Microsoft Access 2003

Manual - Intermediate Level

CHELTENHAM COURSEWARE

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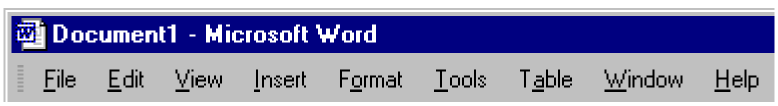
Course Basics

Toolbars

The Title Bar

- The title bar is displayed along the top of almost all program, folder and dialog box windows. It is used to display information such as the name of the application (or folder) and the document you are working on. Information which is displayed here may vary. The example shown illustrates the title bar for a program called **Microsoft Word**, in which a document called **Document1** has been opened or saved:

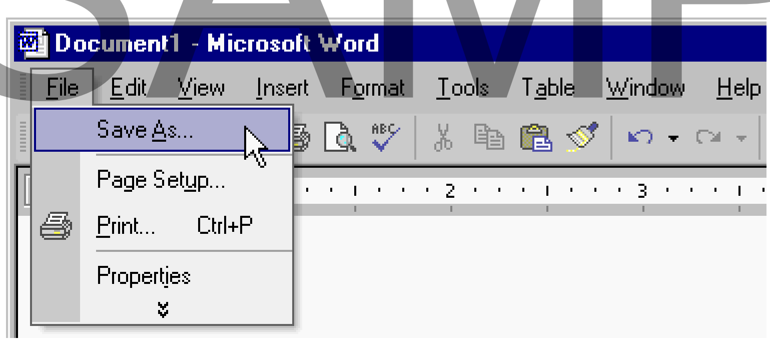


The Menu Bar

- The menu bar is located under the title bar, and contains a series of drop down menus. The example shown illustrates the Microsoft Word Menu Bar:

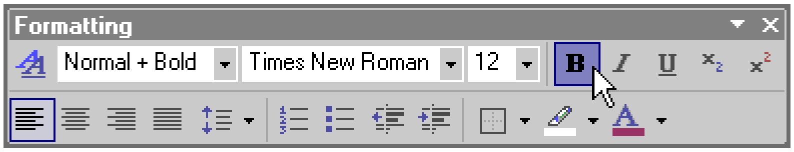
To execute Menu commands

- In most cases, you are asked to use the mouse to execute a series of menu commands (e.g., **File > Save As**). What this means is that you select **File** from the main menu, followed by **Save As**:



The Tool Bar

- The tool bar contains a series of icons, which allow you to achieve a desired effect as quickly as possible. In the example shown, taken from the Microsoft Word Formatting toolbar, to make the selected text bold, you would click on the **Bold** icon:



The Status Bar

- Most application windows have a status bar displayed along the bottom of the window. In the example illustrated, taken from Microsoft Word, the status bar conveys information about the page within the document which you are working on, along with other relevant information:

The Scroll Bar

- When a program or folder needs to display information within a window, two sets of scroll bars may be displayed along the bottom and right side of the window. By using the scroll bars it is possible to move to any position within a document and also work on a document many times bigger than your physical screen size.

To move up and down within a window (using the scroll bar)

- To scroll upwards in a window, click on the upwards-pointing arrow at the top of the vertical scroll bar:
- To move downwards in a window, click on the downwards-pointing arrow at the bottom of the vertical scroll bar:

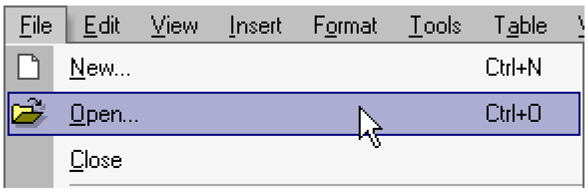
To move right to left within a window

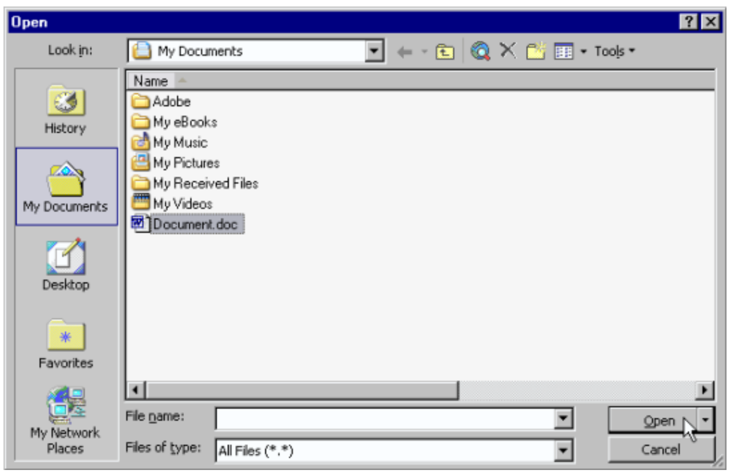
- To move to the right-hand side of a window, click on the right-hand arrow on the horizontal scroll bar:
- To move to the left-hand side of a window, click on the left-hand arrow on the horizontal scroll bar:

File Management

Opening Files

- From the main menu, select **File > Open** command or click on the **Open** icon and select the required file from the dialog box displayed:



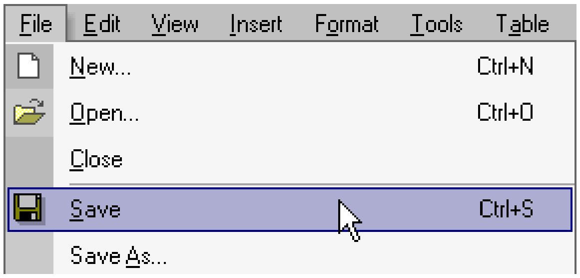


- Use the **Look in** drop-down menu to select the drive or folder which contains the file you want.
- To open the file you require either double-click on the file name or select the file name by clicking on it, and then click on the **Open** button.

Saving Files

To save a new document

- From the main menu, select **File > Save** command or click on the **Save** icon and from the dialog box displayed select the required folder. Enter a file name and then click on the **Save** button:



- After you have saved the file for the first time, clicking on the Save icon will automatically save your document with the filename you gave it. It does not give you the option to rename.

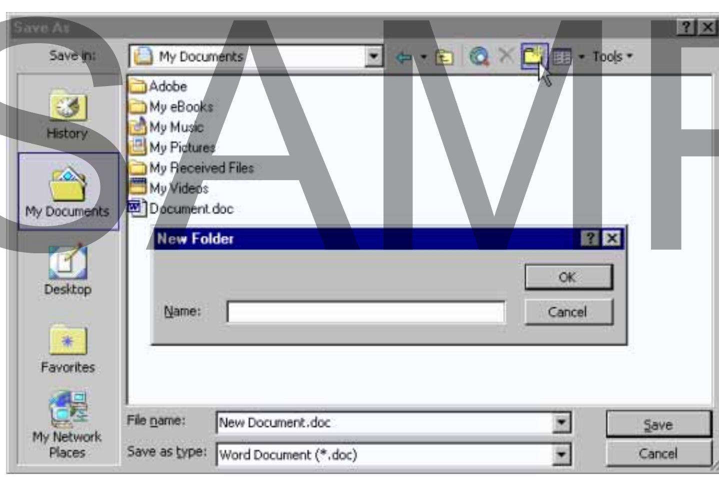
To save a document under another name and/or location

- The **Save As** command can be used to save a file under a different name, to save a file in a different word processor format, or to save a file to a different drive and/or folder. From the main menu, choose **File > Save As** command.

  Note: The **File > Save As** command will rename the document on the screen so that you can keep the earlier version, as well as saving any changes you have made.

To create a new folder in which to save your document

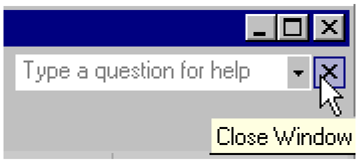
- Click on the **Create New Folder** icon, displayed within the Save As dialog box.
- This will display the New Folder dialog box. Enter the name of the new folder, and then click on the **OK** button:



Note: The folder will be created under the current folder.

Closing Files

- Click on the **Close Window** icon displayed at the top-right of the document window. Be sure to click on the **Close Window** icon, (as opposed to the **Close** icon):



Installing the Sample Files

- Use Windows Explorer to create a folder called **Access 2003 Intermediate Samples**, in the **My Documents** folder.
- If you are installing the sample files from the CD-ROM, place the CD-ROM in the CD drive and copy the files from the **access_2003_intermediate_usa\exercise_files** to the **My Documents\ Access 2003 Intermediate Samples** folder.
- If these files have been copied to your network server, then ask your trainer/supervisor for more information about how to copy these files to your PC's hard disk.

- **Notes for tutors:**
The above instructions are for Windows that has not been set-up for a multi-user environment (with individual profiles). The instructions above may require modification within a Windows mutliuser environment. Where possible pre-install the relevant work files prior to use by students/delegates.

Using the Northwind Database

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

- Install Northwind
- Check for Northwind
- Convert Northwind to the 2002-2003 File Format

Installing the Northwind Database

About Northwind

- **Northwind** is a sample database that ships with Access 2003. It contains product and sales data for the fictitious company **Northwind Traders**.
- **It is recommended that Northwind be installed to follow the lessons in this manual**.

Checking for Northwind

- Click the **File Search** button on the **database** toolbar:

- In the **Search text** box of the **Basic File Search** task pane, type **Northwind**. In the **Search in** area of the task pane, choose **Everywhere** from the drop down menu.
- Click **Go**.
- If **Northwind.mdb** appears in the **Search Results**, double-click on the file to open it and proceed to the next chapter.
- If **Northwind** is not found in the **Search Results** it will need to be installed.

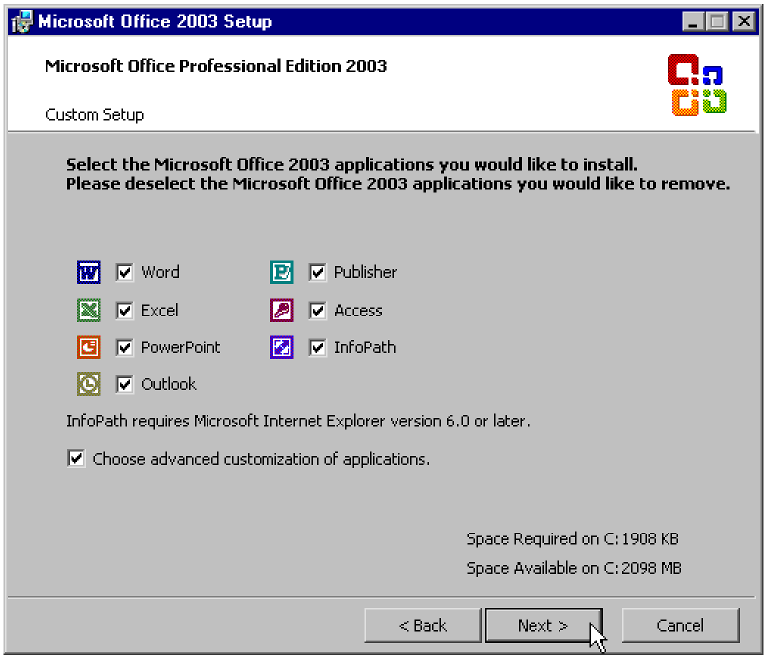
Installing Northwind

- Insert the Microsoft Office 2003 CD-ROM in the CD-ROM drive.
- Double-click **Setup**.

