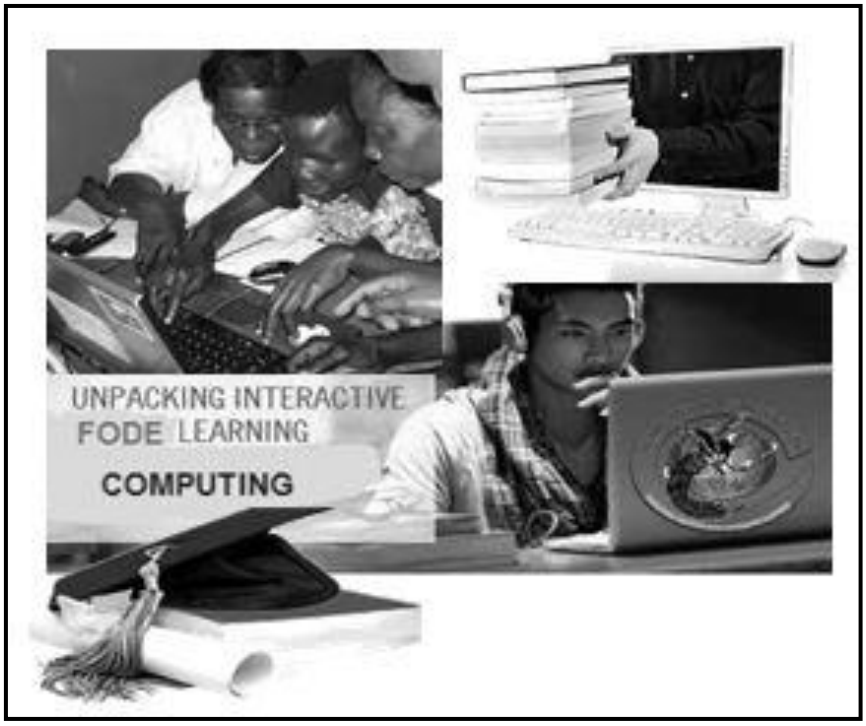
DEPARTMENT OF EDUCATION

GRADE 10

DESIGN AND TECHNOLOGY COMPUTING

UNIT 4



DATABASE 1

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PRIVATE MAIL BAG, P.O. WAIGANI, NCD
FOR DEPARTMENT OF EDUCATION
PAPUA NEW GUINEA

GRADE 10
DESIGN AND TECHNOLOGY-COMPUTING

UNIT 4

DATABASE 1

- **WORKING IN ACCESS**
- **DATABASE**
- **CREATING TABLES**
- **CREATING FORMS**

Acknowledgments

We acknowledge the contributions of all Secondary Teachers who in one way or another helped to develop this Course.

Our profound gratitude goes to the former Principal of FODE, Mr. Demas Tongogo for leading FODE team towards this great achievement. Special thanks to the FODE IT Edit Team and SRC Members who played an active role in critiquing and editing to ensure quality control for this Course.

We also acknowledge the professional guidance provided by the Curriculum Assessment Division throughout the process of writing especially to the late Mr. Tobias Gena.

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DIANA TEIT AKIS

PRINCIPAL

Written and Compiled by Mary Ruanne Junsay and Mark AhChee

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SECRETARY'S MESSAGE

Achieving a better future by individual students and their families, communities or the nation as a whole, depends on the kind of curriculum and the way it is delivered.

This course is a part of the new Flexible, Open and Distance Education curriculum. The learning outcomes are student-centred and allows for them to be demonstrated and assessed.

It maintains the rationale, goals, aims and principles of the national curriculum and identifies the knowledge, skills, attitudes and values that students should achieve.

This is a provision by Flexible, Open and Distance Education as an alternative pathway of formal education.

The course promotes Papua New Guinea values and beliefs which are found in our Constitution, Government Policies and Reports. It is developed in line with the National Education Plan (2005 -2014) and addresses an increase in the number of school leavers affected by the lack of access into secondary and higher educational institutions.

Flexible, Open and Distance Education curriculum is guided by the Department of Education's Mission which is fivefold:

To facilitate and promote the integral development of every individual

To develop and encourage an education system satisfies the requirements of Papua New Guinea and its people

To establish, preserve and improve standards of education throughout Papua New Guinea

To make the benefits of such education available as widely as possible to all of the people

To make the education accessible to the poor and physically, mentally and socially handicapped as well as to those who are educationally disadvantaged.

The college is enhanced to provide alternative and comparable pathways for students and adults to complete their education through a one system, many pathways and same outcomes.

It is our vision that Papua New Guineans' harness all appropriate and affordable technologies to pursue this program.

I commend all those teachers, curriculum writers, university lecturers and many others who have contributed in developing this course.

UKE KOMBRA, PhD
Secretary for Education

TABLE OF CONTENTS

UNIT INTRODUCTION

Unit 4: Database 1 where you will learn about the basic concepts in understanding the database. The Unit consists of the following four Topics:

Topic 1:	**Working in Access**
Topic 2:	**Database**
Topic 3:	**Creating Tables**
Topic 4:	**Creating Forms**

By the end of this Unit you will have gained the skills and proficiency in using the Database to retrieve information in response to a query or a problem that has been set, you will demonstrate knowledge and skills on efficient application of designing and constructing a simple database, create databases and demonstrate skills and techniques to search for information in databases. You will also justify procedures chosen to query a database.

STUDY GUIDE

Below are steps to guide you in your course study.

Step 1: Read each lesson in the Unit Book carefully. In most cases, reading through a lesson once is not enough. It helps to read something over several times until you understand it. You are not expected to memorise the information in the Unit Book. You should use it as a reference and to learn from the examples given to illustrate important points.

Step 2: After reading the summary of the lesson, start doing the Practice Exercise. You must do only one practice exercise at a time. Then mark it according to the following instruction.

CHECK YOUR ANSWERS AT THE END OF TOPIC 1.

Step 3: After marking your answers, go back to the lesson and correct any mistakes you may have made. Then move on to the next lesson.

Step 4: After completing all the Practice Exercises, do Assignment 1.

Step 5: Now send the completed Assignment booklet to FODE for marking.

Follow all these steps 1 - 5 when completing all Unit Books.

Be honest with yourself when you are doing and marking your Practice Exercises as well as completing your Assignment Booklets.

This Unit has a separate assignment booklet for you to use. The information at the end of the last lesson in every Topic will let you know what to do with the assignment exercises.

Whenever you need help and advice, contact your tutor or your Provincial Coordinator for assistance. If you are in the NCD or Central Province, we are available on Mondays to Fridays. You can call in anytime between 8 a.m. and 4 p.m. We would be glad to help you.

The following icons are used in each Lesson in this Unit. Icons are the symbols used in this book to indicate the parts of your lessons. The following are the meanings of these icons.

 - Lesson Introduction

 - Lesson Objectives

 - Reading Activities

 - All other Activities

 - Summary

 - Additional Information

We hope you enjoy learning this course. All the best!

Your Tutor
Information Technology Department

FODE

TOPIC 1

WORKING IN ACCESS

TOPIC 1: WORKING IN ACCESS

In Topic 1, you will learn about Microsoft Access; its functions and uses, its terms and objects, its window parts and functions before planning a database of your own.

In this topic you will study the following:

Lesson 1 is starting Access. You will learn the definition of Microsoft Access; trace its development and importance to organisations.

Lesson 2 is identifying the functions and uses of Access. You will learn the different functions and use of Microsoft Access.

Lesson 3 is identifying the parts of an Access window. You will learn to locate and identify the parts and functions of the Access window.

Lesson 4 is saving and exiting Access. You will learn the steps in saving a file in Access and the proper way to exit it.

Lesson 5 understands databases and objects. You will learn to identify the terms and objects used in Access as well as their appropriate uses.

Lesson 6 is planning a database. You will learn how to plan the contents of a database and the purpose for planning it.

Lesson 1: Starting Access

Welcome to Lesson 1 of Unit 4. In this lesson you will be introduced to Microsoft Access.

Your Aims:

- define Microsoft Access
- trace the development of MS Access
- state the importance of Microsoft Access to organisations

What is Data?

In Unit 1, Lesson 10 on Data Handling, we were able to define data as the raw/unprocessed material that is being fed into the computer system through one of its input devices. The unprocessed material could be anything from text, numbers, and characters to graphics, video, audio, and animation.

What is a Database?

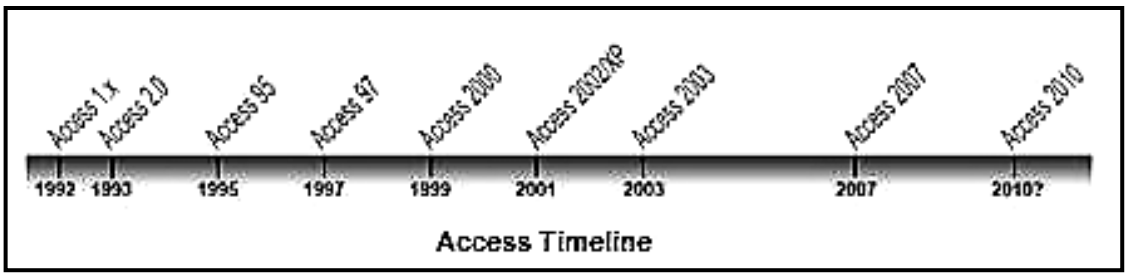
Database is a collection of data and a means to manipulate data in a useful way, which must provide proper storage for large amounts of data, easy and fast access and facilitate the processing of data.

Microsoft Access is a Relational Database Management System (RDBMS). This term is used to refer to a set of software that is used to define, store, manipulate and control the data in a database. From pre-stage flat-file system, to relational and object-relational systems, database technology has gone through several generations in its 40 years history.

There are two types of databases:

1. Flat File System – a flat file system is a collection of different files. These entire file may or may not relate. This type of a database is hard to maintain as there will be a range of problems that you as the user will be facing if you were to use such a database. An example of a flat file system would be a collection of Bob Marley songs all arranged in folders according to albums. There may be 10 songs in the first folder and there may be 11 songs in the next folder, etc. Another example could be 3 word documents, each of them assigned for each of your family member‘s personal details like photo, name, age, height, favourite food. These files all relate to each other but there is no link to connect each of the files.

2. Relational Database – a collection of tables, forms, reports, queries and all organised by a program. All data is stored on tables and each of the objects that the database manages is linked so that this would make it easy for user to make adjustments to their files. If one set of data is edited, the change will appear in all other files.



Access Timeline

A brief history of Microsoft Access
Let us study the evolution of Microsoft Access through these developments.

1. **Access Version 1.0**
   Late 1992, Microsoft released the first version of Access (version 1.0) desktop database application for the Windows operating system. It was shortly replaced with version 1.1 in mid-1993 to incorporate better compatibility with other Microsoft *Office* products of that time and more importantly introduce the ability for programmers to code this application using Access BASIC.

2. **Version 2.0**
   Version 1.1 had performance issues and in the same year Microsoft released Windows 3.1 operating system along with Microsoft Office 4.3 Pro (suite of applications including Excel, Word, PowerPoint with Access - version 2.0) as it required the improved hardware, software memory and the power supported by Windows 3.1.

   This was an ideal desktop database application tailored to the small to medium sized business that required a low cost database. At that time, the capacity of a disk hard drive was less than 100 MB (megabytes) and typical document file sizes were in the 100s of bytes.

   With Access however, a database could grow quite large by comparison and files which exceeded 10MB became a potential problem with the performance being affected from the low RAM (random access memory) which the operating system managed. This sometimes caused data loss and data corruption limiting how Access (version 2.0) was utilised.

3. **Access 95**
   Microsoft released a newer operating system (Windows 95) in 1995 and this was the foundation of moving to a 32-bit processing system with a brand new graphical user interface (GUI). Again, Office 95 was released which included Access 95 and one of the major changes besides the look and feel of this new interface was the more powerful and flexible programming language and the introduction of VBA (Visual Basic for Applications).

4. **Access 97**
   Access 95 was probably the least popular version of all due to the new 32-bit application still in its infancy for the Windows operating system environment and the *JET* database engine being slow. But it certainly was considered the _beta‘ version the eventual release of Access 97 (in 1997) which was a true success.

5. **Access 2000**
As Microsoft released newer operating systems which included Windows 98, the very unpopular Windows ME and eventually the more stable Windows 2000/NT, a brand new significant version of Access 2000 was introduced.

Web integration was a new feature to this version allowing developers to publish results on the internet in HTML. Better security, replication and database connectivity tools really increased the popularity amongst the *die-hard* developers.

6. **Access 2002/2003**
Nowadays, this is the earliest version still in use and is even considered as the standard version (engine format default) for the later releases of Access 2002 and 2003 which were minor improvements of Microsoft Office tools providing better integration with other applications.

7. **Access 2007**
The history of Microsoft Access continues with Access 2007 being released introducing a new file format (ACCDB) which captured new data types such as the *multi-value* and *attachment* fields.

It also followed the new GUI (Graphical User Interface) layout using the standard Microsoft Office Ribbon Bars and provided better ways to manage objects in Access. The look and feel and richer template layouts suddenly made Access a far more user-friendly system to use than ever before.

Users who utilised features like security, replication and Access pages will have noticed these features were dropped in version 2007 and therefore the new Access 2007 still provides support for the previous file formats (MDB) and their respective dropped features.

Access was always going to evolve over time and it has still kept the 'desktop' branding and is commonly used as a tool for reporting from larger database systems and as an alternative front-end interface system.

8. **Access 2010**
Access 2010 was released in the summer of 2010 and provides some new enhancements over the previous version. The new changes are mainly to do with better integration with Microsoft SharePoint Server.

This version is a minor upgrade to Access 2007 with few cosmetic changes (still uses the Ribbon Bar - though slightly modified) and now has better macro functionality with the new addition of Data Macros making it more user friendly. But it is like comparing Access XP to Access 2003 when it comes to listing the differences!

Importance of Microsoft Access to Organisations
Microsoft Access is a database management application used to enter, search, sort and report on information. Microsoft Access is easy to use and tightly integrated with Microsoft Office software applications. Access databases can be customised as complete applications using development tools such as Microsoft Visual Basic and can scale up to more advanced products including Microsoft SharePoint Portal and Microsoft SQL Server.

1. **Ease of Use**
   Microsoft Access is a menu-driven database program that includes a graphical user interface enabling beginner users to enter, manage and report on their data. Data can be entered using a familiar spreadsheet or table interface and the program will automatically generate forms based upon the data and labels that have been entered. Routine tasks such as searches, sorts and queries can be automated with macros using a point-and-click model. Reports can be formatted by dragging and dropping fields on a graphical interface and the program includes many templates that can be easily modified by end users.

2. **Microsoft Office Integration**
   Microsoft Access is popular with Microsoft Office users since it is based upon the familiar "drag and drop" method used with other Microsoft Office products. Access information can be designed to tightly integrate with other Microsoft Office products including Word, Excel, Project and Outlook. It is easy to import, link and update data between these applications using dynamic data exchange and object linking and embedding. Word documents can be easily customised with contact and supplier records within an Access database, and Excel can be used as a front end to enter and update Access database information in real time.

3. **Customisation**
   Microsoft Access users can easily create and modify database queries and reports using the graphical user interface, and a menu-driven macro recorder to automate repetitive steps. Advanced users can customise Access applications using the Visual Basic for Applications "VBA" programming language common to all Microsoft Office applications. Access also includes many templates that can be easily modified by end users.

4. **Extensibility**
   Professional developers can develop complete, customised Access applications using more advanced languages such as Visual Basic, Structured Query Language (SQL) and C++. These custom applications can remain Microsoft Office compatible and work with more powerful external systems including Microsoft SharePoint Portal, Microsoft SQL Server or Oracle.

5. **Benefits**
   Microsoft Access is important because it dramatically decreases the amount of time required to exchange and amount of information between Microsoft Office applications. Access provides database management functionality for beginner users and is highly extensible with enterprise systems by professional developers.

Microsoft Access 2007
The primary function of this program is to act as a database management system. Data is stored in separate structures called tables. These tables may contain data that may refer to data in one or more other tables. These sets of data when compiled together become a database.

Access is designed to use the data in the database to get what information suits you in your situation. It can also create reports using this data for you. If you had your own copra business or boat service then Access could create the business reports

that you need in order for your business to become more efficient and increase revenue and cut down expense.

Microsoft Access Office '97.

Activity 1: Answer the following.

1. Define Microsoft Access.

   _____

   _____

2. Number the following to chronologically arrange their order of development:

   a. Access 2002 _____

   b. Access Version 2 _____

   c. Access 95 _____

3. Describe the following MS Access versions.

   a. Access 2007

   _____

   _____

   b. Access 2010

   _____

   _____

4. List the importance of MS Access to organisations.

_____

_____

_____

_____

_____

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answers. Make sure you do the necessary corrections before moving on to the next part of this lesson.

Summary

You have come to the end of Lesson 1. In this lesson, you have learned the definition, evolution and importance of database.

NOW DO PRACTICE EXERCISE 1 ON THE NEXT PAGE.

Practice Exercise 1

A. Check what version of MS Access you have and write it down in the space below.

_____

_____

B. Short Answers. Complete the following items by describing the different versions of Access. Write your answers in the spaces provided.

- Access 1.0 - _____
- Access 2.0 - _____
- Access 95 - _____
- Access 97 - _____
- Access 2000 - _____
- Access 2002/XP - _____
- Access 2003 - _____
- Access 2007 - _____
- Access 2010 - _____

C. Explain in three sentences, why a flat file system is not suitable for a large company.

_____

_____

_____

_____

_____

CHECK YOUR ANSWERS AT THE END OF TOPIC 1.

Answers to Activity

1. Microsoft Access is a Relational Database Management System (RDBMS). This term is used to refer to a set of software that is used to define, store, manipulate and control the data in a database.

2.

   a. Access 2002 **3**

   b. Access Version 2 **1**

   c. Access 95 **2**

3.

   a. Access 2007

   Access 2007 had introduced a new file format (ACCDB) which encapsulated new data types such as the *multi-value* and *attachment* fields.

   It also followed the new GUI (Graphical User Interface) layout using the standard Microsoft Office Ribbon Bars and provided better ways to manage objects in Access. The look and feel and richer template layouts suddenly made Access a far more user-friendly system to use than ever before.

   b. Access 2010

   Access 2010 provides some new enhancements over the previous version. The new changes are mainly to do with better integration with Microsoft SharePoint Server. This version is a minor upgrade to Access 2007 with few cosmetic changes (still uses the Ribbon Bar - though slightly modified) and now has better macro functionality with the new addition of Data Macros making it more user intuitive.

4. Any two of the following below can be the answers

   Ease of Use, Microsoft Office Integration, Customisation, Extensibility and Benefits

Lesson 2: Functions and Uses of Access

Welcome to Lesson 2 of Unit 4. In Lesson 1 you learned about the definition, development and importance of using Microsoft Access.

In this lesson you shall learn to identify the parts of workbook and use of certain keys to move around in the workbook.

Your Aim:

- identify the functions and uses of Access

Database

As we have learnt in the previous lesson that a Database is a collection of data and a means to manipulate data in a useful way. It must provide proper storage for large amounts of data, easy and fast access and facilitate the processing of data. Microsoft Access as a Database Management System (DBMS) is a set of software that is used to define, store, manipulate and control the data in a database.

Databases can also be manual. Before computers, manual systems such as card index files, filing cabinets, libraries were used to organise data. Computers have the ability to store large amounts of data in a compact space and to process it speedily. These two factors make them ideally suited for database work. Organisations of all sizes now use computers to manage their data. Databases vary enormously; both in terms of scale and architecture, but there are certain elements that are common to almost all database systems:

- Data is organised in tabular structures where each row creates one record and each column defines a field.
- Users are able to add new records, amend existing records, and delete unwanted records.
- Users are able to interrogate (or _query') the database, like: ask it to show which records fulfil certain criteria.
- Users can output the results of queries as reports. These can be viewed on-screen and printed out as hard copy.

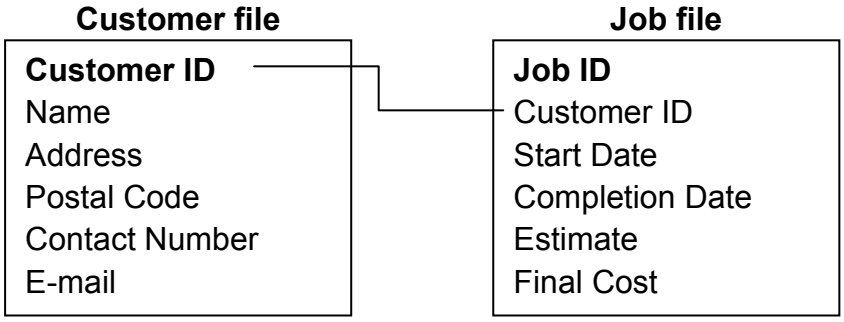
Who uses databases?

- Police forces keep databases of crimes and criminals. This is used to aid detection and analyse patterns of criminality and policing levels.
- Hospitals maintain databases of patients, doctors and treatments. This is used to administer consultations and admissions.
- Schools use databases to keep records of pupils, their assessment data and the timetable they follow.

- Businesses of all size maintain databases to keep track of sales, stock purchases and to analyse their performance.

Relational Databases
Microsoft Access is a Relational Database Management System. A relational database as mentioned in the previous lesson is a collection of tables, forms, reports and queries all organised by a program. Relational Databases were first developed in the 1970s by Edgar Codd as a way, initially, providing a more flexible system for responding to on the spot requests for management information. As they developed it was found that they also helped to solve many of the problems associated with data redundancy, data integrity, and data consistency associated with a flat-file system.

The key difference between relational databases and flat-file systems lies in the creation of separate tables that are related to each other. The diagram below uses the example of the electrician‘s data file.



The Functions of Access
The primary function of this program is to act as a database management system. Data is stored in separate structures called tables. The following are advantages of using a relational database management system:

- Data Integrity – There is no need to change the data in more than one table. If a customer‘s details require updating these only needs to happen once, like in the customer file. All references to that customer in any other file (like via the primary key) will automatically reflect the update.

- Data Redundancy – In a well-designed relational database, there should be no ‗repeating attributes‘ like no piece of data should be unnecessarily repeated.

- Data Consistency – Because the attributes of any one entity (example a job, a customer) are contained within one file, there is no risk of the same attribute being stored in a different format in a different file.

- Flexibility – A relational database can be queried with greater flexibility than a flat file system. Data drawn from different files can be combined in a variety of ways, producing better-quality information.

- Greater Efficiency – Data has to be inputted once and this saves on time and human resources. The memory space requirement is also less and this saves on computing resources.

Activity 1: Fill-in the blanks with the correct word or words. Write your answers on the space provided.

1. What are the uses of MS Access as DBMS?

_____
_____
_____
_____
_____

2. List and describe the functions of Access.

_____
_____
_____
_____
_____
_____
_____
_____
_____

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answers. Make sure you do the necessary corrections before moving on to the next part of this lesson.

Summary

You have come to the end of Lesson 2. In this lesson, you have learned to identify the uses and functions of Access.

NOW DO PRACTICE EXERCISE 2 ON THE NEXT PAGE.

Practice Exercise 2

_____

Answer the following.

1. What was the initial purpose for developing Relational Databases?

_____

_____

2. List down the 4 uses of MS Access?

_____

_____

_____

_____

3. Explain the five functions/advantages of MS Access.

- Data Integrity

_____

_____

- Data Redundancy

_____

_____

- Data Consistency

_____

_____

- Flexibility

_____

_____

- Greater Efficiency

_____

_____

_____

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 1.

Answers to Activity

1. Databases can also be manual. Before computers, manual systems such as card index files, filing cabinets, libraries and others were used to organise data

and so can be defined as databases. Computers have the ability to store large amounts of data in a compact space and to process it speedily. These two facilities make them ideally suited for database work and organisations of all sizes now use computers to manage their data.

2.

- Data Integrity – There is no need to change the data in more than one table. If a customer's details require updating these only needs to happen once, like in the customer file. All references to that customer in any other file (like via the primary key) will automatically reflect the update.

- Data Redundancy – In a well-designed relational database, there should be no _epeating attributes' like no piece of data should be unnecessarily repeated.

- Data Consistency – Because the attributes of any one entity (example a job, a customer) are contained within one file, there is no risk of the same attribute being stored in a different format in a different file.

- Flexibility – A relational database can be queried with greater flexibility than a flat file system. Data drawn from different files can be combined in a variety of ways, producing better-quality information.

Lesson 3: Parts of the Access Window

Welcome to Lesson 3 of Unit 4. In Lesson 2 you learned to identify the functions and uses of Access.

In this lesson you shall learn to identify, locate and learn the functions and uses of the parts of the MS Access window.

Your Aims:

- identify the parts of the MS Access window
- locate the parts of an Access window
- identify the functions and uses of each part of the Access window

---

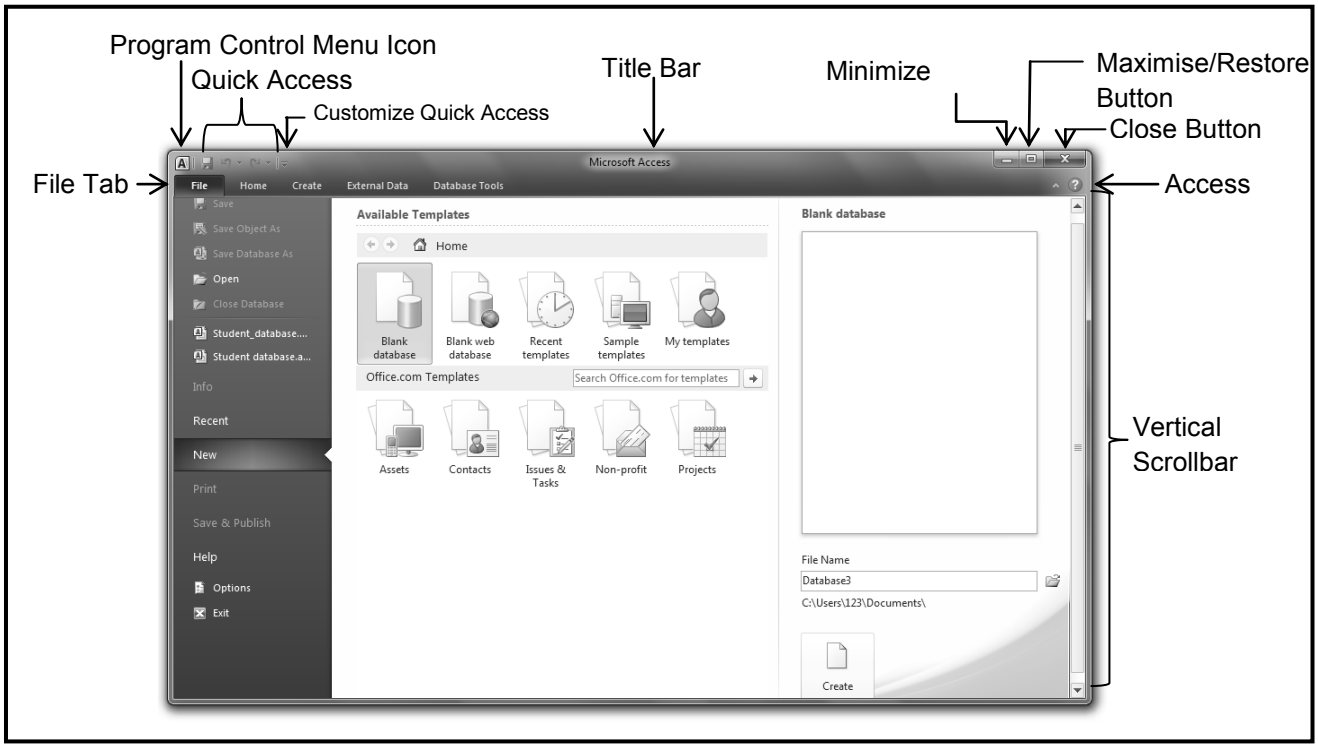
MS Access

In the previous lesson we were able to discuss the functions and uses of Access. In order for you to use the program effectively, you need to know where to find what.

In this lesson we will be identifying the different parts of the MS Access window and look at the functions and uses of the MS Access window.

Parts of the MS Access Window

When opening MS Access for the first time, the GUI should look similar to the display below.



The MS Access. Window.

The Access Screen

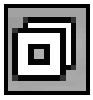
Study the following parts of the MS Access window.

1. Title Bar – The coloured bar that appears at the top of the Access window. The Title Bar tells you which application you are using and if the document you are in is maximised, it will also contain the name of the document. If the Access window is not maximised, by moving the mouse over the Title Bar and clicking and dragging, you will move the Access window to a new location on the screen.

2. Maximise Button – when working in a document, the Access screen contains two windows, an application window and a document window. You can maximise both windows to use on the space you have on-screen. If you want your Access application to fill up the whole screen, click the outer most maximise button. You may find that the document you open can still be bigger – click the inner maximise button to fill the remaining space within the Access application window.

3. Minimise Button – This button is very useful if you need to temporarily switch from Access to another application window without closing Access down. Click the Minimise button to shrink Access to an icon on the Taskbar; you will then be able to view other icons and applications you may wish to access. When you are finished and ready to continue, click the Access icon from the Taskbar to resume. The inner most minimise button will minimise the current document window.

4. Restore Button – This button only appears when a window is maximised. A maximised window has no border and you cannot see what is behind it. If you want to put the window back inside its border so that you can move and size it, click the Restore button.



5. Close Button – this button is used to close a window. If you click the Close button for a document window you close the document. The last button will close the access application.

6. Dialogueue Box Launcher – This button launches Dialogueue boxes specific to the part of the ribbon. Categories such as Font, Clipboard.

7. Backstage View or File Ribbon – is the start of Access and has many important commands and options such as Access Settings, Opening, Saving, Printing, and Closing Files.

Access Window Components

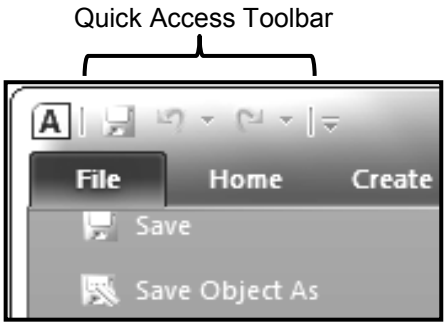
Study the following Access window components.

1. Dialogue Box – To open a Dialogue box use the "Dialogue Box Launcher" when the Dialogue box is open, make a choice from the various options and click OK in the Dialogue box. If you wish to change your mind and close the Dialogue box without making a choice then click on "Cancel". The Dialogue box will close without any choice being applied. If you would like help while the Dialogue box is open then click on the "?" in the top right hand corner this will bring up a help window where you would be able to find help.

2. Groups – Look at the group type on the ribbon such as font and in the bottom right hand corner of that group you may see a small box with an arrow, clicking this is another method to call up a Dialogue box, this time, directly from the ribbon. Many Dialogue boxes may be more familiar to you if you have used Access before.

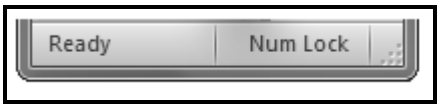
3. Toolbar – There are only two toolbars within the new versions of office. There is a Quick Access Toolbar and there is a Mini Toolbar.

   a. Quick Access Toolbar – By default there are only three buttons on the Quick Access Toolbar but these can be edited and other regularly used buttons can be placed there. Using the drop down menu next to the Quick Access Toolbar will allow the customisation of this toolbar adding your most often used commands.

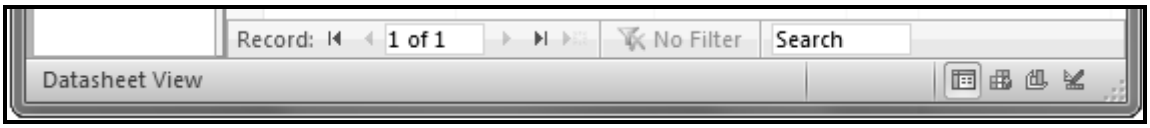


b. Mini Toolbar – Whenever text is selected within Access a small formatting toolbar will appear above the highlighted text and will disappear if the mouse cursor is moved away from the toolbar. The toolbar reappears when the mouse cursor is moved over the highlighted text again.

4. Status Bar – The Status Bar, across the bottom of the screen, displays different information at different times. To the left is an indicator which will display which view you are currently in, to the right are quick options to see which views are available and to change the view you are in (example: Design).



Example 1 Status Bar



Example 2 Status Bar

5. Task Pane – A Task Pane is a window that collects commonly used actions in one place. The Task Pane enables you to quickly create or modify a file, perform a search, or view the clipboard.

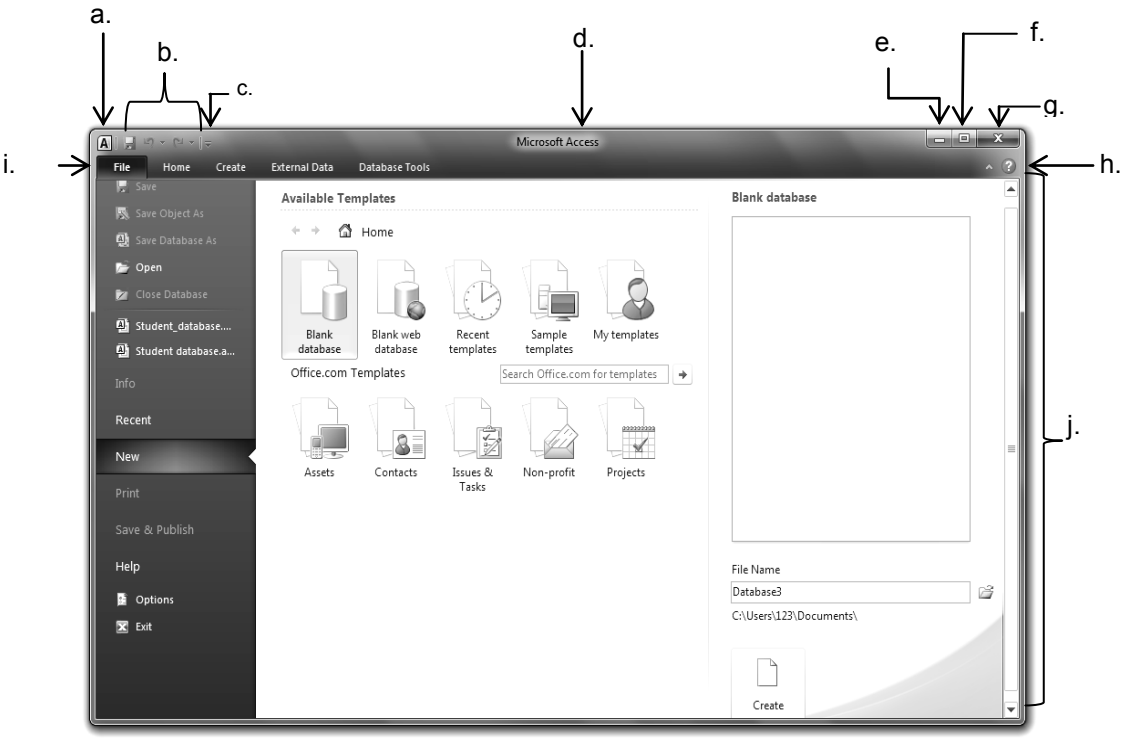
MS Access Ribbons

Under the Home Ribbon Tab is a listing of all commands that are performed most often on the currently selected object, contained in what Microsoft refers to as the _ibbon'.

The parts of the GUI may look different but otherwise the GUI for the individual commands and Dialogue boxes are the same. The major difference between the versions of MS Access is its GUI. Knowing how to navigate your way around the Access window would make it a lot easier to create your database.

Activity 1: Answer the following.

1. Name the parts of an Access Window.



2. Describe the following parts of an Access window.

   a. Title Bar

   _____

   _____

b. Restore button

_____

_____

c. Backstage View

_____

_____

3. Write down the function of the following components.

a. Status Bar

_____

_____

b. Task pane

_____

_____

c. Tool bar

_____

_____

Thank you for completing this activity. Make sure you do the necessary corrections before moving on to the next part of this lesson.

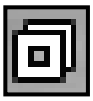
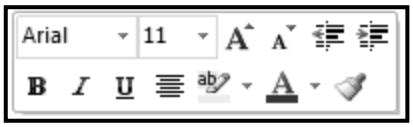
SUMMARY

You have come to the end of Lesson 3. In this lesson, we were able to label the parts of an Access window, list them down, and explain its functions and uses.

NOW DO PRACTICE EXERCISE 3 ON THE NEXT PAGE.

Practice Exercise 3

Complete the table below by filling in the missing information.

No.	Picture	Name	Function
1			This button allows you to maximise windows to capitalise on the space you have on-screen.
2		Minimise Button	This button allows you to easily switch from Access to another program.
3			This button allows the user to move the window around allowing the user to see what's behind it. It only appears when the window is maximised.
4			The larger button will close the Access program window while the smaller one closes the document window.
5		Dialogue Box Launcher	
6			This displays information at different times.
7			Whenever text is selected within Access a small formatting toolbar will appear above the highlighted text and will disappear if the mouse cursor is moved away from the toolbar.
8			By default there are only three buttons on this but it can also be customised to add more buttons.

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 1

Answers to Activity

1.

a. Program Control Menu icon
b. Quick Access toolbar
c. Customise Quick Access toolbar
d. Title bar
e. Minimise
f. Maximise/Restore button
g. Close button
h. Access Help
i. File Tab
j. Vertical Scrollbar

2.

a. Title Bar – The coloured bar that appears at the top of the Access window. The Title Bar tells you which application you are using and if the document you are in is maximised, it will also contain the name of the document.

b. Restore Button – This button only appears when a window is maximised. A maximised window has no border and you cannot see what is behind it.

c. Backstage View or File Ribbon – is the start of Access and has many important commands and options such as Access Settings, Opening, Saving, Printing, and Closing Files

3. a. Status Bar – The Status Bar, across the bottom of the screen, displays different information at different times. To the left is an indicator which will display which view you are currently in, to the right are quick options to see which views are available and to change the view you are in (example: Design).

b. Task Pane – A Task Pane is a window that collects commonly used actions in one place. The Task Pane enables you to quickly create or modify a file, perform a search, or view the clipboard.

c. Toolbar – There are only two toolbars within the new versions of office. There is a Quick Access Toolbar and there is a Mini Toolbar.

i. Quick Access Toolbar – By default there are only three buttons on the Quick Access Toolbar but these can be edited and other regularly used buttons can be placed there. Using the drop down menu next to the Quick Access Toolbar will allow the customisation of this toolbar adding your most often used commands.

ii. Mini Toolbar – Whenever text is selected within Access a small formatting toolbar will appear above the highlighted text and will disappear if the mouse cursor is moved away from the toolbar. The toolbar reappears when the mouse cursor is moved over the highlighted text again.

Lesson 4: Saving and Exiting Access

Welcome to Lesson 4 of Unit 4. In Lesson 3 you learned and identified the basic parts of Access and explained their functions and uses.

In this lesson you shall learn how to save and exit Access.

Your Aims:

- list down the steps in saving and exiting an Access program
- identify alternative ways to exit Objects and Access

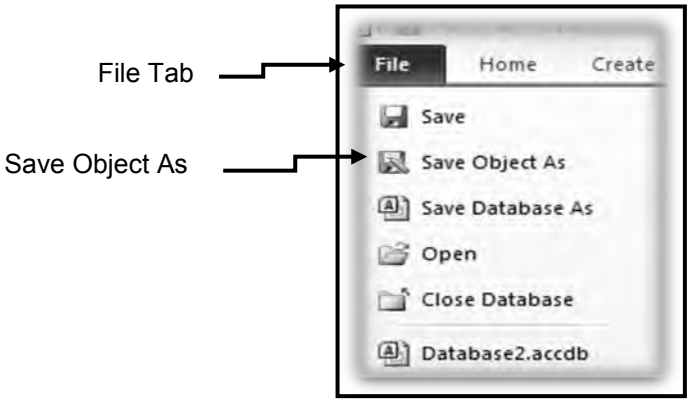
Saving and Exiting Access

Saving and Exiting files in Access is simply the same approach you use for other Office Applications, such as Word, Excel, Power Point. With Access, a single database has coverage of Tables, Forms, Queries, and Reports; therefore you must be carefully when saving these files.

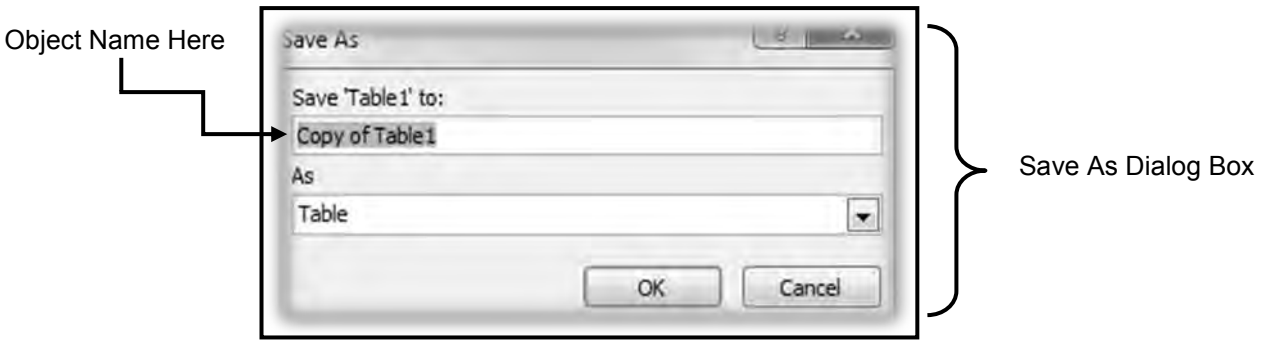
Saving Objects/Files

Saving objects/files will be discussed. Look at the steps given and follow through.

1. Go to **File Tab ➔ Save Object As**.



2. Save As Dialogue box appears, under **Save As**, type the Table Name and then click **OK**.



> In saving all the Objects in Access, the same procedure applies. This includes Table, Queries, Forms and Reports.

Exiting Objects/ Files

Exiting Objects or Files in the Access does not mean that you close the whole application. Follow the steps below on how to exit Objects/Files.

1. Click on the **CLOSE** Button  on the right-most of the Object window to close/ exit.

2. Alternatively, right-click on the **Object Window Tab** 

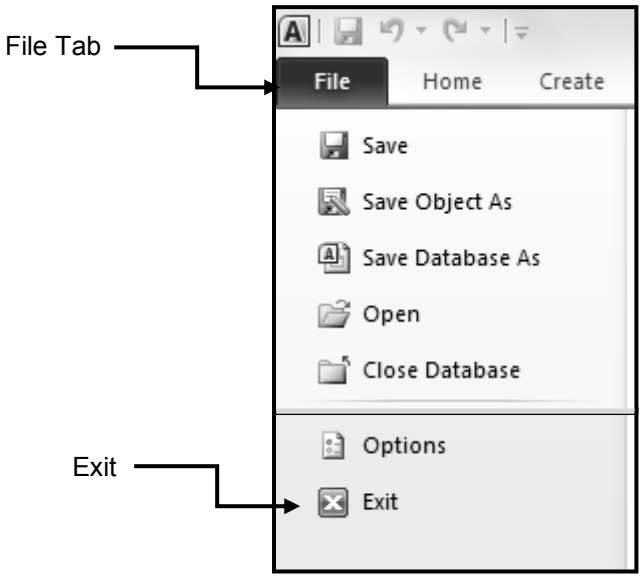
(contains the name of the object) and select **Close**.

Exiting Access

The above steps exit the objects in Access but not the application itself. Like all other applications, the approach/ methods used to close/ exit is just similar. Follow the steps below on how to exit Access.

1. Click on the **CLOSE** Button,  usually on the upper right-most corner of the window, to close Access.

2. Or, click on **FILE TAB ➔ EXIT**.



Activity 1 Answer the following.

1. Chronologically arrange the following steps on the left with numbers on the right.

   a. Select the Save Object As. _____

   b. Go to File Tab. _____

c. Choose Save As. _____

d. Click OK. _____

e. Type the Table Name. _____

2. List the two ways on how to exit Objects and Files in Access.

a.

_____

_____

b.

_____

_____

3. List the two ways on how to exit MS Access.

a.

_____

_____

b.

_____

_____

Thank you for completing this activity. Make sure you do the necessary corrections before moving on to the next part of this lesson.

_____

SUMMARY

You have come to the end of Lesson 4. In this lesson, you have learned the steps in starting and exiting Access Objects and the program itself.

_____

NOW DO PRACTICAL EXERCISE 4 ON THE NEXT PAGE

Practical Exercise 4

Answer the following.

1. List down the steps in saving an Object in MS Access?

a. _____

b. _____

c. _____

d. _____

2. List down the two ways in which you can exit MS Access?

a. _____

b. _____

3. Name the button that allows you to close MS Access.

_____

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 1.

Answers to Activity

1. a. 3
   b. 1
   c. 2
   d. 5
   e. 4

2.
   a. Click on the CLOSE Button on the right-most of the Object window to close/ exit.
   b. Alternatively, right-click on the Object Window Tab (contains the name of the object) and select Close.3. Select the Insert Sheet rows.

3.
   1. Click on the CLOSE Button, usually on the upper right-most corner of the window, to close Access.
   2. Or, click on FILE TAB ➔ EXIT.

Lesson 5: Understanding Databases and Objects

Welcome to Lesson 5 of Unit 4. In Lesson 4 you learned about starting and exiting Access Objects and the program itself.

In this lesson you shall learn to identify the terms and objects used in Access and their appropriate uses.

Your Aims:

- identify the terms used in Access
- identify the objects in Access
- identify the appropriate use of data objects

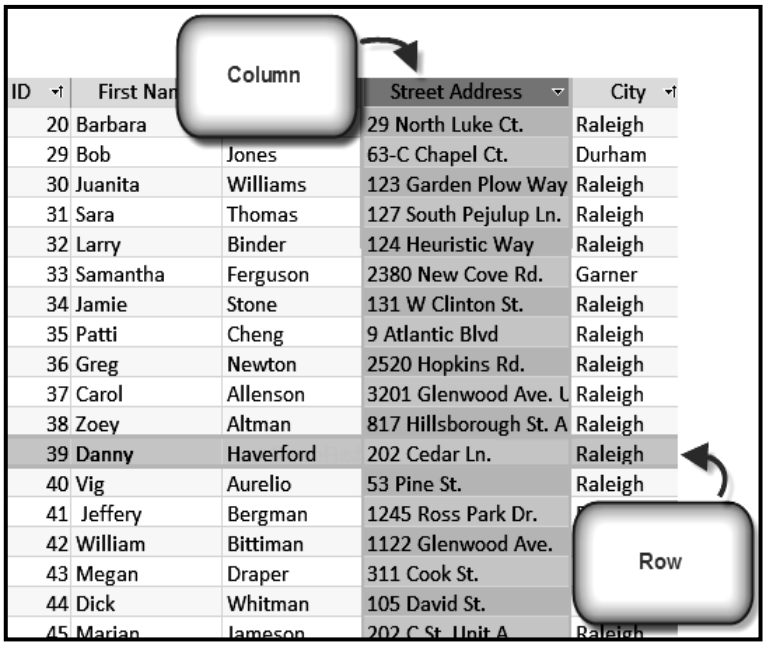
What are Objects?

