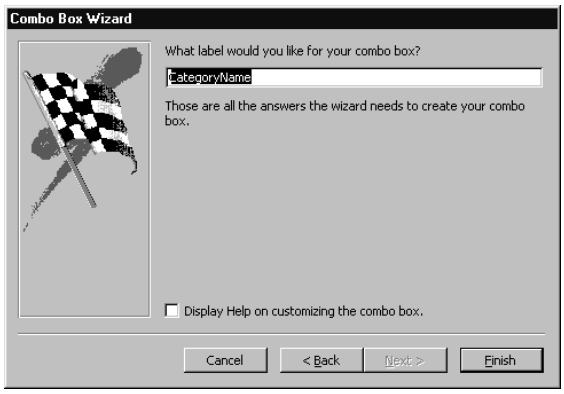
- In this case the box should be wide enough to accommodate all the fields (if it is not drag, the column to the right so that it is wide enough).
- Click on the **Next** button to continue.

- The next dialog box allows Access to store the selected value from the combo box so that it can be recycled later on.



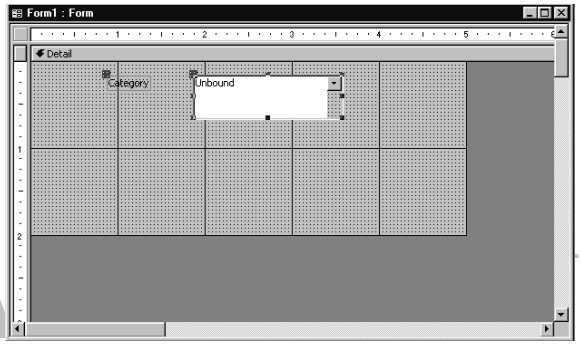
- In this case click on the **Next** button to continue.

- The last dialog box lets you add a label to the Combo Box.

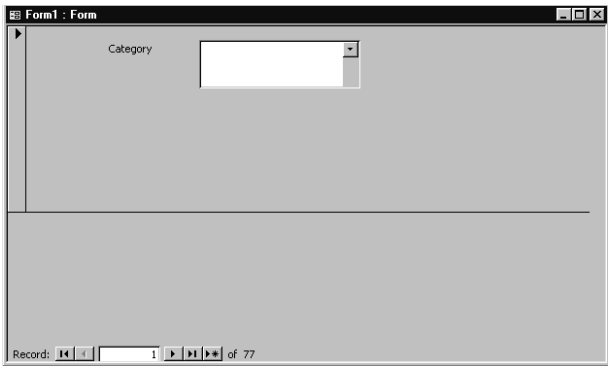


- In this case enter the name **Category Name** *(i.e. two words not one!)*.
- Click on the **Finish** button to complete the wizard.

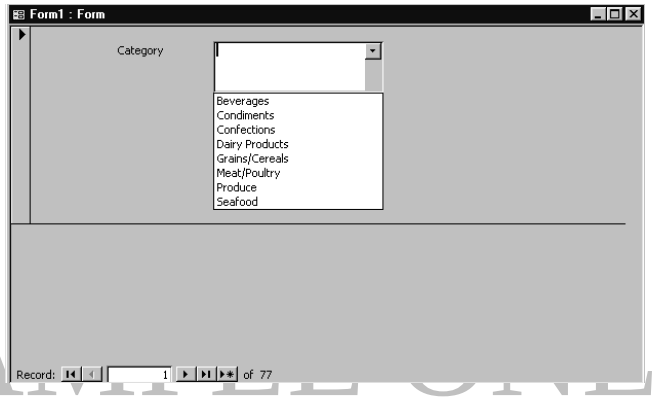
- The complete form will be as illustrated below, shown in **Design View**.



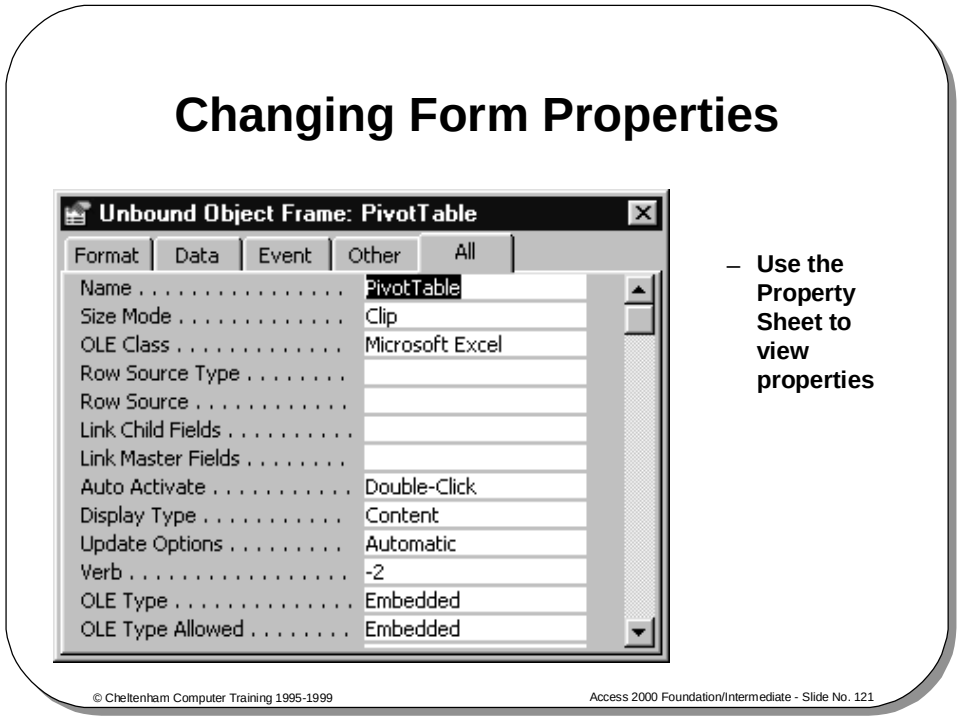
- To see the form as a user would see it, click on the **View** icon in the main toolbar and select **Form View**.



- To use the newly create combo box, click on the down arrow and you will see a list as illustrated.



- Close the form and save it as **CCT-FORM**.



Changing Form Properties

Background

There are properties for the form, for the individual sections of the form and for all controls. Some are assumed, some are added as the controls are created, others are inherited. Finally, you as the system developer can change them.

Use the on-line Help within Access for more information about Properties.

To change the properties for a form

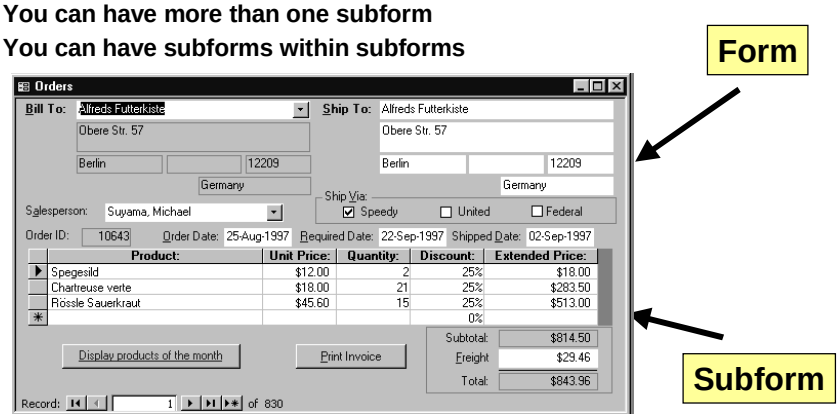
- Place the mouse pointer over the gray area outside any of the form sections or over the box where the rulers meet.
- Double click the left-hand mouse button

  OR click the right-hand mouse button once and select **Properties** from the drop-down list.

- Change the properties as required.

Using Forms With Subforms

- Use in a one-to-many relationship
- The main form is the "one"
- The subform is the "many"
- You can have more than one subform
- You can have subforms within subforms



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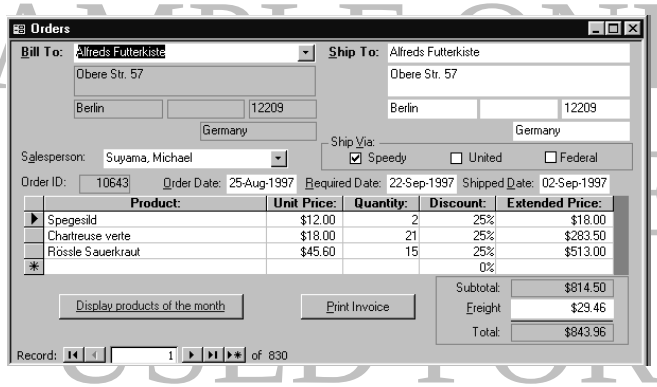
Using Forms With Subforms

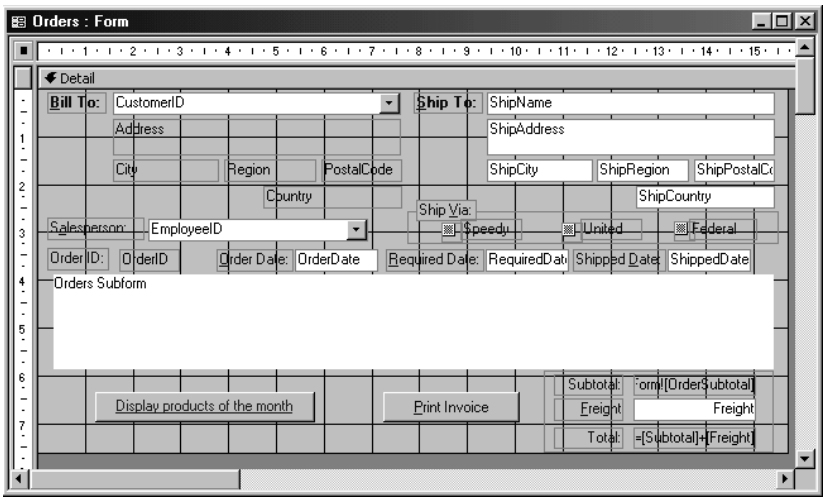
Background

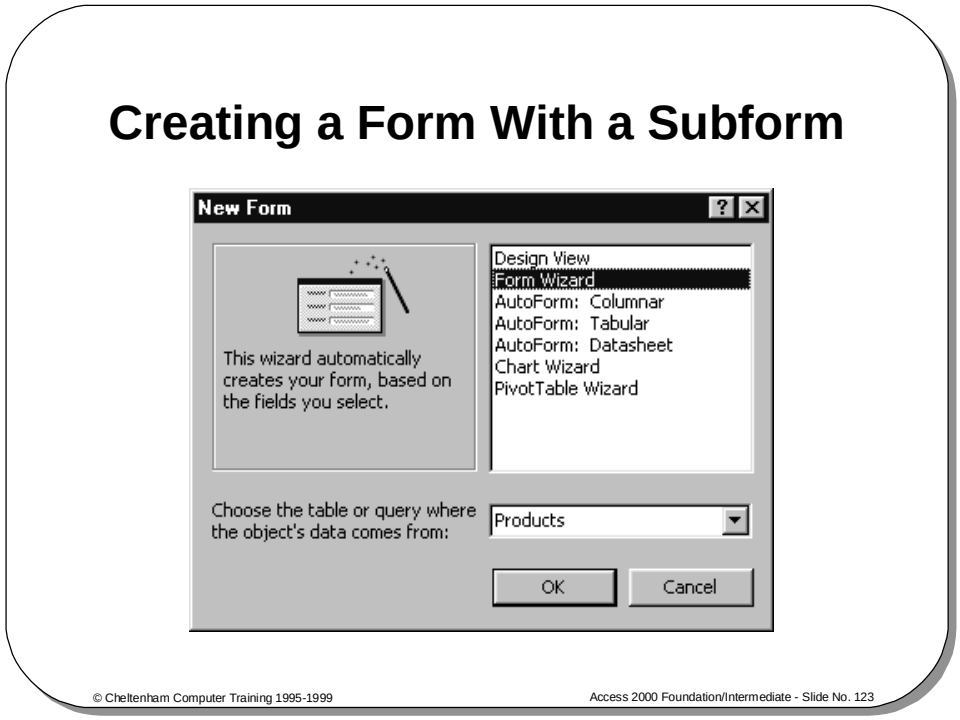
- A good example of a form with a subform is the **Orders** form supplied with the **Northwind** database.



- What you actually see is two forms, a form and subform.

- The **Design View** for this form is shown below.





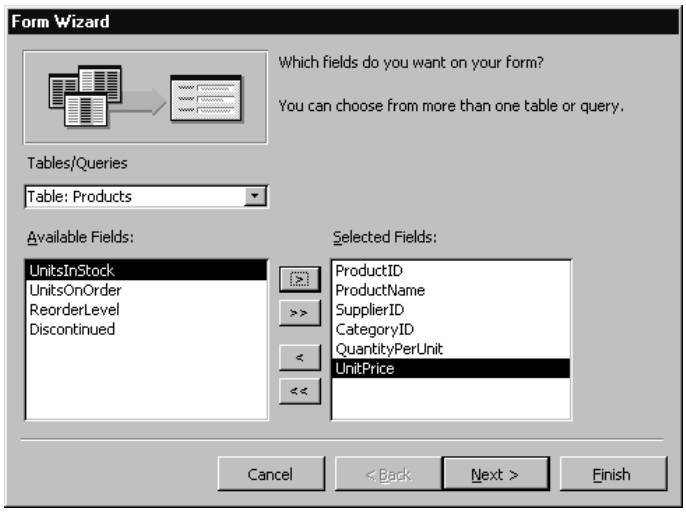
Creating a Form With a Subform

In this example we will use the Northwind database. We will create a new form and use an existing form as the subform!

- Open the **Northwind** database.
- Click on the **Form** icon.
- Click on the **New** button.
- Select the **Form Wizard**.
- Select **Products** as the source where the data will be supplied from, as illustrated below.

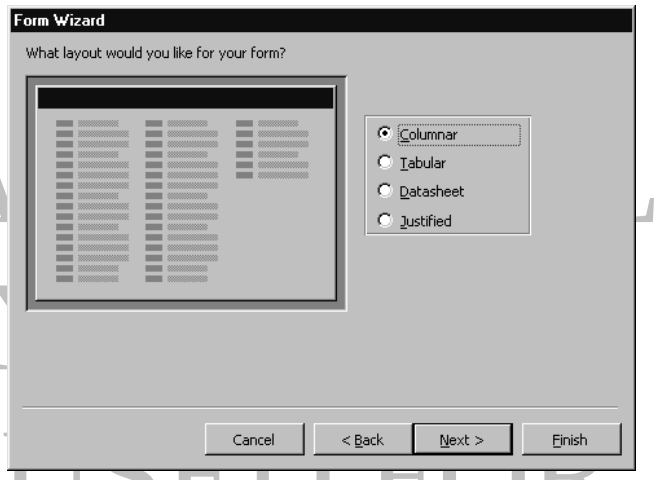
- Then click on the **OK** button.

- Add the first 6 fields, as illustrated below.



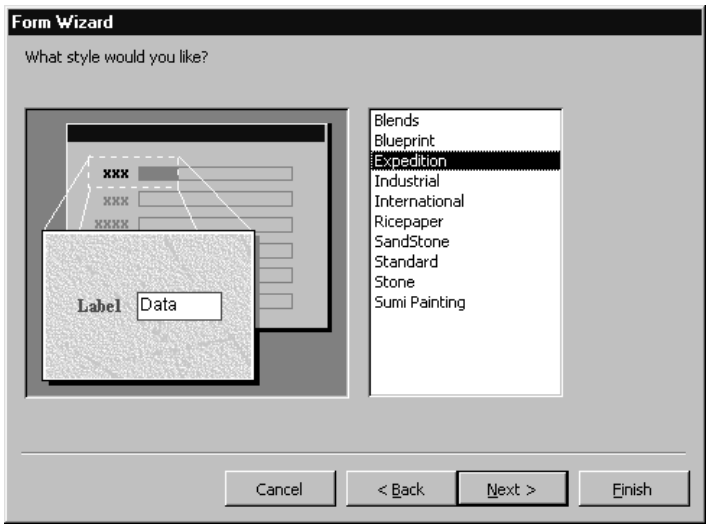
- Click on the **Next** button to continue.

- Use the **Columnar** default offered by the next page of the **Form Wizard**.



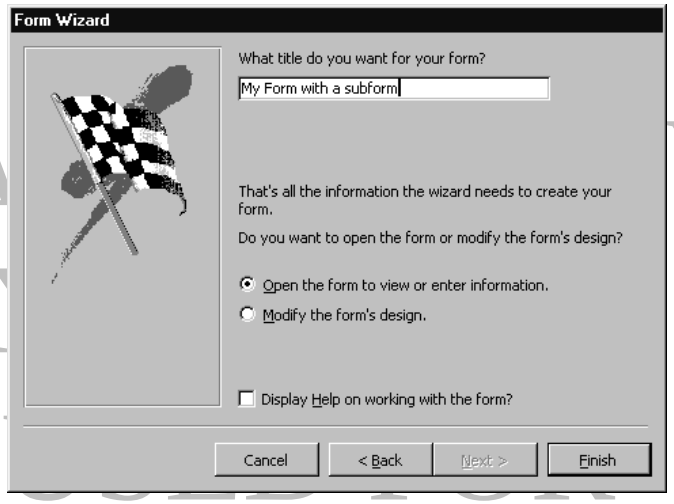
- Click on the **Next** button to continue.

- Select the **Expedition** style.



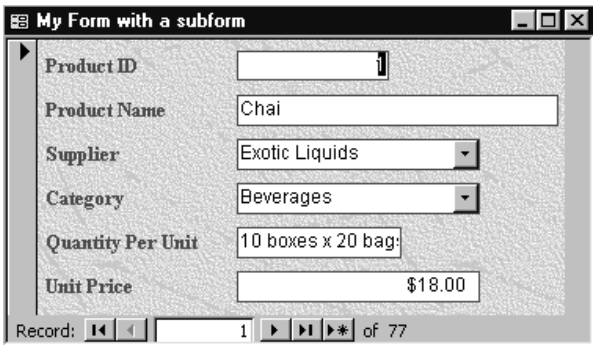
- Click on the **Next** button to continue.

- In the next page of the **Form Wizard** add a title called **My Form with a subform**.



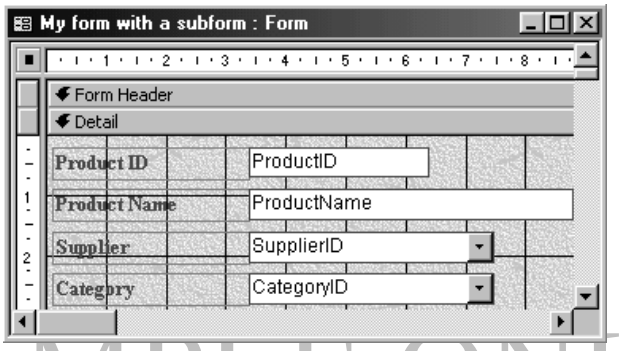
- Click on the **Finish** button to complete the creation of the main form.