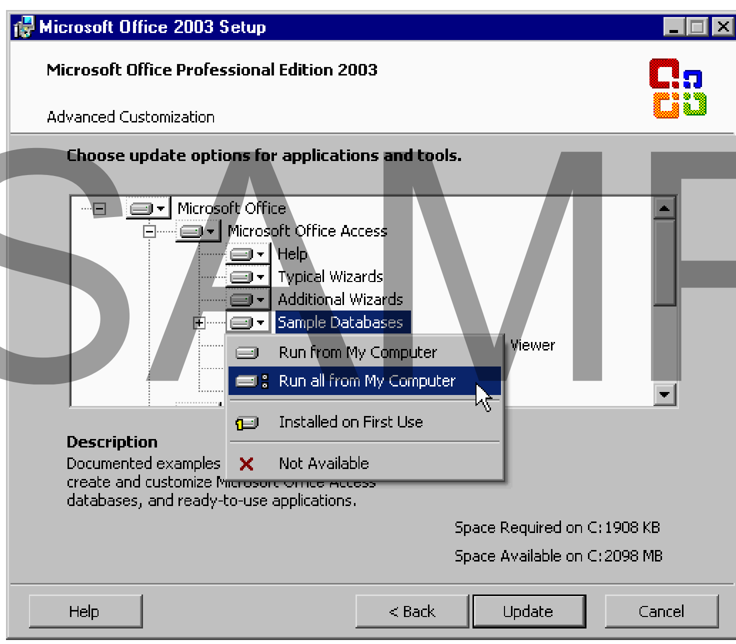
  Note: If your computer has autorun enabled, you will be presented directly with the Microsoft Office 2003 setup screen.

- Select **Add or Remove Features**.

- Click **Next**.
- Make sure that the **Access** box is checked, and that the **Choose advanced customization of applications** checkbox is also selected. Click **Next**:



- Under **Choose update options for applications and tools**, select the **Microsoft Office Access** subtree.
- Under **Sample Databases**, select **Run all from My Computer**:



- Click **Update**.
- Once the installer completes, click **OK** to finish.

  Note: Once the **Northwind** database is installed, search for it again and open it.

Converting Northwind to the 2002-2003 File Format

- You may notice that the Northwind database supplied with Access 2003 utilizes the older Access 2000 file format. If you wish, you can convert Northwind into an Access 2002-2003 database. Please note that all pictures and examples in this training manual will display the Access 2002-2003 file format.

  Note: If you convert Northwind into the 2002-2003 file format, you will no longer be able to open the file with any versions of Access older than Access 2002. If this poses a problem, do not convert the database into the new file format.

To convert Northwind into the Access 2002-2003 file format

- Open the Northwind database.
- From the main menu, select **Tools > Database Utilities > Convert Database > To Access 2002-2003 File Format**.
- In the **Convert Database Into** dialog box, select a folder where you want to save the converted database. Type in a name (i.e. "Northwind.mdb") into the **File name** box.
- Click **Save**. Access will now convert Northwind into a 2002-2003 database - this process may take some time, so please be patient.
- When the conversion is complete, a warning dialog box will be displayed. Click **Yes.**
- Congratulations - the process is complete. To begin working with the converted Northwind database, simply open it and experiment!

Review Questions

How would you:

- Install Northwind?
- Check for Northwind?
- Convert Northwind to the 2002-2003 File Format?

Designing Tables in Access 2003

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

- Set a Primary Key
- Remove Non-Related Data
- Remove Redundant Data
- Remove Repeating Data
- Set Required Values in Columns
- Use the Relationship Tool
- Identify a Related Table
- Create Join Types
- Enforce Referential Integrity
- Work with Cascading Updates and Deletes
- Create a Single-Field Index
- Create a Multiple-Field Index
- Set the Index Sort Order
- Set Index Properties
- Delete Indexes
- Choose Appropriate Data Types
- Set Column Data Types
- Format Data Types
- Convert Between Data Types

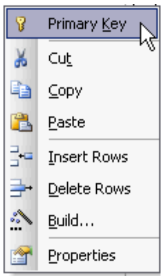
Normalizing Data

Setting a Primary Key

- A **primary key** is a field that uniquely identifies a row in a table and can be based on any alphanumeric value.

To set a primary key

- Open a table in **Design** view.
- Right-click on the field you want to set as the primary key.
- From the pop-up menu, select **Primary Key**:



Note: You must save the table to save the primary key.

Removing Non-related Data

- Part of the **normalization** process is to remove **non-related** values. For example, in the **Employees** table, it would probably be incorrect to include customer data. Such an action would result in the mixing of different areas of subject matter. Customer data should be stored in a separate table.

Removing Redundant Data

- Another part of the **normalization** process is to remove **redundant** values. A **redundant** value is one that appears multiple times in the same table. For example, in the **Suppliers** table, it is undesirable to repeat all supplier data for each product a supplier sells. It is more efficient and manageable to create supplier data once and then relate supplier data to product data in the **Products** table. By doing this, supplier data only needs to be updated once in the **Suppliers** table rather than multiple times in the **Products** table.

Removing Repeating Data

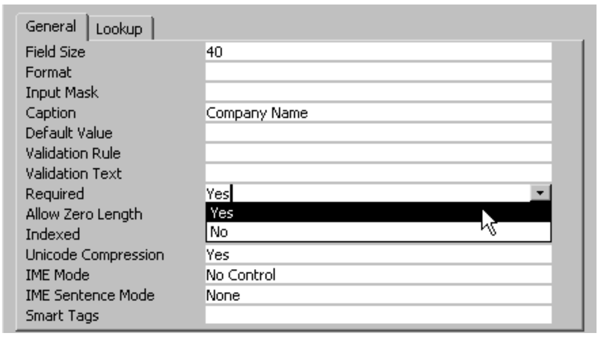
- An additional part of the **normalization** process is to remove **repeating** values. **Repeating** values are similar values that appear across multiple columns of a table. For example, it is undesirable to create a new column for each product sold in the **Orders** table. Instead, it is more efficient and manageable to relate order data by **Order ID** to another table called **Order Details**. Each row in **Order Details** represents a line item on an order.

Setting Required Values in Columns

- Another part of the **normalization** process is to ensure that all fields have values. A well-designed table will not allow **null** values. A **null** value means that a value is unknown. Note that this is different from a blank or zero-length value.

To set required fields

- Open a table in Design view.
- Select the Data Type pane for the desired field.
- Find the General tab in the lower-left portion of the design window.
- In the General tab select the Required field.
- Choose Yes to make the field required:



Note: You must save the table to save the field change.

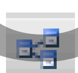
Establishing Relationships

Using the Relationship Tool

- The **Relationship** tool manages joins between related fields in different tables.

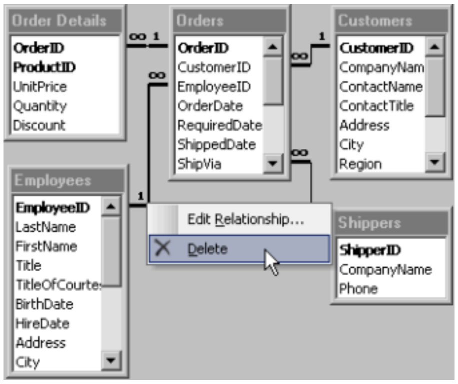
To delete a relationship

- Click the **Relationships** button on the **Database** toolbar:



- Right-click on the **relationship** between two tables.

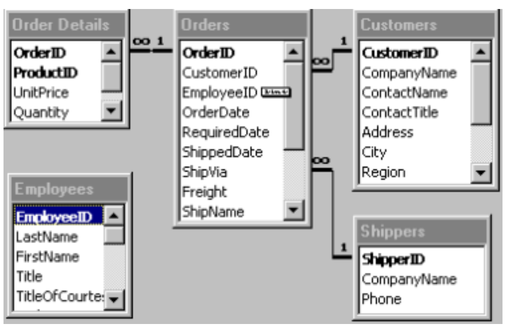
- From the pop-up menu, select **Delete**:



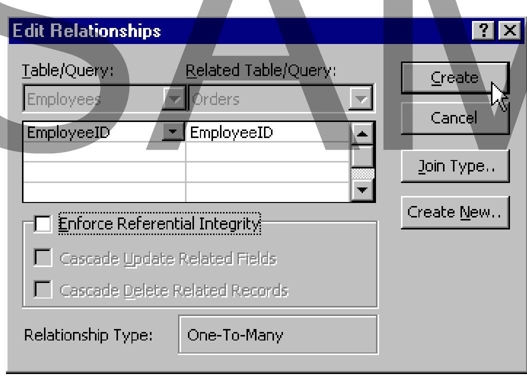
- Click **Yes** when prompted to delete the relationship.

To create a relationship

- Click the **Relationships** button on the **Database** toolbar.
- Drag a field from one table to another table:



- This opens the **Edit Relationships** dialog box.
- Click **Create**:



Identifying a Related Table

- Tables that are related will have fields that are common between them. For example, **Shippers** and **Orders** are related by the **ShipperID** and **ShipVia** fields respectively. It is easier to identify **relationships** if the field names are the same. Related fields should have the same **data type**. For example**,** **EmployeeID** is defined as a **long integer** in both the **Orders** and **Employees** tables.

  Note: Data types are discussed in more detail later in this training manual.

Creating Join Types

- There are three **join types** in Access: **one-to-one**, **one-to-many**, and **many-to-many**.

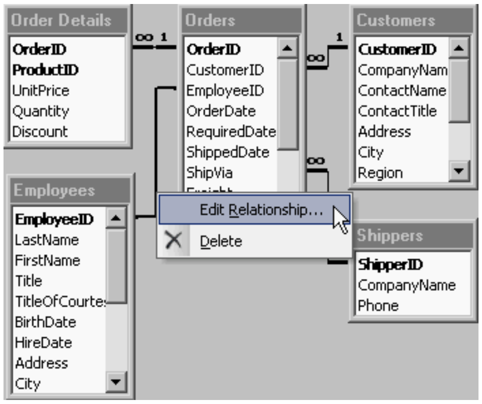
  A **one-to-one** relationship has only one matching row in each related table. **One-to-one** relationships are not common. An example would be a table with many columns divided into multiple tables that relate to one master key value.