One of the key advantages of using MS Access is its ability to manage objects and link tables.

Access 2010 manages four main Objects: **tables**, **queries**, **forms**, and **reports**. Together, these objects allow you to enter, store, analyse, and compile your data as you wish.

The objects in Access are as listed below:

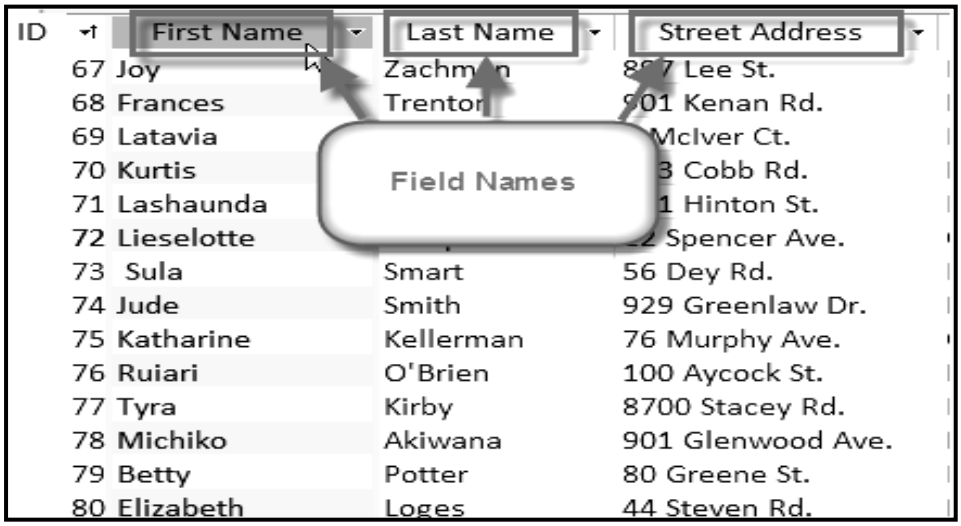
1. **Tables –** A database is a collection of data organised into many connected **lists**. In Access, all data is stored in **tables**, which put tables at the heart of any database. Tables are organised into vertical **columns** and horizontal **rows**



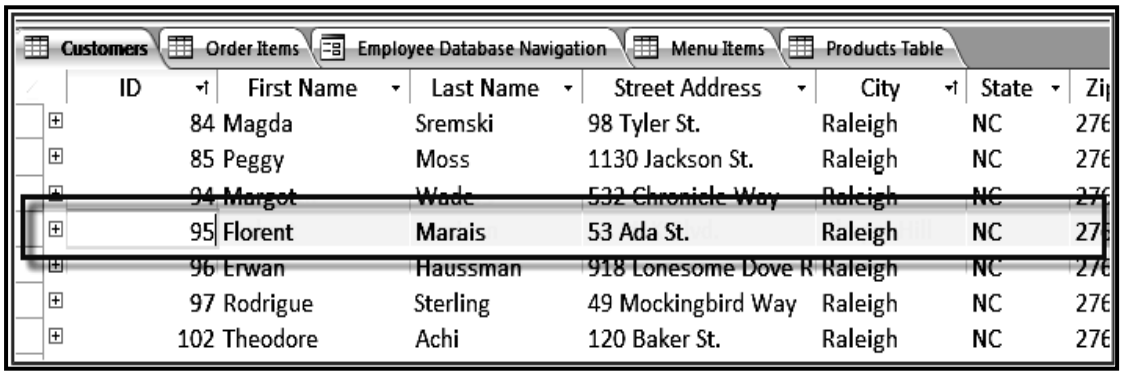
ID	First Nan		Street Address	City
20	Barbara		29 North Luke Ct.	Raleigh
29	Bob	Jones	63-C Chapel Ct.	Durham
30	Juanita	Williams	123 Garden Plow Way	Raleigh
31	Sara	Thomas	127 South Pejulup Ln.	Raleigh
32	Larry	Binder	124 Heuristic Way	Raleigh
33	Samantha	Ferguson	2380 New Cove Rd.	Garner
34	Jamie	Stone	131 W Clinton St.	Raleigh
35	Patti	Cheng	9 Atlantic Blvd	Raleigh
36	Greg	Newton	2520 Hopkins Rd.	Raleigh
37	Carol	Allenson	3201 Glenwood Ave. L	Raleigh
38	Zoey	Altman	817 Hillsborough St. A	Raleigh
39	Danny	Haverford	202 Cedar Ln.	Raleigh
40	Vig	Aurelio	53 Pine St.	Raleigh
41	Jeffery	Bergman	1245 Ross Park Dr.	
42	William	Bittiman	1122 Glenwood Ave.	
43	Megan	Draper	311 Cook St.	
44	Dick	Whitman	105 David St.	
45	Marian	Jameson	202 C St. Unit A	Raleigh

In Access, rows and columns are referred to as **Records** and **Fields** respectively. A **field** is more than just a column: it's a way of organizing

information by the **type** of data. Every piece of information within a field is of the same **type**. For example, every entry in a field called —First Name" would be a name, and every entry in field called —Street Address" would be an address.



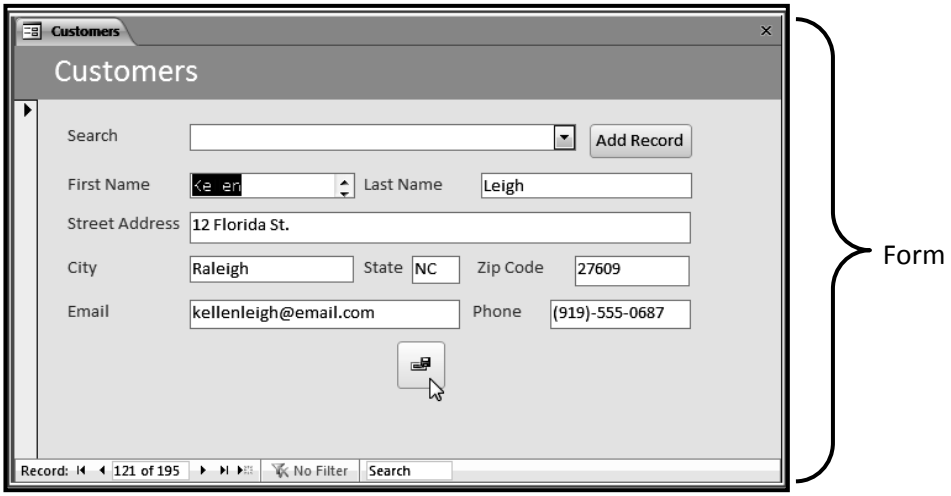
Likewise, a **record** is more than just a row—it is a unit of information. Every cell in a given row is part of that row's record.



Although tables store all of your data, the other three objects offer you ways to work with it. They are: **forms**, **queries**, and **reports**. Each of these objects interacts with the **records** stored in your database's tables.

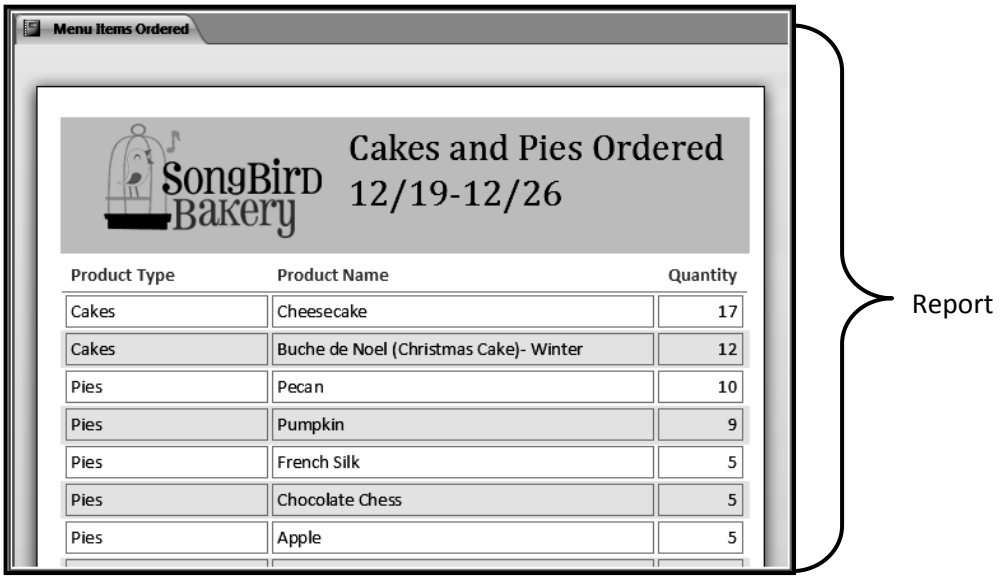
2. **Forms** – Forms are used for entering, modifying, and viewing records. You have probably had to fill out forms on many occasions, like when visiting a doctor's office, applying for a job, or registering for school.

   The reason forms are used so often is that they are an easy way to guide people into entering data correctly. When you enter information into a form in Access, that data goes exactly where the database designer wants it to go in one or more related tables.



3. **Queries** – Queries are a way of searching for and compiling data from one or more tables. They are used to retrieve information from a database. Running a query is like asking a detailed **question** of your database. When you build a query in Access, you are **defining specific search.** Creating **forms** for your database can make entering data much more convenient. When you create a form, you can design it in a way that works with your database and makes sense to you.

4. **Report** – Reports offer you the ability to present your data in print. If you have ever received a computer printout of a class schedule or a printed invoice of a purchase, you have seen a database report. Reports are useful, because they allow you to present components of your database in an easy-to-read format. You can even customise a report's appearance to make it visually appealing. Access offers you the ability to create a report from any **table** or **query**.



Activity 1: Answer the following questions.

1. Differentiate between the following Objects in Access.

   a. Table versus Form

   _____

   _____

   b. Queries versus Reports

   _____

   _____

2. Identify the uses of the following Objects in Access.

   a. Queries

   _____

   b. Reports

   _____

Thank you for completing this activity. Make sure you do the necessary corrections before moving on to the next part of this lesson.

SUMMARY

You have come to the end of Lesson 5. In this lesson, you have identified the terms and objects used in Access and their appropriate uses.

NOW DO PRACTICAL EXERCISE 5 ON THE NEXT PAGE

Practical Exercise 5

Answer the following.

1. List down the four objects that MS Access manages.

   a. _____

   b. _____

   c. _____

   d. _____

2. What are the functions of each of the four objects in MS Access?

   a. _____

   b. _____

   c. _____

   d. _____

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 1.

Answers to Activity

1.

   a. Tables which are organised into vertical columns and horizontal rows are where all data are stored while Forms are used for entering, modifying and viewing records.

   b. Queries are a way of searching for and compiling data from one or more tables while Reports offer you the ability to present your data in print.

2.

   a. Queries are used to retrieve information from a database.
   b. Reports allow you to present components of your database in an easy-to-read format.

Lesson 6: Planning a Database

Welcome to Lesson 6 of Unit 4. In Lesson 5 you learned about the terms and objects used in Access and their appropriate uses.

In this lesson you will learn to plan the contents of a Database and identify its purpose.

Your Aims:

- plan the contents of a database
- identify the purpose of planning a database

Planning a Database

In planning a Database, obviously you need data. Once you have your data in place, you can decide on how and what you want your data to have, how you want the interface of the form and report to look like.

Planning is more important than other steps when creating database, because from your plan, you will create and build what you want with the plans as guidelines to accomplish the database that suits your desire or your client.

Planning includes collecting data, documentations and other necessary information needed to create a database.

Here are the three simple steps on how to plan your Database:

1. Collect and organise data.
2. Organise and update data.
3. Do a draft of the Form and Report.

Let us carefully study each steps in planning a database.

1. **Collect and Organise Data**

   The data you will be collecting is what will make up the contents of the database. Without the data there will be no database.

   Data can be collected either manually or electronically. Collecting data manually means that the data is collected from surveys, questionnaires and interviews. Collecting data electronically means that data is collected through the use of computers through surveys on the internet, questionnaires being emailed to you or any other electronic databases.

   When collecting data, make sure you get all the data that you think is needed for the database. Keep in mind that we want to keep the record of information in a more organised layout. For example, you can get the class list at the administration office, or if you are doing inventory database for a shop, then you have to go around each item on the shelves, look at the prices, and write them down. That is how you collect data.

2. **Organise and Update Data**
   Once you have collected and gathered all your data, go ahead and arrange the data by grouping and classify them according to any criteria one example would be:

   - Mangos
   - Bananas
   - Pawpaws
   - Cucumbers

   These are classified as **FRUITS**.

   Examples of classifications would be according to:

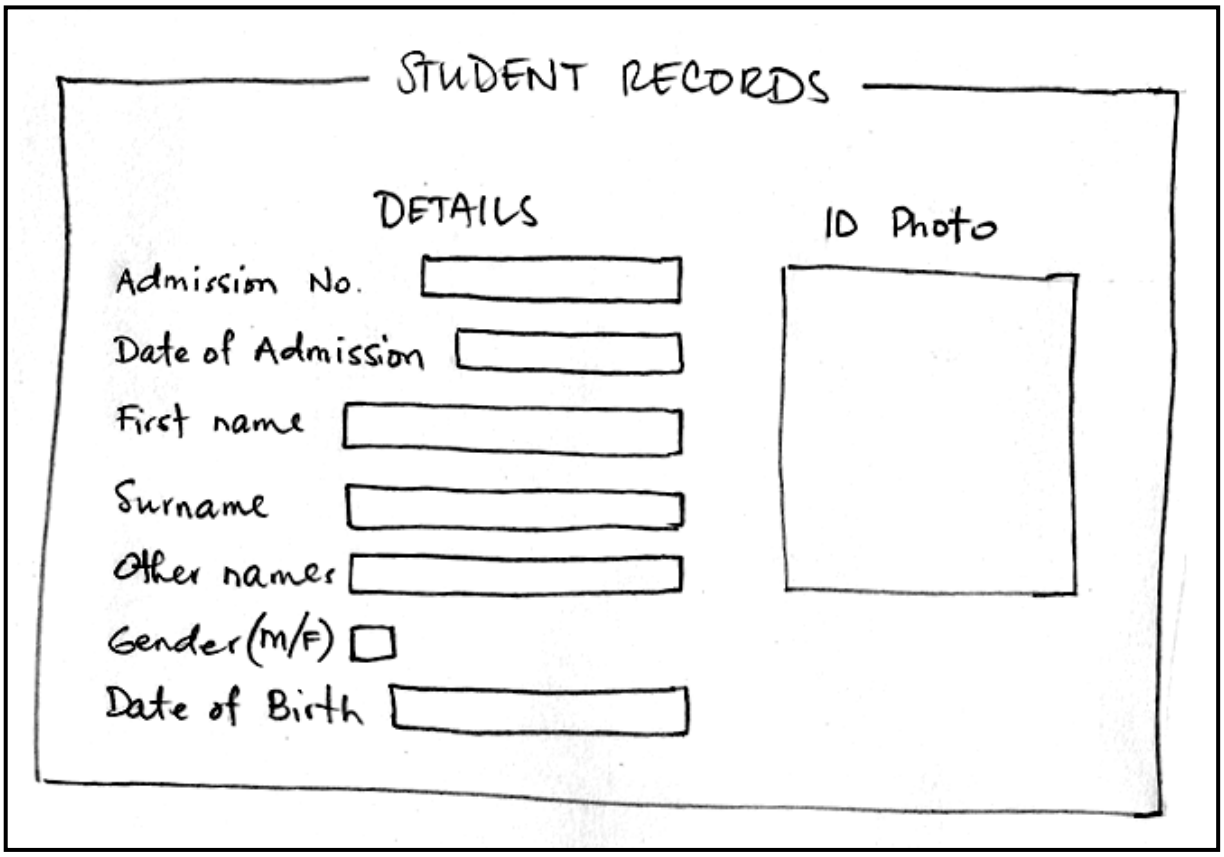
   - Regions
   - Province
   - Salary Range
   - Height
   - Distance

You also need to check to see which ones you need, and which ones need updating and correcting. For example: spelling of words, grammar and punctuation. Organise and prioritize them and get them ready for you to enter them into the computer.

3. **Do a draft of the Form and Report**
   Design how you want your Forms and Reports to look like on paper. This makes it easier for you to construct the Forms and Reports on the computer. You can design by sketching it out, you do not need to be an artist.

   Make sure that the sketch is clear and easy to follow and information displayed on each of the sketches is clearly written. Border lines also need to be included in the sketches.

   The diagram on the next page is an example of how you could sketch a Form on paper.



Activity 1: Answer the following.

1. Identify the steps in planning a database.

   a. _____

   b. _____

   c. _____

2. Why is planning a database important?

   _____

   _____

   _____

Thank you for completing this activity. Make sure you do the necessary corrections before moving on to the next part of this lesson.

SUMMARY

You have come to the end of Lesson 6. In this lesson, you have learned to plan the contents of a database and identify its purpose.

NOW DO PRACTICAL EXERCISE 6 ON THE NEXT PAGE

Practical Exercise 6

A. List down and explain in your own words (one sentence each), the three simple steps in planning a database.

a. _____

_____

_____

_____

_____

b. _____

_____

_____

_____

_____

c. _____

_____

_____

_____

_____

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 1.

Answers to Activity

1.

a.. Collect and Organise Data

b. Organise and Update Data

c. Do a draft of the Form and Report

2. Planning is more important than other steps when creating database, because from your plan, you will create and build want you want with the plans as guidelines to accomplish the database that suits your desire or your client‘s.

Answers to Practice Exercise in Topic 1

Practice Exercise 1

A. Any of the current versions of MS Access) Access 95, 97, 2000, 2003, 2007, 2012, 2013

B.

- Access 1.0 - 1992
- Access 2.0 - 1993
- Access 95 - 1995
- Access 97 - 1997
- Access 2000 - 1999
- Access 2002/XP- 2001
- Access 2003 - 2003
- Access 2007 - 2007
- Access 2010 - 2010

C.

A lot of work would be involved much more as compared to using a relational database system like Access. Changes made in one of the files would not affect other files relating to the same data.

Practice Exercise 2

1. The initial purpose for developing Relational Databases was to provide a more flexible way of responding to spontaneous requests for management purposes.

2.

- Data is organised in tabular structures where each row constitutes one record and each column defines a field.
- Users are able to add new records, amend existing records, and delete unwanted records.
- Users are able to interrogate (or „query‘) the database, like: ask it to show which records fulfil certain criteria.

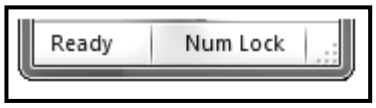
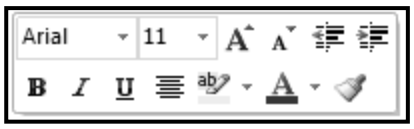
- Users can output the results of queries as reports. These can be viewed on-screen and printed out as hard copy.

3.

- Data Integrity – There is no need to change the data in more than one table. If a customer's details require updating this only need to happen once, like: in the customer file. All references to that customer in any other file (ie: via the primary key) will automatically reflect the update.
- Data Redundancy – In a well-designed relational database, there should be no 'repeating attributes' like: no piece of data should be unnecessarily repeated.
- Data Consistency – Because the attributes of any one entity (example a job, a customer) are contained within one file, there is no risk of the same attribute being stored in a different format in a different file.
- Flexibility – A relational database can be queried with greater flexibility than a flat file system. Data drawn from different files can be combined in a variety of ways, producing better-quality information.
- Greater Efficiency – Data only has to be inputted once and this saves on time and human resources. The memory space requirement is also less and this saves on computing resources.

Practice Exercise 3

No.	Picture	Name	Function
1		Maximise Button	This button allows you to maximise windows to capitalise on the space you have on-screen.
2		Minimise Button	This button allows you to easily switch from Access to another program.
3		Restore Button	This button allows the user to move the window around allowing the user to see what's behind it. It only appears when the window is maximised.
4		Close Button	The larger button will close the Access program window while the smaller one closes the document window.

5		Dialogue Box Launcher	This button launches the Dialogue box specific to the part of the ribbon.
6		Status Bar	This displays information at different times.
7		Mini Toolbar	Whenever text is selected within Access a small formatting toolbar will appear above the highlighted text and will disappear if the mouse cursor is moved away from the toolbar.
8		Quick Access Toolbar	By default there are only three buttons on this but it can also be customised to add more buttons.

Practice Exercise 4

1.

a. Click the —File” Tab.

b. Click on —Save Object As” command.

c. Save As Dialogue box appears, under Save As, type the Table Name

d. Click OK.

2.

a. Click on the close button.

b. Click on —File” Tab, and then click —Exit”.

3.

Close Button

Practice Exercise 5

1.

a. Tables

b. Forms

c. Queries

d. Reports

2.

a. Tables – The tables store the data.

b. Forms – Forms are used for entering, modifying, and viewing records.

c. Queries – These are used to retrieve information from a database

d. Reports – Reports offer you the ability to present your data in print.

Practice Exercise 6

A. List down and explain in your own words (one sentence each), the three simple steps in planning a database.

a. **Collect and organise data**
All the necessary data is collected.

b. **Organise and update data**
Classify the data into groups, update and correct the data, organise and prioritise the data ready for data entry.

c. **Do a draft of the Form and Report**
Sketch the forms and reports on paper.

End of Topic 1.

Now Do Exercise 1 in Assignment Book 1 Then Go to Topic 2.

TOPIC 2

DATABASE

TOPIC 2: DATABASE

In this topic you will learn about Database. The Topic is designed to familiarise you with Database, its components, functions and uses. You will learn to create a blank database and use a template. You will also learn how to open, save and close a Database application.

In this topic, you will study about the following:

Lesson 7 focuses on defining and tracing how Database software was developed.

Lesson 8 explains the functions and uses of Database.

Lesson 9 discusses the components of Database.

Lesson 10 explains how to create a blank Database.

Lesson 11 discusses how to create a Database from a template.

Lesson 12 explains how to open, save and close a Database.

By the end of Topic 2, you should be able to use Database applications for specific tasks and demonstrate knowledge and skills on efficient creation of simple Database.

Lesson 7: Formatting Font and Alignment

Welcome to Lesson 7 of Unit 4. In Lesson 6 you have learned to plan a database and identify the purpose of planning a database.

In this lesson you shall learn the definition of database and how it was developed.

Your Aims:

- define database
- trace how database software is developed

Database

Before we begin, let us look into the words below as these will be commonly used as we progress through our lessons.

Database	A collection of information organised in such a way that a computer program can quickly select desired pieces of data.
Field	A category of information. Example First name or last name.
Form	Used in databases to make it easier to enter and modify information.
Primary Key	A field that can uniquely identify each record.
Query	A query uses a set of rules (criteria) to select specific records from the database. **SQL** (Structured Query Language)
Record	A complete set of information in a database. Example details about a particular person
Relationship	A link between two database tables that have related information. Example A link between student details and the results for each student.
Report	Reports are used to present data in a neat, ready to print format.
Table	Data arranged in rows and columns. All database information is stored in tables.

After learning these key word, we can now proceed to defining data in relation to database.

Data is made up of recorded facts, figures, images and sounds about people, objects, events or other items. Data is stored and collected in a **database**.

Database is often abbreviated as DB. It is a collection of information organised in such a way that a computer program can quickly select desired pieces of data. We can consider a database as an electronic filing system.

Traditional databases are organised by fields, records, and files. A field is a single piece of information; a record is one complete set of fields; and a file is a collection of records. Let us have an example, a telephone book is analogous to a file. It contains a list of records, each of which consists of three fields: name, address, and telephone number.

A telephone directory entry is an example of a file which consist fields.

An another idea in database design is known as Hypertext. In a Hypertext database, any object, whether it be a piece of text, a picture, or a film, can be linked to any other object. Hypertext databases are particularly useful for organizing large amounts of different information, but they are not designed for numerical analysis.

Databases are created to operate large quantities of information by inputting, storing, retrieving, and managing that information. Databases are set up, so that one set of software programs provides all users with access to all the data. Databases use a table format, that is made up of rows and columns. Each piece of information is entered into a row, which then creates a record. Once the records are created in the database, they can be organised and operated in a variety of ways that are limited mainly by the software being used.

Lessons 13-18 will discuss more on how to create Tables using the Miscrosoft Access program. Throughout these lessons and the coming lessons, Microsoft Access will be the program used to create our simple database.

Databases are somewhat similar to spreadsheets, but databases are more useful than spreadsheets because of their ability to manipulate the data that is stored. It is possible to do a number of functions with a database that would be more difficult to do with a spreadsheet. The word data is normally defined as facts from which information can be taken from. A database may contain millions of such facts. From these facts the database management system (DBMS) can develop information.

To access information from a database, you need a **database management system** (**DBMS**). This is a collection of programs that enables you to enter, organise, and select data in a database.

A "**database management system**" (**DBMS**) is a suite of computer software providing the interface between users and a database or databases. Because they are so closely related, the term "database" when used casually often refers to both a DBMS and the data it manipulates. Hence as mentioned earlier, Microsoft Access will be the database management package that we will use.

The interactions catered for by most existing DBMS fall into four main groups:

1. Data definition includes defining new data structures for a database, removing data structures from the database, modifying the structure of existing data.

2. Update involves inserting, modifying, and deleting data.

3. Retrieval focuses on obtaining information either for end-user queries and reports or for processing by applications.

4. Administration refers to registering and monitoring users, enforcing data security, monitoring performance, maintaining data integrity, dealing with control, and recovering information if the system fails.

A DBMS is responsible for maintaining the integrity and security of stored data, and for recovering information if the system fails.

Activity 1. Answer the given questions.

1. What is the relationship of —data” to —database”?

   _____

   _____

   _____

   _____

2. Why is the use of Database more useful than the use of Spreadsheet?

   _____

   _____

   _____

   _____

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answer. Make sure you do the necessary corrections before moving on to the next part of this lesson.

Database History

The development of database technology can be divided into three eras based on data model or structure: **navigational**, **SQL/relational**, and **post-relational**.

The two main early **navigational data models** were the **hierarchical model**, exemplified by IBM's IMS system, and the **Codasyl model** (Network model), implemented in a number of products such as IDMS.

The **relational model**, first proposed in 1970 by Edgar F. Codd, departed from this tradition by insisting that applications should search for data by content, rather than by following links. The relational model is made up of ledger-style tables, each used for a different type of entity.

It was not until the mid-1980s that computing hardware became powerful enough to allow relational systems (DBMSs plus applications) to be widely deployed. By the early 1990s, however, relational systems were dominant for all large-scale data processing applications, and they remain dominant except in niche areas. The dominant database language is the standard SQL for the relational model, which has influenced database languages for other data models.

Object databases were invented in the 1980s to overcome the inconvenience of object-relational mismatch, which led to the coining of the term "**post-relational**" but also development of hybrid object-relational databases.

The next generation of **post-relational databases** in the 2000s became known as **NoSQL** databases, introducing fast key-value stores and document-oriented databases. A competing "next generation" known as NewSQL databases attempted new implementations that retained the relational/SQL model while aiming to match the high performance of NoSQL compared to commercially available relational DBMSs.

Summary

You have come to the end of Lesson 7. In this lesson you have learned the definition of database, database management system and the history of how database was developed.

NOW DO PRACTICE EXERCISE 7 ON THE NEXT PAGE.

Practice Exercise 7

A. Write True if the statement is correct and False if the statement is incorrect on th space provided.

1. Computing hardware became powerful enough to allow relational systems (DBMSs plus applications) to be widely deployed. _____
2. The term "database" when used casually often refers to both a DBMS and the data it manipulates. _____
3. Data definition includes inserting, modifying, and deleting data. _____
4. Databases are created to operate large quantities of information by inputting, storing, retrieving, and managing that information. _____
5. Database use is the same with spreadsheet use. _____
6. The "next generation" is known as NewSQL databases. _____
7. To access information from a database, you need a database management system (DBMS). _____
8. Each piece of information in a database is entered into a column, which then creates a record. _____
9. Hypertext database, any object, whether it be a piece of text, a picture, or a film, can be linked to any other object. _____
10. Data is stored and collected in a database. _____
11. Database is often abbreviated as BD. _____
12. Object databases were invented in the 1980s. _____
13. A database cn be considered as an electronic filing system. _____
14. The dominant database language is the standard SQL for the relational model, which has influenced database languages for other data models. _____
15. The word data is normally defined as facts from which information can be derived. _____

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 2.

Answers to Activities

1. **Data** is made up of recorded facts, figures, images and sounds about people, objects, events or many other items. **Data** is stored and collected in a **database**.

2. Databases are more demanding than spreadsheets because of their ability to manipulate the data that is stored. It is possible to do a number of functions with a database that would be difficult to do with a spreadsheet.

Lesson 8: Functions and Uses of Database

Welcome to Lesson 8 of Unit 4. In Lesson 7 you have learned definition of database and how it was developed.

In this lesson you shall learn to identify the functions, uses and importance of database.

Your Aims:

- identify the functions and uses of database
- identify the importance of database

Why Do We Use A Database?

In Lesson 2, you learned that Microsoft Access as the software used to create databases has a lot of functions and uses. In this lesson, the functions, uses and importance of a database will be discussed in detail.

A database is basically a collection of data or pieces of information. Whether you know it or not, you use databases all of the time. Some examples of commonly used databases might be:

- Address book
- Library catalogue
- Telephone directory
- Stock list

A database is not necessarily contained on a computer. As explained in Lesson 2, database can be manual. A telephone directory is still a database even if it is in the form of a huge book sitting next to your phone.

Filing information was done manually before but with the growing need to store, sort, add, delete and change existing huge amount of information, the need for electronic filing system was evident. Hence, the use of electronic database was born. The term database is now referred to an organised collection of information stored on a computer.

Like a manual filing cabinet, a database enables you to:

- collect together sets of related data and, if you are careful and reliable, keep the data organised;
- update the data once you have collected them, adding or deleting records, or changing the contents of existing records;

In Lesson 7, database is considered as an electronic filing system which unlike a manual filing cabinet can enable you to easily and quickly –work with the data" sorting them, creating reports and merging the data with other documents.

Here are some other reasons for using an electronic database.

- One can quickly find anything one needs to know, and get answers to questions about the data in the database.

  Example : –What is Larry Dorey's phone number?"

- One can find a small subset of the data.

  Example : –Which students have a GPA below 2.0?"

- One can instruct the computer to arrange (sort) records, and thus organise the data in any way one likes.

  Example: –I would like a listing with everything sorted based on the student hobby field. That will make it easy for me to identify students who have the same interests."

- One can use the computer to create any number of reports for the purpose of supplying others with information pertaining to the data in the database.

  Example: –My principal, Yvonne Singer, wants a monthly report of student progress in Reading, Writing, Math and Science."

Functions and Uses of a Database

From the above explanations, we need a database to do the following:

1. Store and sort information
2. Update and manage existing records
3. Create reports on stored information
4. Merge data with other existing data

All of these indicate of the need to be organised in interpreting the meaning of a sorted data that only the database can provide.

This is how important a database is as it allows you to collect and organise huge amount of information neededto be interpreted and later serve a relevant purpose.

As databases are intended for storing and maintaining large amounts of information, these are some examples of the sort of information that can be kept in a database:

- Inventory control
- Payroll systems

- Personnel records
- Music collection catalogue
- Phone and address lists

Databases are kept by both people and organizations. Database is used by people to find information about goods, service and other people while organisations use databases to provide information that help them make decisions. Databases help organisations carry out their business everyday.

People create databases specifically for use at homes. The database might be stored on a computer or written in a book, on paper or on cards. Some examples are:

1. Telephone numbers in a notebook
2. A list of valuable items stored in the house
3. A dictionary
4. A collection of recipes
5. A shopping list for a week

Businesses and organizations create and maintain databases as part of their everyday operation. Some examples are:

1. A school kept a database of all its students‘ names, addresses and telephone numbers.
2. A supermarket has a database of all the items that it sells.
3. A bank has a database of all its customers and their accounts.
4. Libraries keep catalogues of books that they have in stock and those that are lent out.
5. A tennis club has a database of all its members.
6. A video renting shop has a database to keep track of both its customers and its video CDs and DVDs.

Databases allow you to collect and organise information. As discussed in Lesson 7 databases are more useful to use than spreadsheets because they allow you to update information across the board, and they also help reveal connections between data on different sheets.

Database programs like Microsoft Access can be used for personal or business use to keep track of information, like names and addresses, orders or projects. These databases are defined as "desktop databases" and can be purchased as software for personal or office use.

Server databases are used for more complex computer functions. They are used by organizations to manage large amounts of data. They also allow this data to be updated in real time. Server databases are hosted on servers off site because they need a lot of processing power to manage that much information at once.

Although databases are commonly used to access data, they are also used frequently in order to make Web sites run. The information stored in a database fills Web pages, and users can update a Web site quickly and easily by adding content to a database.

Activity 1: Answer the given questions.

1. List five different databases that are used by the following:

Home	School	Library
a.		
b.		
c.		
d.		
e.		

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answers. Make sure you do the necessary corrections before moving onto next part of this lesson.

Summary

You have come to the end of Lesson 8. In this lesson, you have learned to identify the different functions and uses of a database and the importance of database.

NOW DO PRACTICE EXERCISE 8 ON THE NEXT PAGE.

Practice Exercise 8

A. Study the given databases and answer the questions that follow.

1. The database in the table below is made up of the names of a number of cities and town in Papua New Guinea.

   a. Which towns are in the Eastern Highlands?

   b. How many of the towns have a population less than 10,000?

Rank	City/Town Name	Province	Population
1	Port Moresby	Ntional Capital District	256 000
2	Lae	Morobe	129 000
3	Arawa	Bougainville	38 4000
4	Mount Hagen	Western Highlands	28 500
5	Goroka	Eastern Highlands	20 150
6	Alotau	Milne Bay	9 850
7	Tari	Southern Highlands	8 203
8	Kainantu	Eastern Highlands	6 789
9	Ialibu	Southern Highlands	5 463
10	Wau	Morobe	5 896

2. The Great Fleet database contains information about people who were transported to New Zealand as the first white settlers. The figure below shows part of the records for nine members of the Great Fleet.

   a. How many settlers have the surname _Rosendo‘?

   b. What was the date of Johny Bombani‘s arrival?

   c. What is the name of the ship on which the females were transported?

   d. How many convicts had trials before 1786?

First Name	Last Name	Sex	Position	Ship	Date of Arrival
Thomas	Andress	Male	Convict	Alexander	5/3/1785

Johnny	Bombani	Male	Convict	Charlotte	15/9/1784
Henrico	Madamba	Male	Convict	Scarborough	30/8/1786
Martha	Mondez	Female	Convict	Lady Luscha	7/3/1785
Charley	Oraa	Male	Convict	Dustyna	26/5/1784
Mary	Rosendo	Female	Convict	Lady Luscha	13/12/1786
Esther	Rosendo	Female	Convict	Lady Luscha	26/5/1784
Johnico	Rosendo	Male	Convict	Clorobel	14/3/1785
Clarence	Subagan	Male	Convict	Charlotte	7/7/1784

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 2.

Answers to Activity 1

Answers may be similar to the given below.

Home	School	Library
a. shopping list	a. attendance record	a. list of available books
b. monthly budget for 2013	b. enrolment record	b. list of students and their library card IDs
c. medication schedule	c. disciplinary record	c. list of borrowed books
d. —to do” list for the day	d. outstanding students in each subject	d. list of overdue books by students
e. monthly bills payment	e. teacher class record	e. borrowed items by teachers

Lesson 9: Components of a Database

Welcome to Lesson 9 of Unit 4. In Lesson 8, you learned to identify the functions, uses and importance of database.

In this lesson you shall learn to identify the components of a database.

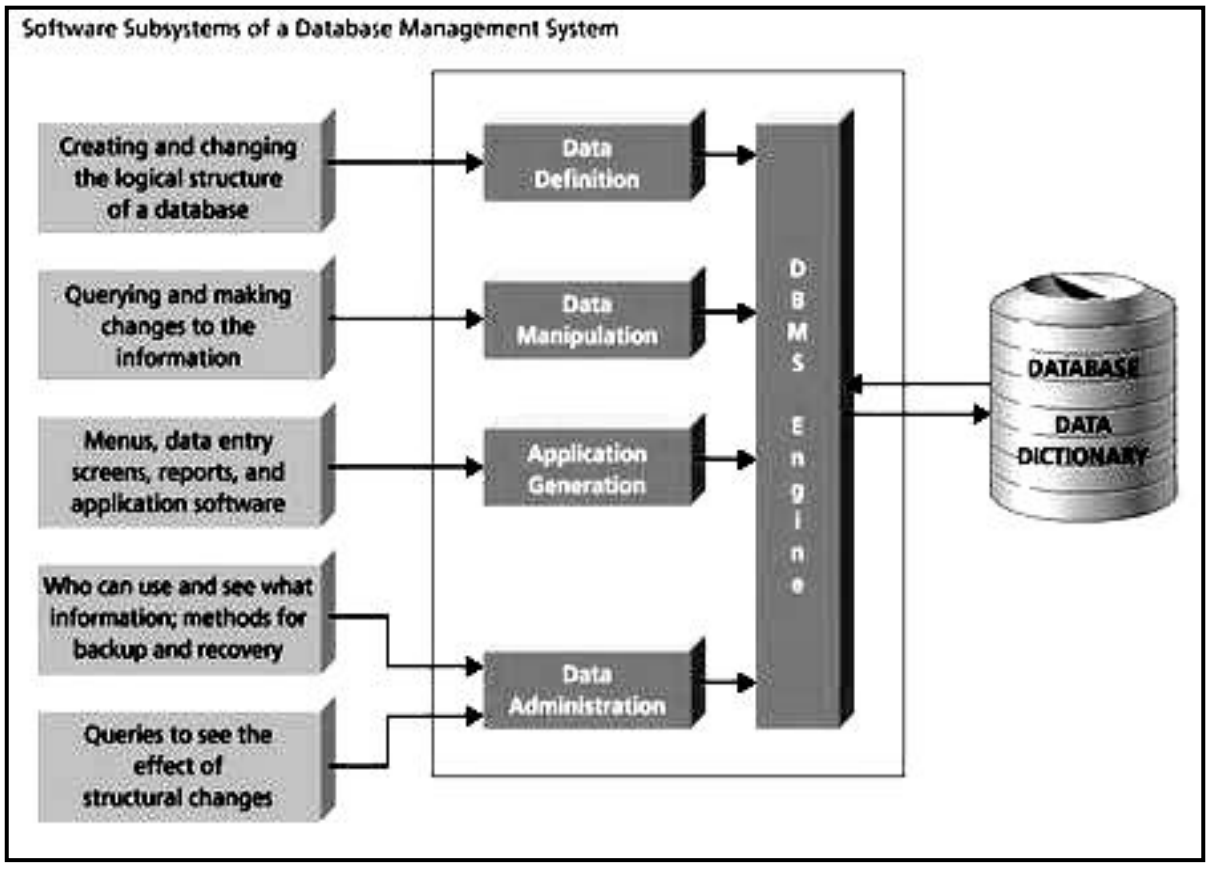
Your Aim:

- identify the components of a database

Components of a Database

DBMSs are the technology tools that directly support managing organizational data. With a DBMS you can create a database including its logical structure and constraints, you can manipulate the data and information it contains, or you can directly create a simple database application or reporting tool.

Human administrators, through a user interface, perform certain tasks with the tool such as creating a database, converting an existing database, or archiving a large and growing database. Business applications, which perform the higher level tasks of managing business processes, interact with end users and other applications and, to store and manage data, rely on and directly operate their own underlying database through a standard programming interface like Open Database Connectivity (ODBC).



Database systems have become the primary mechanism used by most organizations to store and manage their most important information. With the advancement of today‘s technology in computer systems, database is part and parcel of not only for modern organizations but even for small retail shops who are compelled to use this system.

A database management system (DBMS) consists of several components. Each component plays a vital role in the database management system environment. The major components of a database management system are: Software, Hardware, Data, Procedures , Database Access Langauage and the End-Users.

Let us study them one at a time.

1. **Software**

   The Software part consists of DBMS which acts as a bridge between the user and the database or in other words, software that interacts with the users, application programs, and database and files system of a particular storage media (hard disk, magnetic tapes etc.) to insert, update, delete and retrieve data.

   For performing these operations such as insertion, deletion and updating we can either use the Query Languages like SQL, QUEL, Gupta SQL or application softwares such as Visual Basic, Developer and others.

   The main component of a DBMS is the software. It is a set of programs used to handle the database and control and manage the overall computerised database.

Here are more facts on why the software is the main component of a DBMS:

   a. DBMS is a software itself.

   b. Operating system including network software is being used in network to share the data of the database among multiple users.

   c. Application programs developed in programming languages such as C++ and Visual Basic are used to access database in database management system. Each program contains statements that requests the DBMS to perform operation on the database. The operations may include retrieving, updating and deleting.

2. **Hardware**

   Hardware consists of a set of physical electronic devices such as computers (together with associated input/output devices like disk drives), storage devices, input/ouput channels and electromechanical devices that make interface between computers and the real world system.

   It is impossible to implement the DBMS without the hardware devices. In a network, a powerful computer with a high data processing speed and a storage device with large storage capacity is required as a database server.

Since database can range from those of a single user with a desktop computer to those on mainframe computers with thousand of users, therefore proper care should be taken when choosing appropriate hardware devices for a required database.

3. **Data**

It is a very important component of the database system. Most of the organizations generate, store and process large amount of data.

The following are the diffferent types of data:

a. **User Data**

It consists of a table(s) of data called Relation(s) where Column(s) are called fields of attributes and rows are called Records for tables. A Relation must be structured properly.

b. **Metadata**

A description of the structure of the database is known as Metadata. It basically means "data about data". System Tables store the Metadata which includes the following:

- Number of Tables and Table Names
- Number of fields and field Names
- Primary Key Fields

c. **Application Metadata**

It stores the structure and format of Queries, reports and other applications components.

Data is the most important component of the DBMS. The main purpose of a DBMS is to process the data. In DBMS, databases are defined, constructed and then stored, updated and retrieved to and from the databases.

4. **Procedures**

Procedures refer to the instructions and rules that help to design the database and to use the DBMS. The users that operate and manage the DBMS require documented procedures on how to use or run the database management system. These may include the following procedures:

a. install the new DBMS

b. log on to the DBMS

c. use the DBMS or application program

d. make back up copies of the database

e. change the structure of the database

f. generate reports of data retrieved from the database

5. **Database Access Language**

The database access language used to access the data from the database. The users use the database access language to enter new data, change the existing data in the database and to retrieve required data from the database.

The user —write" a set of appropriate commands in database access langauage and submits these to the DBMS. The DBMS translates the user's commands and sends it to a specific part of the DBMS called the **Database Jet Engine**. The database engine generates a set of results according to the commands submitted by the user and converts these into a user readable form called an **Inquiry Report** and then displays them on the screen.

The Database Engine is the core service for storing, processing, and securing data. The Database Engine provides controlled access and rapid transaction processing to meet the requirements of the most demanding data consuming applications within your enterprise. The Database Engine is used to create relational databases for online transaction processing or online analytical processing data. This includes creating tables for storing data, and database objects such as indexes, views, and stored procedures for viewing, managing, and securing data. You can use SQL Server Management Studio to manage the database objects, and SQL Server Profiler for capturing server events.

The administrator may also use the database access language to create and maintain the databases. The most popular database access language is the **SQL** (Structured Query Language). Relational databases are required to have a database query language.

6. **Users**

The users are the people who manage the databases and perform the different operations on the databases in the database system. There are three kinds of people who play different roles in the database system and these are: Application Programmers, Database Administrators and the End-users.

Let us discuss them one at a time.

a. **Application Programmers**

These are the people who —write" the application programs in programming languages (such as Visual Basic, Java or C++) to interact with databases.

b. **Database Administrators**

These are the persons who are responsible for managing the overall database management system. They are often called as the —DBA".

c. **End-Users**

The end-users are the people who interact with the database management system to perform different operations on database such as retrieving, updating, inserting and deleting data.

Activity 1: Identify the component of a database that is described in each item.

1. It is used to access the data to and from the database . _____
2. It refers to the instructions and rules that help to design the database and to use the DBMS. _____
3. It is the most important component of the DBMS. _____
4. It consists of a set of physical electronic devices. _____
5. It is a set of programs used to handle the database and control and manage the overall computerised database. _____

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answers. Make sure you do the necessary corrections before moving onto next part of this lesson.

Summary

You have come to the end of Lesson 9. In this lesson, you have learned to identify the different components of a database.

NOW DO PRACTICE EXERCISE 9 ON THE NEXT PAGE.

Practice Exercise 9

A. Choose the correct term from the pool of words given below and write the answers on the space provided.

DBMS	user	Database Jet Engine	Inquiry Report
screen	results	database access language	commands

The __(1)___ —write" a set of appropriate commands in __(2)___ and submits these to the DBMS.

The __(3)___ translates the user's commands and sends it to a specific part of the DBMS called the __(4)___. The database engine generates a set of __(5)___ according to the __(6)___ submitted by the user and converts these into a user readable form called an __(7)___ and then displays them on the __(8)___.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

B. Answer the questions.

1. What is the function of the Database Access Language?

_____

_____

_____

2. Why is Data regarded as the most important component of a DBMS?

_____

_____

_____

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 2.

Answers to Activity 1

A. To increase the row height of D2 to 35

1. Database Access Language
2. Procedures
3. Data
4. Hardware
5. Software

Lesson 10: Creating a Blank Database

Welcome to Lesson 10 of Unit 4. In Lesson 9, you have learned to identify the components of a database.