- The form will be displayed as illustrated.



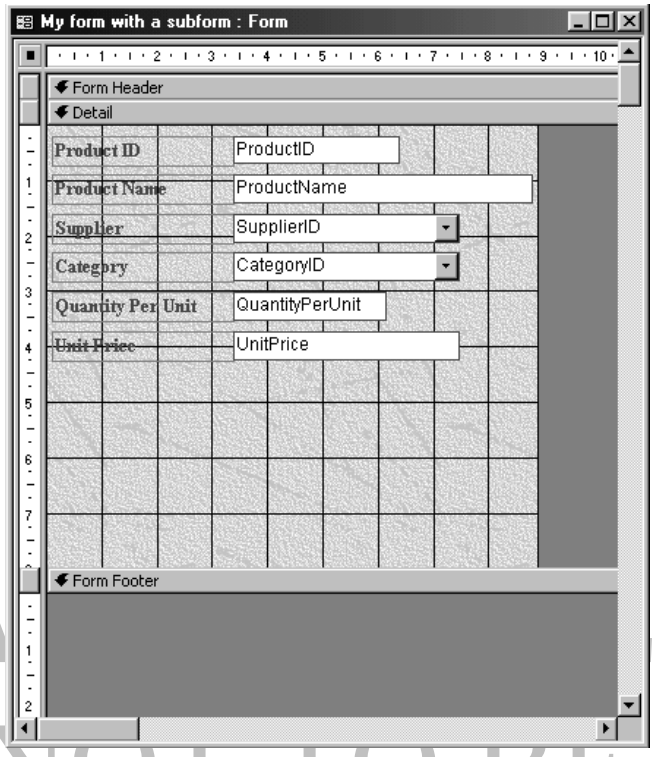
To add a subform to a main form

- Switch to **Design View**, by clicking on the **View** icon (on the main toolbar), and selecting **Design View**. The form will be displayed as illustrated.

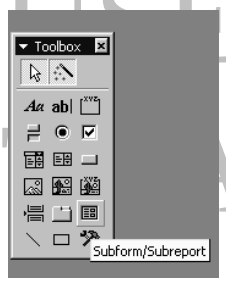


- First we need to create a space on the form into which we can place the subform.
- Move the mouse pointer to the bottom, right corner of the Form window and use drag and drop techniques to make the window larger.

- Move the mouse pointer to the top edge of the **Form Footer** bar, and drag and drop the bar downwards so that you have some extra space into which we can place the subform. The screen will resemble that illustrated below.



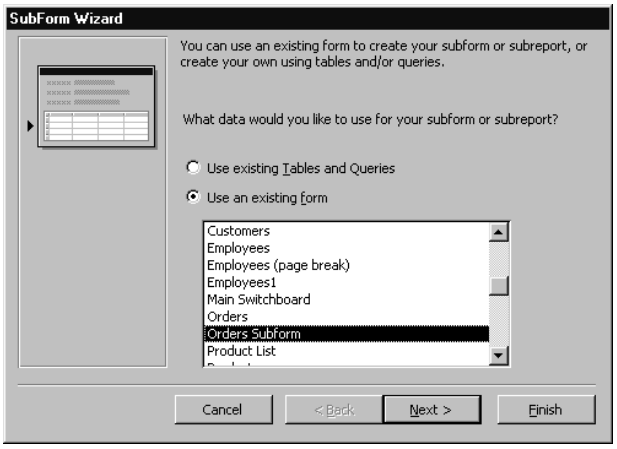
- Now we are ready to insert the subform. If the toolbox toolbar is not already displayed, then click on the **Toolbox** icon to display it.
- Click on the **Subform/Subreport** icon within the **Toolbox** toolbar.



- Use drag and drop techniques to create a rectangle outline on the form where you wish the subform to appear.

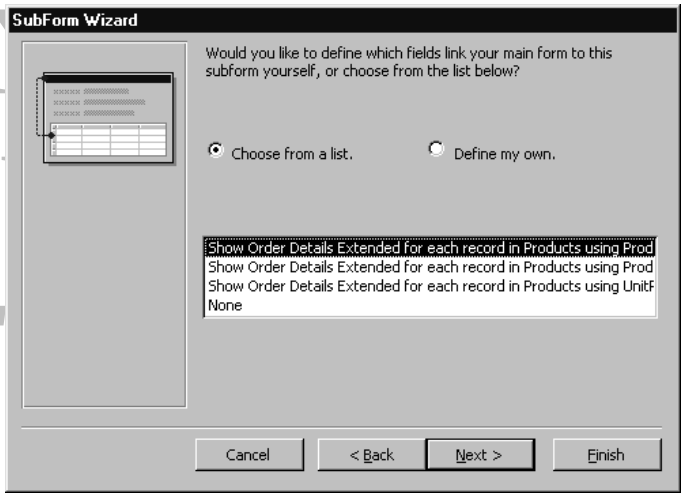
- When you release the mouse button, the **Subform/Subreport Wizard** dialog will be displayed.

NOTE: You may see the following dialog box, in which case you will need to install the Wizard using your Microsoft Office installation CD-ROM.



- Select the **Use an existing form** option, and select the form that will be used as the subform. In this case select **Orders Subform** (a pre-existing form supplied with the Northwind database).
- Click on the **Next** button to continue.

- The next page of the dialog will be displayed, as illustrated.

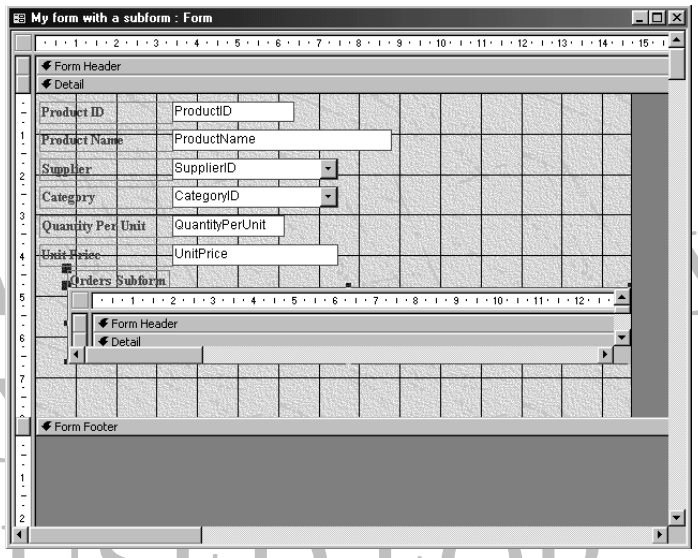


- In this case accept the default offered and click on the **Next** button.

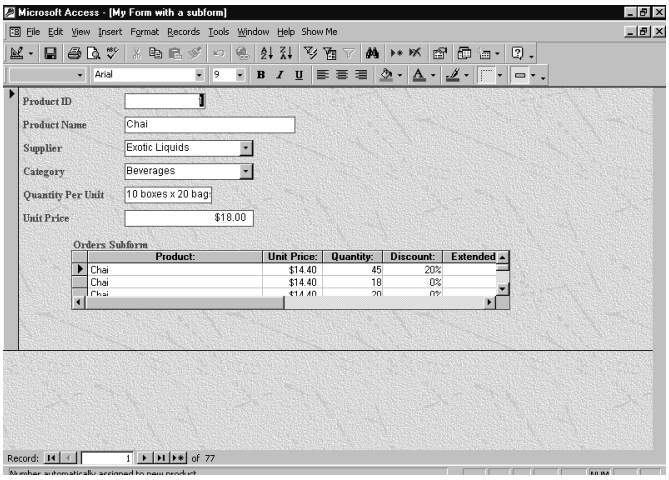
- Lastly you need to supply a name for the subform.

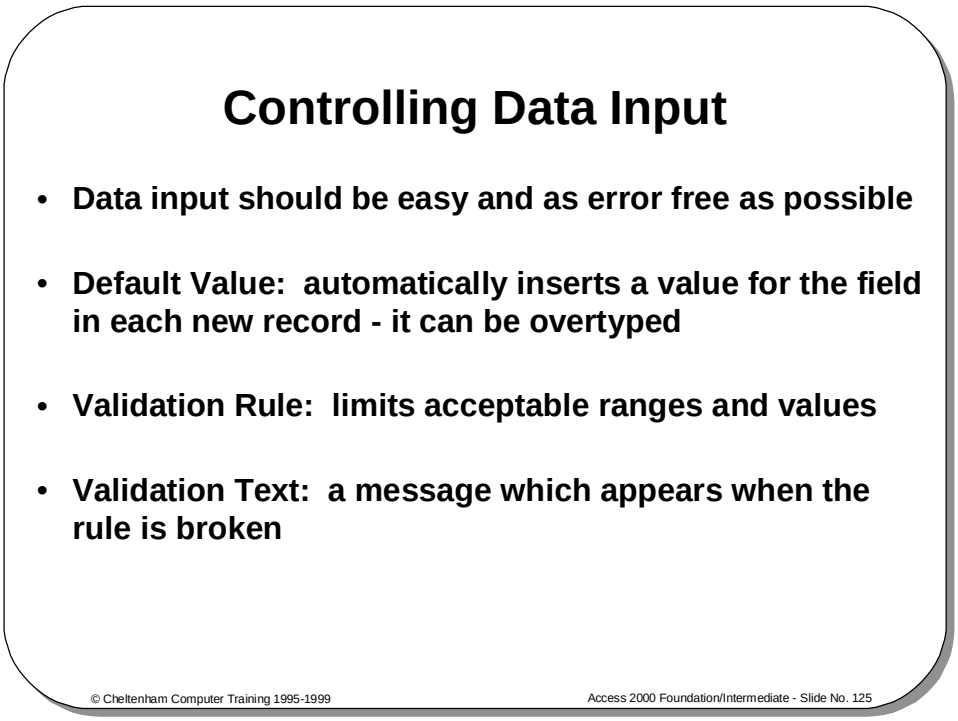
- Accept the default name offered and click on the **Finish** button to complete the **Form Wizard** process.

- The form, displayed in **Design View** will be displayed as illustrated.



- Click on the **View** icon on the standard toolbar, and select **Form View**. The form, with the subform will be displayed as illustrated.





Controlling Data Input

Background

When designing data input forms you should make them as easy for your users as possible. You should also make it as difficult as possible for them to enter the wrong data. There is a limit to how much you can control the accuracy of data input, but there is a lot you can do to make sure that what is entered falls within correct limits. For instance, if you are expecting numeric data in a field, you can make it impossible to enter any other type of character. If your field is a date field, you can ensure it does not accept invalid dates, e.g. 31/09/96 (can we have 31 September).

The validation controls available are as follows:

Default Value The value is automatically inserted into each new record. The user can overtype with a different value if necessary. An example would be defaulting to **UK** for an input field of **Country** where it can be assumed that UK will be the most common value.

Validation Rule An expression which governs the range of the input. For example **<50000** for the **Salary** field in an employees record. Any value above this range would not be accepted.

Validation Text A message which appears in a warning box if the validation rule is broken.

The same properties can be set in table design and are usually better done at that stage. It is also possible to specify a different rule in a form to the one set in the table.

To set Default Value for a control

- Display the **Property Sheet** for the control.
- Select the **Data** tab.
- Click on **Default Value**.
- Type in an expression

OR click on the **Expression Builder** button.

To set a Validation Rule for a control

- Display the **Property Sheet** for the control.
- Select the **Data** tab.
- Click on **Validation Rule**.
- Type in an expression

OR click on the **Expression Builder** button.

To set Validation Text for a control

- Display the **Property Sheet** for the control.
- Select the **Data** tab.
- Click on **Validation Text** and type in the text.

To set an Input Mask

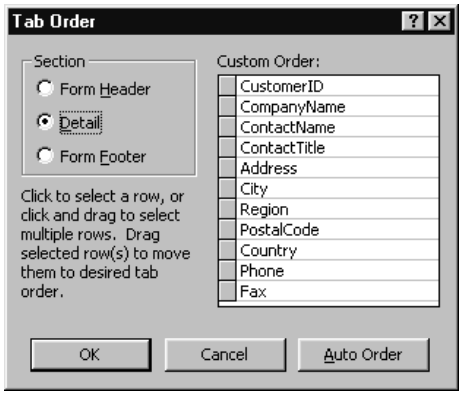
- Display the **Property Sheet** for the control.
- Select the **Data** tab.
- Click on **Input Mask**.
- Type in the input mask

OR click on the **Builder** button to invoke the **Input Mask** Wizard.

Note: The **Input Mask** Wizard only works with date or text fields.

Changing Tab Order

- **Tab order governs the way you move from control to control on a form**
  - **Access automatically assigns a tab order based on the order in which the controls were created**
  - **Use the Tab Order dialog box to make changes**



Changing Tab Order

Background

The tab order is the order in which the user moves from control to control, i.e. when the field is full, or on pressing **TAB** or **Enter**.

When you create a form, Access assigns a tab order based on the order in which the controls were added to the form. If you drag more than one field at a time from the field list to the form, they retain the same order as the list.

You might want to change the tab order to make it simpler for the user, especially if you have moved controls around when adjusting your final design.

To change the tab order

- Open the form in **Design View**.
- Choose **Tab Order** from the **View** menu.
- The dialog box (see above) will be displayed with control names shown in their current tab order.
- Click the **Auto Order** button for Access to assign a left-to-right, top-to-bottom order.

Adding Command Buttons

- **Command buttons are used to initiate sets of actions such as opening the next form or running a particular query**
  - **Some of these actions, called event procedures, are built in to Access**

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Adding Command Buttons

Background

Command buttons are used to initiate sets of actions. These sets of actions can be of two types: macros and event procedures.

What are Macros?

Macros are sets of actions recorded together in a particular sequence for replaying at any later time.

What are Event Procedures

Event procedures are Access Basic Sub procedures which perform a particular operation such as finding the next record.

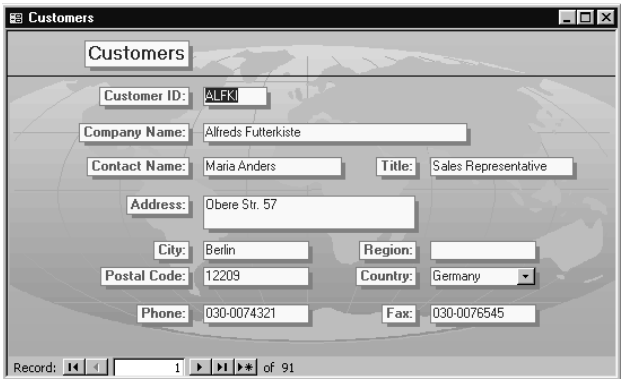
To use command buttons within a form

- Open the **Northwind** database, click on the **Forms** icon and open the **Customer Phone List** form.

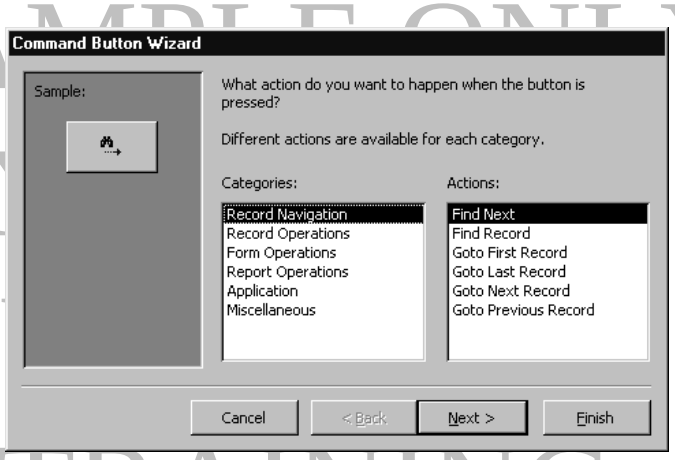
- To see details beginning with A, click on the **A** command button, etc. To see all phone numbers, click on the **All** command button.

To add a command button to a form

- In this example we will add a command button to a form supplied with the **Northwind** database.
- Open the **Northwind** database, click on the **Forms** icon and open the **Customers** form. The form is illustrated below.

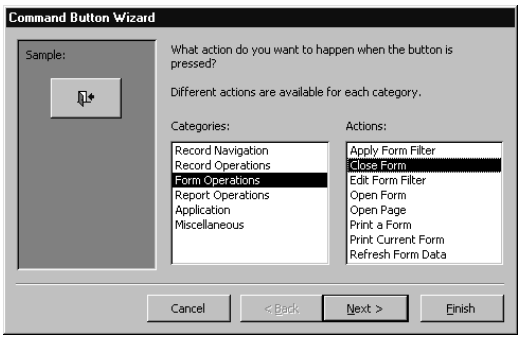


- Switch to form **Design View**, by clicking on the **View** icon located in the standard toolbar, and selecting **Design View**.
- If not already displayed, display the **Toolbox** toolbar, by clicking on the **Toolbox** icon.
- Click on the **Command Button** icon located within the **Toolbox** toolbar.
- Use the normal drag and drop techniques to draw a small rectangle towards the top, right of the form.
- When you let go of the mouse button, you will see the **Command Button Wizard** dialog box displayed.



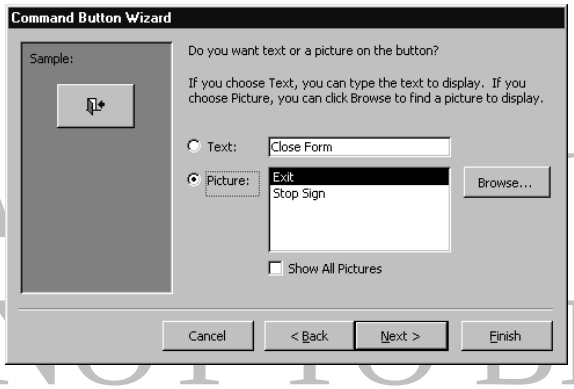
- There are a number of **Categories**, each of which contain a range of available actions. Also each action has a built in icon that will be used for the button.

- In this case choose the **Form Operations** category.
- From the **Form Operations** category, select the **Close Form** action.



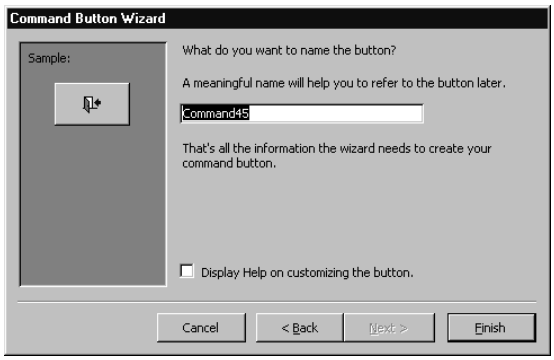
- Click on the **Next** button to continue.