  A **one-to-many** relationship has a row in one table that matches many rows in a related table. This is the most common type of relationship. An example is the relationship between the **Customers** and **Orders** table. This relationship is described as one customer having many orders and each order belonging to only one customer.

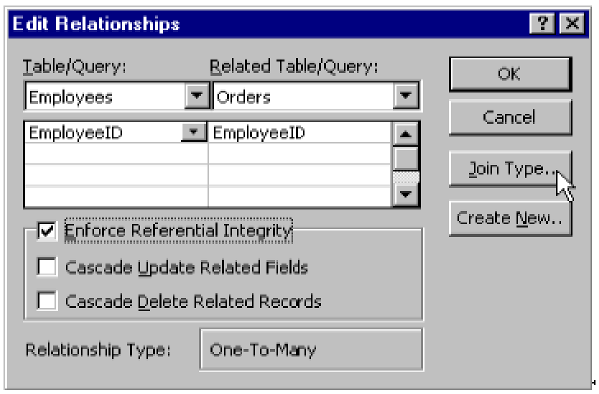
  A **many-to-many** relationship has many rows in one table that match many rows in a related table. This is a special relationship that involves a third table called a **junction** table. An example is the relationship between **Orders** and **Products**. These two tables are joined by a junction table called **Order Details**. This relationship is described as many orders having many products and many products belonging to many orders.

To create a join type

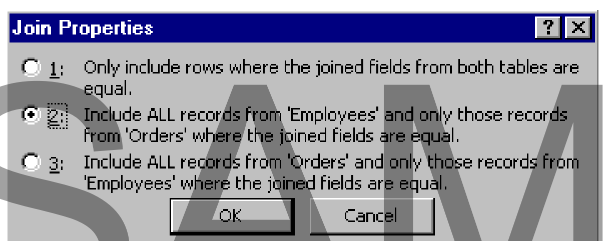
- Right-click on the **relationship** between two tables.
- From the pop-up menu, select **Edit Relationship**:



- This opens the **Edit Relationships** dialog box.
- Click **Join Type**:



- This opens the **Join Properties** dialog box.
- Select the desired relationship type:



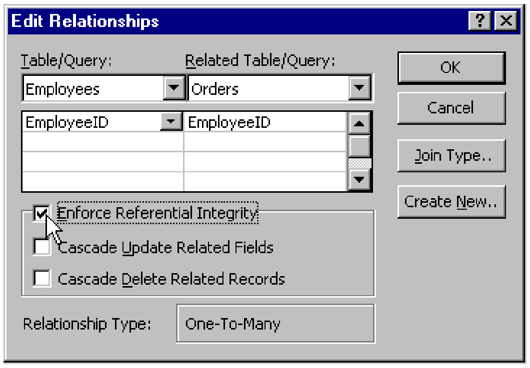
- Click **OK**.

Enforcing Referential Integrity

- **Referential integrity** ensures that related records between tables are valid.

To set referential integrity

- Right-click on the join between two tables.
- From the pop-up menu, select **Edit Relationship**. This opens the **Edit Relationships** dialog box.
- Check the **Enforce Referential Integrity** box:



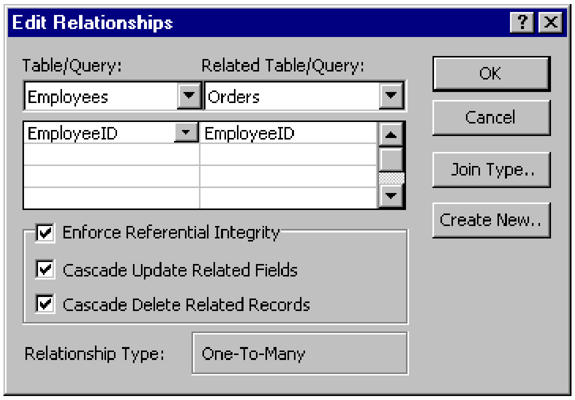
- Click **OK**.

Working with Cascading Updates and Deletes

- **Cascading** allows for updates or deletes of related records without violating **referential integrity**. Use **cascading** when there is a need to propagate **foreign key** data changes. For example, if there is an update of **EmployeeID** in the **Employees** table, then all related records in **Orders** should also be updated with the new **EmployeeID** so that an employee's sales history is not lost. **Cascading** will make this change automatic.

To set cascading options

- Right-click on the join between two tables.
- From the pop-up menu, select **Edit Relationship**. This opens the **Edit Relationships** dialog box.
- Check the **Cascade Update Related Fields** and/or **Cascade Delete Related Fields** box:



- Click **OK**.

Note: The **Enforce Referential Integrity** box must be checked to set **cascading** options.

Working with Indexes

Creating a Single-Field Index

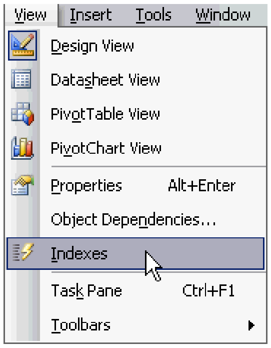
- An **index** is used to improve the performance of data searches. A **single-field index** is defined only on one field. Use a **single-field index** on a field that will participate in a **relationship**. For example, **CategoryID** in the **Products** table is defined as a **single-field index** and is related to the **CategoryID** field in the **Categories** table.

To create a single-field index

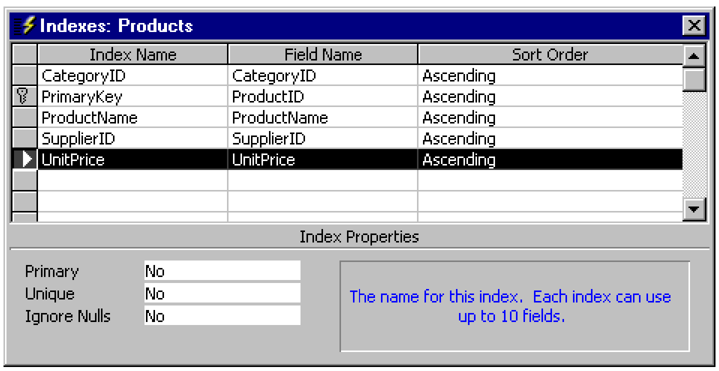
- Open a table in **Design** view.

- Click the **Indexes** button on the **Table Design** toolbar 

OR from the main menu, select **View > Indexes**:



- This opens the **Indexes** design grid.
- Type a name in the **Index Name** column.
- Select a desired field from the drop-down menu in the **Field Name** column:



- Click the **Close** button on the **Indexes** title bar.

  Note: The default **Sort Order** is defined as **Ascending**. Setting the **sort order** is discussed later in this chapter.

Creating a Multiple-Field Index

- A **multiple-field index** is defined on two or more fields. Use a **multiple-field index** on fields that will be used in complex queries.

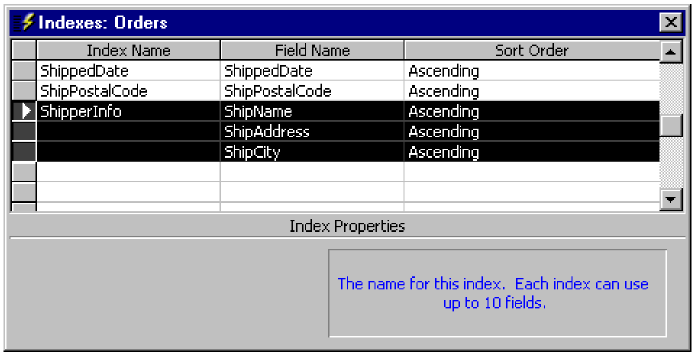
To create a multiple-field index

- Open a table in **Design** view.
- Click the **Indexes** button on the **Table Design** toolbar

  OR from the main menu, select **View > Indexes**.

- This opens the Indexes design grid. Type a name in the **Index Name** column.

- Select multiple fields from the drop-down menu in the **Field Name** column:



- Click the **Close** button on the Indexes title bar.

  Note: Each multiple-field index can use up to 10 fields.

Setting the Index Sort Order

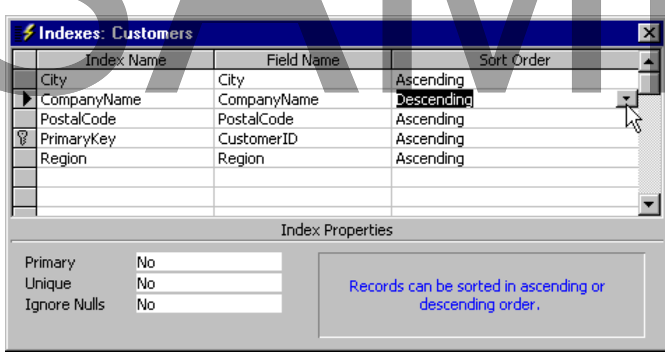
- The **index sort order** improves the performance of queries that use sorting functionality. For example, writing a query that sorts **CompanyName** in descending order from the **Customers** table would benefit from a **descending sort order** index.

To set the index sort order

- Open a table in **Design** view.
- Click the **Indexes** button on the **Table Design** toolbar

  OR from the main menu, select **View > Indexes**.

- This opens the Indexes design grid. Click the drop-down menu in the **Sort Order** column. Select **Descending** to change the sort order:



- Click the Close button on the Indexes title bar.

Setting Index Properties

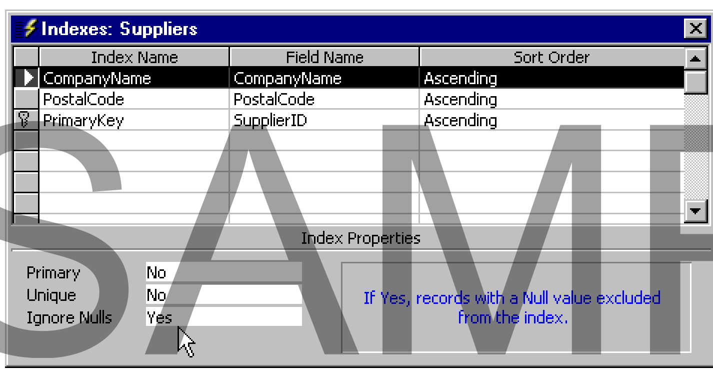
- The behavior of an index can be controlled by setting the **properties** on the index. The available properties are **Primary**, **Unique**, and **Ignore Nulls**. The **Primary** property allows for an additional method of setting the **primary key** for a table. The **Unique** property determines if duplicate values are allowed in the index. The **Ignore Nulls** determines if unknown values are included in the index.

To set index properties

- Open a table in **Design** view.
- Click the **Indexes** button on the **Table Design** toolbar

  OR from the main menu, select **View > Indexes**.

- This opens the **Indexes** design grid.
- Select an index.
- Select a **Primary** property from the drop-down menu in the **Index Properties** section.
- Select a **Unique** property from the drop-down menu in the **Index Properties** section.
- Select an **Ignore Nulls** property from the drop-down menu in the **Index Properties** section:



- Click the **Close** button on the **Indexes** title bar.

