ECDL USING DATABASES

Syllabus 6.0
Learning Material (MS Access 2013)

Provided by:

ECDL Malta

ECDL Using Databases

Databases are crucial tools for storing, managing, and manipulating data. ECDL Using Databases will help you understand what a database is and what it is used for. This module will also allow you to demonstrate a range of key skills relating to building and using a database.

On completion of this module you will be able to:

- Understand what a database is and how it is organised.
- Create a simple database and view the database content in various modes.
- Create a table, define and modify fields, and create relationships between tables. Enter and edit data in a table.
- Use filters and queries to retrieve specific information from a database.
- Create a form to enter, modify and delete records and data in records.
- Create routine reports and prepare outputs ready for print or electronic distribution.

What are the benefits of this module?

This module covers the key functions and characteristics of databases and how to organise and operate them. Once you have developed the skills and knowledge set out in this book, you will be in a position to become certified in an international standard in this area - ECDL Using Databases.

For details of the specific areas of the ECDL Using Databases syllabus covered in each section of this book, refer to the ECDL Using Databases syllabus map at the end of the book.

How to use this book

This book covers the entirety of the ECDL Using Databases course. It introduces important concepts and sets out the specific steps associated with using different features of the application. You will also have the opportunity to practice some of these activities yourself using sample files provided in the Student Folder. It is recommended that you do not save your changes to sample files, as you may want to practice an activity more than once.

ECDL USING DATABASES

LESSON 1 –
EXPLORING ACCESS

In this section, you will learn how to:

- Work with Access
- Start Access
- Open an existing database
- Familiarise with the Ribbon
- Use the contextual tabs
- Use the Quick Access Toolbar
- Understand database objects
- Use the Navigation Pane
- Open a database object
- Delete a database object
- Use tabbed documents
- Close a tabbed document
- Close all tabbed documents
- Switch between the view modes
- Use the Options dialog box
- Close a database
- Create a new database
- Use Help
- Exit Access

1.1 WORKING WITH ACCESS

Concepts

A database is any collection of related data organised for fast search and retrieval. For example, a telephone book is a non-computerised database of information. It is organised in alphabetical order and includes information such as names, addresses, and telephone numbers. Other examples of non-computerised databases include address books and inventory lists.

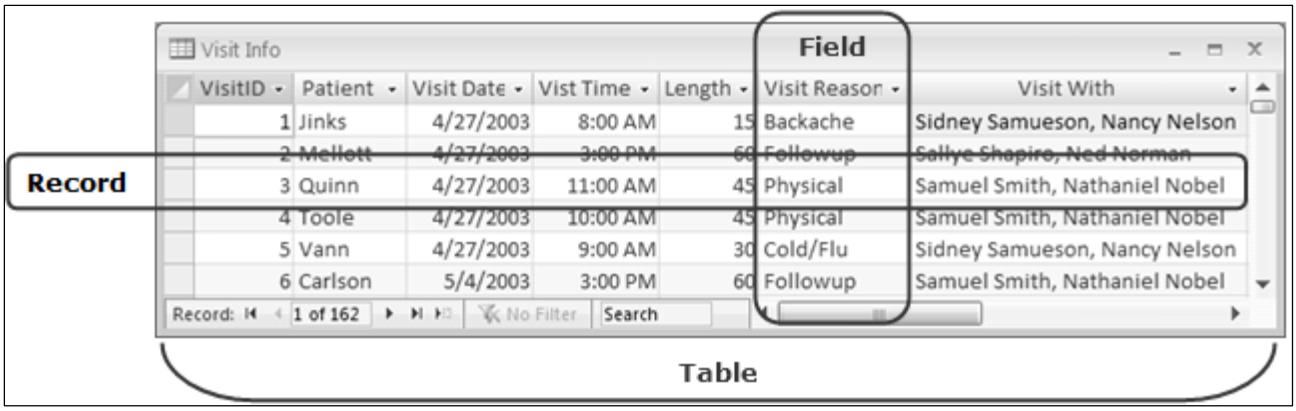
Data is raw, unorganised facts and details. Examples of data that could be stored in a database are:

- A student's test score
- An employee's ID
- A vendor's email address.

Information is the processed output of data. It provides context for data. Examples are:

- Average test score per subject chart
- Mailing list sorted alphabetically and organised by location.

In **Microsoft Access 2013**, the database information is stored in data tables. Every data table has a structure that provides for the collection, organisation, storage, and retrieval of data. These tables of information are contained in a database file. Each database file can have numerous data tables.



Tables are made of fields and records

Some of the common uses of large-scale databases are:

- **Social networks:**
  Social networks utilise large databases to keep record of user profiles and corresponding contact and privacy details. They can be used to track the posts made by users, what they interact with and how long they spend online.

- **Airline booking systems:**
  These systems maintain a database of all the seats on all the available flights, allowing passengers to be quickly booked onto fights to their destination.

- **Government records:**
  Governments all over the world rely on multiple large databases in order to function. Tax records, criminal records and social security all require sophisticated database systems.

- **Bank account records:**
  Banks require extremely reliable databases in order to keep track of all their customer account and log transactions.

- **Hospital patient details:**
  Medical records are stored in a database system. This system should allow your medical history to be instantly available wherever you require treatment.

Access is a database application that you can use to quickly and easily develop relational database applications that help you manage information. You can create a database to help you keep track of just about any kind of information, such as inventory, professional contacts, or business processes. In fact, **Access** comes with templates that you can use right away to track a variety of information, making things easy even for a beginner.

Professional databases are designed and created by database specialists. These are highly skilled database professionals with an in-depth knowledge of exactly how the database works, such as its overall function. Database specialists design and create databases to meet the organisation's needs for present and future use.

For example, a database specialist could analyse the data processing and information needs of a computer training centre and designs a database that allows the storing of students, trainers and course details.

There are various roles that are assigned to maintain the database, such as:

1) Database administrator:
   a) Controls the access to different data for specific users.
   b) Implements security measures to safeguard the organisation's database.
   c) Has overall responsibility for the maintenance and repair of an organisation's database.
   d) Recovers the database after a crash or major errors.

2) Database user:
   a) Enters, updates and retrieves data/information.
   b) Granted access rights as needed for basic data entry and search.

For example, a database administrator assigns various access permissions to data entry personnel, course administrators and managers for the database in the computer training centre. Data entry personnel may only enter and edit student

records but cannot access trainers or courses details. The database administrator may incorporate password protection to sensitive data in the database.

A database user in a computer training centre can access the database based on the access level granted. Data entry personnel can only enter/edit/search/print records of students but cannot access trainer details. Managers may have a higher level of access such as being able to view/edit/search/print records and reports of students, trainers, and courses.

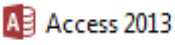
1.2 Starting Access

Concepts

Access databases can help you store and track just about any kind of information, such as inventory, contacts, or business processes. You will learn how to create an **Access** database, add data to it, and then learn about the next steps towards customising and using your new database.

Steps

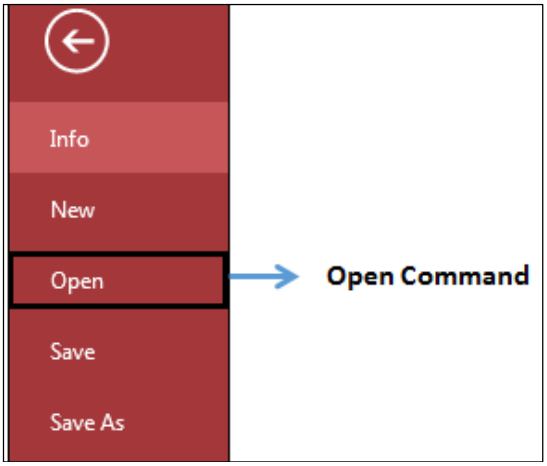
To start **Microsoft Access 2013**:

1. Select **Start**. *The **Start** menu appears.*	Click 
2. Point to **All Programs**. *The All Programs menu appears.*	Point to 
3. Select **Microsoft Office 2013**. *The **Microsoft Office** submenu appears.*	Click 
4. Select **Access 2013**. ***Microsoft Access 2013** opens.*	Click 

1.3 Opening an Existing Database

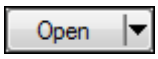
Concepts

Databases residing in your computer or on a shared network drive can be opened by starting **Microsoft Access** and then selecting **Open** command from the **FILE** tab.



Steps

To open an existing database from a specific drive and folder location:

1. Select the **FILE** tab. *The **Backstage** view opens.*	Click **FILE**
2. Select **Open**. *The **Open** dialog box opens.*	Click **Open**
3. Select Computer and navigate to the Folder that contains the database. *Browse to find the correct folder.*	Click **Computer** then **Browse**
4. Navigate to the folder that contains the database. *The Student Folder will open.*	Open the **Student Folder**
5. Select the name of the database you want to open. *The file name is selected.*	Scroll as necessary and click on the file **LibrarySystem.accdb**
6. Select **Open**. *The **Open** dialog box and **Getting Started** task pane close, and the **Security Warning** message box appears below the **Ribbon**, if applicable.*	Click 
7. Select the desired security options. *The database content is enabled or remains disabled.*	Click **Enable Content**, if necessary

8. Select **OK**, if necessary. *The **Security Options** dialog box closes and the database opens in the application window.*	Click OK

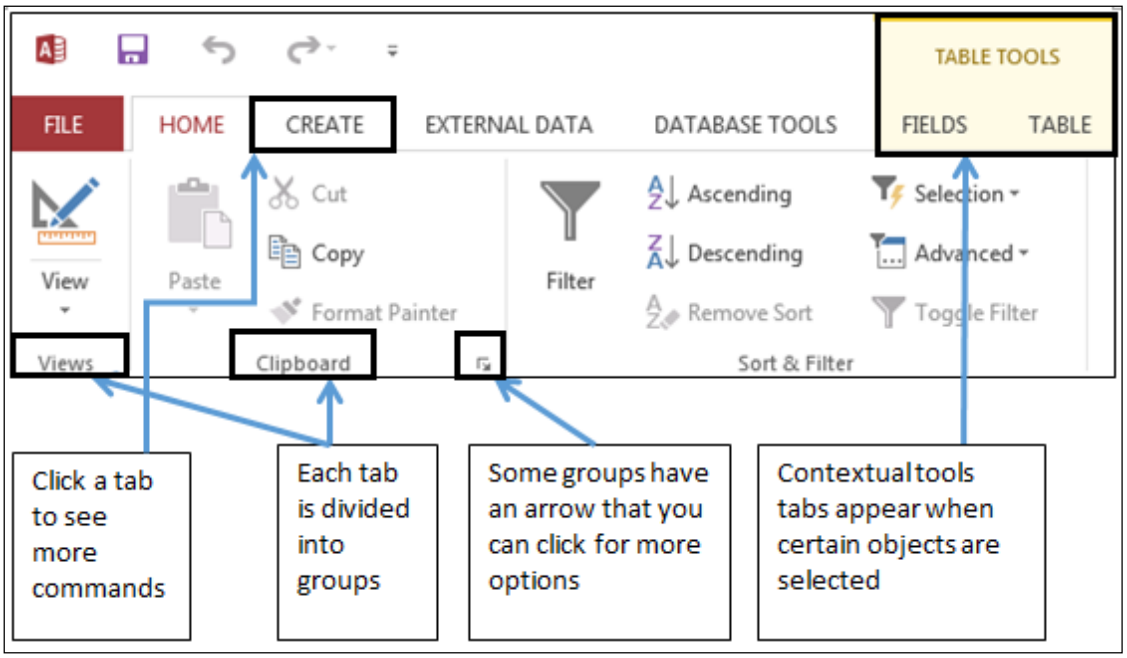
Tip: You can use the keyboard shortcut **Ctrl+O** to open a database project.

1.4 FAMILIARISING WITH THE RIBBON

Concepts

The **Ribbon** is the long strip comprised of tabs with buttons across the top of the main window within the **Access** interface. Since **Access 2007**, the **Ribbon** has replaced all the menus and toolbars that were found in **Access 2003** and older versions. The **Ribbon** is designed in a way that aids you in quickly finding commands that help complete a task, and contains almost all of the primary commands for working with access. You no longer have to search commands endlessly through many menus and sub-menus.

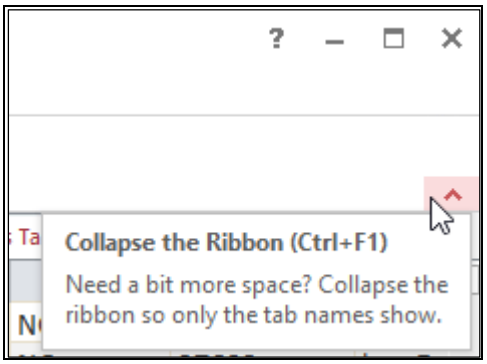
However, the **FILE** tab still exists, as does a single toolbar called the **Quick Access Toolbar**. All the other commands are now found in the various tabs of the **Ribbon** within the interface.



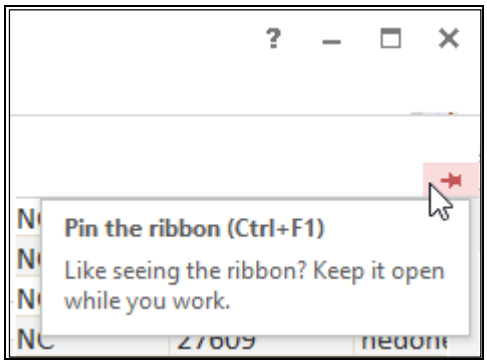
Parts of the Ribbon

The **Ribbon** is designed to respond to your current task; however, you can choose to minimise the **Ribbon** if you find that it takes up too much screen space.

Click the arrow in the lower-right corner of the **Ribbon** to minimise it. Click a tab to make the **Ribbon** reappear. It will disappear again when not in use. To maximise the **Ribbon**, click a tab, then click the pin icon in the lower-right corner. The **Ribbon** will appear at all times.



Minimising the Ribbon



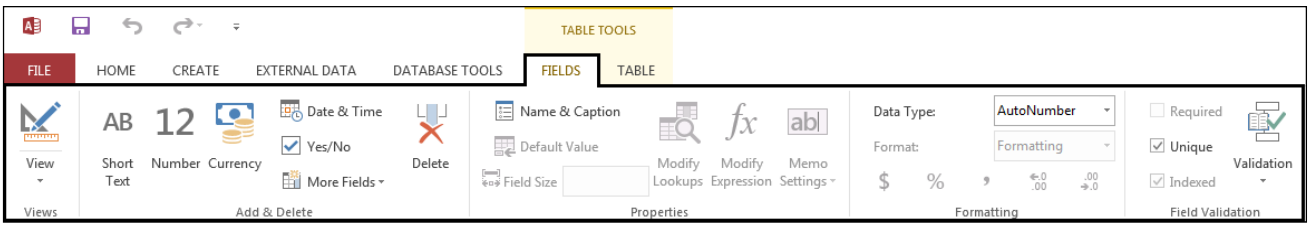
Restoring the Ribbon

As an alternative, you can also double-click on any tab heading to minimise or restore the **Ribbon**.

1.5 USING THE CONTEXTUAL TABS

Concepts

Contextual tabs appear on the **Ribbon** when an object requiring additional functionality is selected. For example, selecting a table in **Access** will display **TABLE TOOLS** contextual tabs on the **Ribbon**.



Contextual tabs

Steps

To use a contextual command tab:

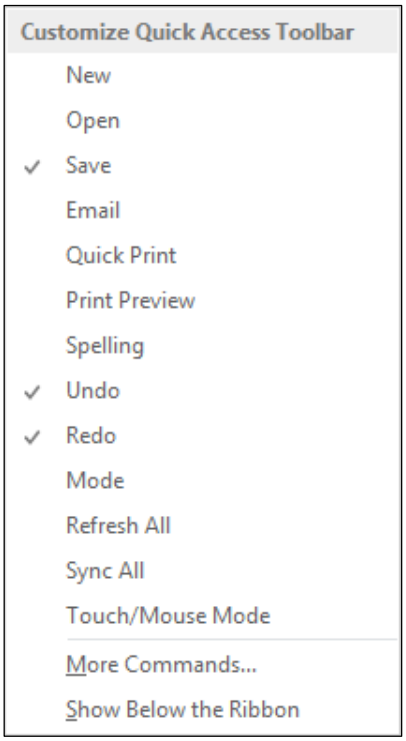
1. Open the desired table from the **Navigation Pane**. *The desired table opens and the **TABLE TOOLS** contextual tab appears on the **Ribbon**.*	Double-click **Assets Table in the LibrarySystem Database**.
2. Select the desired contextual command tab. *The desired tab is selected.*	Click **FIELDS.**

1.6 USING THE QUICK ACCESS TOOLBAR

Concepts

By default, the **Save**, **Undo**, and **Repeat/Redo** buttons appear on the **Quick Access Toolbar**. If you regularly use a few buttons that are scattered on various tabs of the **Ribbon** and you do not want to switch between tabs to access the buttons or crowd the **Ribbon** with a custom tab, you might want to add these frequently used buttons to the **Quick Access Toolbar**. They are then always visible in the upper-left corner of the program window.

Clicking the **Customize Quick Access Toolbar** button at the right end of **the Quick Access Toolbar** displays a menu that lists commonly used commands. Check marks appear to the left of commands currently available on the **Quick Access Toolbar**. You can click these commands to remove them, and click other commands to add them.



As you add buttons to the **Quick Access Toolbar**, it expands to accommodate them. If you add too many buttons, some of them might not be visible, which defeats the purpose of adding them. To resolve this problem, you can move the **Quick Access Toolbar** below the ribbon by clicking the **Customize Quick Access Toolbar** button, and then clicking **Show below the Ribbon**.

1.7 UNDERSTANDING DATABASE OBJECTS

Concepts

An **Access** database can contain various types of database objects, including tables, queries, forms, reports, macros and modules. The following section briefly introduces the four main database objects. All database objects can be accessed from the **Navigation Pane**.

Tables: The basic building block of any database is a table. A database table is similar in appearance to a list or spreadsheet, in that the data is stored in rows and columns.

A database can have many tables. A table should only contain records related to a particular subject. When tables contain data related to a single subject type, it is easier to search for and locate data. For example you may have a table called customers containing information about your customers with a separate table called orders. You can then link the tables by creating a relationship, connecting each customer with their associated orders.

Queries: Queries allow users to locate data from one or more tables according to specific search criteria. The data you want to retrieve may be stored in several tables, and a query allows you to view data from several tables in a single datasheet. In addition, because you generally do not want to see all the information at once, queries allow you select certain fields and add criteria to retrieve only specific records.

The result of a query is called a record set or result set. You can view the result set on the screen, print it, copy it to the clipboard, or use the output of the query as the record source for a form or report.

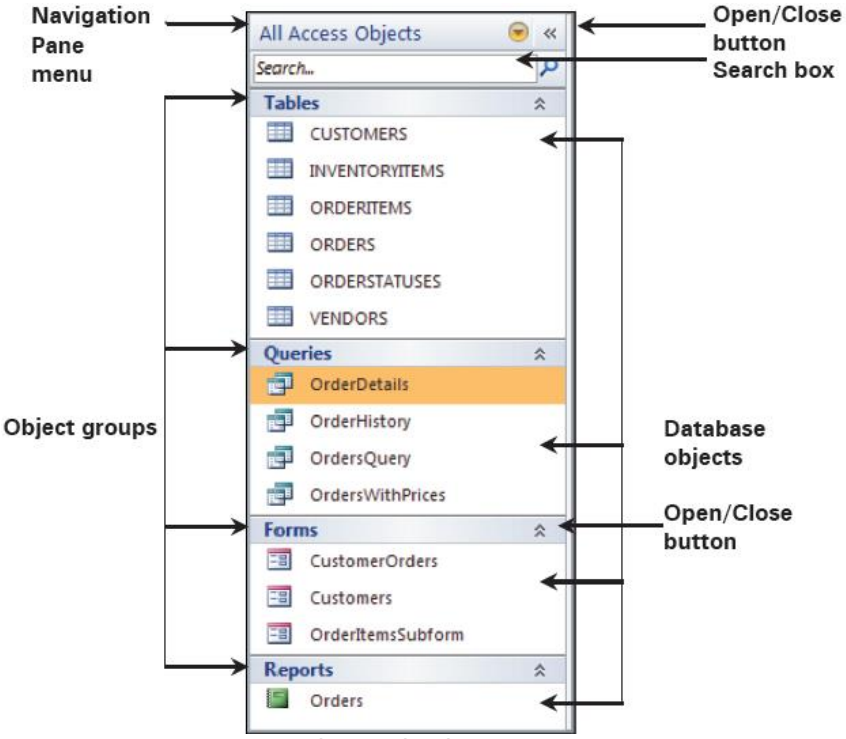
Forms: Forms are commonly used as data entry screens. They are user-friendly interfaces for working with data, and they often contain elements and command buttons that make entering data and performing various other tasks quick and easy.

Reports: You use reports to print and summarise data. Each report is formatted to present the information in the most readable way possible. You can format any report to fit your requirements and you can create custom reports as well.

1.8 USING THE NAVIGATION PANE

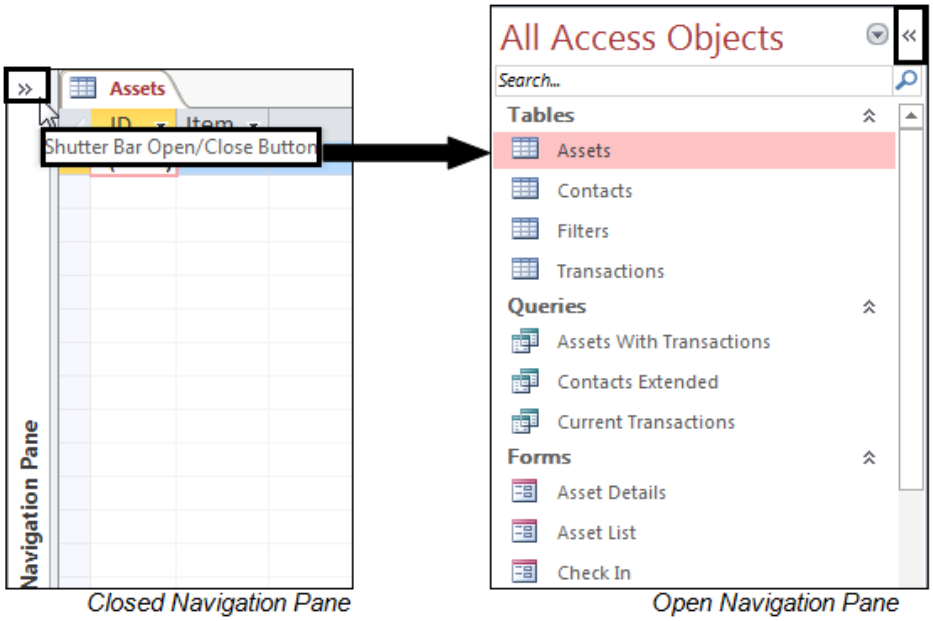
Concepts

Navigation Pane is located at the left side of the **Access** window and helps you to work with database objects. **Navigation Pane** is organised by categories and groups. You can customise the categories and groups of objects in the **Navigation Pane**. You can select specific objects from the **Navigation Pane**.



The Navigation Pane

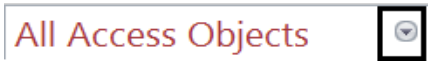
You can change the width of the **Navigation Pane** by positioning the pointer over the right edge of the **Navigation Pane**. You can also hide or open the **Navigation Pane** by clicking the **Shutter Bar Open/Close button**.



Closed Navigation Pane *Open Navigation Pane*

Steps

To use the **Navigation Pane** to select an object type:

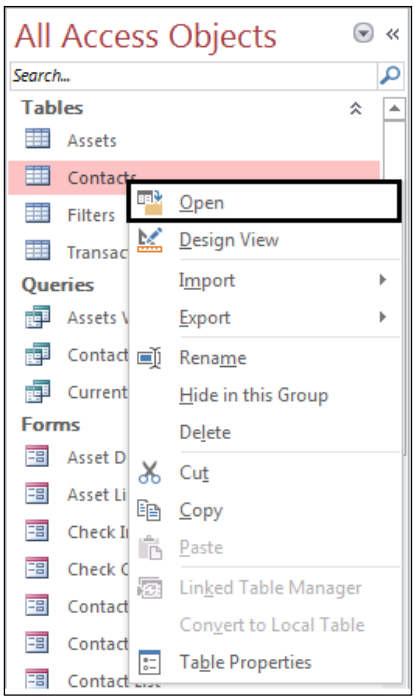
1. Select the arrow in the **Navigation Pane** header. *The **Navigation Pane** menu appears.*	Click 
2. Select the desired object type. *The object type is selected, and the objects stored in it appear in the object list.*	Click **Tables.**

Practice the Concept: Click the **Forms** object type and the **Reports** object type to display their object lists. Then, click the **All Access Objects** in the program to redisplay all **Access** objects.

1.9 Opening a Database Object

Concepts

You can use any object in the **Navigation Pane** by double-clicking it. If you right-click an object, you notice a shortcut menu that lets you do various actions, such as opening an object in design view.



Steps

To open a database object:

If necessary, display the **Tables** object list in the **Navigation Pane**.

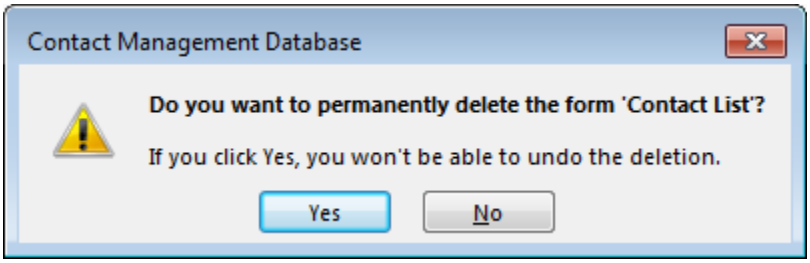
1. Select the name of the object you want to open. *The object appears in the corresponding view, or the corresponding program runs.*	Double-click **Contacts**, if necessary.

Click the **Close** button on the **Contacts** table window title bar to close the **Contacts** table.

1.10 Deleting a Database Object

Concepts

You can delete any object (table, query, form, report) in the **Navigation Pane** by selecting it and pressing the **[Delete]** key. You can also click the **Delete** button on the **HOME** tab. Click **Yes** for the prompt.



When you delete a table, you delete all the data in the table. You cannot undo the delete operation.

Practice the Concept: Display the **Forms** object list. Select the **Asset Details** form object, if necessary, and then double-click it to display the form in **Form** view. Close the **Asset Details** form window. **Delete** the **Asset Details** form.

Display the **Reports** object list. Double-click the **All Assets** object to display it in print preview mode. Close the **All Assets** report window without saving changes, if prompted.

1.11 Using Tabbed Documents

Concepts

Each object that you open in an Access database opens in a new tab. This will allow you to quickly switch between each object. If needed, you can disable tabbed documents by setting your **Access** options.

Steps

To view tabbed documents:

If necessary, select **All Access Objects** in the **Navigation Pane**.

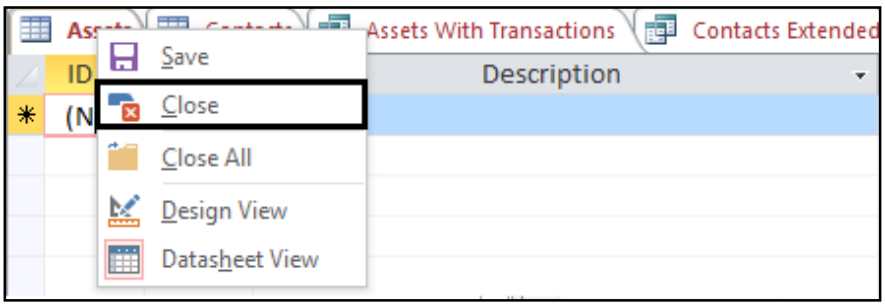
1. Select the first desired table. *The desired table opens.*	Double-click **Assets** table.
2. Select the second desired table. *The second desired table opens.*	Double-click **Contacts** table.
3. Select the desired query. *The desired query opens.*	Double-click **Assets with Transactions** query.
4. Select the second desired query. *The desired query opens.*	Double-click **Contacts Extended** query.

Notice that the tab title is displayed in bold type.

1.12 Closing a Tabbed Document

Concepts

An opened tab can be closed by selecting **Close** from the shortcut menu displayed on the active database object.



Steps

To close a tabbed document:

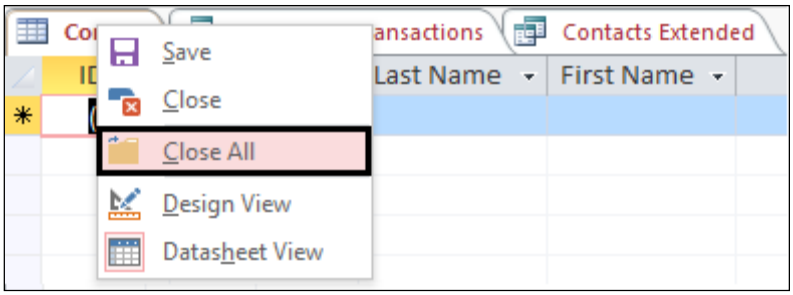
1. Select the desired object tab. *The shortcut menu appears.*	Right-click the **Assets** tab
2. Select the **Close** on the shortcut menu. *The object tab closes.*	Click 

If prompted, close without saving changes.

1.13 Closing All Tabbed Documents

Concepts

All the opened tabs can be closed all a time by selecting **Close All** from the shortcut menu displayed on the active database object.



Steps

To close all tabbed documents:

1. Select the desired object tab. *The shortcut menu appears.*	Right-click the **Contacts** tab.
2. Select **Close All** on the shortcut menu. *All open tabbed objects close.*	Click 

Click **No**, if prompted to save the changes. Notice that all tabbed objects are closed.

1.14 SWITCHING BETWEEN THE VIEW MODES

Concepts

As you continue working with Access, you will find yourself switching between **Design** view and **Datasheet** view.

Click the **View** button on the **HOME** tab to switch to the **Design** view of a table, query, form or report.

Click the **View** icon to return to **Datasheet** view (in tables and queries).

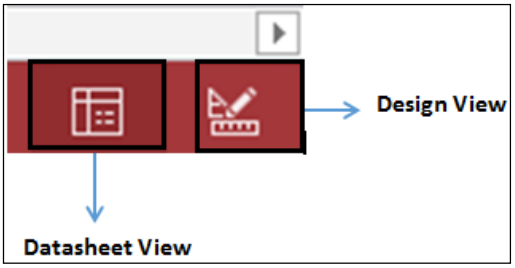
Steps

To switch between views:

If necessary, select **All Access Objects** in the **Navigation Pane**.

1. Select the desired database object. *The desired object opens in datasheet view.*	Double-click **Assets** table.
2. Select the desired view button on the **HOME** tab. *The view changes to design view.*	Click  on the **HOME** tab
3. Select another desired view button on the **HOME** tab. *The view changes to datasheet view.*	Click  on the **HOME** tab

You can also use the status bar to switch between different views.



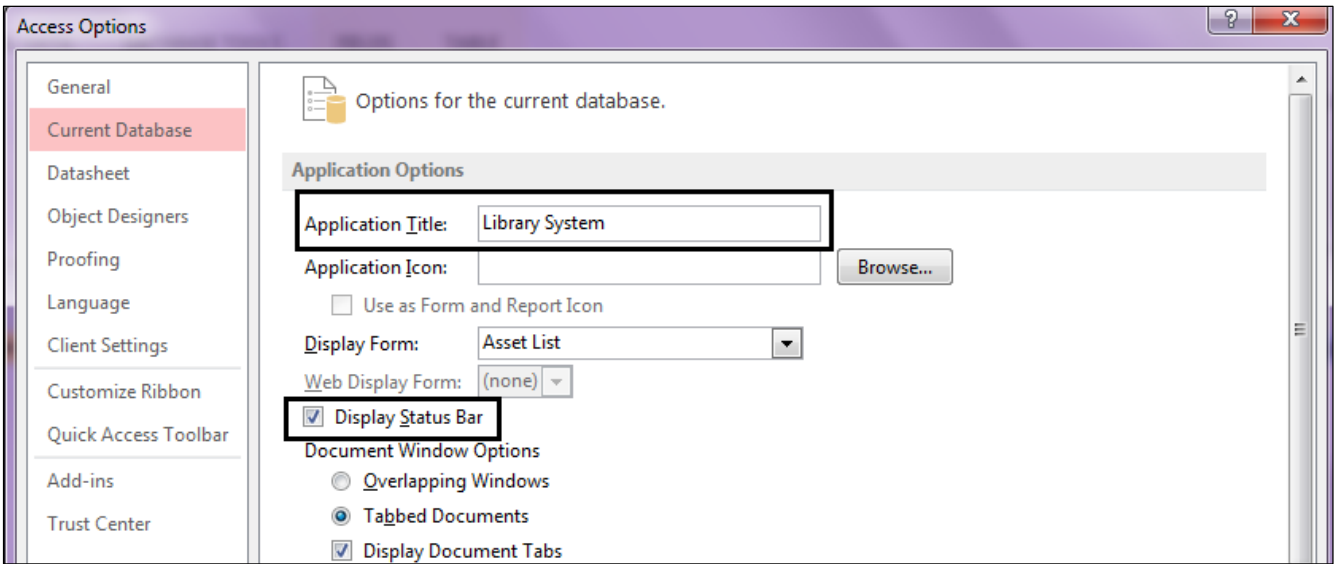
View buttons on the status bar

1.15 USING THE OPTIONS DIALOG BOX

Concepts

Access allows you to configure several things on database start up. For instance, you can hide the **Navigation Pane**, launch a splash screen or a switchboard form, set an **Application Title**, set an **Application Icon**, and several other things.