- The next page of the Wizard allows you to add text or a picture to the command button.



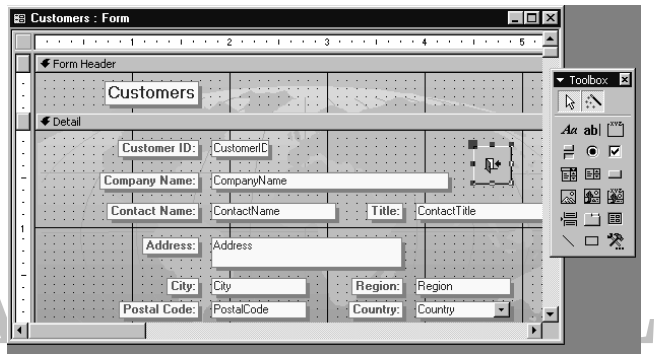
- In this case accept the default picture offered, and click on the **Next** button.

- The last page of the Wizard allows you to name the button. In this case use the name **ExitForm**.

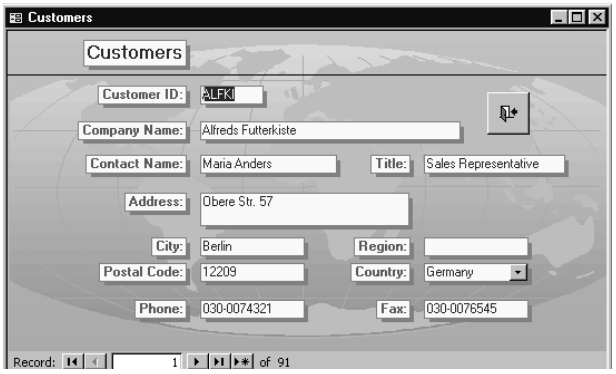


- Click on the **Finish** button to complete the Wizard.

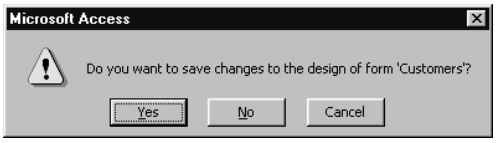
- The form, containing the Command Button, is displayed in **Design View**.



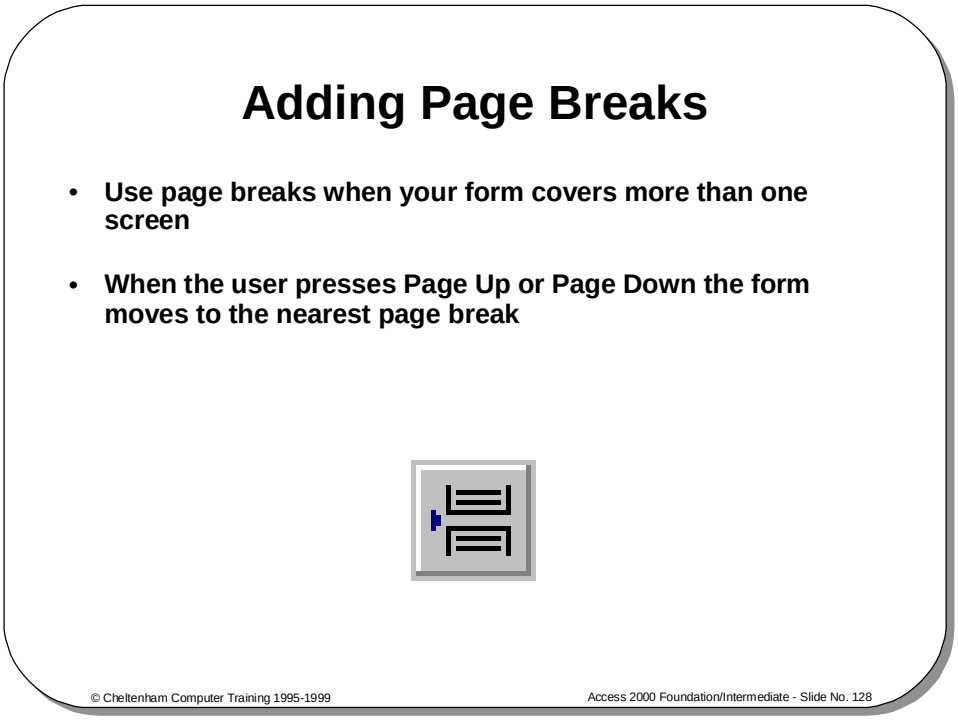
- To see what the form looks like in **Form View**, click on the **View** drop down menu, and select the **Form View** command.



- Click on the button and it should close the form. It will ask you if you wish to save your changes.



Selecting **Yes** will make the addition of the button to the form permanent.



Adding Page Breaks

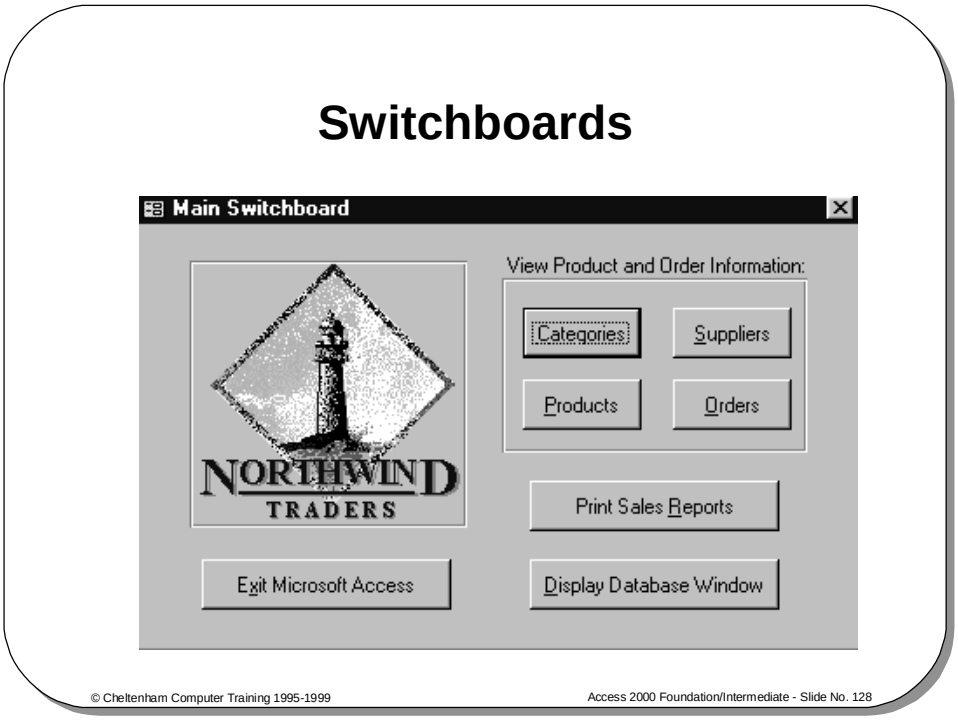
Background

If your form covers more than one screen, you can assist the user by inserting page breaks. The user presses page up or page down to move to the next page in **Forms** View. To use page breaks in Forms View, you must set the **DefaultView** property to **Single Form**.

To add a page break

- Click the **Page Break** tool on the **Toolbox**.

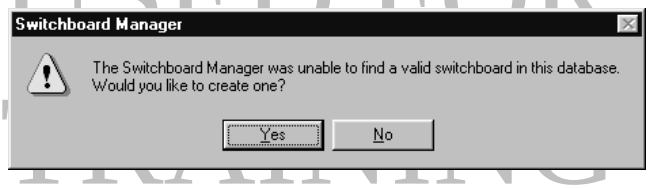
- Click the form in the position where you want the page break. Make sure you don't split a control.
- A row of six dots will appear in the left border of the form to indicate the page break.



Switchboards

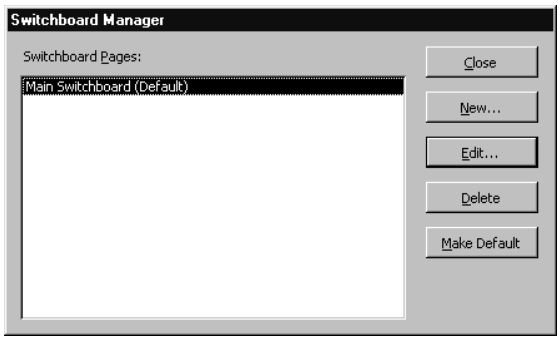
If you create an Access database using the Database Wizard then a switchboard is automatically created. This switchboard is meant as an aid to the user to navigate through the database. The switchboard contains buttons that enables the user to open the main database elements, such as forms and reports. You may easily customize this Switchboard or create a new one from scratch using the Switchboard Manager.

- Open the database to which you wish to add the Switchboard. In the example illustrated we have opened the **Northwind** database.
- Click on the **Tools** drop down menu, click on the **Database Utilities** command, and from the sub-menu displayed select **Switchboard Manager**.
- You will see a dialog box asking if you wish to create a Switchboard.

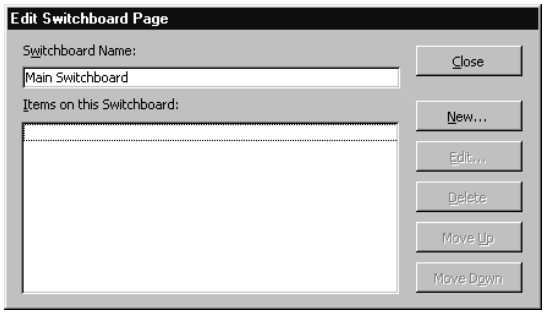


- Click on the **Yes** button.

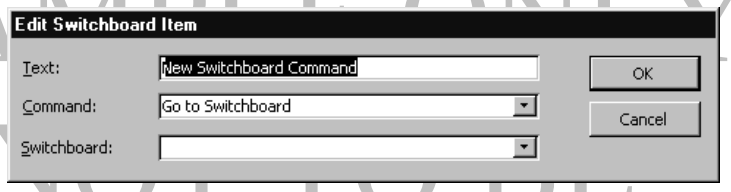
- The **Switchboard Manager** dialog box is displayed, as illustrated.



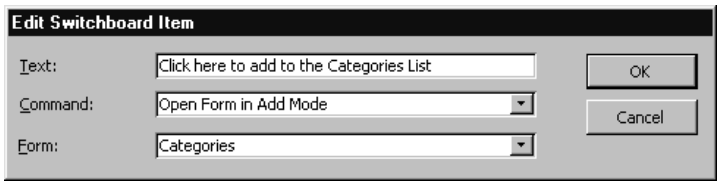
- Click on the **Edit** button.
- When the **Edit Switchboard Page** is displayed,



Click on the **New** button and you will see the following dialog box.

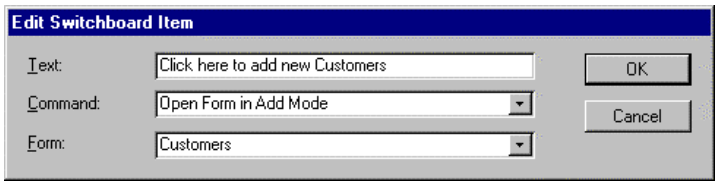


- Click on the **drop down arrow** next to the **Command** field, which will display a list of available commands.
- Select **Open Form in Add Mode**. You will notice that the bottom text box changes to say Form (rather than Switchboard).
- Click on the **down arrow** next to the **Form** field and select a form, such as **Categories**.
- In the **Text** box, (the top field in the dialog box), enter a name for the item you have just entered such as **Click here to add to the Categories List**.



- Click on the **OK** button.

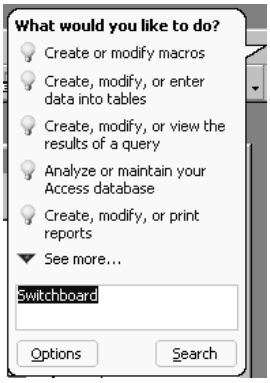
- Repeat this procedure, and add another form entry item, such as Customers.



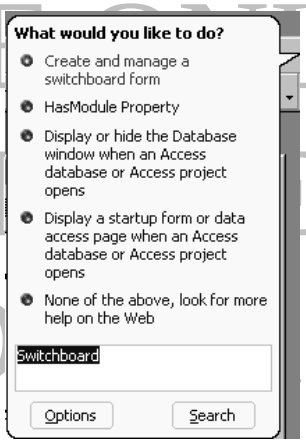
- To continue adding more items such as forms or report, click on the **New** button and repeat the process outlined above.
- When you have finished click on the **Close** button.
- To run the Switchboard, click on the **Form** icon of the database and open the **Switchboard** form.

Microsoft Help sometimes gets it wrong!

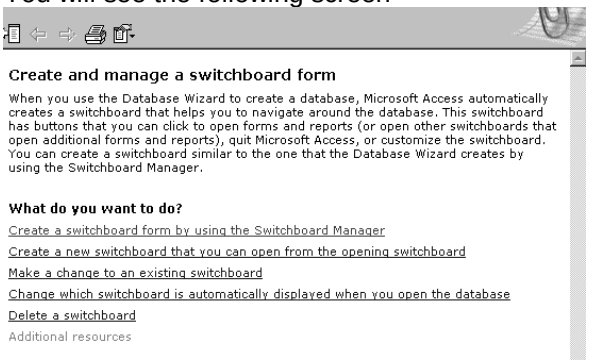
If you click on the Microsoft Access Help icon in the main toolbar and try to get Help for creating a switch board you will find that the instructions are incorrect!



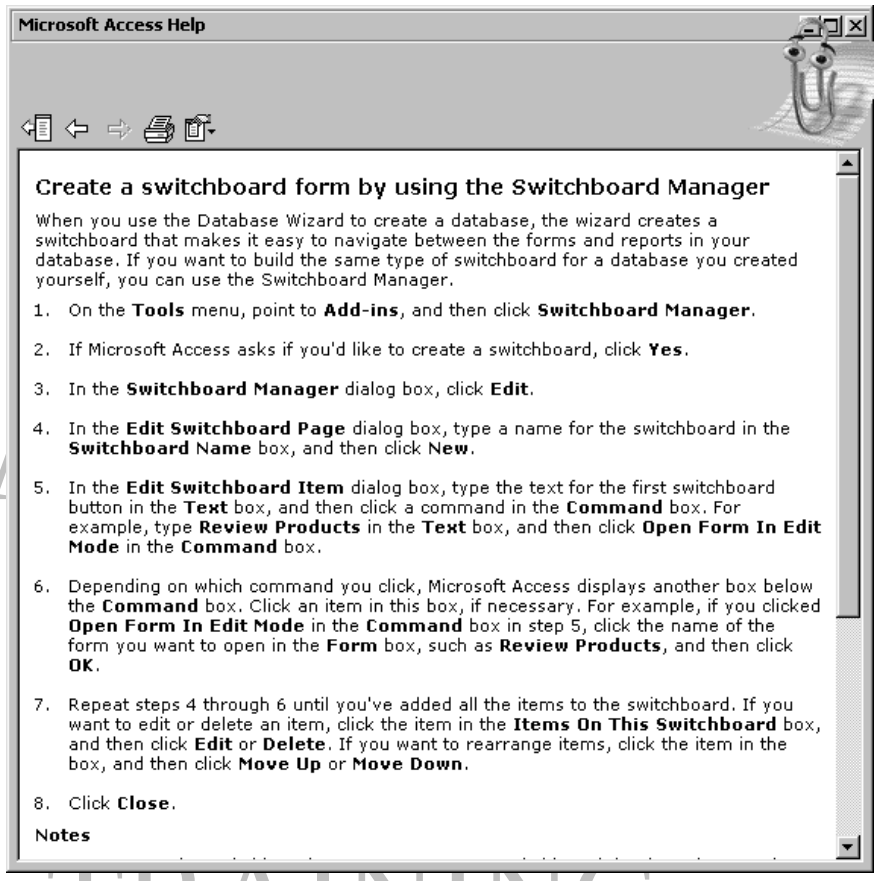
Select the first option, as illustrated.

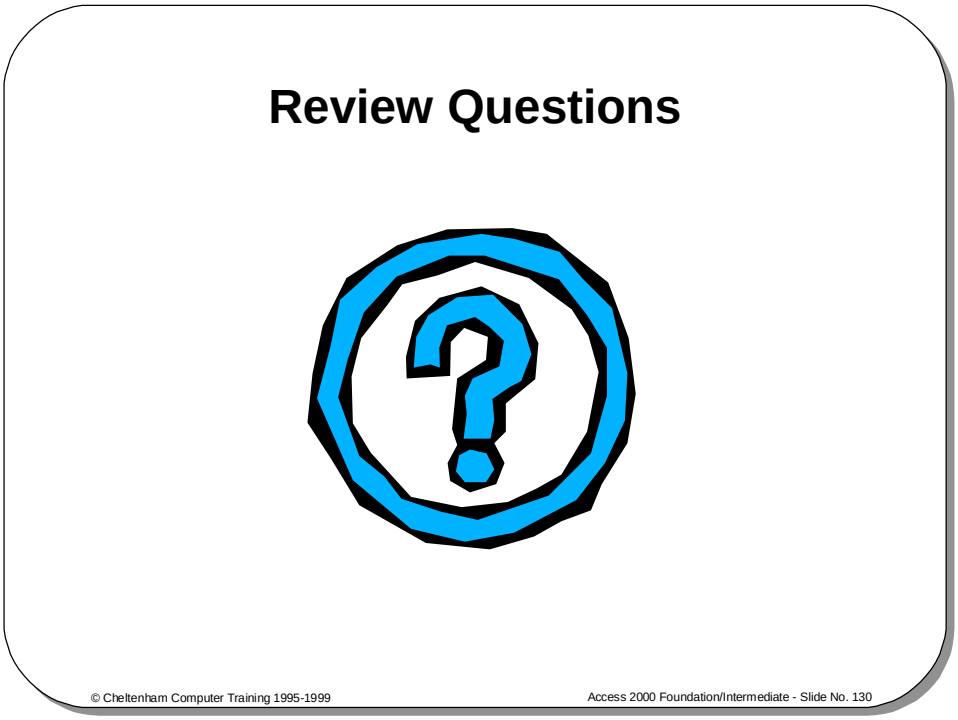


You will see the following screen



The following instructions do not work when using Access 2000!





Review Questions - How Would You ...