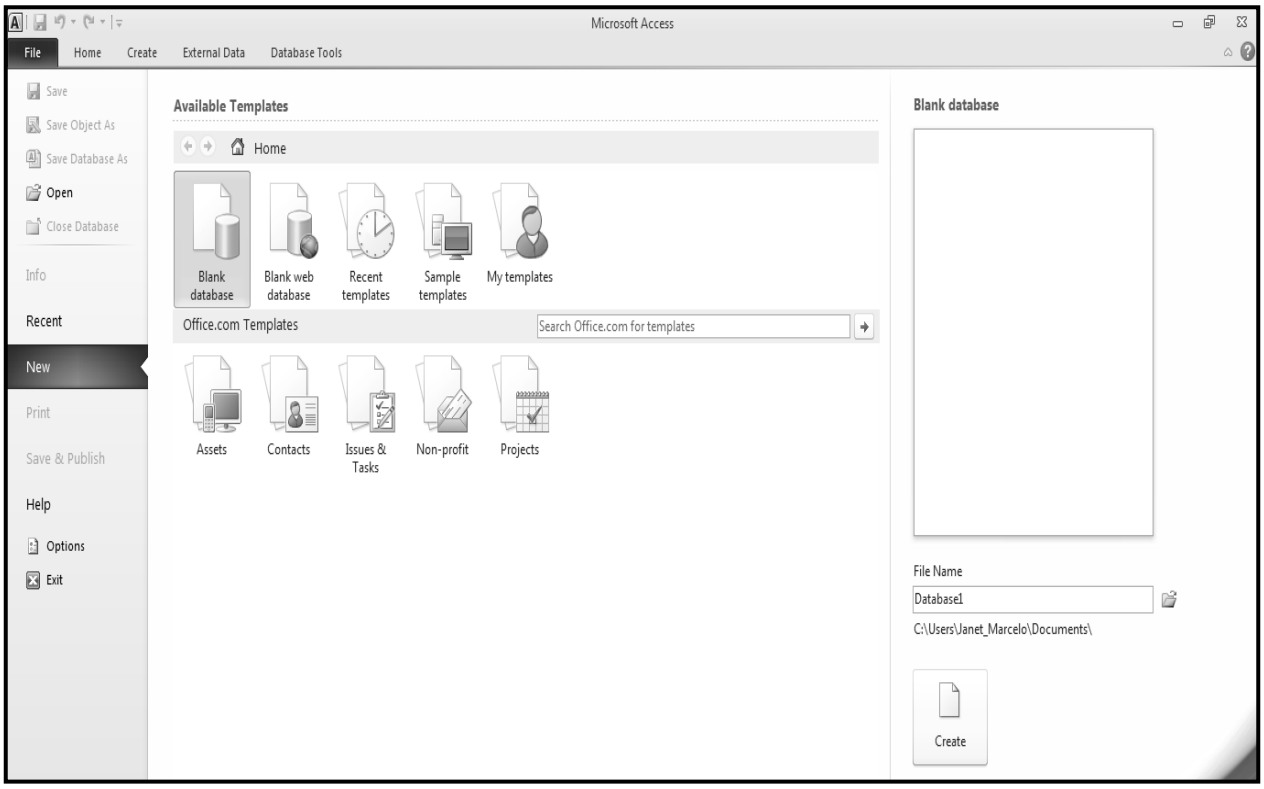
In this lesson you shall learn to identify the steps in creating a blank database.

Your Aim:

- identify the steps in creating a blank database

Creating a Blank Database

Lesson 3 you have learned about the parts of the Microsoft Access window where the Backstage view was discussed. The Backstage view is a starting point from which you can create a new database, open an existing database and view featured content from Office.com.



The Backstage View of Microsoft Access

When you open Access, Backstage view displays the **New** tab. The **New** tab provides several ways that you can create a new database:

- **A blank database** You can start from scratch if you want. This is a good option if you have very specific design requirements or have existing data that you need to accommodate or incorporate.

- **A template that is installed with Access** Consider using a template if you are starting a new project and would like a head start. Access comes with several templates installed by default.

- **A template from Office.com** In addition to the templates that come with Access, you can find many more templates on Office.com. You do not even have to open a browser, the templates are available from the **New** tab.

You can create a database by building your own tables, forms, reports, and other database objects. In most cases, this involves one or both of the following:

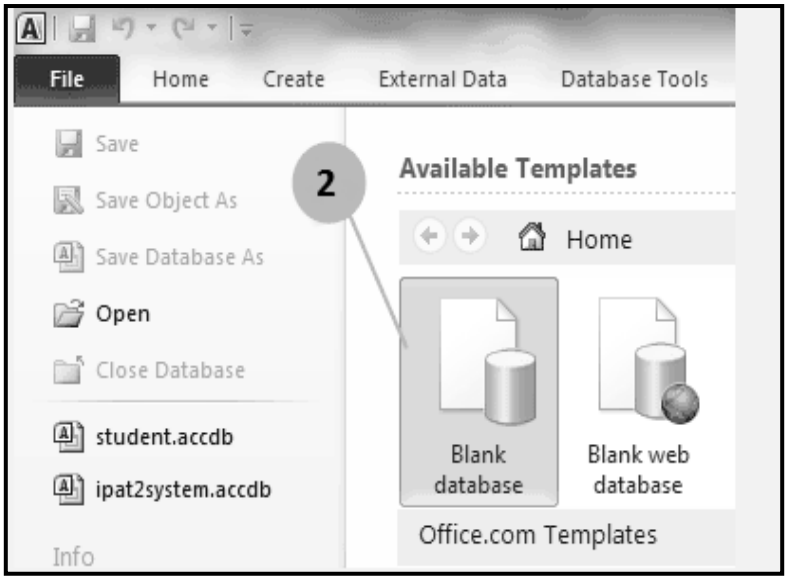
- Entering, pasting, or importing data into the table that is created when you create a new database, and then repeating the process with new tables that you create by using the Table command on the Create tab.

- Importing data from other sources and creating new tables in the process.

Here are the steps in creating a blank database:

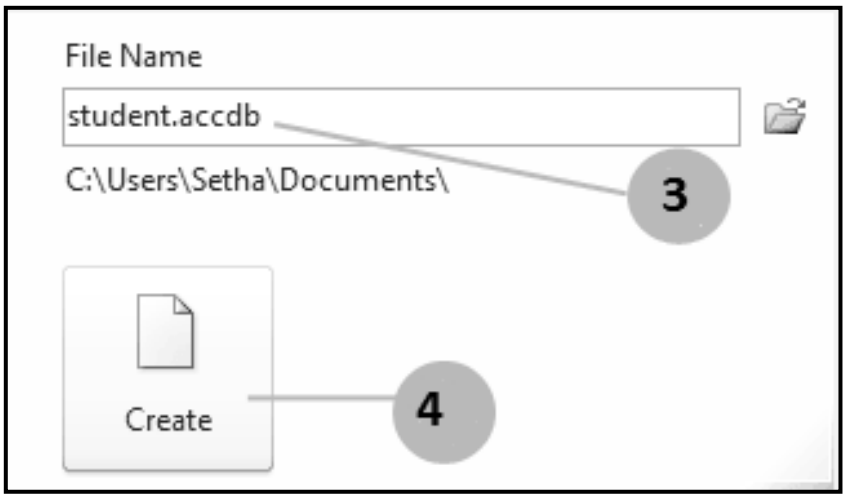
1. Start Access.

2. On the **New** tab in Backstage view, click **Blank Database** or **Blank Web Database**.



The choice that you make here will determine what features are available in the database. Desktop databases can not be published to the Web, and web databases do not support some desktop features, such as totals queries.

3. On the right, type a name for your database in the **File Name** box.



To change the location in which you create the file, click **Browse**  next to the **File Name** box, browse to and select the new location, and then click **OK**.

4. Click **Create**.
   Access creates the database with an empty table named Table1, and then opens Table1 in Datasheet view.

5. Access puts the cursor in the first empty cell in the **Click to Add** column of the new table.

   To add data, begin typing or you can paste data from another source. Read the following below for more information.

Entering data in Datasheet view is designed to be very similar to entering data in an Excel worksheet. The main restriction is that data must be entered in contiguous rows and columns, starting at the upper-left corner of the datasheet.

You should not try to format your data by including blank rows or columns as you might do in an Excel worksheet, because doing so will waste space in your table. The table merely contains your data. All visual presentation of that data will be done in the forms and reports that you design later.

The table structure is created while you enter data. Any time that you add a new column to the datasheet, a new field is defined in the table. Access sets the data type of the field based on the type of data that you enter. For example, if you have a column in which you have entered only date values, Access will set the data type of that field to Date/Time.

If you later attempt to enter a non-date value (such as a name or a phone number) in that field, Access displays a message informing you that the value does not match

the data type of the column. When possible, you should plan your table so that each column contains the same type of data, whether it is text, dates, numbers, or some other type. This makes it much easier to build queries, forms, and reports that select just the data that you want.

6. If you do not want to enter data in Table1 at this time, click **Close** . If you made any changes to the table, Access prompts you to save the changes. Click **Yes** to save your changes, click **No** to discard them, or click **Cancel** to leave the table open.

Activity 1: Answer the questions.

1. What is the difference between a Blank database and a Blank web database?

_____

_____

_____

_____

_____

2. To change the location of which you created the file, what must you do?

_____

_____

_____

_____

_____

3. Why should you not try to format your data by including blank rows or columns as you might do in an Excel worksheet?

_____

_____

_____

_____

_____

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answers. Make sure you do the necessary corrections before moving onto next part of this lesson.

Summary

You have come to the end of Lesson 10. In this lesson you have learned to identify the steps in creating a blank database.

NOW DO PRACTICE EXERCISE 10 ON THE NEXT PAGE.

Practice Exercise 10

A. Follow the given instructions below.

1. Start Access.

2. Create a database as shown below.

Table1

ID	Surname	First Name	Address	Town	Telephone N	Age
1	Abella	Maricor	45 Boroko Street	Port Moresby	325 5127	18
2	Corona	Nathan	78 Jabiru Drive	Port Morseby	323 1235	21
3	Israel	Boris	23 Taurama Road	Port Moresby	352 7895	16
4	Jehan	Junella	63 Waigani Drive	Port Moresby	321 4516	17
5	Laloki	Cruise	34 Humprey Street	Port Moresby	325 1236	18

3. Add the following data in their appropriate fields.

Monaka Cristal	21 Jackson Street	Port Moresby	321 5678	20
Sakura Talon	52 Normal Drive	Port Moresby	323 9956	15
Talento Fardo	11 Borley Avenue	Port Moresby	325 5841	18

4. Save the file as Tennis Club Members.

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 2.

Answers to Activity 1

1. Desktop databases cannot be published to the Web while web databases do not support some desktop features, such as totals queries.

2. To change the location in which you create the file, click Browse  next to the File Name box, browse to and select the new location, and then click OK.

3. You should not try to format your data by including blank rows or columns as you might do in an Excel worksheet, because doing so will waste space in your table. The table merely contains your data. All visual presentation of that data will be done in the forms and reports that you design later.

Lesson 11: Creating a Database from a Template

Welcome to Lesson 11 of Unit 4. In Lesson 10, you have learned to identify the steps in creating a blank database.

In this lesson you shall learn to identify the steps in creating a database from a template.

Your Aim:

- identify the steps in creating a database from a template

Access Template

If you are new to databases, or if you just do not want to spend time creating a database from scratch, Microsoft Access 2010 provides various templates that you can use to quickly create a database that is ready for use.

An **Access template** is a file that, when opened, creates a complete database application. The database is ready to use, and contains all the tables, forms, reports, queries, macros, and relationships that you need to start working. Since the templates are designed to be complete end-to-end database solutions, they save you time and effort and enable you to start using your database right away. After creating a database by using a template, you can customise the database to better suit your needs, just as if you had built the database from scratch.

Each template is designed to meet specific data management needs. This lesson describes the templates that are included with Access 2010. If your particular needs are not met by one of these templates, you can connect to Office.com and browse a wider selection of templates.

There are two types of templates: the web database templates and the client database templates.

Let us take them one at a time.

Web Database Templates

Five Web database templates are included with Access 2010. The term "**Web database**" means that the database is designed to be published to a SharePoint server that is running Access Services. Microsoft **SharePoint** allows groups to set up a centralized, password protected space for document sharing. The following are the web database templates:

- **Assets Web Database** Keep track of assets, including specific asset details and owners. Categorise and record the condition of assets, when they were acquired and where they are located.

- **Charitable Contributions Web Database** If you work for an organization that accepts charitable contributions, use this template to track fundraising efforts. You can track multiple campaigns and report on the contributions received during each one. Track contributors, campaign-related events, and pending tasks.

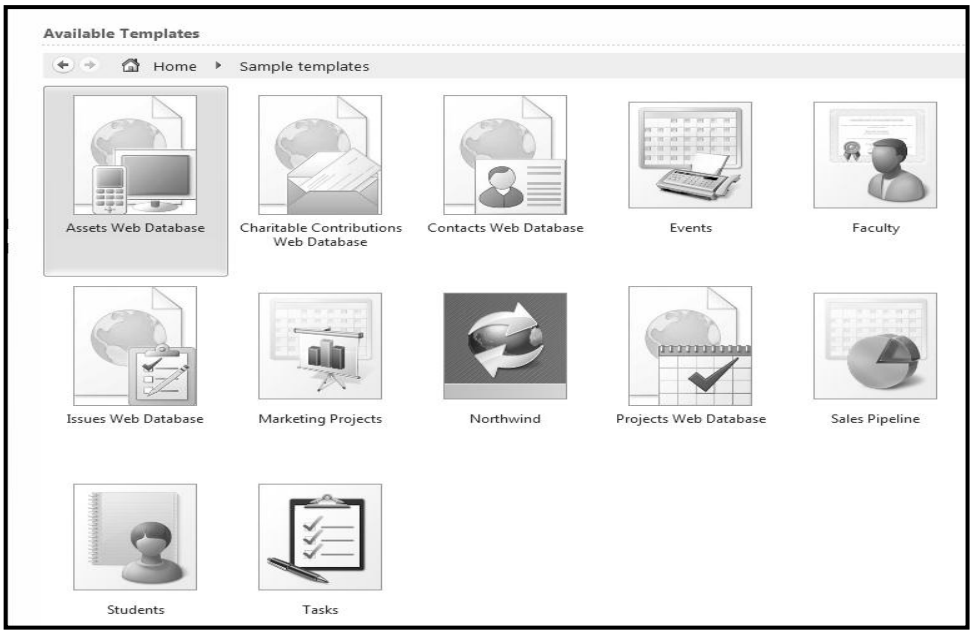
- **Contacts Web Database** Manage information about the people that you or your teams work with, such as customers and partners. Track name and address information, phone numbers, e-mail addresses, and even attach pictures, documents, or other files.

- **Issues Web Database** Create a database to manage a set of issues, such as maintenance tasks that need to be performed. Assign, prioritize, and follow the progress of an issue from start to finish.

- **Projects Web Database** Track a variety of projects and their associated tasks. Assign tasks to people and monitor the percentage of completion.

Client Database Templates

Seven client database templates are included with Access 2010. They are not designed to be published to Access Services, but can still be shared by placing them in a shared network folder or document library. The following are the client database templates.



- **Events** Track upcoming meetings, deadlines, and other important events. Record a title, location, start time, end time, and description, and also attach an image.

- **Faculty** Manage important information about faculty members, such as telephone numbers, addresses, emergency contact information, and employment data.

- **Marketing Projects** Manage the details of a marketing project and schedule and monitor project deliverables.

- **Northwind** Create an order tracking system that manages customers, employees, order details, and inventory.

The Northwind template contains sample data that you will need to remove before using the database.

- **Sales Pipeline** Monitor the progress of prospective sales within a small group of sales professionals.
- **Students** Manage information about your students, including emergency contacts, medical information, and information about their guardians.
- **Tasks** Track a group of work items that you or your team needs to complete.

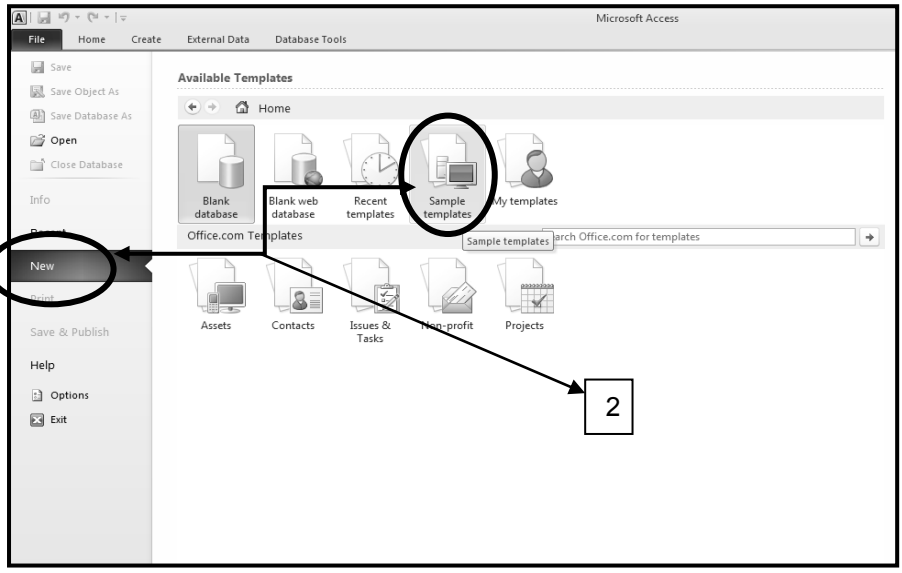
Create a Database by Using a Template
Having learnt the types of templates, you are now ready to learn the process of creating a database by using a template.

Notice that the steps in creating a database from either Web databases or client databases is the same. However, the procedure differs slightly if you are downloading a template from Office.com.

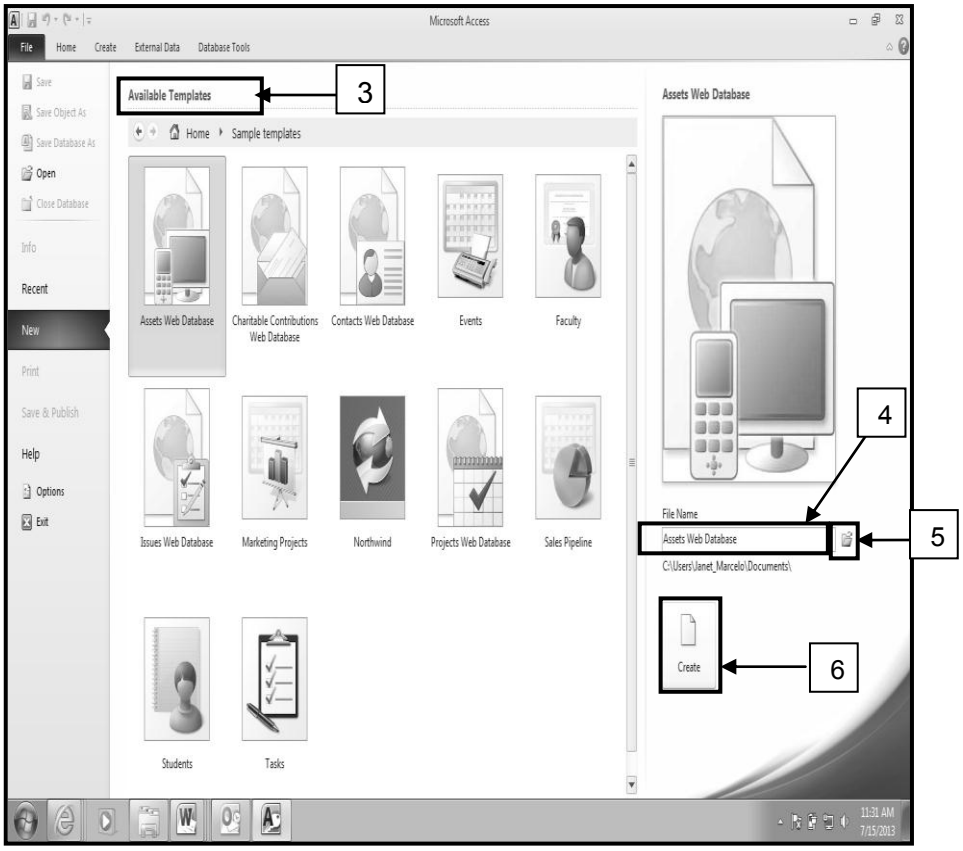
Create a Database by Using a Template that is Included with Access 2010
Microsoft provides quite a few prebuilt database templates to assist you in jumpstarting your database development process.

Follow the steps on how to create a database by using a template that is included with Access 2010.

1. Start Access 2010.
2. On the **New** tab of Microsoft Office Backstage view, click **Sample Templates**.



3. Under **Available Templates**, click the template that you want to use.



4. In the **File Name** box, type a file name.

5. Optionally, click the folder icon next to the **File Name** box to browse to a location where you want to create the database.

   If you do not indicate a specific location, Access creates the database in the default location that is displayed below the **File Name** box.

6. Click **Create**.

After following the steps , Access creates the database and opens it for use.

Create a database by using a template from Office.com

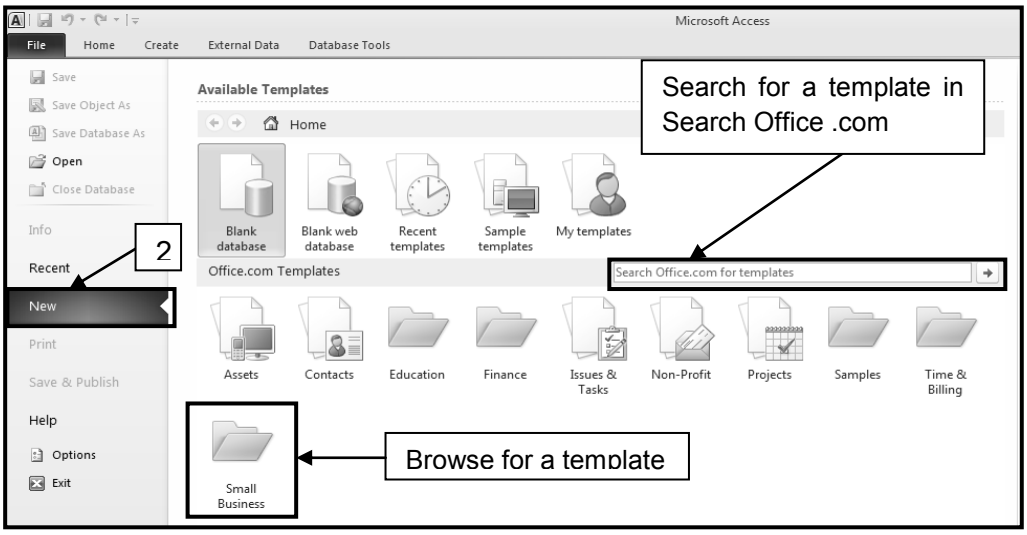
If you are connected to the Internet, you can browse or search for templates on Office.com from within Microsoft Office Backstage view. Use the following procedures:

1. Start Access 2010.

2. On the **New** tab of Backstage view, do **one** of the following:

   - **Browse for a template** Under **Office.com Templates**, click the category of template that you are interested in (for example, **Small Business**).

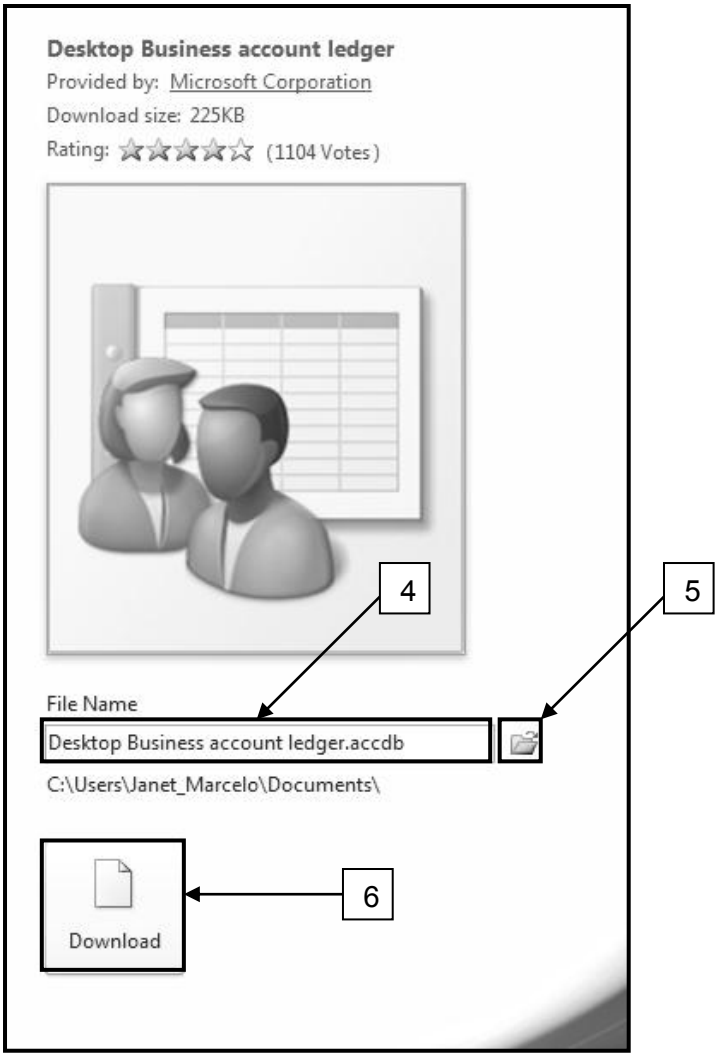
- **Search for a template** In the **Search Office.com for templates** box, type one or more search terms, and then click the arrow button to search.



Available Template using the Search for a Template in Office.com

3. When you find a template that you want to try, click it to select it.

4. In the **File Name** box, type a file name.



5. Optionally, click the folder icon next to the **File Name** box to browse to a location where you want to create the database. If you do not indicate a specific location, Access creates the database in the default location that is displayed below the **File Name** box.

6. Click **Download**.

Activity 1: Identify what type of template is described.

1. Track a group of work items that you or your team needs to complete. _____

2. Track a variety of projects and their associated tasks. Assign tasks to people and monitor the percentage of completion. _____

3. Track contributors, campaign-related events, and pending tasks. _____

4. Monitor the progress of prospective sales within a small group of sales professionals. _____

5. Manage the details of a marketing project and schedule and monitor project deliverables. _____

6. Track upcoming meetings, deadlines, and other important events. _____

7. Keep track of assets, including specific asset details and owners. _____

8. Create an order tracking system that manages customers, employees, order details, and inventory. _____

9. Manage information about the people that you or your teams work with, such as customers and partners. _____

10. Create a database to manage a set of issues, such as maintenance tasks that need to be performed. _____

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answers. Make sure you do the necessary corrections before moving onto next part of this lesson.

Summary

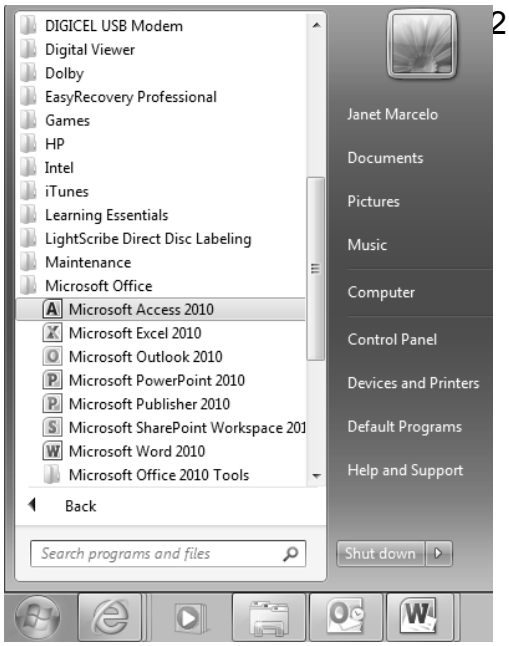
You have come to the end of Lesson 11. In this lesson you have learned how to identify the steps in creating a database from a template.

NOW DO PRACTICE EXERCISE 11 ON THE NEXT PAGE.

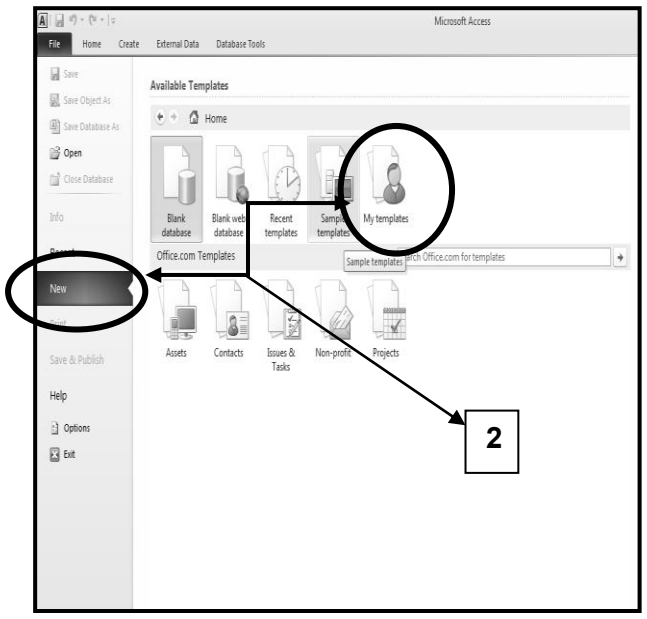
Practice Exercise 11

A. Provided below are screenshots to show how to create a database by using a Template that is included with Access 2010. Write the steps below each screen shot.

1.



2.

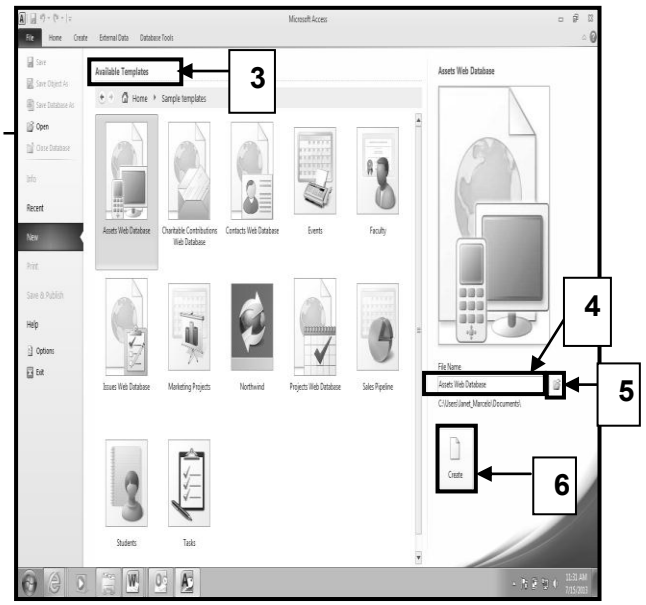


_____ _____

_____ _____

_____ _____

3-6



_____

_____

_____

_____

_____

_____

_____

_____

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 2.

Answers to Activity 1

1. Tasks
2. Project Web Database
3. Charitable Contributions Web Database
4. Sales Pipeline
5. Marketing
6. Events
7. Assets Web Database
8. Northwind
9. Contacts Web Database
10. Issues Web Database

Lesson 12: Opening, Closing and Saving a Database

Welcome to Lesson 12 of Unit 4. In Lesson 11, you have learned to identify the steps in creating a database from a template.

In this lesson you shall learn to identify the steps in opening, closing and saving a database.

Your Aim:

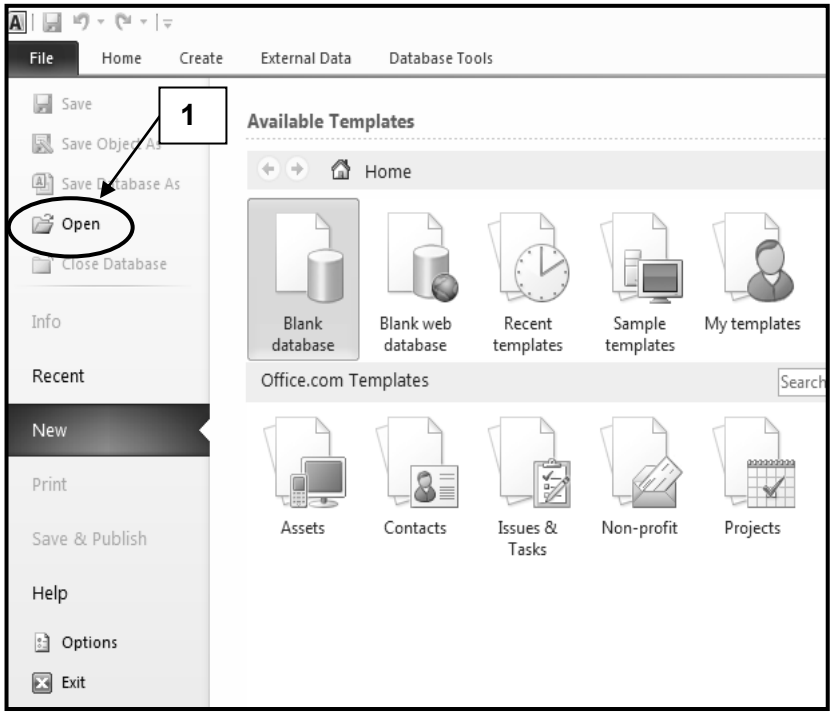
- identify the steps in opening, closing and saving a database

Opening a Database

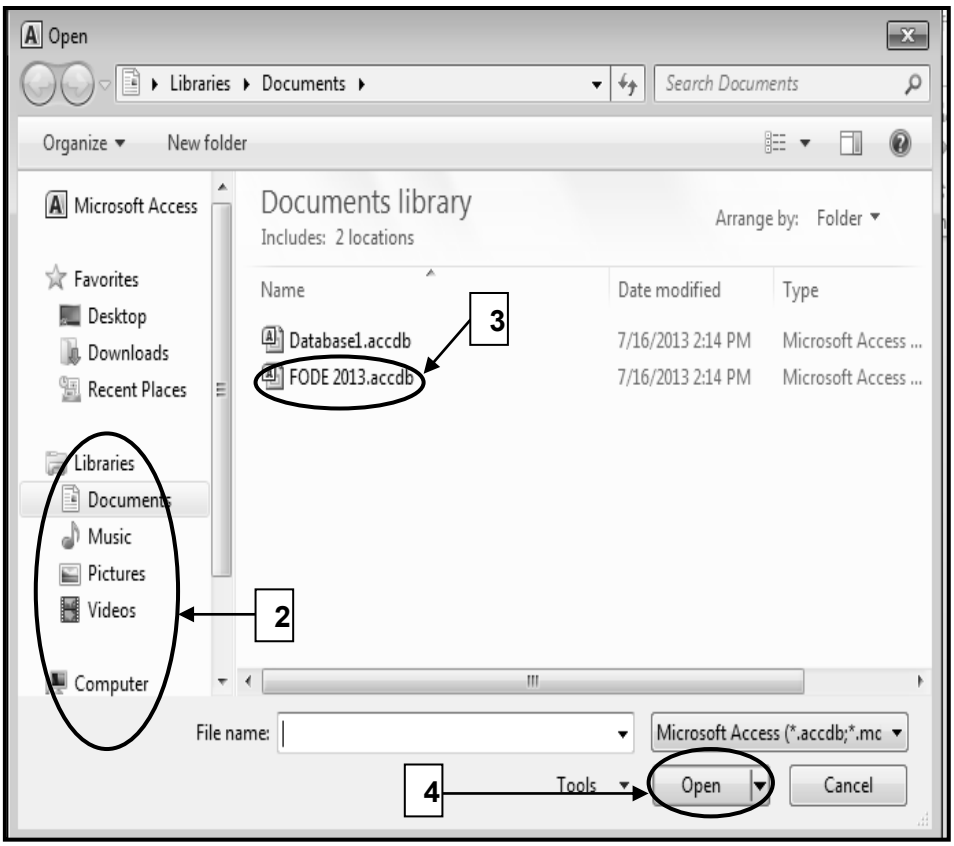
Opening a database in Access requires familiarity with the Access Window. Refer to Lesson 3 where you learnt about the parts of an Access Window.

The following are the steps in opening a database:

1. On the **File tab**, click **Open**.



2. In the list of drives, click the drive that you think might contain the database.



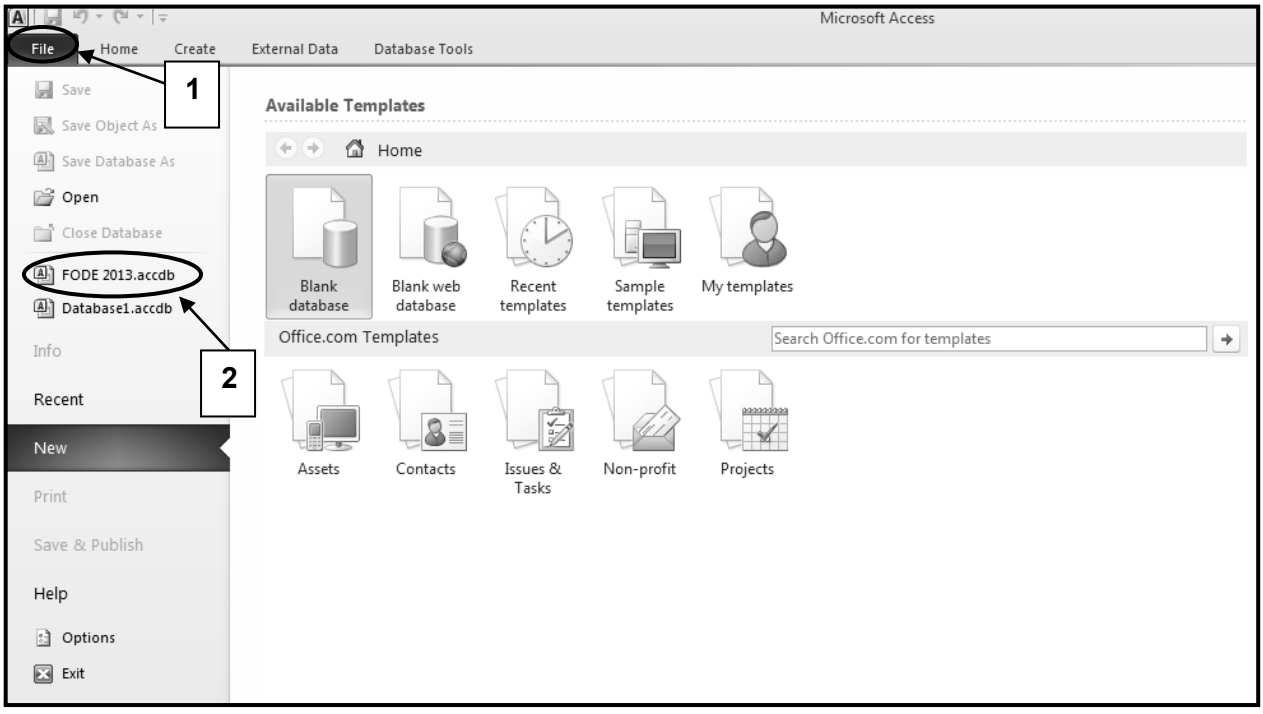
3. Click the filename of the database.

4. Click **Open** to open the database.

If you have saved your previous databases before then you can follow these steps to open them.

1. On the **File tab**.

2. Click on the File name of the database.



3. When you find the database, do one of the following:

- To open the database in default open mode, double-click it.
- To open the database for shared access in a multiuser environment, so that both you and other users can both read and write to the database at the same time, click Open.
- To open the database for read-only access, so that you can view it but can not edit it, click the arrow next to the Open button, and then click Open Read-Only.
- To open the database for exclusive access, so that no one else can open it while you have it open, click the arrow next to the Open button, and then click Open Exclusive.
- To open the database for read-only access, click the arrow next to the Open button, and then click Open Exclusive Read-Only Other users can still open the database, but they only have read-only access.

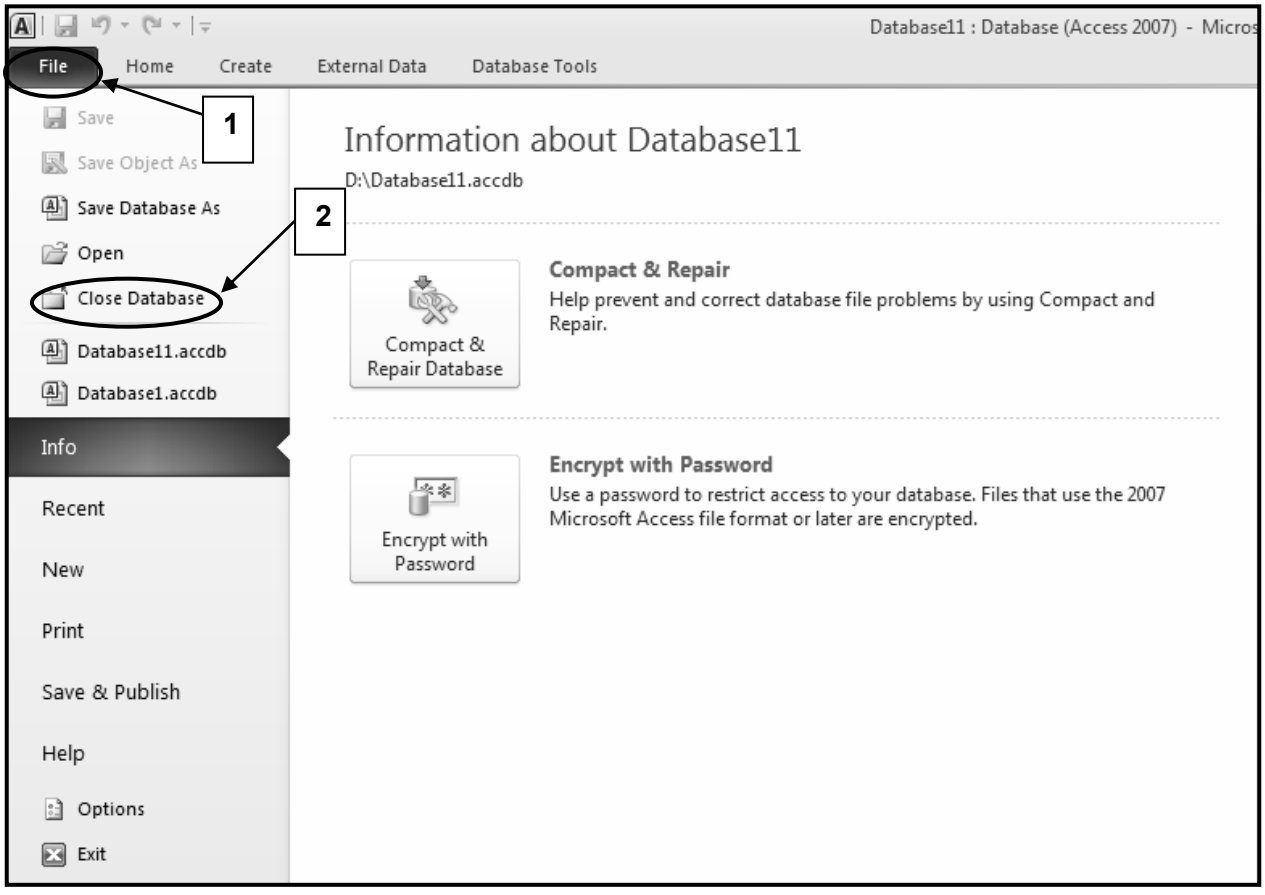
To quickly open one of the last several databases that you had open, on the File tab, click Recent, and then click the file name.

Closing a Database

Closing a database simply means that you are going to exit the database or the program itself. Follow the steps on how to close the database and the program.

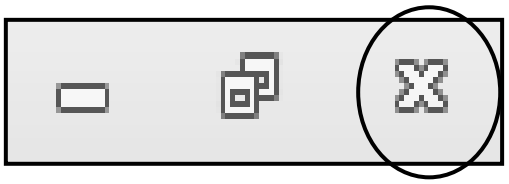
1. Click on **File tab**.

2. Click on **Close Database**.



If you want to close the program entirely, follow these steps:

1. Click the –x" on the upper right corner of the application window. The program will be closed.



Here is another way of closing the entire program.

1. Click **File tab**.

2. Click **Exit** to close the program.

Saving a Database
In Lesson 4 you learnt how to save objects in MS Access. Notice that the steps are very similar.

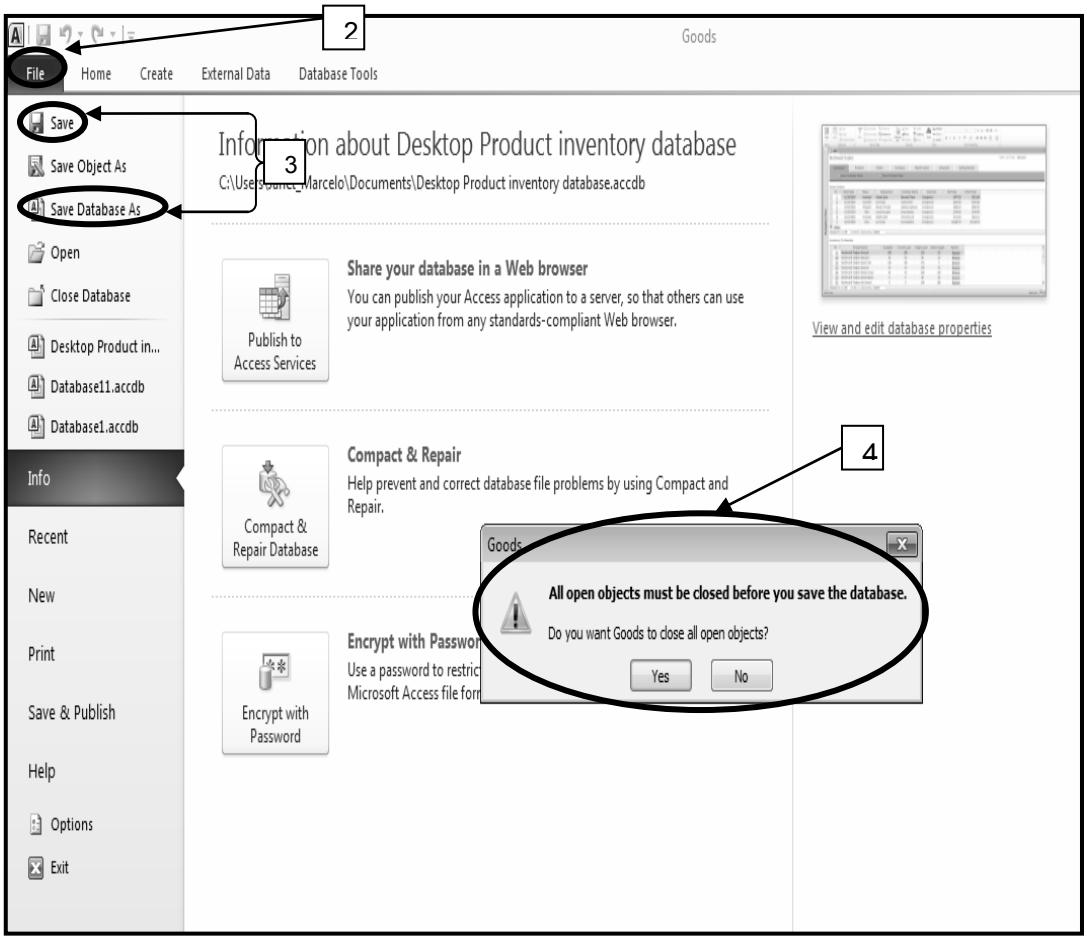
Here are the steps on how to save a database in MS Access 2013.