These settings can be set using the **Access Options** dialog box.



Access Options dialog box

Steps

To use the Access Options dialog box:

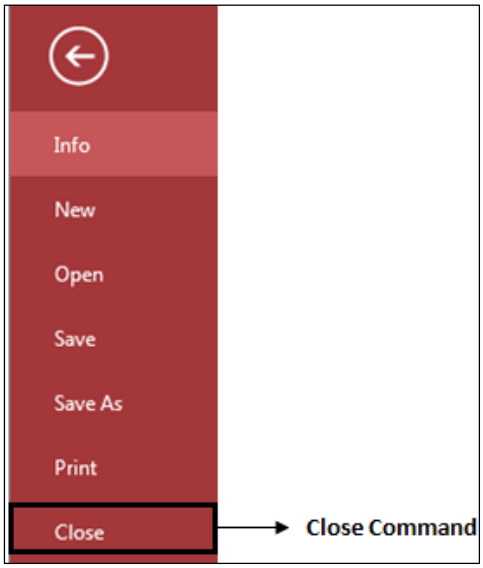
1. Select the **FILE** tab. *The view changes.*	Click **FILE**
2. Select the **Options** command. *The **Access Options** dialog box opens.*	Click **Options**

3. Select the option corresponding to the features you want to change. *The appropriate page appears.*	Click the **Current Database** option
4. Select or deselect options as desired.	• Click in **Application Title** text box under the **Application Options** group • Type **Library Systems** • Click **Display Status Bar** to deselect it if necessary
5. Select **OK**. *The **Access Options** dialog box closes, and the options are enabled or disabled accordingly.*	Click OK

1.16 CLOSING A DATABASE

Concepts

An opened database can be closed by selecting the **Close** command from **FILE** tab.



Steps

To close a database:

1. Select the **FILE** tab. *The **Backstage** view opens.*	Click **FILE**

2. Select **Close**. *The database closes and the **Getting Started** task pane appears.*	Click **Close**

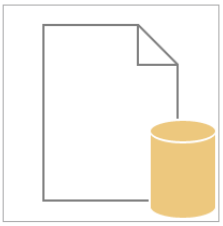
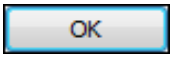
1.17 CREATING A NEW DATABASE

Concepts

You can create a database by building your own tables, forms, reports, and other database objects.

Steps

To create a new, blank database:

1. Click the **Blank Desktop Database** button on the **New** task pane. *The **Blank Desktop Database** dialog box appears.*	Click 
2. Type the desired file name. *The text appears in the **File name** box.*	Type **Inventory**
3. Select the **Save in** folder icon. *A list of available drives appears.*	Click 
4. Select the drive to store the file. *A list of available folders appears.*	Choose the drive with the **Student Folder**.
5. Open the folder where you want to store the file. *A list of available folders and files appears.*	Double-click to open the **Student Folder**, if necessary.
6. Select **OK**. *The folder list closes.*	Click 

7. Select **Create**. *The **Getting Started** task pane closes, and the database opens.*	Click 
8. Open the **Navigation Pane**. *The **Navigation Pane** opens.*	Open the **Navigation Pane**, if necessary.

Click **No**, if prompted to save the changes. Notice that all tabbed objects are closed.

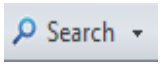
1.18 USING HELP

Concepts

You can use Access's extensive Help facility when you need assistance on any Access topic or task. You can search both Access Help online and offline sources to provide assistance.

Steps

To access **Help**:

1. Select the **?** button. *The **Access** help window.*	Click 
2. Type what to search for in the search box. *The search text appears in the text box.*	Type **primary key**
3. Click **Search**. *The list of related search topics appears.*	Click 
4. Click on the required topic link. *Information regarding the selected topic appears.*	Click the desired link

Close the **Help** window when done.

Tip: You can access Help by hitting **F1** on your keyboard.

1.19 EXITING ACCESS

Concepts

To exit **Access**, you need to close the **Access** application.

Steps

To exit **Access**:

1. Select the **Exit Access** button. ***Access*** *application closes.*	Click 

Notice that the **Access** application has closed.

1.20 REVIEW EXERCISE

Explore Access

1. Start Access, if necessary.
2. Open **BakeryDatabase.accdb**.
3. Open the Navigation Pane, if necessary.
4. Select the **Queries**, **Forms**, and **Reports** object types to view the objects in each; then, select **Access All Objects**.
5. Open all the tables.
6. Hide the Navigation Pane.
7. Use **Close All** to close the remaining open objects.
8. Close the database.

LESSON 2 –
CREATING TABLES

In this section, you will learn how to:

- Use database templates
- Create a table in Datasheet view
- Create a table in Design view
- Add field names
- Assign data types
- Save a new table
- Add a field description
- Set a primary key
- Save changes to a table
- Set a primary key automatically
- Use multi-valued fields

2.1 USING DATABASE TEMPLATES

Concepts

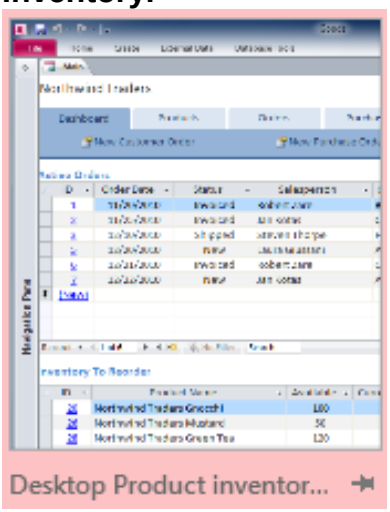
Access provides various templates that can be used to speed up your database creation process. A template is a ready to use database that contains all of the tables, queries, forms, and reports needed for performing certain task.

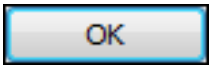
For example, there are templates that include databases for asset tracking, issue tracking, asset management, and project management. Some databases contain sample records to help demonstrate their use. Templates can be used as is, or you can customise them to suit your needs better.

Backstage view displaying the Suggested search for New Database Templates

Steps

Use a template to create a new database.

1. On the Access start-up screen, scroll down to see the featured templates. *A list of database template is displayed and all the templates under the same category appear in the pane.*	Click **Database.**
2. Select the desired template from the displayed templates. *The database template is selected.*	Scroll and select **Desktop Product Inventory.** 

3. Type the desired file name. *The text appears in the **File name** box.*	Type **Product inventory.**
4. Select the **Save in** folder icon. *A list of available drives appears.*	Click 
5. Select the drive where you want to store the file. *A list of available folders appears.*	Click the drive with the **Student Folder**, if necessary.
6. Open the folder where you want to store the file. *A list of available folders and files appears.*	Double-click to open the **Student Folder**, if necessary.
7. Select **OK**. *The folder list closes.*	Click 
8. Select **Create**. *The Local Templates task pane closes, and the database opens.*	Click 
9. Open the **Navigation Pane**. *The **Navigation Pane** opens.*	Open the **Navigation Pane**, if necessary.

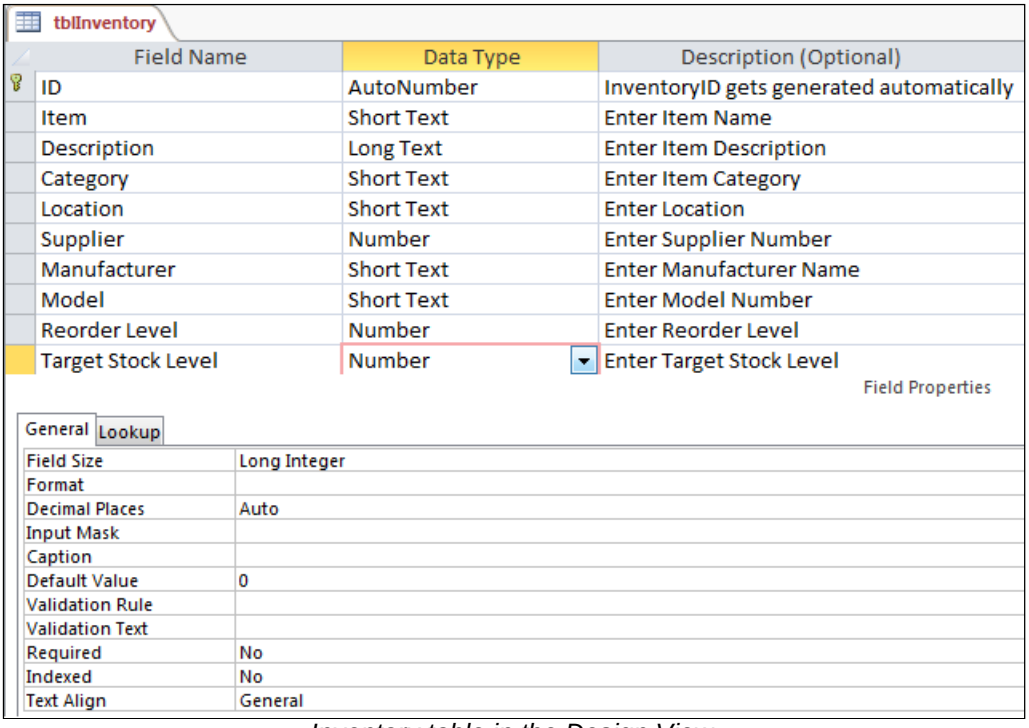
When you open the **Navigation Pane**, it is a good idea to select **Show All**, in order to display all the objects in the database. You can double-click any object in the **Navigation Pane** to open it. You can now enter data directly into the new database, or modify it to meet your needs.

Close **Product inventory.accdb**.

2.2 Assigning Data Types

Concepts

The field data type tells **Access** what kind of values you plan to store in a field and how much storage space to set aside for the field. Although you can change a data type after a field contains data, doing so may erase some or all of the information in the field. The **tblInventory** table below in the **Design** view shows **Field Name**, **Data Type** and **Properties**:



Inventory table in the Design View

The field data type tells Access what kind of values you plan to store in a field and how much storage space to set aside for the field. Although you can change a data type after a field contains data, doing so may erase some or all of the information in the field.

The following table describes the available data types:

Short Text	Text numbers, or both up to 255 characters.
Long Text	Text, numbers, or both up to 65,536 characters.
Number	Numbers used in calculations.
Date/Time	Date times or both up to 8 bytes.
Currency	Currency values prevents rounding.
AutoNumber	Unique sequential numbers automatically added to field.
Yes/No	True/False On/Off.
OLE Object	Documents created in other Office programs up to 1GB.
Hyperlink	Hyperlink to a UNC path or URL up to 2048 characters.
Attachment	Stores one or more file attachments in one field.
Calculated	Data created using a formula, calculated value can later be retrieved to use again.
Lookup Wizard	Create a field that allows the choice of a value from another table or list.

Steps

Assign data types to database fields.

1. Select the **Data Type** column in the field for which you want to change the data type. *The insertion point and a drop-down arrow appear in the corresponding **Data Type** column.*	Click in the **Data Type** column for the **Description** field.
2. Select the arrow. *A list of available data types appears.*	Click 
3. Select the desired data type. *The data type is selected and the field properties change in the lower pane.*	Click **Long Text.**

Practice the Concept: Assign the following data types to the respective fields:

- **ID** **AutoNumber**
- **Supplier** **Number**
- **Origin Country** **Short Text**
- **Reorder Level** **Number**
- **Target Stock Level** **Number**
- **Unit Price** **Currency**
- **Discontinued** **Yes/No**
- **Discontinued Date** **Date/Time**

2.3 CREATING A TABLE

Concepts

Tables are critical objects in a database because they hold all the information or data. For example, a database for a business can have a **Contacts** table that stores the names of their suppliers, their e-mail addresses, and telephone numbers.

In **Design** view, you first create the structure of the new table. Then, you can either switch to **Datasheet** view to enter data or you can also use a form to enter data.

Design view also allows you to specify the field name, data type and additional information for each field in the **Description** column.

Steps

Create a new table in **Design** view. Open a blank database.

1. Select the **CREATE** tab on the **Ribbon**. *The **CREATE** tab appears.*	Click on the **CREATE** tab.

2. Select the **Table Design** button in the **Tables** group. *A blank table appears in **Design** view.*	Click 

2.4 Adding Field Names

Concepts

A data table consists of fields and records. Fields are categories of information. For example, in an address table, you may maintain names, addresses, cities, states, and zip codes. Each of these categories is a field in the address database. For each field in your table, you must give a meaningful name in the Field Name column.

Each field in a table should contain only one element of data. For instance, if you are storing a person's name, use one field for the first name and another field for the second name. This means that at a later date you could manipulate the data to sort by the second name. For the same reason split the details of an address into as many smaller parts as possible so that later you could search by state/region, by post code/zip code or even by country if you are maintaining an international list.

Field Name
ID
Item
Description
Category
Location
Supplier
Manufacturer
Model
Reorder Level
Target Stock Level

Adding Field Name

Steps

Add field names in **Design** view.

If necessary, create a new table in **Design** view and select the first blank cell in the **Field Name** column.

1. Type the desired field name. *The text appears in the **Field Name** column of the current row.*	Type **ID.**

2. Press **DOWN ARROW**. *The insertion point moves down one row, and a default data type **Short Text** appears in the **Data Type** column of the previous row.*	Press **DOWN ⇩.**

Practice the Concept: Type **Item**, **Description, Category, Location, Supplier, Manufacturer, Model, Reorder Level, Target Stock Level, and Unit Price** as the next field names; pressing **[Down]** after each.

2.5 SAVING A NEW TABLE

Steps

Save a new table.

1. Select the **Close Table** icon in the top right-hand corner of the Table in **Datasheet View**. *A save dialog box appears with options for closing the table.*	Click **x**
2. Select whether you wish to save the table or not. *The **Save As** dialog box appears.*	Click **Yes**
3. Enter the table name in the **Table Name:** box. *The new table name is entered into the box.*	Type the desired table name
4. Save the table. *The Save As dialog box closes and the new table is named.*	Click **OK**

2.6 ADDING A FIELD DESCRIPTION

Concepts

You can use the **Description** column to provide information about individual table fields. The field **Description** is optional. It helps you describe the field and is also displayed in the status bar when you select the field on a form.

Steps

Add a description to a field. Open the **tblInventory** table in **Design** view.

1. Select the **Description** column in the field to which you want to add a description. *The insertion point appears in the corresponding **Description** column.*	Click in the **Description** column for the **ID** field.
2. Type the desired description. *The text appears in the **Description** column.*	Type ***Inventory ID gets generated automatically.***
3. Select the **Description** column in the field to which you want to add a description. *The insertion point appears in the corresponding **Description** column.*	Click in the **Description** column for the **Item** field.
4. Type the desired description. *The text appears in the **Description** column.*	Type ***Enter Item Name.***

Practice the Concept: Type the following description for the respective fields:

Description - Enter Item Description
Category - Enter Item Category
Location - Enter Location
Supplier - Select Supplier Number
Manufacturer - Enter Manufacturer Name
Model - Enter Model Number
Reorder Level - Enter Reorder Level
Target Stock Level - Enter Target Stock Level
Unit Price - Enter Unit Price

2.7 SETTING A PRIMARY KEY

Concepts

The primary key is a field in the table that uniquely identifies each record in the table. Examples of primary key include **Order ID**, **Product ID**, or **Customer ID**.

There are several advantages to setting a primary key. First, the primary key is automatically indexed, which makes information retrieval faster. Second, when you open a table, the records are automatically sorted in order by the primary key.

Finally, a primary key prevents the entry of duplicate data because Access does not allow duplicates in the primary key field.

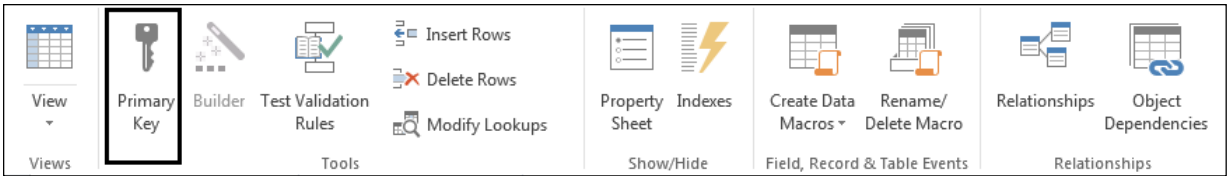


TABLE TOOLS DESIGN tab

tblInventory

Field Name	Data Type	Description (Optional)
ID	AutoNumber	InventoryID gets generated automatically
Item	Short Text	Enter Item Name
Description	Long Text	Enter Item Description
Category	Short Text	Enter Item Category
Location	Short Text	Enter Location
Supplier	Number	Select Supplier Number
Manufacturer	Short Text	Enter Manufacturer Name
Model	Short Text	Enter Model Number
Reorder Level	Number	Enter Reorder Level
Target Stock Level	Number	Enter Target Stock Level

ID field chosen as primary key

Steps

Set a field as the primary key.

1. Select the field you want to designate as the primary key. *The insertion point appears in the field.*	Click **ID** in the **Field Name** column.
2. Click the **Primary Key** button in the **Tools** group on the **DESIGN** tab on the ribbon. *A key appears in the row selector for the designated field and the field is set as the primary key.*	Click  .

You can use an **AutoNumber** field to provide a unique value that's only purpose is to make each value unique.

2.8 Saving Changes to a Table

Concepts

When you create a new table and save it, Access prompts you for a table name. If you make any changes to the table after assigning a name, simply click the **FILE**

tab and choose **Save** to save the changes made. You can also click on the **Save** button in the **Quick Access Toolbar**.

Steps

Do not apply these steps to the open table, they are an instructional reference only.

1. Select the **FILE** tab on the **Ribbon**. *The **Backstage view** appears.*	Click **FILE.**
2. Select **Save**. *The changes are saved.*	Click **Save.**

Note: If you want to save the changes made as another table, click the **FILE** tab and choose **Save As**. Select **Save Object As** and click **Save As**. Enter a new table name and click **OK.**

2.9 Setting a Primary Key Automatically

Concepts

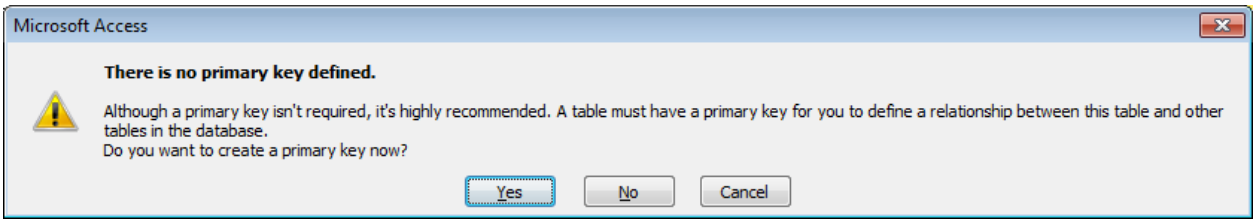
When you create a new table and save it, Access can automatically create a primary key and assign it the **AutoNumber** data type.

Steps

Set a primary key field automatically.

1. Create a new table in **Design** view. *The table **Design View** appears.*	Click **CREATE** tab and select **Table Design** in the **Tables** group.
2. Add the required fields and set the data types. *The fields are added.*	Add the following fields and set the data type: Table2 Field Name / Data Type FirstName / Text LastName / Text Email / Hyperlink
3. Save the table. *The **Save As** prompt appears.*	Click **Save** in the **Quick Access Toolbar**.
4. Assign a name for the table. *Access prompts for setting of a primary key.*	Type the table name as **Email List** and click **OK**.

5. Select an option for setting the primary key *The primary is set accordingly.*	Click **Yes** to set a primary key automatically.



Access prompt for setting a primary key

Access creates a new field named as **ID** with the data type set to **AutoNumber**.

Close and then delete the table. Having closed the table, right-click the table in the navigation pane and click **Delete**. Click **Yes** when prompted.

2.10 REVIEW EXERCISE

Create a Table

1. Use the **Desktop Task Management** sample template to create a database. Name the database **Task Management** and save it to the **Student Folder**.
2. Use the **Navigation Pane** to display objects by type, then select **All Access Objects**.
3. Open the **Contacts** table.
4. After you have viewed the table, close it. Then, close the **Task Management** database as well.
5. Create a blank database named **Training** and save it to the **Student Folder**.
6. Create a new table in **Design** view.
7. Add the following fields and their corresponding data types to the table:

Field Name	Data Type
ProjectID	**Short Text**
ClientID	**Short Text**
CourseName	**Short Text**
StartDate	**Date/Time**
EndDate	**Date/Time**
TrainerInitials	**Text**
Cost	**Number**

8. Enter the following description for the **ProjectID** field: **Enter the ProjectID assigned by Marketing**.
9. Set the **ProjectID** field as the primary key.
10. Save the table as **tblProject**.
11. Close the database and delete **Training** when finished.

LESSON 3 –
SETTING FIELD PROPERTIES

In this lesson, you will learn how to:

- Use field properties
- Limit field size
- Set number formats
- Set date/time formats
- Set yes/no formats
- Index a field
- Set default values
- Set validation rules

3.1 USING FIELD PROPERTIES

Concepts

Each field has a set of properties that control the way it stores, handles, and displays data. Since the forms and reports you create use the fields in your tables, setting field properties in the early stages of building a database can save you time later on; you will have less design work to do in later stages if you set the desired field properties before you create any forms and reports.

You normally set or change field properties when you create a table in **Design** view. If you have created and saved a table using default field properties, you can open the table in **Design** view to change its property settings.

The properties available in the **Field Properties** pane depend on the data type assigned to the selected field. Some of the property types you can set or change are listed in the following table:

Property type	Description
Field Size	Limits a **Text** field to a specific number of characters; limits a **Number** field to a specific type of number.
Format	Controls the way values appear in **Datasheet** view.
Decimal Places	Available for **Number** and **Currency** fields only, determines how many decimal places will appear in the field; this property type has no effect on **Number** fields using the **General** format.
Input Mask	Creates a pattern for data entered into the field (such as adding hyphens within a telephone number).
Caption	Creates a label other than the field name; the caption will appear in the table and on forms and reports.
Default Value	Specifies the value you want to appear in the selected field in all new records.
Validation Rule	Forces data entered into the selected field to meet a specified requirement; for example, you can specify that the **Credit Limit** field not be over $10,000.
Validation Text	Creates an error message to appear when the data entered violates a validation rule.
Required	Specifies that the field cannot be left empty.
Allow Zero Length	Determines whether or not you can enter quotation marks (“ ”) in a **Text**, **Memo** or **Hyperlink** field to indicate that there is no data for that field.
Indexed	Speeds up retrieval of data in a field; all primary key fields are automatically indexed.

Consideration must be given to the consequences of changing any properties. Changes being made to tables that already contain data records may incur data loss.

3.2 LIMITING FIELD SIZE

Concepts

Setting a field size limits the number of characters or the type of characters you can enter into a field. After typing the maximum number of characters allowed, further keystrokes are not permitted. The **Field Size** property is available only for **Text**, **Number**, and **AutoNumber** data types; all other data types have default sizes that are set automatically.

For a **Text** field, the field size is the maximum number of characters you want to allow in the field, up to the maximum of 255 characters allowed by Access. For a **Number** field, you can select one of the following **Field Size** options:

Field Size	Size Range	Decimal Places
Byte	0 to 255 (no fractions)	None; data is rounded
Integer	-32768 to 32767 (no fractions)	None; data is rounded
Long Integer	-2,147,483,648 to 2,147,483,647 (no fractions)	None; data is rounded
Single	-3.4×10^{38} to 3.4×10^{38}	Up to 7
Double	-1.797×10^{308} to 1.797×10^{308}	Up to 15
Replication ID	Globally unique identifier	Not available
Decimal	-10^{28} to 10^{28}	Up to 28

For an **AutoNumber** field, only the **Long Integer** and **Replication ID** options are available.

Steps

From the **Student Folder**, open **Design.accdb**. Open the **tblEmployee** table in **Design** view.

Limit the size of a field.

1. Select the field for which you want to set the field size property. *The field is selected.*	Scroll as necessary and click in the **Basic Salary** field.
2. Select the **General** tab in the **Field Properties** pane, if necessary. *The **General** tab is displayed.*	Click the **General** tab, if necessary.
3. Select the **Field Size** property. *A drop-down arrow appears in the **Field Size** box.*	Click in the **Field Size** box.

4. Select the **Field Size** list, or type the desired value. *A list of available options is displayed.*	Click **Field Size** 
5. Select the desired option, if applicable. *The option appears in the **Field Size** box.*	Click **Integer.**

Proceed to the next section without closing the **Employee** table.

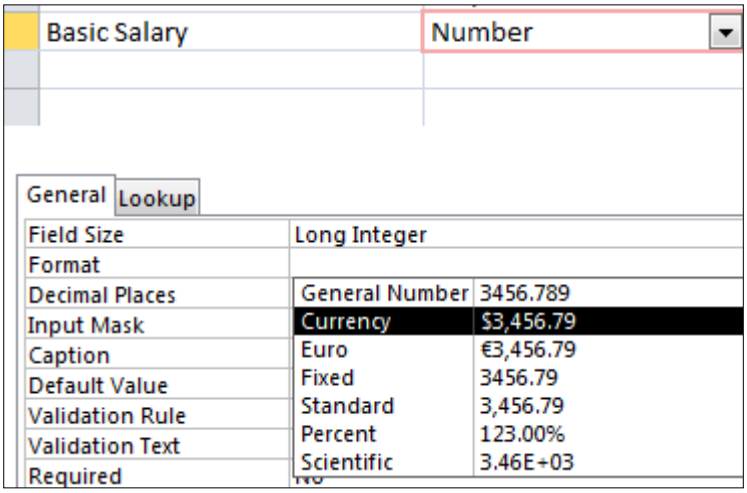
3.3 SETTING NUMBER FORMATS

Concepts

The **Format** property affects how data appears in **Datasheet** view, not how it is stored in the table nor how it is used in calculations. If a **Number** data type field is formatted with 0 decimal places, for example, a value of 1.5 would appear as 2 in the datasheet; if the value is multiplied by 2 in a calculation, however, the answer would be 3, not 4.

The available formats for fields with **Number** data types are listed in the following table:

Format	Description
General Number	Displays a number exactly as it is entered; this is the default format.
Currency	Displays a dollar sign, thousands separator, and two decimal places; the defaults for this format are determined by the system settings.
Euro	Displays a euro sign, thousands separator, and two decimal places; the defaults for this format are determined by the system settings.
Fixed	Displays at least one digit and is rounded to the default number of decimal places; the defaults for this format are determined by the system settings.
Standard	Displays thousands separator and is rounded to the default number of decimal places; the defaults for this format are determined by the system settings.
Percent	Multiplies the number by 100, displays a percent sign (%), and is rounded to the default number of decimal places; the defaults for this format are determined by the system settings.
Scientific	Expresses numbers in standard scientific notation (as multiples of exponents of 10).



Selecting a number format

Steps

Set a number format.

Open the **tblEmployee** table in **Design** view if necessary.

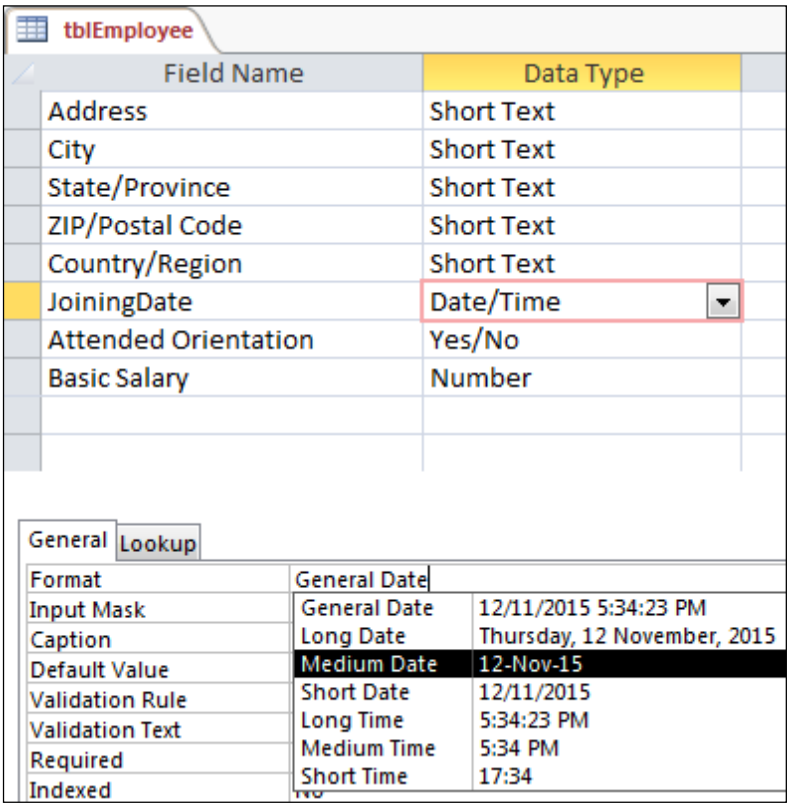
1. Select the field for which you want to set a number format. *The field is selected.*	Scroll as necessary and click in the **Basic Salary** field.
2. Select the **General** tab in the **Field Properties** pane, if necessary. *The **General** tab is displayed.*	Click the **General** tab, if necessary.
3. Select the **Format** property. *A drop-down arrow appears in the **Format** box.*	Click in the **Format** box.
4. Select the **Format** list. *A list of available formats is displayed.*	Click **Format**
5. Select the desired format. *The format appears in the **Format** box.*	Click **Currency.**

Switch to the **Datasheet** view. Scroll to the **Basic Salary** column of the first record and enter the value **3500** and press **[Enter]**. Notice that the value is now formatted as currency. Proceed to the next section without closing the **tblEmployee** table.

3.4 Setting Date/Time Formats

Concepts

A Date/Time field can have various date formats as shown in the picture below. You can use the formats as per your requirement.



Different date formats

Steps

Set a date/time format.

Open the **tblEmployee** table in **Design** view if necessary.

1. Select the field for which you want to set a date/time format. *The field is selected.*	Scroll as necessary and click in the **Joining Date** field.
2. Select the **General** tab in the **Field Properties** pane, if necessary. *The **General** tab is displayed.*	Click the **General** tab, if necessary.
3. Select the **Format** property. *A drop-down arrow appears in the **Format** box.*	Click in the **Format** box.

4. Select the **Format** list. *A list of available formats is displayed.*	Click **Format** 
5. Select the desired format. *The format appears in the **Format** box.*	Click **Medium Date.**

Switch to **Datasheet** view. Scroll as necessary to the **Joining Date** field; notice its format.

Switch back to **Design** view.

3.5 SETTING YES/NO FORMATS

Concepts

A **Yes/No** field is limited to either a positive or a negative response and can be displayed as a text box, a check box, or a combo box. You select the display of the field on the **Lookup** page in the **Field Properties** pane.

If the **Yes/No** field displays its values in a text box, you can select one of three **Yes/No** data type formats: **True/False**, **Yes/No**, and **On/Off**. Regardless of the format selected, the positive responses of **True**, **Yes**, and **On** are equivalent, just as the negative responses of **False**, **No**, and **Off** are equivalent. Consequently, if the **Yes/No** field is set to the **True/False** format and a user enters **Yes**, Access automatically converts it to **True**.

When a **Yes/No** field displays a check box, a selected check box indicates a positive response and a deselected check box indicates a negative response. The check box is the default setting for a **Yes/No** field.

Steps

Set a yes/no format.

If necessary, open the **tblEmployee** table in **Design** view.

1. Select the field for which you want to set a yes/no format. *The field is selected.*	Scroll as necessary and click in the **Attended Orientation** field.
2. Select the **General** tab in the **Field Properties** pane, if necessary. *The **General** tab is displayed.*	Click the **General** tab, if necessary.