1. Create forms using the Form Wizard?
2. Create a form without Forms Wizard?
3. Use the Form Design View?
4. Open an existing form in design view?
5. Display the property list?
6. Display the field list?
7. Display the toolbox?
8. Display the code behind the form?
9. Select and manipulate control and labels?
10. Change the size of a section?
11. Change the width of the form?
12. Explain the terms Bound Controls, Unbound Controls and Calculated Controls?

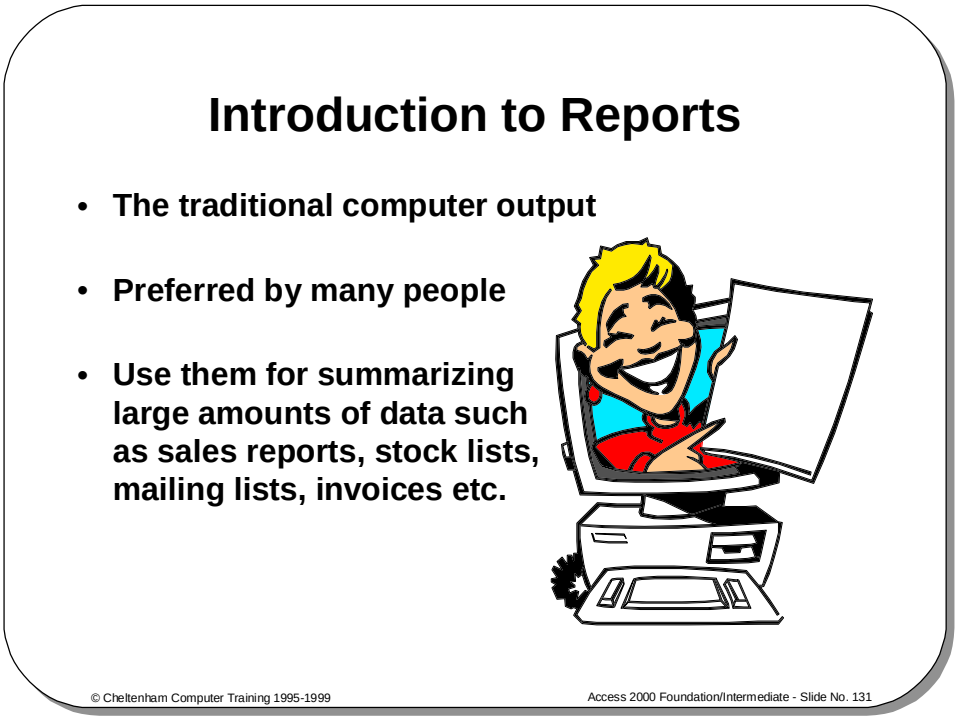
13. Create Combo Box Control using the toolbox?
14. Use forms with subforms?
15. Create a form with a subform?
16. Set Default Value for a control?
17. Set a Validation Rule for a control?
18. Set Validation Text for a control?
19. Set an Input Mask?
20. Change the Tab order?
21. Explain the concepts of Macros and Event Procedures?
22. Use command buttons within a form?
23. Add a command button to a form?
24. Add page breaks?
25. Use and create Switchboards?

Reports

Learning Module Objectives

When you have completed this learning module you will have:

- Seen how to open and View existing reports
- Seen how to navigate within a report
- Seen how to view the whole page of a report
- Seen how to print reports
- Seen how to create a report using AutoReports
- Seen how to create a columnar report using AutoReport Wizard
- Seen how to create reports using the Report Wizard
- Seen how to add grouping levels to a report
- Seen how to sort records within a report
- Seen how to determine the layout of a report
- Seen how to determine the style of a report
- Seen how to name a report
- Seen how to use the LabelWizard
- Seen how to use the Chart Wizard
- Seen how to create a report without using the Report Wizard
- Seen how to create a text box
- Seen how to create a label
- Seen how to set Report Properties



Introduction to Reports

Background

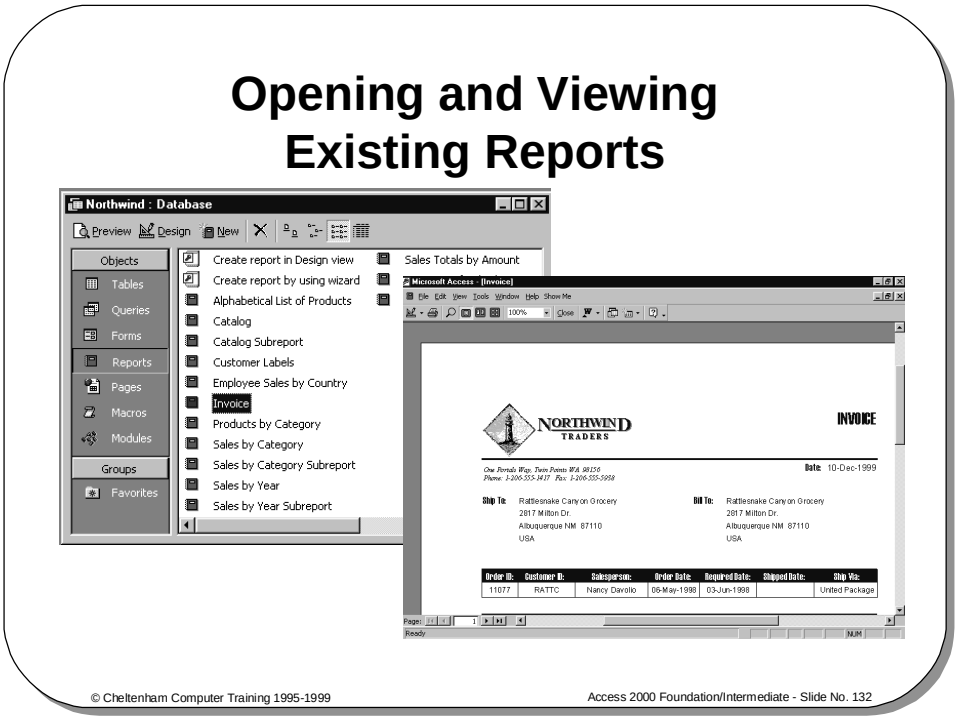
As discussed, your first step in creating a database should be to establish what you want from it, i.e. the output. Output is normally information displayed either on-screen, or printed. A screen display is usually a Datasheet or a form and is the response to an interactive query or command. Forms can also be printed, but for most purposes, printed reports are the best way to provide hard copy output. This is particularly so for information covering several records, especially when summary information is also required.

You can use reports for a variety of purposes: some common examples are periodical sales summaries, stock lists, mailing lists and invoices.

The easiest way to produce your own reports is by using the Microsoft Access wizards. There is a choice of different reports. Easiest of all is the AutoReport Wizard which constructs the whole report according to your instructions. You can also choose single column, Groups/Totals, Mailing Labels, Summary and Tabular reports.

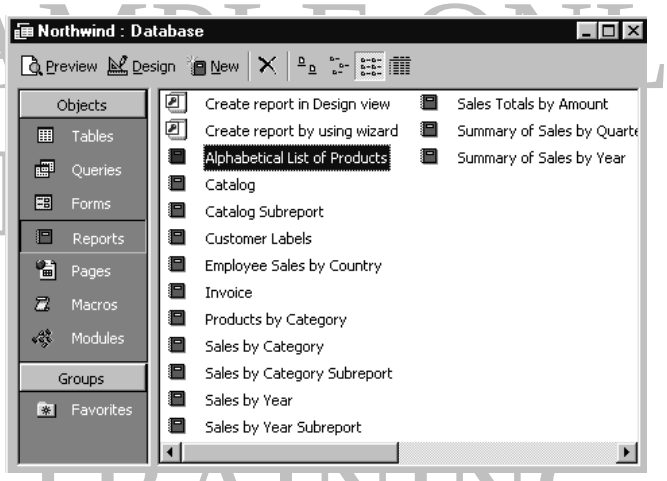
Grouping allows you to identify and organize data into logical groups and to provide group and grand totals. Up to a maximum of ten groups are allowed. You can also include a sub-report as part of your report.

Before attempting any report design of your own, it would be a good idea to explore some of the reports from the Northwind database supplied with Microsoft Access. You can look at them in print preview and design mode to get an idea of how they are constructed.

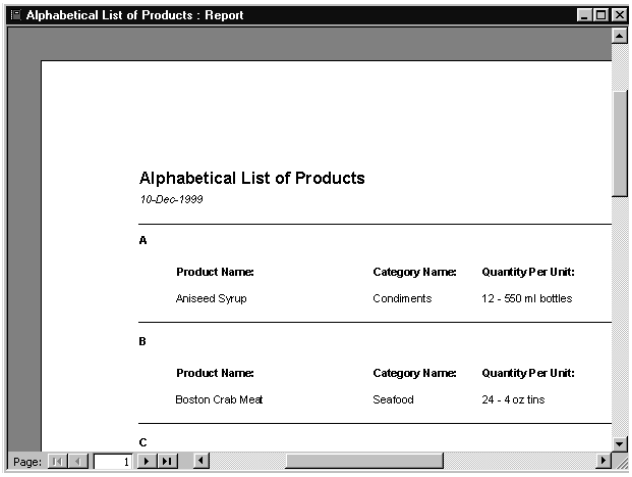


Opening and Viewing Existing Reports

- Open the **Northwind** database and 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

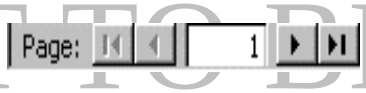
- Use the scroll bars at the right-hand side and bottom of the window to move to different parts of the page.

To see the whole page

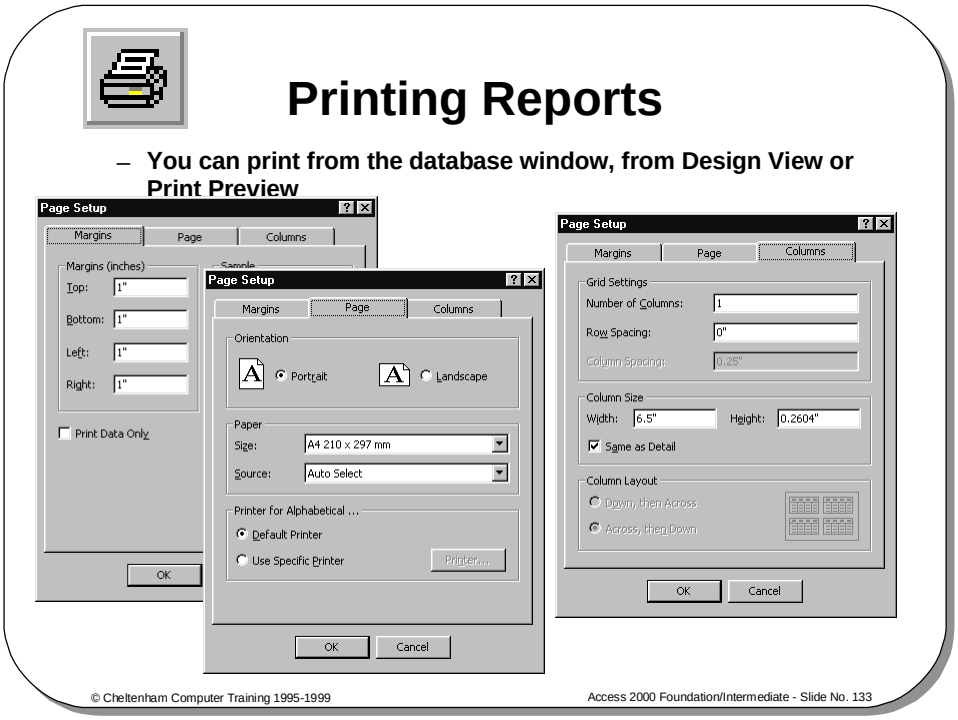
- Move the mouse pointer over any area of the report. The pointer should change to represent a magnifying glass.
- Click the left-hand mouse button. The report display will change so that the whole of the page is displayed.
- Click again on the left-hand mouse button to display the report full size. 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.



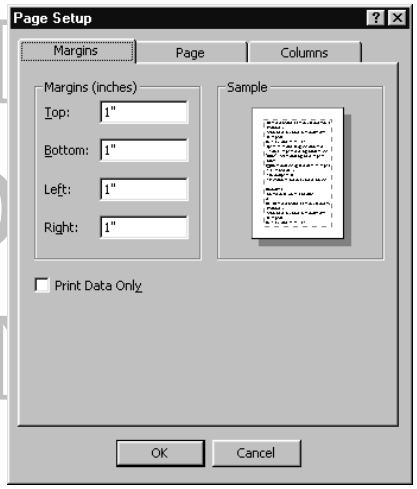
Printing Reports

Background

Before printing your report for the first time, you might need to change the page orientation. Portrait is the normal print orientation where, as the name suggests, an A4 sheet appears with the longest edges on the side. The alternative, landscape, has the longest edges at top and bottom. Once you have set page orientation, it will be saved with the report. As well as sending a report directly to the printer, you can send it to a file to print later.

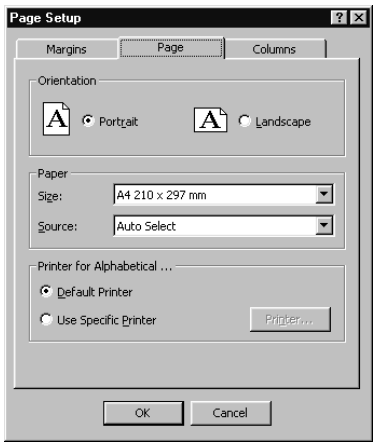
To set print margins

- 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.



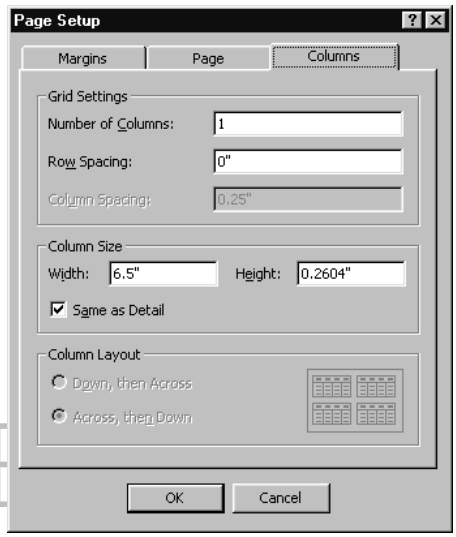
To setup Page printing options

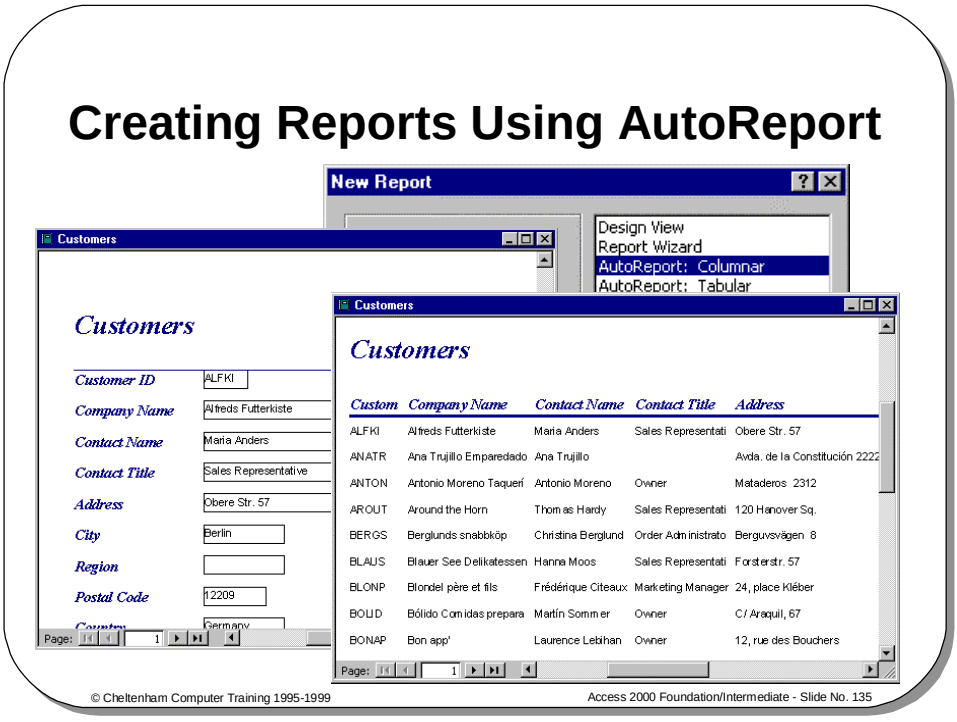
- Click on the **File** drop down menu and select **Page Setup**.
- Select the **Page** tab.
- Set your options as required and then click on the **OK** button.



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.





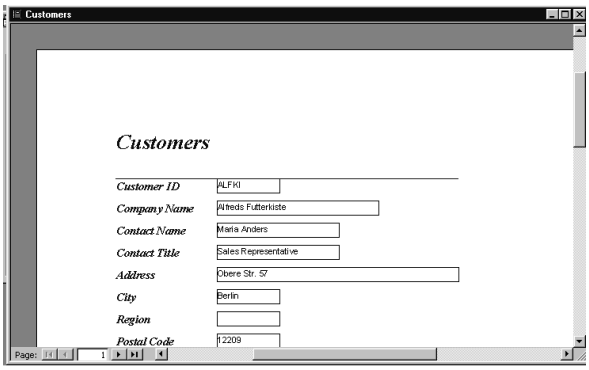
Creating a Report Using AutoReports

To create a columnar report using AutoReport Wizard

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

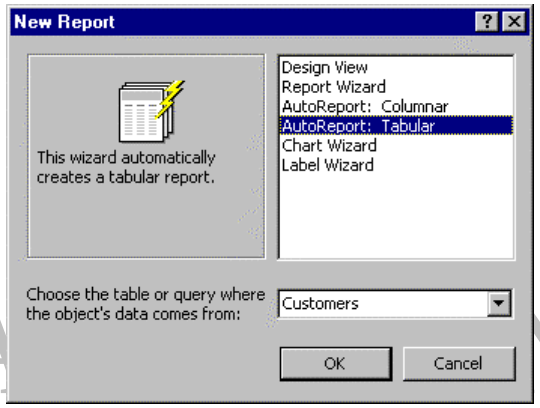
- Select the table or query where the objects data comes from. In the example shown we have selected **Customers** from the **Northwind** database.
- Select **AutoReport: Columnar**.