1. Start **Access 2013**.

2. Go to **File tab**.

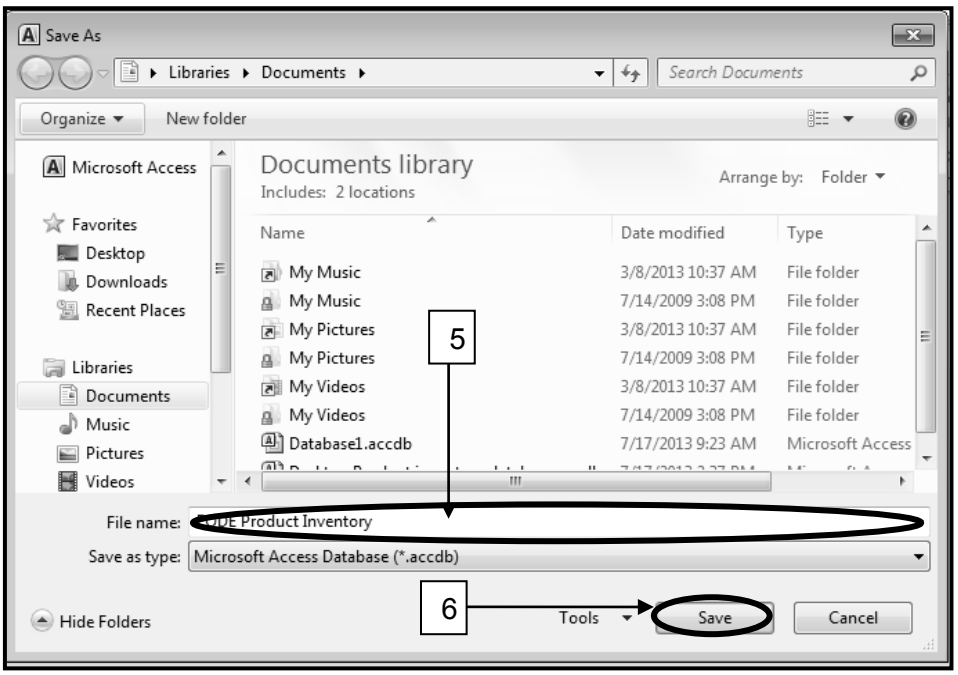
3. Click on "**Save**" for an existing database that you have previously worked on or "**Save Database As**" for a newly created database.

4. If you have chosen "**Save Database As**", a Dialogue box will appear informing you that "**All open objects must be closed before you save the database**". Click **YES** or **NO** as needed.



5. The "**Save As**" Dialogue box will appear. Type the file name of the database on the selected drive for its location.

6. Click "**Save"** to save the database.



Activity 1: Answer the questions.

1. When do you use —Save” and —Save Database As”?

   _____

   _____

2. What are the steps if you need to close a database?

   _____

   _____

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answers. Make sure you do the necessary corrections before moving onto next part of this lesson.

Issues in Saving a Database

If you created a database by using Microsoft Access 2010 and you want to share the database with people who are using versions of Access earlier than Access 2007, you can save the database to an earlier file format by using the Save As command.

However, Access 2010 includes a number of new features that can prevent you from saving to an earlier file format. Some new features can not be used from within Access 2007, even though Access 2007 uses the same .accdb file format as Access

2010. This lesson will also outline the basic process of converting to an earlier file format and the factors that can prevent conversion.

Study the next section of this lesson on how to make a copy of the existing database, and save it in a new format.

Use the following procedure to convert the database to any of the three most recent formats: Access 2000, Access 2002-2003, or Access 2007. This command preserves the original database in its original format, and creates a copy in the format that you specify.

1. Close the Access file. If the file is a multiuser Access database located on a server or in a shared folder, ensure that no one else has it open.

2. Start **Access 2010**.

3. On the **File tab**, click **Open**.

4. Browse to the location of the file that you want to convert, and then double-click it to open it.

If the Database Enhancement Dialogue box appears, asking whether you want to enhance the database, click No.

5. If a form opens when you start the database, close the form.

6. On the **File tab**, click **Save Database As**.

7. In the **Save As** Dialogue box, type a name for the new database.

Unless you will save the new database in a different location, its name must be different from that of the original database.

In either case, it is usually best to use a different name, so that you can easily distinguish between the front-end database and the back-end database. However, if you are converting to Access 2007 format, the file name extension changes from .mdb to .accdb, so that you can use the same file name.

8. Click **Save**.

Use Access 2007 to open a database that was created in Access 2010

The default file format for both Access 2010 and Access 2007 is the **.accdb** file format. In fact, when you create a new database in Access 2010, the file format displayed in the title bar is Access 2007. As a result, you can use Access 2007 to open a database that was created in Access 2010 without first using the Save As command.

However, Access 2010 includes some new features that require Access 2010 to run. Depending on the feature, one of the following behaviourss might occur when you try to use the database in Access 2007:

- You can not modify the object that uses the new feature.

- You can not open the object that uses the new feature.
- You can not open the database in Access 2007 at all.

Save a copy of an .accdb file in the .mdb file format
Versions of Access prior to Access 2007 use the .mdb file format by default. In Access 2010, you can convert an .accdb file to an .mdb file, but only if the .accdb file does not contain any features that require the .accdb file format to run.

The following are the steps on how to save a copy of an .accdb file in the .mdb file format:

1. On the **File tab**, click **Save & Publish**.
2. Under **Save Database As**, do one of the following:
   - To save a copy of the database in a format that can be opened by using Access 2002 or later, click Access 2002 - 2003 Database (*.mdb).
   - To save a copy of the database in a format that can be opened by using Access 2000 or later, click Access 2000 Database (*.mdb).
3. Click **Save As**.

   If the database contains any features that prevent you from saving it as an .mdb file, Access displays a message and prevents you from continuing. The next section outlines factors that can prevent saving as an .mdb file. You must address those factors before you can continue with this procedure.
4. In the Save As Dialogue box, in the File name box, type a name for the database file, and then click Save.

Access closes the original database and opens a new copy of the database in the format that you specified. Any changes that you make to the database affect only the new copy.

To make changes to the original database, you must reopen the original database.

To convert an Access 2010 database to a file format that is compatible with Access 97 or earlier, you must first use Access 2010 to convert the database to the Access 2000 file format or the Access 2002 - 2003 file format.

Then you use an earlier version of Access to convert the database to the format that you want. For example, by using the Convert Database command in Access 2003, you can convert an Access 2000 database or an Access 2002 - 2003 database to the Access 97 file format.

Factors that prevent conversion to the .mdb file format
Certain new data types and features can be used only in the .accdb file format and are not supported by earlier versions of Access**. If your**

database contains any of these features, and you attempt to save it as an earlier version database, Access displays a message and does not convert the database.

The following list describes factors that prevent conversion to an earlier file format:

1. Use of new data types, field property settings, and objects.

   The following new data types, field property settings, and objects are not supported by earlier versions of Access:

   - Calculated fields in tables
   - Data macros
   - Multivalued lookup fields (lookup fields that have the Allow Multiple Values property set to Yes)
   - The Attachment data type
   - History-tracking Memo fields (Memo fields that have the Append Only property set to Yes)

You can not convert the database unless you revise the database so that it no longer uses these features.

You can convert a database that contains Rich Text Memo fields (Memo fields that have the Text Format property set to Rich Text).

However, versions of Access earlier than Access 2007 do not interpret the field as Rich Text. If any Rich Text formatting is present in the data, the text displays with HTML tags instead of the formatting, as in the following example.

Original Rich Text	Text as viewed in earlier versions of Access
This is an example.	This is an example.

2. Links to external files that are not supported by earlier versions of Access In Access 2007 , you can link to several types of data that are not supported by earlier Access versions. These include:

   - Tables in other .accdb files
   - Microsoft Excel 2007 or Excel 2010 worksheets (.xlsx)
   - Windows SharePoint Services lists

   If your database contains links to these types of data sources, you must delete the links before you can convert the database to the .mdb file format.

One solution is to import the data instead of linking to it, so that the data is contained in the Access database itself.

3. Database encryption .accdb files use a new password-protection method that is not compatible with earlier file formats. If you add a password to an Access 2007 or Access 2010 database by using the Encrypt with Password command, you must first remove the password before you can convert the database to an earlier file format.

   In Access 2010, do the following to decrypt the database:

   1. On the **File tab**, click **Info**, and then click **Decrypt Database**.

   2. In the **Unset Database Password Dialogue box**, type the password that was used to encrypt the database, and then click **OK**.

Activity 2: Answer the questions.

1. What are the factors which prevent the conversion to the .mdb file format?

   _____

   _____

   _____

2. What is the reason preventing an earlier file format of Access to be saved in Access 2010?

   _____

   _____

   _____

3. What is the default file format for both Access 2010 and Access 2007

   _____

   _____

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answer. Make sure you do the necessary corrections before moving on to the next part of this lesson.

Summary

You have come to the end of Lesson 12. In this lesson, you have learned how to open, close and save a database.

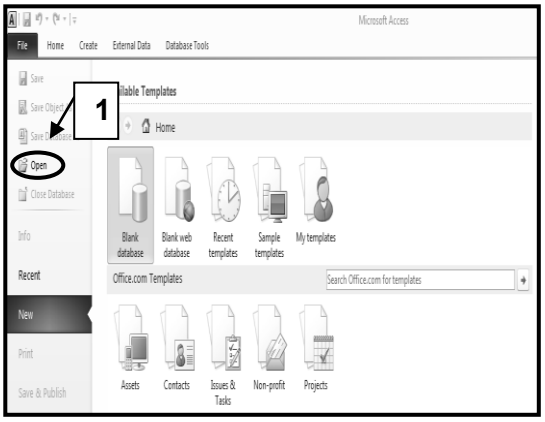
NOW DO PRACTICE EXERCISE 12 ON THE NEXT PAGE.

Practice Exercise 12

A. Provided below are screenshots to show how to open and close a database with Access 2010. Write the steps beside each screen shot.

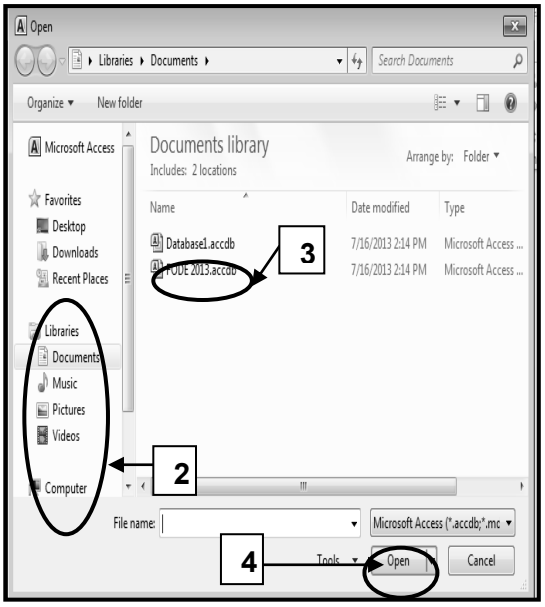
Opening a Database

1.



_____
_____
_____
_____
_____
_____
_____

2-4



_____
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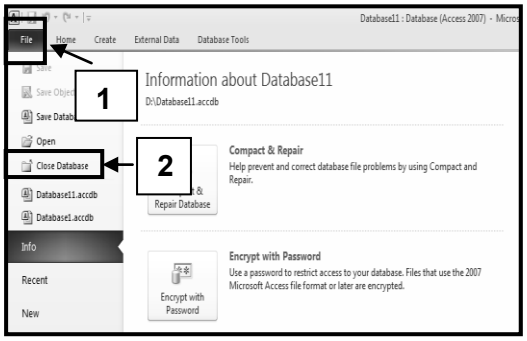
_____

Closing a Database

1.



_____
_____
_____
_____
_____
_____

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 2.

Answers To Activity 1

1. Click on —Save” for an existing database that you have previously worked on or –Save Database As” for a newly created database.

2. 1. Click on File tab.

   2. Click on Close Database.

Answers To Activity 2

1.

   a. Use of new data types, field property settings, and objects.

   b. Links to external files that are not supported by earlier versions of Access In Access 2007 , you can link to several types of data that are not supported by earlier Access versions.

   c. Database encryption .accdb files use a new password-protection method that is not compatible with earlier file formats.

2. Access 2010 includes a number of new features that can prevent you from saving to an earlier file format. Also, some new features can not be used from within Access 2007, even though Access 2007 uses the same .accdb file format as Access 2010.

3. .mdb file

Answers to Practice Exercises

Practice Exercise 7

1. True
2. True
3. False
4. True
5. False
6. True
7. True
8. False
9. True
10. True
11. False
12. True
13. True
14. True
15. True

Practice Exercise 8

1. a. Goroka and Kainantu
   b. Alotau, Tari, Kainantu, Ialibu and Wau
2. a. 3
   b. 15/9/1784
   c. Lady Luscha
   d. 7

Practice Exericise 9

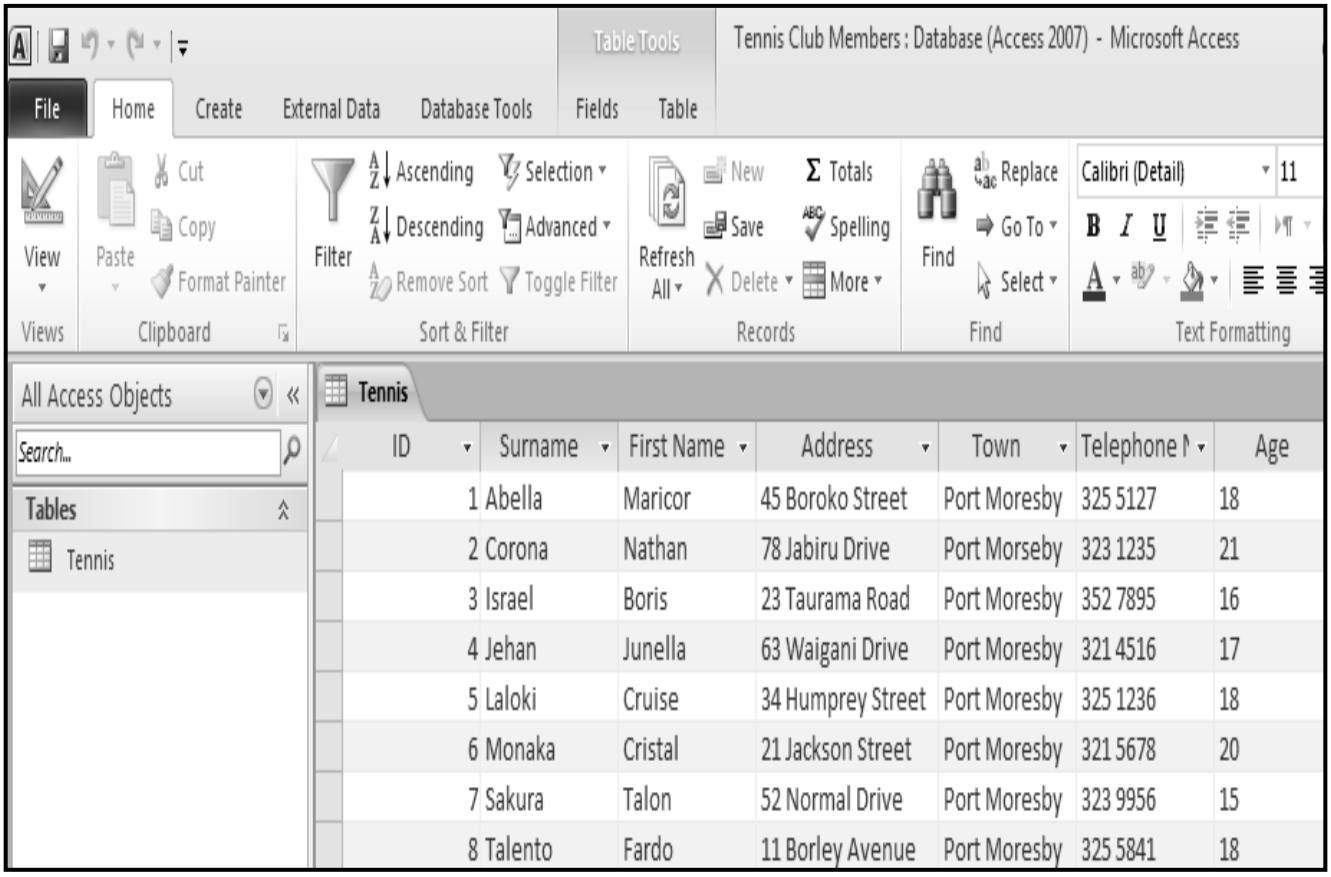
1.
   1. user
   2. database access langauage
   3. DBMS
   4. Database Jet Engine
   5. results
   6. commands
   7. Inquiry Report
   8. screen

2. The database access language is used to access the data to and from the database. The users use the database access language to enter new data, change the existing data in the database and to retrieve required data from the database.

3. It is a very important component of the database system. Most of the organizations generate, store and process large amount of data. The data acts a bridge between the machine parts like hardware and software and the users which directly access it or access it through some application programs.

Practical Exericise 10

Your work may look like the example below.



ID	Surname	First Name	Address	Town	Telephone N	Age
1	Abella	Maricor	45 Boroko Street	Port Moresby	325 5127	18
2	Corona	Nathan	78 Jabiru Drive	Port Morseby	323 1235	21
3	Israel	Boris	23 Taurama Road	Port Moresby	352 7895	16
4	Jehan	Junella	63 Waigani Drive	Port Moresby	321 4516	17
5	Laloki	Cruise	34 Humprey Street	Port Moresby	325 1236	18
6	Monaka	Cristal	21 Jackson Street	Port Moresby	321 5678	20
7	Sakura	Talon	52 Normal Drive	Port Moresby	323 9956	15
8	Talento	Fardo	11 Borley Avenue	Port Moresby	325 5841	18

Practice Exericise 11

1. Start Access 2010.
2. On the **New** tab of Microsoft Office Backstage view, click **Sample Templates**.
3. Under **Available Templates**, click the template that you want to use.
4. In the **File Name** box, type a file name.

5. Optionally, click the folder icon next to the **File Name** box to browse to a location where you want to create the database. If you do not indicate a specific location, Access creates the database in the default location that is displayed below the **File Name** box.

6. Click **Create**.

Practice Exericise 12

Opening a Database

1. On the File tab, Click Open.
2. In the list of drives, click the drive that you think might contain the database.
3. Click the filename of the database.
4. Click Open to open the database.

Closing a Database

1. Click on File tab.
2. Click on Close Database.

End of Topic 2.

Now Do Exercise 2 in Assignment Book 1 Then Go to Topic 3.

TOPIC 3

CREATING TABLES

TOPIC 3: CREATING TABLES

In this topic you will learn what a table is. This aims to provide steps to create and modify an organised presentation of your data and makes your database look polished and professional.

In this topic, you will study about the following:

Lessons 13 identifies a table and lists the steps of creating it in Datasheet View and Design View.

Lesson 14 focuses on how to add fields in Design View and explains the importance of adding fields in this type of view.

Lesson 15 explains the different data types used in a table and teaches how to identify these data types according to the fields used

Lesson 16 discusses steps on how to enter records in each field and teaches the techniques on how to navigate within the table.

Lesson 17 gives the steps on how to edit fields and their properties.

Lesson 18 discusses the steps on how to add, move and delete fields and explains the importance of doing these procedures.

By the end of Topic 3, you should be able to create a neat, well- presented and user-friendly table in Datasheet View and Design View and provide a database that is easy to use.

Lesson 13: Creating Tables in Datasheet View

Welcome to Lesson 13 of Unit 4. In Lesson 12, you learned to open, close and save a database.

In this lesson you will be introduced to database table.

Your Aims:

- define a table
- identify the sections of a table
- differentiate datasheet view from design view
- create a table in datasheet view
- create a table in design view

What is a Database Table?

All database objects rely on the existence of a database table. A **database object** is any **defined object** in a **database** that is used to store or reference data. Some examples of **database objects** include tables, views, clusters, sequences, indexes, and synonyms.**Tables** are the most important component of an Access database because tables are where all of your information is stored.

Tables in an access database are similar in many ways to Excel tables. It is the fundamental object in a relational database and tables to use rows and columns to present the data rather like a spreadsheet. For this reason, when you view the data as a table in an *Access* database, you are in what *Access* calls a *Datasheet View*.

Tables contain grids of rows and columns that contain your data about a specific topic, such as name of products or name of persons. Tables organise data into columns and rows. Each *record* in a table contains information about one item, such as a particular employee. A record is made up of *fields*, such as name, address and telephone number. A record is also commonly called a row, and a field is also commonly called a column. Most Access databases will consist of more than one related table, but the first database we will create will be a simple, single-table database.

Example: A telephone book is made up of several related tables. There is the main table which contains all of the phone listings. There are also related tables containing information such as area codes and post codes. The following is an example of how a telephone listing may appear in a phone book.

LAST NAME	FIRST NAME	ADDRESS	PROVINCE	PHONE
Kaian	Jubilee	Waigani	Lae, Morobe	73187654
Raepa	Stephanie	East Boroko	Madang	72065200

Somers	Billy	Boroko	East New Britain	73012987

Each category of data (Name, Initials, and Address and others) is a **field**. Each individual item of information (such as the information for Kaian) is a **record**.

Your database can contain many tables; each table is storing information about a different subject. Each table can contain many fields of different types, including text, numbers, dates, and pictures.

Below are list of examples of tables you might create.

- Table that tracks tasks and due dates
- Product items, with prices and pictures for each item
- An inventory of equipment or stock on hand
- List of employees in a certain company

You should plan and design your database carefully to ensure its correctness and to avoid making too many changes.

Designing a Table
Before entering data in each of the sections in the table, you must first know the data you need to enter in the fields.

NAME	DESCRIPTION
Field Name	You can place here the person‘s name, address, phone and birthday.
Data Type	Data Type tells Access what kind of information can be stored in the field. You can click the drop-down arrow to choose the data type such as Text, Memo, Number, Date/Time, Currency, AutoNumber, Yes/No, OLE Objects, Hyperlink, Lookup Wizard.
Description	The description explains the data in the field. It will only appear in the status bar but not in the table.

When you have created a new database, a new blank table is already created. You could create this table as you go by simply entering data. You have learned from Lesson 6 that it is suggested that you plan a database before working on it.

A simple database, such as a contact list, might use only a single table. Many databases, however, use several tables. When you create a new database, you create a new file on your computer that acts as a container for all of the objects in your database, including your tables.

You can create a table by creating a new database, by inserting a table into an existing database, or by importing or linking to a table from another data source such as a Microsoft Office Excel workbook, a Microsoft Office Word document, a text file,

or another database. When you create a new blank database, a new empty table is automatically inserted for you. You can then enter data to start defining your fields.

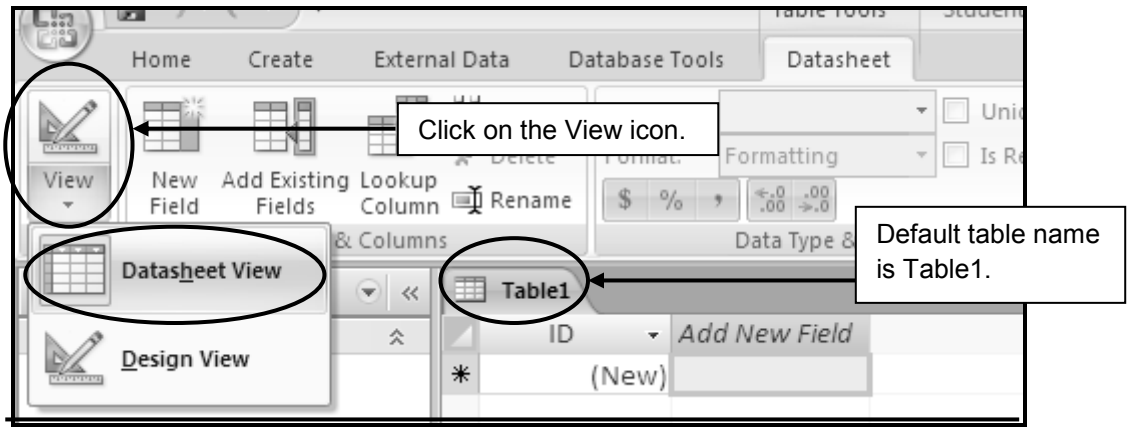
You can create a table in Datasheet View, and Design View. Follow the steps provided and you will learn which method is the best to use when creating a table.

Creating Table from the Datasheet View
The **Datasheet View** is used for working with the actual data in the table. This is the default view once you create a database. In this view, a table is already created with default name Table1. The table name can be changed once you save the table. A field name ID is already created, all you have to do is to add new fields needed for the table that you want to create.

Activity 1: Follow the given steps to create a table in Datasheet View.

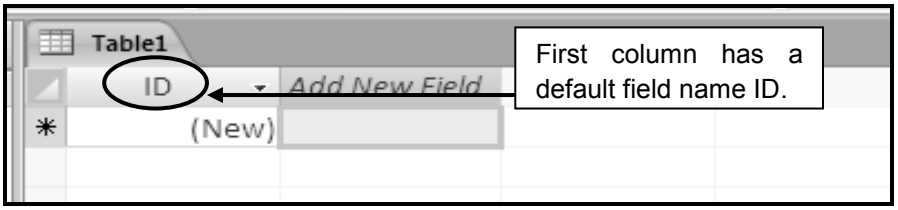
Before doing this activity make sure you open your MS Access and you have created a blank database. Name your database as **STUDENTS LIST**.

1. Click the view icon on the ribbon.



2. You will notice that Datasheet view icon is being highlighted, this means that you are in Datasheet view.

3. A table is already created with a default field name **ID** on the first column and a default table name **Table1.**



4. The second column is also prepared for additional fields to be added. Adding fields will be discussed on the next lesson.

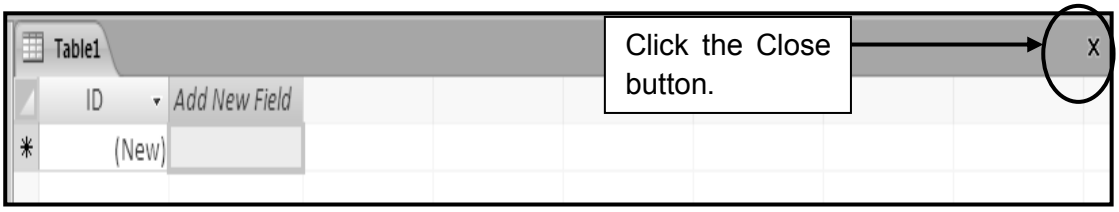
Thank you for completing this activity. You have already created a table in Datasheet View. In this view most of the fields are generated by Access. Datasheet View is really useful only if you feel the need to quickly enter some data into the table before setting up the table's properties.

Creating Table from the Design View

The **Design View** is used for modifying the design of the table. This is the most detailed way to construct a table. In this method of creating a table, you will start from the scratch. Unlike the previous table you created, in Design View, you will enter the fields, select data type and note the description of the fields you want to create.

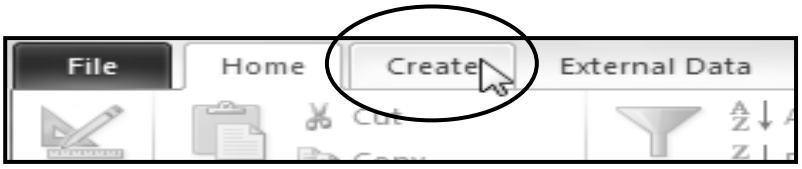
Activity 2: Follow the given steps to create a table in Design View.

1. Click the Close button to close the table we created in Datasheet view.



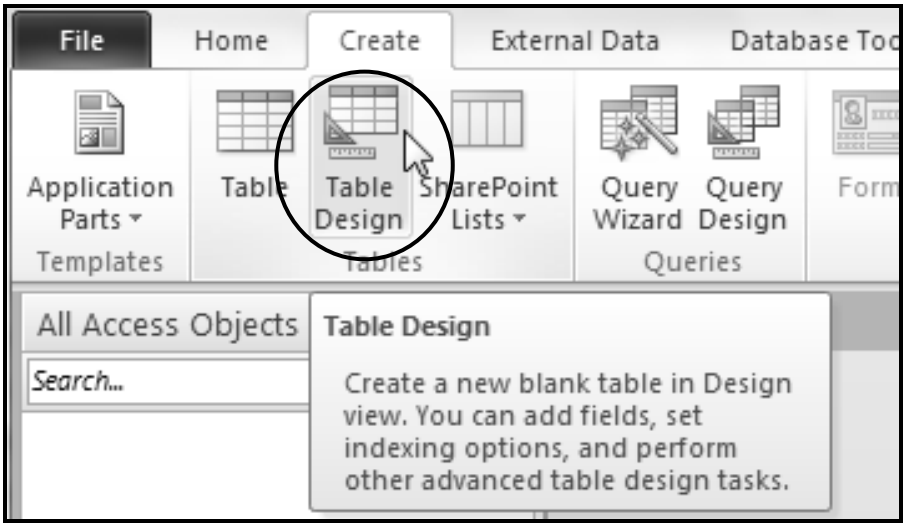
Once prompted you want to save changes, select **NO**.

2. Click **Create tab on the Ribbon**.



In the create tab we can see some options for creating new content in your database including Tables. We will use the **Table Design** view which is well suited for setting up the structure of a table.

3. Click the **Table Design** button beneath the **Create** tab.



A new table will now be created and displayed in **Design** view.

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answer. Make sure you do the necessary corrections before moving on to the next part of this lesson.

Summary

You have come to the end of Lesson 13. In this lesson, you have identified what a table is and learned the different sections of a table. You also differentiated the Datasheet view and Design view and were able to create a table in these two types of views.

NOW DO PRACTICAL EXERCISE 13 ON THE NEXT PAGE.

Practical Exercise 13

A. Identify what is being described below. Write your answer on the space provided.

1. The most important component of an Access database where all of the information is stored _____
2. The default view every time you create a new table _____
3. A table uses _____ and _____ to present data.
4. Each category of data such as Name, Address, and Phone number is a _____.
5. Each individual item of information is a _____.

B. Write TRUE if the statement is correct and FALSE if it is incorrect.

1. When you have created a new database, a new blank table is already created in Datasheet View. _____
2. A record is commonly called a row, and a field is commonly called a column. _____
3. You can create a table in Datasheet View and Design View. _____
4. Design View is the view you use for entering data into the table. _____
5. Datasheet view is well suited for setting up structure of a table._____

C. Name the following icons.

_____

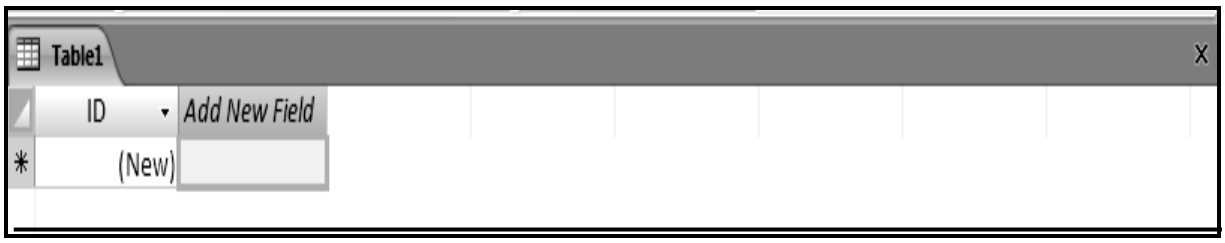
_____

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 3.

Answers to Activities

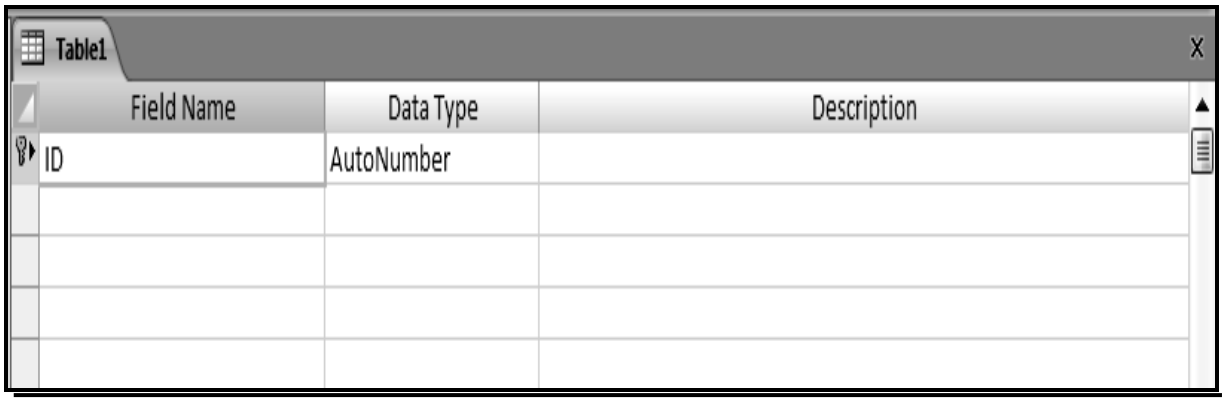
Activity 1

Your first table should look like the one below:



Activity 2

Table in Design view should look like the one below:



Lesson 14: Adding Fields in Design View

Welcome to Lesson 14 of Unit 4. In Lesson 13, you learned how to create a table in Datasheet View and Design View.

In this lesson you will learn how to add fields into your table.

Your Aims:

- define a field
- identify the steps in adding a field
- create a primary key
- save and close the table created

Storing Data in Database

When you create a database you store your data in tables like subject-based lists of rows and columns. You have learned from Lesson 13 that columns are also called fields, which are the information items you want to track. You define a table in terms of the fields you want to track for that subject.

For example, in a Contacts table you might create fields for Name, Initials, Telephone Number and Address. For a Products table you might create Product Name, Product ID and Price.

It is important that you choose fields carefully. For example, it's usually a bad idea to create a field to store a calculated value. You can usually have Office Access calculate the value when needed instead.

When choosing fields, you must try to store information in its smallest useful parts. For instance, instead of a FullName, consider storing a LastName and a FirstName. Generally speaking, if you need to report, sort, and search or calculate on an item of information, put it in a column by itself.

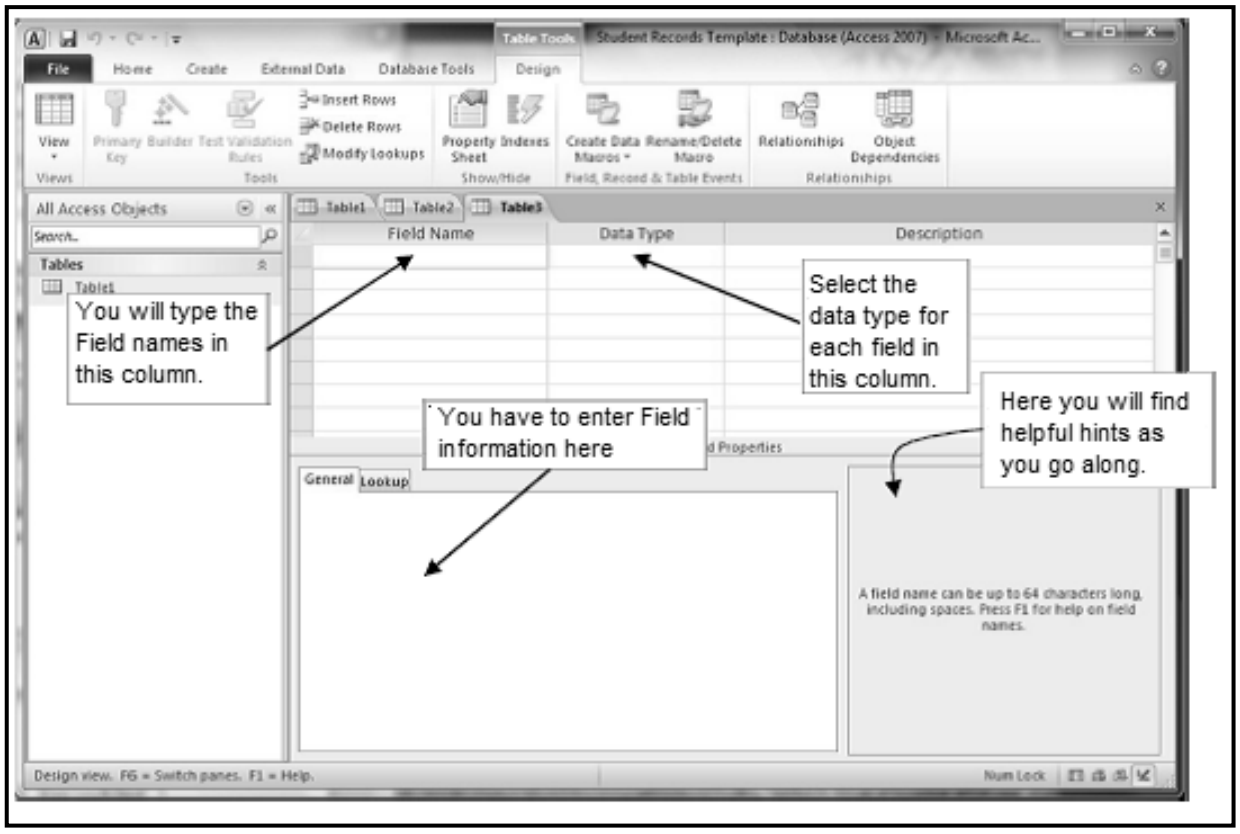
Fields and Primary Keys

When you create a new table, one of your first tasks is to create the fields that will make up the table. One of the fields should be a primary key. A **Primary Key** is a field which is unique to each record. In the example below, **Last Name** is not unique for each record, since more than one record can contain the same name as shown. The same is true for **First Name** and **Province**.

It is even possible that there may be more than one phone listing for people at the same **Address**. Therefore the only field which would be unique to each record is **Phone**, since each phone number would only have one listing in the table. This would make Phone a good choice for a primary key. The importance of primary keys will be explained later.

LAST NAME	FIRST NAME	ADDRESS	PROVINCE	PHONE
Kaian	Jubilee	Waigani	Lae, Morobe	73187654
Raepa	Stephanie	East Boroko	Madang	72065200
Somers	Billy	Boroko	Wewak	73012987

A field has certain defining characteristics. For example, every field has a Name that uniquely identifies the field within a table. A field also has a data type that is chosen to match the information to be stored. The data type determines the values that can be stored and the operations that can be performed, as well as how much storage space to set aside for each value. Every field also has an associated group of settings called properties that define the appearance or behaviour characteristics of the field. For example, the Format property defines a field's display layout that is, how it should appear when displayed.



On the screen, Access is waiting for you to begin typing in the field names. The cursor is located in the first data entry box in the Field Name column, prompting you to type in a name for your first field. Access field names can be up to sixty four characters in length, more than enough for any purposes.

The top section of the window is where you enter the names of the fields in your table along with the data type for each field. When you have a field name selected in the top section, the bottom section will display properties which allow you to customise the selected field.

When you create a new table, the table opens in Datasheet View. As a beginner it is more practical to create fields in Design View because it is easy to identify data types in this view. You have also learned in Lesson 13 that Design View is used when you want to modify the design of your table and that includes creating your fields. At this point let us create Fields on the first table we have created in Lesson 13.

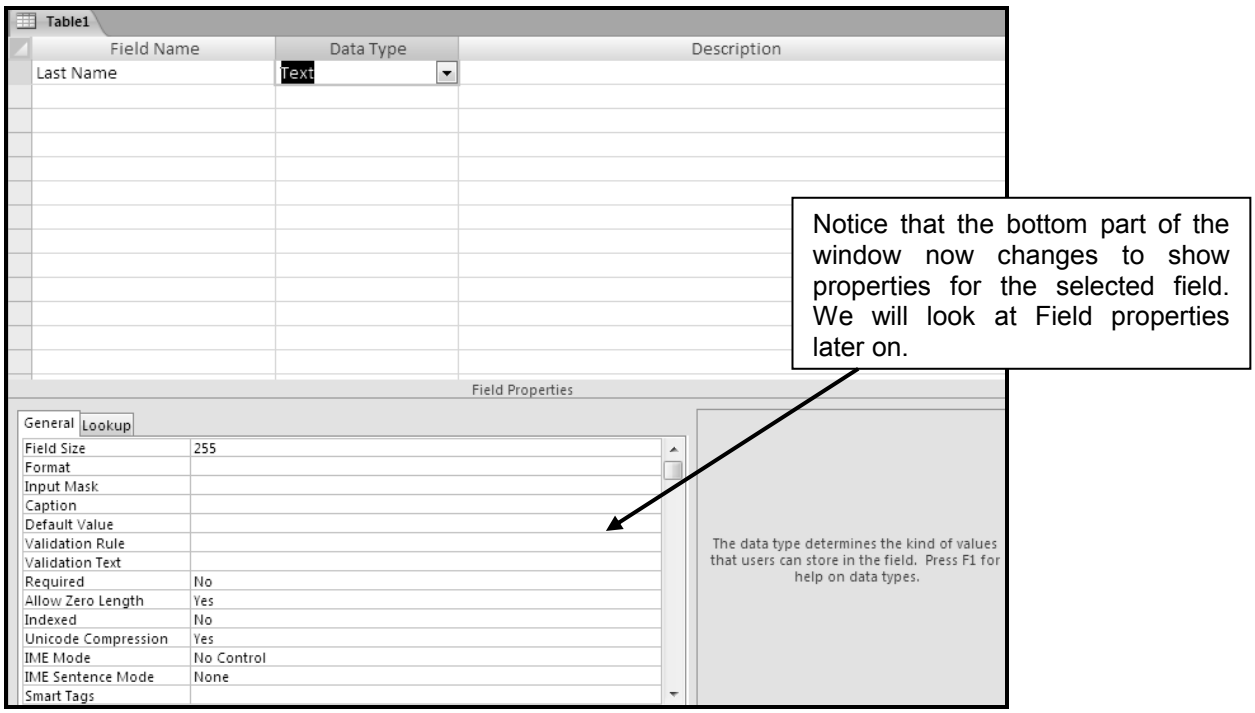
Activity 1: Follow the given steps to add field in Design view.

Make sure that the ***Students List database*** is open and follow the steps.

1. Click the **View** icon on the **Ribbon**. This icon allows you to switch between **Datasheet** and **Design** Views. Click on **Design View**.

2. Select the first row in the **Field Name** column.

3. Type Last Name and press **[Tab]** or **[Enter].** This will move you to the Data Type column.



4. Leave the Data Type as *Text* and press **[Tab]** or **[Enter]** to move to the **Description** column.

5. In the **Description** column type *Last name of the student* and press

   [Tab] or **[Enter]** to move on to the next line.

6. For the next field enter *First Name* as **Field Name**, Text as **Data Type** and *First name of the student* as the **Description**.

7. For the next field enter *Date of Birth* as **Field Name**.

8. In the **Data Type** column we want to change it to **Date/Time**. An easy way of selecting Data Types is to press the first letter of the one you want. Press the letter D and Date/Time will become selected. Enter *Birth date of the student* for the **Description** and move to the next line.

9. Complete the remaining fields so that they are the same as the table shown below.

Table1

Field Name	Data Type	Description
Last Name	Text	Last name of the student
First Name	Text	First name of the student
Date of Birth	Date/Time	Birth date of the student
Address	Text	Students City address
Province	Text	Province of the student
Phone	Text	Student's phone/mobile number
Gender	Text	Is the student Male or Female
Mark	Number	Mark the student got on the test
Comment	Memo	Additonal information about the student

Notice that instead of just having one field for the student name we have separate fields for last name and first name. This enables us to search and sort the table by last and first names separately. We have separated the address in to separate fields for the same reason so that information in the table can be searched/sorted by province.

You have successfully completed this activity. You have learned the steps to add fields in a table using the Design View. Remember that providing a description for each field is not essential but it is good idea. These descriptions can be used for certain features in other parts of your database. You may go to the end of this lesson to check your work.

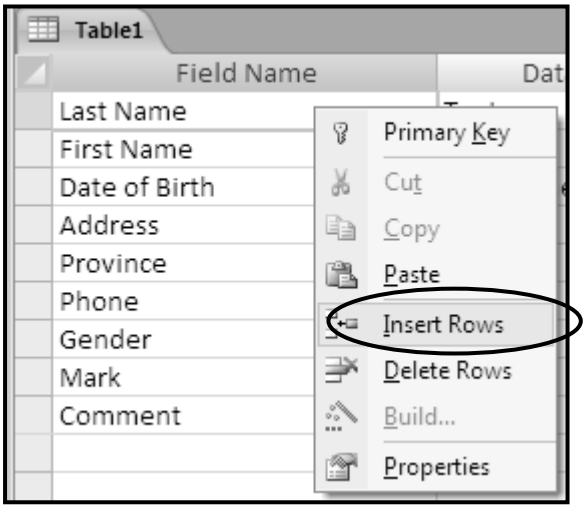
Creating a Primary Key

At the moment the table has no primary key specified. None of the fields would contain information that would be unique to each student. For instance, the same last name could be shared by more than one student so last name could not be used to identify a specific student record. The same is true for each other field. In cases like this where there is no field unique to each record, a new field can be created and used as a primary key. At this point you will use the table you have created in the first activity of this lesson. You will insert a new field before the Last name. Follow the steps below on how to create a Primary Key.

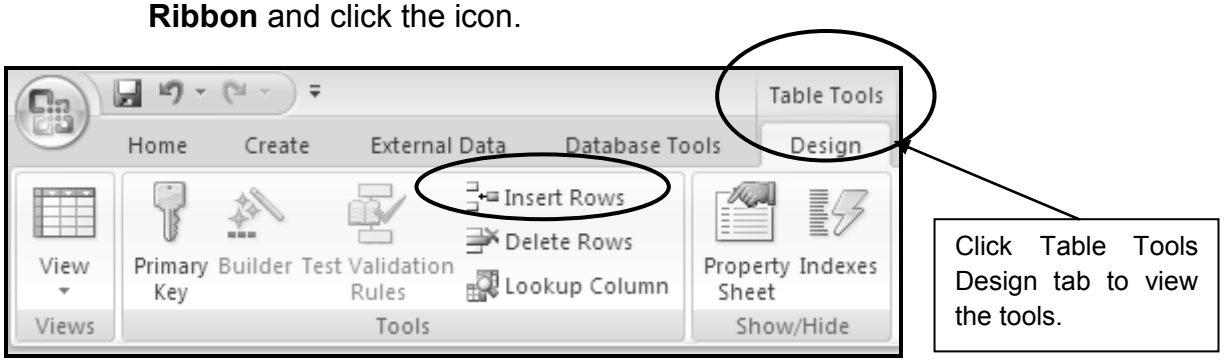
1. Click on the first field (Last Name).