3. Select the **Format** property. *A drop-down arrow appears in the **Format** box.*	Click in the **Format** box.
4. Select the **Format** list. *A list of available formats is displayed.*	Click **Format** 
5. Select the desired yes/no format. *The format appears in the **Format** box.*	Click **Yes/No**.

3.6 INDEXING A FIELD

Concepts

Access uses indexes much like a Table of Contents to help locate and sort information quickly. An index is a copy of a field which is sorted and stored separately to speed up access to the data in a table. For example, to access a particular record in an employee details table based on surname, it would be necessary to search the entire table looking for the surname. If **Surname** was defined as an **Index** however, the name could be quickly found from the sorted list of surnames and this would link to the appropriate record in the table.

If a field is set as indexed, the table will be automatically sorted by that field whenever the table is opened. Indexing can be set on more than one field and the fields are sorted in turn. By default, Access set the Primary key as the Index within a table.

The following lists the possible settings for the Indexed property:

- **No**
  Do not create an index on this field (or delete the existing index).
- **Yes (Duplicates OK)**
  Create an index on this field.
- **Yes (No Duplicates)**
  Create a unique index on this field.

By setting the **Index** property to **No Duplicates**, Access prevents any new value which matches an existing value from being entered into the field. For example, indexing the **ID** field in a table and setting it to **Yes (No Duplicates)** prevents duplicate numbers being entered and therefore the values in the field remain unique.

Steps

Create an indexed field.

If necessary, open the **tblEmployee** table in **Design** view.

1. Select the field for which you want to apply an index. *The field is selected.*	Click in the **Fax Number** field.
2. Select the **General** tab in the **Field Properties** pane, if necessary. *The **General** tab is displayed.*	Click the **General** tab, if necessary.
3. Select the **Indexed** property. *The insertion point appears in the **Indexed** box, and the **list arrow** appears.*	Click in the **Indexed** box.
4. Click the **list arrow**. *The various index settings appear.*	Click 
5. Select a required indexing option. *The option appears in the Indexed box.*	Click **Yes (Duplicates OK).**
6. Press **[Enter]**. *The **Indexed** property is saved.*	Press **[Enter].**

Save the changes to the table.

3.7 SETTING DEFAULT VALUES

Concepts

When you set a default value for a field that value automatically appears in the field for all new records. You can, however, modify the default field value as needed when entering a new record.

A default value can save you time when entering data. For example, if a table stores the names and addresses of clients and most of the clients have addresses in New York, you can set the default value of the **State** field to **NY**. If you then enter a new record for a client in Connecticut, or if a client moves out of New York, you can change the value in the **State** field just for that individual record. Setting a default value for an established table, however, does not modify existing records.

You can set a default value by entering the desired value or expression in the **Default Value** box. An expression consists of operators (i.e., =, +, -, *, /) and/or values.

If you create a default value for a **Text** field, the default text must be enclosed in quotation marks (**" "**); for example, **"Net 30"**. Values for **Date** fields must be enclosed in number signs (#); for example, **#1/15/98#**. If you do not enter the number signs, however, Access will automatically enter them.

Steps

Set a default value.

If necessary, open the **tblEmployee** table in **Design** view.

1. Select the field for which you want to set a default value. *The field is selected.*	Scroll as necessary and click in the **Attended Orientation** field.
2. Select the **General** tab in the **Field Properties** pane. *The **General** tab is displayed.*	Click the **General** tab.
3. Select the **Default Value** property. *The insertion point appears in the **Default Value** box, and the **Build** button appears.*	Click in the **Default Value** box.
4. Type the desired default value. *The text appears in the **Default Value** box.*	Type ***yes.***
5. Press **[Enter]**. *The default value is saved.*	Press **[Enter].**

Practice the Concept: Assign the default value of **Asia Pacific** for the **Country/Region** field. Save the table and switch to **Datasheet** view. Scroll to display the **Attended Orientation** column in the new record row; notice that the **Attended Orientation** field for the new record is checked.

Then, switch back to **Design** view.

3.8 SETTING VALIDATION RULES

Concepts

A validation rule ensures that only valid data is stored in the field. You can set validation rules for a field in the design view. When you enter data using the datasheet view or a form, the validation rules are applied before the data is saved in the table. If the data follows the rule, then it is saved in the table, otherwise it is not. If this occurs Access will display the validation text to notify the user that the entered data is not following the validation rule.

Steps

Set a validation rule.

If necessary, open the **tblEmployee** table in **Design** view.

1. Select the field for which you want to set a validation rule. *The field is selected.*	Scroll as necessary and click in the **Basic Salary** field.
2. Select the **General** tab in the **Field Properties** pane, if necessary. *The **General** tab is displayed.*	Click the **General** tab, if necessary.
3. Select the **Validation Rule** property. *The insertion point appears in the **Validation Rule** box, and the **Build** button appears.*	Click in the **Validation Rule** box.
4. Enter the desired validation rule. *The text appears in the **Validation Rule** box.*	Type ***<=5000.***
5. Select the **Validation Text** property. *The insertion point appears in the **Validation Text** box.*	Click in the **Validation Text** box.
6. Enter the desired validation text. *The text appears in the **Validation Text** box.*	Type ***Basic salary may not exceed $5,000.***

Save the table; a **Microsoft Office Access** warning box informs you that data integrity rules have been changed. Select **Yes**.

Switch back to **Datasheet** view. Create a new record; scroll as necessary, enter **15000** in the **Basic Salary** field, and press **[Enter]**. Select **OK**.

Press the **[Delete]** key and **Yes** to delete the new record and switch back to **Design** view.

Practice the Concept:

1. Add the following validation rule to the **Joining Date** field to prevent any future date entries:
   <=Date()
2. Add the following validation rule to the **Basic Salary** field to ensure only entries between 500 and 8000 are entered.
   Between 500 and 8000
3. Save the table.

3.9 REVIEW EXERCISE

Set field properties

1. Open **FieldsEX.accdb**.
2. Open the **tblOrders** table in **Design** view.
3. Set the **Format** property for the **Pickup Date** field to **Short Date**.
4. Set the **Default** property for the **Paid** field to **No**.
5. Open the **tblMenu Items** table in **Design** view.
6. Set the **Format** property for the **Price** field to **Currency**.
7. Set a validation rule for the **Price** field, so that it can only contain values greater than 1 dollar. *(**Hint:** Type **>1**.)* Then, enter the following validation text: **The amount paid must be greater than one dollar**.
8. Switch to **Datasheet** view, saving the changes. Select **Yes** to any **Microsoft Access** warning boxes. Notice the formats of the **Price** field.
9. Close the database file.

LESSON 4 –
WORKING WITH TABLES

In this lesson, you will learn how to:

- Use field templates
- Add field to existing table
- Add records
- Move through records
- Select records
- Edit records
- Delete data in a record
- Delete records
- Display a Totals row in a table

4.1 USING FIELD TEMPLATES

Concepts

Tables are the building blocks of a database. They are made of records (also called rows) and fields (also called columns). You can sometimes save time by choosing fields from a field template. A field template definition includes field name, a data type, a setting for the field's **Format** property.

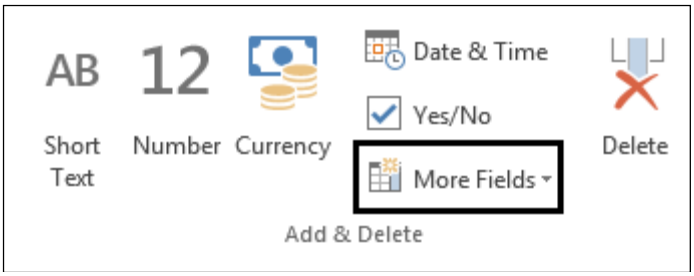
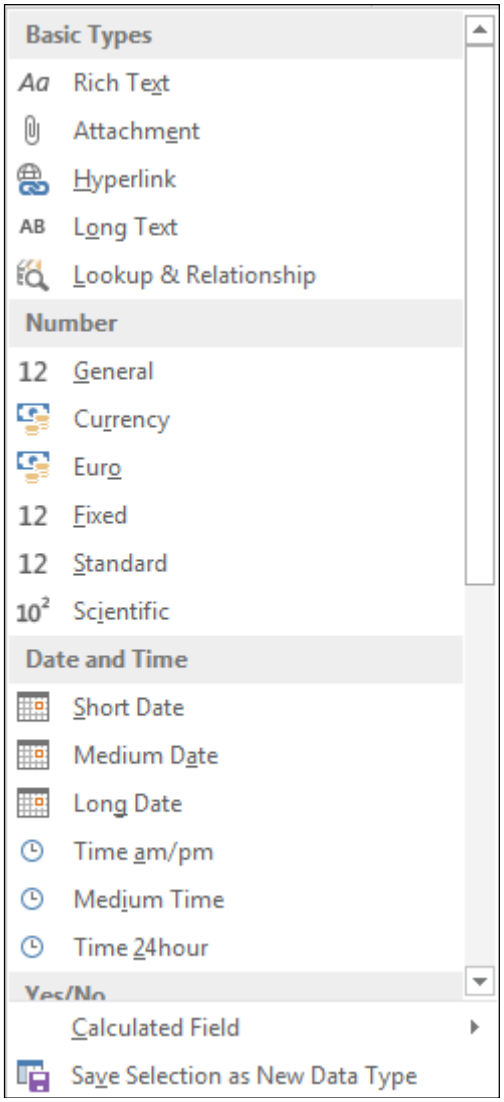


TABLE TOOLS FIELDS contextual tab



More Fields drop down list

Steps

To use the **Field Template** task pane:

From the **Student Folder**, open **Tables1.accdb** database. Open the **tblEmployee** table in **Datasheet** view.

1. Select the **Fields** tab on the **Ribbon**. *The **Fields** tab appears.*	Click **Fields.**
2. Select the field in the datasheet after which you want to insert the new field. *A **field** is selected.*	Click **Basic Salary.**
3. Select the **More Fields** button in the **Add & Delete** group. *The field list is displayed.*	Select 
4. Select the desired field from the field list. *The new field is inserted in the datasheet.*	Click **Attachment.**

4.2 ADDING FIELD TO EXISTING TABLE

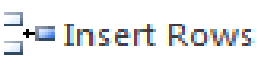
Concepts

New fields can be added even after a table has been created.

Steps

Add a new field to an existing table:

From the **Student Folder**, open **Tables1.accdb** database. Open the **tblEmployee** table in **Design** view.

1. Select a row to add the new field. *The row is selected.*	Click **Basic Salary.**
2. Select the **Insert Rows** button in the **Tools** group. *A blank row is inserted.*	Click 

3. Type a name for the field and set the data type. *The new field is created.*	Type the field name as **Insurance** and set the data type to **Yes/No**.

4.3 ADDING RECORDS

Concepts

You can add records to a table by opening the table in the **Datasheet** view. A table opened in **Datasheet** view resembles an **Excel** worksheet. To move to the next field in the same row, press **[Tab]**, use the **RIGHT** ⇨ or **LEFT** ⇦ arrows, or click the cell in the next field.

Note: You do not need to explicitly save your data. **Access** commits the changes made to the table when you move the cursor to the new field in the same row, or when you move to the next row.

You must enter the type of data that the field is set to accept. If you do not follow, **Access** displays an error message.

Steps

Add a record to a table.

Open the **tblEmployee** table in **Datasheet** view, if necessary.

1. Select the first field in the new record row, if necessary. *The insertion point appears in the field.*	Click in the **Company** field of the first row, if necessary.
2. Type the desired data. *The data appears in the field.*	Type ***CarySales.***
3. Press **[Enter]**. *The insertion point moves to the next field.*	Press **[Enter].**
4. Enter the desired record data into the remaining fields, pressing **[Enter]** after each entry. *The data appears in the fields.*	Follow the instructions shown below the table to complete this step.

Add the following records to the table, pressing **[Enter]** after each field:

Field Name	Value
Last Name	Teo
First Name	Carissa
E-mail Address	carissa@carysales.com
Job Title	Account Manager
Business Phone	(065)5678-2345
Address	6, PA Drive
City	Singapore
State/Province	Singapore
Zip/Postal Code	Singapore
Joining Date	22/4/2013
Basic Salary	3500

Close the **Datasheet** view window.

4.4 Moving through Records

Concepts

Navigating Access records is same as navigating an Excel worksheet. You can use arrow keys or tab keys to move from one field to another. You can also use the **Record selectors** just above the status bar to move to the next record, previous record, first record, and the last record. You can also type in the record number you want to move to in the textbox located in between the record selectors.

tblEmployee

ID	Company	Last Name	First Name	E-mail Address	Job Title	Business Phone
2	Cary Sales Pte.	Brown	Mary	mary@carysales.com	Sales Executive	5678-9080
3	CarySales	Brown	Hemry	Hemry@carysales.com	Sales Engineer	(065)7874-8780
4	CarySales	Tan	Timothy	Timothy@carysales.com	Production Engineer	(065)4562-3455
5	CarySales	Smith	Wilson	Wilson@carysales.com	Sales Executive	(065)7874-8780
6	CarySales	Leow	Sally	sally@carysales.com	Production Support	(065)7899-9888
7	CarySales	Teck	Tom	Tom@carysales.com	Production Support	(065)7899-9888
8	CarySales	Gupta	Rajesh	Rajesh@carysales.com	Production Support	(065)7899-9888
9	CarySales	Pandit	Reshmi	Reshmi@carysales.com	Production Support	(065)7899-9888
10	CarySales	Mahmood	Fakruddin	fakruddin@carysales.com	Production Support	(065)7899-9888
11	CarySales	Binte Mahmoc	Siti Nuralisa	Sitinur@carysales.com	Marketing Support	(060)8900-9909
12	CarySales	Kho	Lina	lina@carysales.com	Marketing Manager	(060)8900-9909
13	CarySales	Lee	Agnes	Agnes@carysales.com	Sales Manager	(060)8900-9909
14	CarySales	Anwar	Mohammad	anwar@carysales.com	Sales Manager	(060)8900-9909
15	CarySales	Lee Hong	Nicole	nicole@carysales.com	Media executive	(065)7874-8780
(New)						

Record: 15 of 15 No Filter Search

Employee table showing all records

The navigation buttons are:

First record	Moves the cursor to the first record in the table and keeps the cursor in the same field.
Previous record	Moves the cursor to the previous record in the table and keeps the cursor in the same field.
Next record	Moves the cursor to the next record in the table and keeps the cursor in the same field.
Last record	Moves the cursor to the last record in the table and keeps the cursor in the same field.
New (blank) record	Creates a new record at the end of the table and moves the cursor to the first field of the new record.

Steps

Move through records in a table.

Open the **tblEmployee** table in **Datasheet** view.

1. To move to the last record in the table, click the **Last Record** button on the navigation toolbar. *The first field of the last record is selected.*	Click
2. To move to the first record, click the **First Record** button on the navigation toolbar. *The first field of the first record is selected.*	Click
3. To move to the next record, click the **Next Record** button on the navigation toolbar. *The first field of the next record is selected.*	Click
4. To move to the previous record, click the **Previous Record** button on the navigation toolbar. *The first field of the previous record is selected.*	Click

4.5 SELECTING RECORDS

Concepts

You can also select one record or multiple records using a keyboard or a mouse. If you are using the keyboard then you need to go to that record and holding down the **[Shift]** key and the right arrow key you can select the entire record.

If you are using the Mouse, then you need to go to that record and point and click to the left of the current record, the entire record is selected.

tblEmployee

ID	Company	Last Name	First Name	E-mail Address	Job Title	Business Phone
2	Cary Sales Pte.	Brown	Mary	mary@carysales.com	Sales Executive	5678-9080
3	CarySales	Brown	Hemry	Hemry@carysales.com	Sales Engineer	(065)7874-8780
4	CarySales	Tan	Timothy	Timothy@carysales.com	Production Engineer	(065)4562-3455
5	CarySales	Smith	Wilson	Wilson@carysales.com	Sales Executive	(065)7874-8780
6	CarySales	Leow	Sally	sally@carysales.com	Production Support	(065)7899-9888
7	CarySales	Teck	Tom	Tom@carysales.com	Production Support	(065)7899-9888
8	CarySales	Gupta	Rajesh	Rajesh@carysales.com	Production Support	(065)7899-9888
9	CarySales	Pandit	Reshmi	Reshmi@carysales.com	Production Support	(065)7899-9888
10	CarySales	Mahmood	Fakruddin	fakruddin@carysales.com	Production Support	(065)7899-9888
11	CarySales	Binte Mahmoc	Siti Nuralisa	Sitinur@carysales.com	Marketing Support	(060)8900-9909
12	CarySales	Kho	Lina	lina@carysales.com	Marketing Manager	(060)8900-9909
13	CarySales	Lee	Agnes	Agnes@carysales.com	Sales Manager	(060)8900-9909
14	CarySales	Anwar	Mohammad	anwar@carysales.com	Sales Manager	(060)8900-9909
15	CarySales	Lee Hong	Nicole	nicole@carysales.com	Media executive	(065)7874-8780

Selected Record

Steps

Select a record in a table.

If necessary, open the **tblEmployee** table in **Datasheet** view.

1. Click anywhere in the record you want to make active. *The field is selected and the record selector changes colour.*	Click in the **ID** field for record number 6.
2. Point to the record selector of a record you want to select. *A solid, black, right-pointing arrow appears.*	Point to the left of the **ID** field for record number 6.
3. Click in the record selector of the record you want to select. *The entire record is selected.*	Click to the left of the **ID** field for record number 6.

4.6 EDITING RECORDS

Concepts

The records in the table can be edited either by opening the table in the datasheet view or using a form.

Steps

Edit a table record in edit mode.

If necessary, open the **tblEmployee** table in **Datasheet** view.

1. Click in the field you want to edit. *The insertion point appears in the field.*	Click in the **E-mail address** field in the record number 6.
2. Select the text you want to edit. *The characters are selected.*	Click after the word Tom.
3. Type the desired text. *The characters are replaced.*	Type ***Teck (****to read as TomTeck@carysales.com).*
4. Press **[Enter]**. *The changes to the record are saved.*	Press **[Enter].**

4.7 PRINTING FROM A TABLE

Concepts

You can print pages, selected records and tables from Microsoft Access. You can also view pages in this view by navigating the **Next Page** and **Previous Page** buttons in the **Print Preview** section.

Steps

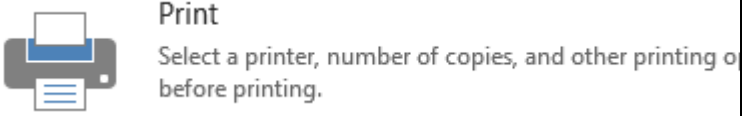
1. Select the **FILE** tab. *The backstage view will open.*	Click **FILE**
2. Select the Print option and then select **Print**. *The Print dialogue box will appear.*	Click **Print**  Print Select a printer, number of copies, and other printing options before printing.

3. Confirm printing. *The page will print*.	Click **OK**

Print Select Records

1. Select the records to print. *The records will be selected.*	Select the last name row in the **tblEmployee.**
2. Select the **FILE** tab. *The backstage view will open.*	Click **FILE**
3. Select the **Print** option and then select **Print**. *The Print dialogue box will appear*.	Click **Print** 
4. Select the **Selected Records** option. *The records will be selected.*	Click **Selected Records**
5. Print the records. *The records will be printed.*	Click **OK**

Print a Complete Table

1. Select the **FILE** tab. *The backstage view will open.*	Click **FILE**
2. Select the **Print** option and then select **Print**. *The Print dialogue box will appear.*	Click **Print** 
3. Ensure the **All** option is selected. *The table will be selected.*	Click **All**
4. Print the table. *The table will be printed*.	Click **OK**

Tip: You can use the keyboard shortcut **Ctrl+P** to quickly open the print dialogue box.

4.8 Deleting Data in a Record

Concepts

You can delete the data in a record in a table by navigating to the desired record, selecting the data in the desired field and pressing the **[Delete]** key.

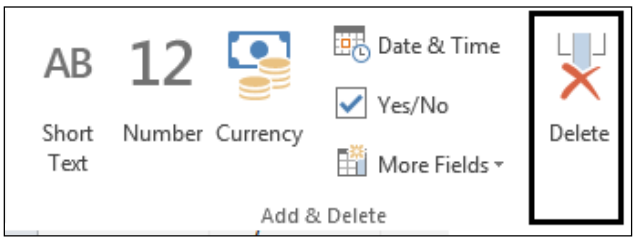
Steps

Delete data in a record from a table.

Open the **tblEmployee** table in **Datasheet** view, if necessary.

1. Select the record that has data that you want to delete. *The record is selected.*	Scroll as necessary and click any field in record 5.
2. Select the data you want to delete. *The data is selected.*	Select the job title for record 5.
3. Press **[Delete]**. *The data is removed.*	Press **[Delete].**

Save the **tblEmployee** table. As an alternative, you can also select the **Delete** command in the **Add & Delete** group of the **TABLE TOOLS FIELD** tab.

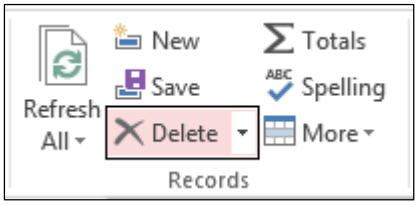


The Delete command in the Add & Delete group

4.9 Deleting Records

Concepts

You can delete the records in a table by navigating to the desired record and pressing the **Delete** button present in the **Records** group in the **HOME** tab. Alternatively, you can also delete the record by right clicking on the desired record and then selecting **Delete Record** from the shortcut menu.

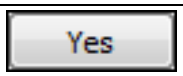


Delete in the Records group

Steps

Delete a record from a table.

Open the **tblEmployee** table in **Datasheet** view, if necessary.

1. Select the record you want to delete. *The record is selected.*	Scroll as necessary and click the record selector of the last record.
2. Press **[Delete]**. *The record is removed from the table, and a **Microsoft Office Access** warning box opens, prompting you to confirm the deletion.*	Press **[Delete].**
3. Select **Yes** to delete the record. *The **Microsoft Office Access** warning box closes.*	Click 

Save the **tblEmployee** table.

4.10 REVIEW EXERCISE

Work with Tables

1. Open **TableEX.accdb**.
2. Open the **tblProducts** table in **Datasheet** view.
3. Add the following records to the table:

Product Code	Product Name	Standard Cost	List Price	Quantity per Unit	Supplier	Category
NWTSO	Northwind Trader Corn Chicken Soup	$2.00	$3.00	1 item	Supplier G	Soups

4. Close the **tblProducts** table.
5. Open the **tblCustomers** table in **Datasheet** view.
6. Move to the fifth record.
7. In the fifth record, change the Job Title to **Marketing Executive.**
8. Delete the last record. Close the table and then close the database.

LESSON 5 –
EDITING TABLES

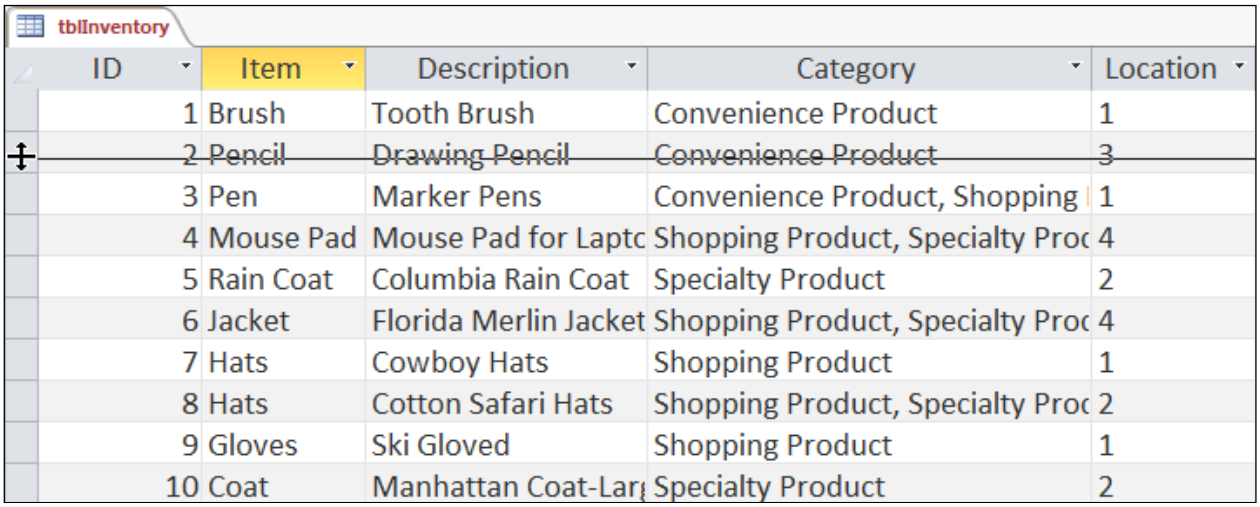
In this lesson, you will learn how to:

- Change the row height
- Change the column width
- Change a font attribute
- Change a cell effect
- Use alternate background colours
- Select a column
- Move a column
- Hide a column
- Unhide a column
- Freeze a column

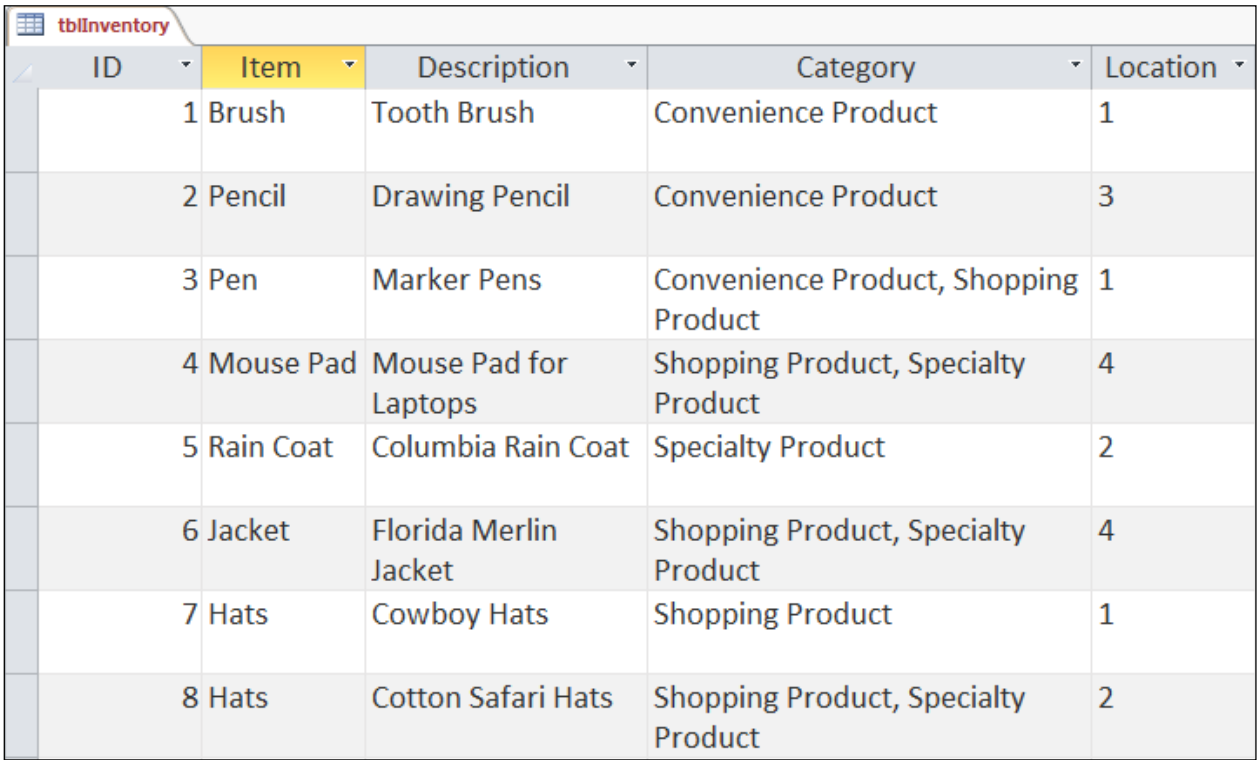
5.1 CHANGING THE ROW HEIGHT

Concepts

After you have created the database, you may find that the data seems a bit unorganised. You can change the order of the columns or you can even make each row of data easier to read. You can make the text easier to read by increasing the row height in your datasheets.



Row height being increased



Inventory table in datasheet view with increased row height

Steps

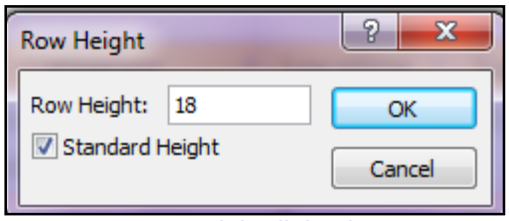
From the **Student Folder**, open **TABLES2.ACCDB**.
Change the height of the rows in a table.

Open the **tblInventory** table in **Datasheet** view.

1. Point to any horizontal line between records in the record selector. *The mouse pointer changes into a black cross with vertical arrowheads.*	Point to the horizontal line below the **Brush** record selector.
2. Drag the line to the desired row height. *The height of all the rows changes accordingly.*	Drag the line down to the top of the next row.

Notice that the longer text entries in the **Description** field now wrap to the next line.

Practice the Concept: Select any record, right-click and select **Row Height**. Select the **Standard Height** option and **OK**.



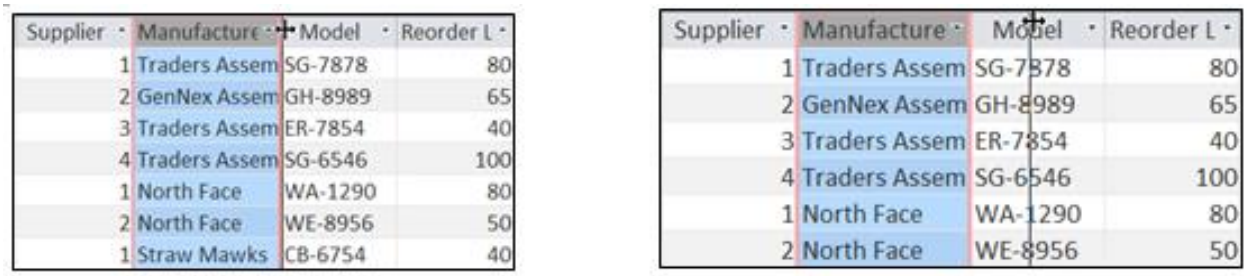
Row Height dialog box

5.2 CHANGING THE COLUMN WIDTH

Concepts

If some of the fields in your datasheet contain lots of text, some of that text may be cut off so that you can't see them at all. In that case, you can resize the column to make it more readable. You can also resize one or more columns manually or automatically.

To resize single column, position the mouse pointer at the right edge of the column header until the pointer changes to a double- headed arrow.



Supplier	Manufacture	Model	Reorder L
1	Traders Assem	SG-7878	80
2	GenNex Assem	GH-8989	65
3	Traders Assem	ER-7854	40
4	Traders Assem	SG-6546	100
1	North Face	WA-1290	80
2	North Face	WE-8956	50
1	Straw Mawks	CB-6754	40

Supplier	Manufacture	Model	Reorder L
1	Traders Assem	SG-7878	80
2	GenNex Assem	GH-8989	65
3	Traders Assem	ER-7854	40
4	Traders Assem	SG-6546	100
1	North Face	WA-1290	80
2	North Face	WE-8956	50

Changing the Manufacturer column width

Supplier	Manufacturer	Model
1	Traders Assembly	SG-7878
2	GenNex Assembly	GH-8989
3	Traders Assembly	ER-7854
4	Traders Assembly	SG-6546
1	North Face	WA-1290
2	North Face	WE-8956

Changed Column width

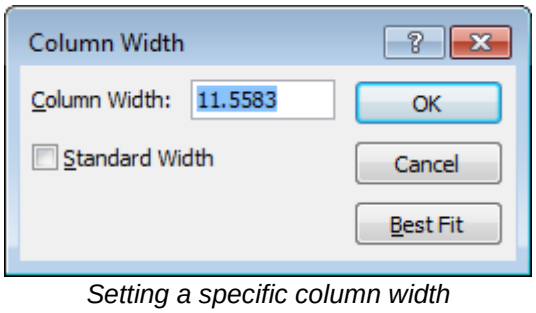
Steps

Change the width of a column in a table.

If necessary, open the **tblInventory** table in **Datasheet** view.

1. Point to the vertical line to the right of the header of the column you want to adjust. *The mouse pointer changes into a black cross with horizontal arrowheads.*	Point to the vertical line to the right of the **Description** header.
2. Drag the line to the desired width. *The column width changes accordingly.*	Drag the line to the right of the **Model** header.

To resize a column to a specific width, right-click on the field name and select **Field Width**. Type the required width and click **OK**.