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



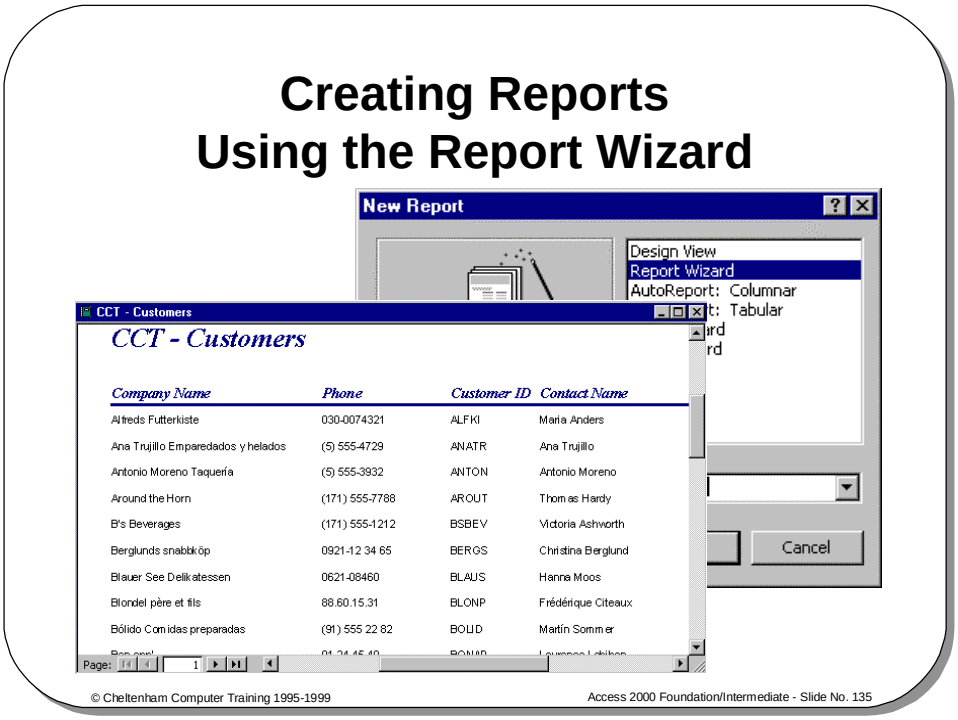
To create a Tabular report using AutoReport Wizard

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



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

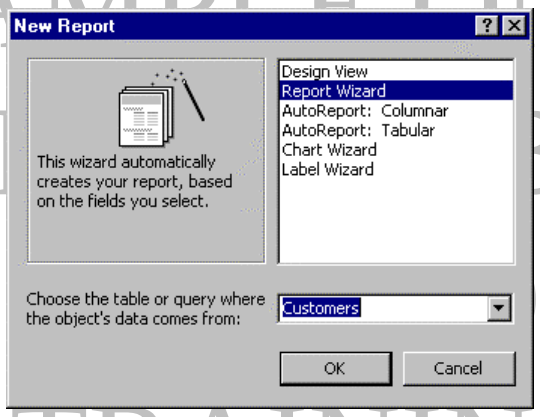
- Select **AutoReport: Tabular**.
- Click on the **OK** button and the table formatted report will be generated and displayed on the screen.



Creating Reports Using the Report Wizard

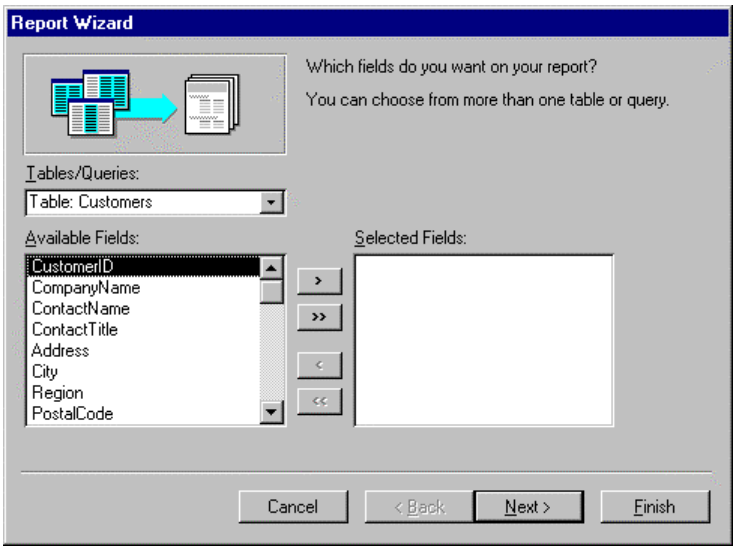
To create a report using Report Wizard

- 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.

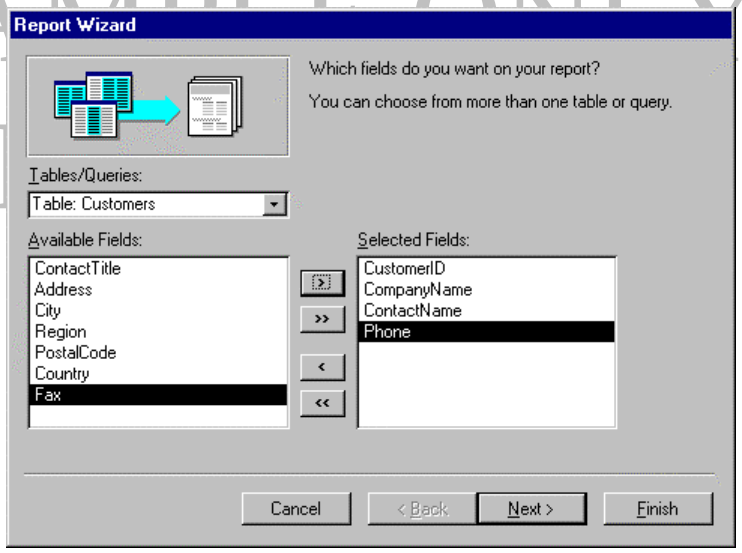
- The next page of the **Report Wizard** is displayed.



- 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

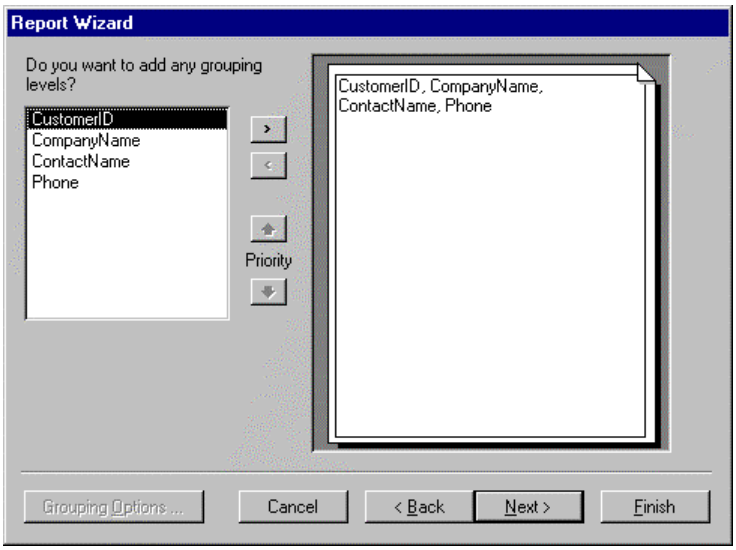
- Click on the field that you require and click on the right pointing arrow to add the field to the **Selected Fields** section of the dialog box.
- Repeat this procedure to add the fields that you require within the report. In the illustration below, based on the Northwind database, we have added **CustomerID, CompanyName, ContactName** and **Phone**.



- Click on the **Next** button to continue.

To add grouping levels to a report

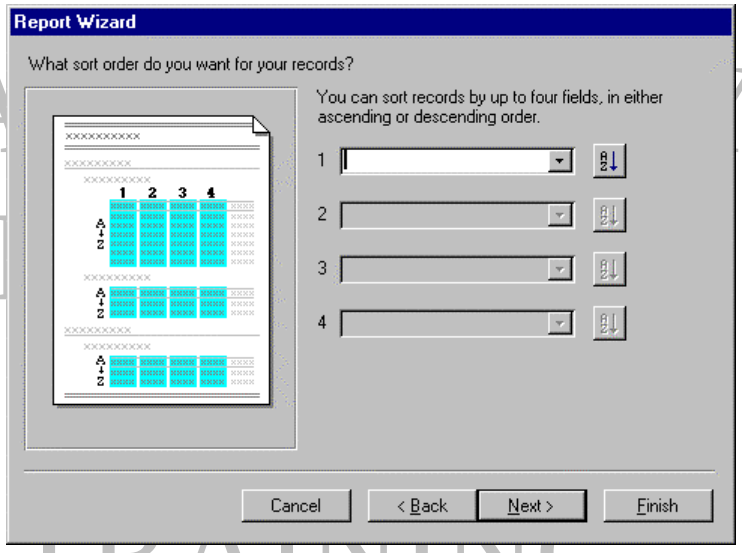
- The next page that is displayed allows you to add grouping levels.



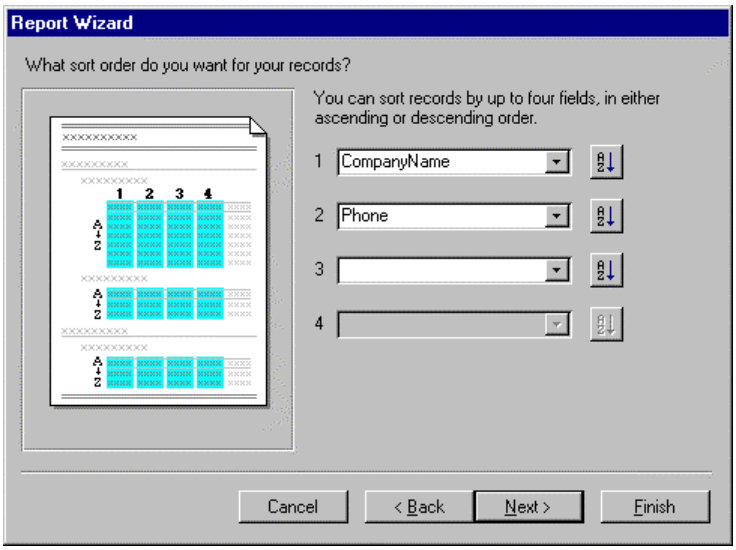
- Grouping is covered later. In this example we have clicked on the **Next** button to continue to the next page of the **Report Wizard**.

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.



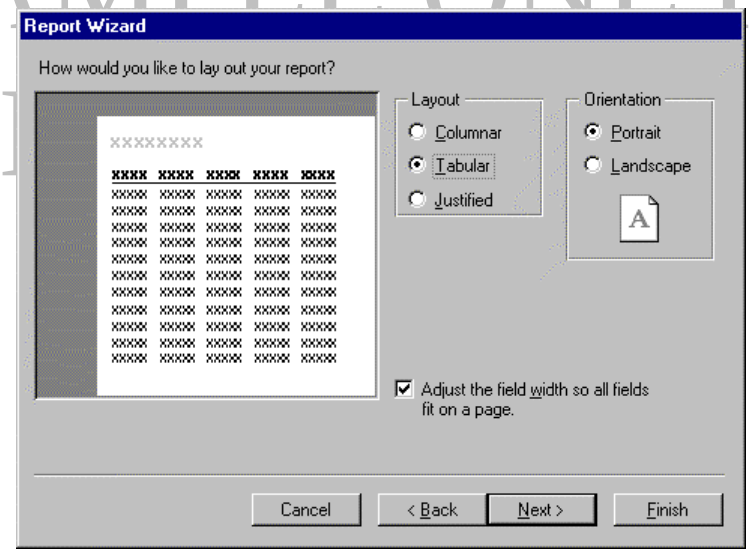
- In this case we have chosen to sort first by **CompanyName** and then by **Phone**, as illustrated.



- Click on the **Next** button to continue to the next page.

To determine the layout of a report

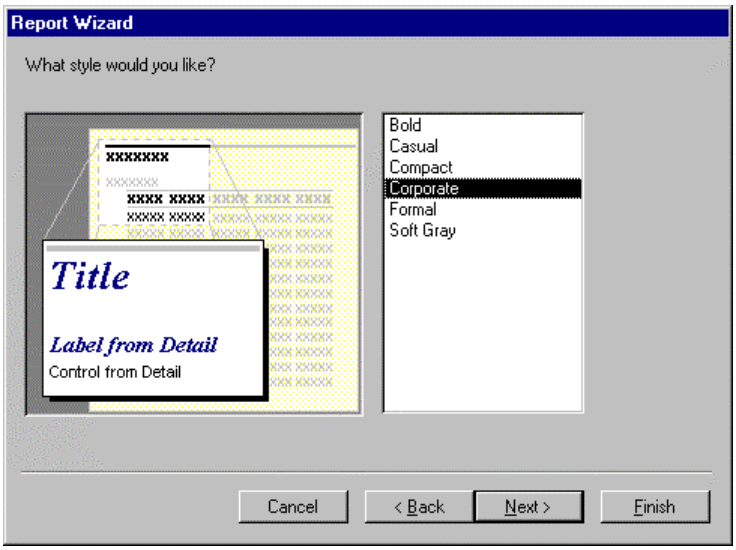
- The next page of the **Report Wizard** allows you to determine the layout of the report.
- You can select a **Columnar**, **Tabular** or **Justified** layout.
- You can set the page orientation to **Portrait** or **Landscape**.
- You can **automatically adjust the field width** so that all the fields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

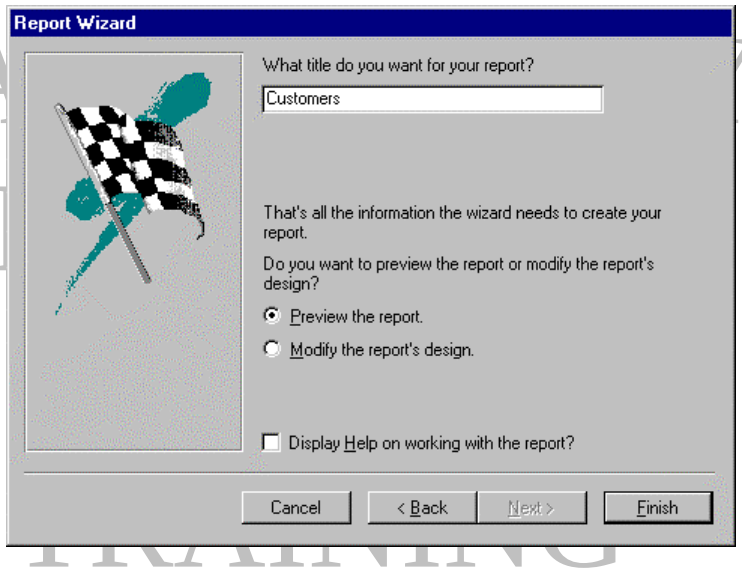
- The next page of the **Report Wizard** allows you to select from a range of styles, **Bold**, **Casual**, **Compact**, **Corporate**, **Formal** or **Soft Gray**.



- When you have selected the required style, click on the **Next** button to continue to the next page of the **Report Wizard**.

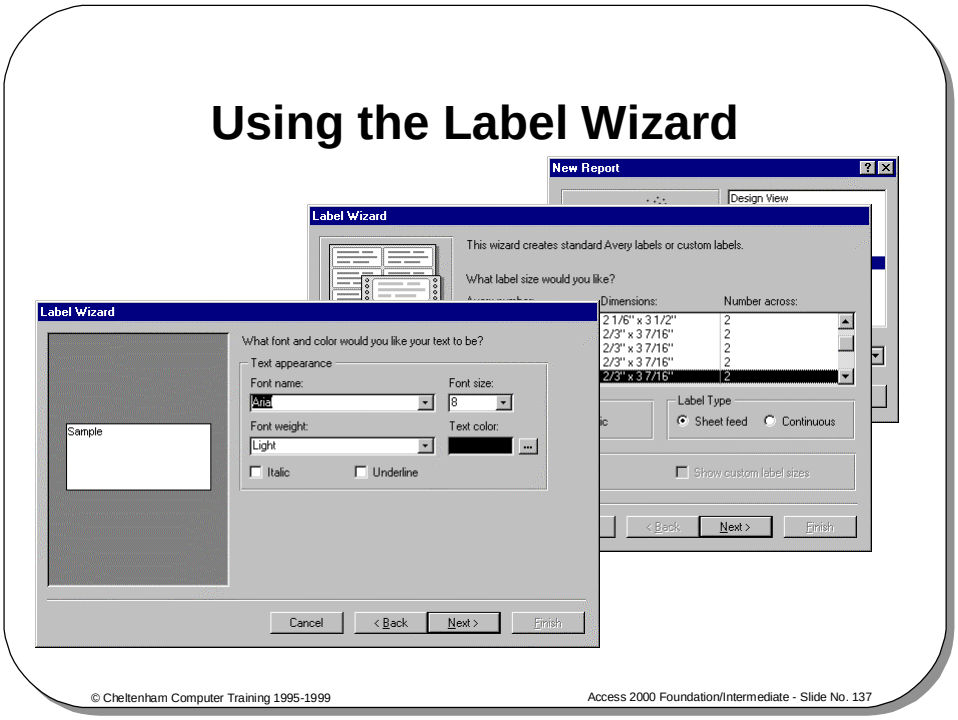
To name a report

- 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.



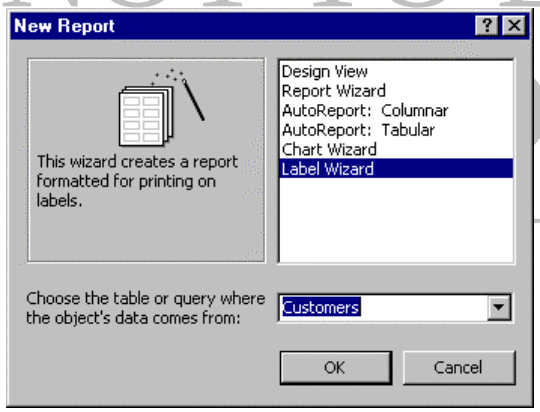
Using the Label Wizard

Background

Databases are often used for keeping data on individuals and companies (e.g.: a contact list). One of the report types available within Access is mailing labels.

To create mailing labels

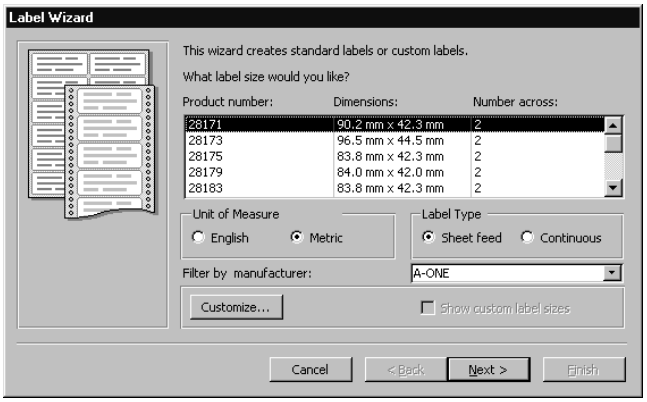
- Open the **Northwind** database.
- Open the **Database Window** and select **Reports**.
- Click on the **New** icon, which will display the **New Report** dialog box.
- Choose the table or query where the object's data comes from.
- Select the **Label Wizard**.