2. Insert a new Field before **Last Name**. Select only one among the three methods on the next page.

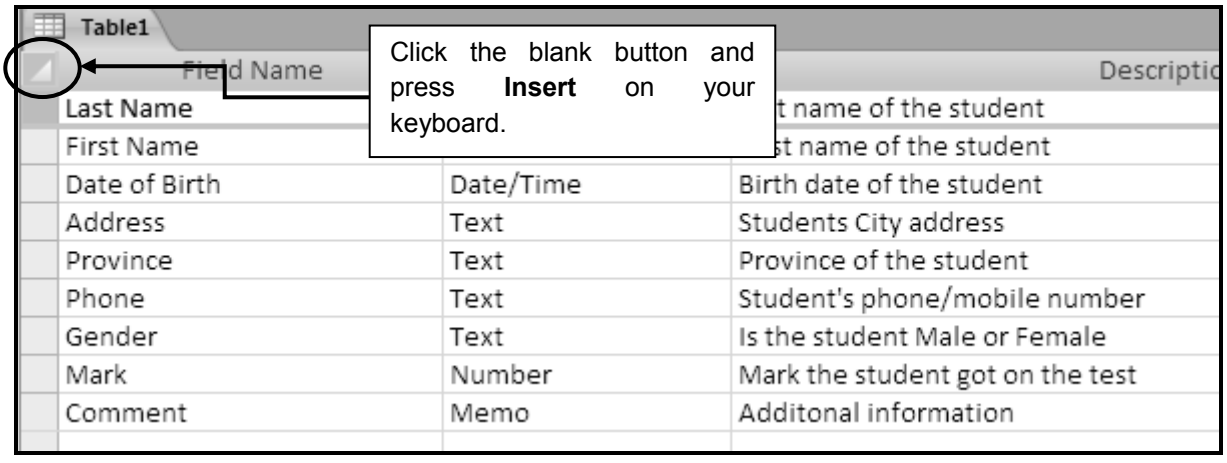
Method 1: Right-click on the Last Name field and select **Insert Rows**.



Method 2: Make sure the **Table Tools Design** tab is selected on the **Ribbon** and click the icon.

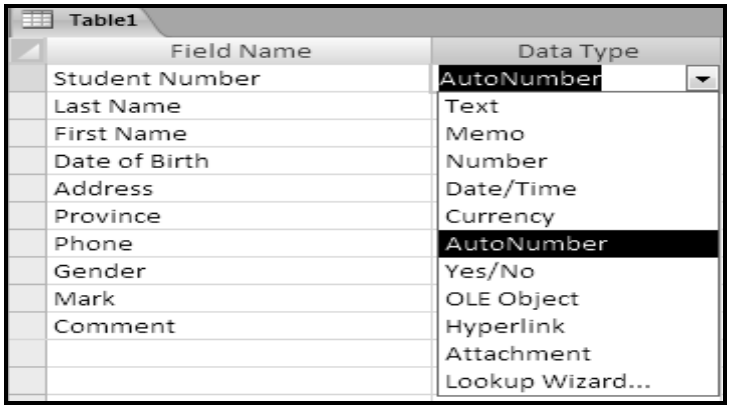


Method 3: Select the field by clicking the small blank button to the left of the field name and then press the **[Ins]** key on your keyboard.



3. Enter **Student Number** as the new **Field Name**.

4. Choose **AutoNumber** as the **Data Type**.

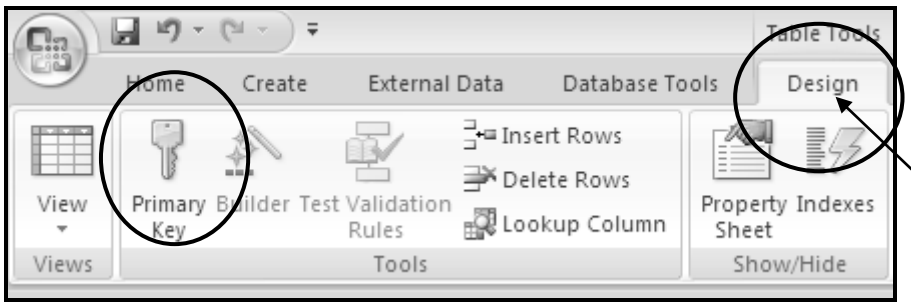


5. For the field **Description** enter - **Unique identification number.**

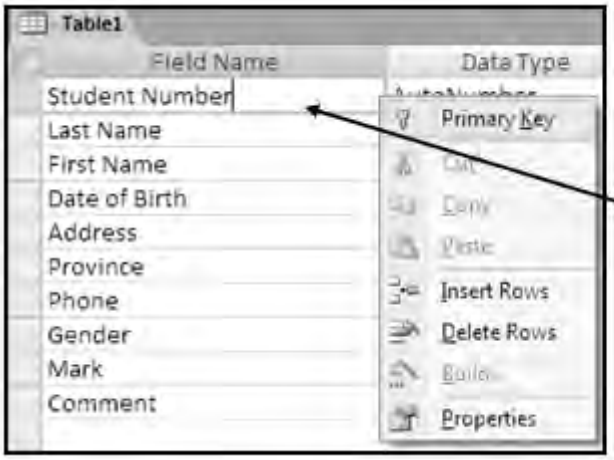
An **AutoNumber** field is the only type where you do not need to enter anything in to a record. For each new record entered, Access will automatically place a new number in the AutoNumber field. It is useful as a primary key field as it ensures that each record will have a number that is different from every other record. On the next lesson you will learn more about AutoNumber.

6. Make sure the **Student Number** field is still selected.

7. Click the **Primary Key** icon on the **Ribbon**. You can also right-click on the **Student Number** field and select **Primary Key**.



Click Table Tools Design tab to view the Primary key icon.



If you right click on the Student Number field you can select from context menu the Primary Key.

If you accidentally set the wrong field as a primary key, then simply select the intended field and choose the primary key option once again to set it as the new primary key.

It is usually best to specify a primary key for a table before saving. Otherwise, Access will want to create an extra field as a primary key. When a table is saved, it does not become a new file. It becomes an object within the database file you have already created.

Saving the Table

After you add fields to a table, you should save its design. When you save a new table for the first time, give it a name that describes the information it contains. You can use up to sixty four characters (letters or numbers), including spaces. For example, you might name a table Customers, Parts Inventory, or Products.

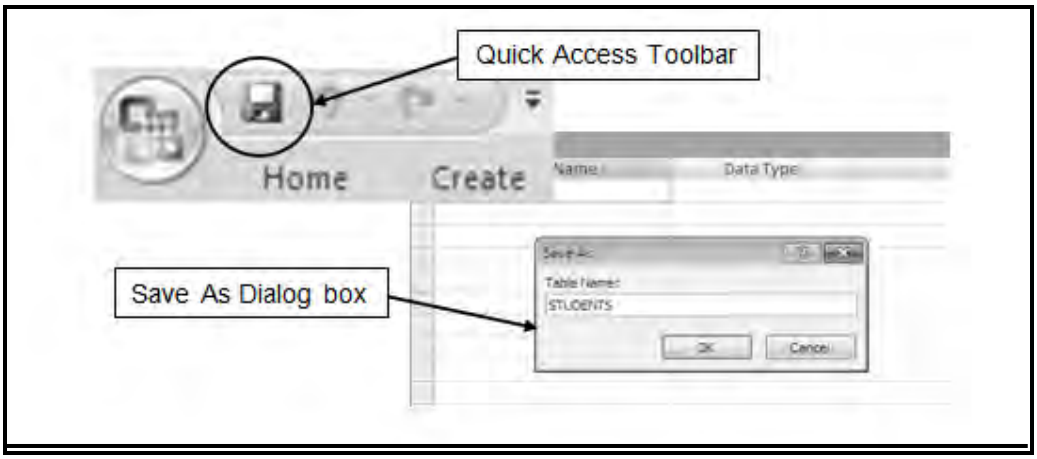
You should give the table a name describing the data it will contain. Also, use names that will distinguish tables from queries, such as using uppercase letters or name prefixes.

You can save table in many ways.

A. - On the **Quick Access Toolbar**, click the **Save** button.

- On the **Save As Dialogue box,** type your table name. Key in **Students**.

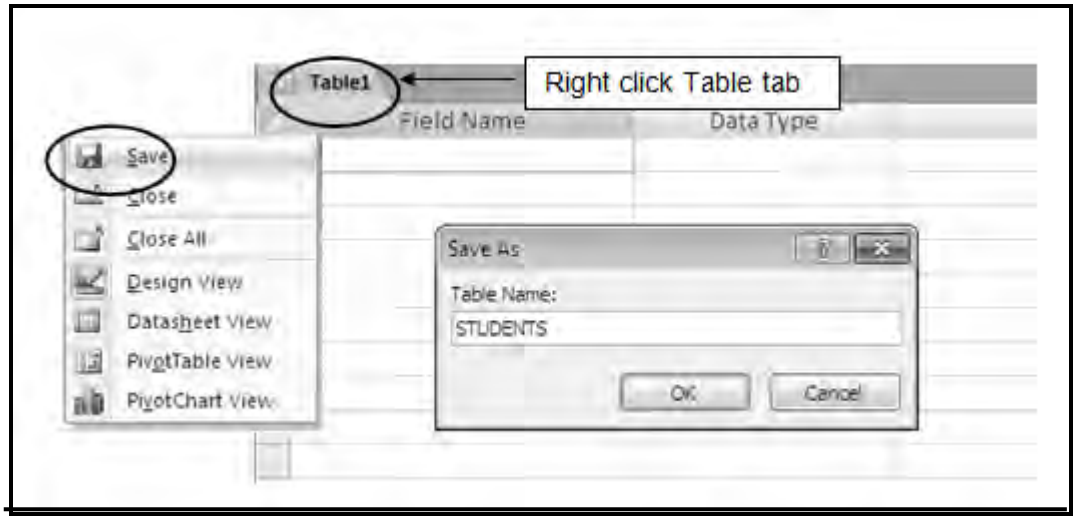
- Finally click **OK** to finish saving the table.



B. - Right click on the Table tab and on the context menu, select **Save**.

- On the **Save As Dialogue box**, type your table name. Key in **Students**.

- Finally click **OK** to finish saving the table.



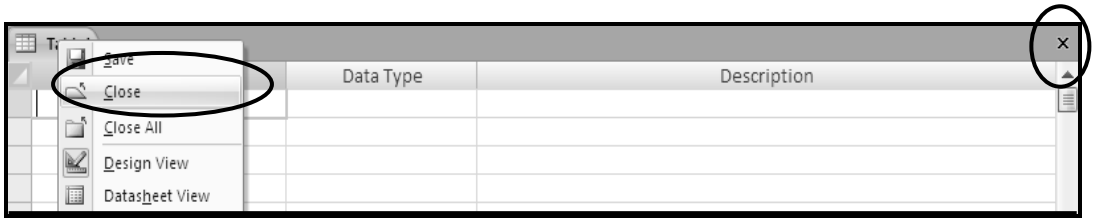
C. - Simply press **[Ctrl] + S** on your keyboard to save.

- Type the table name **Students** and click **OK**.

Closing the Table

All the tables that you have opened will be displayed with their corresponding tabs. You have to close the table when there are many open tables or when you are finished using the table. You also have to close a table before performing a specific task such as renaming a table. Follow the steps below on how to close a table.

1. Right click on the table tab.
2. On the context menu, select **Close**.



Activity 2: Create a Friends Directory table that will contain the following:

Field Name	Data Type	Description
Full Name	Text	Friend's full name
Address	Text	Friend's address
Age	Text	Friend's age
Birthday	Date	Friend's date of birth
Phone Number	Text	Friend's contact number

In this activity you will:

1. Set the Phone Number as the primary key.
2. Save the table using the Quick Access toolbar
3. Name the table as FRIENDS.
4. Close the table using the context menu.

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answer. Make sure you do the necessary corrections before moving on to the next part of this lesson.

Summary

You have come to the end of Lesson 14. In this lesson, you learned to add fields using the Design View and set the Primary Key among these fields. You also learned how to save and close the table you have made.

NOW DO PRACTICAL EXERCISE 14 ON THE NEXT PAGE.

Practical Exercise 14

A. Fill in the blanks.

1. When you create a new table, the table opens in _____ view.
2. When you create a database you store your data in _____.
3. You define a table in terms of the _____ you want to track for the subject.
4. When you create a table, one of your first tasks is to create the _____ that will make up the table.
5. A _____ is a field which is unique to each record.
6. Access field names can be up to _____ characters in length, more than enough for any purposes.
7. You can view the Primary Key icon in _____ tab.

B. Write T if the statement is correct and F for incorrect; Underline the word or words that made the statement wrong.

1. It is important that you choose fields carefully. _____
2. Every field has a name that uniquely identifies the field with the table. _____
3. Datasheet view is used when you want to modify the design of your table. _____
4. A Primary key is a field that contains unique information. _____
5. You can insert a field using the [Tab] key in your keyboard. _____
6. You can move from one column to another column in your table using the spacebar. _____
7. It is usually best to specify a primary key for a table before saving. _____
8. You have to close a table before performing a specific task such as renaming a table. _____

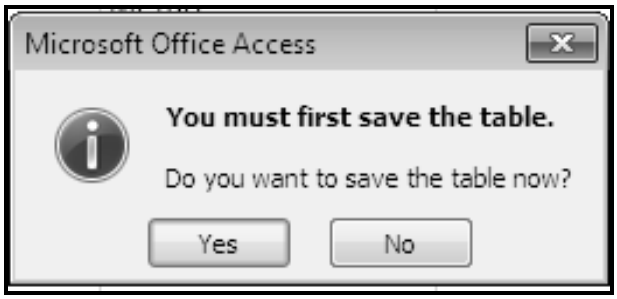
CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 3.

Answers to Activities

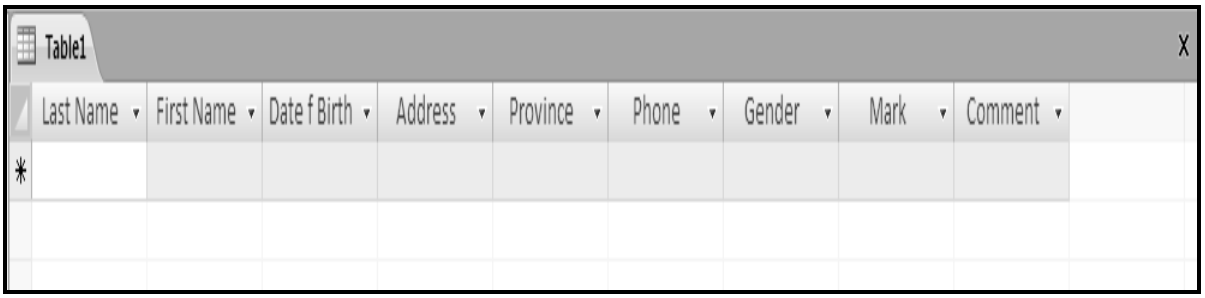
Activity 1

Be sure you key-in all the remaining data to complete the table in Design View and follow the instructions below:

1. Click the View icon  in the ribbon and select Datasheet View.
2. Access will ask you to save the table. Click on **Yes**



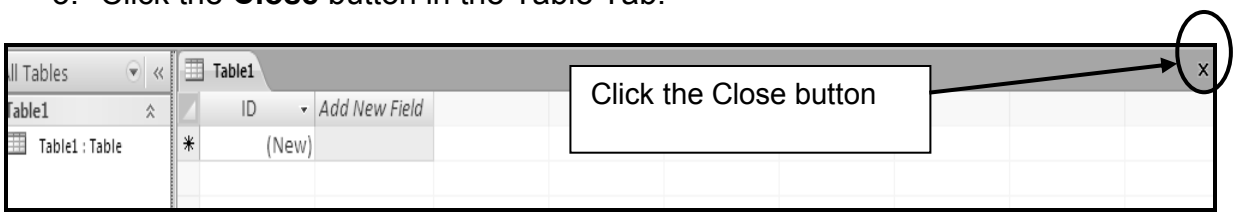
3. The table should look like the one below in Datasheet view.



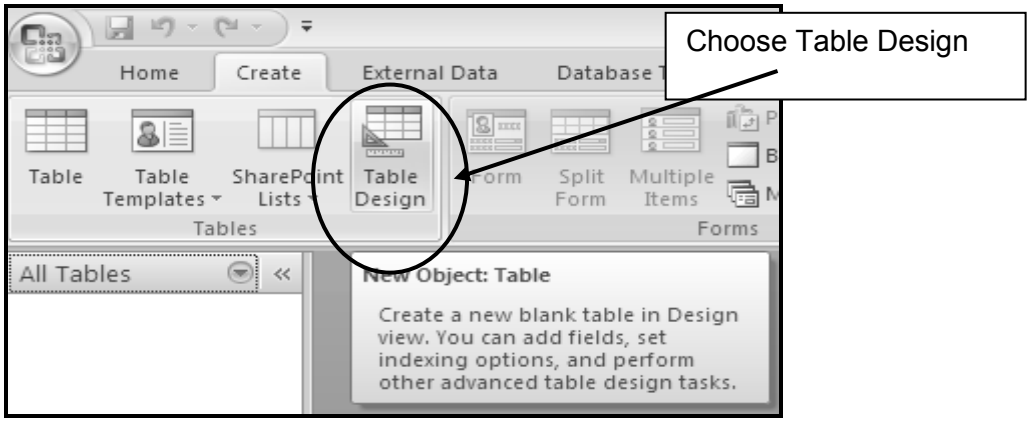
Activity 2

Refer to the steps below:

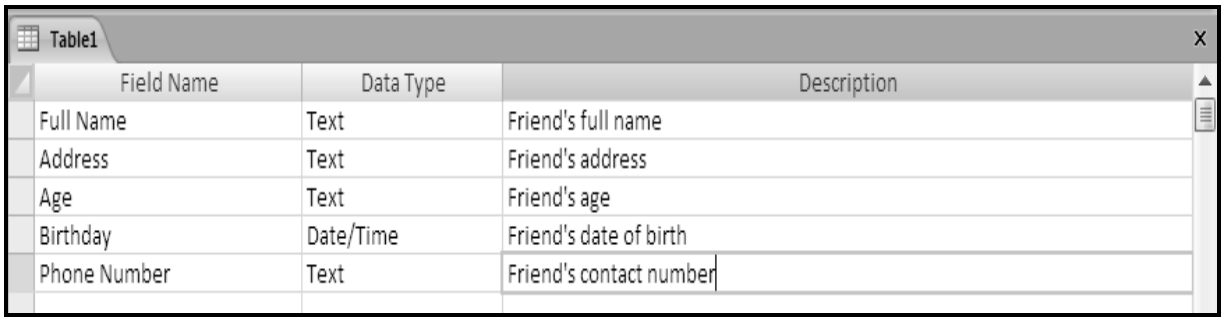
1. Create a database and name it as **Friends Directory**.
2. Access will open in Datasheet view.
3. Click the **Close** button in the Table Tab.



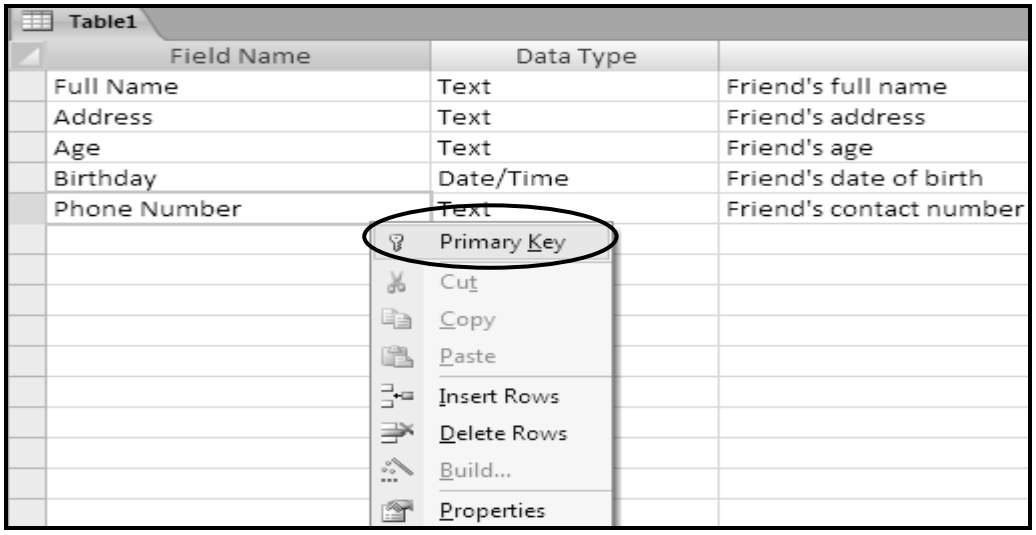
4. Click **Create** tab on the ribbon and click the **Table Design**.



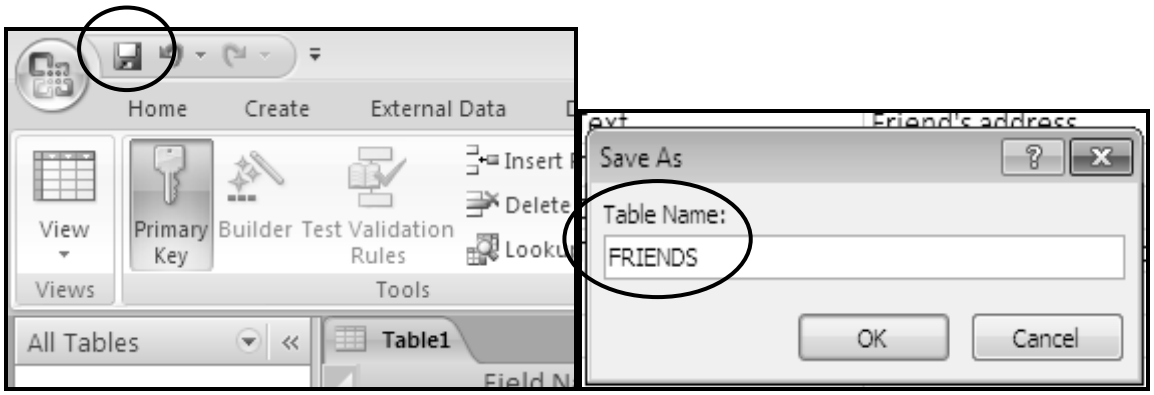
1. Key in the Field Names and Data types given. Your table should look like the one below.



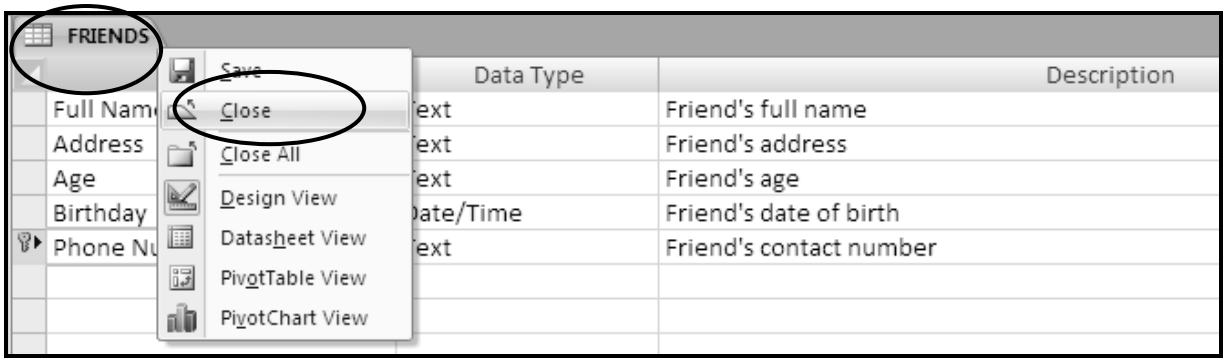
2. Right click the **Phone number** field. Choose from the context menu **Primary Key** to set this field as the primary key of the table.



3. On the **Quick Access menu** click **Save**. Type **FRIENDS** in the Save As Dialogue box for your Table's Name and click **OK**.



4. Right click the table tab. The context menu will be opened and choose **Close** to close the Friends' table.



Lesson 15: Identifying Data Types

Welcome to Lesson 15 of Unit 4. In Lesson 14, you have learned how to add fields on your table.

In this lesson you will be introduced to different data types used in Access database tables.

Your Aims:

- define data types
- identify different data types
- identify the importance of identifying data types

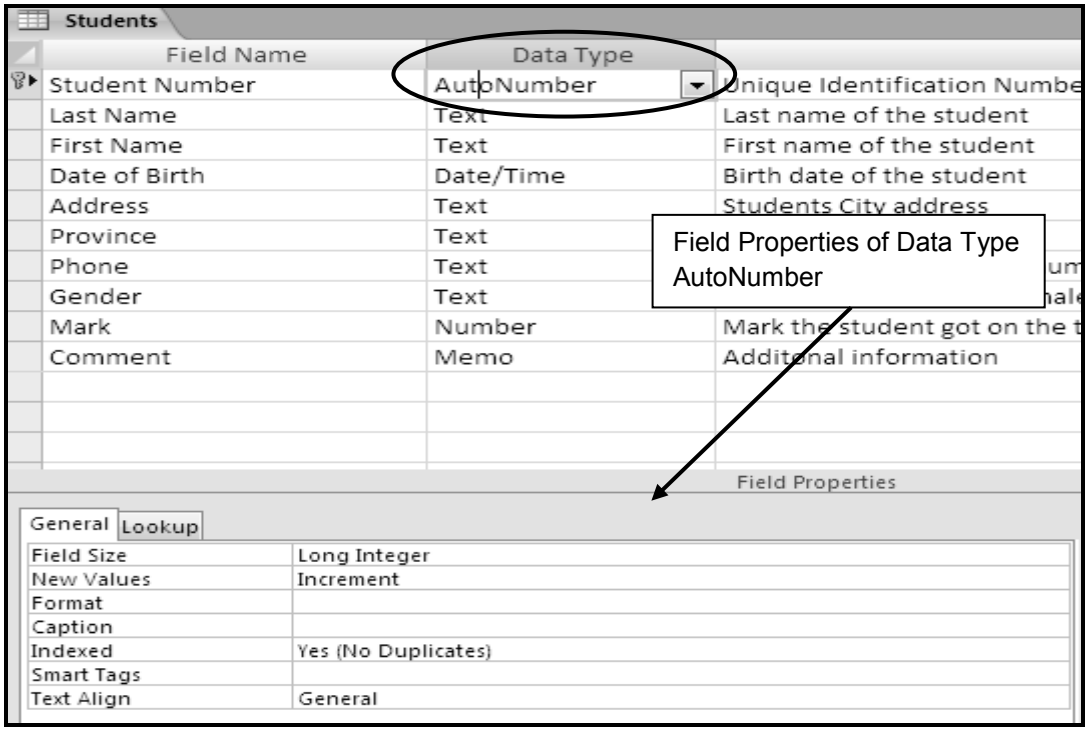
Field Data Types
Each field in a table can be one of several available field types. When you enter a field name in the design view, the next column will allow you to choose a field type.

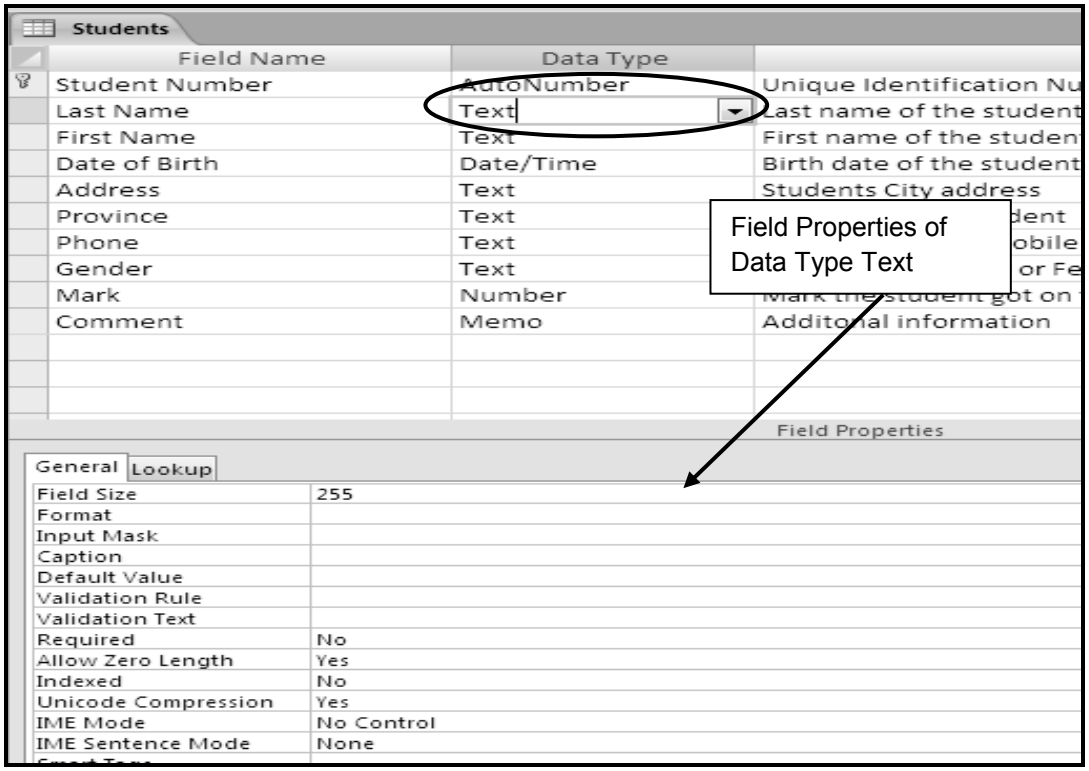
To assign appropriate data types to the fields you create in a table, it is necessary for you to know the different data types available for use with your table fields. When you create a field, you have to assign a data type so that Access knows how to handle its contents. The following are the different data types you can choose from. You will use several of these in later exercises.

Data Type	Description
Text	This is the default field type since it is the most commonly used. Text fields can store any kind of text/numeric characters with a maximum of 255 characters. This field is best suited for text or numbers that do not require calculations (such as phone numbers).
Memo	Stores large amounts of text or numbers – up to 63,999 characters. Uses more memory on your computer than a text field.
Number	Stores only numbers. Useful for fields that may require calculations. For numbers that do not require calculations (such as phone numbers) you are better off sticking with Text fields which use less space.
Date/Time	For fields that will be used to store dates or times.
Currency	Used for storing monetary amounts
AutoNumber	Automatically generates a unique number for each new record. Useful for primary key fields.

Yes/No	Fields that contains only one of two values (such as yes/no, true/false, on/off).
OLE Object	This is used for fields that need to link to an external object, such as a picture or document.
Hyperlink	Used or fields that will store links, such as web URLs, email addresses and network locations.
Attachment	You can attach images, spreadsheet files, documents, charts, and other types of supported files to the records in your database, much like you attach files to e-mail messages.
Lookup Wizard	This allows you to create a drop down list so that a user of the database can choose from a list of options rather than typing data.

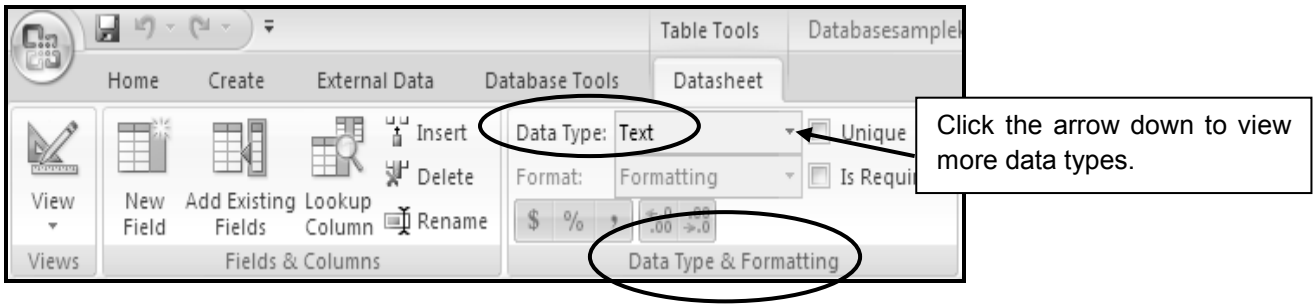
In addition, each field has other formatting options you can set. They appear in the bottom half of the Dialogue box, the Field Properties area. The formatting options change depending on the field type. Refer to the next figures.





Compare the Field Properties of Auto Number and Text Data Types, as you can notice in General tab, both Data Types has its own formatting options. You can change these options depending on the needs or functions of the tables you want to create.

We will discuss more about this topic in Lesson 17. If you are working in Datasheet View, you can change your data type in the **Data Type and Formatting** group. To view this, simply click the **Datasheet** tab of the Table Tools.



When you enter data in the new column, Office Access 2010 uses the information you type to recognise the appropriate data type for the field. For example, if you type a date in the column, such as 1/1/2006, Office Access 2010 sees the information you entered, recognises it as a date, and sets the data type for the field to Date/Time.

If Access does not have enough information from what you enter to guess the data type, the data type is set to Text.

The following table shows how automatic data type detection works in Datasheet view.

If you type:	Data type created by MS Access
John	Text
http://www.google.com *You can use any valid Internet protocol prefix. For example, http://, https://, and mailto: are valid prefixes.*	Hyperlink
50000	Number, Long Integer
50,000	Number, Long Integer
50,000.99	Number, Double
50000.389	Number, Double
12/31/2006 *The date and time formats recognised are those of your user locale.*	Date/Time
December 31, 2006	Date/Time
10:50:23	Date/Time
10:50 am	Date/Time
17:50	Date/Time
$12.50 *The currency symbol recognised is that of your user locale.*	Currency
21.75	Number, Double
123.00%	Number, Double
3.46E+03	Number, Double

In addition to determining the data type, Office Access 2010 may set the **Format** property, depending on what you enter. For example, if you type 10:50 am, Access sets the data type Date/Time and the **Format** property to Medium Time.

If you want to explicitly set the data type and format for a field, over riding the choice that Office Access 2010 makes, you can do so by using the commands in the **Data Type & Formatting** group.

Activity 1: Complete the tables below. Identify the data type of each field.

MOVIES

Field Name	Data Type
Media Number	
Movie Title	
Actor	
Category	
Media	
Date Borrowed	
Date Returned	

MUSIC CDs

Field Name	Data Type
CD Number	
Song	
Artist	
Record Comapany	
Date Purchased	

DIRECTORY

Field Name	Data Type
Government Office	
Officer-in-Charge	
Address	
Phone Number	
Contact Person	

FRIENDS

Field Name	Data Type
Full Name	
Nickname	
Address	
Age	
Birthday	
Phone Number	
School	
Motto in Life	
Email Address	

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answer. Make sure you do the necessary corrections before moving on to the next part of this lesson.

Summary

You have come to the end of Lesson 15. In this lesson, you learned that data type of a field depends on the function of this field in our table. You have also learned that Access uses the information you type to recognise the appropriate data type for the field.

NOW DO PRACTICAL EXERCISE 15 ON THE NEXT PAGE.

Practical Exercise 15

A. Identify the data type that is being described in each sentence.

1. Stores large amounts of text or numbers – up to 63,999 characters. _____
2. Useful for fields that may require calculations. _____
3. For fields that will be used to store dates or times. _____
4. This is the default field type since it is the most commonly used. _____
5. Automatically generates a unique number for each new record. Useful for primary key fields. _____
6. Fields that contain only one of two values. _____
7. Used or fields that will store links, such as web URLs, email addresses and network locations. _____
8. Used for storing monetary amounts. _____
9. This is used for fields that need to link to an external object, such as a picture or document. _____
10. This allows you to create a drop down list so that a user of the database can choose from a list of options rather than typing data _____

B. Answer briefly the following questions.

1. What is a data type?

   _____

   _____

2. Why do you need to identify the data type of a field in the table?

   _____

   _____

3. How can you change your data type in Datasheet view?

   _____

   _____

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 3.

Answers to Activity 1

MOVIES

Field Name	Data Type
Media Number	AutoNumber
Movie Title	Text
Actor	Text
Category	Text
Media	Text
Date Borrowed	Date/Time
Date Returned	Date/Time

MUSIC CDs

Field Name	Data Type
CD Number	AutoNumber
Song	Text
Artist	Text
Record Comapany	Text
Date Purchased	Date/Time

DIRECTORY

Field Name	Data Type
Government Office	Text
Officer-in-Charge	Text
Address	Text
Phone Number	Text
Contact Person	Text

FRIENDS

Field Name	Data Type
Full Name	Text
Nickname	Text
Address	Text
Age	Text
Birthday	Date/Time
Phone Number	Text
School	Text
Motto in Life	Memo
Email Address	Hyperlink

Lesson 16: Entering Data in Fields

Welcome to Lesson 16 of Unit 4. In Lesson 15, you learned how to identify data types of each field that you will use in your table.

In this lesson you will learn how to input data on these fields.

Your Aims:

- identify the steps in entering data in fields
- identify the keyboard shortcuts and mouse techniques in navigating records in the table

Entering a Record

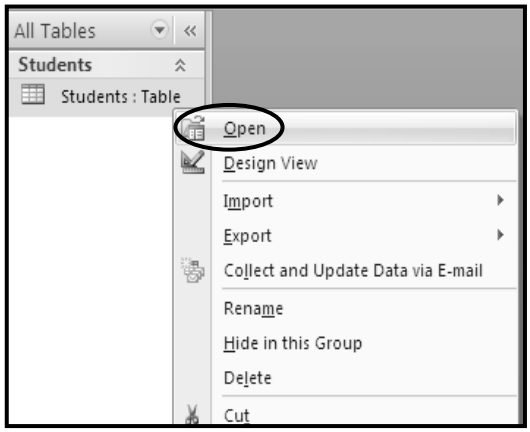
After you have created the table and fine-tuned its structure, you are ready to enter data into the table. This means that you should have access to all the data that you need to enter. Then, all you have to do is open the table and input the data records. You can enter records into a datasheet format or into a form. A datasheet allows you to see other records entered while a form will allow you to see one record at a time. We will discuss more about Form as you continue in Lesson 20 of Unit 4, —Entering Records to a Form."

Just like in a spreadsheet, there are columns and rows in the table and the intersection is called cell. After entering the records in the table, Access automatically saves them, unlike with other MS Office Applications, such as Word or Excel, where you must save your data after entering it.

Activity 1: Perform the instructions below.

Before doing this activity, make sure that the ***Students List*** database is open. You will add records on the ***STUDENTS*** table you have created in Lesson 14.

With your database open, the objects within the database will be listed on the Navigation Pane to the left. Currently the only item in the list will be your ***STUDENTS*** table. To open the Student table that we have made:



1. Select the **Students** table on the list that can be found on the left of the screen.

2. Right click **Students** and choose **Open** or

3. Double click the table Students

You can choose between steps 2 and 3. Both steps will allow you to open your Students table in Datasheet View.

To enter a record to your table in Datasheet View, follow the steps below:

1. Click the **View** icon on the **Ribbon**.  This icon allows you to switch between **Design** and **Datasheet** Views. When you are in Datasheet view (as you should be now) the icon will change to a 

Notice that the first column is for the **Student Number** field and it is filled with the text (New). We don't need to enter anything in this field since a student number will be generated automatically (remember that's what an AutoNumber field's for) so press **[Tab]** to move to the Last Name field.

2. Type *Kaian* as the **Last Name**. Notice that as soon as you enter information, a number will appear in the **Student Number** column. Every record will be given a unique number. If you delete a record, that number won't be used again.

3. Press **[Enter]** or **[Tab]** to move on to the next field.

4. Complete the rest of the fields as shown below.

5. When you reach the last field (**Comment**) press **[Enter]** again to move to the next line. As soon as you move off that row, the record will be saved.

Changes to table data are saved automatically in Access. The only time you need to save any changes yourself is when you have modified the structure of a database by adding or modifying the design of objects (such as tables). Changes to data are saved for you.

6. Click the **View** icon to return to the **Table Design** view.

Students

Student Nur	Last Name	First Name	Date of Birth	Address	Province	Phone	Gender	Mark	Comment
1	Kaian	Jubilee	9/12/1996	Waigani	Lae, Morobe	73187654	Male	90	
2	Laki	Isaac	1/7/1995	Boroko	Kimbe	72158209	Male	89	
3	Raepa	Stephanie	4/17/1996	Waigani	Madang	72065200	Female	89	
4	Maro	Gaba	3/6/1996	Gordons	Central	73167543	Female	87	
5	Somers	Billy	10/3/1995	Boroko	Lae, Morobe	73012987	Male	92	
6	Amala	Cecilia	7/17/1996	Boroko	Central	72076900	Female	95	
7	Balaguan	Joshua	1/15/1995	Gordons	East New Britai	72376598	Male	87	
8	Beatty	Emmanuel	3/11/1995	Waigani	Central	72152987	Male	85	
9	Bunan	Melisa	8/26/1996	East Boroko	Madang	72187954	Female	88	
10	Bosuk	Caleb	11/1/1996	Gordons	Mt. Hagen	72359207	Male	90	
*	(New)								

You have successfully finished the first activity of this lesson. You have learned the steps in entering data on your table. You can keep on practising by adding five more data in each field. You will learn more about navigating within the table as you continue with this lesson. Now, you may go to the end of this lesson to check your answer. Make sure you do the necessary corrections before moving on to the next part of this lesson.

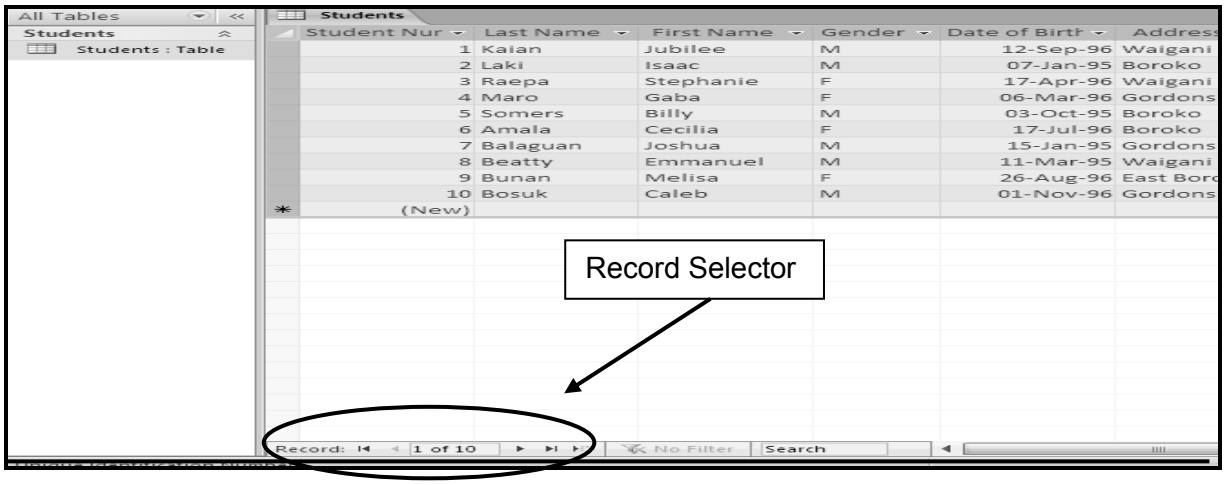
Navigating Between Records

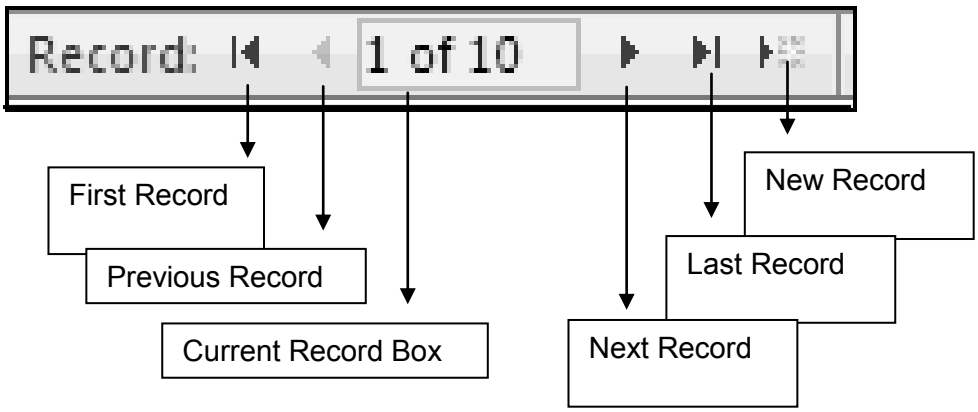
So far, you have used the [Tab] key only to move from field to field in the table. You might have also used the mouse to move the insertion point from a field in one record to another field in that record, or to a field in a different record. Because you do your data entry from the keyboard, Access provides several keystrokes that can be used to navigate the various fields in the table. For example, you can back up one field in a record by pressing **[Shift] + [Tab].** The table below summarises the various keyboard shortcuts for moving around in a table.

KEY	**FUNCTION**
Enter, Tab, Right Arrow	Goes to the next field
Left Arrow, Shift + Tab	Goes to the previous field
End	Goes to the last field in the record
Home	Goes to the first field in a record

Up Arrow	Goes up one line in a record
Down Arrow	Goes down one line in a record
Page Up	Goes up one screen
Page Down	Goes down one screen

You can click the Record Selector arrows to go to view first, previous, next or last record. The Record Selector can be found at the bottom part of our table.





Activity 2: Perform the following commands and answer the following questions.

In this activity you will use the Students' Table you have created in Activity 1 of this lesson.

1. Position your selector in Student Number 1 and press [Enter]. You are currently in what record? _____

2. If you are in the record Raepa and you press [Shift] + [Tab] key on your keyboard, you transferred to what record? _____

3. You are editing the birth date of Laki Isaac and you accidentally press [End]. You are in what record? _____

4. If you are in the record Amala and you want to go to record named Beatty you will press _____

5. You are in record 03-Oct-95 and you accidentally press [Home]. You are in what record? _____

6. Position your selector in the record balaguanj@gmail.com and press the arrow to the right. You are in what record? _____

7. Place your selector in the record Melissa. The current record box indicates _____

8. Place your selector in the record Billy and click Last Record button on your Record Selector. You are currently in what record? _____

9. Place your selector in the record Emmanuel and click Previous Record button on your Record Selector. You are currently in what record? _____

10. Place your selector in the record Gaba and click First Record button on your Record Selector. You are in what record? _____

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answer. Make sure you do the necessary corrections before moving on to the next part of this lesson.