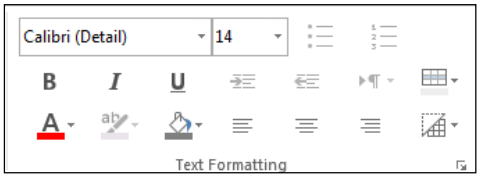


Setting a specific column width

5.3 Changing a Font Attribute

Concepts

Access allows you to format the fonts in your tables. You can change the font face, font size, and font colour using the commands present in the **Text Formatting** group on the **HOME** Tab.



Text Formatting group

Steps

Change a font attribute.

If necessary, open the **tblInventory** table in **Datasheet** view.

1. Select the **HOME Tab** on the **Ribbon**. *The **Format** menu appears.*	Click on the **HOME** tab.
2. Select the desired options from the **Text Formatting** group on the **HOME Tab**. *The font attributes changes.*	Click on **B**.

Click the **Bold** button again to return the font back to its original state.

5.4 Selecting a Column

Concepts

Category	Location	Supplier	Manufacturer
Convenience Product	1	1	Traders Assembly
Convenience Product	3	2	GenNex Assembly
Convenience Product, Shopping Product	1	3	Traders Assembly
Shopping Product, Specialty Product	4	4	Traders Assembly
Specialty Product	2	1	North Face
Shopping Product, Specialty Product	4	2	North Face

Inventory table showing Location column selected

Steps

Select a column in a table.

If necessary, open the **tblInventory** table in **Datasheet** view.

1. Click the header of the column you want to select. *The column is selected.*	Click the **Location** header.

Click in any field to deselect the column.

5.5 Moving a Column

Concepts

You can change the sequence of the columns by selecting the column and then dragging using the column border and releasing the mouse at the desired column position.

Category	Location	Supplier	Manufacturer
Convenience Product	1	1	Traders Assembly
Convenience Product	3	2	GenNex Assembly
Convenience Product, Shopping Product	1	3	Traders Assembly
Shopping Product, Specialty Product	4	4	Traders Assembly
Specialty Product	2	1	North Face
Shopping Product, Specialty Product	4	2	North Face

Inventory table showing Location column (located between Category and Supplier) selected

Category	Supplier	Location	Manufacturer
Convenience Product	1	1	Traders Assembly
Convenience Product	2	3	GenNex Assembly
Convenience Product, Shopping Product	3	1	Traders Assembly
Shopping Product, Specialty Product	4	4	Traders Assembly
Specialty Product	1	2	North Face
Shopping Product, Specialty Product	2	4	North Face

Inventory table showing Location column moved to a new location (between Supplier and Manufacturer)

Steps

Move a column in a table.

If necessary, open the **tblInventory** table in **Datasheet** view.

1. Select the column you want to move. *The column is selected.*	Click the **Location** header.
2. Drag the column to the new location. *The column appears in the new location.*	Drag the **Location** column to the right of the **Supplier** column, until a vertical divider bar appears between the columns.

Click in any field to deselect the column.

Close the **Inventory** table without saving the changes. Close **TABLES2.ACCDB**.

5.6 REVIEW EXERCISE

Edit Tables

1. Open **EditTableEX.accdb**.
2. Open the **tblCustomers** table in **Datasheet** view.
3. Increase the row height by approximately 25.
4. Change the font to **Arial Narrow** and the font size to **12**.
5. Widen the **Job Title** and **Address** columns so that all the data in them appears.
6. Move the **Email Address** column to the right of the **Job Title** column.
7. If necessary, resize the Datasheet window so that the columns at the far right do not appear.
8. Close the table without saving the changes.
9. Close the database.

LESSON 6 –
FINDING AND FILTERING DATA

In this lesson, you will learn how to:

- Sort records
- Find specific records
- Find records using wildcards
- Use Replace
- Use Filter By Selection
- Apply/remove a filter
- Use Filter Excluding Selection
- Use the Search Box
- Use Quick Filter
- Use AutoFilter

6.1 SORTING RECORDS

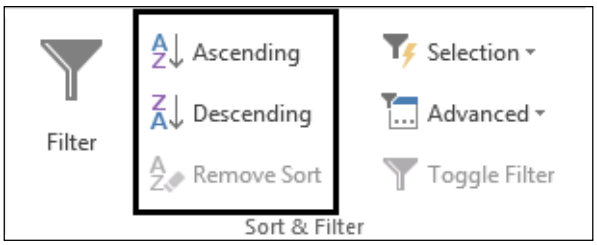
Concepts

You can sort the records in a table, query, form, or a report on one or more fields. When sorting on multiple fields, it is important to identify the sort order.

To arrange the list in alphabetical, numerical, chronological, or Boolean order, on the table or query, click the column header or a field under the column. Then, in the **Sort & Filter** section of the **Ribbon**, click 

. You can also right-click to sort the list. Besides the regular arrangement of records, you can also sort records in reverse alphabetical, numerical, or chronological. When you do this, the empty fields will always come last in the list.

When you are done sorting the records, it can be important to reset the table before continuing unless you want to keep the list sorted. This can be achieved by clicking **Remove Sort** button**.**



Sort & Filter group present under the HOME Tab

Steps

From the **Student Folder**, open **FILTER1.ACCDB**.
Sort records in a table.

Open the **tblEmployee** table in **Datasheet** view.

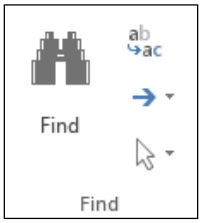
1. Select the field by which you want to sort. *The insertion point appears in the column.*	Click in the **Last Name** column.
2. Select the **Ascending** or **Descending** button in the **Sort & Filter** group on the **HOME Tab**. *The records are sorted accordingly.*	Click 
3. To remove the sort, select the **Remove Sort** button. *All sorts are removed.*	Click 

Practice the Concept: Scroll as necessary to view the **Basic Salary** column and sort the records by the **Basic Salary** field in descending order. Then, remove the sort by selecting the **Remove Sort** button.

6.2 FINDING SPECIFIC RECORDS

Concepts

As the volume of data in the table grows, it becomes increasingly difficult to find data in a table manually. You can use Access **Find** tool to quickly find data The **Find** command can be used to search for a specific text, number and date in a field.



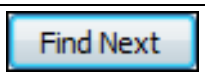
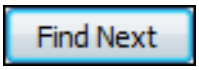
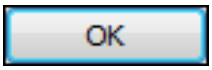
Find group present under the HOME Tab

Steps

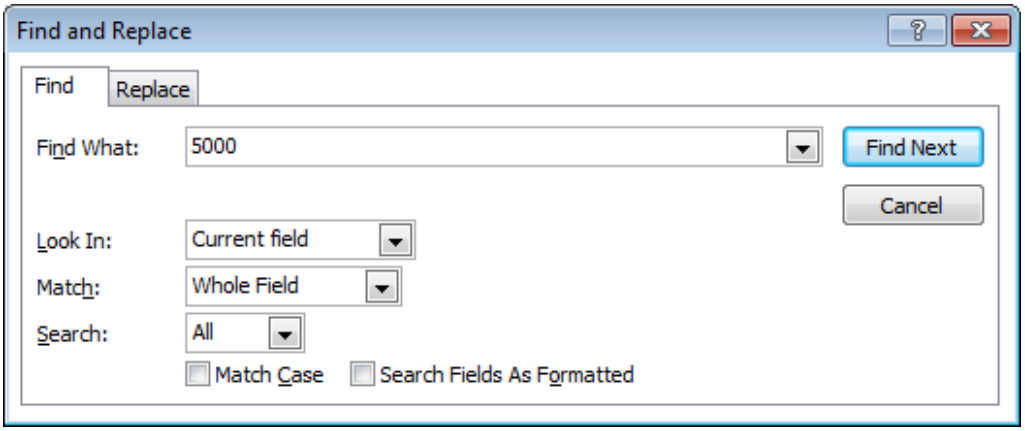
Find specific records in a table.

If necessary, open the **tblEmployee** table in **Datasheet** view.

1. Select the field you want to search. *The insertion point appears in the column.*	Scroll as necessary and click in the **Job Title** column.
2. Click the **Find** button on the **HOME Tab** on the **Ribbon**. *The **Find and Replace** dialog box opens with the insertion point in the **Find What** box.*	 Click Find
3. Type the text you want to find in the **Find What** box. *The text appears in the **Find What** box.*	Type ***Production Support.***
4. Select the **Match** list. *A list of available options appears.*	Click **Match** 
5. Select the desired option. *The option is selected.*	Click **Whole Field.**

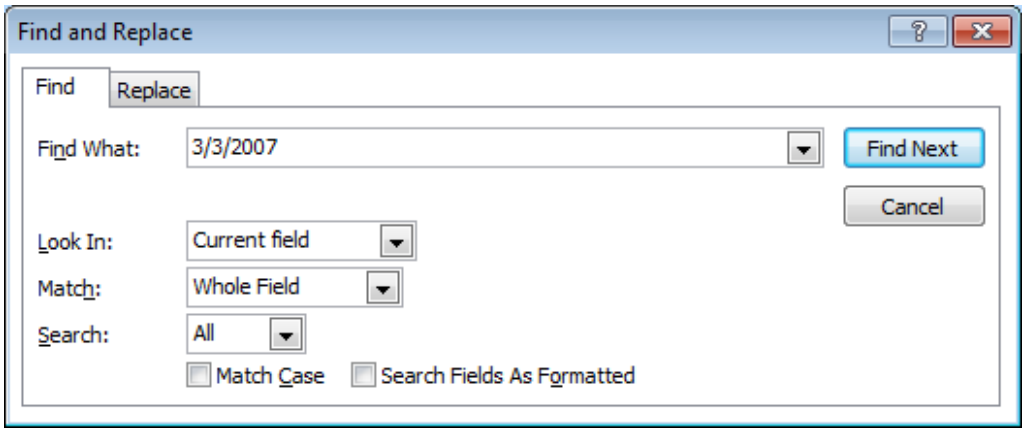
6. Select **Find Next** to begin the search. *The data in the first matching record is selected.*	Click 
7. Select **Find Next** to find the next matching record. *The data in the next matching record is selected, or a **Microsoft Office Access** message box opens to notify you that all records have been searched.*	Click  twice.
8. When all records have been searched, select **OK**. *The **Microsoft Office Access** message box closes.*	Click 
9. Select **Cancel** to close the **Find and Replace** dialog box. *The **Find and Replace** dialog box closes.*	Click 

Practice the Concept: Search for a basic salary value of 5000 using the **Find** command. Note, ensure the **Search Fields As Formatted** checkbox is deselected.



Searching for a number value

Search for an employee that was hired on the 3rd March 2007 using the **Find** command.



Searching for a date value

6.3 FINDING RECORDS USING WILDCARDS

Concepts

A wildcard is a special character that can represent one or more characters in a text value. You can use them to find a number of records with similar information, although they are not exactly the same. You can also use them to find a specific record when you can't remember enough information to retrieve that record.

The most flexible wildcard character is the asterisk (*). It matches any block of characters in a specific position. For example: **Like "*Access*"** would return Microsoft Access, Access 97, accessed, and accessing.

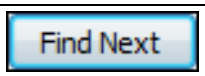
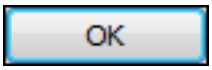
The question mark character (?) serves as a single-character placeholder.

Steps

Find records in a table using wildcards.

If necessary, open the **tblInventory** table in **Datasheet** view.

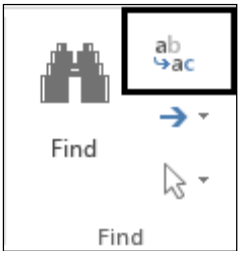
1. Select the field you want to search. *The insertion point appears in the column.*	Scroll as necessary and click in the **Description** column.
2. Click the **Find** button on the **HOME Tab** on the **Ribbon**. *The Find and Replace dialog box opens with the text in the **Find What** box selected.*	 Find

3. Type the text you want to find in the **Find What** box. *The text appears in the **Find What** box.*	Type ***Coat****
4. Select the **Match** list. *A list of available options appears.*	Click **Match** 
5. Select the desired option. *The option is selected.*	Click **Any Part of Field.**
6. Select **Find Next** to begin the search. *The field in the first matching record is selected.*	Click 
7. Select **Find Next** to find the next matching record. *The field in the next matching record is selected, or a **Microsoft Office Access** message box opens to notify you that all records have been searched.*	Click  four times.
8. When all records have been searched, select **OK**. *The **Microsoft Office Access** message box closes.*	Click 
9. Select **Cancel** to close the Find and Replace dialog box. *The **Find and Replace** dialog box closes.*	Click 

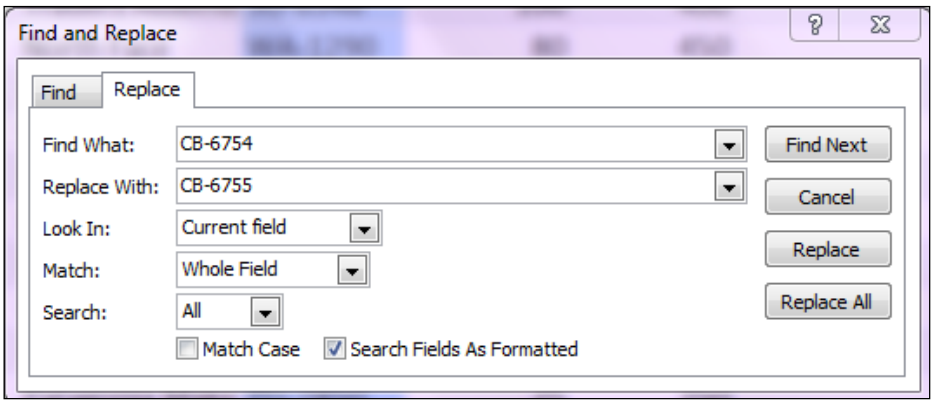
6.4 USING REPLACE

Concepts

The Find and Replace dialog box allows you to locate and replace small amounts of data. The dialog box resembles the Find tools that you see in other programs, but it contains specific features applicable to working with databases.



Find group present under the HOME Tab



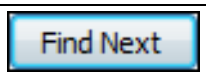
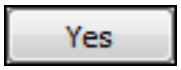
Find and Replace dialog box

Steps

Use the Replace feature to replace record data in a table.

If necessary, open the **tblInventory** table in **Datasheet** view.

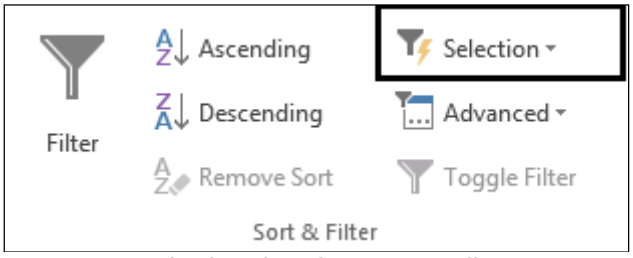
1. Select the field you want to search. *The insertion point appears in the column.*	Scroll as necessary and click in the **Model** column.
2. Select the **Replace** button in the **Find** group on the **HOME Tab** on the **Ribbon**. *The Find and Replace dialog box opens.*	Click 
3. Type the text you want to find in the **Find What** box. *The text appears in the **Find What** box.*	Type ***CB-6754.***
4. Select the **Replace With** box. *The insertion point moves to the **Replace With** box.*	Press **[Tab].**
5. Type the desired replacement text. *The text appears in the **Replace With** box.*	Type ***CB-6755.***

6. Select **Find Next** to begin the search. *The data in the first matching record is selected.*	Click 
7. Select **Replace**. *The data is replaced, and the data in the next matching record is selected.*	Click 
8. Select **Replace All**. *A **Microsoft Office Access** warning box opens, warning you that you will not be able to undo the Replace operation.*	Click 
9. Select **Yes** to replace all remaining matches. *The **Microsoft Office Access** warning box closes, and all remaining instances of the data are replaced.*	Click 
10. Select **Cancel** to close the **Find and Replace** dialog box. *The **Find and Replace** dialog box closes.*	

6.5 Using Filter by Selection

Concepts

Filter by Selection is one of the fastest ways to filter your list. With this option, all you need to do is highlight the filter criteria in your table or form and then choose Filter by Selection. Your list will quickly filter based on the data that is selected.



HOME Tab showing the Sort & Filter group

Steps

Use the Filter by Selection feature.

If necessary, open the **tblInventory** table in **Datasheet** view.

1. Select any field that contains the data by which you want to filter. *The insertion point appears in the field.*	Scroll as necessary to the **Manufacturer** column and click in any **North face** field.
2. Click the **Selection** button on the **Sort & Filter** group on the **HOME Tab**. *The **Filter by Selection** sub-menu appears.*	Click 
3. Select the desired filter options. *The selected filter is applied.*	Click **Equals "North face".**

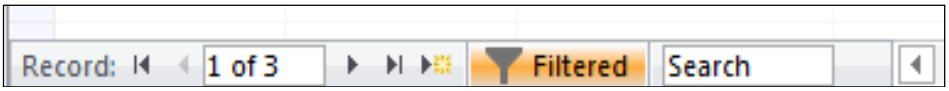
To remove the filter, go to the **HOME** tab and click the **Advanced** button in the **Sort & Filter** group. Click **Clear All Filters**.

6.6 Applying/Removing a Filter

Concepts

To switch to the unfiltered view of data, remove the filters using one of these 2 methods:

- On the **HOME** tab, in the **Sort & Filter** group, click the **Advanced** button. Click **Clear All Filters**.
- Click **Filtered** on the record navigator bar to revert to the full view.

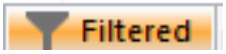


Record Navigator Bar showing the records Filtered

Steps

Apply and remove a filter.

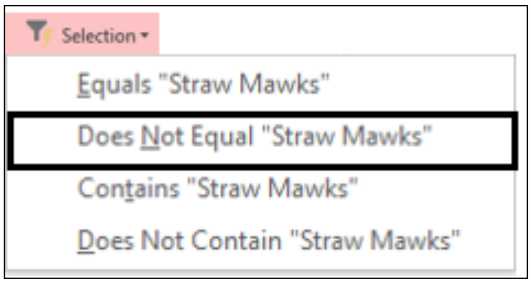
If necessary, open the **tblInventory** table in **Datasheet** view and filter the table by the **Traders Assembly** manufacturer.

1. Click the **Filtered** button in the **Record Navigator bar**. *The filter is applied or removed accordingly.*	Click 

6.7 USING FILTER EXCLUDING SELECTION

Concepts

You can use a filter in Access to exclude results that do not match certain criteria for more accurate results.



Sort & Filter group showing the Selection drop down list options

Steps

Use the **Filter Excluding Selection** feature.

If necessary, open the **tblInventory** table in **Datasheet** view and display all records.

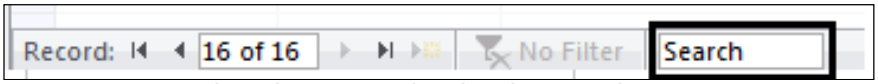
1. Select the field that contains the data you want to exclude. *The insertion point appears in the field.*	Scroll as necessary to the **Manufacturer** column and click in any **Straw Mawks** text.
2. Select the **HOME** tab. *The **HOME** tab appears*.	Click **HOME.**
3. Select the **Selection** button in the **Sort & Filter** group. *The **Filter** submenu appears*.	Click 
4. Select the desired filter option. *The records are filtered to exclude the selected data.*	Click **Does Not Equal "Straw Mawks".**

Remove the filter.

6.8 USING THE SEARCH BOX

Concepts

You can also search the records in the database using the **Search** textbox. You need to specify the search criteria and then press the **[Enter]** key. You will notice that the cells containing the matching text are highlighted one by one.



Record Navigator Bar showing the Search Text Box

Steps

Use the Search Box to search for a specific record.

Open the **tblInventory** table, if necessary.

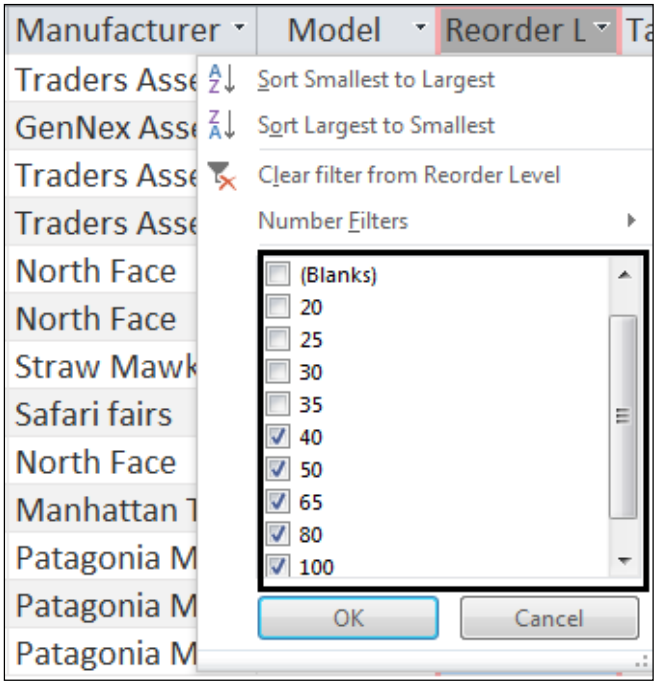
1. Click in the **Search** box. *The insertion point appears in the search box.*	Click in the **Search** box.
2. Type the text you want to find in the Search Box. *The text appears in the Search box and Access highlights the first instance of the text in the **Datasheet**.*	Type **Specialty Product.**
3. Press **[Enter]**. *Access highlights the second instance of the text in the **Datasheet**.*	Press **[Enter].**

Notice if you continue to hit the **[Enter]** key, Access continues to highlight further instances of the specified text in the **Datasheet**.

6.9 USING QUICK FILTER

Concepts

Quick filter lets you choose which values that you want to hide that are listed in a particular field. It's easy to use, but potentially time consuming. To show the list of quick filter values, move to the field you want to filter, and then click **HOME** tab and select **Filter** button present under the Sort & Filter group.

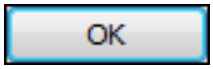


Quick Filter List displayed for Reorder Level Field

Steps

Use Quick Filters.

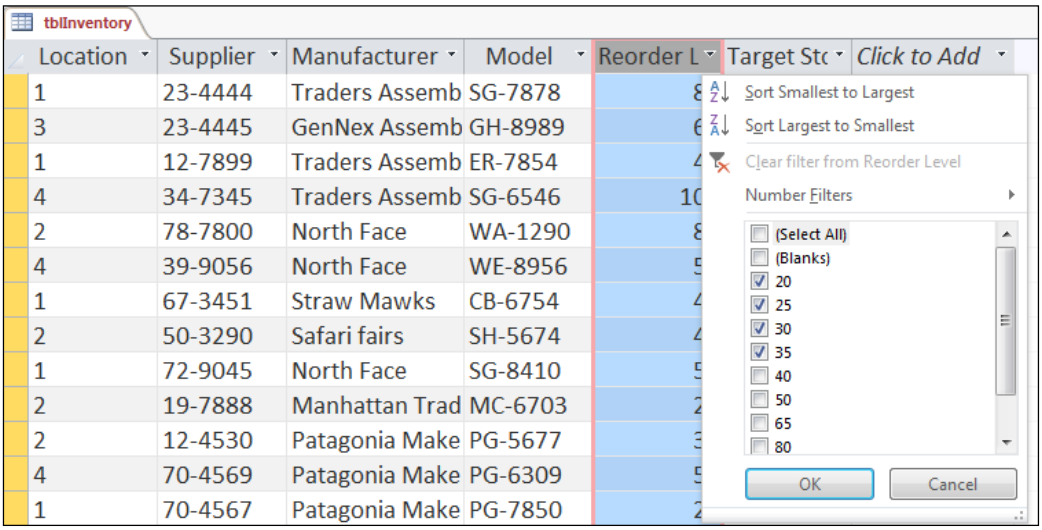
Open the **tblInventory** table in datasheet view, if necessary.

1. Select the desired column. *The desired column is selected.*	Click **Reorder Level.**
2. Select the arrow on the right of the desired field header. *The **Filter** menu appears.*	Click  in the field header.
3. Select the desired filter options. *The desired option is selected and further filter options appear based on the data type selected.*	Click **20, 25, 30, 35 to deselect the checkboxes.**
4. Select **OK**. *The filter is applied to the table.*	Click 
5. Select the **Filtered** button to remove the filter. *The filter is removed.*	Click 

6.10 USING AUTOFILTER

Concepts

AutoFilter feature in Access helps you to hide everything in a table except the records you want to view.

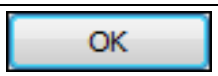


Using Autofilter to filter records

Steps

Use AutoFilter.

Open the **tblInventory** table, if necessary.

1. Select the desired column. *The desired column is selected.*	Click **Reorder Level.**
2. Select the **HOME Tab**, if necessary. *The **HOME Tab** is selected.*	Click **HOME.**
3. Select the **Filter** button in the **Sort & Filter** group. *The **Filter** menu appears.*	 Click Filter
4. Clear the filter option check boxes. *The filter option check boxes are cleared.*	Click **(Select All)** to clear all check boxes.
5. Select the desired filter options. *The desired options are selected.*	Click **50**
6. Select **OK**. *The desired filter is applied to the table.*	Click 

7. Select the **Filtered** button to remove the filter. *The filter is removed.*	Click 

Close **FILTER1.ACCDB**.

6.11 REVIEW EXERCISE

Find and filter data

1. Open **FilterEX**.**accdb**. If necessary, enable the content by clicking the **Enable Content** button.
2. Open the **tblCustomers** table in **Datasheet** view.
3. Sort the records in descending order by the **City** field.
4. Sort the records in ascending order by the **Last Name** field.
5. Find all the records in the state of **FL**.
6. Use a wildcard to find all records with a customer name that starts with **An**.
7. Use the **Replace** feature to find the **98052** Postal Code and replace it with **98055**.
8. Close the **tblCustomers** table.
9. Open the **tblProducts** table in **Datasheet** view.
10. Use the **Filter by Selection** feature to find all records with **Supplier A** as the type of Supplier. Then, remove the filter.
11. Use the **Filter Excluding Selection** feature to find all records with a value that is not **Supplier B**. Then, remove the filter.
12. Use the **AutoFilter** to filter the table to show only the products with the Category **Beverages**.
13. Remove the filter using the **Filter** button.
14. Use the **QuickFilter** number filter to find all products with List Price between $20.00 and $30.00
15. Remove the filter.
16. Close the database.

LESSON 7 –
USING SIMPLE QUERIES

In this lesson, you will learn how to:

- Use queries and recordsets
- Use the Simple Query Wizard
- Create a query in Design view
- Save a query
- Adding criteria to a query
- Save changes to a query
- Open a query
- Add a table to a query
- Join tables in a query
- Run a query

7.1 Using Queries and Recordsets

Concepts

A query is a means of extracting information from tables. You can use queries to analyse the data in a table or to extract data for a form or report. Queries are commonly used to display data in related tables and enable you to control not only which records to display, but also which fields. For example, you may want to give a sales representative a list of the contacts and telephone numbers for a particular region; you can create a query to extract just the contact names and telephone numbers within the specified region.

A query does not contain data; rather, it is a set of instructions. Access uses these instructions to select and display the desired records in a table. As a result, whenever new data is added to the queried table, the query is automatically updated; if the new records meet the conditions of the query, they will be included when the query runs.

When you open or run a query, a recordset appears. A recordset contains all the fields and records that meet the conditions of the query. Although the recordset is not a table, it can be used to edit or add new records in the queried tables.

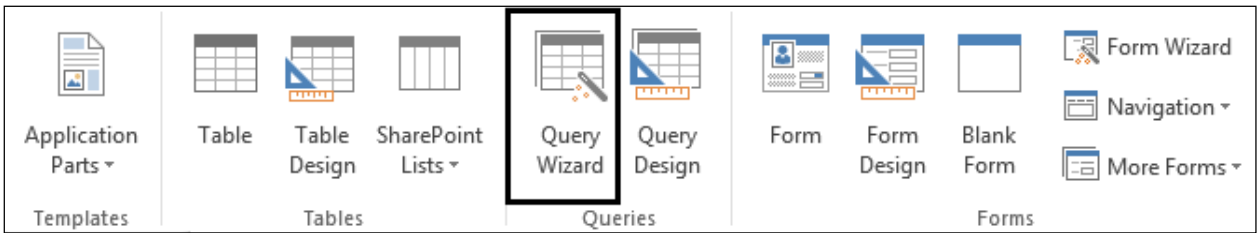
7.2 Using the Simple Query Wizard

Concepts

When you want to select specific data from one or more sources, you can use a select query. A select query helps you retrieve only the data that you want, and also helps you combine data from several data sources. You can use tables and other select queries as data sources for a select query.

A select query is a database object that shows information in Datasheet view. A query does not store data; it displays data that is stored in tables. A query can show data from one or more tables, from other queries, or from a combination of the two.

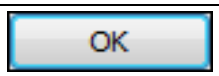
You can use the **Query Wizard** to automatically create a select query. When you use the wizard, you have less control over the details of the query design, but the query is usually created faster than if you did not use the wizard.



CREATE tab showing different groups

Steps

From the **Student Folder**, open **QUERY1.ACCDB**.
Use the Simple Query Wizard to display selected fields in a table.

1. Select the **Create** tab on the **Ribbon**. *The **Create** tab appears.*	Click **CREATE.**
2. Select the **Query Wizard** button in the **Queries** group of the **Create Ribbon**. *The New Query dialog box opens.*	Click 
3. Select **Simple Query Wizard**. ***Simple Query Wizard** is selected.*	Click **Simple Query Wizard.**
4. Select **OK**. *The New Query dialog box closes, and the Simple **Query** Wizard opens.*	Click 
5. Select the arrow in the **Tables/Queries** list. *A list of available tables and queries appears.*	Click 
6. Select the table or query you want to query. *All **available** fields in the selected table or query appear in the **Available Fields** list box.*	Click **Table: tblEmployee.**
7. Select the first field you want to add to the query from the **Available Fields** list box. *The **field** is selected.*	Click **Last Name.**
8. Select the arrow to the right of the **Available Fields** list box. *The **field** moves to the **Selected Fields** list box.*	Click 
9. Add other fields to the **Selected Fields** list box, as desired. *The **fields** move to the **Selected Fields** list box.*	Follow the instructions below the table before continuing on to the next step.

10. Select **Next >**. *The next page of the Simple Query Wizard appears with the text in the **What title do you want for your query?** box selected.*	Click 
11. Type the desired query name. *The name appears in the **What title do you want for your query?** box.*	Type ***qryContacts and Phone Numbers.***
12. Select **Finish**. *The **Simple Query Wizard** closes, the query runs, and the recordset appears in **Datasheet** view.*	Click 

Add the **First Name**, **E-mail Address** and **Business Phone** fields to the query.

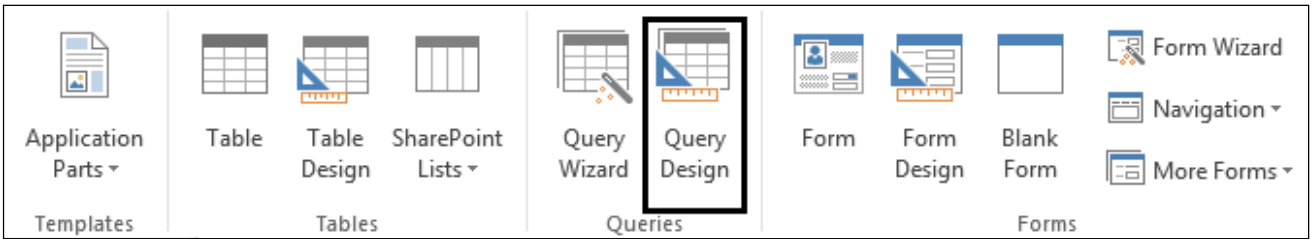
Return to the table and continue on to the next step (step 10).

Close the query. Notice that the **qryContacts and Phone Numbers** query now appears in the **Queries** object list.

7.3 Creating a Query in Design View

Concepts

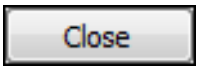
You can create a query in **Design** view, allowing you to create a more informative set of results regarding certain items.



CREATE tab showing different groups

Steps

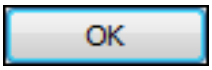
1. Select the **Create** tab on the **Ribbon** toolbar. *The **Create** tab appears.*	Click **CREATE.**

2. Click the **Query Design** button from the **Queries** group. *A new query opens in **Design** view, with the **Show Table** dialog box open.*	Click 
3. Add the table you want to query. *The table field list appears in the top pane of **Design** view.*	Double-click **tblEmployee.**
4. Select **Close**. *The **Show Table** dialog box closes.*	Click 
5. Add the first field to the query. *The field appears in the design grid.*	Double-click **First Name** in the field list.
6. Add other fields to the query as desired. *The fields appear in the design grid.*	Add the following fields to the query: **Last Name** **E-mail Address** **Job Title** **Joining Date**

7.4 Saving a Query

Steps

Save a query.