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

To set label sizes and type

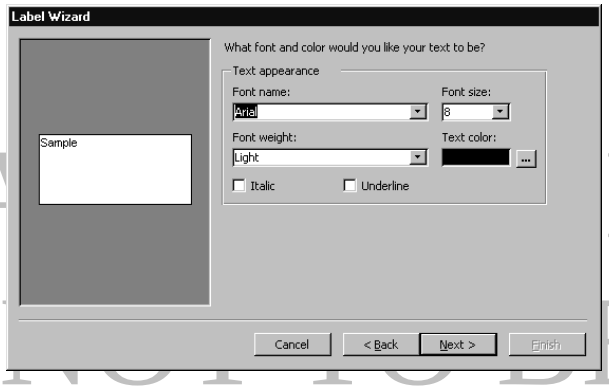
- The next page of the **Label Wizard** allows you to determine the size of your labels, and whether you will use sheet fed or continuous labels. You can also select English or metric sizes. If necessary you can click on the **Customize** button to define special label types.



- Select the options that you require and then click on the **Next** button.

To set the font formats that label will use

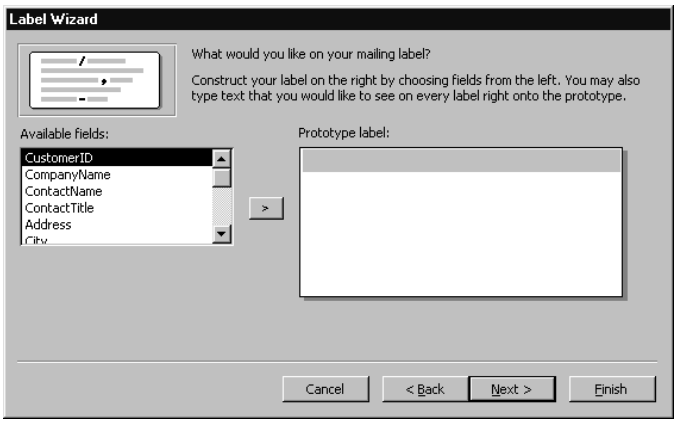
- The next page of the **Label Wizard** allows you to select the font formats that you wish to use.



- 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

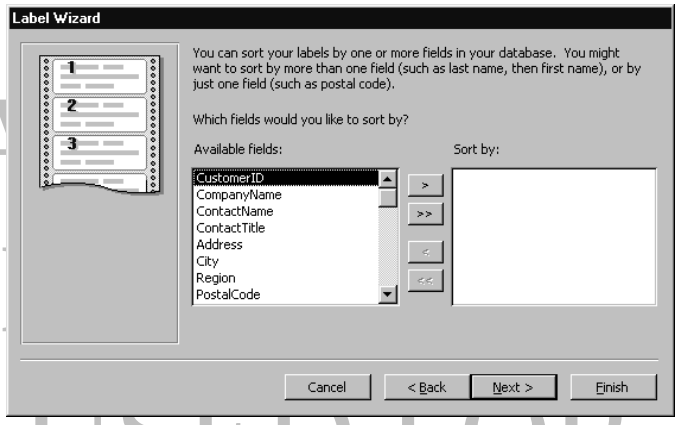
- The next page of the **Label Wizard** allows you to determine what information will be displayed on the labels.



- 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

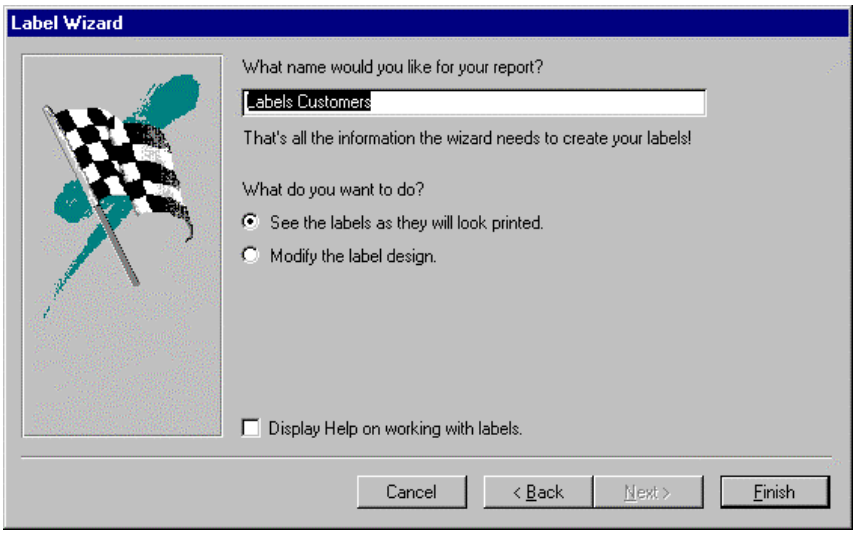
- This page of **Label Wizard** allows you to sort the labels by one (or more) fields.



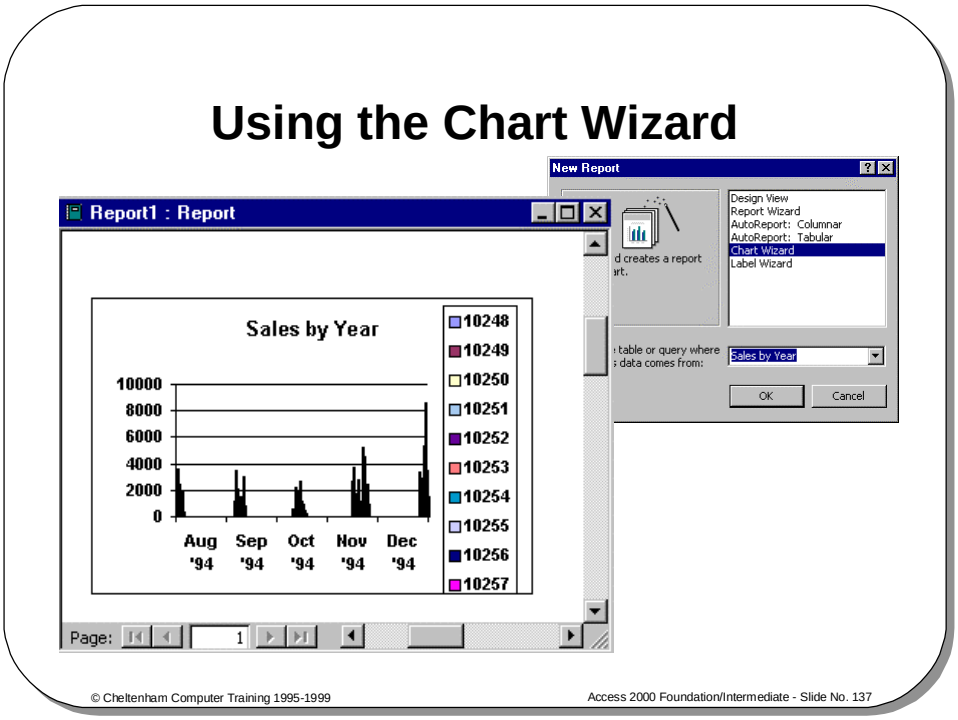
- Select fields to sort on, as required.
- Click on the **Next** button to continue.

To name the label report

- This page is the final page of the wizard and it allows you to name your report.



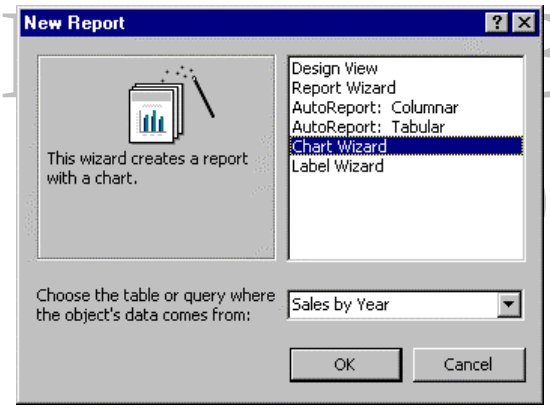
- Click on the **Finish** button to generate the labels and to preview the results.



Using the Chart Wizard

To create a chart based report

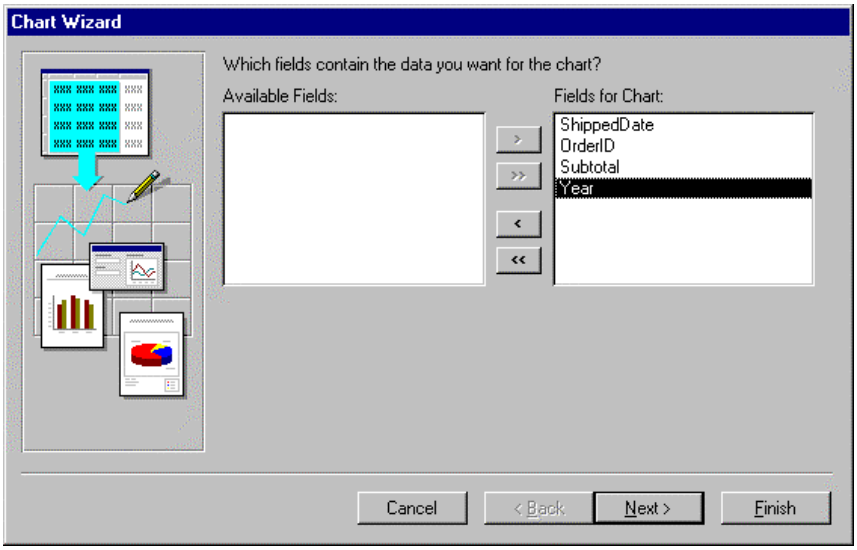
- Open the **Database Window** and select **Reports**.
- Click on the **New** icon, which will display the **New Report** dialog box.
- Choose the table or query on where the object's data comes form. In the example below we have selected **Sales by Year** from the **Northwind** database.
- Select the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



- Click on the **OK** button.

To add fields to a chart report

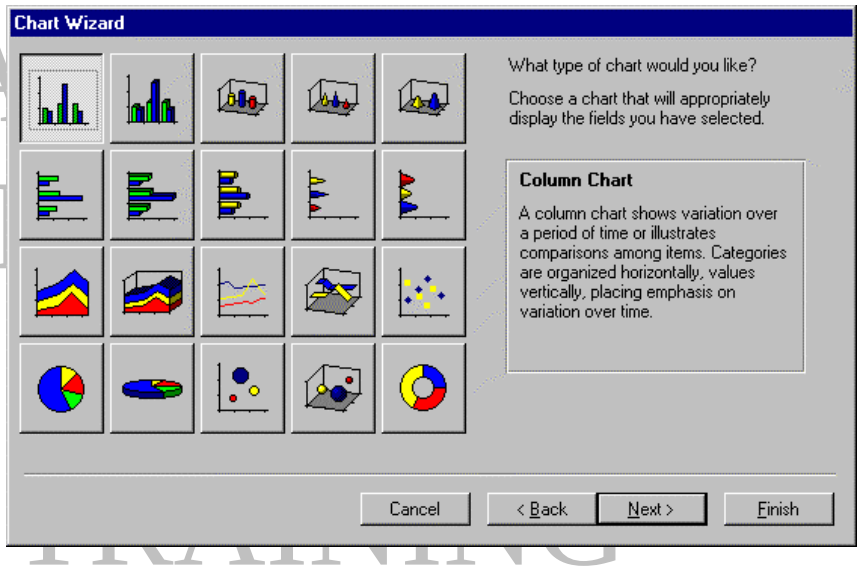
- Next you need to decide which fields to add to the chart report. In this example we have added all fields, by clicking on the right pointing double arrow.



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

To select a chart type

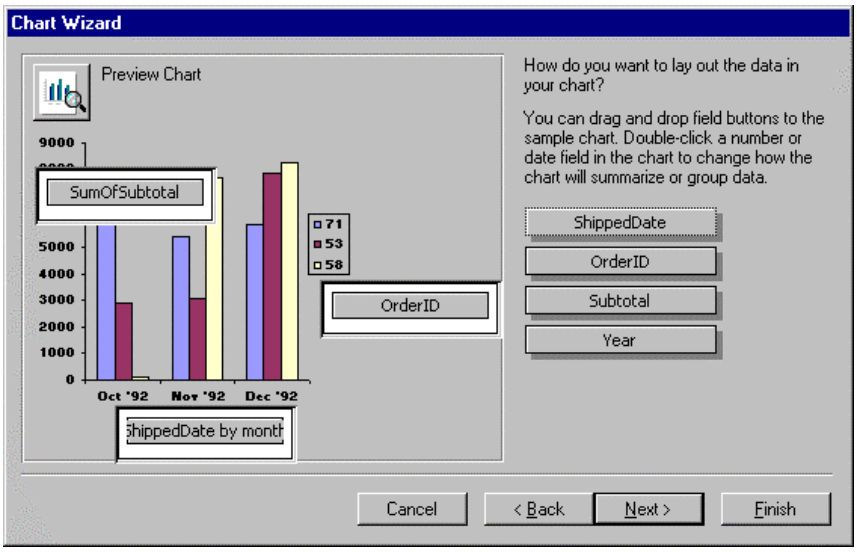
- Next you need to decide on the type of chart that you wish to create.



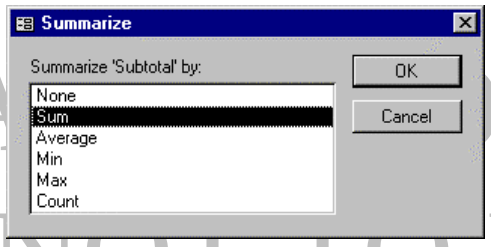
- Click on the chart type that you require, and then click on the **Next** button.

To determine the chart report layout

- Next you need to decide on the layout of the data within the chart.



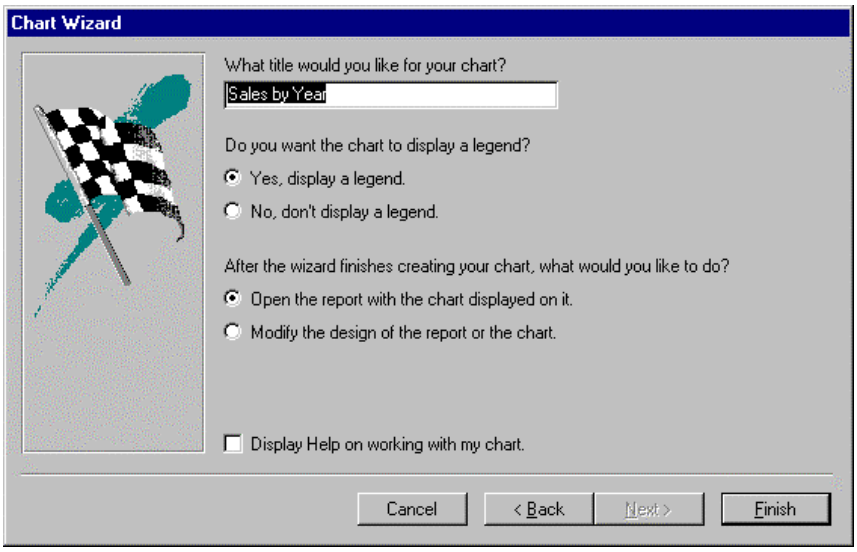
- You can drag and drop the field button to the sample chart.
- You can double click on a field to change how the chart will summarize or group the data.
- For instance if you double click on the **SumOfSubtotal** button you will see the following dialog box.



- When you have setup the chart data layout as required, click on the **Next** button to continue.

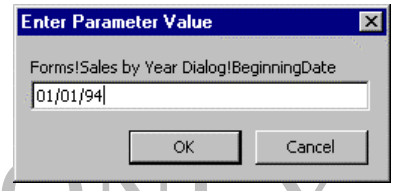
To name a chart report

- Lastly you need to give the chart report a name.

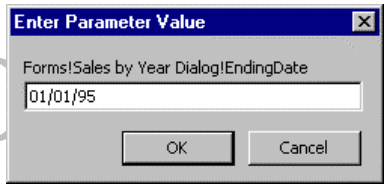


- You can also choose whether or not to display a legend.
- Click on the **Finish** button to complete the Wizard.

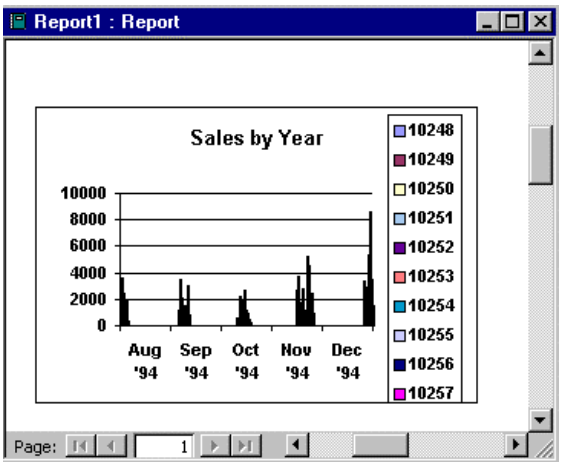
- In the example given you will see the following dialog box, which ask for the starting date of the chart. Enter a starting date, in this case we have entered **01/01/94**.
- Click on the **OK** button.



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

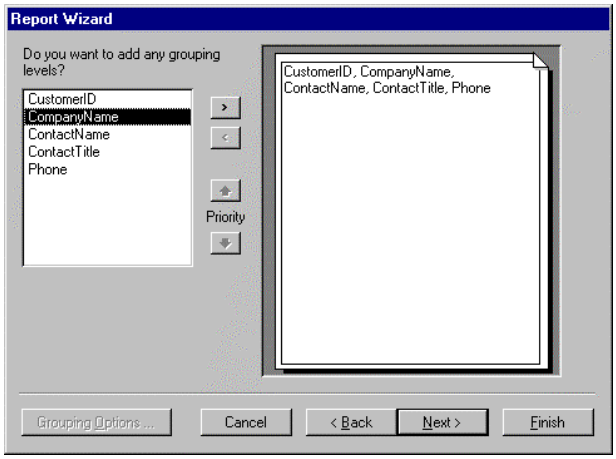


- The chart will be displayed as illustrated below.