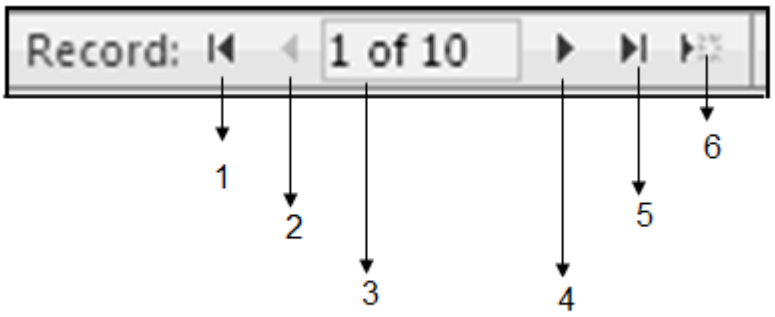
Summary

You have come to the end of Lesson 16. In this lesson, you learned how to enter records in your table in Datasheet View. You have also Practiced how to navigate within the records on the table you have created. There are several ways to speed up the editing if you know how to use these shortcut keys correctly.

NOW DO PRACTICAL EXERCISE 16 ON THE NEXT PAGE.

Practical Exercise 16

A. Identify the parts of the Record Selector.



1. _____ 4. _____
2. _____ 5. _____
3. _____ 6. _____

B. Check the sentence that expresses true ideas in entering data in fields.

1. You should use Design View when you are entering data in fields. _____
2. In Datasheet View you can see other records entered. _____
3. After entering records in the table, Access automatically saves them. _____
4. There is no need to enter any record in an AutoNumber field. _____
5. You can back up one field in a record by pressing [Shift] + [Tab]. _____
6. The UP arrow key goes down one line in a record. _____
7. The Page Down key goes down one screen. _____
8. The [End] key goes to the first field in a record. _____
9. The Right arrow key has the same function as the [Enter] key. _____
10. The [Home] key goes to the last field in a record. _____

C. **Open your Friends' Table and enter 10 data records for each field.**

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 3.

Answers to Activities

Activity 1

Your Table should look like the one below:

Students

Student Nur	Last Name	First Name	Date of Birth	Address	Province	Phone	Gender	Mark	Comment
1	Kaian	Jubilee	9/12/1996	Waigani	Lae, Morobe	73187654	Male	90	
2	Laki	Isaac	1/7/1995	Boroko	Kimbe	72158209	Male	89	
3	Raepa	Stephanie	4/17/1996	Waigani	Madang	72065200	Female	89	
4	Maro	Gaba	3/6/1996	Gordons	Central	73167543	Female	87	
5	Somers	Billy	10/3/1995	Boroko	Lae, Morobe	73012987	Male	92	
6	Amala	Cecilia	7/17/1996	Boroko	Central	72076900	Female	95	
7	Balaguan	Joshua	1/15/1995	Gordons	East New Brita	72376598	Male	87	
8	Beatty	Emmanuel	3/11/1995	Waigani	Central	72152987	Male	85	
9	Bunan	Melisa	8/26/1996	East Boroko	Madang	72187954	Female	88	
10	Bosuk	Caleb	11/1/1996	Gordons	Mt. Hagen	72359207	Male	90	
*	(New)								

Activity 2

1. Kaian
2. 3
3. You are still in the birth date but the cursor is on the last character
4. Arrow down
5. You are still in that record but the cursor is on the first character
6. Comment Field
7. 9 of 10
8. Caleb
9. Joshua
10. Jubilee

Lesson 17: Editing Field and their Properties

Welcome to Lesson 17 of Unit 4. In Lesson 16, you learned how to enter data into each field of the table with the use of different navigating techniques.

In this lesson you will learn to change fields and their individual properties to have a neat and reliable table.

Your Aims:

- identify the steps in editing fields and their properties
- determine the importance of editing fields and their properties

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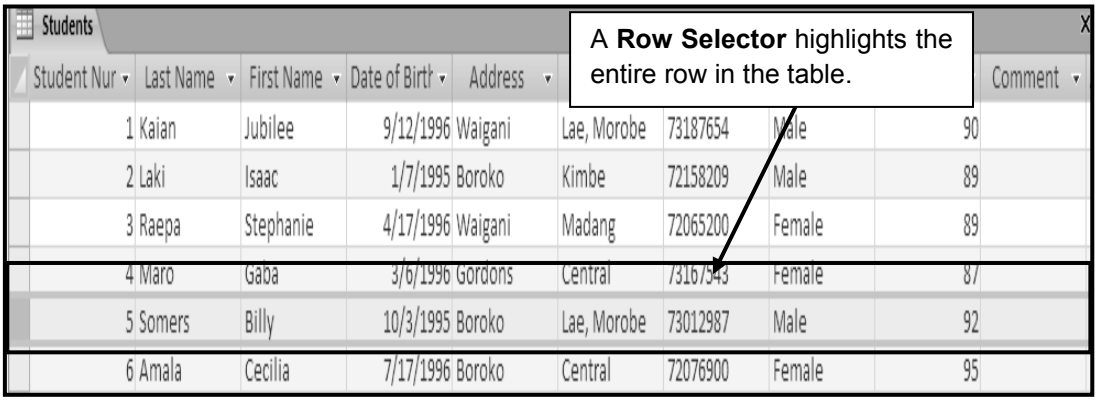
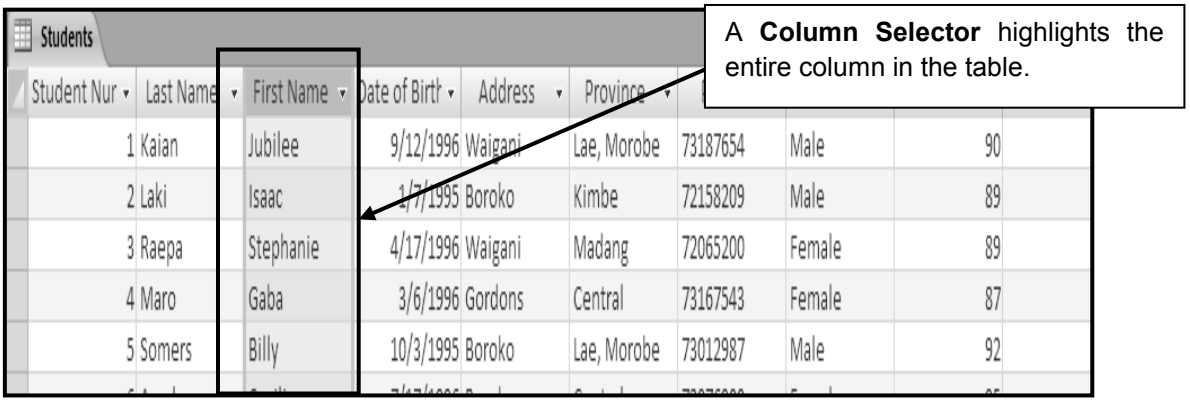
Database

A database will often be used by a lot of different people and the person designing it will not always be one of those users. For that reason, it is important to ensure that the database is designed to be easy to use. As you are working on your database, you may find that you need to edit or change your field properties and/or records.

Selecting Fields and Records

Before you can edit a field or data on your field, you have to select the data first. You can go to the particular cell and highlight the data to select it. You can also select records and field quickly by clicking the record selector and field selector. To select more than one field or record hold down the [Shift] key while clicking the field or record.

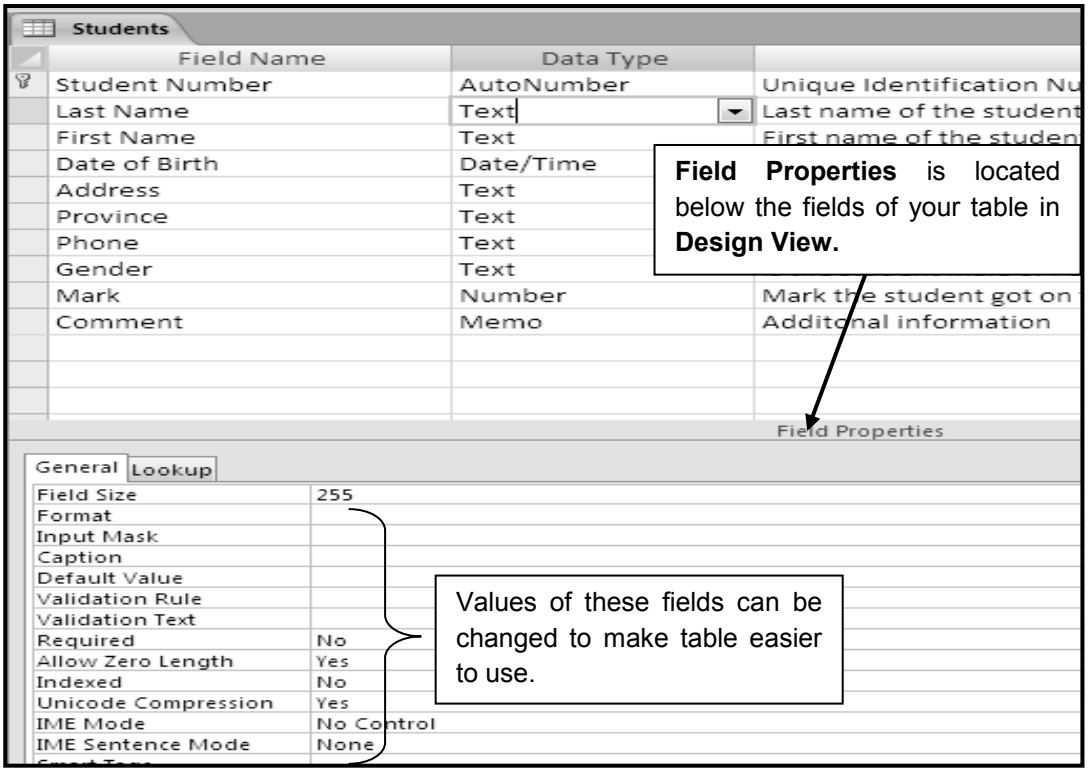




Changing Field Properties

Each field in the table you have created has several properties that can be changed to make the table easier to use. The properties available for each field will vary depending on data type. Below are some Field properties that are commonly used.

NAME	DESCRIPTION
Field Size	It is the number of characters allowed in the field
Format	Displays the numbers, dates, times and text
Input Mask	Allows you to control the data pattern or format. You can also specify characters that will be placed in the field automatically.
Caption	You can provide your own text to be used instead of the field names in the forms, tables, reports and queries.
Default Value	Allows you to set a field property that is common in most of the entries in your database.
Required	Specifies that you have to enter a value in a field. Access will alert you if you have not entered a value.
Decimal Places	You can specify the number of decimal places

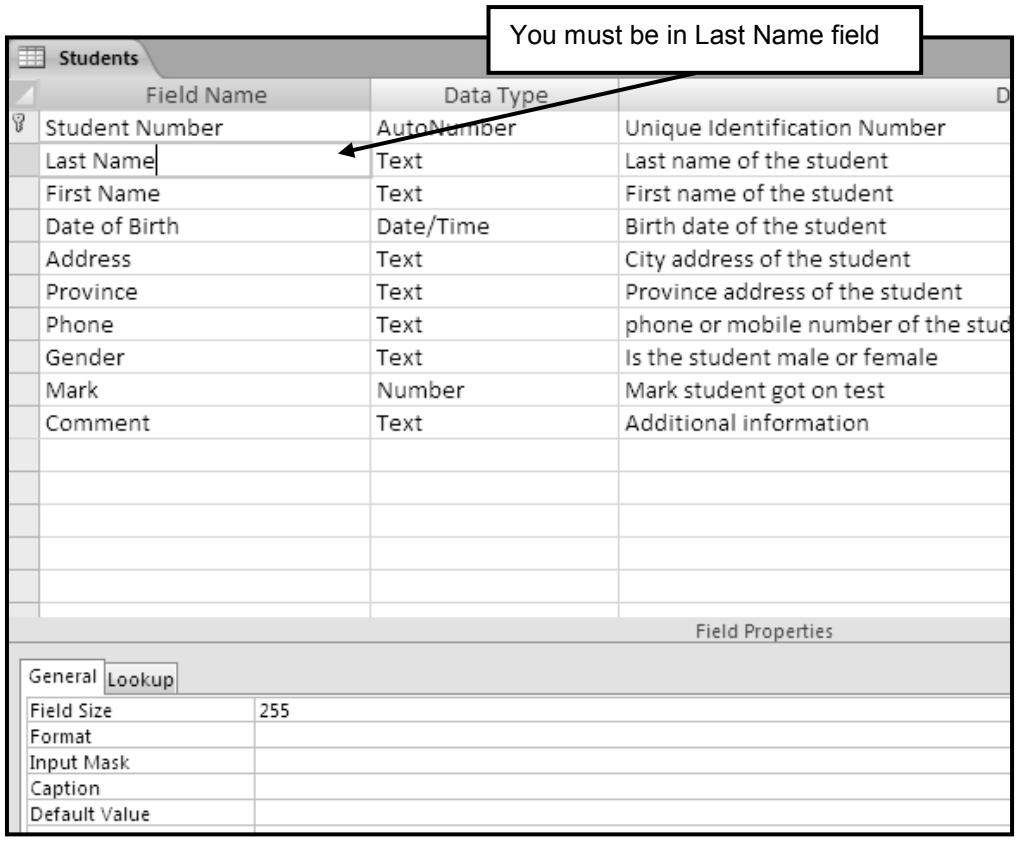


Activity 1: Editing the Fields Size Property. Perform the instructions below.

Before doing this activity make sure that Student List Database is open.

1. Open the *STUDENTS* table in **Design View**. To do this you have to click the View icon  and click Design View. We will limit how many characters can be typed in some of the fields by changing the Field Size property.

2. Click on the ***Last Name*** field. At the bottom of the window you will see a list of properties for the selected field.

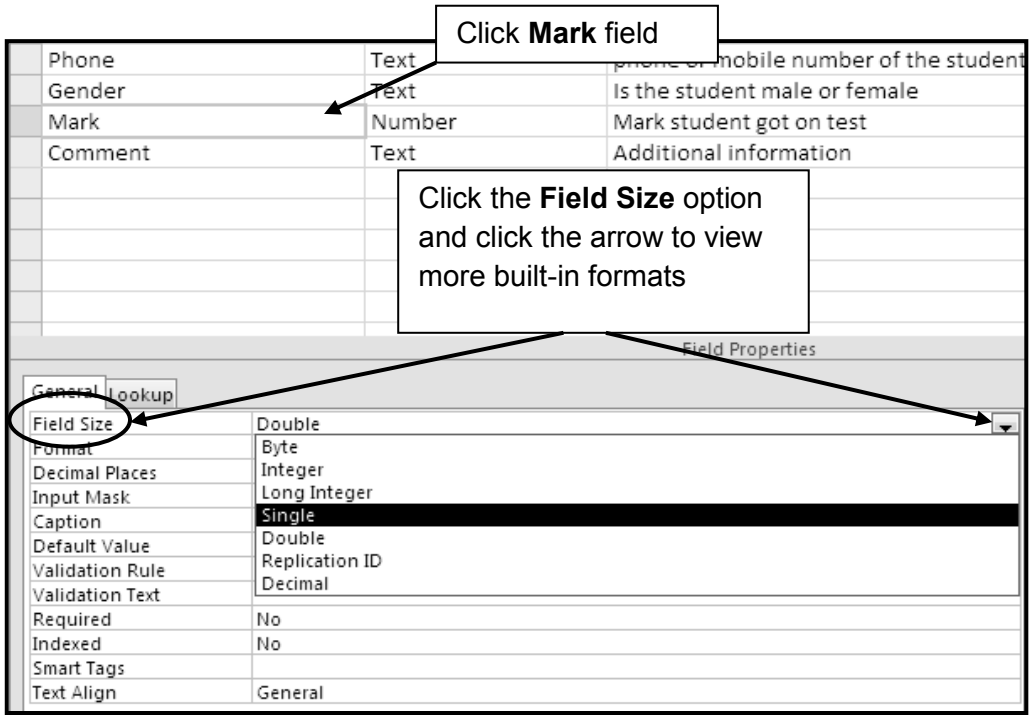


3. Refer to the **Field Size**, 255 is way too much for a Last name so, we will limit the field size to ***25*** characters. Click in the **Field Size** property and change the number from *255* to *25*.

4. Click on the ***First Name*** field. Change the Field Size to 25 as well. Do the same to ***Address*** and ***Province*** Fields.

5. Click on the ***Gender*** field, this field will handle only 1 character; M for Male and F for Female. Change the Field Size from *255* to *1*.

6. In the top part of the window, click in the ***Mark*** field. Click on the Field Size, an arrow to the right of the property indicates that there are some built-in formats that can be chosen from a list. Click the arrow down and you will have a range of **Field Size** options to choose from (such as byte, single and integer).



7. For our marks field we want an option that allows for decimal places but does not have a large number range. ***Single*** would be a suitable option so choose that for **Field Size**.

8. Click or press **[Ctrl] [S]** to save the changes to the design of the table.

You have successfully finished the first activity of this lesson. You have learned the steps in editing the Field Size Property of some of your fields in the table. Keep on practising to improve your skills. You will learn more techniques in changing other field properties as you continue with this lesson. Make sure you do the necessary corrections before moving on to the next part of this lesson.

The Format Property

The Format Property is used to control how information from a field will display. This allows you to ensure that all of the information in a table will have a neat and consistent look.

At this point you will change the format of the **Date of Birth** field.

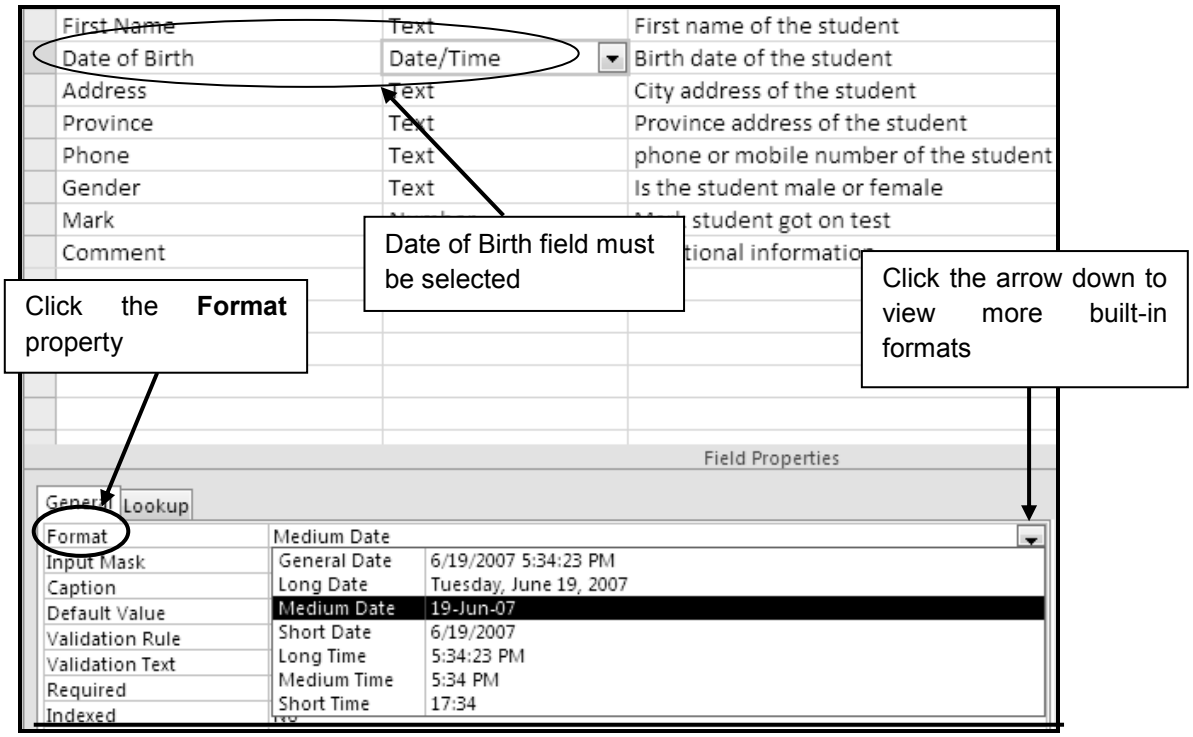
Activity 2: Perform the instructions below to edit the Format Property.

Before doing this activity make sure that Student List Database is open.

1. Select the **Date of Birth** field from the top section of the window.

2. Click in the **Format** property at the bottom.

3. Click the arrow to display the list and choose the Medium Date option. This will mean that any dates in this field will be displayed as dd-mm-yyyy so that the 12th of September 1996 would display as 12-Sept-1996, even if the dates are typed in a different format.



You can also create your own custom formats for any field. Remember that you can use the **[F1]** key for help on creating custom formats.

Thank you for completing this activity. You have learned the steps in editing the Format Property of Date/Time field in your table. Keep on practising by trying the other built-in formats provided to hone your skills. You will use these skills in modifying your table to have a consistent look. Make sure you do the necessary corrections before moving on to the next part of this lesson.

Editing Records

You can edit and make changes to your table by using the navigation buttons for easier movement around the table. You have learned from Lesson 16 the keys that you can use while moving around your table. To go to a specific record number, type the number in the Record Number box. The Record Pointer indicates the current record that you are in. You can also use the [**Tab]** key or the mouse pointer to move to a cell.

If the data in a field must be updated or has been entered incorrectly, the easiest way to replace this data is to enter the new data from scratch. To replace the old content in a field, follow these steps:

1. You can use the [**Tab]** key to move to the field you want to edit (the contents of the field will be selected), or select the contents of a field with the mouse.

2. Click the field to select its content.

3. Type the new data, which replaces the old data.

4. You can then use the [**Tab]** key or use the mouse to move to the next field you need to edit.

Replacing the entire contents of a field is kind of a heavy-handed way to edit a field if you need to correct the entry of only one or two characters. You can also fine-tune your entries by editing a portion of the data in the field. Follow these steps:

1. Place the mouse pointer over the position in the field where you want to correct data. Your mouse pointer should become an I-beam.

2. Click once to place the insertion point at that position in the field. Now you can edit the content of the field.

3. Press [**Backspace]** to remove the character to the left of the insertion point or [**Delete]** to remove the character to the right of the insertion point.

4. Enter new text into the field as needed. New entries in the field are inserted, meaning they displace the current entry but do not overwrite it.

Activity 3: **Perform the instructions below to edit record in a table.**

1. Open a new database and name it as **Movie Lists**.
2. Create a table. Use the skills you have learned from the previous lessons.
3. Refer to the settings below for the fields and data types to be used.

FIELD NAME	DATA TYPE
Media Number	Auto Number
Movie Title	Text
Actor	Text
Category	Text
Media	Text
Date Barrowed	Date
Date Returned	Date

4. Save your table using the table name **Movies**.

5. Enter the following records. Your table should look like the one below.

MOVIES

Media Number	Movie Title	Actor	Category	Media	Date Borrow	Date Return
1	Atlantis	Walt Disney	Adventure	CD	8/12/2013	8/15/2013
2	Narnia	Walt Disney	Musical	DVD	8/20/2013	8/21/2013
3	Mouse Hunt	Nathan Lane	Comedy	CD	8/10/2013	8/12/2013
4	Bring It On	Anne Judson	Action	DVD	8/5/2013	8/7/2013
5	Scooby Doo	Kurt Russel	Comedy	DVD	8/15/2013	8/18/2013
*	(New)					

6. Edit the Record Narnia, under its Category column change from Musical to Adventure.

7. The Category of the Movie Title Bring It On must be changed from Action to Comedy.

8. The Actor of the Movie Title Scooby Doo must be changed from Kurt Russel to Warner Bros.

9. Make all Media as DVD.

You have completed this activity. You have learned the steps in editing the records in your table. You may keep on adding more records to Practice the skills you have learned from the lessons. Make sure you do the necessary corrections before moving on.

Summary

You have come to the end of Lesson 17. In this lesson, you learned how to edit the Field Properties of each field in your table using Design View. You have also Practiced how to edit the records on the table you have created.

NOW DO PRACTICAL EXERCISE 17 ON THE NEXT PAGE.

Practical Exercise 17

A. Write TRUE if the statement is correct and FALSE if it is incorrect.

1. It is important to ensure that the database is designed to be easy to use._____
2. You have to select the data first before you can edit a field or record._____
3. You can select a data by simply pointing the mouse on the record._____
4. To select more than one field or record hold down the [Ctrl] key while clicking the field or record. _____
5. The largest number of characters you can set in field size is 225._____
6. Each data type has its own Field Properties. _____
7. Each field in the table you have created has several properties that can not be changed. _____
8. The properties available for each field will vary depending on data type._____

B. Identify the field property described in each statement.

1. Specifies that you have to enter a value in a field. Access will alert you if you have not entered a value. _____
2. It is the number of characters allowed in the field. _____
3. Allows you to set a field property that is common in most of the entries in your database. _____
4. Displays the numbers, dates, times and text. _____
5. You can provide your own text to be used instead of the field names in the forms, tables, reports and queries. _____
6. You can specify the number of decimal places. _____
7. Allows you to control the data pattern or format. You can also specify characters that will be placed in the field automatically. _____

C. Open the MOVIES Table and edit the Field Properties of the following:

1. Change the Field Size of the following Field Names from 255 to 30:
   a. Movie Title
   b. Actor
   c. Category

d. Media

2. Change the format of the following field names, use Medium Date

a. Date Borrowed

b. Date Returned

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 3.

Answers in Activities

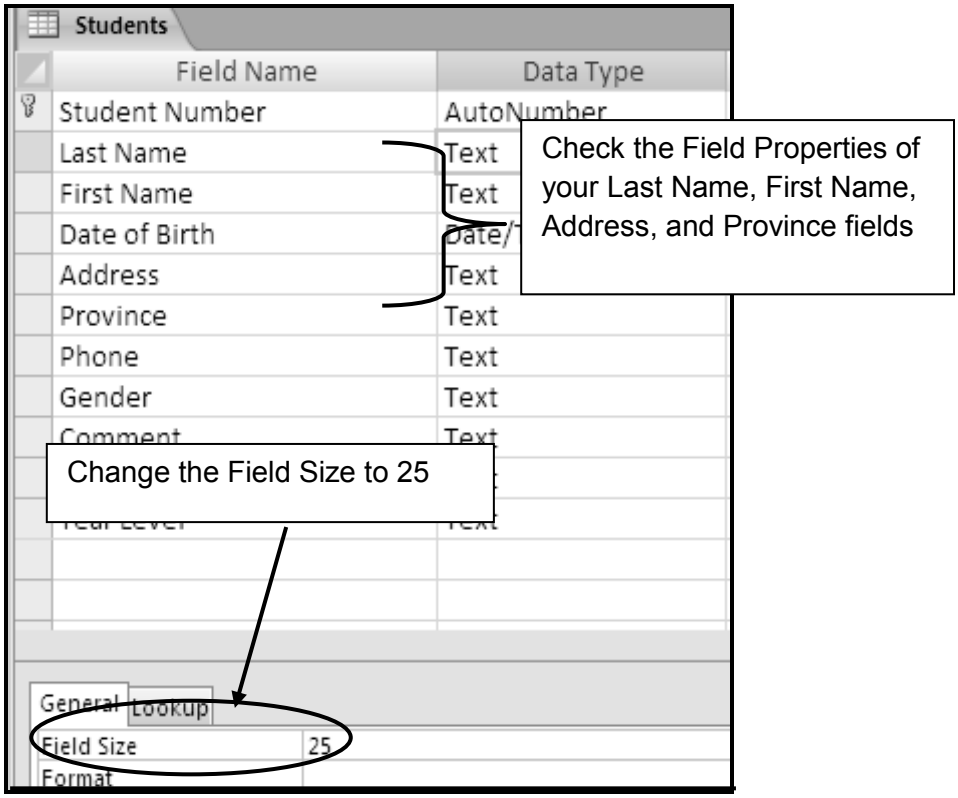
Activity 1

Refer to the steps below:

1. Open the Student List database and open the Students table in Datasheet view.

2. Add new record in the Last Name, First Name, Address and Province fields. Try to type more than 25 characters. The 26th character should not be acceptable and can not be displayed because you set the Field Size to a maximum of 25 characters only.

3. If you can enter characters beyond 25 characters, go back to Design View and check the Field Property of Last Name, First Name, Address and Province fields. Field Size must be changed from 255 to 25.



Activity 2

Refer to the steps below:

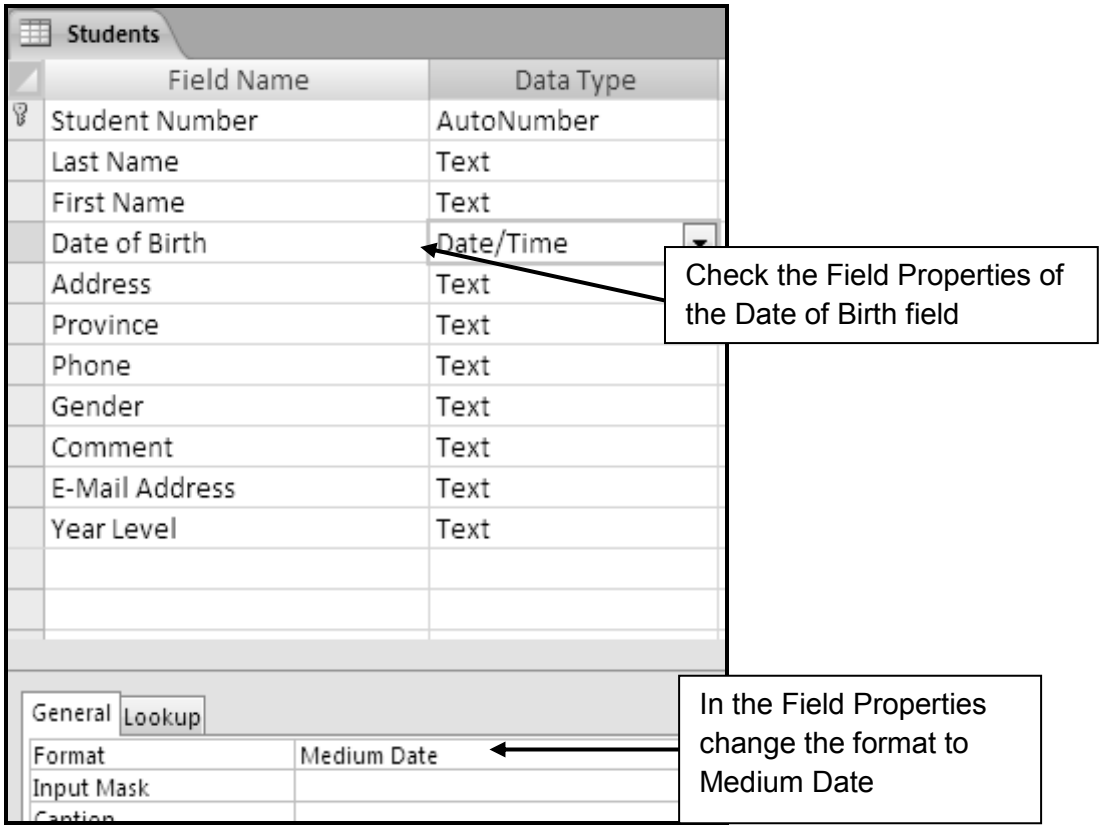
1. Open the Students table in Datasheet View.

2. Add new record; in Date of Birth field enter September 15, 2000. Your output must be 12-Sept-00.

3. If this is not your output go back to the Design view and check the Format in Field Property of the Date of Birth field. This must be set to Medium date.

4. Save any changes you have made by pressing [Ctrl] + S

5. Switch to Datasheet View and enter 10-11-98. Your output must be 11-Oct-98



Activity 3

Refer to the steps below:

1. Click Table Design in Create Tab

2. Input the Fields and set the data type given in Design View.

FIELD NAME	**DATA TYPE**
Media Number	Auto Number

Movie Title	Text
Actor	Text
Category	Text
Media	Text
Date Barrowed	Date
Date Returned	Date

3. Enter the given records in Datasheet view.

MOVIES

Media Number	Movie Title	Actor	Category	Media	Date Borrow	Date Return
1	Atlantis	Walt Disney	Adventure	CD	8/12/2013	8/15/2013
2	Narnia	Walt Disney	Musical	DVD	8/20/2013	8/21/2013
3	Mouse Hunt	Nathan Lane	Comedy	CD	8/10/2013	8/12/2013
4	Bring It On	Anne Judson	Action	DVD	8/5/2013	8/7/2013
5	Scooby Doo	Kurt Russel	Comedy	DVD	8/15/2013	8/18/2013
(New)						

4. Place your selector to cell Narnia, press [Tab] twice. The word Musical will be selected or highlighted, type Adventure to replace Musical.

5. Place your selector to record Bring It On, press [Tab] twice. Type Comedy to replace Action.

6. Place your selector to record Kurt Russel, press [Del] to delete and type Warner Bros.

7. Place your selector to the cells that has CD, delete the word CD by pressing [Del] in your keyboard, or highlight the word CD and type DVD.

8. Your final output should be similar to the one below.

MOVIES

Media Number	Movie Title	Actor	Category	Media	Date Borrow	Date Return
1	Atlantis	Walt Disney	Adventure	DVD	8/12/2013	8/15/2013
2	Narnia	Walt Disney	Adventure	DVD	8/20/2013	8/21/2013
3	Mouse Hunt	Nathan Lane	Comedy	DVD	8/10/2013	8/12/2013
4	Bring It On	Anne Judson	Comedy	DVD	8/5/2013	8/7/2013
5	Scooby Doo	Warner Bros	Comedy	DVD	8/15/2013	8/18/2013
(New)						

Lesson 18: Adding, deleting and Moving Fields

Welcome to Lesson 18 of Unit 4. In Lesson 17, you learned how to edit Field properties and records within your table.

In this lesson you will learn to add, delete and move the fields in your table.

Your Aims:

- identify the steps in adding, deleting and moving fields
- determine the importance of adding, deleting and moving fields

Adding New Field

You have learned in Lesson 14 how to create fields in your table. There will be instances that there is a need to add field(s) in your table. In Datasheet View you can immediately add a field by typing some information in the **Add New Field** column.

Students

Student Nur	Last Name	First Name	Date of Birth	Address	Province	Phone	Gender	Mark	Comment	Add New Field
1	Kaian	Jubilee	12-Sep-96	Waigani	Lae, Morobe	73187654	M	90		
2	Laki	Isaac	07-Jan-95	Boroko	Kimbe	72158209	M	89		
3	Raepa	Stephanie	17-Apr-96	Waigani	Madang	72065200	F	89		

You will now add a new field in your Students' table Datasheet view:

1. In the Navigation Pane, locate and double-click the table to which you want to add the field. Access opens the table in Datasheet View.

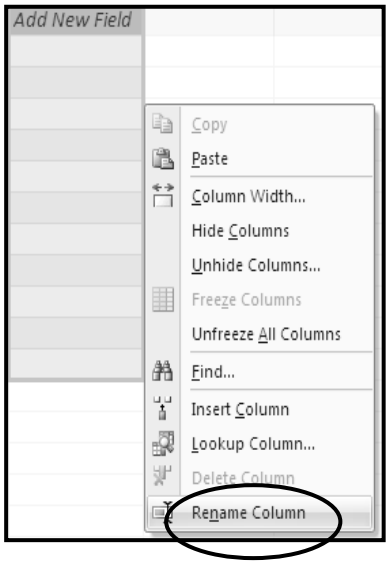
2. Scroll to the right of the datasheet and locate the blank column. By default, the words **Add New Field** appear in the column header of the blank column.

3. Double-click the column header and enter a name for the new field or Right-click the column header and click **Rename Column** on the shortcut menu.

4. Type **Year Level**.

5. Enter some data in the first blank row beneath the new field you have made.

6. Save your changes.



Basically, adding a new field is best done using the Design View. You have already learned from Lesson 13 and 14 the difference between these views as well as how to switch from these views respectively.

When you use Design View in adding a new field setting the data type and its properties will give you an ease rather than doing it in Datasheet View, because practically Datasheet view is used when working on the actual data of the table.

Activity 1: Perform the instructions below to add fields in Students table.

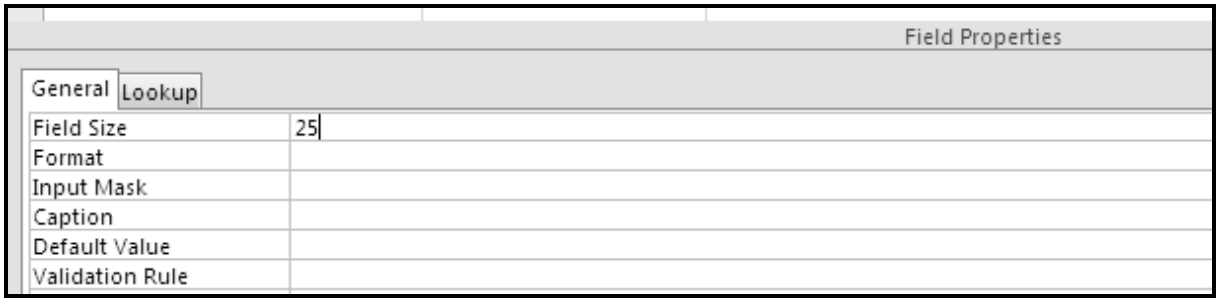
Let us now add fields to your Students' table using the Design View.

1. Open the *STUDENTS* table in **Design View**. To do this you have to click the View icon  and click Design View.

2. In the Field Name column type ***E-mail Address*** after the field name ***Comment***.

3. Set the **Data Type** to **Hyperlink** and key in ***E-mail of the student*** for the **Description**

4. Now, in the Field Properties, change the field size to ***25***



5. Save the changes by pressing **[Ctrl] + S** on your keyboard. Switch to Datasheet View so you can enter data on the new field that you have just created.

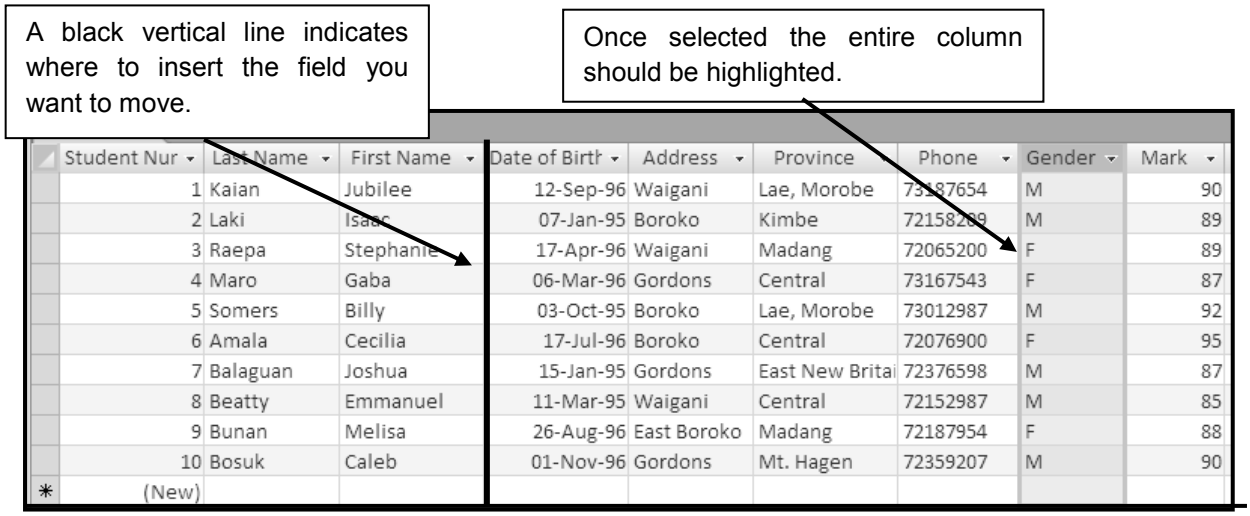
You have successfully finished the first activity of this lesson. You have learned the steps in adding fields in your table. You can add fields both in Datasheet and Design Views. Now, you may go to the end of this lesson to check your answer. Make sure you do the necessary corrections before moving on to the next part of this lesson.

Moving Fields

You can also rearrange the fields in the table. Moving the fields on the table can only be done in Datasheet View. Let us rearrange the Students' Table that you have:

1. Open the Students Table in Datasheet View.

2. Select the ***Gender*** field in the table.



Student Nur	Last Name	First Name	Date of Birth	Address	Province	Phone	Gender	Mark
1	Kaian	Jubilee	12-Sep-96	Waigani	Lae, Morobe	73187654	M	90
2	Laki	Isaac	07-Jan-95	Boroko	Kimbe	72158289	M	89
3	Raepa	Stephanie	17-Apr-96	Waigani	Madang	72065200	F	89
4	Maro	Gaba	06-Mar-96	Gordons	Central	73167543	F	87
5	Somers	Billy	03-Oct-95	Boroko	Lae, Morobe	73012987	M	92
6	Amala	Cecilia	17-Jul-96	Boroko	Central	72076900	F	95
7	Balaguan	Joshua	15-Jan-95	Gordons	East New Britai	72376598	M	87
8	Beatty	Emmanuel	11-Mar-95	Waigani	Central	72152987	M	85
9	Bunan	Melisa	26-Aug-96	East Boroko	Madang	72187954	F	88
10	Bosuk	Caleb	01-Nov-96	Gordons	Mt. Hagen	72359207	M	90
*	(New)							

3. Use the mouse to drag the field to a new position in the field list (simple as click and drag).You will place this field after the First Name field. You will notice a black vertical line between the columns where you want to insert the field that you moved. This means that this is where you will place the field Gender.

4. Perform the same steps in moving the ***Comment*** Field. Place the Comment field after the field for ***E-mail Address***.

5. Click **Save** or **Ctrl S** to save the changes you have made.

Deleting Fields

You can also delete any unwanted fields. Be very careful about deleting fields after you start entering records into your table. When you delete a field, all the information stored for each record in that field is gone, too. The best time to experiment with deleting fields is before you enter any data into the table.

A column in a datasheet represents the same thing as a field in a database table. When you add or remove a column from a datasheet, you add or remove a field from the table that underlies the datasheet. If that field contains data, you also eliminate that information.

Before you remove a column from a datasheet, remember several important facts:

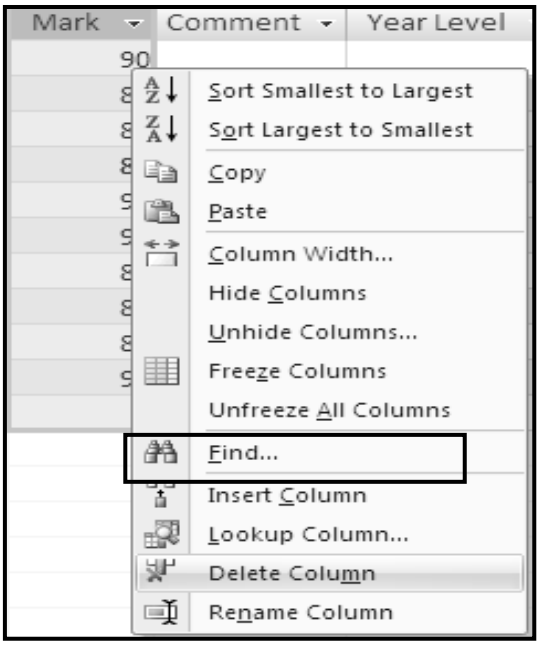
- When you remove a column, you delete all the data in the column, and you can not undo the deletion. For that reason, you should back up the table before you delete the column.

- You can not delete certain types of columns without some additional work. For example, you can not use Datasheet view to delete a primary key field. You must use Design view to perform that task. Also, you can not delete a primary key without first deleting the relationship between the field and the tables from which the field takes its data.

The rules for deleting a column in Datasheet view also apply to working in Design view. The following are the steps in deleting a field both in Design view and Datasheet view. Study the steps first and you will apply one of this later on the Students' Tables you have created.

A. Delete column in Datasheet view

1. Right-click the header row of the column that you want to remove.
2. Click **Delete Column** on the shortcut menu.
3. Click **Yes** to confirm the deletion.
4. Click **Save** or key in **CTRL S**.



B. Delete column in Design view

1. In the Navigation Pane, right-click the table that you want to change, and then click **Design View** on the shortcut menu or on the Access status bar, click **Design View**.
2. Select the field (the row) that you want to delete.
3. On the **Design** tab, in the **Tools** group, click **Delete Rows** or press **[DELETE]** on your keyboard.
4. Click **Save** or key in **[CTRL S]**.

Activity 2: Follow the given steps to delete field in Datasheet view

This time, you will delete one of the fields in the Students' Table. Be careful in doing this remember that once you perform delete this will be permanently remove from the table and you can not not perform undo the operation. We will perform the deletion in Datasheet view.

1. Right click the ***Mark*** field in your table.
2. Click **Delete Column** on the shortcut menu.
3. Click **Yes** to confirm the deletion.

4. Click **Save** or key in **[CTRL] + S**.

The final output of your table should be similar to the one below.

Students

Student Nur	Last Name	First Name	Gender	Date of Birt	Address	Province	Phone	Year Level	E-Mail Addr	Comment
1	Kaian	Jubilee	M	12-Sep-96	Waigani	Lae, Morobe	73187654	IV	kaianj@gmail.(	
2	Laki	Isaac	M	07-Jan-95	Boroko	Kimbe	72158209	IV	lakii@gmail.co	
3	Raepa	Stephanie	F	17-Apr-96	Waigani	Madang	72065200	IV	raepas@yahoo	
4	Maro	Gaba	F	06-Mar-96	Gordons	Central	73167543	IV	marog@gmail.	
5	Somers	Billy	M	03-Oct-95	Boroko	Lae, Morobe	73012987	IV	somersb@yah(	
6	Amala	Cecilia	F	17-Jul-96	Boroko	Central	72076900	III	amalac@datec	
7	Balaguan	Joshua	M	15-Jan-95	Gordons	East New Brita	72376598	III	balaguanj@gm	
8	Beatty	Emmanuel	M	11-Mar-95	Waigani	Central	72152987	III	beattye@digic	
9	Bunan	Melisa	F	26-Aug-96	East Boroko	Madang	72187954	III	bunanm@date	
10	Bosuk	Caleb	M	01-Nov-96	Gordons	Mt. Hagen	72359207	III	bosukc@gmail	
(New)										

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answer. Make sure you do the necessary corrections before moving on to the next part of this lesson.

Summary

You have come to the end of Lesson 18. In this lesson, you learned how to add, move and delete fields in your table. Keep on practising using the steps provided in this lesson to hone your skills in creating a user friendly table.