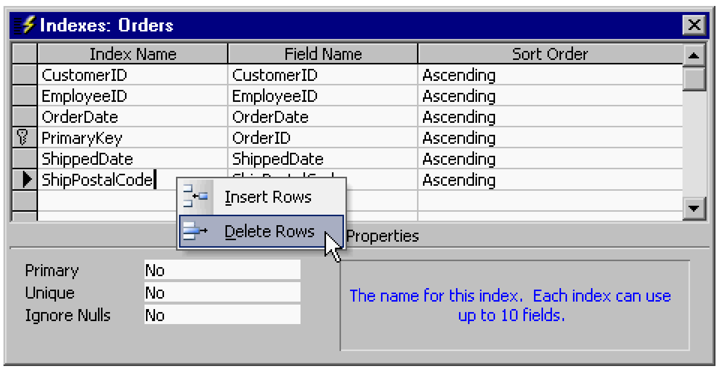
  Note: Changing the **index properties** on an existing index can cause unexpected changes in the index behavior. The **Primary** property cannot be set on another field if the original **primary key** is part of a relationship.

Deleting Indexes

- Open a table in **Design** view.
- Click the **Indexes** button on the **Table Design** toolbar

  OR from the main menu, select **View > Indexes**.

- This opens the **Indexes** design grid.
- Right-click on an **Index Name**.
- From the pop-up menu, select **Delete Rows**:



- Click the **Close** button on the **Indexes** title bar.

Working with Data Types

Choosing Appropriate Data Types

- Determining which **data type** to use for a field is a very important step in designing a table. The available data types are **Text, Memo**, **Number**, **Date/Time**, **Currency**, **AutoNumber**, **Yes/No**, **OLE Object**, and **Hyperlink**. The following are some important considerations when deciding which data types to use:

  Storage requirements: For example, the **Number** data type can use 1, 2, 4, 8, or 16 bytes.

  The domain of the data: This refers to what can be stored in the column. For example, **Text** cannot be stored in a **Number** field.

  Establishing relationships: Generally, it is more efficient to establish relationships between **Number** or **Text** columns.

  Sorting requirements: Sorting **Text** values may return unexpected results and

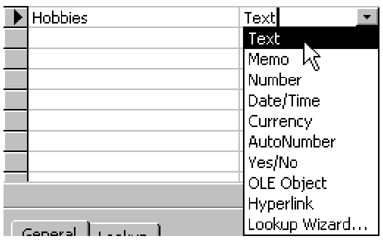
OLE Objects cannot be sorted.

Indexing requirements: Indexing **Memo** fields can create very large indexes and **OLE Objects** cannot be indexed.

Calculation requirements: Certain calculations cannot be performed on fields defined as **Text** or **OLE Objects**.

Setting Column Data Types

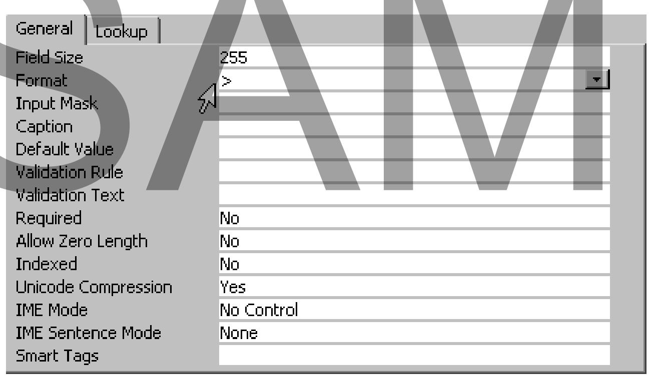
- Open a table in **Design** view.
- Create a new field.
- Select the desired data type from the **Data Type** drop-down menu:



- **Close** the table.

Formatting Data Types

- Open a table in **Design** view.
- Select an existing field.
- Set the desired field size in the **Field Size** text box.
- Add an appropriate formatting symbol in the **Format** text box:



- **Close** the table.

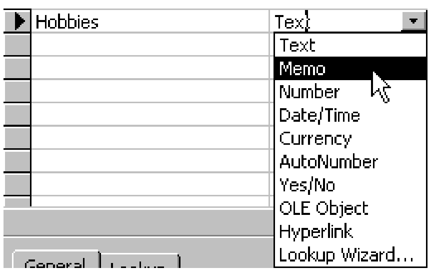
Converting Between Data Types

- Sometimes it may be necessary to change the data type for a column. For example, it may be necessary to change from a **Text** field, which has a maximum length of 255 characters, to a **Memo** field which has a maximum length of 65,536 characters.

  Note: Changing between data types can result in a **loss of data**. This can happen when converting from a larger data type to a smaller data type, or when converting between incompatible data types (such as changing from **Text** to **Number**).

To change a field to a different data type

- Open a table in **Design** view.
- Select an existing field.
- Select the desired data type from the **Data Type** drop-down menu:



- **Close** the table.

Review Questions

How would you:

- Set a Primary Key?
- Remove Non-Related Data?
- Remove Redundant Data?
- Remove Repeating Data?
- Set Required Values in Columns?
- Use the Relationship Tool?
- Identify a Related Table?
- Create Join Types?
- Enforce Referential Integrity?
- Work with Cascading Updates and Deletes?
- Create a Single-Field Index?
- Create a Multiple-Field Index?

- Set the Index Sort Order?
- Set Index Properties?
- Delete Indexes?
- Choose Appropriate Data Types?
- Set Column Data Types?
- Format Data Types?
- Convert Between Data Types?

Designing Queries in Access 2003

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

- Create update queries
- Create delete queries
- Create append queries
- Create make-table queries
- Create a one-parameter query
- Create a two-parameter query
- Use wildcards as parameters
- Create calculated fields
- Use common functions in calculated fields
- Create a two-table join
- Add fields from different tables to the query grid
- Remove tables from the query builder

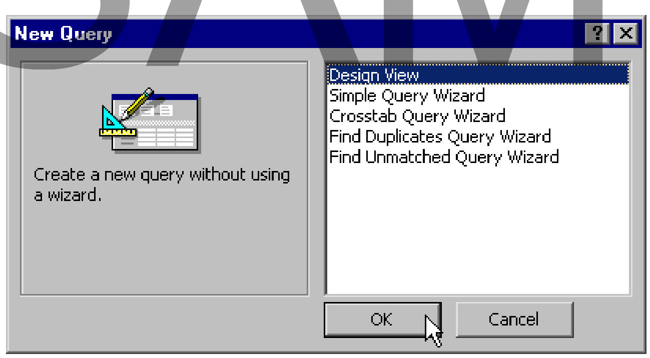
Creating Action Queries

Creating Update Queries

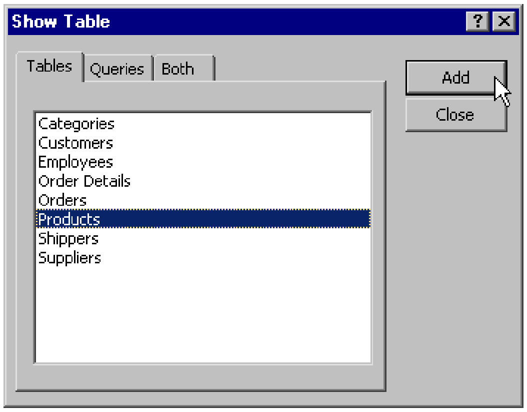
- An **Update Query** makes changes to a group of records. Updates can be made in one or more tables.

To create an Update Query

- Click **Queries** in the **Objects** pane.
- Click the **New** button to open the **New Query** dialog box.
- Select **Design View**.
- Click **OK**:

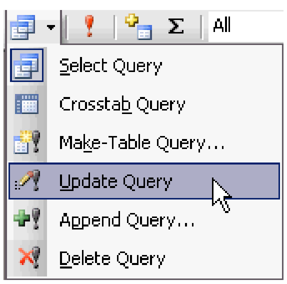


- Select a table from the **Tables** tab in the **Show Table** dialog box. Click **Add**:

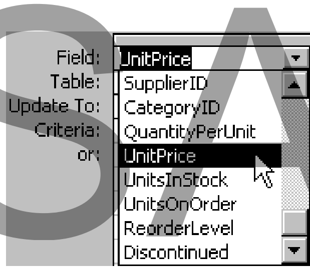


- Click **Close**. A representation of the table appears in the query grid.
- Click on the **Query Type** button on the **Query Design** toolbar:

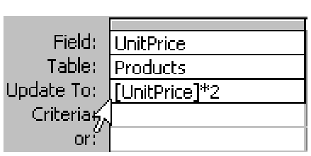
- Select **Update Query** to change from a **Select Query** to an **Update Query**:



- Select a field from the **Field** drop-down menu:



- Select the **Update To** section of the query grid and type a value:



- Click the **Run** button on the **Query Design** toolbar to execute the update:

- Click **Yes** to apply the changes.

  Note: There is no **undo** feature for the update action. The change is permanent.

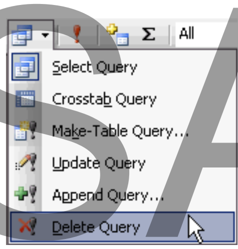
- **Close** the query design window.

Creating Delete Queries

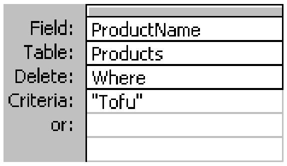
- A **Delete Query** deletes groups of records. Deletes can be made in one or more tables.

To create a Delete Query

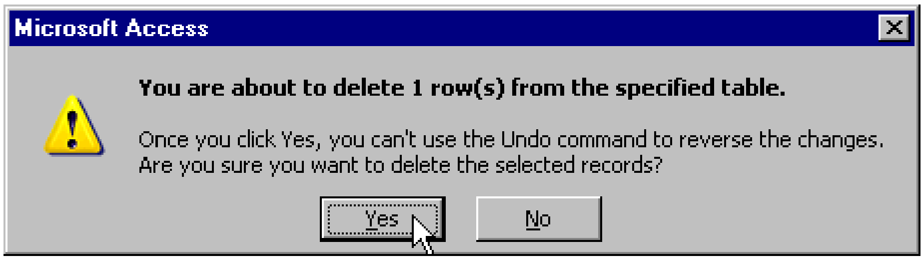
- Click Queries in the Objects pane.
- Click the New button. This opens the New Query dialog box.
- Select Design View.
- Click OK.
- Select a table from the Tables tab in the Show Table dialog box.
- Click Add.
- Click Close. A representation of the table appears in the query grid.
- Click the Query Type button on the Query Design toolbar.
- Select Delete Query to change from a Select Query to a Delete Query:



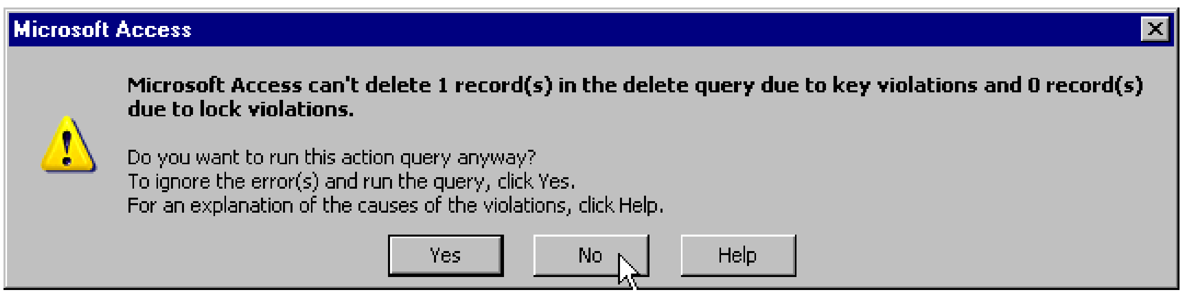
- Select a field from the **Field** drop-down menu.
- Select the **Criteria** section of the query grid and type a value: **Note:** This delete query uses a **where** filter to limit which rows are deleted.