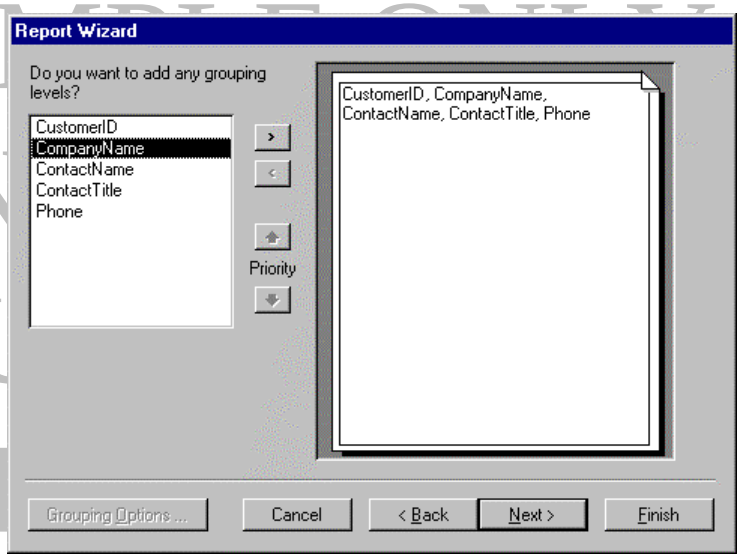
Grouping Levels in Reports

- **You can use Report Wizard to add grouping levels**



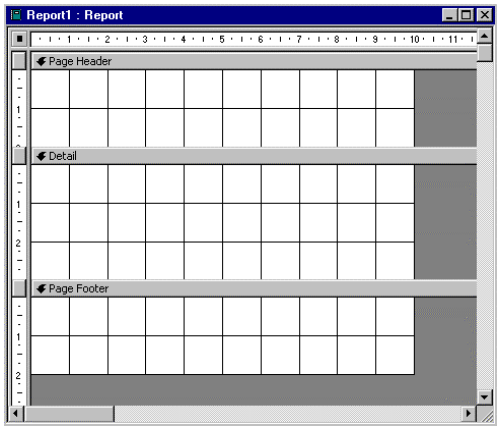
Grouping Levels in Reports

Background The easiest way to add grouping information to a report is to use the **Report Wizard**.



Creating a Report Without a Wizard

When you choose not to use a Wizard you are presented with a blank "Report" onto which you place controls, as when creating a "Form"



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Creating a Report Without a Wizard

To create a report without using Report Wizard

- Open the **Database Window**.
- Click on the **Report** icon.
- Click on the **New** icon in the database window to display the **New Report** dialog box.
- Select a table or query from the drop down menu.
- Click on the **Design View** option.
- Click the **OK** button.

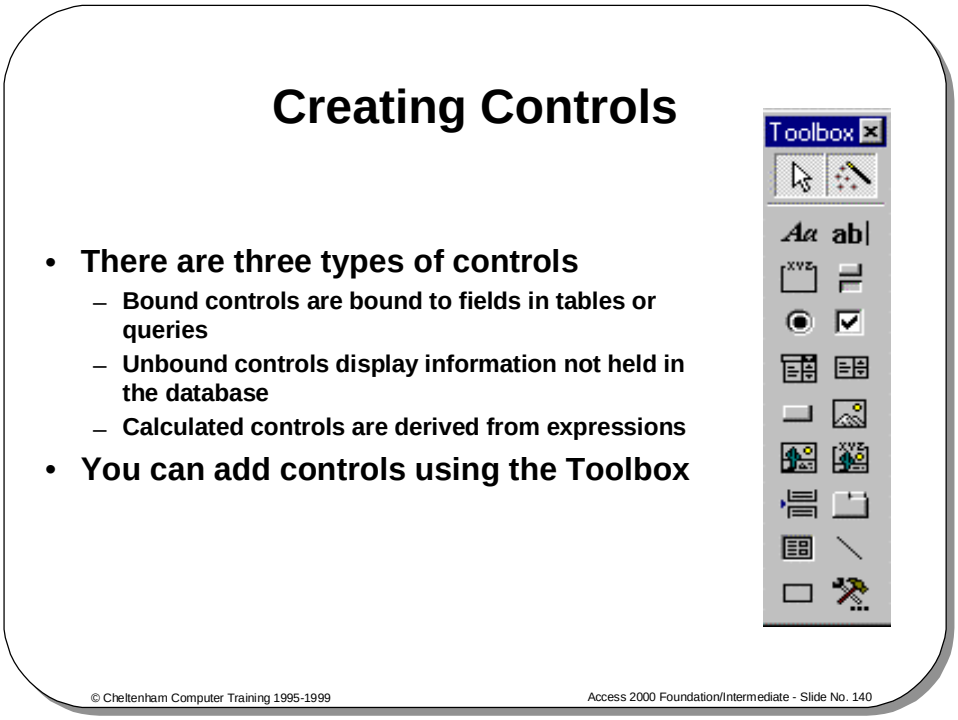
Access will display a blank report template.

Note: The following instructions assume you have a report open in **Design View**.

To display the toolbox

- Choose **Toolbox** from the **View** menu

  OR click on the **Toolbox** icon on the standard toolbar.



Creating Controls

Background There are three types of control and they are described below.

Bound Control Bound controls are used to display data from fields in tables or queries. The values can be text, numbers, dates, logical (i.e. Yes/No), pictures or graphs. The most common type of bound control is a text box. It is normally more efficient to create your bound controls first.

Unbound Control A control that displays information such as text, lines, rectangles and pictures. An unbound control is not derived from a table.

Calculated Control The result of an expression.

The toolbox This is identical to the one available in Forms. All types of control can be created using the toolbox.

To create a bound text box

- If the field list is not displayed, choose **Field List** from the **View** menu.
- Select the field or fields in one of the following ways:

One field	Click the field.
A block of adjacent fields	Click the first field and with the **SHIFT** key depressed, click the last field of the block.
Several unconnected fields	Hold down the **Ctrl** key while you click each field.
All fields on the field list	Double click the **Title Bar** of the field list.

- Drag the field or fields onto the area of the form where you want them to appear. Multiple fields will retain their order in the field list.

To create a text box using the toolbox

- Click the **Text Box** icon on the **Toolbox**. As you move the mouse pointer from the **Toolbox** to the form, it will change to a small box resembling the **Text Box** icon but with a cross outside the upper left-hand corner of the box.
- Click the report where you want the text box to go.

  If you want your report to display a different label, click in the label box and type in your alternative text.

To create a label

- Click the **Label** icon in the **Toolbox**.
- Click in the area of the report where you want your label to go.
- Type the text you want in your label.

Alternatively, hold down the mouse button and drag the pointer to create a box of any size into which you can then type your label.

To create a bound control using the toolbox

- Choose **Field List** from the **View** menu to display the field list.
- Click the appropriate tool icon on the **Toolbox**.
- Select a field from the field list and drag it to the report.

To create an unbound or calculated control using the toolbox

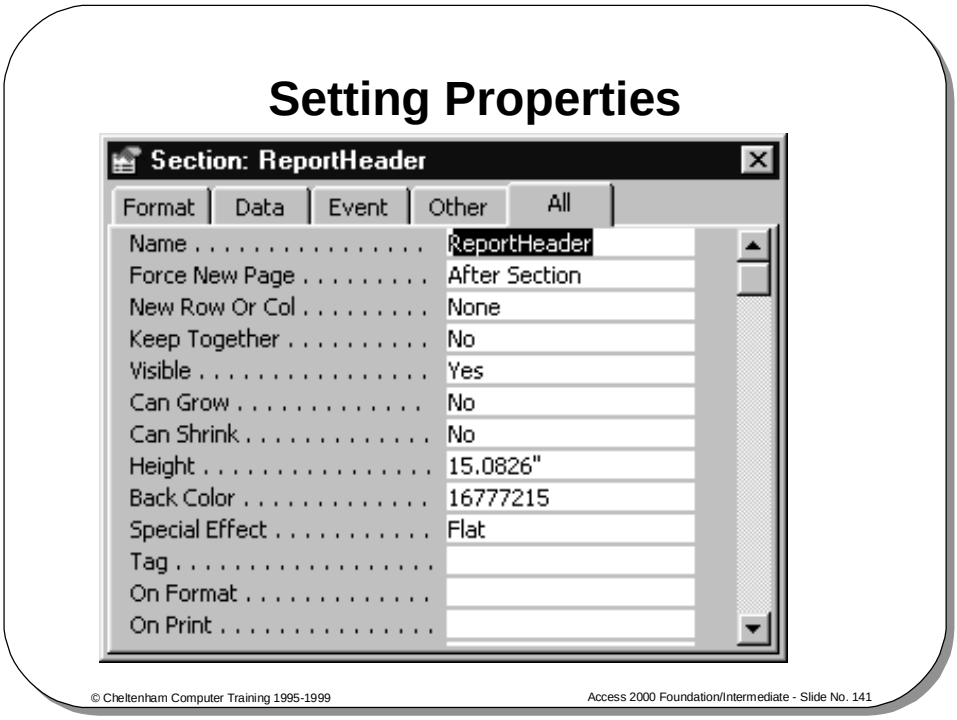
- Choose **Field List** from the **View** menu to display the field list.
- Click the appropriate tool icon on the **Toolbox**.
- Click on the report.

To change the text of a label

- Double click in the label.
- Type in the alternative text.

To create a calculated text box

- Move the mouse pointer over the text box. It should change to an insertion point (I-beam).
- Type an expression.



Setting Properties

Background

When you create a report, Access assumes properties for each of its controls and for the report and sections in the report. Bound controls inherit properties from the underlying tables or queries. You can make changes to properties in the Property Sheet.

The Property Sheet appears with a display of properties. To view more properties, scroll through the list.

By clicking on the tabs, you can choose to see just Data Properties, Event Properties, Layout Properties or Other Properties.

The different property types are explained in the section on properties in forms.

Here are some of the properties that are particularly relevant to reports:

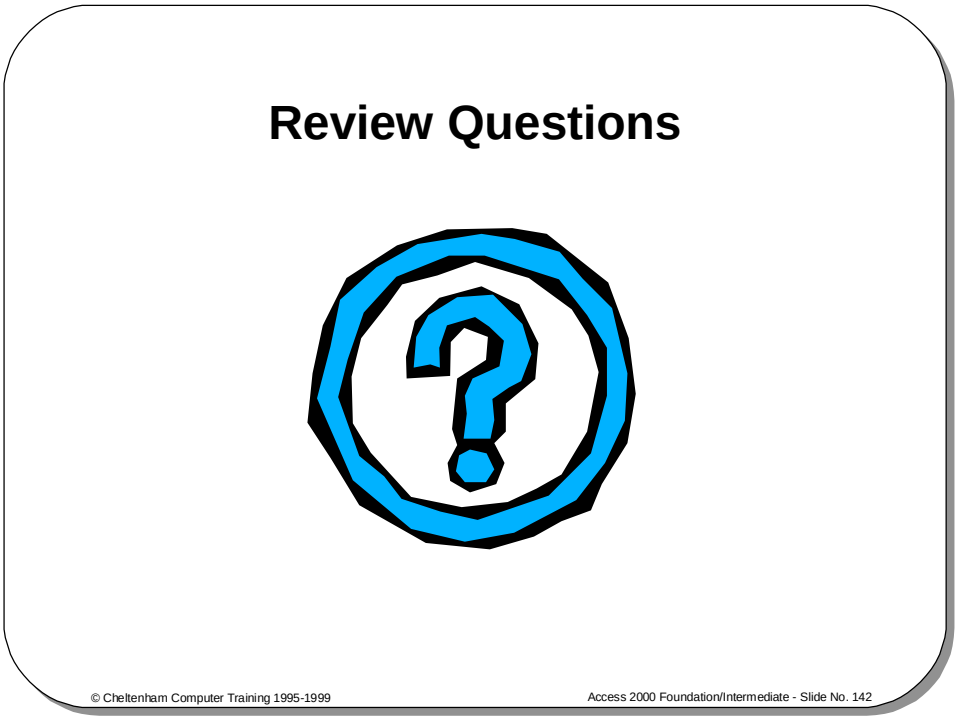
HideDuplicates	Used to hide data in the control when it has the same value as the preceding record.
RunningSum	Specifies a running total in text boxes. Can be set to Run over Group.
CanGrow, CanShrink	Says whether a report section, text box or sub-report can shrink or grow to accommodate the amount of data. Cannot be used for page headers or footers.

To display the Property Sheet

- Open a report in Design View and double click on a **Control** object

  OR click a **Control** object with the right-hand mouse button and select **Properties** from the drop down menu

  OR choose **Properties** from the **View** menu.



Review Questions - How Would You ...

1. Open and View existing reports?
2. Navigate within a report?
3. View the whole page of a report?
4. Print reports?
5. Create a report using AutoReports?
6. Create a columnar report using AutoReport Wizard?
7. Create reports using the Report Wizard?
8. Add grouping levels to a report?
9. Sort records within a report?
10. Determine the layout of a report?

11. Determine the style of a report?

12. Name a report?

13. Use the Label Wizard?

14. Use the Chart Wizard?

15. Create a report without using the Report Wizard?

16. Create a text box?

17. Create a label?

18. Set Report Properties?

APPENDIX ONE - File Management Within Access 2000

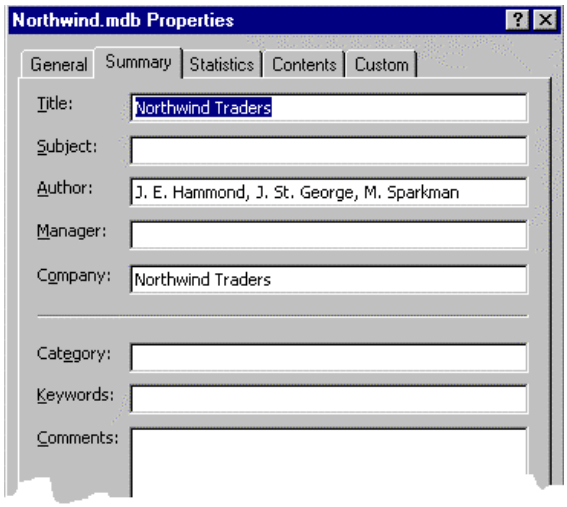
Learning Module Objectives

When you have completed this learning module you will have seen how to:

- Display the File Property Information
- Select files
- Cycle between multiple open documents
- Display the Open pop-up menu
- Open a file as read-only
- Print many different files at the same time
- Find a file if you know the file name
- Find a file that contains a particular word or phrase
- Delete a file
- Rename a file
- Create a shortcut

Access 2000 Properties

- **From the File menu, choose the Database Properties command**
  - **Displays information about the current database**



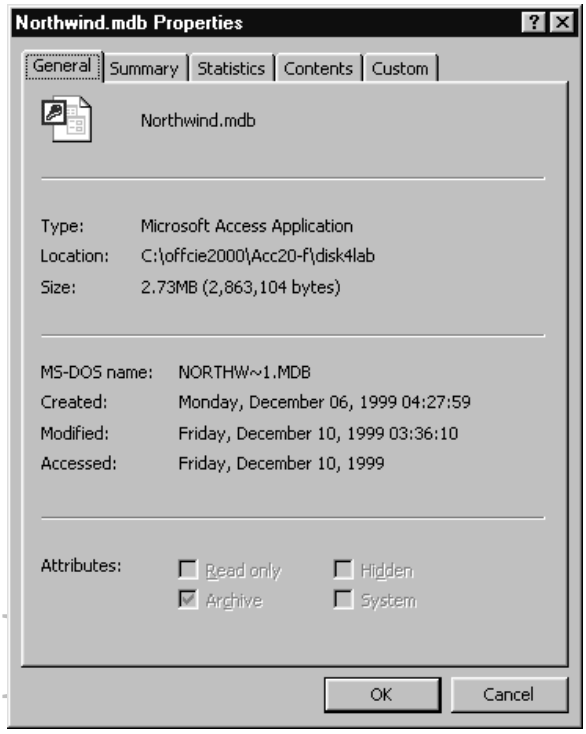
Access 2000 Properties

To display the File Property Information

- First open a database and then from the **File** drop down menu, choose the **Database Properties** command to display the **Database Properties** dialog box, which contains five tabs called, **General**, **Summary**, **Statistics**, **Contents** and **Custom**.

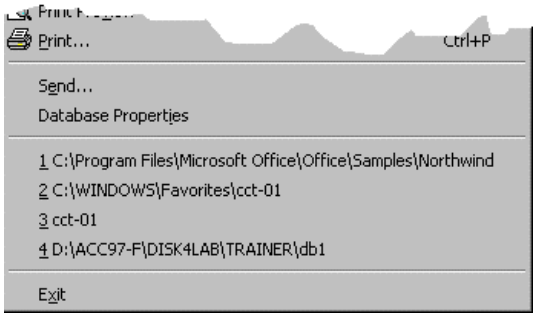
The General tab

Displays general information concerning a file, such as the file type, location and size. Also gives details on the date of file creation, the equivalent MS-DOS file name (if the Windows 95 (or Windows NT) file name is longer that 8 characters), plus the date of the last file access or modification. Lastly the file attribute information is displayed, indicating for instance whether the file is read-only or hidden.



Opening Files - A Review

- **Sometimes known as loading a file**
  - **Note: A list of the four most recently opened files is displayed under the File menu**
  - **You can open these files by clicking on them**



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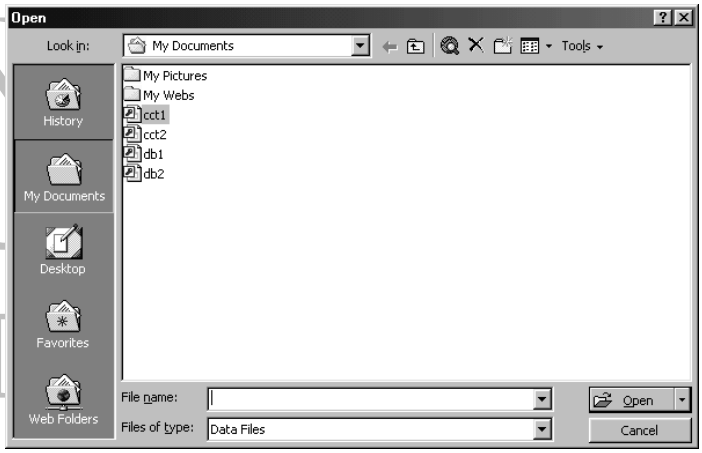
Opening Files - A Review

To open a file

- Either click on the **Open** icon and select the required file from the dialog box displayed

OR from the **File** drop down menu click on the **Open** command

OR press **Ctrl+O** and the **Open** dialog box is displayed.