1. Click the **Save** button on the **Quick Access Toolbar**. *The **Save As** dialog box opens with the text in the **Query Name** box selected.*	Click 
2. Type the desired query name. *The text appears in the **Query Name** box.*	Type ***qryEmployee***
3. Select **OK**. *The **Save As** dialog closes and the query is saved.*	Click 

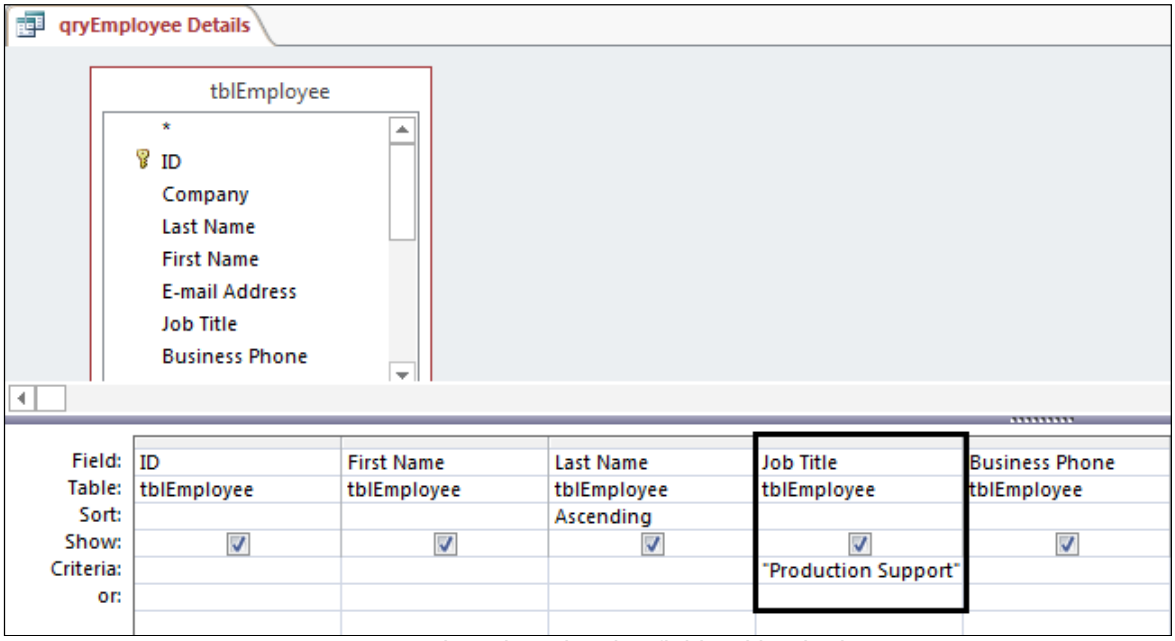
Close the query. Notice that the **qryEmployee Query** now appears in the **Queries** object list. Criteria can now be added to the query.

7.5 Adding Criteria to a Query

Concepts

A query criterion is an expression that Access compares to query field values to determine whether to include the record that contains each value. For example, = "Singapore" is an expression that Access compares to values in a text field in a query. If the value for that field in a given record is "Singapore ", Access includes the record in the query results.

A criterion is similar to a formula — it is a string that may consist of field references, operators, and constants. Query criteria are also called expressions.



Query Design View showing fields with criteria

Steps

Add criteria to a query to select specific records.

If necessary, display **All Access Objects** in the Navigation Pane.

Open the **qryEmployee Query** in **Design** view.

1. Select the **Criteria** row for the field you want to match. *The insertion point appears in the **Criteria** field.*	Click in the **Criteria** row under **Job Title.**
2. Type the value you want to match. *The text appears in the **Criteria** row in the design grid.*	Type ***Production Support.***

3. Press **[Enter]**. *The criterion is entered and Access inserts the appropriate characters or symbols around it.*	Press **[Enter].**

Run the query by clicking the **Run** button in the **Results** group in the **Design** tab. Notice that only records in the **Production Support** region appear in the recordset.

Practice the Concept: Switch to **Design** view. Delete the **"Production Support"** criteria under the **Job Title** field and select the **Criteria** row under the **Joining Date** field. Enter the criteria **5/4/2013**. Press **[Enter]**. Notice that Access inserts number symbols around the date value. Run the query and scroll as necessary to view the **Joining Date** column. Notice that only records with a **5/4/2013** date appear in the recordset.

7.6 SAVING CHANGES TO A QUERY

Concepts

When you create a new query and save it, Access prompts you for a query name. If you make any changes to the query after assigning a name, simply click the **FILE** tab and choose **Save** to save the changes made. You can also click on the **Save** button in the **Quick Access Toolbar**.

Steps

Ensure the **qryEmployee Query** is still open from the previous exercise in **Design** view.

1. Select the **FILE** tab on the **Ribbon**. *The **Backstage view** appears.*	Click **FILE.**
2. Select **Save**. *The changes are saved.*	Click **Save.**

Note: If you want to save the changes made as another query, click the **FILE** tab and choose **Save As**. Select **Save Object As** and click **Save As**. Enter a new query name and click **OK.**

Close the query.

7.7 OPENING A QUERY

Concepts

To open a query, you need to run the query by double clicking the desired query object from the **Navigation Pane**. It returns the recordset.

Steps

Open a query in **Datasheet** view.

If necessary, display **All Access Objects** in the Navigation Pane. If the **qryEmployee Query** does not exist, use the **qryEmployee Details** query.

1. Select the name of the query you want to run. *The query runs, and its recordset appears in **Datasheet** view.*	Double-click **qryEmployee Details.**

Close the recordset.

7.8 ADDING A TABLE TO A QUERY

Concepts

Creating queries involves selecting one or more tables and fields, sorting data, and choosing data by entering criteria. A query often requires related data from more than one table, so you can add a number of tables to the design of the query.

When you are initially creating a query, you can select more than one table.

Steps

Add multiple tables to a query.

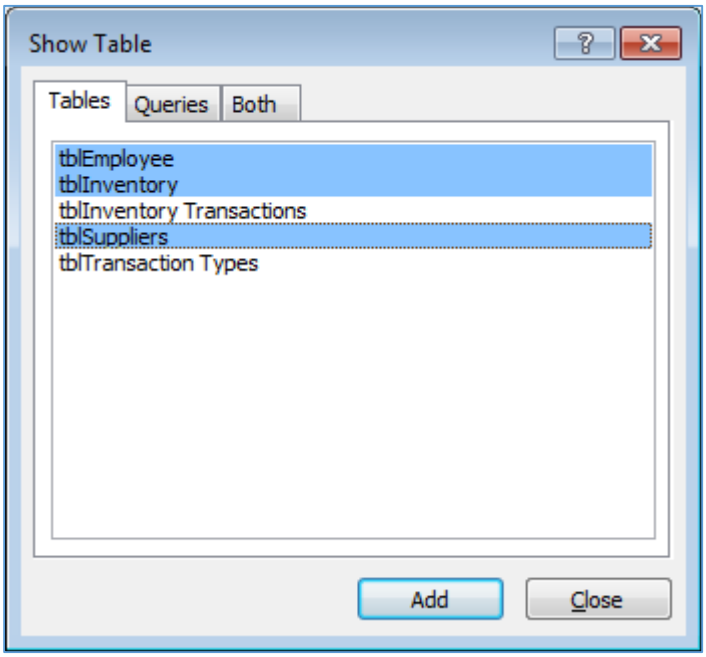
You need to create a query containing all the supplier names with their corresponding item name with a high reorder level (50 or more). Supplier names are in the **tblSuppliers** table and the item names with the reorder level values are found in the **tblInventory** table.

1. Create a new query in **Design view**. *The **Show Table** dialog box opens.*	Click the **CREATE** tab and click **Query Design** in the **Queries** group.

2. Select the tables to add from the **Show Table** dialog box, click **Add** and then click **Close**. *The tables are added to the design view.*	Press **[Shift]** and click on **tblInventory** and **tblSuppliers.**
3. Click and drag the fields required into the **Field row** in the window below. *The fields are added.*	Drag and drop the following fields: Field: Company | Item | Reorder Level Table: tblSuppliers | tblInventory | tblInventory
4. Add the required criteria. *The criteria is added.*	Click in the **Criteria** box for **ReorderLevel** and type **>=50**

Save the query as **High Reorder** and close the query.

Note: When selecting tables from the **Show Table** dialog box, use the **[Shift]** key to select adjacent tables and use the **[Ctrl]** key to select non-adjacent tables.



*Tables selected by pressing the **[Shift]** key and clicking on tblEmployee and tblInventory (adjacent tables) and press the **[Ctrl]** key and clicking on tblSuppliers (non-adjacent table)*

7.9 RUNNING A QUERY

Concepts

When you open or run a query, a recordset appears. A recordset contains all the fields and records that meet the conditions of the query. Although the recordset is not a table, it can be used to edit or add new records in the queried tables.

Steps

Run a query to test its design:

If necessary, open the **qryEmployee Query** in **Design** view. If the **qryEmployee Query** does not exist, use the **qryEmployee Query 4** query.

1. Select the **Run** button. *The query runs and its recordset appears in **Datasheet** view.*	 Click Run

First Name	Last Name	E-mail Address	Job Title	JoiningDat
Mary	Brown	mary@carysales.com	Sales Executive	7/1/2013
Hemry	Brown	Hemry@carysales.com	Sales Engineer	23/6/2011
Timothy	Tan	Timothy@carysales.com	Production Engineer	3/4/2013
Wilson	Smith	Wilson@carysales.com	Sales Executive	12/2/2011
Sally	Leow	sally@carysales.com	Production Support	3/3/2007
Tom	Teck	Tom@carysales.com	Production Support	12/5/2009
Rajesh	Gupta	Rajesh@carysales.com	Production Support	5/4/2013
Reshmi	Pandit	Reshmi@carysales.com	Production Support	10/4/2013
Fakruddin	Mahmood	fakruddin@carysales.com	Production Support	7/1/2013
Siti Nuralisa	Binte Mahmoc	Sitinur@carysales.com	Marketing Support	7/1/2013
Lina	Kho	lina@carysales.com	Marketing Manager	12/2/2011
Agnes	Lee	Agnes@carysales.com	Sales Manager	5/4/2013
Mohammad	Anwar	anwar@carysales.com	Sales Manager	12/5/2009
Nicole	Lee Hong	nicole@carysales.com	Media executive	19/2/2009

Query Datasheet View showing Employees details

Click the **VIEW** button on the **Ribbon** to switch back to **Design** view.

Close the query without saving.
Close **QUERY1.ACCDB**.

7.10 REVIEW EXERCISE

Use simple queries

1. Open **Query1EX.accdb**.
2. Use the Query Wizard to create a query.
3. Select the **tblCustomers** table and add the **Company**, **Last Name. First Name, Address, City, State,** and **Postal Code** fields.
4. Name the query **qryCustomerNames** and view its recordset. Then, close the **qryCustomerNames** query.
5. Create a query in **Design** view.
6. Add the **tblEmployees** table to the query. Then add the **ID** and **Full Name** fields to the design grid.
7. Close the database file.

LESSON 8 –
MODIFYING QUERY RESULTS

In this lesson, you will learn how to:

- Sort a query output
- Hide and unhide a field in a query
- Add and remove fields in a query
- Print a query

8.1 Sorting a Query Output

Concepts

Access allows you to apply sorts while you're designing your query. This allows you to view your data exactly the way you want, to view it every single time you run the query.

A sort that includes more than one sorted field is called a **multi-level sort**. A multi-level sort allows you to apply an initial sort, and then further organise that data with additional sorts. For example, if you had a table full of customers and their addresses, you might choose to first sort the records by city, and then further sort them alphabetically by last name.

qryEmployee Details

ID	First Name	Last Name
2	Mary	Brown
3	Hemry	Brown
4	Timothy	Tan
5	Wilson	Smith
6	Sally	Leow
7	Tom	Teck
8	Rajesh	Gupta
9	Reshmi	Pandit
10	Fakruddin	Mahmood
11	Siti Nuralisa	Binte Mahmoc
12	Lina	Kho
13	Agnes	Lee
14	Mohammad	Anwar
15	Nicole	Lee Hong
*	(New)	

Original records

qryEmployee Details

ID	First Name	Last Name
14	Mohammad	Anwar
11	Siti Nuralisa	Binte Mahmoc
3	Hemry	Brown
2	Mary	Brown
8	Rajesh	Gupta
12	Lina	Kho
13	Agnes	Lee
15	Nicole	Lee Hong
6	Sally	Leow
10	Fakruddin	Mahmood
9	Reshmi	Pandit
5	Wilson	Smith
4	Timothy	Tan
7	Tom	Teck
*	(New)	

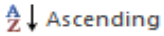
Sorted alphabetically according to Last Name

Steps

From the **Student Folder**, open **QUERY2.ACCDB**.
Sort a query.

Display **All Access Objects** in the Navigation Pane and open the **qryEmployee Details** query in **Datasheet** view.

1. Select the field by which you want to sort. *The column in selected.*	Click the **Last Name** field.

2. Select the **HOME** tab on the **Ribbon**, if necessary. *The **HOME** tab appears.*	Click **HOME.**
3. Select the desired sort option in the **Sort and Filter** group. *The recordset is sorted.*	Click 

Notice that the recordset is sorted in ascending order by the **Last Name** field. Close the recordset.

Practice the Concept: Open the **tblEmployee** table in **Datasheet** view. Click the **New Record** button on the **Table Datasheet** toolbar and create a new record by adding data only in the following fields:

Field	**Data**
Company	Morris Magnum Ltd.
Last Name	Gomez
First Name	Sandra
E-mail Address	Sandra@morrismagnum.com
Job Title	Sales Manager
Business Phone	(065)7896-3456
Mobile Phone	6789-9876
Fax Number	5678-9876
Address	10, Macadamia Drive
State	Singapore
Postal Code	678992
Country / Region	Asia
Joining Date	2/1/2007
Attended Orientation	No
Basic Salary	4000

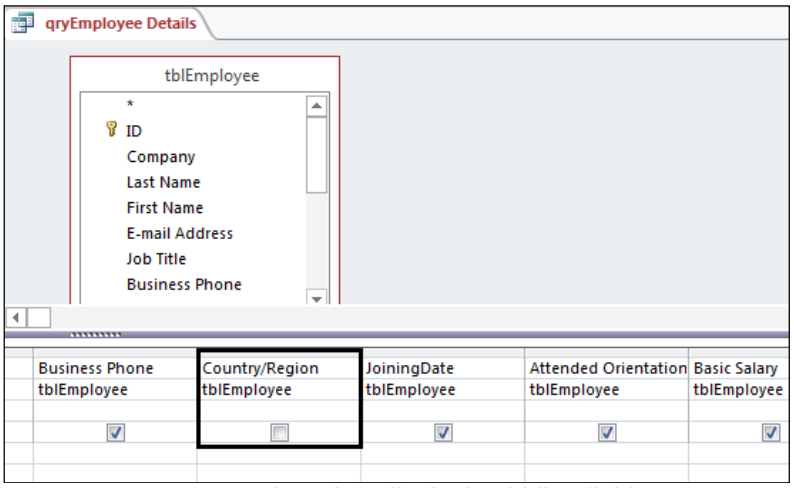
Close the **tblEmployee** table and run the **qryEmployee Details Query**. Notice that the new record appears in the recordset and is sorted in the correct order.

Close the recordset.

8.2 HIDING AND UNHIDING FIELD IN QUERY

Concepts

You can add to the query design grid, a field that you use for setting criteria or a sort order, yet not show the data from that particular field in the query's results.



Query Design View displaying hiding fields

Steps

Hide a query field.

If necessary, display **All Access Objects** in the Navigation Pane.

Open the **qryEmployee Details** Query in **Design View**.

1. Deselect the **Show** option in the field you want to hide. *The **Show** option is deselected.*	Scroll as necessary and click  in the **Show** row under **Country / Region** to deselect it.

Run the query. Notice that the **Country / Region** field does not appear in the recordset.

Practice the Concept: Switch to **Design** view. Click the checkbox in the **Show** row under **Country / Region** to select it. Run the query. Notice that the **Country / Region** field now appears in the recordset.

Alternatively, you can hide and unhide a field in **Datasheet View** by right-clicking the field title and selecting **Hide Fields**. To unhide the field, select **Unhide Fields.**

8.3 Adding and Removing Fields in Query

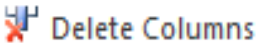
Concepts

You can add or delete field in the query design grid to modify the recordset display.

Steps

Add or remove query field.

Open the **qryContactList** query in **Design** view.

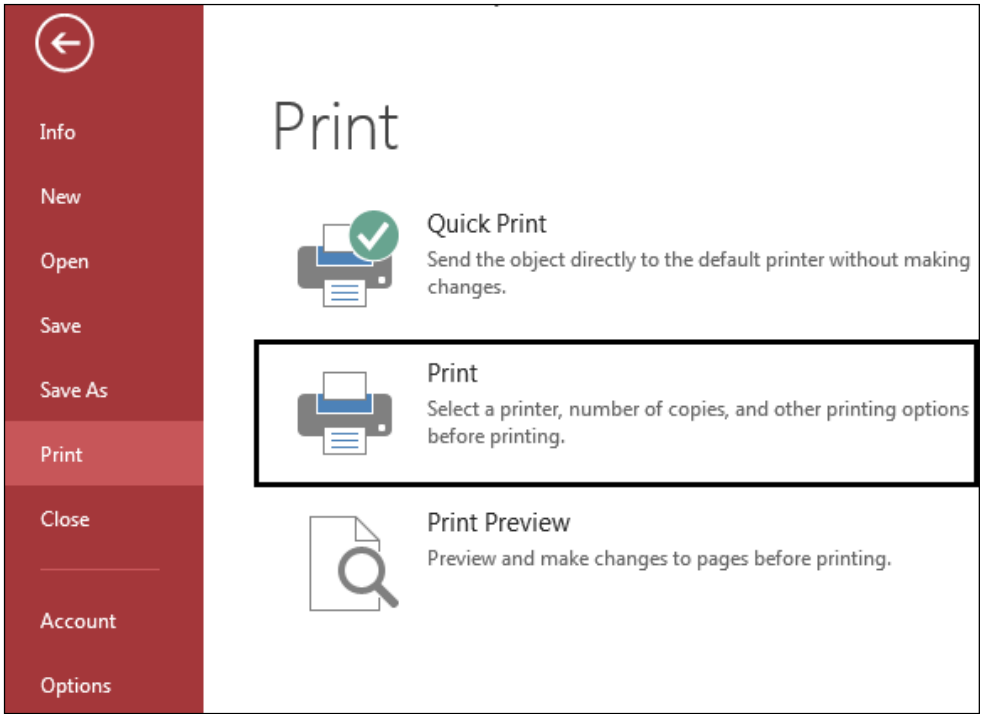
1. Drag and drop the field to a required location in the grid. *The field is added to the grid.*	Drag the field ***Last Name*** and drop it on ***E-mail Address*** field in the design grid.
2. Click in the **Field** row of the field to delete. *The insertion point appears on the field name.*	Click on the ***Job Title*** field in the grid.
3. Click the **Delete Column** command in the **Query Setup** group. *The field is removed from the grid.*	Click 

Run the query. When complete, close the query.

8.4 Printing a Query

Concepts

It is easy to print query results. Although not as elegant as a printed report, printed query results are often sufficient to meet desired needs.

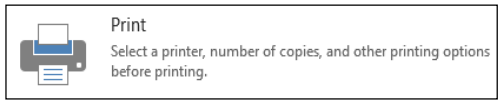
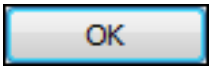


Backstage View displaying Printing options

Steps

Print a query from the Navigation pane.

Display **All Access Objects** in the Navigation Pane, if necessary.

1. Run the query you want to print. *The query is selected.*	Run **qryEmployeeDetails Query.**
2. Select the **FILE** tab. *The Backstage view opens.*	Click **FILE.**
3. Select the **Print** option. *The Print pane appears.*	Click **Print.**
4. Select the **Print** button. *The Print dialog box appears.*	Click 
5. Select **OK**. *Access runs the query and prints the recordset.*	Click 

Close **QUERY2.ACCDB**.

Tip: You can quickly access the **Print** pane by using the keyboard shortcut **Ctrl+P.**

8.5 REVIEW EXERCISE

Modify query results

1. Open **Query2EX.accdb**.
2. Open the query **qryCustomerNames** in **Design** view.
3. Sort the query in ascending order by the **First Name** field. Then, run the query.
4. Open the query **qryCustomerNames** in **Design** view.
5. Add criteria to display only the customer staying in **Seattle** city.
6. Run the query. Notice that only customers staying in Seattle city are displayed.
7. Open the query again in Design view.
8. Hide the **City** field and run the query.
9. Close the query.
10. Close the database file.

LESSON 9 –
USING OPERATORS IN QUERIES

Topics in this lesson:

- Use comparison operators
- Use an And condition
- Use an Or condition
- Use a Not condition
- Use the Between…And operator
- Use a wildcard character
- Edit a query

9.1 USING COMPARISON OPERATORS

Concepts

An operator is a sign or symbol that specifies the type of calculation to perform within an expression. There are mathematical, comparison, logical, and reference operators.

Comparison operators are used for comparing values and return true or false depending upon the data in the table. The following table displays examples of various criteria and the query result:

OPERATOR	DESCRIPTION	EXAMPLE
<	Less than	<500
<=	Less than or equal to	<=500
>	Greater than	>500
>=	Greater than or equal to	>=500
=	Equal to	=500
<>	Not equal to	<>500

Steps

From the **Student Folder**, open **OPERATE.ACCDB**.
Use comparison operators in a query.

Display **All Access Objects** on the **Navigation Pane**, if necessary. Open the **qrySupplierInventory** in **Design** view.

1. Select the **Criteria** row in the field to which you want to add criteria. *The insertion point appears in the **Criteria** row of the corresponding field*.	Scroll as necessary and click in the **Criteria** row of the **Target Stock Level** field.
2. Type the desired comparison operator and value. *The criterion appears in the **Criteria** row.*	Type ***<=300.***
3. Enter the action. *The criterion is entered into the design grid.*	Press **[Enter].**

Run the query. Notice that only records with a target stock level of $300 or less appear in the recordset.

Close the query.

ID	Company	Item	Description	Model	Reorder Level	Target Stock Level
1	Senix Ltd	Brush	Tooth Brush	SG-7878	80	200
2	Marco Supplies	Pencil	Drawing Pencil	GH-8989	65	250
3	Koby Sales	Pen	Marker Pens	ER-7854	40	300
1	Senix Ltd	Coat	Manhattan Coat-Large	MC-6703	20	300
2	Marco Supplies	Pullover	Patagonia Fleece Pullover	PG-5677	35	250
2	Marco Supplies	Cardigan	Patagonia Retro Fleece	PG-6309	50	250
3	Koby Sales	T-Shirt	Mountain Cappy T-Shirt	MM-6734	30	250

Practice the Concept: Open the **qryEmployee Details** query in **Design** view. Delete any previous criterion. Find all records of employees with contract dates on or after January 1, 2010, by adding **>=1/1/2010** to the **Criteria** row of the **Joining Date** field and pressing **[Enter]**. Notice that Access inserts number symbols (#) around the value to indicate a date value.

Field:	ID	First Name	Last Name	Job Title	Business Phone	Country/Region	JoiningDate	Attended Orientation	Basic Salary
Table:	tblEmployee	tblEmployee	tblEmployee	tblEmployee	tblEmployee	tblEmployee	tblEmployee	tblEmployee	tblEmployee
Sort:									
Show:	☑	☑	☑	☑	☑	☑	☑	☑	☑
Criteria:							>=#1/1/2010#		
or:									

Run the query. Notice that only those records that match the criterion appear in the recordset.

ID	First Name	Last Name	Job Title	Business Phone	Country/Re	JoiningDate	Attended O	Basic Salary
2	Mary	Brown	Sales Executiv	5678-9080	Asia Pacific	7/1/2013	☑	$3,400.00
3	Hemry	Brown	Sales Engineer	(065)7874-8780	Asia Pacific	23/6/2011	☑	$2,500.00
4	Timothy	Tan	Production En	(065)4562-3455	Asia Pacific	3/4/2013	☑	$4,500.00
5	Wilson	Smith	Sales Executiv	(065)7874-8780	Asia Pacific	12/2/2011	☑	$1,500.00
8	Rajesh	Gupta	Production Su	(065)7899-9888	Asia Pacific	5/4/2013	☑	$2,100.00
9	Reshmi	Pandit	Production Su	(065)7899-9888	Asia Pacific	10/4/2013	☑	$1,900.00
10	Fakruddin	Mahmood	Production Su	(065)7899-9888	Asia Pacific	7/1/2013	☑	$2,000.00
11	Siti Nuralisa	Binte Mahmoc	Marketing Sup	(060)8900-9909	Asia Pacific	7/1/2013	☑	$2,100.00
12	Lina	Kho	Marketing Mar	(060)8900-9909	Asia Pacific	12/2/2011	☑	$5,000.00
13	Agnes	Lee	Sales Manager	(060)8900-9909	Asia Pacific	5/4/2013	☑	$5,000.00
*	(New)				Asia Pacific		☑	$0.00

Return to **Design** view and delete the criterion.

Find all records of employees earning $5000 by adding **=5000** to the **Criteria** row of the **Basic Salary** field and pressing **[Enter]**. Run the query. Notice that only those records that match the criterion appear in the recordset.

ID	First Name	Last Name	Job Title	Business Phone	Country/Re	JoiningDate	Attended O	Basic Salary
12	Lina	Kho	Marketing Mar	(060)8900-9909	Asia Pacific	12/2/2011	☑	$5,000.00
13	Agnes	Lee	Sales Manager	(060)8900-9909	Asia Pacific	5/4/2013	☑	$5,000.00
14	Mohammad	Anwar	Sales Manager	(060)8900-9909	Asia Pacific	12/5/2009	☑	$5,000.00

Return to **Design** view and delete the criterion.

Find all records of employees not earning $5000 by adding **<>5000** to the **Criteria** row of the **Basic Salary** field and pressing **[Enter]**. Run the query. Notice that only those records that match the criterion appear in the recordset.

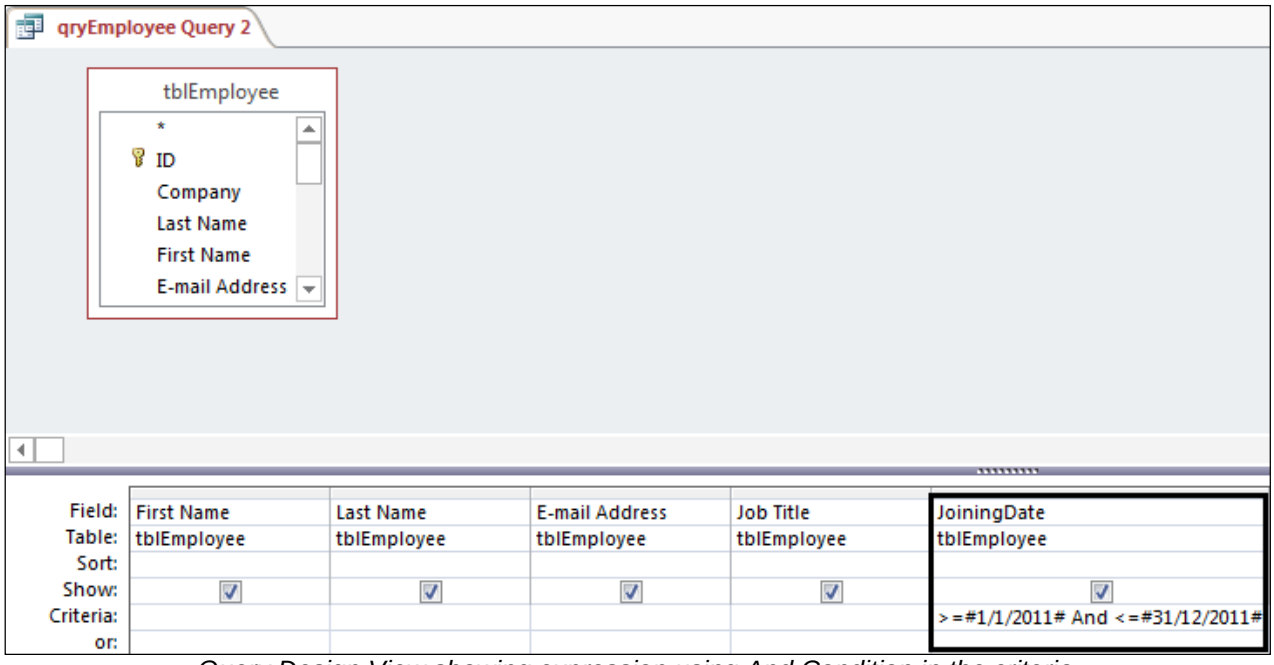
ID	First Name	Last Name	Job Title	Business Phone	Country/Re	JoiningDate	Attended O	Basic Salary
2	Mary	Brown	Sales Executiv	5678-9080	Asia Pacific	7/1/2013	☑	$3,400.00
3	Hemry	Brown	Sales Engineer	(065)7874-8780	Asia Pacific	23/6/2011	☑	$2,500.00
4	Timothy	Tan	Production En	(065)4562-3455	Asia Pacific	3/4/2013	☑	$4,500.00
5	Wilson	Smith	Sales Executiv	(065)7874-8780	Asia Pacific	12/2/2011	☑	$1,500.00
6	Sally	Leow	Production Su	(065)7899-9888	Asia Pacific	3/3/2007	☑	$2,300.00
7	Tom	Teck	Production Su	(065)7899-9888	Asia Pacific	12/5/2009	☑	$2,200.00
8	Rajesh	Gupta	Production Su	(065)7899-9888	Asia Pacific	5/4/2013	☑	$2,100.00
9	Reshmi	Pandit	Production Su	(065)7899-9888	Asia Pacific	10/4/2013	☑	$1,900.00
10	Fakruddin	Mahmood	Production Su	(065)7899-9888	Asia Pacific	7/1/2013	☑	$2,000.00
11	Siti Nuralisa	Binte Mahmoc	Marketing Sup	(060)8900-9909	Asia Pacific	7/1/2013	☑	$2,100.00
15	Nicole	Lee Hong	Media executi	(065)7874-8780	Asia Pacific	19/2/2009	☑	$2,500.00

9.2 Using an AND Condition

Concepts

Logical operators (AND, OR, NOT) are used to combine two expressions and return a true, false, or null result. Logical operators are also referred to as Boolean operators.

The And operator returns True when both the expressions are true.
Example: **Joining Date >= 1/1/2011 AND <= 31/12/2011**. This query criteria will display all the details of those employees who joined in the year 2011.



Query Design View showing expression using And Condition in the criteria

Steps

Use an And condition in a query.

If necessary, open the **qryEmployee Query 2** in **Design** view and delete any previous criteria.

1. Select the **Criteria** row of the desired field. *The insertion point appears in the **Criteria** row of the corresponding field.*	Click in the **Criteria** row of the **Joining Date** field.
2. Type the desired criterion. *The criterion appears in the design grid*.	Type ***>=1/1/2011.***
3. Type the **And** operator and an additional criterion in the same **Criteria** row and field, or type additional criteria in the same **Criteria** row of one or more other fields. *The additional criterion appears in the design grid*.	Type ***and <=31/12/2011.***
4. Press **[Enter]**. *The And condition is entered into the design grid.*	Press **[Enter].**

Run the query. Notice that only records that match the And condition appear in the recordset.

Return to **Design** view and delete the criteria.

9.3 USING AN OR CONDITION

Concepts

The logical operators are used to combine more than one expression. The "**Or**" operator returns True when any one of the expressions returns true. The "**Or**" operator returns false when both the expressions returns false.

Example: Country="USA" OR "UK". This query criterion will display all the records where the country is either USA or UK.

Steps

Use an OR condition in a query.

If necessary, open the **qrySupplier Details** query in **Design** view and delete any previous criteria.

1. Select the **Criteria** row of the desired field. *The insertion point appears in the corresponding **Criteria** row.*	Click in the **Criteria** row of the **Job Title** field.
2. Type the desired criterion. *The criterion appears in the **Criteria** row*.	Type ***Supplier Manager.***
3. Select the **Or** row of the desired field. *The insertion point appears in the **or** row*.	Click in the **Or** row of the **Job Title** field.
4. Type the second criterion. *The second criterion appears in the **or** row.*	Type ***Account Manager.***
5. Press **[Enter]**. *The Or condition is entered into the design grid.*	Press **[Enter].**

Run the query. Notice that records matching either Or condition appear in the recordset.