- Click the **Run** button on the **Query Design** toolbar to execute the delete.
- Click **Yes** to apply the changes:



Note: An error will occur if a relationship has been previously defined for this field. Click **No** to cancel or **Yes** to ignore the error and continue:



- **Close** the query design window.

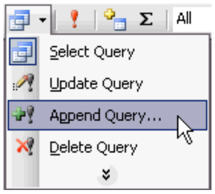
Creating Append Queries

- An **Append Query** adds groups of records to the end of a table. Records can be added from one or more tables.

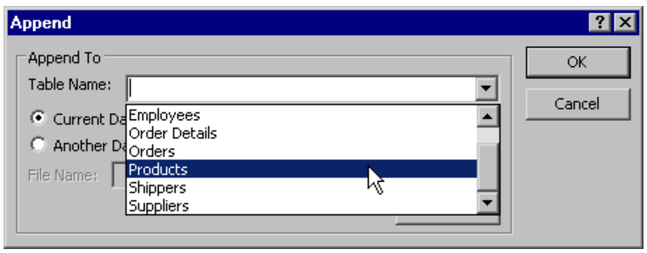
To create an Append Query

- Click **Queries** in the **Objects** pane.
- Click the **New** button. This opens the **New Query** dialog box.
- Select **Design View**.
- Click **OK**.
- Select a table from the **Tables** tab in the **Show Table** dialog box.
- Click **Add**.
- Click **Close**. A representation of the table appears in the query grid.

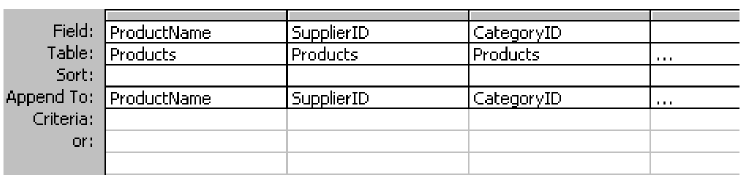
- Click the **Query Type** button on the **Query Design** toolbar.
- Select **Append Query** to change from a **Select Query** to an **Append Query**:



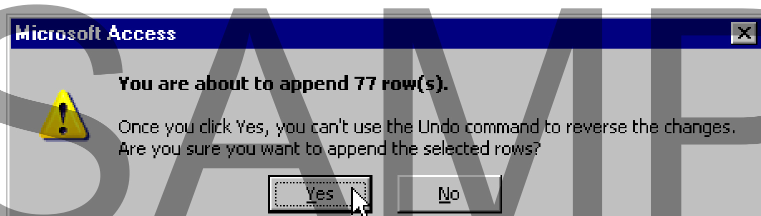
- This opens the **Append** dialog box.
- Select a table from the **Table Name** drop-down menu:



- Click **OK**.
- Select the desired fields to append:



- Click the **Run** button on the **Query Design** toolbar to execute the update.
- Click **Yes** to append the rows:



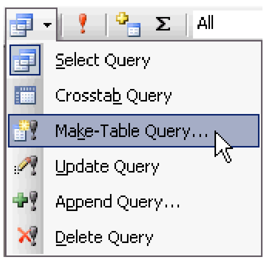
- **Close** the query design window.

Creating Make-Table Queries

- A **Make-Table Query** creates a new table from data in another table. Records can be added from one or more tables.

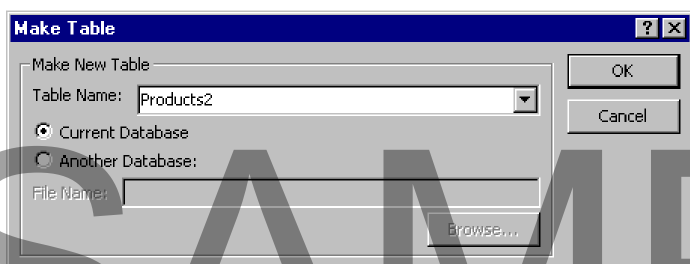
To create a Make-Table Query

- Click **Queries** in the **Objects** pane.
- Click the **New** button. This opens the **New Query** dialog box.
- Select **Design View**.
- Click **OK**.
- Select a table from the **Tables** tab in the **Show Table** dialog box.
- Click **Add**.
- Click **Close**. A representation of the table appears in the query grid.
- Click the **Query Type** button on the **Query Design** toolbar.
- Select **Make-Table Query** to change from a **Select Query** to a **Make-Table Query**:

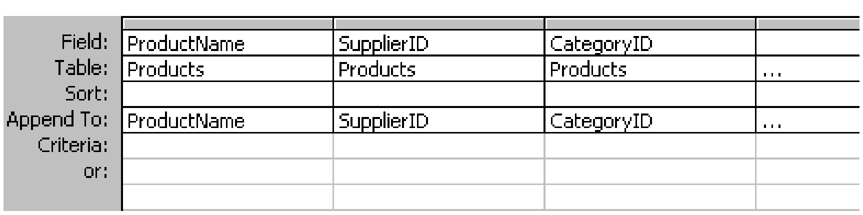


- This opens the **Make Table** dialog box.
- Select a table from the **Table Name** drop-down menu

  OR type a new table name:



- Click **OK**.
- Select the desired fields:



- Click the **Run** button on the **Query Design** toolbar to execute the update.

- Click **Yes** to paste the rows into the table:

Note: There will now be a new table in the **Tables** section.

- **Close** the query design window.

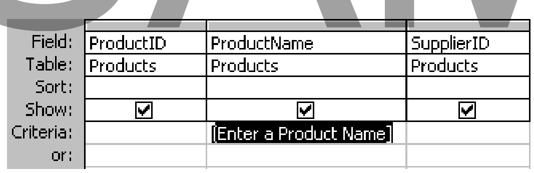
Creating Parameter Queries

Creating a One-Parameter Query

- A **parameter query** is a special query that prompts a user for input. This is useful for creating generic queries where users can specify custom select criteria.

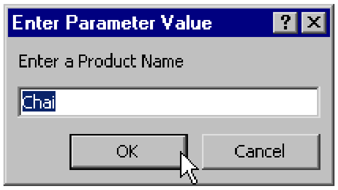
To create a one-parameter query

- Click **Queries** in the **Objects** pane.
- Click the **New** button. This opens the **New Query** dialog box.
- Select **Design View**.
- Click **OK**.
- Select a table from the **Tables** tab in the **Show Table** dialog box.
- Click **Add**.
- Click **Close**. A representation of the table appears in the query grid.
- Select a field from the **Field** drop-down menu.
- Add a prompt in the **Criteria** text box:



- Click the **Run** button on the **Query Design** toolbar to execute the query. This opens the **Enter Parameter Value** dialog box.
- Input a value.

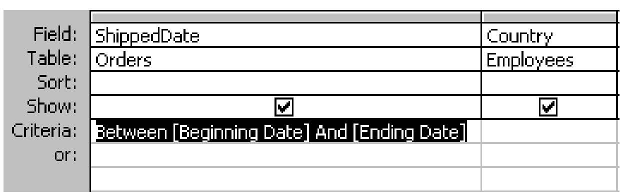
- Click **OK**:



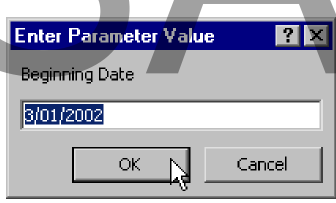
- The results of the query are displayed.
- **Close** the query results window.

Creating a Two-Parameter Query

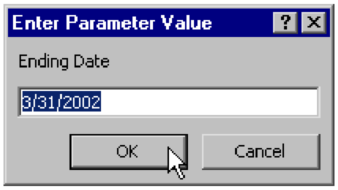
- Click **Queries** in the **Objects** pane.
- Click the **New** button. This opens the **New Query** dialog box.
- Select **Design View**.
- Click **OK**.
- Select a table from the **Tables** tab in the **Show Table** dialog box.
- Click **Add**.
- Click **Close**. A representation of the table appears in the query grid.
- Select a field from the **Field** drop-down menu.
- Add two prompts in the **Criteria** text box:



- Click the **Run** button on the **Query Design** toolbar to execute the query. This opens the first **Enter Parameter Value** dialog box.
- Input a value.
- Click **OK**:



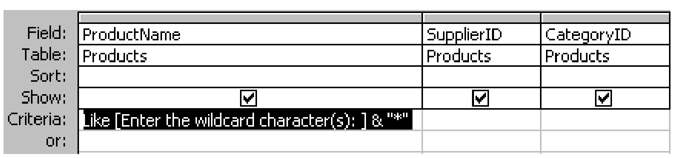
- This opens the second **Enter Parameter Value** dialog box.
- Input a value.
- Click **OK**:



- The results of the query are displayed.
- **Close** the query results window.

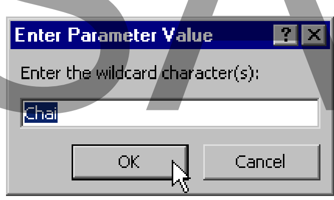
Using Wildcards as Parameters

- Click **Queries** in the **Objects** pane.
- Click the **New** button. This opens the **New Query** dialog box.
- Select **Design View**.
- Click **OK**.
- Select a table from the **Tables** tab in the **Show Table** dialog box.
- Click **Add**.
- Click **Close**. A representation of the table appears in the query grid.
- Select a field from the **Field** drop-down menu.
- Add a wildcard prompt in the **Criteria** text box:



Note: The **Like** operator is used for pattern searches.

- Click the **Run** button on the **Query Design** toolbar to execute the query. This opens **Enter Parameter Value** dialog box.
- Input a value.
- Click **OK**:



- The results of the query are displayed.
- **Close** the query results window.