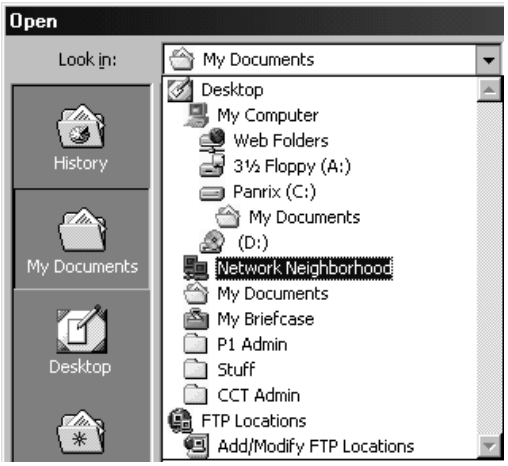


- Use the **Look in** drop down box to select the drive or folder that contains the file you wish to open.
- To open the file you require either double click on the name of it in the list box, or use the **Up** and **Down** arrow keys to highlight the name of the file and press **Enter**.

Icons across the top and down the left of this dialog box to help you in selecting the required file.

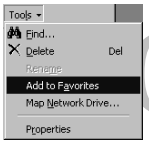
Icon	Function

Click on the **Down** arrow to display folders (directories) and drives.



Click here to move up one level through your folder (directory) tree.

Click here to look at your favorite documents.

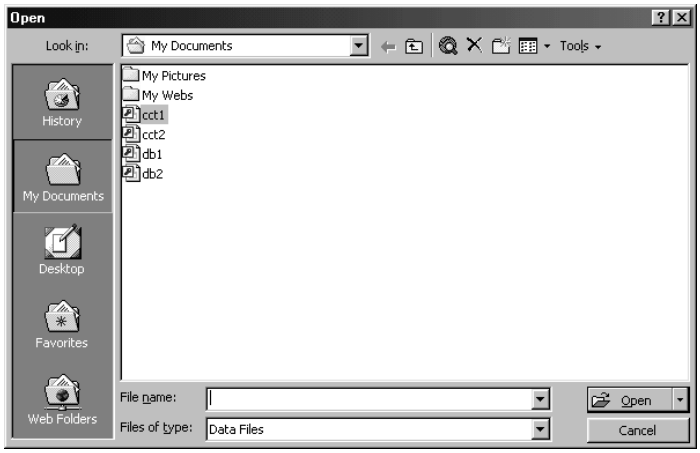


Click here to add the current document to your favorites list.

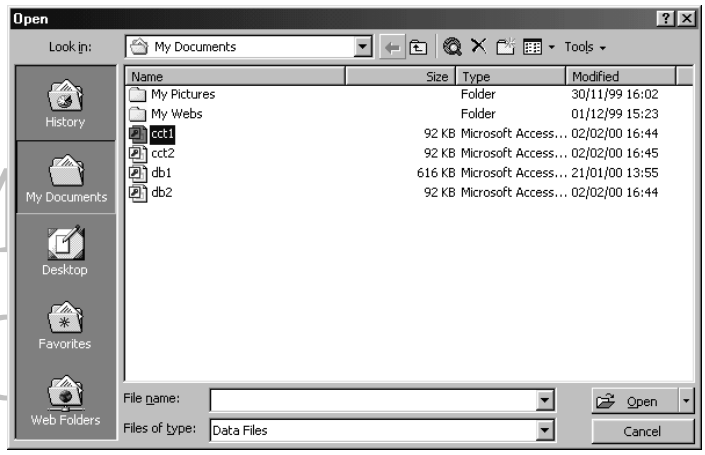
NOTE: This allows you to add files of folders to a special folder called Favorites. The advantage of this is that you can simply look within the Favorites folder to see all the documents that you use most often (assuming that you have added them to your favorites list). All items added to the Favorites List are in fact added as Windows shortcuts, which link to the actual document and can be held anywhere on your disk. I.e. adding to the Favorites DOES NOT produce a copy of the original file, only a Windows shortcut!

Icon	Function

Click here to list files, in the form illustrated below. Folders and files are listed without any further details.

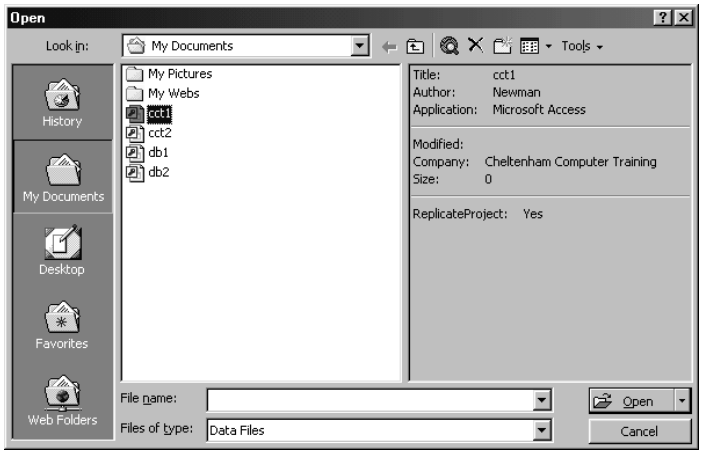


Click here to display file details, including file size, type and date of the last file modification.



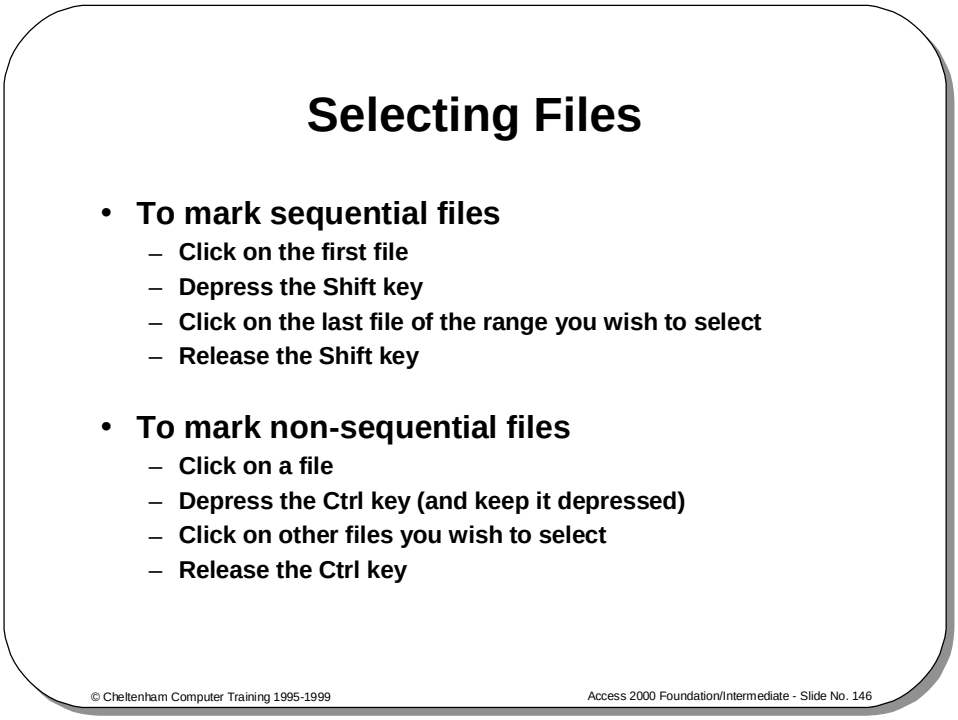
Icon	Function

Click here to display file properties, as in the form illustrated below.



Click here to preview the contents of the selected file. This displays the contents of the document, formatted as it would appear if you opened the document. Note that this operation may take a long time if you are previewing a long document.

Click here to display the **Tools** pop-up menu.



Selecting Files

The method for selecting files outlined in the accompanying slide illustrates general methods of selecting not just files, but objects in general.

For instance, you will find that similar techniques allow you to highlight more than one cell within Excel, or more than one graphical object within PowerPoint. The trouble is that the key sequences are not always identical thus, to select more than one graphical object within PowerPoint, you would first select an object, then with the Shift key depressed, select further objects. When you release the Shift key you will notice that all the required objects remain selected.

To cycle between multiple open documents

- Press **Ctrl**+**F6**

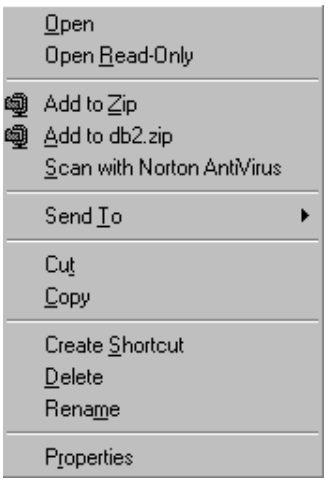
  OR click on the **Window** drop down menu and click on the required file from the list displayed.

To display the Open pop-up menu

- Display the **Open** dialog box and if necessary change to the folder containing the files that you wish to open.
- Select the file(s) that you wish to open.

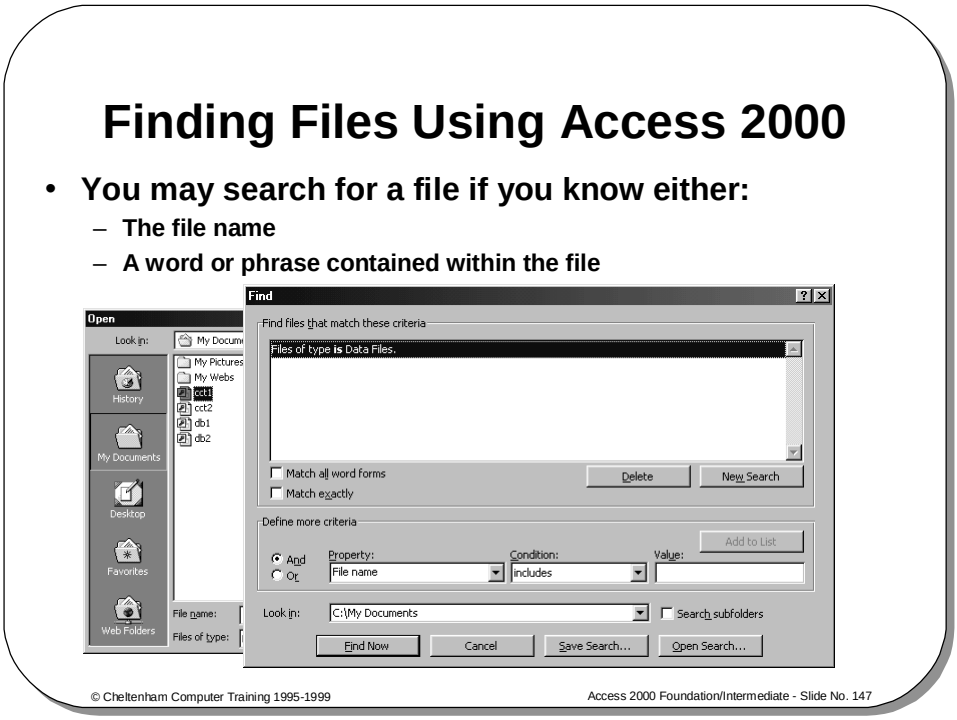
  To select files that are not in sequential order hold down the **Ctrl** key and click on the files that you wish to select. Then release the **Ctrl** key.

- Click once using the right mouse button to display the open pop-up menu.



To open a file as read-only

- Display the **Open** dialog box and select the file that you wish to rename or delete.
- Right click to display the open pop-up menu.
- Select the **Open Read-Only** command.



Finding Files Using Access 2000

Background

In Access 2000, this function has been integrated into the Open dialog box. If you remember the name of a file, but cannot remember in which folder you saved the file, then Access 2000 can locate the file for you. Alternatively you may not even remember the name of the file, but do remember a particular word or phrase contained within the file. Again Access 2000 can locate the file for you!

To find a file if you know the file name

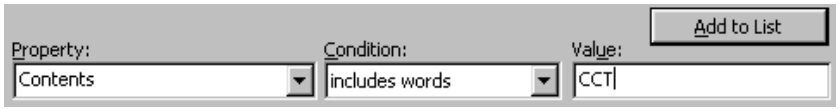
- Click on the **File** drop down menu, and select the **Open** command, which displays the **Open** dialog box.
- If you wish to search an entire disk, click on the **Up One Level** icon (and repeat this operation if necessary) until you see the top level folder displayed.
- In the **File name** field, enter the name of the file you are searching for.
- Click on the **Tools** icon and select the **Find** command from the menu.
- Ensure that the **Search subfolders** check box is ticked.

- Click on the **Find Now** button. The system will now search though the entire hard disk and locate any file with the specified file name. **NOTE**: This may take some time!
- To open the file, select it (if necessary) and click on the **Open** button.

To find a file that contains a particular word or phrase

In some cases you may not remember the name of the file you are searching for, but can remember a uniquely identifying word or phrase contained within the file. We can use the Find dialog box to help us locate the file!

- Click on the **File** drop down menu, and select the **Open** command, which displays the **Open** dialog box.
- Click on the **Tools** icon and select the **Find** command from the menu.
- From the **Property** down down list, select **Contents**.
- In the **Value** text box enter the word or phrase you wish to search for.

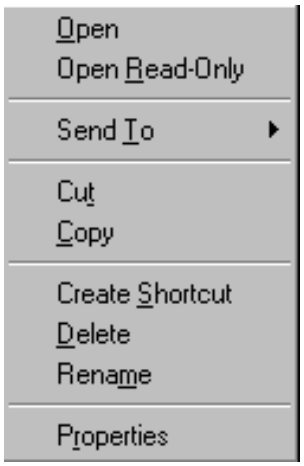


- Click on the **Add to List** button.
- Click on the **Find Now** button. The system will now search though the hard disk and locate any file containing the specified text.

NOTE: If you wish to search the entire disk as opposed to the currently selected folder remember to first move to the top level folder on the disk, and also remember to ensure that the **Search subfolders** check box is ticked in the **Find** dialog box.

Copying, Deleting, Renaming Files and Creating Shortcuts

- **Display the Open dialog box**
- **Select a file and right click using the mouse**
- **Select the required command from the pop-up displayed**



Copying, Deleting, Renaming Files and Creating Shortcuts

To display the Open pop-up menu

- Display the **Open** dialog box, by clicking on the **Open** command located under the **File** drop down menu.
- Click once on the files you wish to manipulate. This will select the file.
- Right click using the mouse button.

To delete a file

- Select the required file in the **Open** dialog box.
- Press the **Delete** key.

OR right click on the file and select **Delete** from the pop-up menu.

To rename a file

- Select the required file in the **Open** dialog box.
- Right click on the file and select **Rename** from the pop-up menu.

To create a shortcut

- Select the required file in the **Open** dialog box.
- Right click on the file and select **Create Shortcut** from the pop-up menu

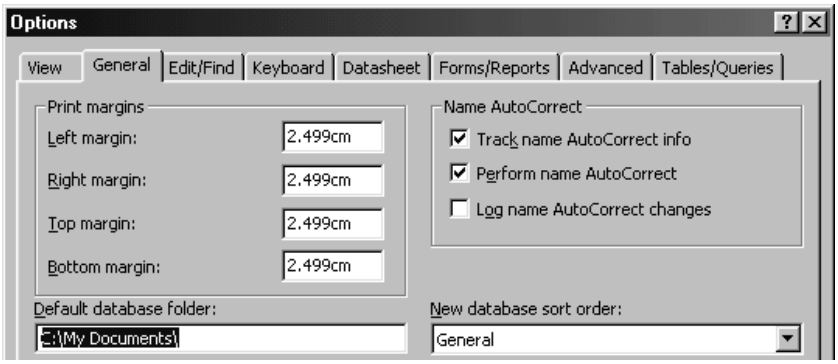
To copy a file

- Select the required file in the **Open** dialog box.
- Right click on the file and select the **Copy** command from the pop-up menu.
- Open the folder wish to copy the file into.
- Right click and select **Paste** from the pop-up menu.

NOTE: You can copy the file to the same folder as the original, Access will give the copy a different file name.

Setting a Default Folder (Directory)

- **By default normally points to My Documents**
- **May be customized as you wish**

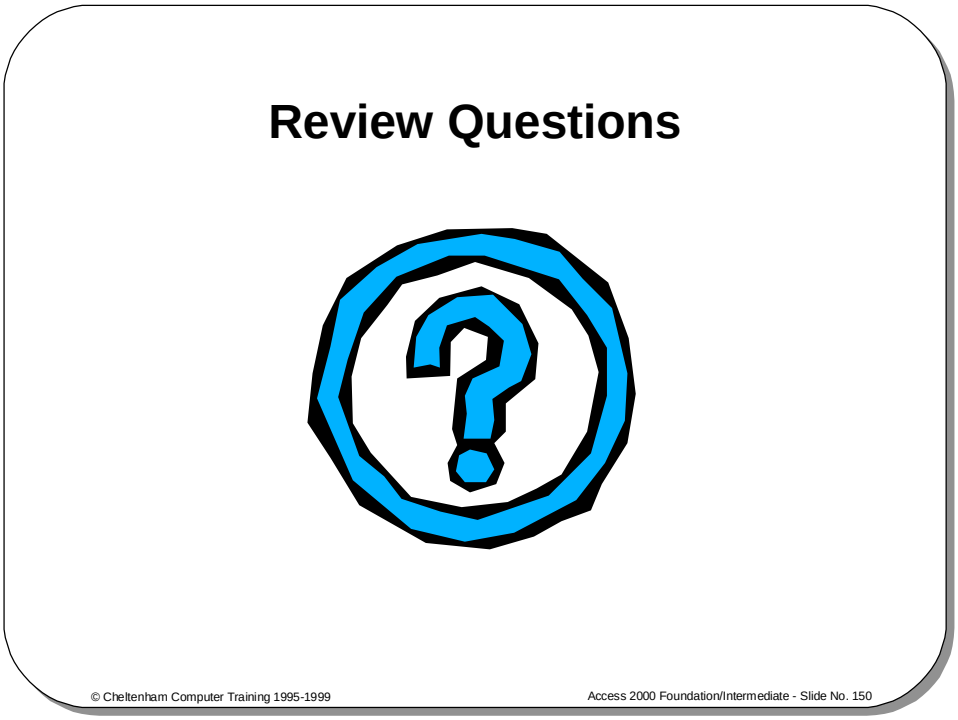


Setting a Default Folder (Directory)

To set the default Access directory

- Click on the **Tools** drop down menu and select the **Options** command, which will display the **Options** dialog box.
- Click on the **General** tab.
- Enter the default folder that you require in the **Default database folder** section of the dialog box.
- Click on the **OK** button.

From now on, by default whenever you open or save a file, the default directory will be as you have just defined. This is extremely useful as you can save all your Access files in one folder, your Word files in another folder and so on. This is useful for file maintenance, finding files and also is useful when it comes to backing up files.



Review Questions. How Would You …

1. Display the File Property Information?
2. Open more than one file simultaneously?
3. Cycle between multiple open documents?
4. Display the Open pop-up menu?
5. Open a file as read-only?
6. Find a file if you know the file name?
7. Find a file that contains a particular word or phrase?
8. Delete a file?
9. Rename a file?
10. Create a shortcut?
11. Copy a file?
12. Set the default folder?