Return to **Design** view and delete all criteria.

9.4 USING A NOT CONDITION

Concepts

The logical operators are used to combine more than one expression. The "**Not**" operator is used to exclude records in the query.

Example: Country<>"USA". This query criterion will display all the records where the country is not USA.

Steps

Use a NOT condition in a query.

If necessary, open the **qrySupplier Details** query in **Design** view and delete any previous criteria.

1. Select the **Criteria** row of the desired field. *The insertion point appears in the corresponding **Criteria** row.*	Click in the **Criteria** row of the **City** field.

2. Type the desired criterion. *The criterion appears in the **Criteria** row*.	Type ***<>KL***
3. Press **[Enter]**. *The NOT condition is entered into the design grid.*	Press **[Enter].**

Run the query. Notice that records not matching the City KL appears in the recordset.

Return to **Design** view and delete all criteria.

9.5 USING THE BETWEEN…AND OPERATOR

Concepts

The Between … And operator determines whether the value of an expression falls within a specified range of values or not.

For example: You can use **Between 1000 And 2000** criteria in the Basic Salary field to display those records that falls within the range or not.

Steps

Use the **Between And** operator in a query.

If necessary, open the **qryEmployee Query** 2 in **Design** view and delete any previous criteria.

1. Select the **Criteria** row of the desired field. *The insertion point appears in the corresponding **Criteria** row.*	Click in the **Criteria** row of the **Basic Salary** field.
2. Type **Between**, the first value in the range, **And**, and the last value in the range. *The operator and the criteria appear in the **Criteria** row.*	Type ***Between 1000 And 2000***
3. Press **[Enter]**. *The **Between And** operator and the criteria are entered into the design grid.*	Press **[Enter]**.

Run the query. Notice that only records matching the criteria appear in the recordset.

Return to **Design** view and delete the criteria.

9.6 USING A WILDCARD CHARACTER

Concepts

A wildcard is a special character that can represent any character that may appear in the same position in the field. Common wildcards include asterisk (*), the question mark (?), and the number sign (#). You may be familiar with using a wildcard along with the Like operator to help you locate records with similar data in your database.

***** or **%**	Matches any number of characters
? or _	Matches a single character in a specific position
#	Matches a number

Note: The % and _ characters are only available when using the Microsoft Access database engine and the Microsoft Office Access 2007 OLE DB Provider.

For example:

Like "m*"	would return all values that start with m examples: **M**ary, **M**ia, **M**ichelle, **M**olly, **M**artin, **M**oe
Like "m%"	
Like "*m*"	would return all values that contain m examples: Ada**m**, **M**aria**m**, Sa**m**antha
Like "%m%"	
Like "*m"	would return all values that end with m examples: Ada**m**, Maria**m**
Like "%m"	
Like "m??"	would return all values that start with m and are 3 characters in length examples: Mia, Moe
Like "m__"	
Like "m#"	would return all values that start with m and are 2 characters in length where the second character is a number examples: m7, m3

Steps

Use a wildcard character in a query.

If necessary, open the **qrySupplierDetails** query in **Design** view and delete any previous criteria.

1. Select the **Criteria** row of the desired field. *The insertion point appears in the corresponding **Criteria** row.*	Click in the **Criteria** row of the **Last Name** field.
2. Type the desired criteria, using wildcards as appropriate. *The text appears in the **Criteria** row.*	Type ***M****
3. Press **[Enter]**. *The criteria is entered into the design grid.*	Press **[Enter]**

Run the query. Notice that only records matching the criteria appear in the recordset.

Return to **Design** view and delete all criteria.

9.7 EDITING A QUERY

Concepts

Query criteria can be edited at any time to get the required recordset.

Steps

Editing a query by adding, removing and editing criteria.

Open the **qrySupplierInventory** query in **Design** view.

1. Select the **Criteria** row of the desired field. *The insertion point appears in the corresponding **Criteria** row.*	Click in the **Criteria** row of the **ID** field.
2. Type the desired criteria. *The text appears in the **Criteria** row.*	Type ***2.***
3. Press **[Enter]**. *The criteria is entered into the design grid.*	Press **[Enter].**
4. Select the criteria to remove. *The criteria is selected.*	Click and drag to highlight the criteria ***T-Shirt.***
5. Press **[Delete]**. *The criteria is removed.*	Press **[Delete].**

6. Select the **Criteria** row of the desired field to edit. *The insertion point appears in the corresponding **Criteria** row.*	Click in the **Criteria** row of the **Target Stock Level** field.
7. Edit the criteria as required. *The criteria is modified.*	Change the comparison operator **>** to **<** so that the criteria is ***<300.***

Run the query. Notice that only records matching the criteria appear in the recordset. Return to **Design** view and delete all criteria.

Then, close the query without saving the changes. Close **OPERATE.ACCDB**.

9.8 REVIEW EXERCISE

Use operators in query results

1. Open **OperatorEx.accdb**.
2. Open the **qryCustomerOrderDetails** query in **Design** view.
3. Set criteria to find only orders with extended price of more than $200.
   *(**Hint:** Try using the > operator.)*
4. Run the query; the criteria should find 6 records. Then, return to **Design** view and delete the criterion.
5. Use an **Or** condition to find only records with the text **Lee** or **Li** occurring anywhere in the Last Name.
6. Run the query; the criteria should find 5 records. Then, return to **Design** view and delete the criteria from the query.
7. Run the query; the criteria should find 12 records. Then, switch back to **Design** view and delete the criteria.
8. Close the query.
9. Close the database file.

LESSON 10 –
CREATING RELATIONSHIPS

Topics in this lesson:

- Use related tables
- Set referential integrity

10.1 USING RELATED TABLES

Concepts

A relationship helps you combine data from two or more different tables. Each relationship consists of fields in two tables, with data that corresponds. Tables can be joined, or related, in order to access and coordinate information in all the fields of the related tables. Joining tables is a useful way to avoid entering duplicate information in various, related tables.

For example, you might have a ProductID field in a Products table and in an OrderDetails table. Each record in the OrderDetails table has a ProductID that corresponds to a record in the Products table with the same ProductID.

A relationship is built by matching a unique field within one table with a field within another table. The fields must have the same data types and field size.

For example, the following table consists of customer names and address fields, along with a unique identification number for each customer, which serves as the primary key in the table. You can create this number or allow Access to create it for you.

ID #	Names	Address	City	State	Zip
1	Smith	11692 J St. NW	Washington	DC	20013
2	Conrad	16 Allegheny Center	Pittsburgh	PA	16489
3	Kane	1012 Broadway	Lexington	KY	40567
4	Apple	516 Beacon Ave.	Seattle	WA	98051
5	Billow	9249 Cavalcade St.	Houston	TX	77002

You could then create a separate table consisting only of orders placed by customers. This table would also contain the field for the unique customer identification number, but not the customers' names and addresses.

ID #	Order
1	Office Work Center
2	All-In-One Corner Desk and Hutch
3	Open-Front Steel Bookcase
4	2-Drawer Letter File
5	Executive Leather Chair, Black

By relating the two tables through the common customer identification number field, the customers' name and address does not have to be entered for every order. All that has to be entered is the customer identification number, along with the orders.

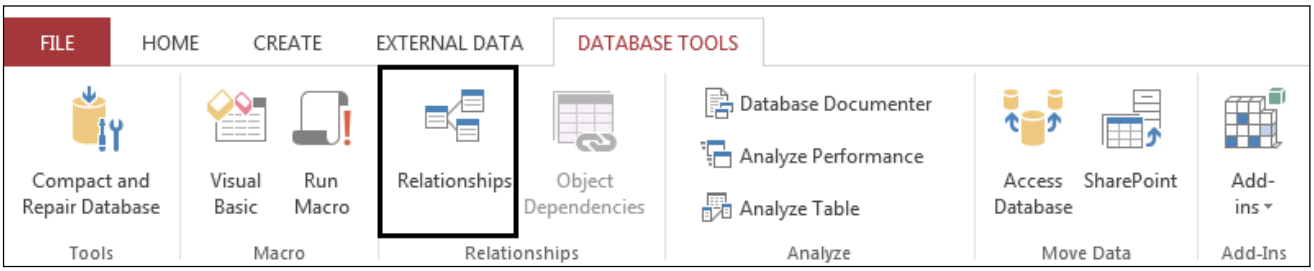
Access includes three types of relationships:

1. One-to-many
2. One-to-one
3. Many-to-many.

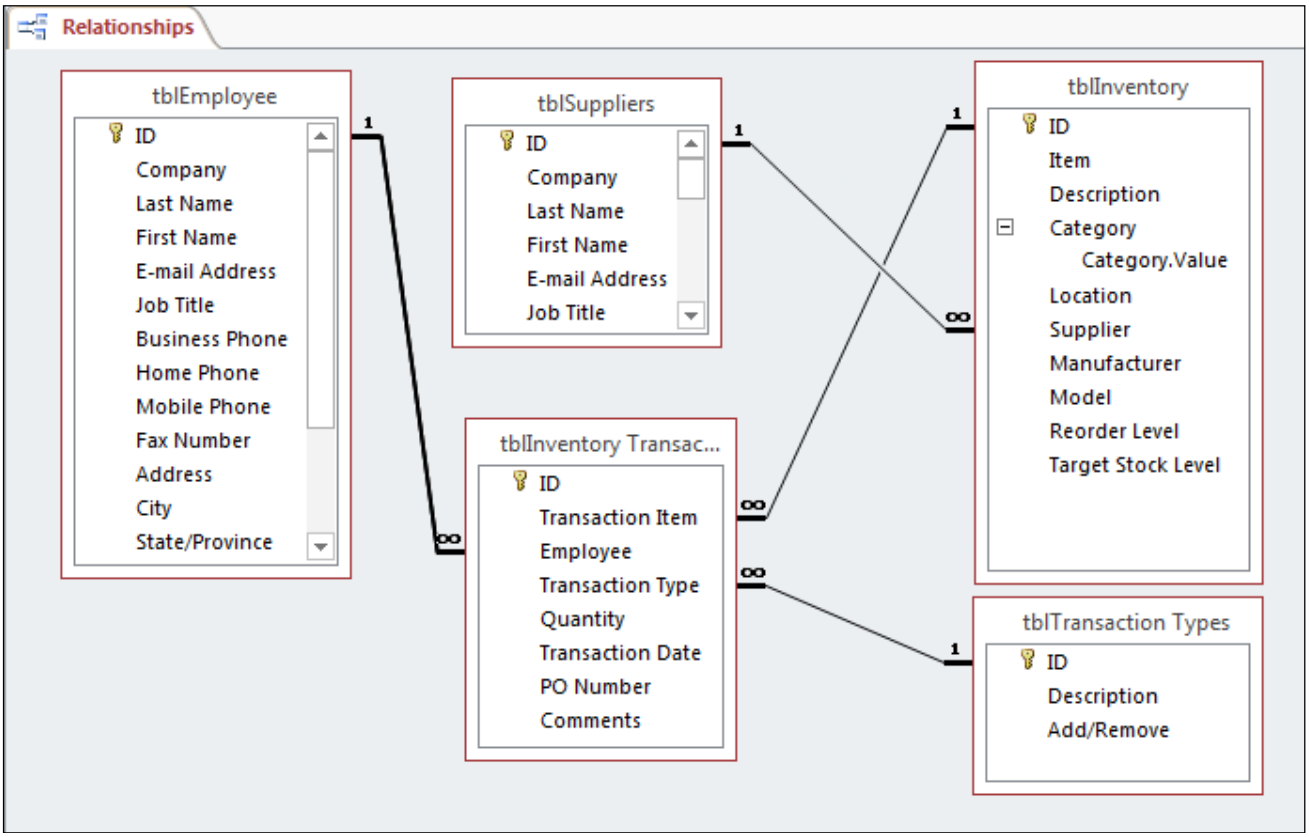
A **one-to-many relationship** occurs when one record from the primary table matches many records from the related table (e.g., one customer record matches many order records).

A **one-to-one relationship** occurs when one record from the primary table matches one record from the related table. Access determines the relationship type automatically when you create the relationship.

A **many-to-many relationship** occurs when a number of records from the primary table match a number of records in the related table (e.g. when dealing with Products and Orders, each record in the Orders table may match many records in the Products table and vice versa).



DATABASE TOOLS tab showing Relationships group and other groups



Sample Database Relationship Diagram

To create a one-to-many relationship in Access, on the **DATABASE TOOLS** tab, in the **Relationships** group, click **Relationships.** On the **DESIGN** tab, in the **Relationships** group, click **Show Table.** Select one or more tables, click **Add**, then click **Close.** Drag a field from one table to the common field in the other table. In the **Edit Relationships** dialog box, confirm that the field names shown are the common fields for the relationship. The field on the one side of the relationship must have a unique index, such as a primary key, and the field on the many side should not have a unique index. Click **Create** and then click **Save** when finished in the **Relationships** window.

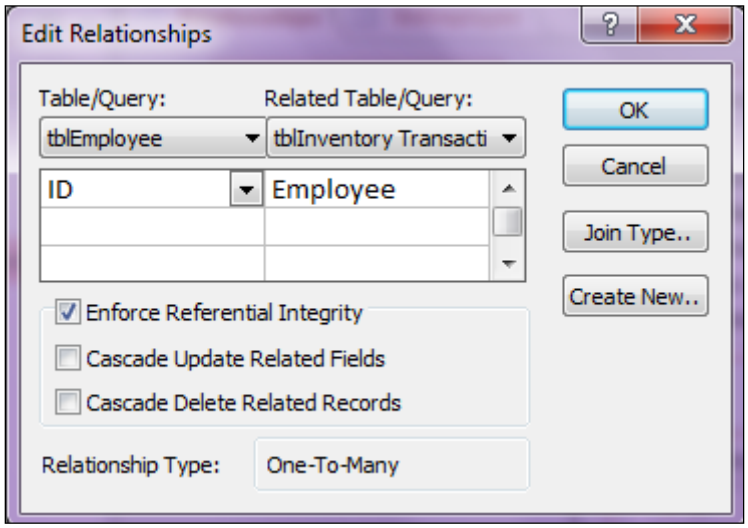
To delete a relationship from a database, on the **DATABASE TOOLS** tab, in the **Relationships** group click **Relationships.** On the **DESIGN** tab in the **Relationships** group**,** click **All Relationships**. Click the relationship line for the relationship you wish to delete and press the **[Delete]** key. Click **Yes**, and click **Save** to save changes.

10.2 Setting Referential Integrity

Concepts

Referential integrity ensures that your primary and foreign key fields stay in synch whenever you add, change, or remove data. In turn, that keeps your data accurate. Integrity ensures that relationships are valid. Integrity avoids records being accidentally deleted or altered.

For example: if you delete a supplier from your database and if you enforce referential integrity, then any data related to that supplier is also deleted. In other words, the deletion cascades through your data. However, if you don't enforce referential integrity, then the data related to that supplier references a parent value that no longer exists. Those records become "orphans," and using that data becomes much more difficult.



Edit Relationships window used for enforcing referential integrity

LESSON 11 –
CREATING BASIC FORMS

In this lesson, you will learn how to:

- Use Forms
- Use the Form button
- Save a form
- View records in a form
- Add a record using a form
- Delete a record using a form
- Add, edit and delete record data using a form
- Use the Calendar for Date Picking
- Use the Form Wizard
- Print records in a form
- Base a form on a query

11.1 USING FORMS

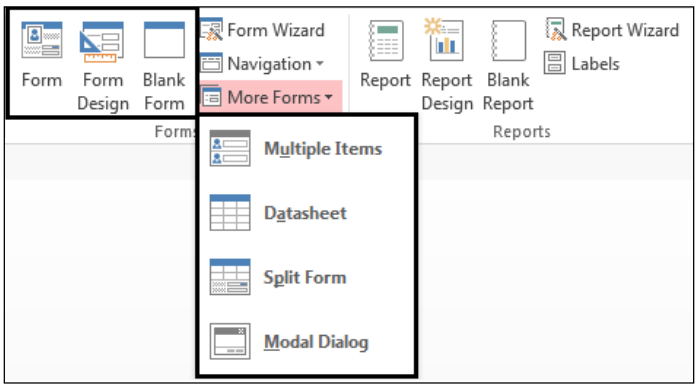
Concepts

Forms, like datasheets, can be used for viewing and editing data. However, they can also be used to present data in a more attractive format. Forms are usually designed to display all the fields for a single record within the form window, eliminating the need to scroll. You can also display data from related tables in one form. Since forms are objects through which you or other users can add, edit, or display the data stored in your Access database, the design of your form is an important aspect. If your database is going to be used by multiple users, well-designed forms are essential for efficiency and data entry accuracy.

Access provides four basic types of forms: columnar, tabular, datasheet and justified. In a columnar form, the field names are listed on the left side of the form and the field values appear in a column on the right. If space permits, there can be more than one column.

In a tabular form, the field names are listed across the top of the form and the values appear in the corresponding columns beneath them. A datasheet form appears similar to **Datasheet** view. Both the tabular and datasheet forms display data in a table layout.

In a justified form, the field names and values appear in alternate rows, evenly spaced across the page. Field values appear under the corresponding field names.



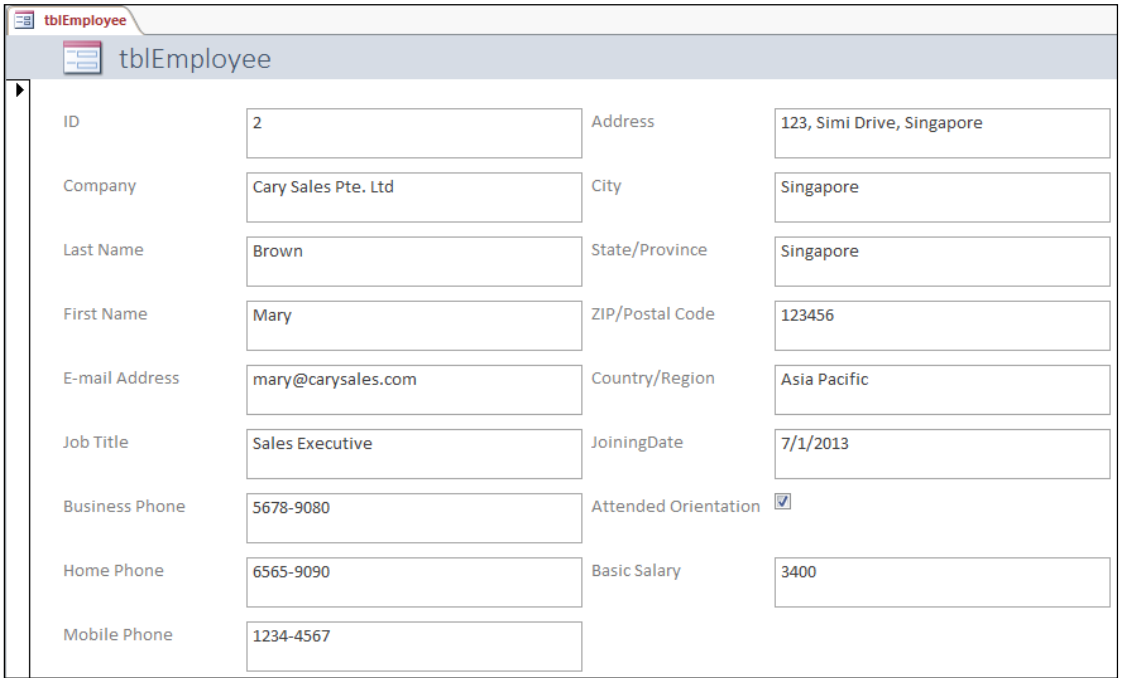
Forms Group showing various buttons

11.2 USING THE FORM BUTTON

Concepts

The fastest way to create a form is to use the **Form** button on the **CREATE** tab. The **Form** button automatically creates a simple form from the selected table or query, without needing any input. However, you must select a table or query before AutoForm can create the form. All fields in the table or query will appear on the form, and the title of the form is the name of the table or query.

The form is not saved automatically. When you close the form for the first time, Access prompts you to save it.



Employee Form created using the Form button present in the CREATE tab

Steps

From the **Student Folder**, open **FORMS1.ACCDB**.
Use the **Form** button to create a form.

If necessary, display **All Access Objects** in the Navigation Pane.

1. Select the table or query in the Navigation Pane on which you want to base your form. *The object is selected.*	Click the **tblEmployee** table.

2. Select the **Form** button on the **Create** tab. *The new form opens in **Form** view.*	 Click Form

View the form.

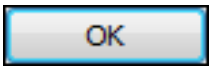
11.3 Saving a Form

Concepts

You can save a form having created one in Access.

Steps

Save a form.

1. Click the **Save** button on the **Quick Access Toolbar**. *The **Save As** dialog box opens with the text in the **Form Name** box selected.*	Click 
2. Type the desired form name. *The text appears in the **Form Name** box.*	Type ***frmEmployee***
3. Select **OK**. *The **Save As** dialog closes and the form is saved.*	Click 

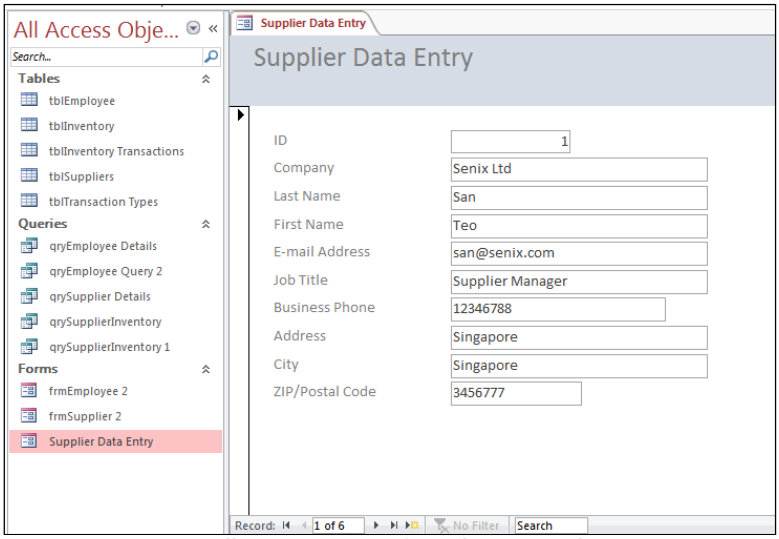
Then, close the form.

Note: The prefix **frm** denotes that the database object is a form.

11.4 Viewing Records in a Form

Concepts

Navigating records in a form is similar to navigating records in **Datasheet** view. You can use the navigation buttons at the bottom of the window to display records in a form.



Supplier Data Entry form in Form View

Steps

View records in a form.

If necessary, open the **frmSupplierDataEntry** form in **Form** view.

1. Click the **Last Record** button at the bottom of the form window. *The last record appears.*	Click
2. **Click** the **First Record** button at the bottom of the form window. *The first record appears.*	Click
3. Click **the Next Record** button at the bottom of the form window. *The next record appears.*	Click
4. Click **the Previous Record** button at the bottom of the form window. *The previous record appears.*	Click

11.5 Adding a Record using a Form

Concepts

Forms are frequently used to add records to one or more tables. It can be easier to work in a well-designed form than in the underlying table because forms are usually designed to display all the fields for a single record within the form window, eliminating the need to scroll.

You can use the **[Enter]** key to move between fields as you enter data. If you want to skip one or more fields, you can press the **[Tab]** key until the insertion point appears in the desired field, or you can click in the field in which you want to enter data. When you press the **[Enter]** key after entering data in the last field in a record, Access automatically saves the record and displays a blank form for entering another record.

Steps

Add a record using a form.

Open the **frmEmployee** form in **Form** view. If the **frmEmployee** form does not exist, use the **frmEmployee 2** form.

1. Click the **New Record** button at the bottom of the form window. *The insertion point appears in the first field of the new record.*	Click 
2. Type the desired data into the first field of the new record. *The data appears in the field.*	Type ***2000***
3. Press **[Enter]**. *The insertion point moves to the next field.*	Press **[Enter]**
4. Enter data in the remaining fields as desired. *The data appears in the fields.*	Follow the instructions shown below the table to complete this step.

Enter the following data in the corresponding fields:

Field	**Field Value**
Company	CarySales
Last Name	Xiang
First Name	Ray Hu
E-Mail Address	Xiang@carysales.com
Job Title	
Business Phone	70998976
Home Phone	65432333
Mobile Phone	67906788

Close the form. To confirm that the information was entered into the form's corresponding table, open the **frmEmployee 2** form in **Datasheet** view and scroll to the last record to view the new entry. Then, close the **tblEmployee** table.

11.6 Deleting a Record using a Form

Concepts

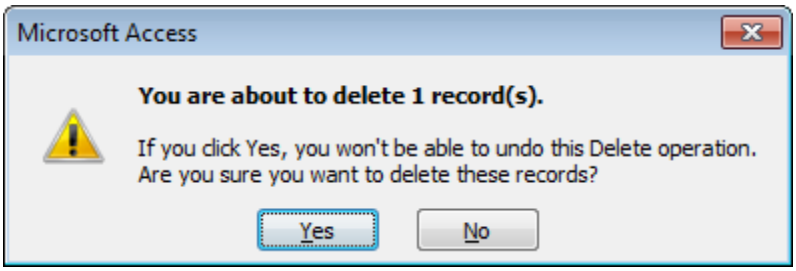
You can delete records in a form. This eliminates the need to open the table to delete records.

Steps

Delete a record using a form.

Open the **frmEmployee** form in **Form** view. If the **frmEmployee** form does not exist, use the **frmEmployee 2** form.

1. Navigate to the record to delete. *The record is displayed on the form.*	Go to record 14.
2. Click the **Delete** record command. *The data appears in the field.*	Select the **Delete** list arrow and select Delete Record in the **Records** group
3. Click **Yes**. *The record is deleted.*	Click **Yes**



Delete record confirmation

Close the form.

11.7 Adding, Editing and Deleting Record Data using a Form

Concepts

You can add, edit and delete record data directly in the form.

Steps

Add a record data using a form.

Open the **frmEmployee** form in **Form** view. If the **frmEmployee** form does not exist, use the **frmEmployee 2** form.

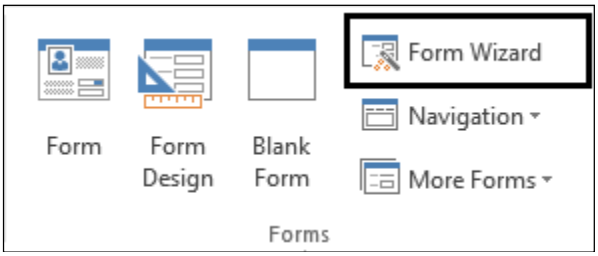
1. Navigate to the required record. *The record is displayed on the form.*	Scroll to record 15.
2. Add the required data in the appropriate field. *The data appears in the field.*	Type ***Marketing Support*** in the Job Title text box

Practice the Concept: Edit the email address data to read from **Xiang@carysales.com** to **rayhu@carysales.com**. Delete the entry in the **Home Phone** field.

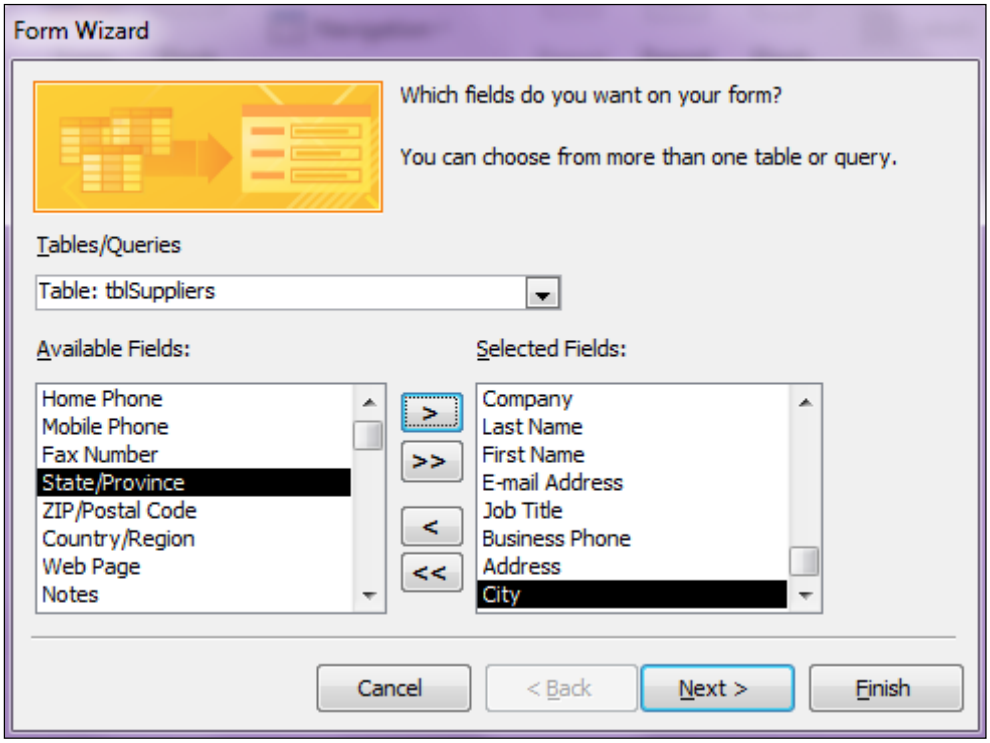
11.8 USING THE FORM WIZARD

Concepts

You can use the **Form Wizard** to quickly and easily create a form. The Form Wizard guides you through the process. First, you must choose the table or query on which you want to base the form, and then you can select the fields you want to include. Next, you select the desired type of form layout: columnar, tabular, datasheet, justified, **PivotTable**, or **PivotChart**. You can then select a style from a variety of predefined styles provided by Access. Finally, you must name the form.



CREATE tab showing Forms group



The Form Wizard Dialog Box

Steps

Create a Form with the Form Wizard.

1. Select the **Create** tab. *The **Create** tab appears.*	Click **CREATE**
2. Select **Form Wizard**. *The Form Wizard opens.*	Click Form Wizard
3. Select the **Tables/Queries** list. *A list of tables and queries appears.*	Click **Tables/Queries**
4. Select the table or query on which you want to base the form. *The table or query is selected, and the fields in the selected table or query appear in the **Available Fields** list box.*	Click **Table: Customers**, if necessary
5. Add the desired fields to the **Selected Fields** list box, or add all the fields. *The fields appear in the **Selected Fields** list box.*	Click **ID**, then click >
6. Enter additional fields as desired. *The text appears in the columns.*	Follow the instructions shown below the table before continuing on to the next step.

7. Select **Next >**. *The next page of the Form Wizard opens.*	Click 
8. Select the desired form layout. *A preview of the layout appears in the Form Wizard.*	Click **Columnar**, if necessary.
9. Select **Next >**. *The next page of the **Form Wizard** opens.*	Click 
10. Type the desired form name. *The name appears in the **What title do you want for your form?** box.*	Type ***Supplier Data Entry***
11. Select **Finish**. *The **Form Wizard** closes, and the new form opens.*	Click 

Select the following fields in the **Available Fields** list: **Company, Last Name, First Name, E-mail Address, Job Title, Business Phone, Phone Number, Fax Number, Address, City, and Postal Code.**

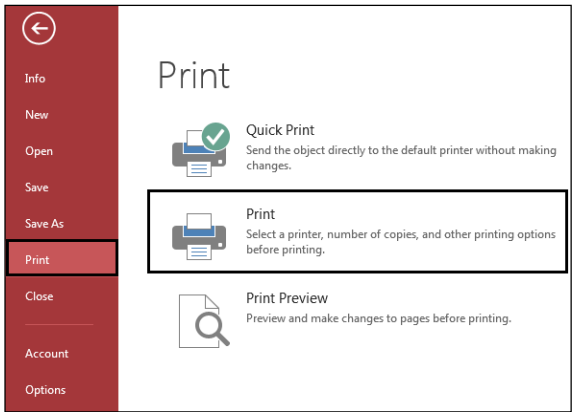
Return to the table and continue on to the next step (step 7).

Notice the new form is now listed under the **Forms** section on the Navigation Pane.

11.9 Printing Records in a Form

Concepts

You can print an open form. When you use the **Print** dialog box, you can print all records, only specified pages, or all selected records, thereby saving time and paper.