Creating Calculated Columns in Queries

Creating Calculated Fields

- Click **Queries** in the **Objects** pane.
- Click the **New** button. This opens the **New Query** dialog box.
- Select **Design View**.
- Click **OK**.
- Select a table from the **Tables** tab in the **Show Table** dialog box.
- Click **Add**.
- Click **Close**. A representation of the table appears in the query grid.
- Select a field from the **Field** drop-down menu.
- Enter an **expression** for the **calculated field**:

Field:	ProductName	UnitPrice	[UnitPrice]*1.5
Table:	Products	Products	
Sort:			
Show:	☑	☑	☑
Criteria:			
or:			

- Click the **Run** button on the **Query Design** toolbar to execute the query.
- The results of the query are displayed.
- **Close** the query results window.

Using Common Functions in Calculated Fields

- There are a large number of functions that can be used in **calculated fields**. **Functions** in Access can be divided into groups. Common groups are **Date/Time**, **Financial**, **Math**, and **Text** functions. Some common functions within each group include:

  Date/Time: Date, DatePart, Day, Hour, Minute.

  Financial: FV, PV, IRR, Pmt.

  Math: Exp, Rnd, Sqr.

  Text: LTrim, RTrim, Replace, Len.

  Functions will only work correctly when supplied with the correct number of arguments. A tool included within Access, called the **Expression Builder**, simplifies using functions in **calculated fields**. The **Expression Builder** is discussed later in this training manual.

Joining Tables

Creating a Two-Table Join

- A two-table join links related fields between two different tables.

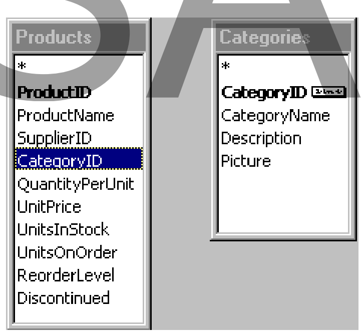
To create a two-table join

- Click **Queries** in the **Objects** pane.
- Click the **New** button. This opens the **New Query** dialog box.
- Select **Design View**.
- Click **OK**.
- Select a table from the **Tables** tab in the **Show Table** dialog box.
- Click **Add**.
- Click **Close**. A representation of the table appears in the query grid.

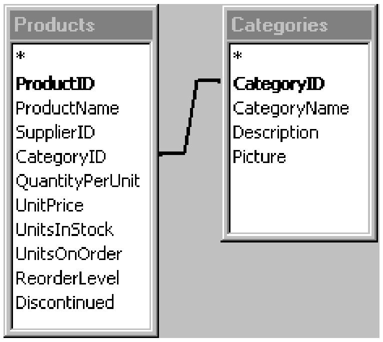
To add another table to the query grid

- Click the **Show Table** button on the **Query Design** toolbar. This opens the **Show Table** dialog box.

- Select the desired table. Click **Add**. Create a join between the tables by dragging and dropping a field from the first table to the related field in the second table:



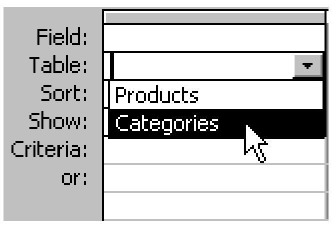
- The final result will be a join link between the two tables:



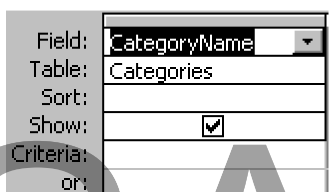
Adding Fields from Different Tables to the Query Grid

- Select the desired field from the **Field** drop-down menu

  OR select the desired table from the **Table** drop-down menu:



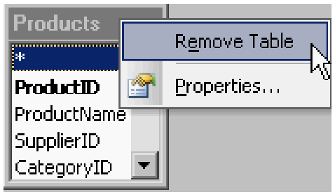
- Select the desired field from the **Field** drop-down menu:



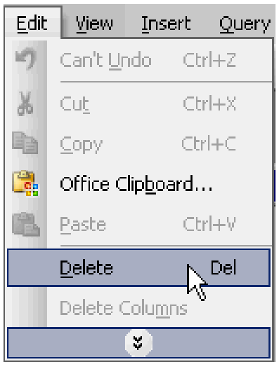
- Click the **Run** button on the **Query Design** toolbar to execute the query.
- The results of the query are displayed.
- **Close** the query results window.

Removing Tables from the Query Builder

- Right-click on the table you want to remove in the query grid.
- From the pop-up menu, select **Remove Table**:



OR from the main menu, select **Edit > Delete**:



Review Questions

How would you:

- Create Update Queries?
- Create Delete Queries?
- Create Append Queries?
- Create Make-Table Queries?
- Create a One-Parameter Query?
- Create a Two-Parameter Query?
- Use Wildcards as Parameters?
- Create Calculated Fields?
- Use Common Functions in Calculated Fields?
- Create a Two-Table Join?
- Add Fields from Different Tables to the Query Grid?
- Remove Tables from the Query Builder?

Designing Forms in Access 2003

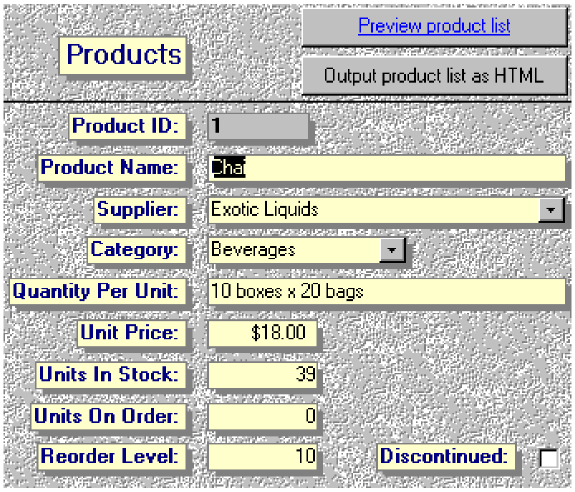
When you have completed this learning module you will have seen how to:

- Choose an Appropriate Control
- Place Controls on a Form
- Move a Control
- Resize a Control
- Set Control Properties
- Create Page Headers and Footers
- Create Form Headers and Footers
- Set Form Properties
- Work with Identifiers
- Create a Subform
- Create a Form with Two Subforms
- Create Nested Subforms
- Delete a Subform
- Create a Modal Pop-up Form
- Create a Modeless Pop-up Form
- Create a Switchboard
- Edit a Switchboard Item
- Delete a Switchboard

Creating Data Entry Forms

About Forms

- Forms can be used for data entry, displaying data in a user-friendly format, and as a navigational tool:



Choosing an Appropriate Control

- Controls are objects that can be placed on forms, reports, or data access pages that display data, perform actions, or can be used for visual display. Controls shipped with Access 2003 include:

  Text Boxes: Used to display data on a form. Text boxes can be **bound** to a data source or **unbound** to accept input or display a calculation.

  Labels: Used to display text on a form. Labels are useful for descriptions of instructional text. Labels are not associated with a data source.

  List Boxes: Used to display a pre-determined list of values. List boxes are useful when limiting selection choices or when enforcing data integrity.

  Command Buttons: Used to execute a pre-defined set of actions in a macro or event procedure written in visual basic.

  Check Boxes: Used to set **Yes / No** values from an underlying query or table.

  Option Groups: Used to select a limited list of choices. Sometimes interchangeable with **List Boxes** when selecting from only a few pre-defined options.

  Toggle Buttons: Used to set **Yes / No** values from an underlying query or table. Useful when combined with an **Option Group** to select values that are **Yes / No**.

  Image: Used when displaying a digital image on a form. An example would be the display of a company logo.

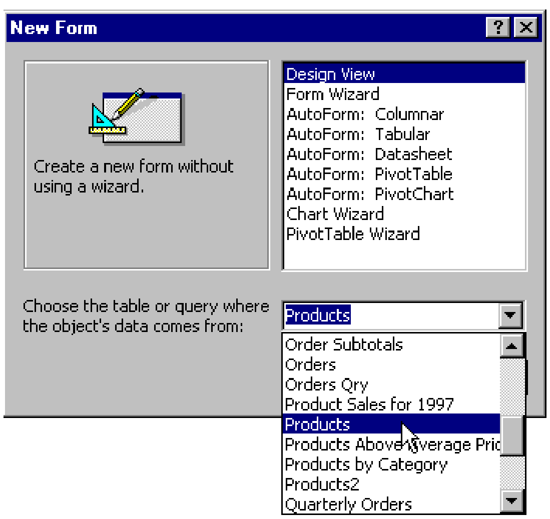
  Tabbed Pages: Used when presenting different sections of information as one logical set. Useful when separating levels of information related to a common topic such as employee, company, or personal information.

Rectangles and Lines: Used when displaying limited geometric shapes. Useful when displaying breaks between fields or sections within a form.

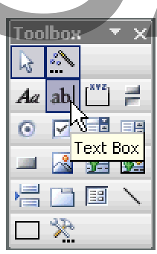
Subform: An advanced control that displays child data that is related to data on the parent form. **Subforms** are discussed later in this training manual.

Placing Controls on a Form

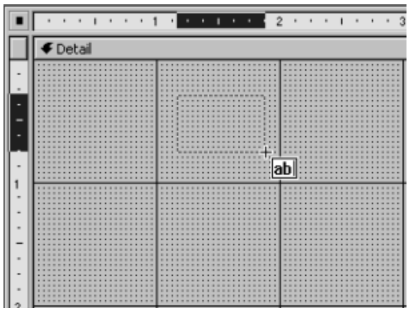
- Click **Forms** in the **Objects** pane.
- Click the **New** button. This opens the **New Form** dialog box.
- Select **Design View**.
- Select a data source for the **form** from the drop-down menu:



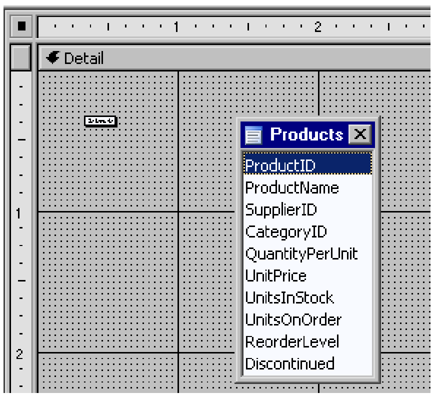
- Click **OK**.
- Access opens into **Form Design** view showing the **Detail** area, **Data Source**, and **Toolbox**.
- Click the desired control to place on the **form** on the **Toolbox** toolbar:



- Click and drag the **control** in the **Detail** area of the **form**:

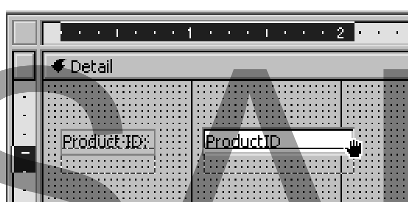


OR drag and drop a field from the **data source** to the **Detail** area of the **form**:



Moving a Control

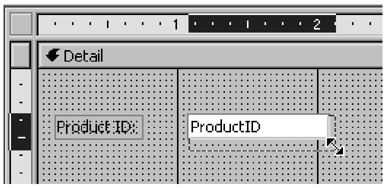
- Select the control you want to move.
- Place the cursor over the **control** until the cursor changes to a hand.
- Click and drag the control to its new location:



Resizing a Control

- Select the control you want to resize.
- Place the cursor over the **control** until the cursor changes to a double arrow.