NOW DO PRACTICAL EXERCISE 18 ON THE NEXT PAGE.

Practice Exercise 18

A. Fill in the blanks.

You can _____ any unwanted fields. Be _____ about deleting fields after you start entering records into your table. When you delete a field, _____ the information stored for each record in that field is _____, too.

A _____ in a datasheet represents the same thing as a_____ in a database table. When you _____ or _____ a column from a datasheet, you add or remove a field from the_____ that underlies the datasheet. If that field contains data, you also _____ that information.

B. Perform the instructions below:

1. Open the Friends Table you have created in Lesson 14.
2. Add the following fields:
   a. Nickname
   b. School
   c. Favourite Quote
   d. Email address
   e. Comment
3. Set the data types of these newly added fields.
4. Move the field Nickname and place it after the field Full Name.
5. Delete the field Age.
6. Save the changes you have made on your table.
7. Enter data on these newly added fields.
8. Close the table.

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 3.

Answers to Activities

Activity 1

Refer to the steps below:

1. Open your Students Table in Datasheet view.
2. Your Table should be similar as the one below.

Students

Student Nur	Last Name	First Name	Date of Birth	Address	Province	Phone	Gender	Mark	Commer	E-Mail Addr
1	Kaian	Jubilee	12-Sep-96	Waigani	Lae, Morobe	73187654	M			kaianj@gmail
2	Laki	Isaac	07-Jan-95	Boroko	Kimbe	72158209	M			lakii@gmail.c
3	Raepa	Stephanie	17-Apr-96	Waigani	Madang	72065200	F			raepas@yaho
4	Maro	Gaba	06-Mar-96	Gordons	Central	73167543	F			marog@gmai
5	Somers	Billy	03-Oct-95	Boroko	Lae, Morobe	73012987	M			somersb@yah
6	Amala	Cecilia	17-Jul-96	Boroko	Central	72076900	F			amalac@date
7	Balaguan	Joshua	15-Jan-95	Gordons	East New Brita	72376598	M			balaguanj@gr
8	Beatty	Emmanuel	11-Mar-95	Waigani	Central	72152987	M			beattye@digi
9	Bunan	Melisa	26-Aug-96	East Boroko	Madang	72187954	F			bunanm@dat
10	Bosuk	Caleb	01-Nov-96	Gordons	Mt. Hagen	72359207	M			bosukc@gmai
(New)										

3. There should be an E-Mail Address added after the column comment.

Activity 2

Refer to the steps below:

1. Open your Students Table in Datasheet view
2. Your Table should be similar as the one below.
3. The Mark column should have been deleted.

Students

Student Nur	Last Name	First Name	Gender	Date of Birth	Address	Province	Phone	Year Level	E-Mail Addr	Comment
1	Kaian	Jubilee	M	12-Sep-96	Waigani	Lae, Morobe	73187654	IV	kaianj@gmail.c	
2	Laki	Isaac	M	07-Jan-95	Boroko	Kimbe	72158209	IV	lakii@gmail.co	
3	Raepa	Stephanie	F	17-Apr-96	Waigani	Madang	72065200	IV	raepas@yahoo	
4	Maro	Gaba	F	06-Mar-96	Gordons	Central	73167543	IV	marog@gmail.	
5	Somers	Billy	M	03-Oct-95	Boroko	Lae, Morobe	73012987	IV	somersb@yah	
6	Amala	Cecilia	F	17-Jul-96	Boroko	Central	72076900	III	amalac@datec	
7	Balaguan	Joshua	M	15-Jan-95	Gordons	East New Brita	72376598	III	balaguanj@gm	
8	Beatty	Emmanuel	M	11-Mar-95	Waigani	Central	72152987	III	beattye@digic	
9	Bunan	Melisa	F	26-Aug-96	East Boroko	Madang	72187954	III	bunanm@date	
10	Bosuk	Caleb	M	01-Nov-96	Gordons	Mt. Hagen	72359207	III	bosukc@gmail	
(New)										

Answers to Practical Exercises

Practice Exercise 13

A.

1. Table
2. Datasheet view
3. Columns and rows
4. Field
5. Record

B.

1. True
2. True
3. True
4. False
5. False

C.

1. Datasheet View
2. Design View

Practice Exercise 14

A.

1. Datasheet view
2. Tables
3. Fields
4. Fields
5. Primary Key
6. 255
7. Design

B.

1. T
2. T
3. F – Datasheet View
4. T
5. F – [Tab]
6. F – spacebar
7. T
8. T

Practice Exercise 15

A.

1. Memo
2. Numbers
3. Date/Time
4. Text
5. AutoNumber
6. Yes/No
7. Hyperlink

8. Currency
9. OLE Object
10. Lookup Wizard

B.

1. Data Type is the list of different types of data that has a specific purpose applied on each field that are used in a database table.
2. You have to identify the data type in a field because Access should know how to handle the contents of the field in the table.
3. You can change the data type of field in Datasheet view in Data Type & Formatting menu that can be found in Datasheet tab.

Practice Exercise 16

A.

1. First Record
2. Previous Record
3. Current Record
4. Next Record
5. Last Record
6. New (blank) Record

B.

1. √
2. √
3. √
4. √
5. √
6.
7. √
8.
9. √

C. Sample entries below. You can have your own output in this exercise

FRIENDS

Full Name	Address	Age	Birthday	Phone Numl	Add New Field
Raynol Balili	Gordons	16	5/8/1997	72098654	
Bessy Gola	East Boroko	16	2/28/1997	72134543	
Jacinta Amos	6 Mile	15	4/7/1998	73256512	
Sepura Amul	Boroko	15	3/6/1998	74398765	
Jean Amos	Taurama	15	1/15/1998	75412310	
*					

Practice Exercise 17

A.

1. True
2. True
3. False
4. False
5. False
6. True
7. False
8. True

B.

1. Required
2. Field Size
3. Default Value
4. Format
5. Caption
6. Decimal Places
7. Input Mask

C.

1. Refer to the steps below
    a. Open the Movies Table in Design View.
    b. Select the field Movie Title, in the Field Properties change the Field Size and make it 30.
    c. Do the same steps for the field names Actor, Category, and media
    d. Save the changes, press [Ctrl] + S
    e. Switch your view to Datasheet View
    f. Try to enter data on the fields, input more than 30 characters
2. Refer to the steps below
    a. Open the Movies Table in Datasheet View.
    b. Select the Date Borrowed field
    c. In the Field Properties, click Format and click Medium Date
    d. Do the same steps to change the format of Date Returned
    e. Save Changes, press [Ctrl]+ S

f. Switch to Datasheet View

g. Try to enter a date

Practice Exercise 18

A. You can **DELETE** any unwanted fields. Be **VERY CAREFUL** about deleting fields after you start entering records into your table. When you delete a field, **ALL** the information stored for each record in that field is **GONE**, too.

A **COLUMN** in a datasheet represents the same thing as a **FIELD** in a database table. When you **ADD** or **REMOVE** a column from a datasheet, you add or remove a field from the **TABLE** that underlies the datasheet. If that field contains data, you also **ELIMINATE** that information.

B.

Refer to the steps below:

1. In the Navigation Pane, right click the table **Friends**.
2. Click on **Design View**.
3. In the **Field Name** column, after the Phone Field Name, type **Nickname** and press [Tab].
4. In the **Data type** column click **Text** or press [Enter].

   You can type any descriptions that best describes these additional fields.
5. Next field is **School** and press [Tab].
6. Choose **Text** for the data type.
7. Next field is **Favourite Quote** and press [Tab].
8. Choose **Memo** for the data type.
9. Next field to enter is **Email Address** and press [Tab].
10. Choose **Hyperlink** for the data type.
11. Last field is **Comment** and press [Tab].
12. Choose **Memo** for the data type.
13. Click the **Save** button in the **Quick Access toolbar**.
14. Switch your view to **Datasheet** view.
15. Click the column selector of field **Nickname**, and drag to move it after the field Full Name.
16. Click the column selector of field **Age** and press **[Delete]** on your keyboard.

17. Click **Yes** to confirm the deletion.

18. Right click the table tab and click **Close**.

End of Topic 3.

Now Do Exercise 3 in Assignment Book 3 Then Go to Topic 4.

TOPIC 4

CREATING FORMS

TOPIC 4: CREATING FORMS

In this topic you will learn what a form is. You will be able to enter records and modify the layout of your form. This topic aims to provide a window of your data and makes your database look polished and professional.

In this topic, you will study about the following:

Lessons 19 discusses a form and lists the steps of creating it using form wizard

Lesson 20 focuses on how to enter records in a form and step-by-step procedure will be presented in entering records.

Lesson 21 teaches how to modify the layout of a form and the importance of modifying a form layout

Lesson 22 discusses how and when to use the design and layout views in modifying contents in forms

Lesson 23 gives the steps on how to insert image in a form.

Lesson 24 identifies the purpose of using an Auto Format and Form header.

By the end of Topic 4, you should be able to create basic, split and multiple item type of form which provides easier way to navigate, create and modify database records.

Lesson 19: Using Form Wizard

Welcome to Lesson 19 of Unit 4. In Lesson 18, you learned how to add, move and delete fields in your table.

In this lesson you will be introduced to Form and its different types of forms. You will also use a Form Wizard to create your first Form.

Your Aim:

- define a form
- identify the uses of form
- name the benefits of form
- create a form using form wizard
- identify the steps in using the form wizard

What Is Form?

Information in a database can be entered and edited directly in a table; most people find it simpler to use a form. We use forms all the time in everyday life as a way of recording information so forms are familiar to us. The Form Design tools in Access are very flexible, they allow you to customise a form with many features to make it easy for the user to enter/edit data.

A Form is a type of a database object that is used to enter, change, delete and display data in a database. A form can contain lines, colour and images together with check boxes, button and other features called controls. When you create a form, there are a couple of key purposes that you should keep in mind. Your form is good at its job if it achieves clarity and control.

Forms help people focus on just what they need when they enter or view data. You should design a form so that it is easy to read and understand. You can include labels to describe data, and instructions for entering it, right next to each working area.

You can create three types of forms namely plain form, split form which shows both datasheet and form at the same time and multiple-item form which shows multiple record at the same time.

Using the Form Wizard

One way of creating form is using the Form Wizard. The form wizard is an automated way of creating a basic form for your data, rather than doing it manually.

Using the Form Wizard allows you to have a lot more control over how your form looks and functions. This method allows you to select fields from more than one table/query as well as giving you a lot of choice about how the form will appear.

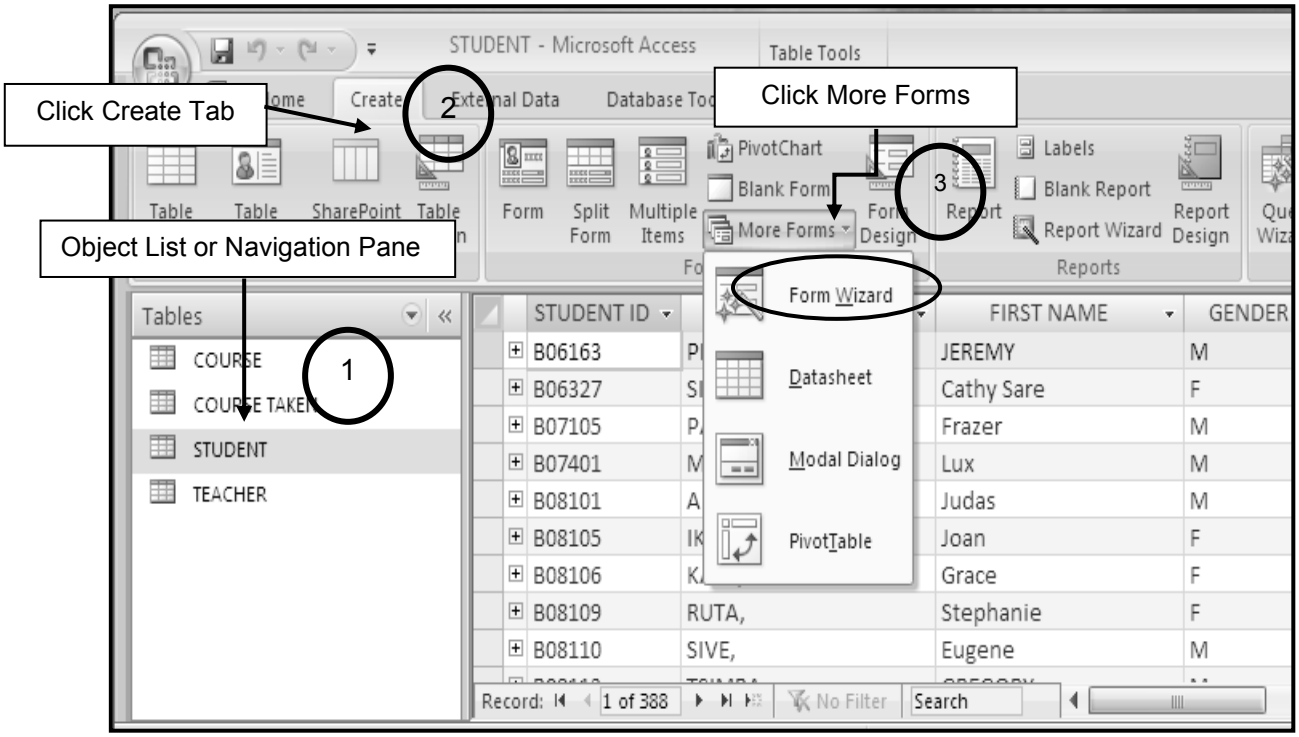
The Form Wizard is best when you want to be guided step by step through the process of creating form. The Form Wizard asks you questions and creates a form based on your answers.

You will need to tell the wizard:

- Which table query the form data comes from.
- Which fields to use on the form.
- Which layout to apply
- Which visual style to apply

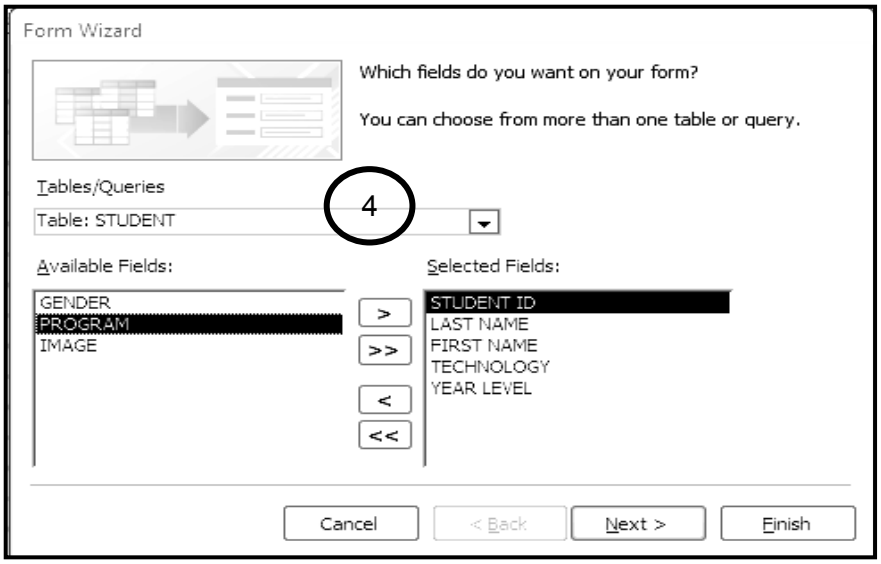
Let us start creating our first form using the Form Wizard

1. On the **Object List or Navigation pane**, click the table or query you want to use.
2. Click the **Create tab** on the **Ribbon.**
3. Click **More Forms** and select **Form Wizard**.

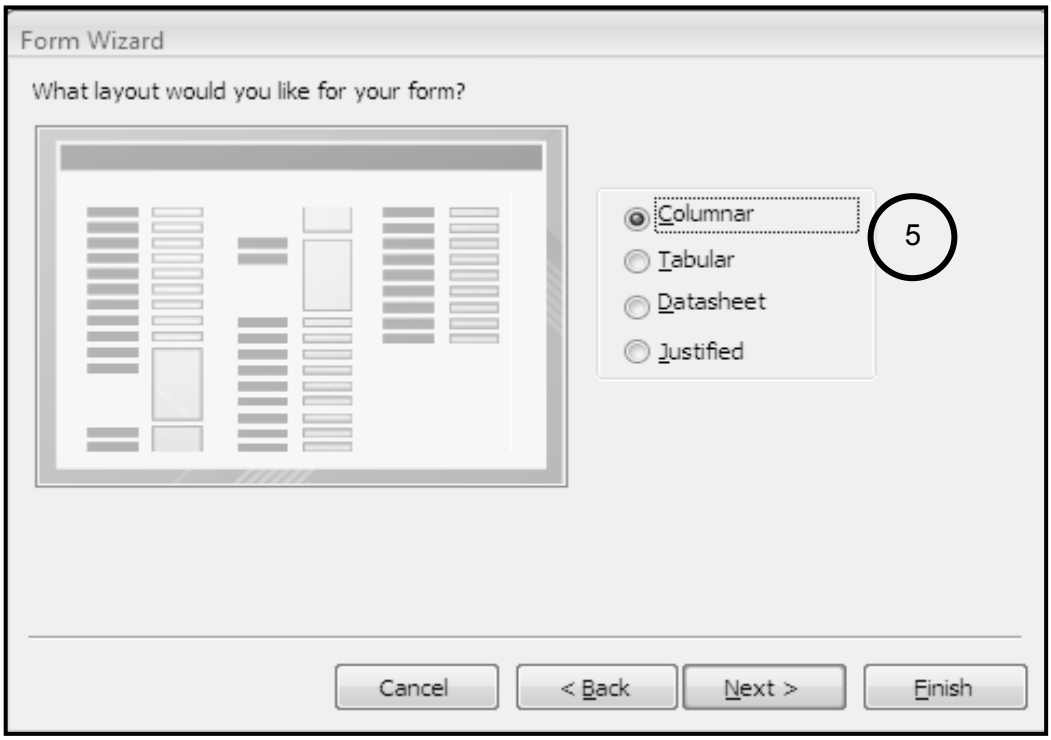


4. In the Form Wizard Dialogue box, select the fields that you want to include in our form.

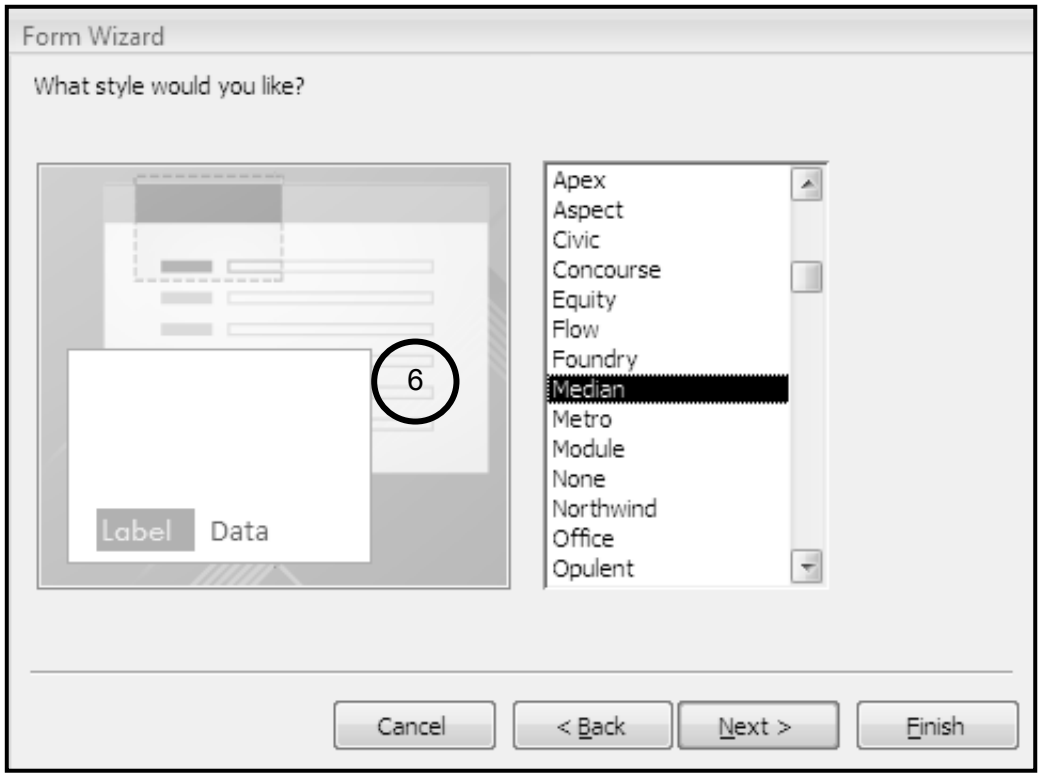
Note: If you want to choose some of fields available, then click [>], otherwise if you want to include all available fields, click [>>]. After selecting your desired fields, click **Next** button.



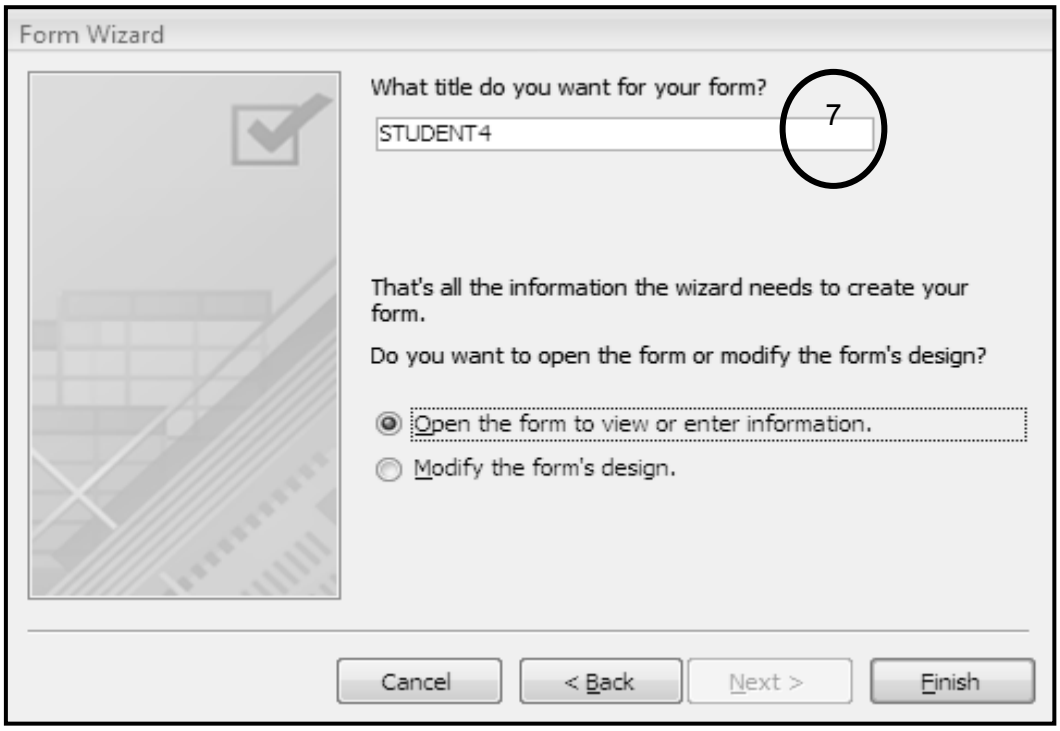
5. Next, you will choose the layout of your form. Preview of the layout available can be seen on the left side of the Dialogue box. After you have selected the desired layout you will click **Next** button.



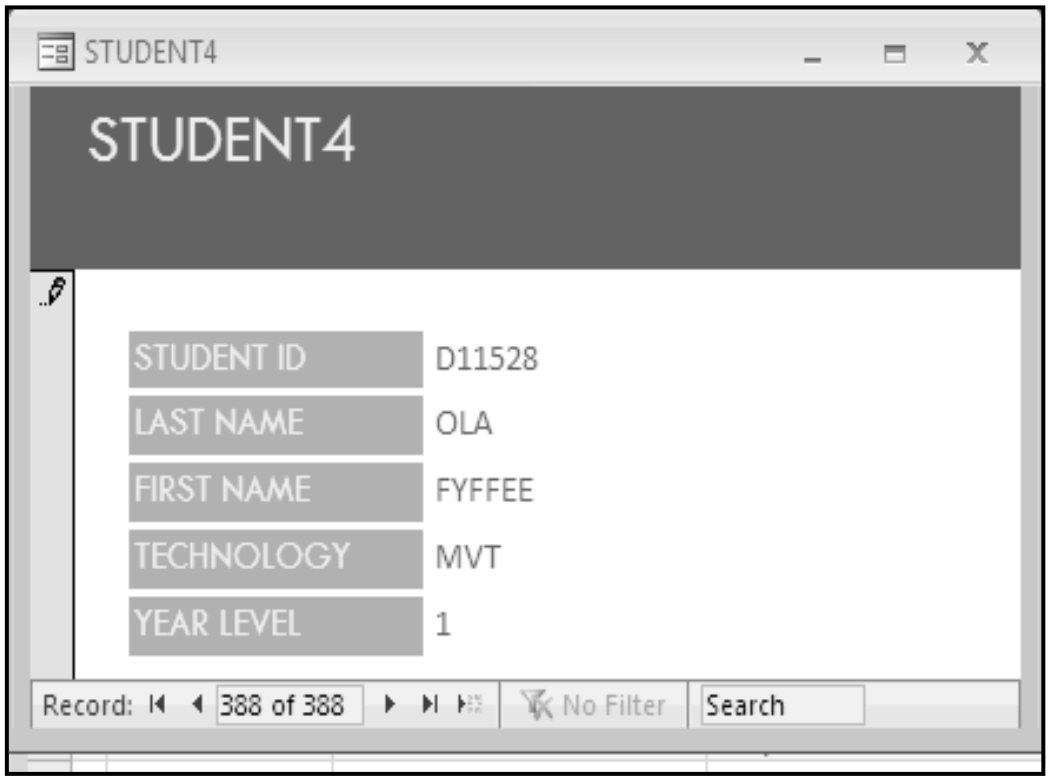
6. Choose the style that you want to apply on your form. Preview of the layout available can be seen on the left side of the Dialogue box. After you have selected the desired layout you will click **Next** button.



7. Name the title of your form or you may use the default title in the title box. Lastly, click on the button *Open the form to view or enter information*, then click **Finish.**



8. You have just created your form STUDENT4 using the Form Wizard.



Activity 1: Answer the following. Write your answer on the space provided.

1. What is a form?

_____

_____

2. How do you differentiate a split form from a multiple-item form?

_____

_____

3. Enumerate three (3) benefits of using Form Wizard in creating forms.

a.

_____

_____

b.

_____

_____

c.

_____

_____

Activity 2: Create a form using Form Wizard

Using the knowledge in creating tables, create a **Flowers** table that contains the following: Common name of the flower, its scientific name and type. After creating Flower Table use the Form Wizard in creating your form.

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answer. Make sure you do the necessary corrections before moving on to the next part of this lesson.

Summary

You have come to the end of Lesson 19. In this lesson, you learned about forms. Form is used to enter, change, delete and display data in a database. There are several ways in creating form; a Form Wizard will guide you through step by step in creating form.

NOW DO PRACTICE EXERCISE 19 ON THE NEXT PAGE.

Practice Exercise 19

A. Identify what is being described below. Write your answer on the space provided.

1. It is a type of a database object that is used to enter, change, delete and display data. _____

2. It can contain lines, colour and images together with check boxes, button and other features called controls. _____

3. A form is good at its job when it achieves _____ and _____

4. It is a type of form which shows datasheet and form at the same time. _____.

5. It is a type of form which shows multiple records at the same time. _____

B. Arrange the following steps on how to create a form using Form Wizard. Use numbers 1-7 and write your answer on the space provided.

_____ In the Form Wizard Dialogue box, select the fields that you want to include in your form.

_____ On the Object List, click the table or query you want to use.

_____ Click More Forms and select Form Wizard.

_____ Select the Layout you want to apply to your form.

_____ Click the Create tab on the Ribbon.

_____ Give a title name to your form and click Finish button.

_____ Select the Style that you want to apply to your form.

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 4.

Answers to Activity

Activity 1

1. A Form is a type of a database object that is used to enter, change, delete and display data in a database. A form can contain lines, colour and images together with check boxes, button and other features called controls

2. A split form shows both datasheet and form at the same time, while multiple-item form shows multiple record at the same time

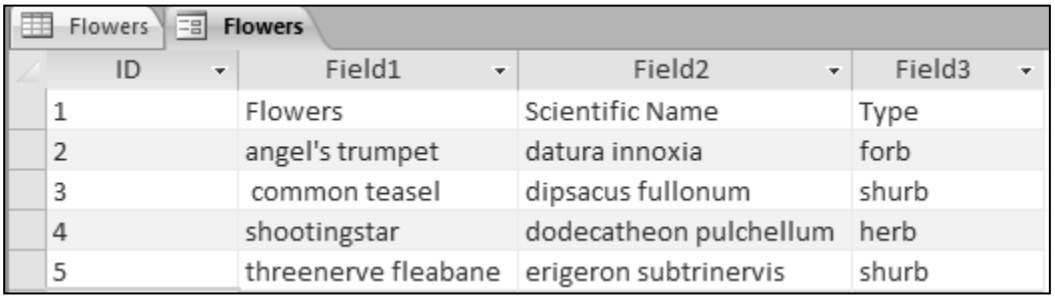
3.

a. Provides step by step procedure in creating a form.

b. It can quickly create a basic form of data.

c. It allows more control on how a form looks and functions.

Activity 2



Flowers | Flowers

ID	Field1	Field2	Field3
1	Flowers	Scientific Name	Type
2	angel's trumpet	datura innoxia	forb
3	common teasel	dipsacus fullonum	shurb
4	shootingstar	dodecatheon pulchellum	herb
5	threenerve fleabane	erigeron subtrinervis	shurb

Lesson 20: Entering Records in Form

Welcome to Lesson 20 of Unit 3. In Lesson 19 you learned about forms and the use of the Form wizard.

In this lesson you will learn how to use and to input records to the form that you created in the Lesson 19.

Your Aims:

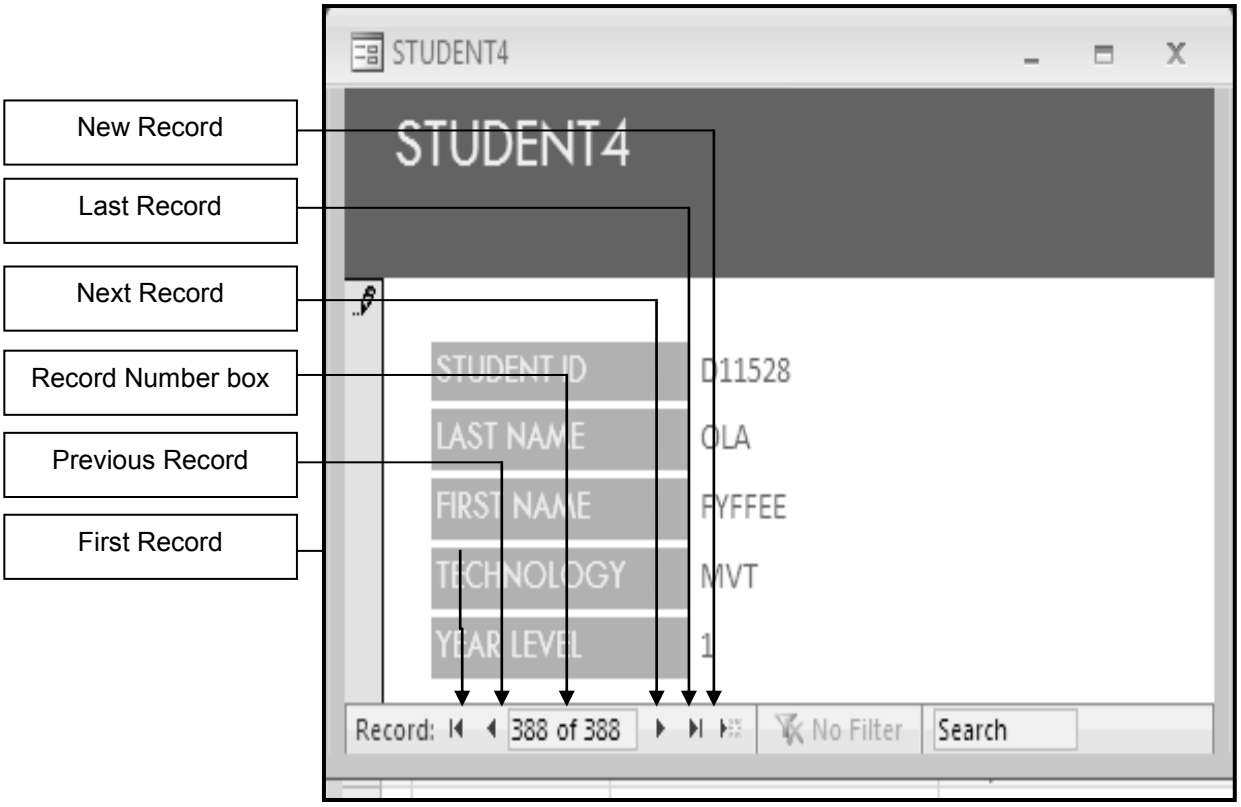
- identify the basic parts of a form
- add, change and delete records to the form

Using Forms

Understanding the parts of a form is the first step in adapting it to your needs. Once you know how to create forms, it is time to start making those forms look and act the way you want. To do that, you need to know your way around the parts of a form.

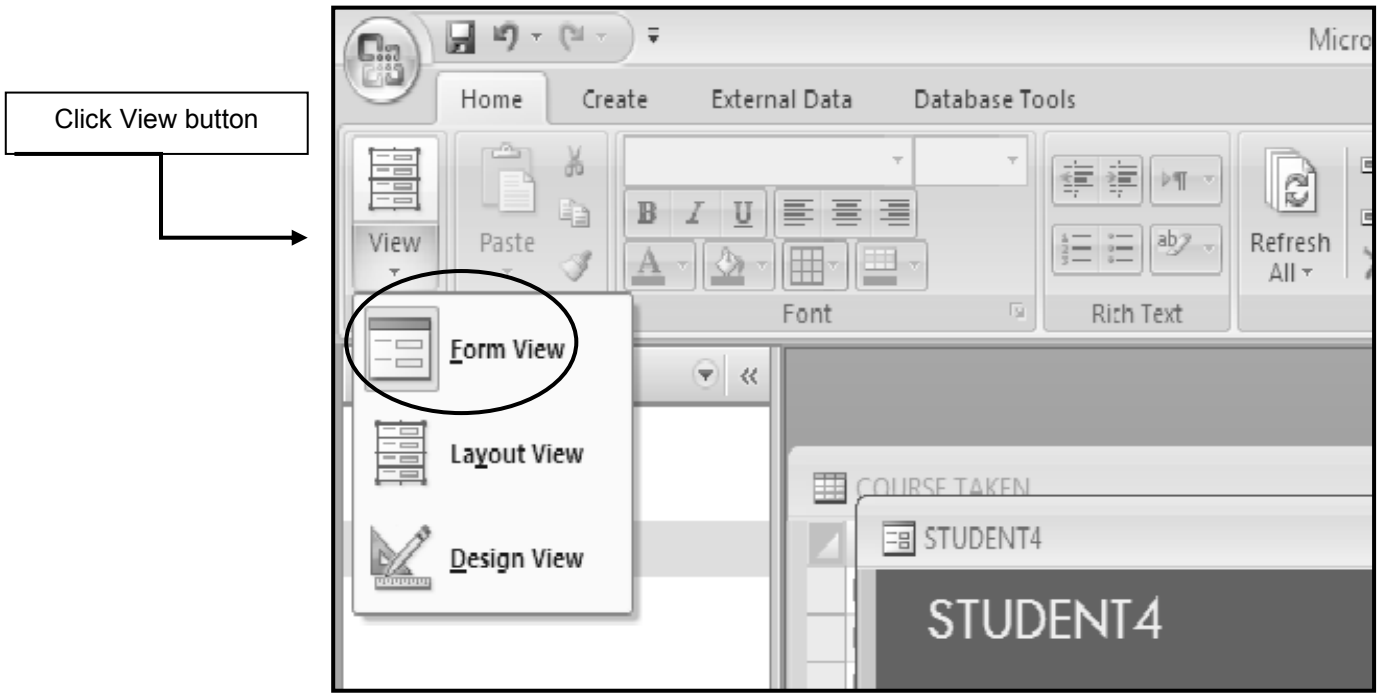
All forms share an underlying structure and contain a shared set of working items. Once you are familiar with these you will be able to see how a form is put together.

Using a form is the same as using the Datasheet View. Below is the form that we have created in Lesson 19. Let us identify the different parts of our form.



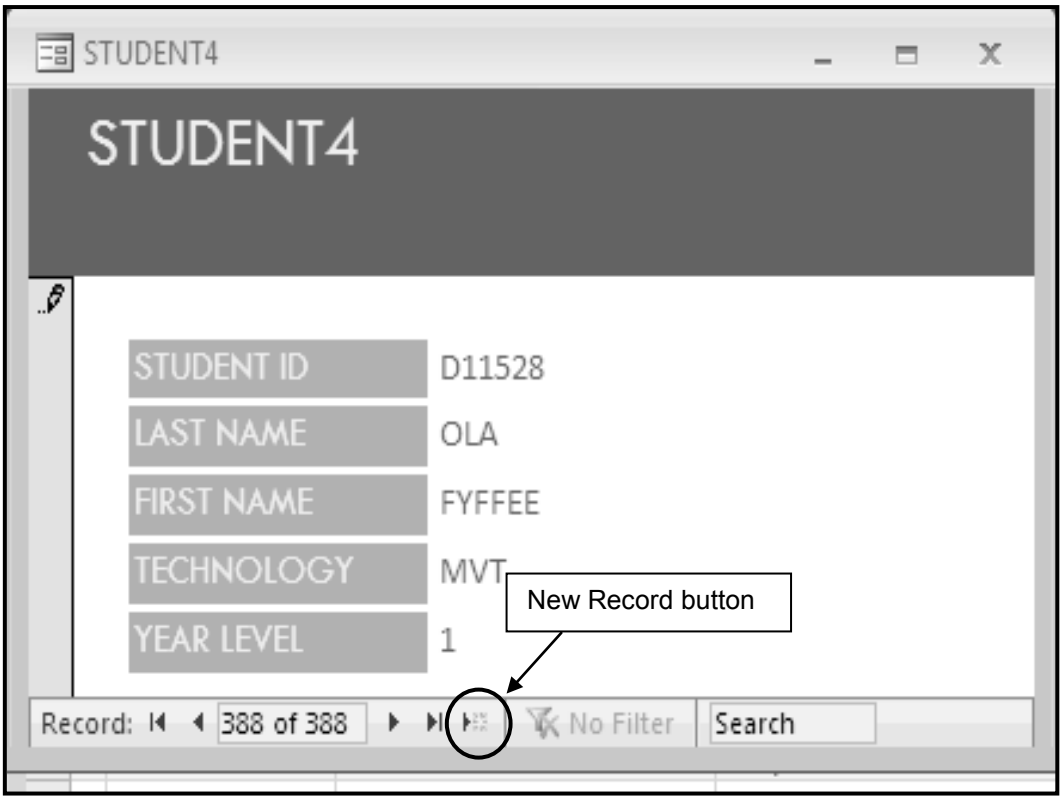
Upon creating a form, it is time to take it for a test spin. For that you have to be in Form view (refer to figure). When you open a form by double-clicking it in the

navigation pane, it opens in Form View. In Form View, you can perform all the same task you performed in the datasheet when you work in the table. With a simple form, the key difference is that you see only one record at a time.



Adding Record

As what you have learned from Lesson 18, you add new record in Datasheet view by scrolling to the very bottom of the table, and typing just underneath the last row. In Form View, the concept is similar – if you want to add a new record, click the **New Record** button.



If you have decided that you do not want to add a new record after all, then press Esc twice. The first time you press Esc, Access wipes out the value in the current field.

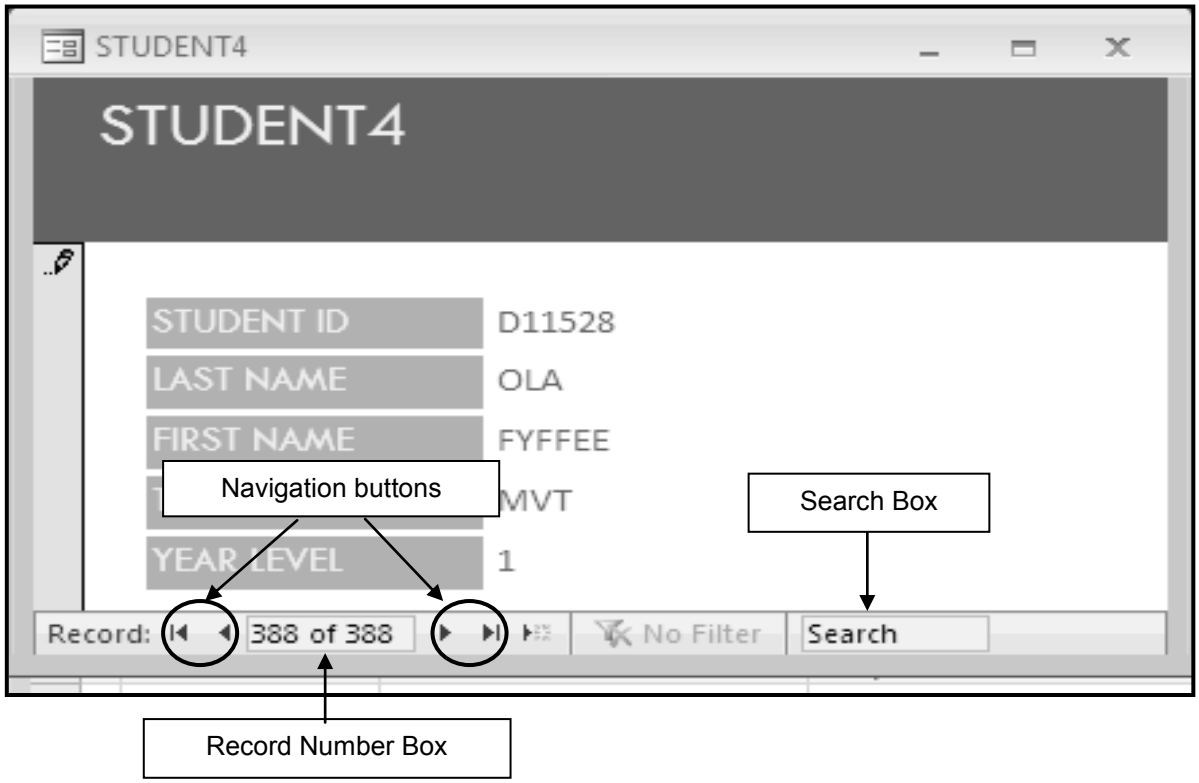
Changing Record
Rare is the record that never changes. Depending on the type of data you are storing, most of your work in Form View may consist of hunting down a specific record and making modifications.

Before you can make any of these changes, you need to find the right record. In Form View, you have three ways to get to the record you need. These methods use the navigation controls that appear at the bottom of the form window.

1. **By navigating**. If your table is relatively small, then the fastest way to get going is to click the arrow buttons to move from one record to the next.

2. **By position**. If you know exactly where your record is, then you can type in the number that represents the position in the **Record Number Box**, and press Enter. If you do not get exactly where you want, then you can also use the navigation buttons to move to the nearby record

3. **By searching**. The quick search feature finds a record with a specific piece of text (or numeric value) in one of its fields. To use quick search, type the text you want to find in the search box.



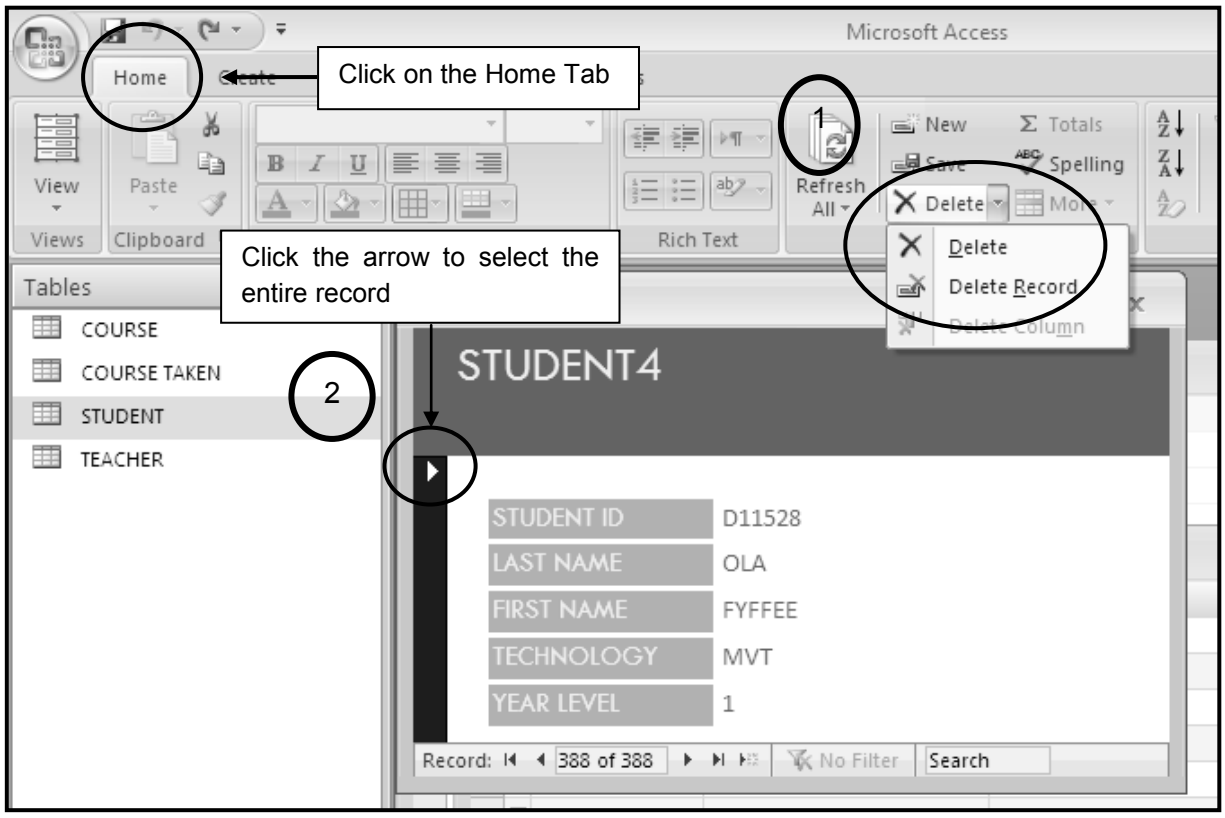
Access commits any change you make as soon as you move to another record or field. To back out of a change, press Esc key before you move on. When you do, the original value reappears in the cell, and Access tosses out your changes. And if you do commit a change by accident, then you can use the Undo button or press Ctrl+Z in your keyboard.