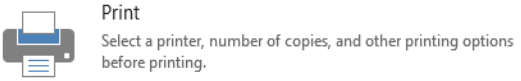
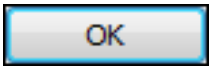


Backstage view displaying the printing options

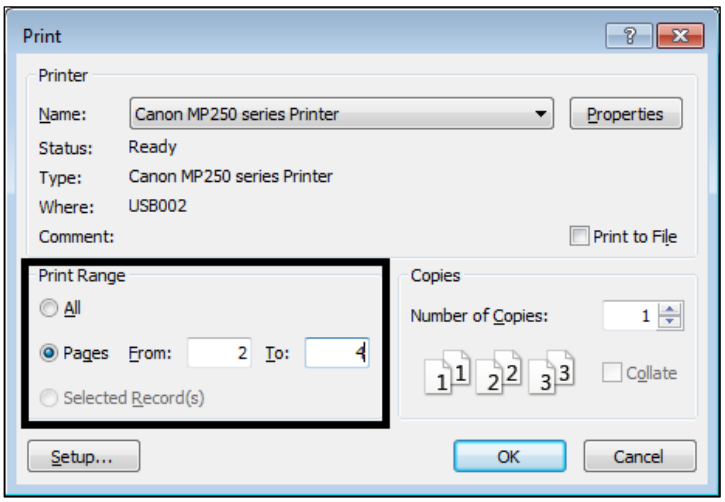
Steps

Print specific pages in a form.

If necessary, open the **Supplier Data Entry** form in **Form** view. If the **Customer Data Entry** form does not exist, use the **frmSupplier 2** form.

1. Select the **FILE tab**. *The **Backstage view** appears.*	Click **FILE**
2. Select the **Print** tab. *The **Print options** appear on the right pane.*	Click 
3. Select the **Print** button. *The Print dialog box appears.*	Click 
4. Select the desired options. *The option is selected.*	Click  **Pages** and type **2** in the **From** box and **4** in the **To** box.
5. **Select OK**. *The **Print** dialog box closes, and Access prints the records.*	Click 

Close the form.



The Print dialog box with specific pages selected for printing

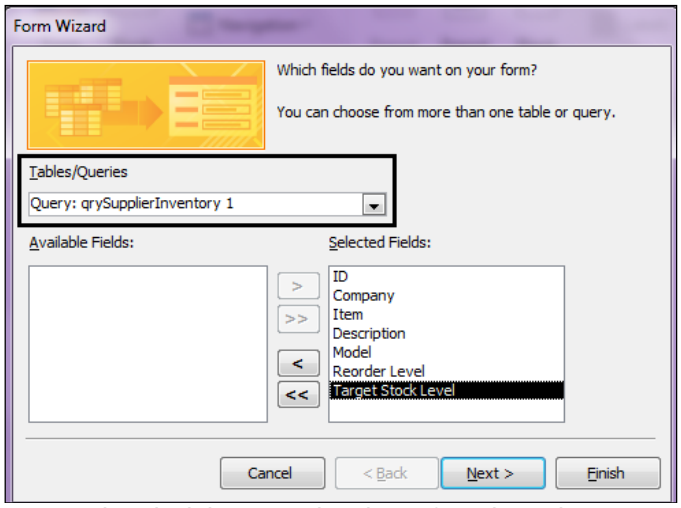
The Print Range section allows you to specific which records to print:

All	Selected by default. Prints all the records
Pages	Enter the specific page range to print using the **From** and **To** text boxes, for example **From: 2 To: 4**
Selected Record(s)	Prints the currently selected records.

11.10 Basing a Form on a Query

Concepts

Forms can extract information from a query as well as from a table. If the query recordset cannot be updated, you will not be able to edit the form or add records to it. Nevertheless, a form can be used to present query data in a more attractive manner.



Form Wizard Dialog Box showing a form based on query

Steps

Base a form on a query.

If necessary, display **All Access Objects** in the Navigation Pane.

1. Select the **CREATE** tab. *The **CREATE** tab appears.*	Click **CREATE**
2. Select **Form Wizard**. *The **Form Wizard** opens.*	Click 
3. Select the **Tables/Queries** list. *A list of available tables and queries appears.*	Click **Tables/Queries** 
4. Select the query on which you want to base the form. *The query is selected, and the fields in it appear in the **Available Fields** list box.*	Click **Query: qrySupplierInventory 1**

5. Add the desired fields to the **Selected Fields** list box, or add all the fields. *The fields appear in the **Selected Fields** list box.*	Click 
6. Select **Next >**. *The next page of the **Form Wizard** appears.*	Click 
7. Select the desired form layout. *A preview of the layout appears in the **Form Wizard**.*	Click  **Tabular**
8. Select **Next >**. *The next page of the **Form Wizard** appears.*	Click 
9. Type the desired form name. *The name appears in the **What title do you want for your form?** box.*	Type ***Inventory Supplies***, if necessary
10. Select **Finish**. *The **Form Wizard** closes, and the new form opens.*	Click 

View the form. Notice that the rightmost field (**Target Stock Level**) is not displayed properly as the field width is narrow. To change the field width, you need to display the form in design view.

Save and close the form.

Close **FORMS1.ACCDB**.

11.11 REVIEW EXERCISE

Create and print basic forms

1. Open **Forms1EX.accdb**.
2. Use the Form Wizard to create a new form using the **tblCustomers** table.
3. Add all the fields to the form.
4. Select the **Columnar** layout.
5. Name the form **frmCustomer Data Entry** and have the Form Wizard open the form to view or enter information.
6. Print record number 10.
7. Add a new record, with the following data:

Field	Data
Company	Company K
Last Name	Nelson
First Name	Mathew
Job Title	Owner
Business Phone	(555)565-1000
Address	490 S. Maple St.
City	Boston
State	MA
Zip	02188

8. Close the form and open the **tblCustomers** table in **Datasheet** view to view the new record. Then, close the **tblCustomer** table.
9. Use the Form Wizard to create a new form based on the **qryCustomerOrderDetails** query.
10. Add all the fields to the form.
11. Select the **Tabular** layout.
12. Name the form as **frmCustomerOrderDetails** and have the Form Wizard open the form to view or enter information.
13. Close the form.
14. Create form based on the **tblSuppliers** table using the **Form** button.
15. Close the form.
16. Close the database file.

LESSON 12 –
USING DESIGN VIEW

In this lesson, you will learn how to:

- Understand controls
- Add a form header and footer text using the label control
- Save changes to a form
- Edit an unbound control
- Use multiple Undo/Redo in Design view

12.1 UNDERSTANDING CONTROLS

Concepts

Controls are the parts of a form or report that you use to enter, edit, or display data. For example, a text box is a popular control for displaying data on reports, or for entering and displaying data on forms. Other popular controls include command buttons, check boxes, and combo boxes (drop-down lists). The most frequently used control is the text box, but other controls include command buttons, labels, check boxes, and subform/subreport controls.

Controls can be bound, unbound, or calculated.

Bound control: A control whose source of data is a field in a table or query is called a bound control. You use bound controls to display values that come from fields in your database. For example, a text box that displays an employee's last name might get this information from the Last Name field in the Employees table.

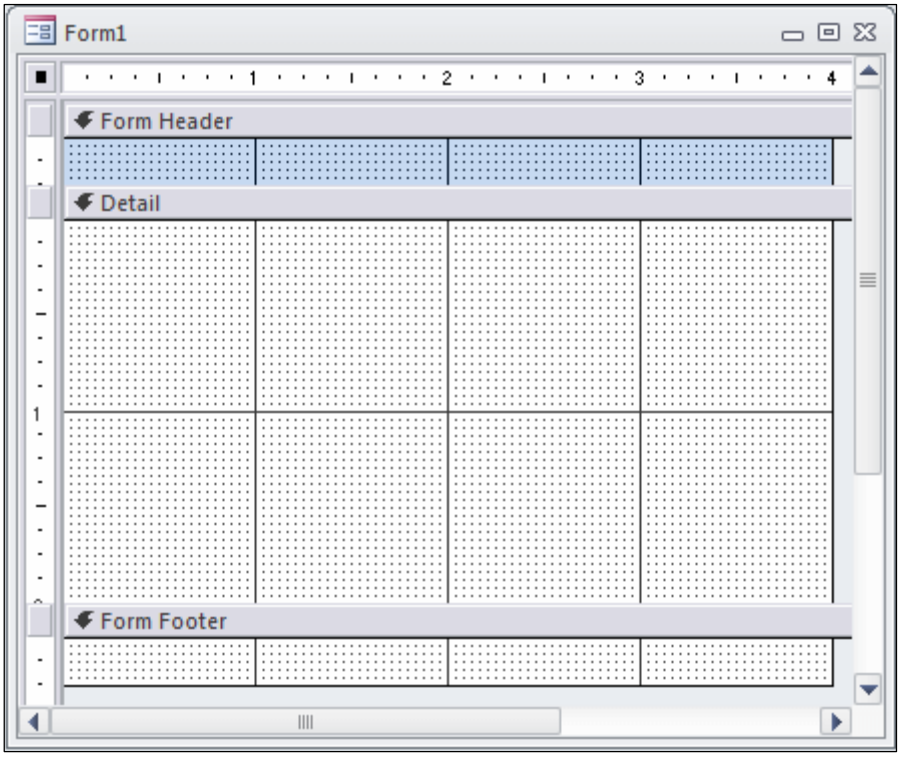
Unbound control: A control that doesn't have a source of data (such as a field or expression) is called an unbound control. You use unbound controls to display information, pictures, lines or rectangles. For example, a label that displays the title of a form is an unbound control.

Calculated control: A control, whose source of data is an expression, rather than a field, is called a calculated control. You specify the value that you want to use as the source of data in the control by defining an expression. For example, the following expression calculates the price of an item with a 25 percent discount by multiplying the value in the Unit Price field by a constant value (0.75).
=[Unit Price] * 0.75

12.2 ADDING A FORM HEADER AND FOOTER TEXT USING THE LABEL CONTROL

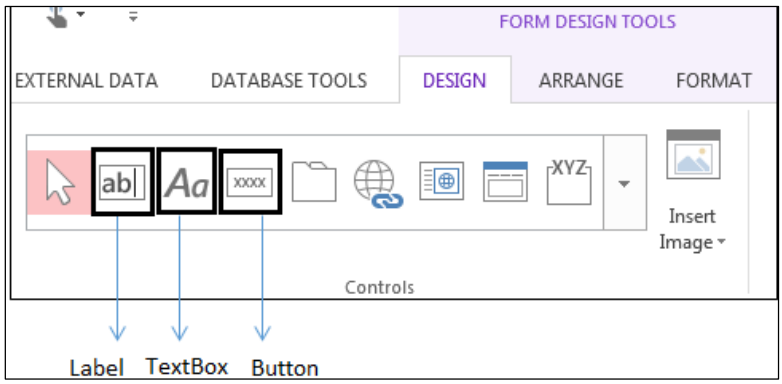
Steps

The **Form Header** and **Form Footer** sections let you add titles, instructions, command buttons, and other controls to the top and bottom of your form, respectively. Controls placed in the **Form Header** and **Form Footer** sections remain on the screen whenever the form is displayed in **Form** view or **Layout** view; they do not change when the contents of the **Detail** section change as you navigate from one record to another record.



Form with header and footer sections

You use unbound controls to display information, pictures, lines or rectangles. For example, a label that displays the title of a form is an unbound control.



FORM DESIGN TOOL Contextual tab showing Controls group

Add a label in **Design** view.

From the **Student Folder**, open **DESIGN.ACCDB**.

Open the **frmInventory** form in **Design** view.

1. Select the **Design** tab on the **Ribbon**. *The **Design** tab is displayed.*	Click **DESIGN**
2. Select the **Label** button in the **Controls** group. *The **mouse** pointer changes into the letter **A** with a plus sign (+) when positioned over the form or report.*	Click 

3. Click in the form or report where you want the top left corner of the label to appear. *The **insertion** point appears surrounded by a label box.*	Click and drag the mouse in the desired location of the label on the form.
4. Type the text for the label. ***The** label box expands and the text appears.*	Type ***Cary Sales Pvt Ltd***
5. Enter the text. *The **label** box is entered onto the form or report as an unbound control.*	Press **[Enter]**

You can edit the text in the header or footer area by simply clicking in the label box and edit as required.

Centre align the label. If necessary, Bold, Underline and change the font size to 18. Click in a blank area of the form to deselect the label.

12.3 SAVING CHANGES TO A FORM

Concepts

When you create a new form and save it, Access prompts you for a form name. If you make any changes to the form after assigning a name, simply click the **FILE** tab and choose **Save** to save the changes made. You can also click on the **Save** button in the **Quick Access Toolbar**.

Steps

1. Click the **FILE** tab on the **Ribbon**. *The **Backstage view** appears.*	Click **FILE**
2. Select **Save**. *The changes are saved.*	Click **Save**

Note: If you want to save the changes made as another form, click the **FILE** tab and choose **Save As**. Select **Save Object As** and click **Save As**. Enter a new form name and click **OK.**

Close the **frmInventory** form.

Practice the Concept: Open the **frmInventory 5** form in **Design** view. Using the **DESIGN** tab, add a label to the left side of the form header. Enter the text **Order Entry Form**. Resize the text to **14 pt**. You will probably need to reposition the

details section selector so that you can resize the label box for the text to fit. Click in a blank area of the form to deselect the label. Switch to **Form** view. Notice the form header at the top of the page. Switch to **Design** view.

12.4 EDITING AN UNBOUND CONTROL

Concepts

The quick way to edit an unbound control is by clicking the control and making the necessary changes. For a label, you need to click the control and edit the text.

Steps

Edit an unbound control.

If you have not been using the **frmInventory** form, open the **frmInventory 5** form in **Design** view.

1. Select the unbound control you want to edit. *Sizing handles appear around the control.*	Click the **Cary Sales Pvt Ltd** label
2. Type the desired changes. *The text in the unbound control is edited.*	Change the title to **Cary Sales Pte Ltd**
3. Press **[Enter]**. *The edited text is entered into the unbound control on the form or report.*	Press **[Enter]**

Move the **Cary Sales Pte Ltd.** label box so that it is centred within the rectangle. Click in a blank area of the form to deselect the control. Switch to **Form** view to view the changes. Switch back to **Design** view.

12.5 USING MULTIPLE UNDO/REDO IN DESIGN VIEW

Concepts

You can undo the changes made to the unbound controls by using the **Undo** and the **Redo** commands present in the Quick Access Toolbar.

Steps

Use the **Undo** and **Redo** features to undo and redo a command.

If you have not been using the **frmInventory** form, open the **frmInventory 5** form in **Design** view.

Delete the line below the tennis graphic, the tennis graphic, and the rectangle.

1. To undo the previous command or action, click the **Undo** button on the **Quick Access Toolbar**. *The previous command or action is reversed.*	Click 
2. To redo the undone command or action, click the **Redo** button on the **Quick Access Toolbar**. *The command or action is redone.*	Click 
3. To undo or redo multiple consecutive actions, click the **Undo** or **Redo** button arrow, as applicable. *A list of previous actions appears, with the most recent action at the top of the list.*	Click the  arrow
4. Select the action you want to undo or redo. *The actions are undone or redone accordingly.*	Click the last **Delete** command in the list

Notice that Access returns the line, company logo, and rectangle.

Close the form without saving it.

12.6 REVIEW EXERCISE

Use Design view

1. Open **Forms2EX.ACCDB**.
2. Open the **frmSupplier** form in **Design** view.
3. Edit the label in the form header. Enter the text **Worldwide SupplyGoods Corp.**
4. Add an image under the **Worldwide SupplyGoods Corp.** label. Add the **WorldWideLogo.jpg** image from the **Student Folder**. Centre the image under the label.
5. Add a rectangle around the **Worldwide SupplyGoods Corp.** label and the logo.
6. Draw a horizontal line across the bottom of the form. *(**Hint:** Hold the **[Shift]** key to draw a straight line.)*
7. Use the **Undo** feature to reverse the previous action.
8. Use the **Redo** feature to redo the reversed action.
9. Switch to **Form** view to view the completed form.
10. Close the form, without saving the changes.
11. Close the database file.

LESSON 13 –
CREATING BASIC REPORTS

In this lesson, you will learn how to:

- Use the Report button
- Use print preview - reports
- Print pages of a report
- Use the Report Wizard
- Change views in a report
- Changing control arrangement of data fields in report layout
- Save changes to a report
- Change orientation and paper size
- Group and summarise report data
- Base a report on a query

13.1 USING REPORTS

Concepts

Reports allow users to create a printed copy of all or selected data for greater ease of reference and understanding. Although you can print records from a table or form, a report provides more precise control over the final output. Reports can include page headers and footers, calculated totals and subtotals, and even graphics. In addition, reports can be used for invoices, orders, presentations, and mailing labels.

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

Employees

ID	1
Last Name	Freehafer
First Name	Nancy
Job Title	Sales Representative
Business Phone	(123)456-7890
ID	2
Last Name	Cencini
First Name	Andrew
Job Title	Vice President, Sales
Business Phone	(123)456-7890

Columnar layout

Employees

ID	Last Name	First Name	Job Title	Business Phone
1	Freehafer	Nancy	Sales Representative	(123)456-7890
2	Cencini	Andrew	Vice President, Sales	(123)456-7890
3	Kotas	Jan	Sales Representative	(123)456-7890
4	Sergienko	Mariya	Sales Representative	(123)456-7890
5	Thorpe	Steven	Sales Manager	(123)456-7890
6	Neipper	Michael	Sales Representative	(123)456-7890

Tabular layout

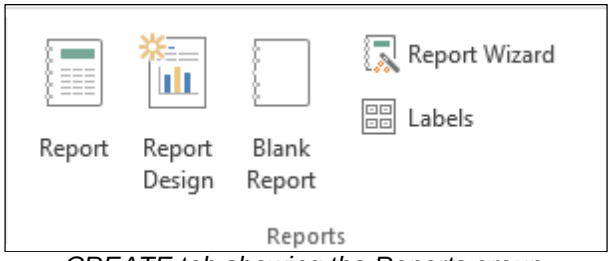
Reports can include data from a single table or related tables. Reports can also be based on queries.

13.2 USING THE REPORT BUTTON

Concepts

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

When using the **Report** button to create a report, Access does not automatically save it; the first time you close the report, Access prompts you to save it.



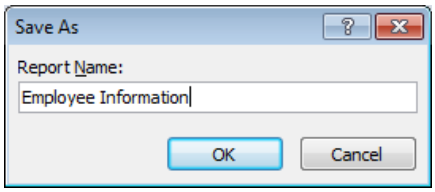
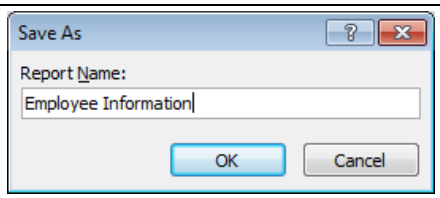
CREATE tab showing the Reports group

Steps

From the **Student Folder**, open **REPORT1.ACCDB**.

Use the **Report** button to create a report.

If necessary, display **All Access Objects** in the Navigation Pane.

1. Select the table or query in the **Navigation Pane** on which you want to base your report. *The object is selected.*	Click the **tblEmployee** table
2. Select the **Report** button on the **Create** tab. *The new form opens in **Report** view.*	Click 
3. Save the report. *The **Save As** dialog box appears.*	Click the **FILE** tab and select **Save** or click on the **Save** button in the **Quick Access Toolbar**
4. Enter a name for the report. *The dialog box allows you to enter a name, clicking **OK** will save the Report Name.*	
5. Click **Cancel** and do not save the report.	

Close the report.

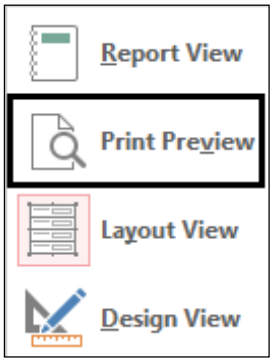
13.3 Using Print Preview - Reports

Concepts

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

Print preview provides options for viewing the report. You can zoom out to see more of the report or zoom in to see a portion of the report in more detail. The **Zoom** button on the **Print Preview** tab allows you to choose from several magnification options, from as small as 10% to as large as 500% or 1000%.

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



REPORT LAYOUT TOOLS Contextual tab showing the View group list options

Employee ID	First Name	Last Name	Transaction Item	Quantity	Transaction Date
2	Mary	Brown	Marker Pens	30	29/4/2013 11:09:32 AM
3	Hemry	Brown	Ski Gloves	25	29/4/2013 11:10:08 AM
5	Wilson	Smith	Patagonia Fleece Pullover	20	29/4/2013 11:12:43 AM
9	Reshmi	Pandit	Mouse Pad for Laptops	5	29/4/2013 11:13:54 AM
10	Fakruddin	Mahmood	Champion T-Shirt	20	29/4/2013 11:14:19 AM
10	Fakruddin	Mahmood	Patagonia Cappy T-Shirt	22	29/4/2013 11:14:49 AM
8	Rajesh	Gupta	Tooth Brush	30	29/4/2013 11:16:20 AM
10	Fakruddin	Mahmood	Drawing Pencil	30	29/4/2013 11:16:43 AM

Using print preview

Steps

Use print preview to view a report.

If necessary, display the **Reports** object list. Use the **rptAprilTransaction** report.

1. Open the report you want to preview. *The report is selected.*	Double-Click **rptAprilTransaction**, if necessary
2. Select the **DESIGN** tab. *The **DESIGN** ribbon appears.*	Click **DESIGN**
3. Select the **View** button. *The View list options appear.*	Click 
4. Select the **Print Preview** button. *The preview of the document is displayed.*	Click 
5. Click the area of the report page you want to magnify to 100%. *The report area is magnified to 100%.*	Click the transaction item
6. Click anywhere in the report page to change the magnification back to fit the window. *The entire page appears in print preview.*	Click anywhere in the page
7. Click the Two **Pages** button in the **Zoom** group to display two pages of the report. *Two pages appear in print preview.*	Click 
8. Click the **Next Page** button at the bottom of the report window to display the next page of the report. *The next page of the report appears.*	Click 
9. Click the **Last Page** button at the bottom of the report window to display the last page of the report. *The last page of the report appears.*	Click 
10. Click the **Previous Page** button at the bottom of the report window to display the previous page of the report. *The previous page of the report appears.*	Click 
11. Click the **First Page** button at the bottom of the report window to display the first page of the report. *The first page of the report appears.*	Click 

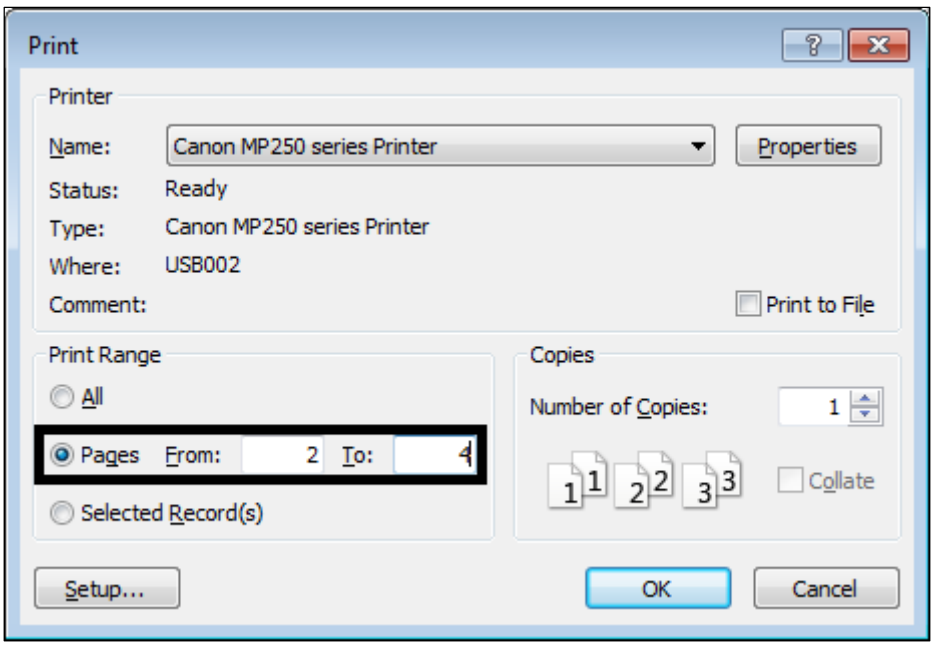
Practice the Concept: Use the **Zoom** on the **Status Bar** to change the magnification to 250%. Scroll through the report to view the text.

Close print preview.

13.4 Printing Pages of a Report

Concepts

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



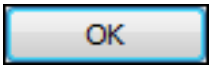
Specifying specific pages to print in the Print Dialog Box

Steps

Print specific pages of a report.

If necessary, display the **All Access Objects** in the Navigation Pane, use the **rptApril Transaction** report.

1. Select the report you want to print. *The report name is selected.*	Click **Order Information**, if necessary
2. Select the **FILE** tab. *The Backstage **view** appears.*	Click **FILE**

3. Select the **Print** tab. *The Print options appear on the right pane*	Click 
4. Select the **Print** button. *The **Print** dialog box appears.*	Click 
5. Select the **Pages** option. *The **Pages** option is selected, and the insertion point appears in the **From** box.*	Click  **Pages**
6. Type the number of the first page you want to print. *The number appears in the **From** box.*	Type ***1***
7. Select the **To** box. *The insertion point appears in the **To** box.*	Press **[Tab]**
8. Type the number of the last page you want to print. *The number appears in the **To** box.*	Type ***2***
9. Select **OK**. *The **Print** dialog box closes, and Access prints the selected pages.*	Click 

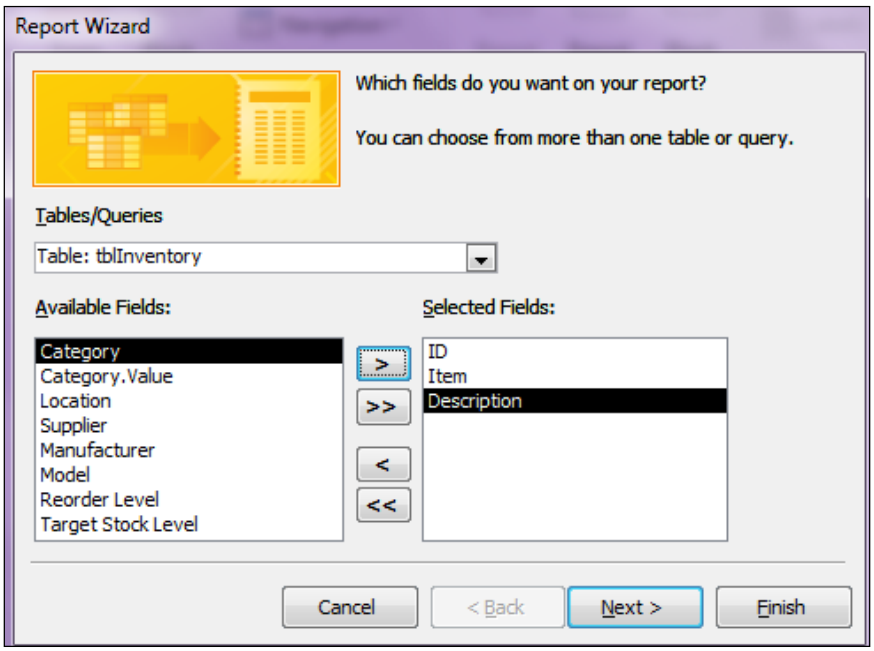
13.5 USING THE REPORT WIZARD

Concepts

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

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

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



Using the Report Wizard

Steps

Use the Report Wizard to create a report.

1. Select the **CREATE** tab on the **Ribbon**. *The **Create** tab appears.*	Click **CREATE**
2. Select the **Report Wizard** button. *The **Report Wizard** opens.*	Click 
3. Select the **Tables/Queries** list. *A list of available tables and queries appears.*	Click **Tables/Queries** 
4. Select the table or query on which you want to base the report. *The table or query is selected, and the fields in it appear in the **Available Fields** list.*	Click **Table: tblInventory**
5. Add the desired field to the **Selected Fields** list box. *The field appears in the **Selected Fields** list box.*	Double-click **ID**
6. Add additional fields as desired. *The fields appear in the **Selected Fields** list box.*	Double-click **Item AND Description**

7. To add another table to the report, select the **Tables/Queries** list. *A list of available tables and queries appears.*	Click **Tables/Queries** 
8. Select the desired table or query. *The table or query is selected, and the fields in it appear in the **Available Fields** list box.*	Click **Table: tblSuppliers**
9. Add the desired fields to the **Selected Fields** list box. *The fields appear in the **Selected Fields** list box.*	Follow the instructions shown below the table before continuing on to the next step
10. Select **Next >**. *The next page of the **Report Wizard** appears.*	Click 
11. Select the desired option in the **How do you want to view your data?** list box. *A preview of the option appears in the **Report Wizard**.*	Click **by tblSuppliers**, if necessary
12. Select **Next >**. *The next page of the Report Wizard appears.*	Click 
13. Select the desired grouping level in the **Do you want to add any grouping levels?** list box. *A preview of the grouping level appears in the Report Wizard.*	Double-click **ID**
14. Select **Next >**. *The next page of the **Report Wizard** appears.*	Click 
15. To sort the records, select the **1** list. *A list of available report fields appears.*	Click **1** 
16. Select the field by by which you want to sort. *The field is selected.*	Click **Item**
17. Select **Next >**. *The next page of the **Report Wizard** appears.*	Click 

18. Select the desired report layout. *A preview of the layout option appears in the **Report Wizard**.*	Click  **Stepped**, if necessary
19. Select the desired report orientation. *The orientation option is selected.*	Click  **Landscape**
20. Select **Next >**. *The next page of the **Report Wizard** appears.*	Click 
21. Type the desired report name. *The text appears in the **What title do you want for your report?** box.*	Type ***Inventory Supplied Report***
22. Select **Finish**. *The **Report Wizard** closes, and the report appears in print preview.*	Click 

From the **tblSuppliers** table, add the **Company**, **Store Name**, **First Name**, **Last Name**, Email **Address** and **Phone** fields.

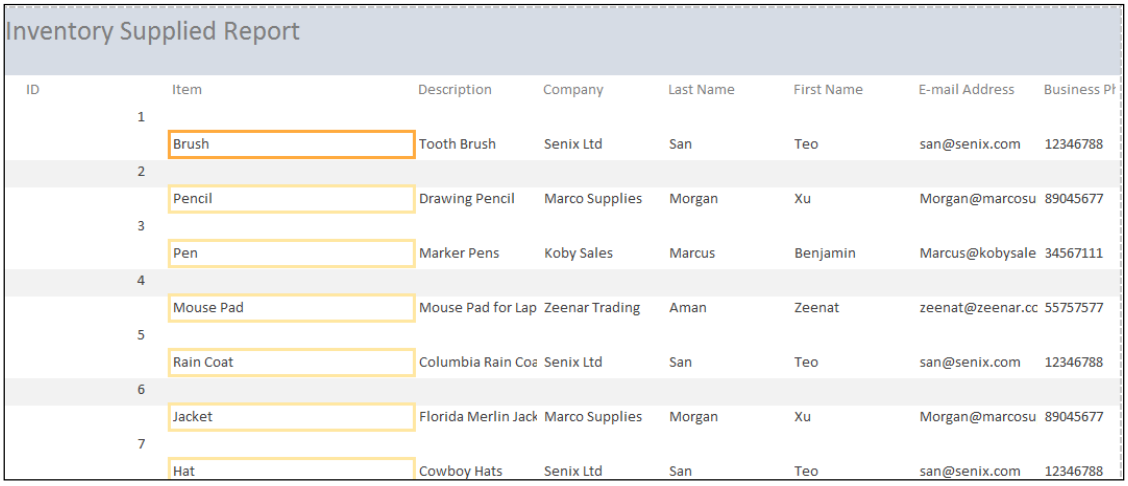
Close print preview. Notice that the new report appears in the **Navigation Pane**.

13.6 Changing Views in a Report

Concepts

After you create a report, you can view it in a selection of different views: **Report** View, **Print Preview**, **Layout** View, or **Design** View. When a report is open, you can switch between these views by clicking the **View** button in the Views section of the **HOME Tab** on the **Ribbon**. The following table explains the different views:

View	Description
Report View	This view displays the report as you (or the Report Wizard) designed it.
Print Preview	This view allows you to view the print layout of your report.
Layout View	This view looks like **Print Preview**, but allows you to make changes to your report.
Design View	Displays the report in the **Design** View window, where you can change form elements, move them around and add or delete them, if necessary.


Inventory Supplied Report

ID	Item	Description	Company	Last Name	First Name	E-mail Address	Business Pl
1	Brush	Tooth Brush	Senix Ltd	San	Teo	san@senix.com	12346788
2	Pencil	Drawing Pencil	Marco Supplies	Morgan	Xu	Morgan@marcosu	89045677
3	Pen	Marker Pens	Koby Sales	Marcus	Benjamin	Marcus@kobysale	34567111
4	Mouse Pad	Mouse Pad for Lap	Zeenar Trading	Aman	Zeenat	zeenat@zeenar.cc	55757577
5	Rain Coat	Columbia Rain Coa	Senix Ltd	San	Teo	san@senix.com	12346788
6	Jacket	Florida Merlin Jack	Marco Supplies	Morgan	Xu	Morgan@marcosu	89045677
7	Hat	Cowboy Hats	Senix Ltd	San	Teo	san@senix.com	12346788

A report in Layout view

Steps

Change the report view.