- Click and drag control to the desired size:



Setting Control Properties

- Control properties can be divided into five categories:

  Format: Sets visual properties for a control.

  Data: Sets the underlying data source for a control.

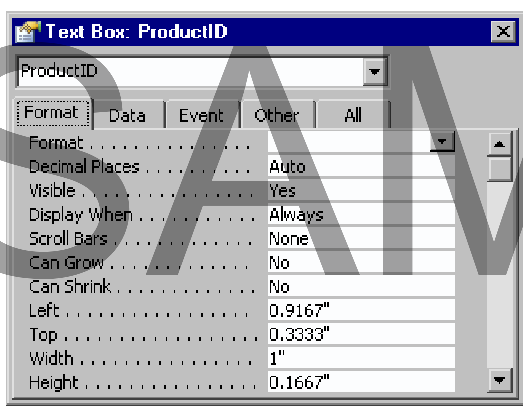
  Event: Sets action behavior for a control. Typically used to tie a macro or event procedure to a specific control action.

  Other: Sets the behavior for the control such as tab stop behavior or the tab order.

  All: Used to view all categories in the same pane.

To set a property on a control

- Right-click on the control. From the pop-up menu, select **Properties**. This opens the **control properties** dialog box:



- Select the desired control properties.

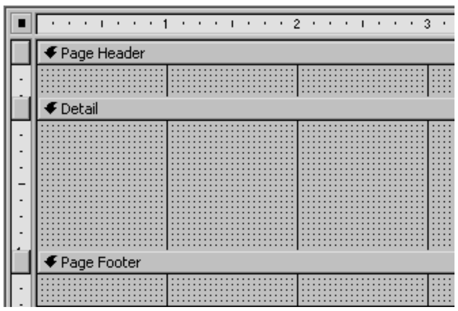
  Note: The available control properties will vary depending on the type of control used.

Creating Page Headers and Footers

- **Page headers** and **page footers** appear at the top and bottom of each page and can display information such as a column heading.

To create page headers and footers

- Right-click in the **Detail** area of the form.
- From the pop-up menu, select **Page Header/Footer**. This opens the **Page Header** and **Page Footer** panes:



- Place the desired control on the **page header** or **page footer**.

Creating Form Headers and Footers

- **Form headers** and **form footers** appear at the top and bottom of each page and can display items such as the date, page number, or company logo.

To create form headers and footers

- Right-click in the **Detail** area of the form.
- From the pop-up menu, select **Form Header/Footer**. This opens the **Form Header** and **Form Footer** panes.
- Place the desired control on the **form header** or **form footer**.

  Note: Page headers and footers and **Form headers and footers** can both appear on the same form.

Setting Form Properties

- Form properties can be divided into five categories:

  Format: Sets visual properties for a form.

  Data: Sets the underlying data source for a form.

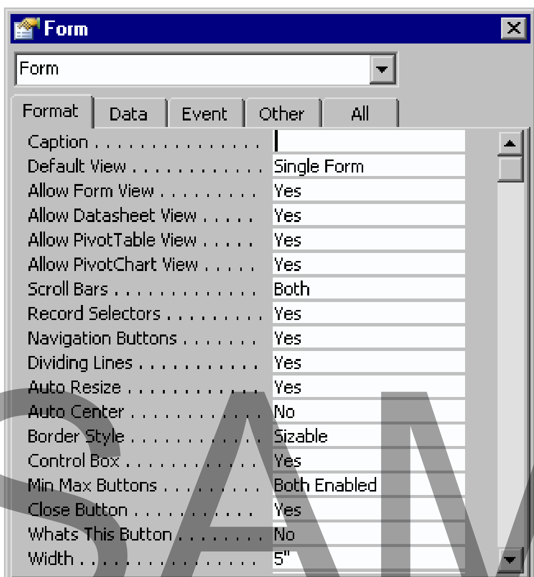
  Event: Sets action behavior for a form. Typically used to tie a macro or event procedure to a specific form action.

  Other: Sets the behavior for the form such as the **modal** or **pop-up** properties.

  All: Used to view all categories in the same pane.

To set a form property

- Right-click on the form.
- From the pop-up menu, select **Properties**. This opens the **Form** properties dialog box:



- Select the desired **form** properties.

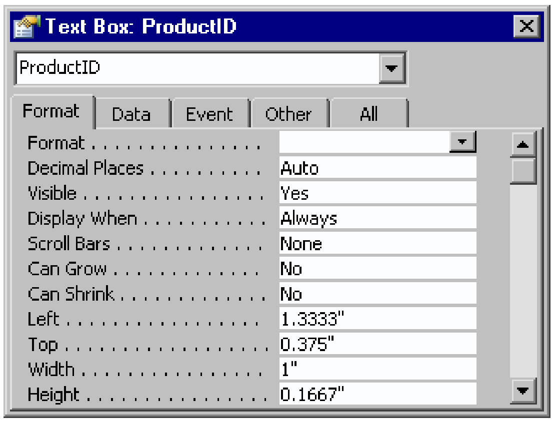
Working with Identifiers

- When referencing an object or property in another form or subform, it is necessary to use an **object identifier**. This is the fully qualified name of the object or property. For example, when referencing the **order date** in the

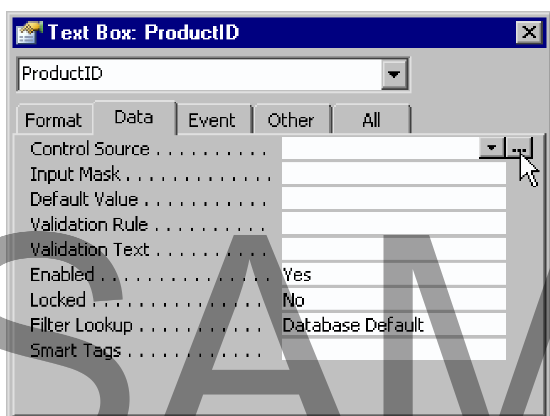
Orders form, it is necessary to use the **object identifier** Forms![Orders]![OrderDate].

To add an object identifier in a control

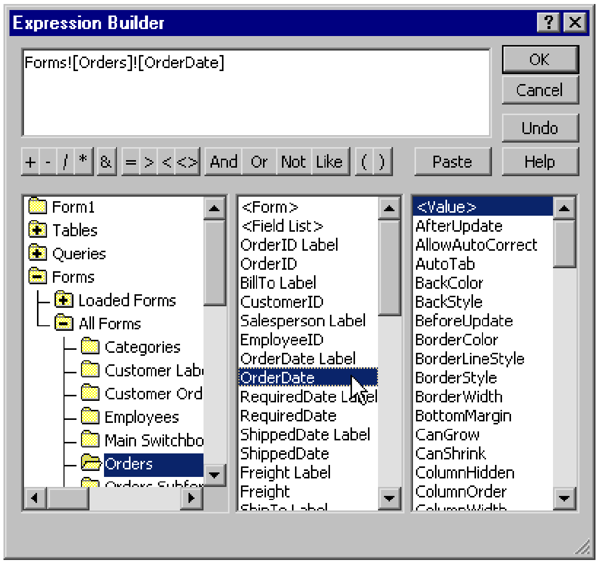
- Right-click on a control.
- From the pop-up menu select **Properties**. This opens the **control properties** dialog box:



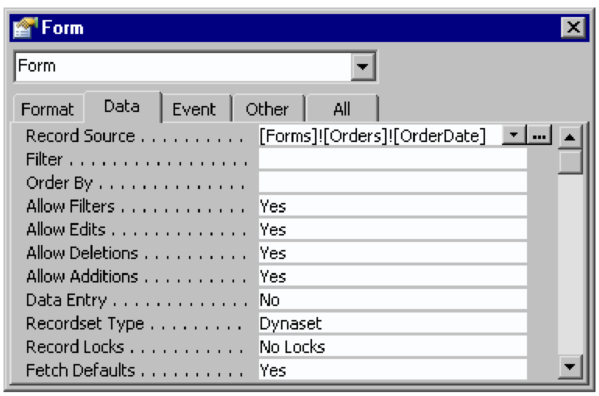
- Click the **Data** tab.
- Click the **Expression Builder** button next to the **Control Source** field:



- This opens the Expression Builder.
- Add the desired object from the **Expression Builder** window:



- The external object is now referenced in the current control using its **Object Identifier**:



Working with Subforms

Creating a Subform

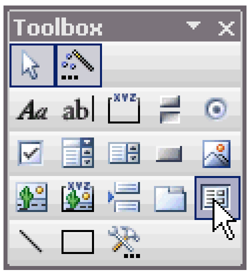
- A **subform** is a form inside another form. Subforms are useful for displaying **one-to-many relationships** where the main form displays the **one** side of the relationship and the subform displays the **many** side of the relationship. A form/subform combination is sometimes called a parent/child form.

To add a subform to a form

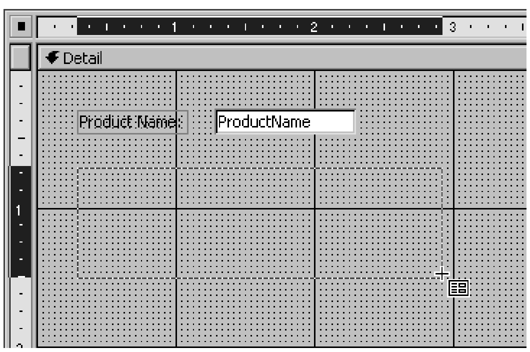
- Open a form in **Design** view.

- Click the **Control Wizards** button on the **Toolbox** toolbar:

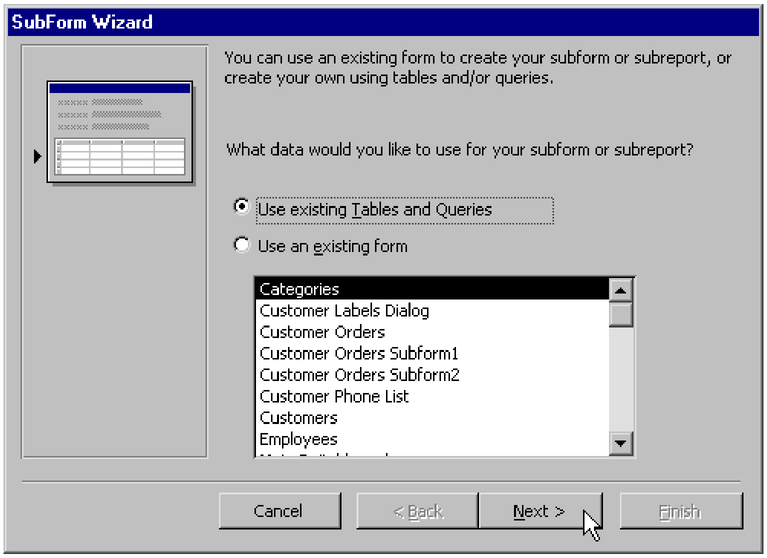
- Click the **Subform / Subreport** button on the **Toolbox** toolbar:



- Click and drag the **control** in the **Detail** area of the form:

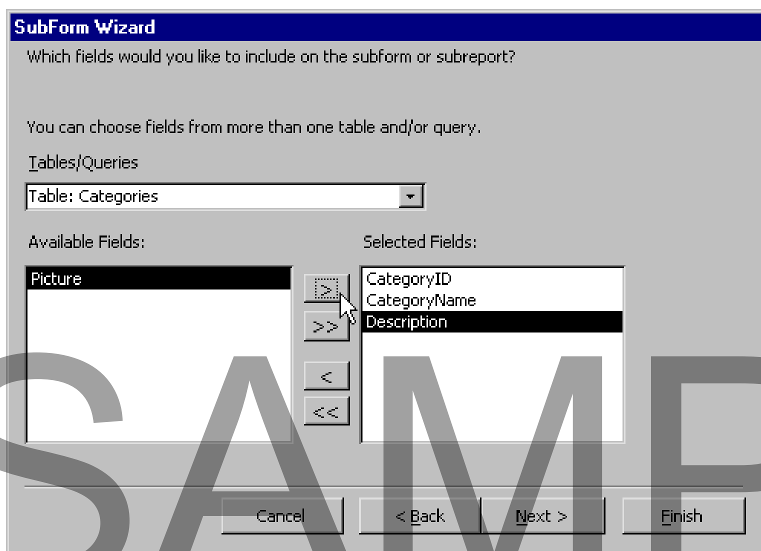


- This opens the **SubForm Wizard**.
- Select the **Use existing Tables and Queries** option button.
- Click **Next**:



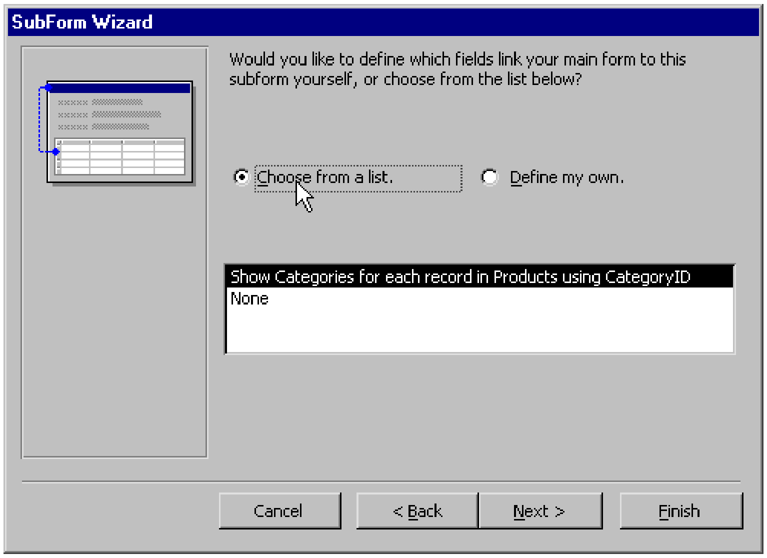
- Select a table from the **Tables/Queries** drop-down menu.
- Select a field from the **Available Fields** area.
- Click the single right arrow to add the field

OR click the double right arrow to add all fields:



- Click **Next**.
- Select the **Choose from a list** option button

OR select the **Define my own** option button:



Note: If **Define my own** is selected, the wizard will require the link between the main **form** and **subform** to be manually defined.

- Click **Next**.
- Type a name for the **subform**.
- Click **Finish**.

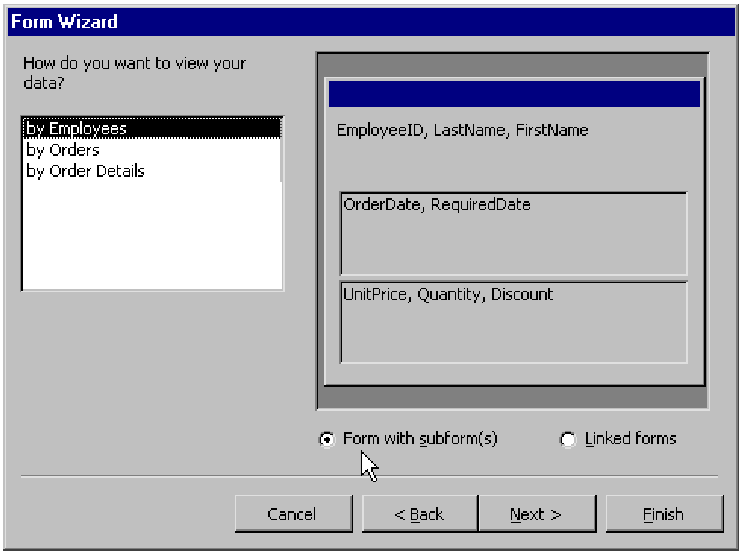
Creating a Form with Two Subforms

- A **form** with two **subforms** is often used when one **subform** is related to another **subform** within the same main **form**. The first **subform** is related to a key value in the main **form**. The second **subform** is related to the first **subform** by a different key value.

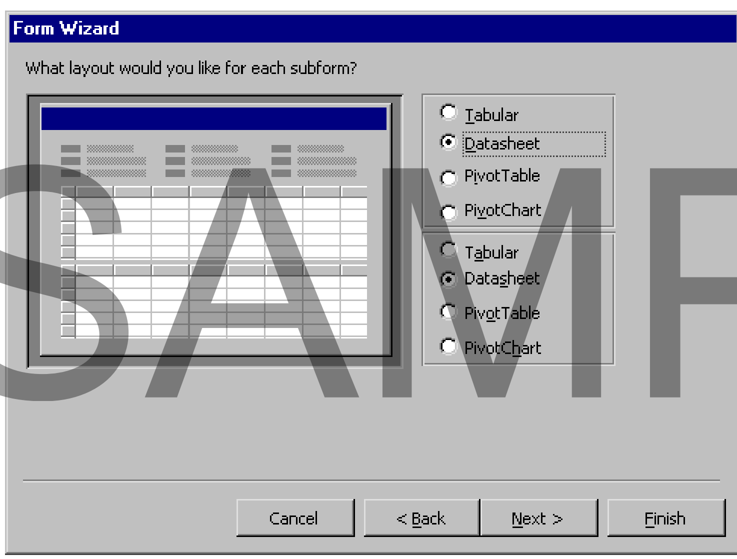
To create a form with two subforms

- Click **Forms** in the **Objects** pane.
- Click the **New** button on the database window. This opens the **New Form** dialog box.
- Select **Form Wizard**.
- Click **OK**.
- Select a table from the **Tables/Queries** drop-down menu.
- Add the desired fields.
- Select another table from **Tables/Queries** drop-down menu. This will be the first **subform**.
- Add the desired fields.

- Select another table from **Tables / Queries** drop-down menu. This will be the second **subform**.
- Add the desired fields.
- Click **Next**.
- Select the desired view in the **How do you want to view your data** dialog box.
- Select the **Form with subform(s)** option button:

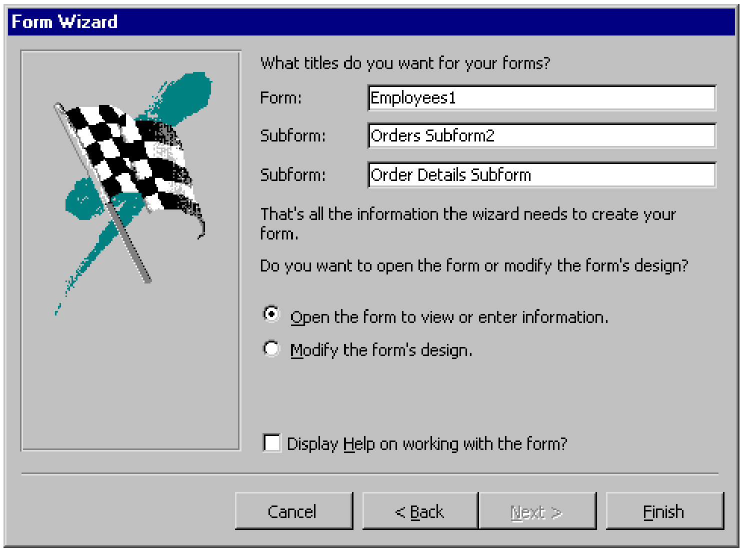


- Click **Next**.
- Select the desired **layout** for each subform:



- Click **Next**.
- Select the desired **form style**.
- Click **Next**.

- Enter the title for the main form and each subform:



- Click **Finish**.

Creating Nested Subforms

- Creating a **nested subform** is similar to creating a form with two **subforms**. The main difference between the two is that the second **subform** is embedded in the first **subform** instead of in the **main form**.

To create a nested subform

- Create a **subform** within a **main form**.

Note: Creating subforms within a form was previously discussed in this training manual.

- Click the **Subform / Subreport** control button on the **Toolbox** toolbar.
- Click and drag the **control** in the **Detail** area of the existing subform. This opens the **SubForm Wizard**.
- Select the **Use existing Tables and Queries** option button.
- Click **Next**.
- Select a table from the **Tables / Queries** drop-down menu.
- Select a field from the **Available Fields** area.
- Click the single right arrow to add a field

OR click the double right arrow to add all fields.

- Click **Next**.
- Select the **Choose from a list** option button

  OR select the **Define my own** option button.

  Note: If **Define my own** is selected, the wizard will require the link between the main form and subform to be manually defined.

- Click **Next**.
- Type a name for the **subform**.
- Click **Finish**.

Deleting a Subform

- Open the main form in Design view.
- Right-click on the subform.
- From the pop-up menu, select Cut

  OR right-click on the subform in the Forms database window.

- From the pop-up menu, select Delete.

  Note: Deleting the subform directly from the Forms database window without deleting it from the parent form will cause an error when opening the parent form.

Creating Pop-up Forms

Creating a Modal Pop-up Form

- A **modal** form is one that has exclusive focus when it is open. Other database objects are not accessible while the form is open.

End of the preview sample

CHELTENHAM
COURSEWARE

This sample is approximately half of the full course. Please see the table of contents at the beginning of this document to see the full list of topics covered in the full course.

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