Open the **rptInventorySupplied 1** report, if necessary.

1. Select the **Design View** button on the Status Bar. *The report changes to **Design** view.*	Click 

Practice the concept: Follow the above steps and select the **Layout View** button on the **Status Bar**.

Close the report.

13.7 Changing Control Arrangement of Data Fields in Report Layout

Concepts

You can customise the arrangement of the data fields in the report by simply clicking and dragging it to a new location. A data field has two components, the **Label** and the **Control**. The **Label** appears on the left of the field and **Control** to the right.

Label →  **← Control (field)**

In some cases, the data fields may need to be cut to be later pasted back, or other data fields may need to be resized to make room for this move.

- To move label or field individually, click and drag the top left handle of the data field.
- To move them together as one, click and drag the edge of any part of the data field.

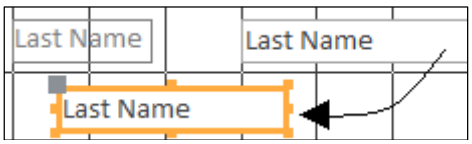
Steps

Change arrangement of data fields and headings within a report layout.

Open the **rptEmpDetails** report in **Design** view.

1. Select the data field label to rearrange. *The label is selected.*	Click on **First Name** label
2. Click the top left handle and drag the selected control to the new location. *The control is moved.*	Click and drag the **First Name** label and place it next to **Last Name** text box
3. Select the data field text box to rearrange. *The text box label is selected.*	Click on **First Name** text box
4. Click the top left handle and drag the selected control to the new location. *The control is moved.*	Click and drag the **First Name** text box and place it below **First Name** label

Practice the Concept: Move the **Last Name** text box and place it below the **Last Name** label. Select both the **First Name** label and text box controls and move it close the **Last Name** controls.



Selecting the top left handle of a control and moving to a new position

13.8 Saving Changes to a Report

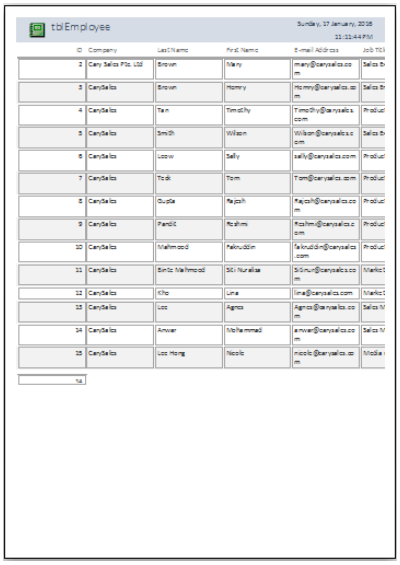
Concepts

When you create a new report and save it, Access prompts you for a report name. If you make any changes to the report after assigning a name, simply click the **FILE** tab and choose **Save** to save the changes made. You can also click on the **Save** button in the **Quick Access Toolbar**.

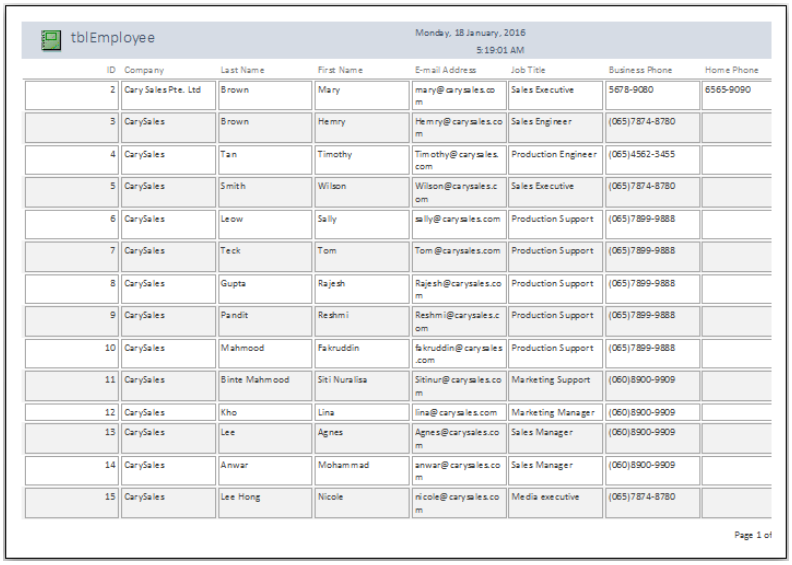
13.9 Changing Orientation and Paper Size

Concepts

After you create a database object (table, query, form or report), you can change the orientation and paper size before printing them out. You can choose from a portrait (tall) or landscape (wide) orientation for your report.



Portrait (tall)

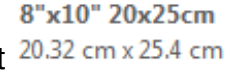


Landscape (wide)

Steps

Change the report orientation and paper size.

Open the **rptInventorySupplied 1** report.

1. Select the **FILE** tab. *The **FILE** tab is displayed.*	Click **FILE**
2. Select **Print Preview**. *The report displays in print preview.*	Click **Print Preview**
3. Change the orientation as required in the **Page Layout** group of the **PRINT PREVIEW** tab. *The page orientation is applied.*	Click  Portrait
4. Change the paper size as required in the **Paper Size** group. *The page orientation is applied.*	Click **Size** and select  8"x10" 20x25cm 20.32 cm x 25.4 cm

Close the report.

13.10 Grouping and Summarising Report Data

Concepts

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

You can see how grouping works by comparing the **List of Products by Category** report (shown below) to the datasheet for its underlying query, **Product List**. Both the report and the query sort products by category, but the report also prints the name of each category on a separate line at the beginning of each group (in the group header) and the number of products for each category on a separate line at the end of each group (in the group footer).

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

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

For example, the **Sales by Date Shipped** report below is grouped by the **Shipping Date** and **Sum** summary calculation is added to the **Sale Amount**.

Group field →

Sales by Date Shipped

01-Mar-06

Order ID	Company	Sale Amount
11-Nov-05		
15	Company I	$460.00
16	Company K	$127.50
	Total for 11-Nov-05:	$587.50
26-Jan-06		
7	Company BB	$140.00
7	Company BB	$10.00
13	Company I	$10.00
	Total for 26-Jan-06:	$160.00

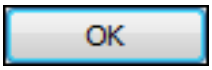
← Summary calculation

Steps

Group and summarise report data.

If necessary, display **All Access Objects** in the Navigation Pane.

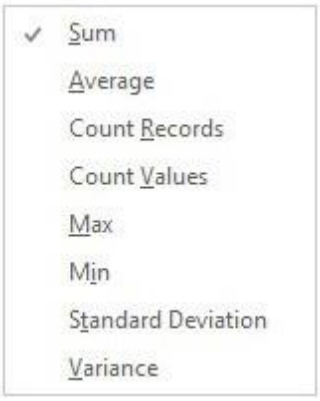
1. Select the **CREATE** tab on the **Ribbon**. *The **New Report** dialog box opens.*	Click **CREATE**
2. Select the **Report Wizard** button. *The **Report Wizard** opens.*	Click 
3. Select the Tables**/Queries** list. *A list of available tables and queries appears.*	Click **Tables/Queries** 
4. Select the table or query on which you want to base the report. *The table or query is selected, and the fields in it appear in the **Available Fields** list box.*	Click **Table: tblEmployee**
5. Add the fields you want to include in the report to the **Selected Fields** list box. *The fields appear in the **Selected Fields** list box.*	Follow the instructions shown below the table before continuing on to the next step
6. Select **Next >**. *The next page of the **Report Wizard** appears.*	Click 
7. Select the desired grouping option from the **How do you want to** view **your data?** list box. *A preview of the grouping option appears in the **Report Wizard**.*	Click **by tblEmployee**

8. Select **Next >**. *The next page of the **Report Wizard** appears.*	Click 
9. Select the desired grouping level from the **Do you want to add any grouping levels?** list box, if applicable. *A preview of the grouping level appears in the **Report Wizard**.*	Double-click **ID**
10. Select **Next >**. *The next page of the **Report Wizard** appears.*	Click 
11. To sort the records, select the **1** list. *A list of available report fields appears.*	Click **1** 
12. Select the field by by which you want to sort. *The field is selected.*	Click **Transaction Item**
13. If you have included a **Number** data type field, select the Summary **Options** button. *The **Summary Options** dialog box opens.*	Click 
14. Select the desired summary options. *The summary options are selected.*	Click  **Sum**
15. Select **OK**. *The **Summary Options** dialog box closes.*	Click 
16. When you have finished selecting options from the **Report Wizard**, select **Finish**. *The **Report Wizard** closes, and the report appears in print preview.*	Click 

Add the **ID**, **First Name** and **Last Name** fields. Select the **tblInventoryTransaction** table from the **Tables/Queries** list, and add the **Transaction Item, Quantity,** and **PO number** field below the **Last Name** field.

Close print preview. Notice that the new **Transaction** report appears in the Navigation Pane.

You can also add total to a field in an existing report. Simply select the required field in the **Layout** view, click the **Totals** button in the **Grouping & Totals** group on the **Design** tab and select the required function.



13.11 Basing a Report on a Query

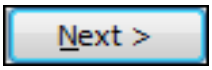
Concepts

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

Steps

Base a report on a query using the Report Wizard. The following report will use **qryInventoryTransactionCurrentMonth**. This will generate all the inventory transactions for the current month.

1. Select the **CREATE** tab on the Ribbon. *The **CREATE** tab appears.*	Click **CREATE**
2. Select the **Report Wizard** button. *The **Report Wizard** opens.*	Click 
3. Select the **Tables/Queries** list. *A list of tables and queries appears.*	Click **Tables/Queries** 
4. Select the query on which you want to base the report. *The query is selected, and the fields in it appear in the **Available Fields** list box.*	Click **Query: qryInventoryTransactionCurrentMonth**
5. Add the desired fields to the **Selected Fields** list box, or add all fields. *The fields appear in the **Selected Fields** list box.*	Click 
6. Select **Next >**. *The next page of the **Report Wizard** appears.*	Click 

7. Select the desired grouping option from the **How do you want to view your data?** list box. *A preview of the grouping option appears in the **Report Wizard**.*	Click **by tblInventory**, if necessary
8. Select **Next >**. *The next page of the **Report Wizard** appears.*	Click 
9. Select the desired grouping level from the **Do you want to add any grouping levels?** list box, if applicable. *A preview of the grouping level appears in the **Report Wizard**.*	Double-click **ID**
10. Select **Next >**. *The next page of the **Report Wizard** appears.*	Click 
11. Select **Next >**. *The next page of the **Report Wizard** appears.*	Click 
12. Select the desired report layout. *A preview of the layout option appears in the **Report Wizard**.*	Click  **Outline**
13. Select the desired report orientation. *The orientation option is selected.*	Click  **Portrait**, if necessary
14. Select **Next >**. *The next page of the **Report Wizard** appears.*	Click 
15. Type the desired report name in the **What title do you want for your report?** box. *The name appears in the **What title do you want for your report?** box.*	Type ***Monthly Inventory Transaction Report***
16. Select **Finish**. *The **Report Wizard** closes, and the report appears in print preview.*	Click 

Close print preview. Notice that the new report appears in the Navigation Pane.

Close **REPORT1.ACCDB**.

13.12 REVIEW EXERCISE

Create and print basic reports

1. Open **Report1EX.accdb**.
2. Use the Report Wizard to create a new report.
3. Select the **tblOrders** table and add the **ID**, **Order Date**, and **ShippedDate, ShipAddress, ShipCity, and ShipZipPostal** fields to the report.
4. Select the **tblOrderDetails** table and add the **ExtendedPrice** field to the report.
5. Group the data **by tblOrders** and then add the **ID** grouping level.
6. Calculate **ExtendedPrice** using the **Sum** function. Show both detail and summary calculations.
7. Select the **Outline** layout and the **landscape** orientation.
8. Name the report **Orders by Customers** and display it in print preview.
9. Zoom to **100%** to display the report in more detail.
10. Print page 1. Then, close print preview.
11. Use Report Wizard to create a report from the **qryProductsAvgPrice** query.
12. Add all the fields to the report, group the report by **Product Code.**
13. Select the **Stepped** layout, the **Landscape** orientation.
14. Change the name to **Product Price** and preview the report. Then, close print preview.
15. Use the **Report** button to create report based on the **tblSupplier** table.
16. Preview the report. Then, close print preview, saving the report as **rptSupplier**.
17. Close the database file.

LESSON 14 –
USING ADVANCED REPORT DESIGN

In this lesson, you will learn how to:

- Add report sections in Design view
- Export data to an Excel workbook
- Export data to a text file
- Export data to a XML file

14.1 Adding Report Sections in Design View

Concepts

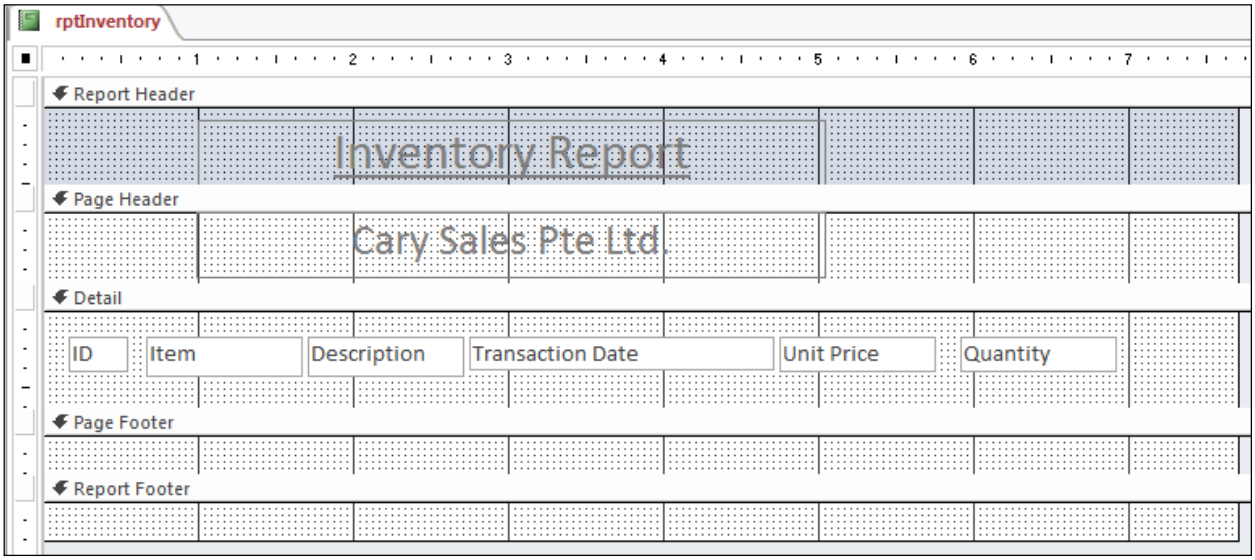
You can create or customise a report in **Design** view. A report has three basic sections: **Detail**, **Report Header/Footer**, and **Page Header/Footer**.

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

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

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

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

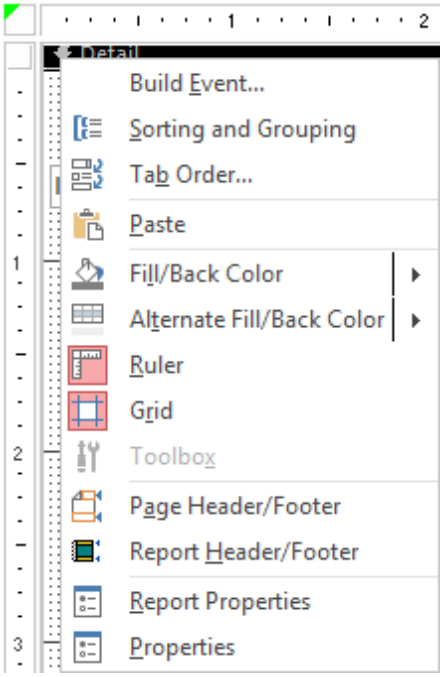


Adding report sections

Steps

From the **Student Folder**, open **AdvanceReport.accdb**.
Add report sections in **Design** view.

Open the **rptInventory** report in **Design** view.

1. Right-click anywhere on the **Detail** bar. *A shortcut menu appears.*	Right-click on the **Detail** bar. 
2. Select the **Page Header/Footer** or **Report Header/Footer** button in the **Show/Hide** group. *The **Page Header** and **Page Footer** or the **Report Header** and Report **Footer** sections appear.*	Click 

If necessary, select the **Design** tab and add a label to the left side of the report header. Enter the text **Inventory Report**. Preview the report. Notice the report header at the top of the page. Switch back to **Design** view.

Practice the Concept: Add a page header and footer to the report. Add a label to the centre of the page header. Enter the text **Cary Sales Pte Ltd**.

Preview the report and change to a 2-page view. Notice that the report header only appears on the first page, but the page header appears at the top of each page. Switch to **Design** view.

Close the report.

14.2 Exporting Data to an Excel Workbook

Concepts

Using the **Export Wizard**, you can export data from an Access database to in a file format that can be read by Excel. When you export data to Excel, Access creates a copy of the selected data, and then stores the copied data in a file that can be opened in Excel. If you copy data from Access to Excel frequently, you can

save the details of an export operation for future use, and even schedule the export operation to run automatically at set intervals.

You can export a table, query, form, or report. You can also export selected records in a multiple-record view, such as a datasheet. You cannot export macros or modules to Excel. When you export a form, report, or datasheet that contains subforms, subreports, or subdatasheets, only the main form, report, or datasheet is exported. You must repeat the export operation for each subform, subreport, and subdatasheet that you want to export to **Excel**.

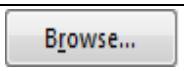
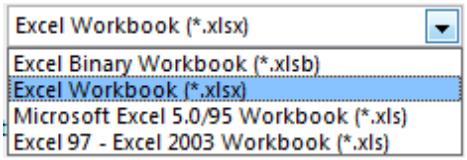
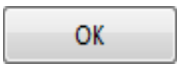
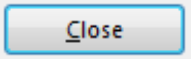
If the source object is a table or a query, decide whether you want to export the data with or without its formatting. This decision affects two aspects of the resulting workbook — the amount of data that is exported and the display format of the data. The following table describes the outcome of exporting formatted and unformatted data:

Export	Source Object	Fields and Records	Formatting
Without formatting	Table or query **Note**: Forms and reports cannot be exported without their formatting	All fields and records in the underlying object are exported.	• The **Format** property settings are ignored during the operation. • For lookup fields, only the lookup ID values are exported. • For hyperlink fields, the contents are exported as a text column that displays the links in the format **displaytext#address#**.
With formatting	Table, query, form, or report	Only fields and records that are displayed in the current view or object are exported. Filtered records, hidden columns in a datasheet, and fields not displayed on a form or report are not exported.	• The wizard respects the Format property settings. • For lookup fields, the lookup values are exported. • For hyperlink fields, the values are exported as hyperlinks. • For rich text fields, the text is exported but the formatting is not.

Steps

To export **Access** data to an **Excel** workbook:

From the **Student Folder**, open **rptInventoryByOrder 3** in **AdvanceReport.accdb**. If necessary, display **All Access Objects** in the **Navigation Pane**.

1. Select the table or query containing data to be exported. *The table or query is selected.*	Click on the query **qryPhoneList**
2. Select the **EXTERNAL DATA** tab. *The **EXTERNAL DATA** tab is displayed.*	Click **EXTERNAL DATA**
3. Select the **Excel** button in the **Export** group. *The **Export – Excel Spreadsheet** dialog box appears.*	Click 
4. Select the **Browse** button. *The **File Save** dialog box appears.*	Click 
5. Select the location and specify the file name to save the data to be exported. *The location and file name is specified.*	Select the **Student Folder** and enter the file name **Staff Phone List**
6. Select the **Save** button. *The **File Save** dialog box closes.*	Click 
7. Select the **File format** list and choose an **Excel** file format. *The option is selected.*	Click **Excel Workbook (*.xlsx)**, if necessary 
8. Specify the export options. *The options are selected.*	Click  **Export data with formatting and layout**
9. Select the **OK** button. *The prompt to save export steps appears.*	Click 
10. Select **Close**. *The wizard closes and the data is exported.*	Click 

It is also possible to export a report output to a PDF by following similar steps to those above. Under the **EXTERNAL DATA** tab, click the **PDF or XPS** button in the **Export** group. Navigate to the appropriate drive and ensure PDF is selected in

the **Save as type:** dropdown and click **Publish**. Decide whether to **Save export steps** or not and click **Close**.

Practice the Concept: Export the **qryPhoneList** query to a **PDF** file with the default settings. Delete both the spreadsheet and PDF after saving.

14.3 Exporting Data to a Text File

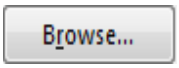
Concepts

You can export tables, queries, forms, and reports as text files. You can also export a selected portion of a datasheet view. When you export tables and queries, you have the option of exporting the entire object, or only the data without any additional formatting.

At the end of the operation, Access creates a text file (*.txt or *.csv). If you choose to ignore formatting, you have the option of creating a delimited text file or fixed-width text file. If you choose to export formatted data, Access tries to approximate the layout of the source object.

Steps

To export **Access** data to a **Text** file:

1. Select the table or query containing data to be exported. *The table or query is selected.*	Click on the table **tblEmployee**
2. Select the **EXTERNAL DATA** tab. *The **EXTERNAL DATA** tab is displayed.*	Click **EXTERNAL DATA**
3. Select the **Text File** button in the **Export** group. *The **Export – Text File** dialog box appears.*	Click 
4. Select the **Browse** button. *The **File Save** dialog box appears.*	Click 
5. Select the location and specify the file name to save the data to be exported. *The location and file name is specified.*	Select the **Student Folder** and enter the file name **Staff List**
6. Select the **Save** button. *The **File Save** dialog box closes.*	Click 

7. Specify the export options. *The options are selected.*	Click **Export data with formatting and layout**
8. Select the **OK** button. *The prompt to encode the data appears.*	Click OK
9. Select the **OK** button. *The prompt to save export steps appears.*	Click OK
10. Select **Close**. *The wizard closes and the data is exported.*	Click Close

Practice the Concept: Export the **qrySupplierInventory** query to a **Text** file with the default settings. Delete both files after saving.

14.4 Exporting Data to a XML File

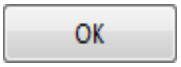
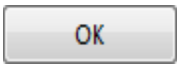
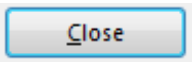
Concepts

A relational database that contains tables and queries may unleash downside of exchanging data between systems over the internet. By converting them into XML format, which is widely accepted and compatible, it could be very beneficial since it eventually mitigates the chance of encountering any incompatibility problem.

Steps

To export **Access** data to a **XML** file:

1. Select the table or query containing data to be exported. *The table or query is selected.*	Click on the table **tblSupplier**
2. Select the **EXTERNAL DATA** tab. *The **EXTERNAL DATA** tab is displayed.*	Click on the **EXTERNAL DATA** tab
3. Select the **XML File** button in the **Export** group. *The **Export – XML File** dialog box appears.*	Click XML File
4. Select the **Browse** button. *The **File Save** dialog box appears.*	Click Browse...

5. Select the location and specify the file name to save the data to be exported. *The location and file name is specified.*	Select the **Student Folder** and enter the file name **Vendor List**
6. Select the **Save** button. *The **File Save** dialog box closes.*	Click 
7. Select the **OK** button. *The **Export XML** dialog box appears.*	Click 
8. Select the **OK** button. *The prompt to save export steps appears.*	Click 
9. Select **Close**. *The wizard closes and the data is exported.*	Click 

Close the database. Delete file after saving.

14.5 REVIEW EXERCISE

Use advanced report design

1. Open **ADVREPEX.ACCDB**.
2. Create a new report in **Design** view based on the **tblCustomers** table.
3. Add the **ID** field to the 1" mark on the horizontal ruler in the **Detail** section. Below the **ID** field, add the **Company**, **Last Name**, **First Name**, **Address, City** and **State** fields to the report at the 3" mark on the horizontal ruler in the **Detail** section.
4. Display the report header and footer. Using the toolbox, add a label to the left side of the report header. Enter the text **Customer Information**.
5. Preview the report. Then, close the report.
6. Close the database file.

ECDL Syllabus

Ref	ECDL Task Item	Location
1.1.1	Understand what a database is.	*1.1 Working with Access*
1.1.2	Understand that information is the processed output of data.	*1.1 Working with Access*
1.1.3	Understand how a database is organised in terms of tables, records and fields.	*1.1 Working with Access*
1.1.4	Understand that all database data is stored in tables. Understand that changes are automatically saved.	*1.1 Working with Access*
1.1.5	Know some of the common uses of databases like: social networks, booking systems, government records, bank account records, hospital patient details.	*1.1 Working with Access*
1.2.1	Understand that each table in a database should contain data related to a single subject type.	*1.7 Understanding Database Objects*
1.2.2	Understand that each record in a database should contain data related to a single subject.	*1.7 Understanding Database Objects* *2.4 Adding Field Names*
1.2.3	Understand that each field in a table should contain only one element of data.	*2.4 Adding Field Names*
1.2.4	Understand that field content is associated with an appropriate data type like: text, number, date/time, yes/no.	*2.2 Assigning Data Types*
1.2.5	Understand that fields have associated field properties like: field size, format, default value.	*3.1 Using Field Properties* *3.7 Setting Default Values*
1.2.6	Understand what a primary key is.	*2.7 Setting a Primary Key*
1.2.7	Understand that the main purpose of an index is to speed up search queries.	*3.6 Indexing a Field*
1.3.1	Understand that the main purpose of relating tables in a database is to minimise duplication of data.	*10.1 Using Related Tables*
1.3.2	Understand that a relationship is built by matching a unique field in one table with a field in another table.	*10.1 Using Related Tables*
1.3.3	Understand the importance of maintaining the integrity of relationships between tables.	*10.2 Setting Referential Integrity*
2.1.1	Open, close a database application.	*1.2 Starting Access*
2.1.2	Open, close a database.	*1.3 Open an Existing Database* *1.16 Closing a Database*
2.1.3	Create a new database and save to a location on a drive.	*1.17 Creating a New Database*
2.1.4	Display, hide built-in toolbars. Restore, minimise the ribbon.	*1.4 Familiarising with the Ribbon* *1.6 Using the Quick Access Toolbar*
2.1.5	Use available help resources.	*1.18 Using Help*
2.2.1	Open, save, close a table, query, form, report.	*1.8 Using the Navigation Pane* *1.9 Opening a Database Project* *1.11 Using Tabbed Documents* *1.12 Closing a Tabbed Document* *1.13 Closing All Tabbed Documents*
2.2.2	Switch between view modes in a table, query, form, report.	*1.14 Switch between the View Modes*
2.2.3	Delete a table, query, form, report.	*1.10 Deleting a Database Object*
2.2.4	Navigate between records in a table, query, form. Navigate between pages in a report.	*1.8 Using the Navigation Pane* *4.4 Moving through Records* *4.7 Printing from a Table*

Ref	ECDL Task Item	Location
2.2.5	Sort records in a table, form, query output in ascending, descending numeric, alphabetic order.	*6.1 Sorting Records*
3.1.1	Add, delete records in a table.	*4.3 Adding Records* *4.9 Deleting Records*
3.1.2	Add, modify, delete data in a record.	*4.3 Adding Records* *4.6 Editing Records* *4.8 Deleting Data in a Record*
3.2.1	Create and name a table and specify fields with their data types like: text, number, date/time, yes/no.	*2.3 Creating a Table*
3.2.2	Apply field property settings: field size, number format, date/time format, default value.	*3.2 Limiting Field Size* *3.3 Setting Number Formats* *3.4 Setting Date/Time Formats* *3.7 Setting Default Values*
3.2.3	Understand consequences of changing data types, field properties in a table.	*2.2 Assigning Data Types*
3.2.4	Create a simple validation rule for numbers.	*3.8 Setting Validation Rules*
3.2.5	Set a field as a primary key.	*2.7 Setting a Primary Key* *2.9 Setting a Primary Key Automatically*
3.2.6	Index a field with, without duplicates allowed.	*3.6 Indexing a Field*
3.2.7	Add a field to an existing table.	*4.2 Adding Field to Existing Table*
3.2.8	Adjust the width of column(s) in a table.	*5.2 Changing the Column Width*
3.3.1	Create a one-to-many relationship between tables.	*10.1 Using Related Tables*
3.3.2	Delete a one-to-many relationship between tables.	*10.1 Using Related Tables*
3.3.3	Apply referential integrity between tables.	*10.2 Setting Referential Integrity*
4.1.1	Use the search command for a specific word, number, date in a field.	*6.8 Using the Search Box*
4.1.2	Apply a filter to a table, form.	*6.9 Using Quick Filter*
4.1.3	Remove filter from a table, form.	*6.10 Using AutoFilter*
4.2.1	Understand that a query is used to extract and analyse data.	*7.1 Using Queries and Recordsets*
4.2.2	Create a named single-table query using specific search criteria.	*7.2 Using the Simple Query Wizard*
4.2.3	Create a named two-table query using specific search criteria.	*7.8 Adding a Table to a Query*
4.2.4	Add criteria to a query using one or more operators: = (Equal), <> (Not equal to), < (Less than), <= (Less than or equal to), > (Greater than), >= (Greater than or equal to).	*7.5 Adding Criteria to a Query*
4.2.5	Add criteria to a query to sort records in ascending, descending numeric, alphabetic order.	*8.1 Sorting a Query Output*
4.2.6	Add criteria to a query using one or more logical operators: AND, OR, NOT.	*9.2 Using an AND Condition*
4.2.7	Use a wildcard in a query like: * or %, ? or _.	*9.6 Using a Wildcard Character*
4.2.8	Edit a query: modify, remove criteria.	*9.7 Editing a Query*

Ref	ECDL Task Item	Location
4.2.9	Edit a query: add, remove, move, hide, unhide fields.	*8.2 Hiding and Unhiding Filed in Query*
4.2.10	Run a query.	*7.9 Running a Query*
5.1.1	Understand that a form is used to display, add and edit records.	*11.1 Using Forms*
5.1.2	Create and name a simple form.	*11.2 Using the Form Button*
5.1.3	Use a form to insert new records.	*11.5 Adding a Record using a Form*
5.1.4	Use a form to delete records.	*11.6 Deleting a Record using a Form*
5.1.5	Use a form to add, modify, delete data in a record.	*11.7 Adding, Editing and Deleting Record Data Using a Form*
5.1.6	Add, modify text in headers, footers in a form.	*12.2 Adding a Form Header and Footer Text Using The Label Control*
6.1.1	Understand that a report is used to present selected information from a table, query.	*13.1 Using Reports*
6.1.2	Create and name a simple report based on a table, query.	*13.2 Using the Report Button*
6.1.3	Create and name a grouped report. Sort records and calculate summary information like: sum, minimum, maximum, average.	*13.5 Using the Report Wizard* *13.10 Grouping and Summarising Report Data*
6.1.4	Edit a report: change arrangement of data fields, headings.	*13.7 Changing Control Arrangement of Data Fields in Report Layout*
6.1.5	Edit a report: add, modify text in headers, footers.	*14.1 Adding Report Sections in Design View*

Ref	ECDL Task Item	Location
6.1.6	Export a table, query output in spreadsheet, text file, csv, XML format to a location on a drive.	*14.2 Exporting Data to an Excel Workbook* *14.3 Exporting Data to a Text File* *14.4 Exporting Data to a XML File*
6.1.7	Export a report output in pdf format to a location on a drive.	*14.2 Exporting Data to an Excel Workbook*
6.2.1	Change table, form, query output, report orientation: portrait, landscape. Change paper size.	*13.9 Changing Orientation and Paper Size*
6.2.2	Print a page, selected record(s), complete table.	*4.7 Printing from a Table*
6.2.3	Print all records, specific page(s) using form layout.	*11.9 Printing Records in a Form*
6.2.4	Print the result of a query.	*8.4 Printing a Query*
6.2.5	Print specific page(s) in a report, print complete report.	*13.4 Printing Pages of a Report*

Congratulations! You have reached the end of the ECDL Using Databases book.

You have learned about the key skills relating to databases, including:

- Understand what a database is and how it is organised.
- Create a simple database and view the database content in various modes.
- Create a table, define and modify fields, and create relationships between tables. Enter and edit data in a table.
- Use filters and queries to retrieve specific information from a database.
- Create a form to enter, modify and delete records and data in records.
- Create routine reports and prepare outputs ready for print or electronic distribution.

Having reached this stage of your learning, you should now be ready to undertake ECDL certification testing. For further information on taking this test, please contact your ECDL test centre.