Deleting Record

When you delete whole records from a database, you delete the data in each field, and you also delete the key value which is the value that makes the record unique. If the record is not related to any other records (that is, if the key value does not reside in any other records or tables in the database), you can delete the record by selecting it and pressing DELETE.

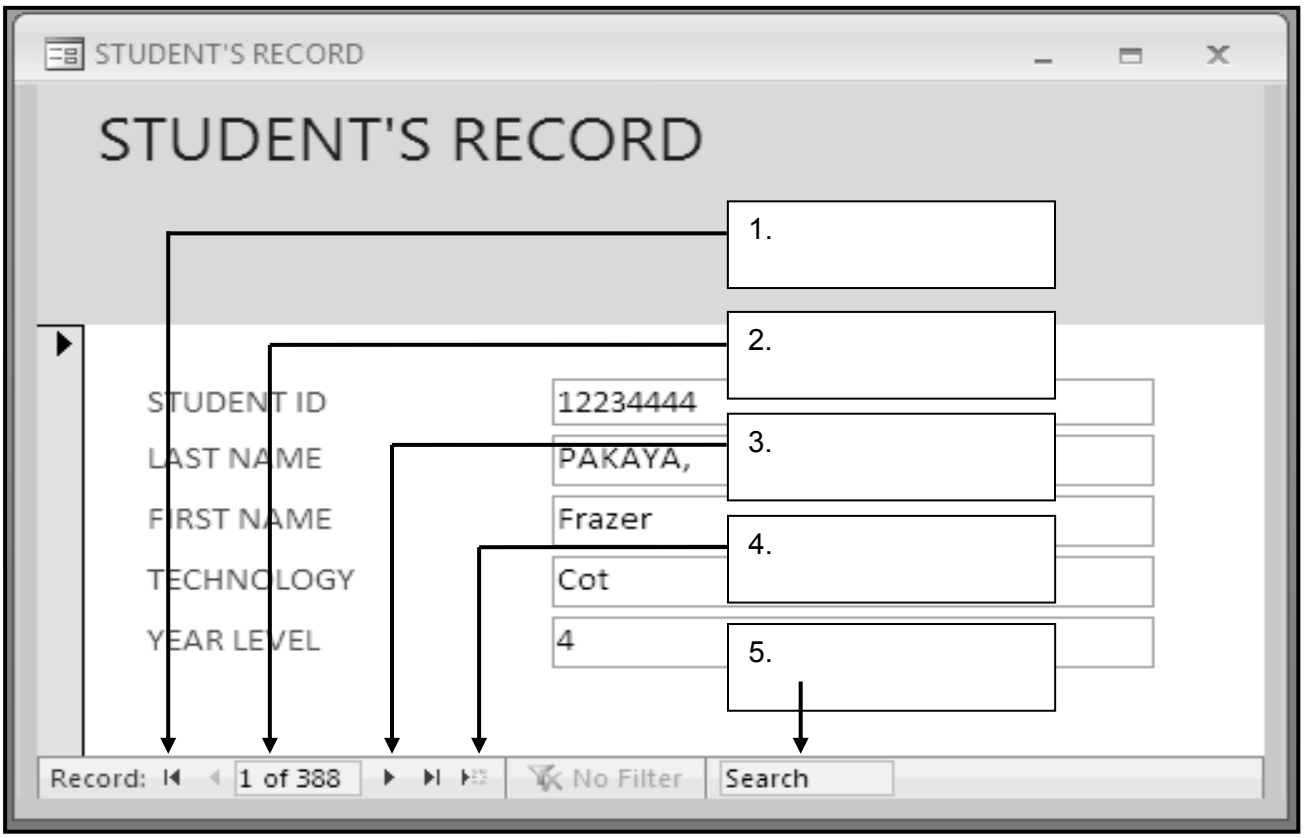
When you find a record that should not exist, you can wipe it out in seconds. There are several ways you can delete a record in a form.

1. In the Home menu tab, click on **Delete** and choose **Delete Record**; OR
2. You can select the whole record by clicking the margin with small arrow on the form window's left side and press delete.



Remember that once you delete a whole record, you cannot undo that deletion. For that reason, you should always back up your database before you delete data.

Activity 1: Name the parts of the database form.



Activity 2: Add records in a form

Using the **Flowers** form you have created in the previous activity in Lesson 19 add ten (10) more records in the form and the knowledge you have learned, change and delete some records.

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answer. Make sure you do the necessary corrections before moving on to the next part of this lesson.

Summary

You have come to the end of Lesson 20. In this lesson, you learned the basic parts of form. With these basic parts you learned how to navigate in the different records you have in your form. You have also learned how to add, change and delete records in the form.

NOW DO PRACTICE EXERCISE 20 ON THE NEXT PAGE.

Practice Exercise 20

A. Write True if the statement is correct and write False if it is incorrect.

1. You can add, change and delete records in the form. _____
2. You have to be in Form View to be able to add, change or delete a record. _____
3. Navigation buttons are composed of Last, Next, Previous and First Record buttons. _____
4. Click the New Record button to delete a record. _____
5. If you do not want the changes you have made in a form just simply press ALT key to wipe out the value in the current field. _____
6. Form View has three (3) ways to get to the record you need. _____
7. If you know exactly where the record is, type the number that represents the position in the Record Number Box. _____
8. To use quick search, type the text you want to find in the Search Box. _____
9. Changes committed by accident can be cancelled with the use of undo button or Ctrl + Z keys in your keyboard. _____
10. Once you delete a whole record, you cannot undo the deletion. _____

B. Enumerate the following

1. Three (3) ways to get to the record you need
   a. _____
   b. _____
   c. _____
2. Two (2) ways how to delete a record
   a. _____
   b. _____

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 4.

Answers to Activity

Activity 1

1. First Record
2. Record Number Box
3. Next Record
4. New Record Button
5. Search box

Activity 2

Flowers | Flowers

ID	Field1	Field2	Field3
1	Flowers	Scientific Name	Type
2	angel's trumpet	datura innoxia	forb
3	common teasel	dipsacus fullonum	shurb
4	shootingstar	dodecatheon pulchellum	herb
5	threenerve fleabane	erigeron subtrinervis	shurb
6	yellow buckwheat	eriogonum flavum	shurb
7	filaree	erodium cicutarium	herb
8	glacier lily	erythronium grandiflorum	forb
9	sunflower	helianthus annuus	herb
10	St. John's Wort	hypericum formosum var. Scouleri	herb
11	bitter root	lewisia rediviva	herb
12	blue flax	linum perenne	forb
13	spur lupine	lupinus arbustus	shrub
14	nodding microseris	microseris nutans	herb
15	monardella	monardella odoratissima	shrub

Lesson 21: Modifying Layout of the Form

Welcome to Lesson 21 of Unit 4. In Lesson 20, you learned the basic parts of the form and navigated the different records to have in a form.

In this lesson you will learn how to modify the form that you created in the Lesson 19. This lesson will improve your skills in modifying your form according to its use.

Your Aims:

- add, delete and make changes in the form
- set and change font type, size, colour, alignment and attributes in the form
- change the appearance of the form.

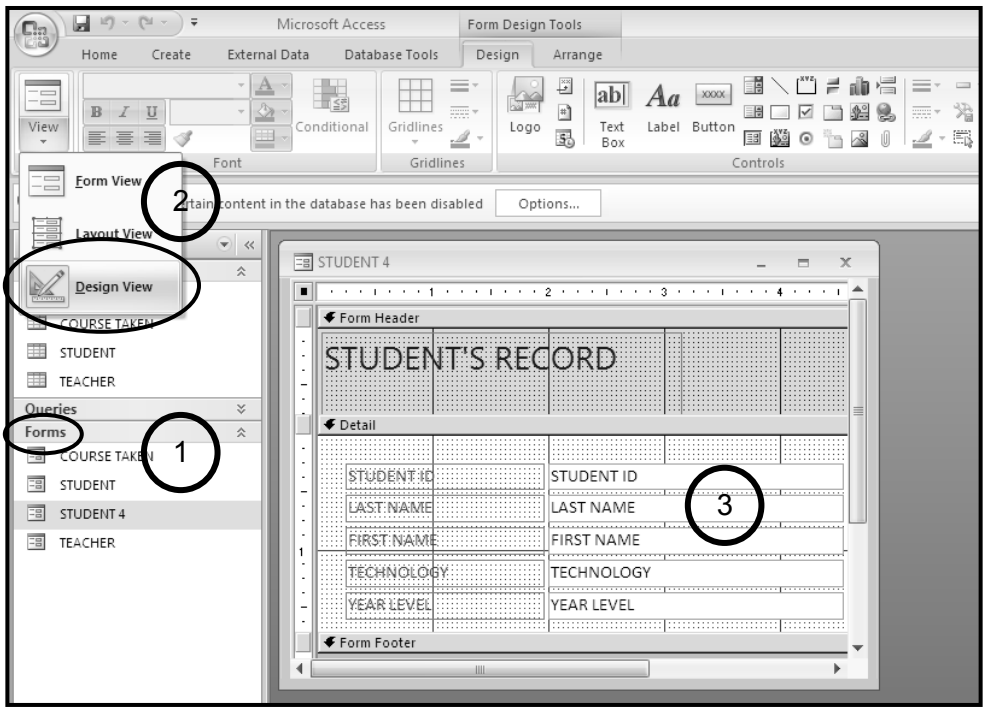
Modifying Forms

You can add, delete and make changes in the form you have created in the past lessons. You can also change the font, size and style of text in the text box. For you to be able to modify your form make sure that you are in the Design View. To do these follow the steps below:

1. Select the form you want to modify. Let us open the **Student 4 Form.** You can double click Student 4 or right click and choose open.

2. On the tool bar, click **View** and choose **Design View.**

3. You can click the controls within the form that needs to be edited or changed.

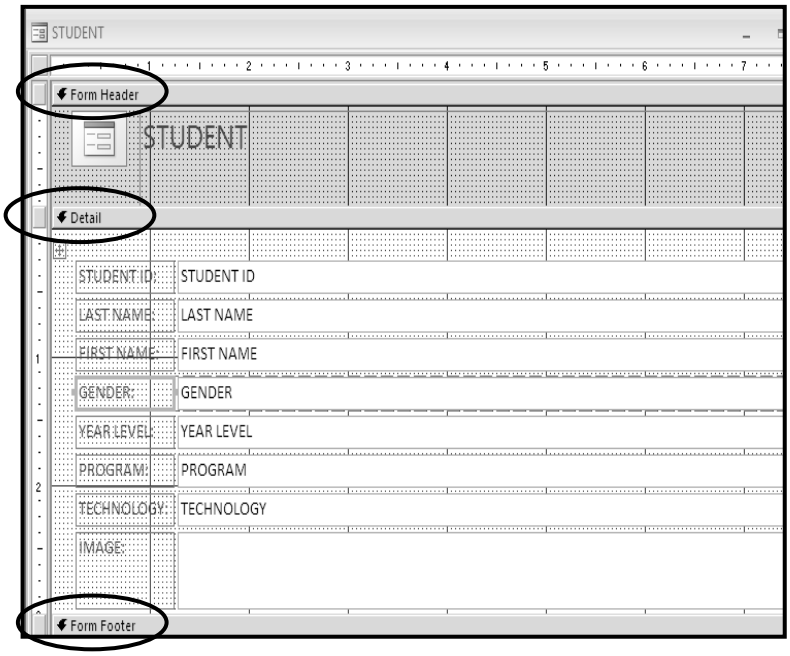


A form has its own sections these are Form Header, Detail and Form Footer.

1. **Form Header** - Displays information that remains the same on each record. Example is the title of the form.

2. **Detail -** Displays the record.

3. **Form Footer** - Displays information that remains the same on each record. Example is the instructions on how to use the form.



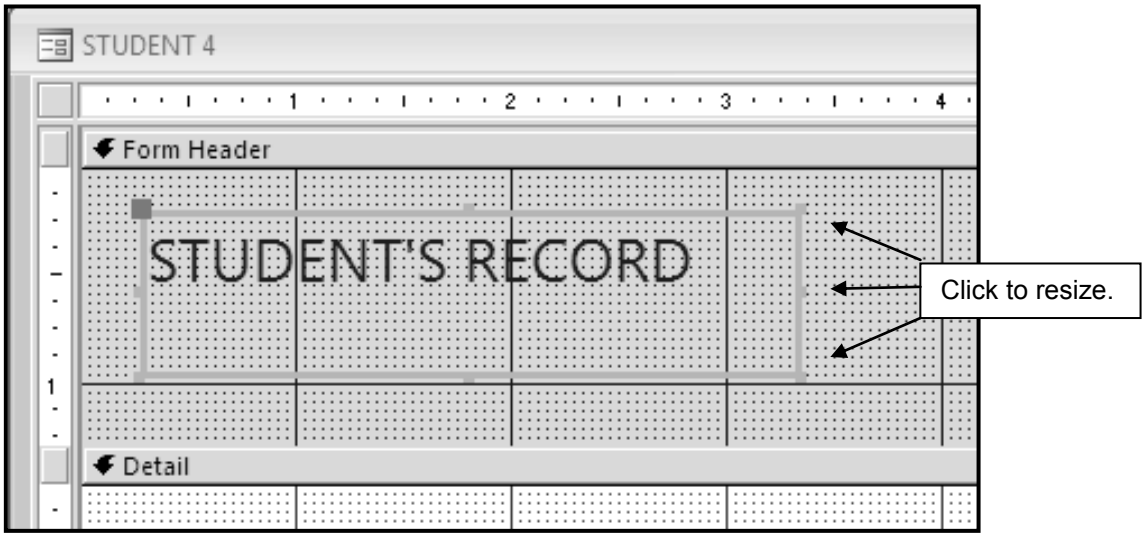
Moving and Resizing Forms
Follow the steps below on how to move and resize forms.

1. Select the form you want to modify. Let us open the **Student 4 Form.** You can double click Student 4 or right click and choose open.

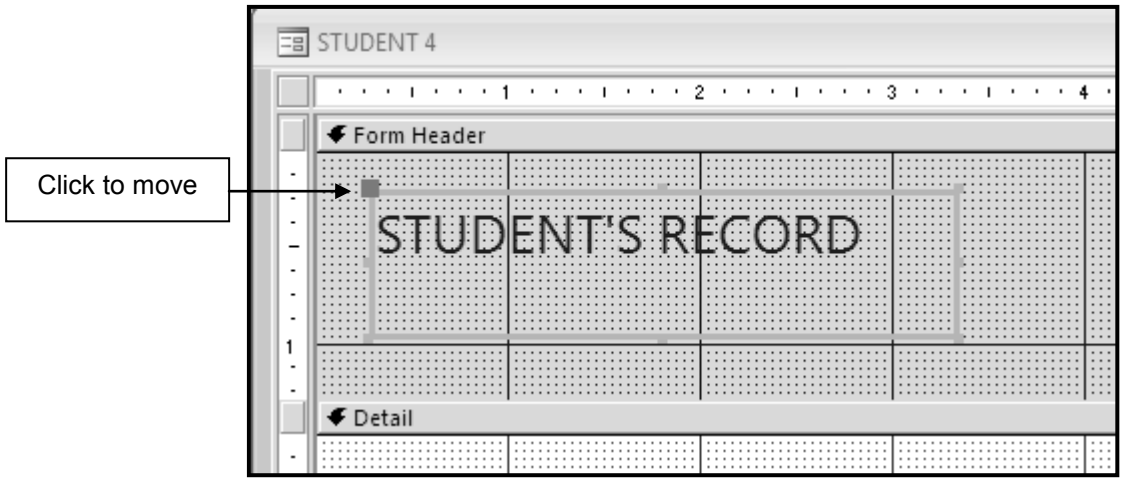
2. On the tool bar, click **View** and choose **Design View.**

3. You can click on the label Student‘s Record.

4. Click on the handles to resize.



5. You can move the label when you click on the big handle on the upper left corner of the label's border.



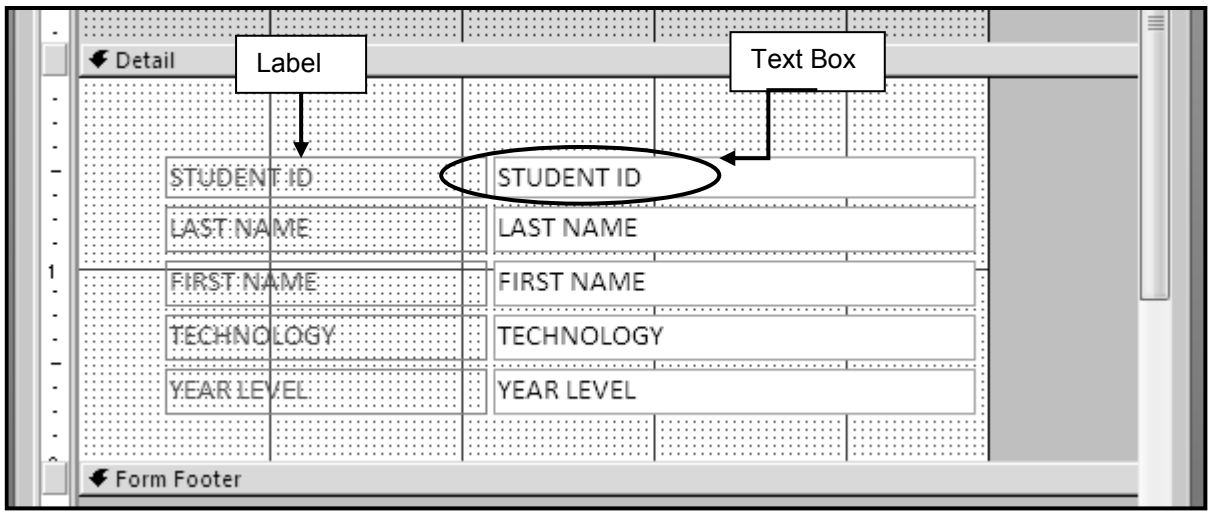
Changing font, style and size in Forms
Follow the steps below on how to change the font, style and size in Forms.

1. Select the form you want to modify.

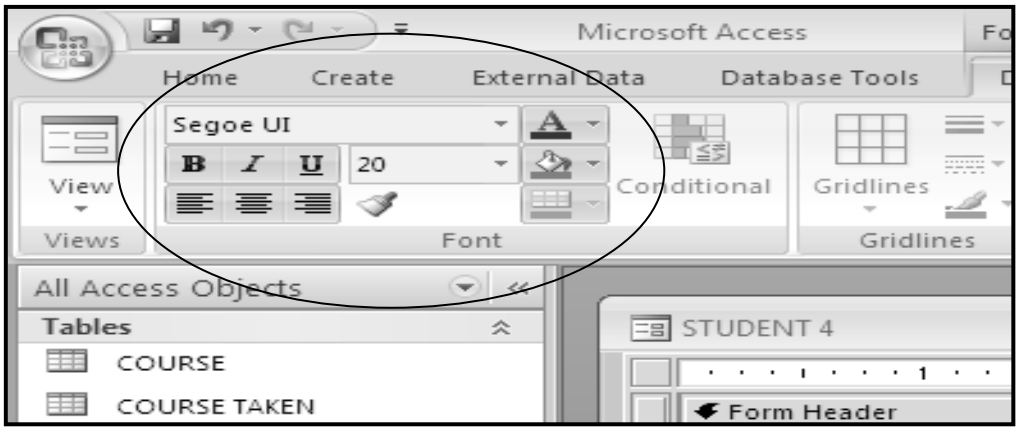
2. On the tool bar, click **View** and choose **Design View.**

3. Click the text box that you want change the font. For example click on

   STUDENT ID.



4. Using the Font toolbar you can now change your font, style and size. The font can become **Bold (B)**, **Underline (U)** or **Italic (I)**. You can also apply font colour and fill colour.



If you want to use the same colour for another control, click **Font Colour** without picking a colour from the palette. If you want to set different colours for several controls at once, click the arrow next to **Font Colour**, and then click the horizontal bar at the top of the colour palette and drag it to another location.

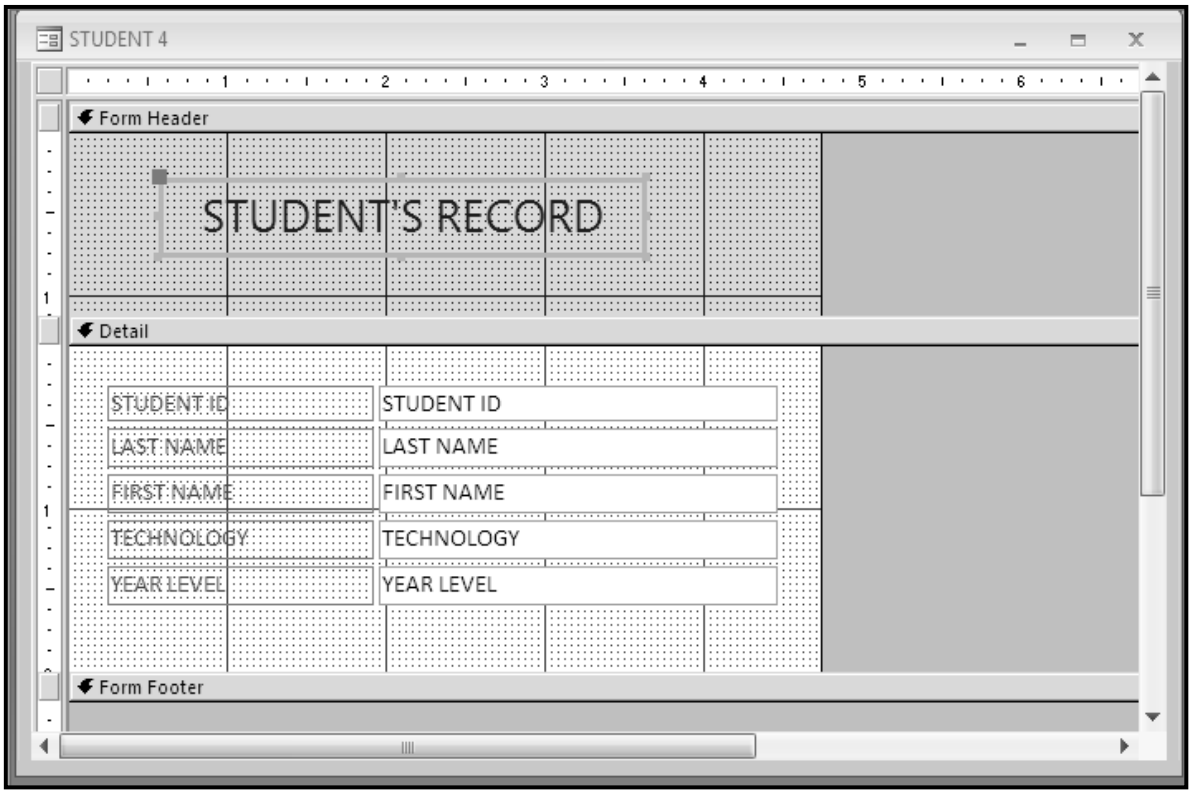
Changing the appearance the Forms

Follow the steps below on how to change the appearance of the Forms.

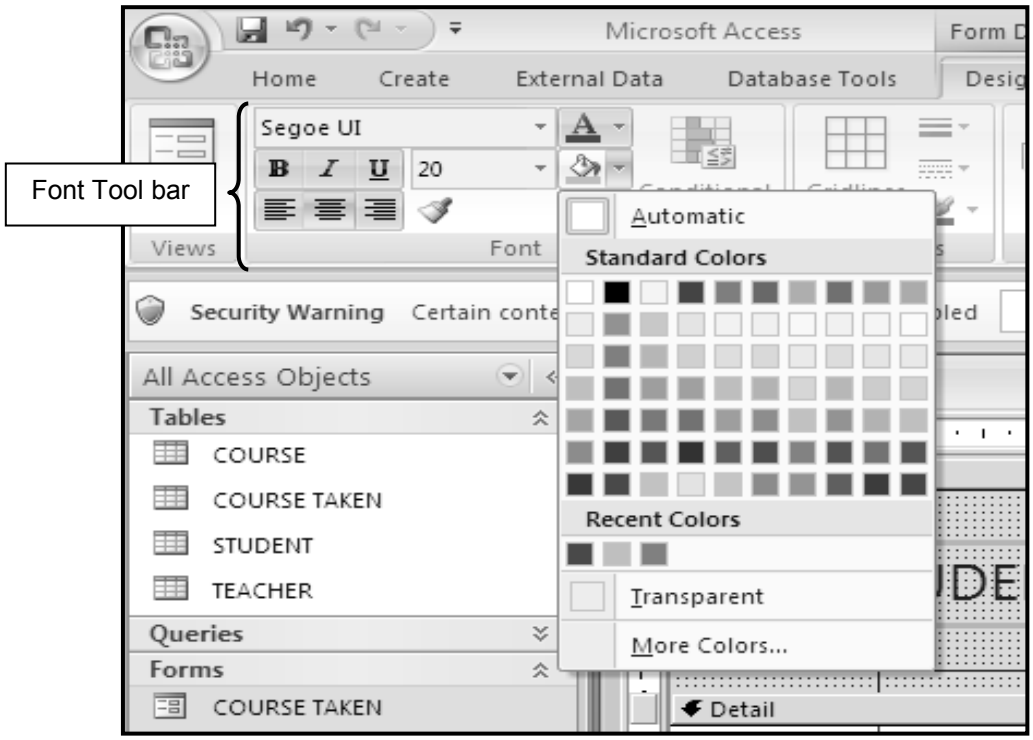
1. Select the form you want to modify.

2. On the tool bar, click **View** and choose **Design View.**

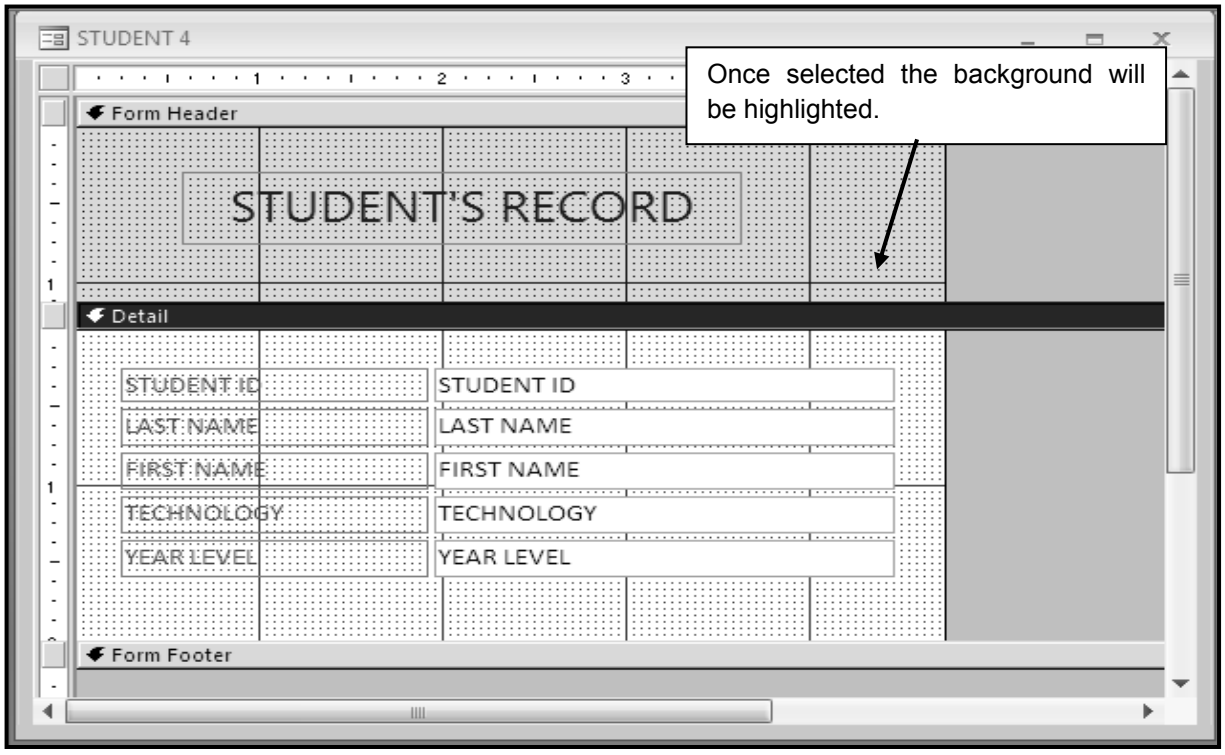
3. You can click on the label Student's Record. Move the box to your desired place, you may also resize the actual box simply clicking and dragging the handles.



4. In the Font tool bar you can change the font, style and size. You can also Apply colour to your font and fill the colour of the text box.

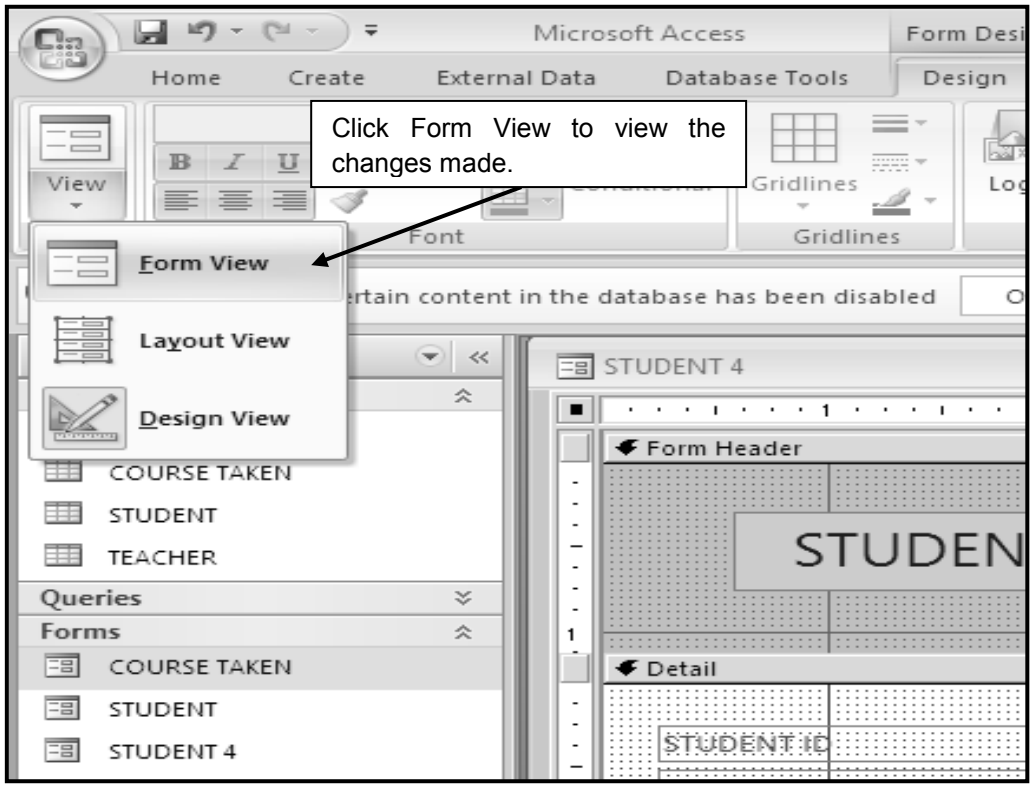


5. To apply colour on the actual background of the form, click on the horizontal bar of Form Header, Detail, or Form Footer.



6. Click on the **Fill color** on the Font tool bar, to apply a background colour on the Form Header, Detail, or Form Footer.

7. To view the changes you made click the Form view in the View tool bar.



Activity 1: Describe the following sections of a form. Write your answer on the space provided.

1. Form Header

_____

_____

_____

2. Detail

_____

_____

_____

3. Form Footer

_____

_____

_____

Activity 2: Modify an existing form

Open the **Flowers** form you have created in the previous activity in Lesson 19. Modify the form using the following settings:

	Label and Text Box
Font Name	Century Gothic
Font Size	12

Make sure you also apply your desired colour for font and fill colours.

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answers. Make sure you do the necessary corrections before moving on to the next part of this lesson.

Summary

You have come to the end of Lesson 21. In this lesson, you learned how to modify the appearance of your form. You were able to change the font name, size and colour. You also manage to move the controls in your form such as text box and labels.

NOW DO PRACTICE EXERCISE 21 ON THE NEXT PAGE.

Practice Exercise 21

A. Arrange the following steps on how to move or resize form. Use numbers 1-5.

_____ Click on the handles to resize.

_____ Select the form you want to modify.

_____ Click control that you want to move.

_____ On the tool bar, click View and choose Design View.

_____ To move the label click on the big handle on the upper left corner of the label's border.

B. Arrange the following steps on how to change the appearance of a form. Use numbers 1-7.

_____ On the tool bar, click View and choose Design View.

_____ In the Font tool bar you can select the font, style and size.

Apply color to your font and fill the colour of the text box.

_____ Click on the label and move the box to your desired place, you can resize the actual box, simply click and drag the handles.

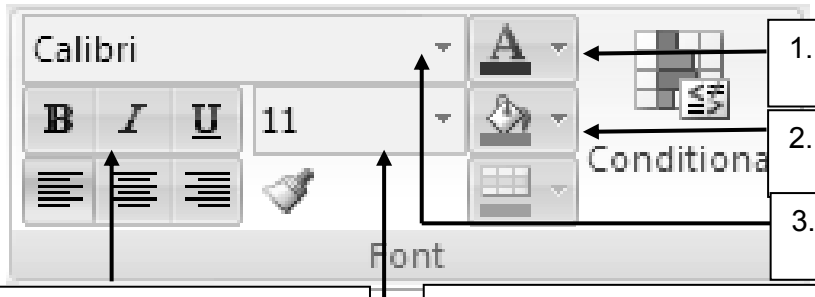
_____ Select the form you want to modify.

_____ Click on the Fill color on the Font tool bar, to apply a background colour on the Form Header, Detail, or Form Footer.

_____ To apply color on the actual background of the form, click on the horizontal bar of Form Header, Detail, or Form Footer.

_____ To view the changes you made click the Form view in the View tool bar.

C. Name the following icons in the Font tool bar.



1. _____
2. _____
3. _____
4. _____
5. _____

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 4.

Answers to Activity

Activity 1

1. A Form Header displays information that remains the same on each record.
2. The Detail displays the record.
3. The Form Footer displays information that remains the same on each record.

Activity 2

Flowers | Flowers

ID	Field1	Field2	Field3
1	Flowers	Scientific Name	Type
2	angel's trumpet	datura innoxia	forb
3	common teasel	dipsacus fullonum	shurb
4	shootingstar	dodecatheon pulchellum	herb
5	threenerve fleab	erigeron subtrinervis	shurb
6	yellow buckwhea	eriogonum flavum	shurb
7	filaree	erodium cicutarium	herb
8	glacier lily	erythronium grandiflorum	forb
9	sunflower	helianthus annuus	herb
10	St. John's Wort	hypericum formosum var. Sc	herb
11	bitter root	lewisia rediviva	herb
12	blue flax	linum perenne	forb
13	spur lupine	lupinus arbustus	shrub
14	nodding microser	microseris nutans	herb
15	monardella	monardella odoratissima	shrub

Lesson 22: Using Design View and Layout View

Welcome to Lesson 22 of Unit 3. In Lesson 21, you learned how to modify the appearance of your form.

In this lesson you will learn the basic views needed in creating and modifying forms. It will provide certain tasks to explain further how to use these views.

Your Aims:

- differentiate Design View from Layout View
- identify the uses of Design View and Layout View

Understanding Design View and Layout View

Design View gives you a more detailed view of the structure of your form. You can see the Header, Detail, and Footer sections of the form. The form is not actually running when it is shown in Design view, so you cannot see the underlying data while you are making design changes; however, there are certain tasks you can perform more easily in Design View than in Layout view. You can:

- Add a wider variety of controls to your form, such as labels, images, lines, and rectangles.
- Edit text box control sources in the text boxes themselves, without using the property sheet.
- Resize form sections, such as the Form Header or the Detail section.
- Change certain form properties that cannot be changed in Layout View

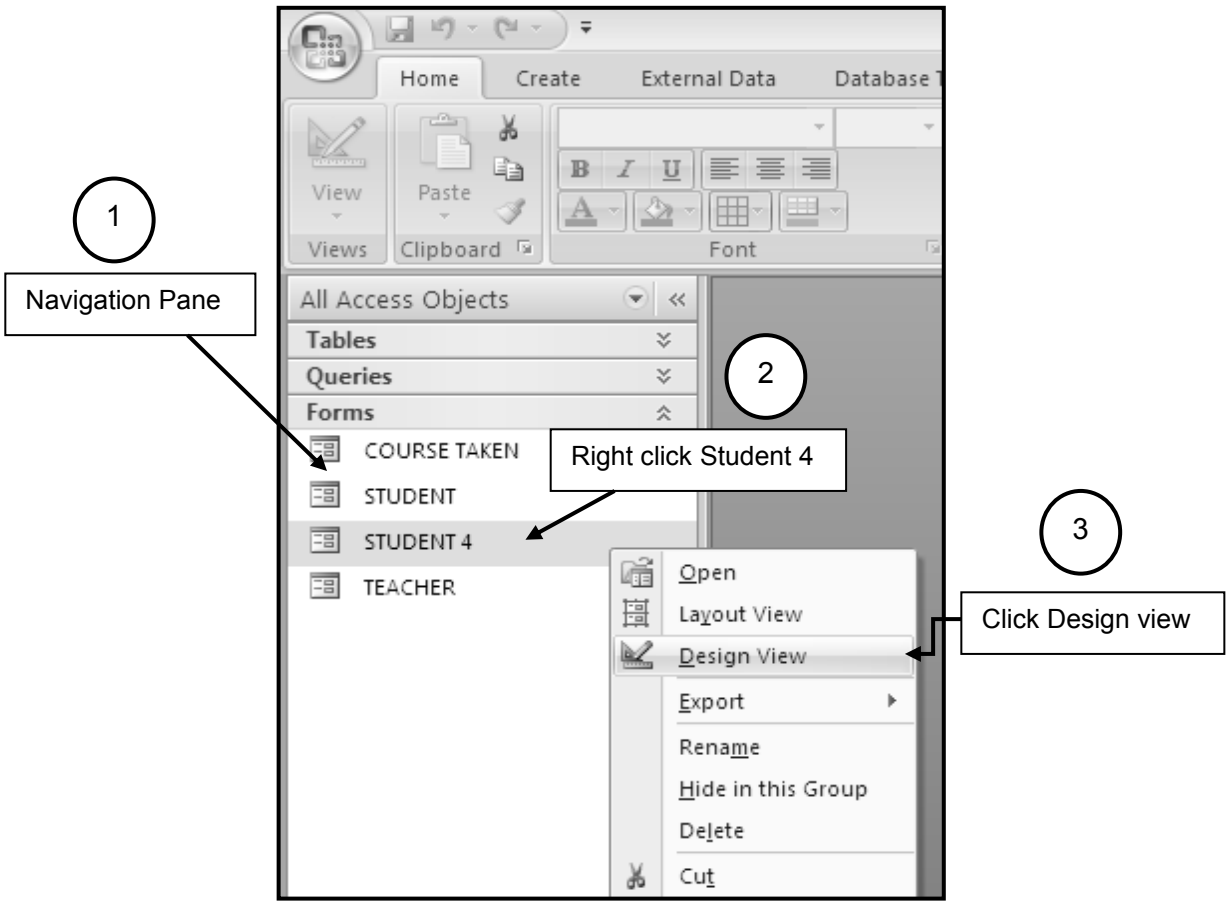
Layout View is the easier to use and understand than Design View for form modification, and it can be used for nearly all the changes you would want to make to a form. In Layout View, the form is actually running, so you can see your data much as it will appear in Form View. However, you can also make changes to the form design in this view. Because you can see the data while you are modifying the form, this is a very useful view for setting the size of controls or performing almost any other task that affects the appearance and usability of the form.

Certain tasks cannot be performed in Layout View and require switching to Design View. In certain situations, Access displays a message telling you that you must switch to Design View to make a particular change.

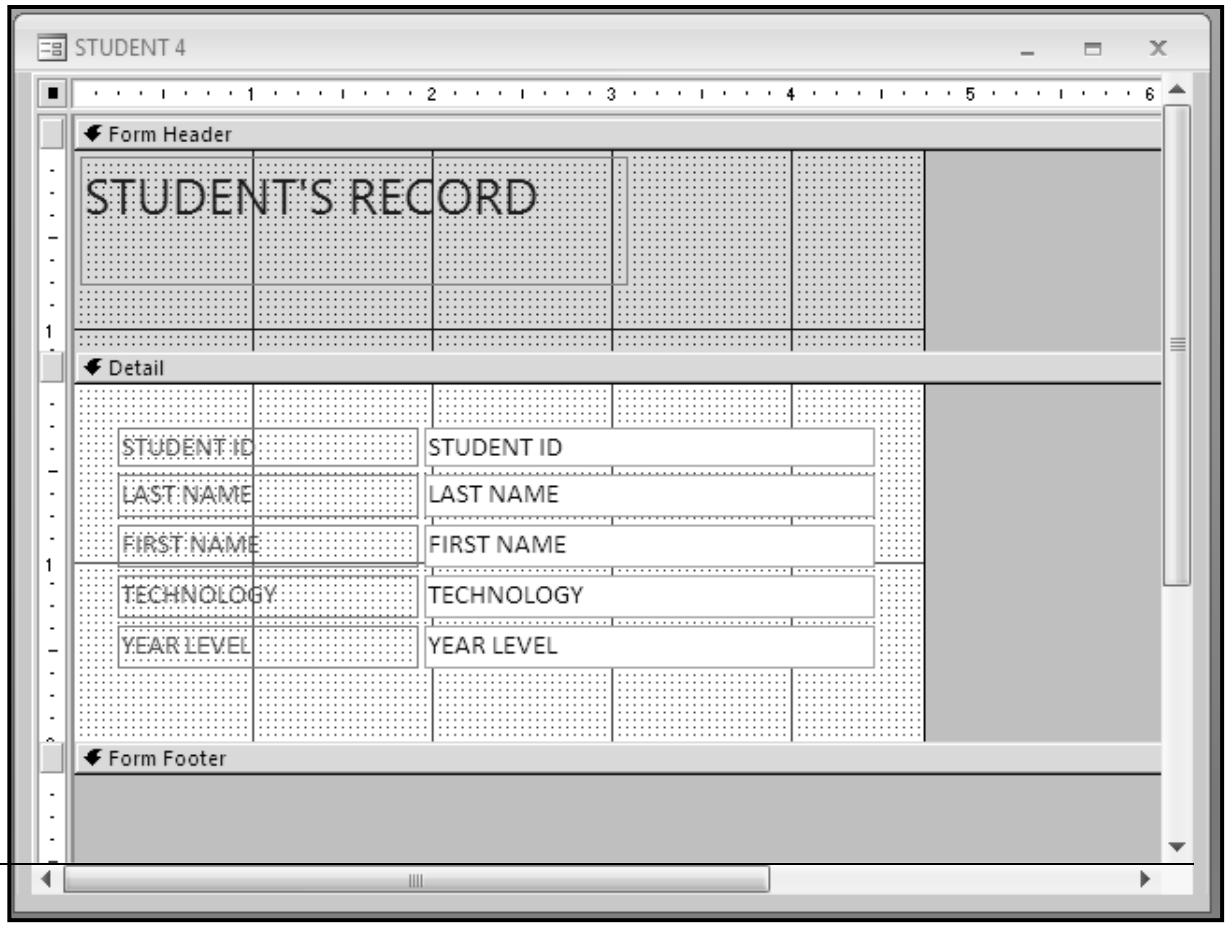
Modifying Form in Design View

We can perform a lot of modification in Design View and more easily compare to Layout View. You can add new controls and fields to the form by adding them to the design grid. The property sheet gives you access to a large number of properties that you can set to customise your form.

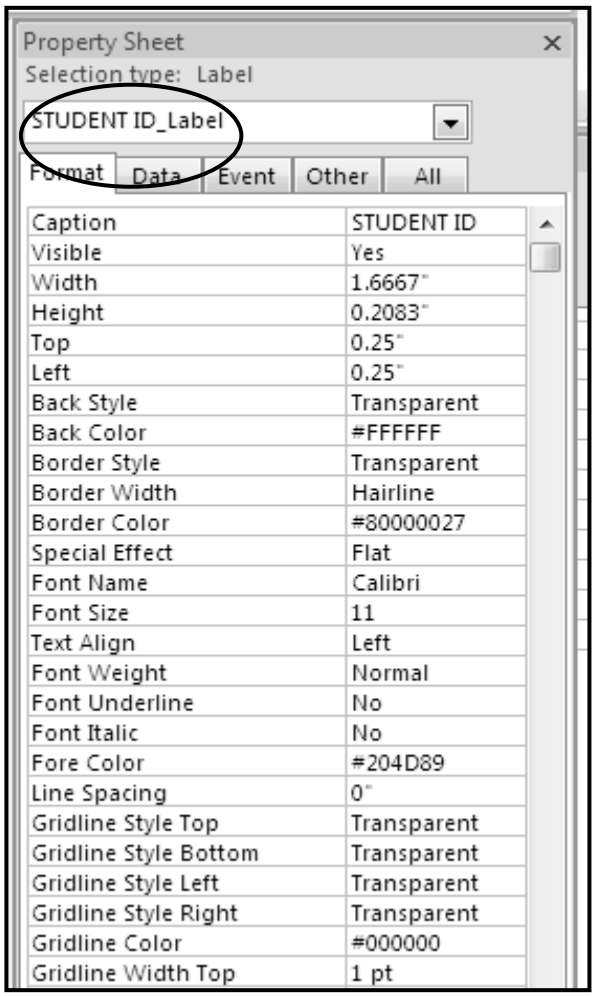
To switch to Design View, besides the method discussed in Lesson 21, you can right-click the form name in the Navigation Pane and then click **Design View**



The form that will open should look like this. Access shows the form in Design View.



You can use the Property Sheet to modify the properties for the form and its controls and sections. To display the Property Sheet, press F4. The Property Sheet will display the properties depending on the controls or sections selected. For example, Property Sheet of Form Header, Detail and Form Footer will be different if you selected a label or text box inside the form. See the example below:



Many other controls can be created only in the Design View because most of the tools in the Controls group are accessible only while your form is open in Design View. To view these controls, your form should be in Design View and click Design tab.

Modifying Form in Layout View

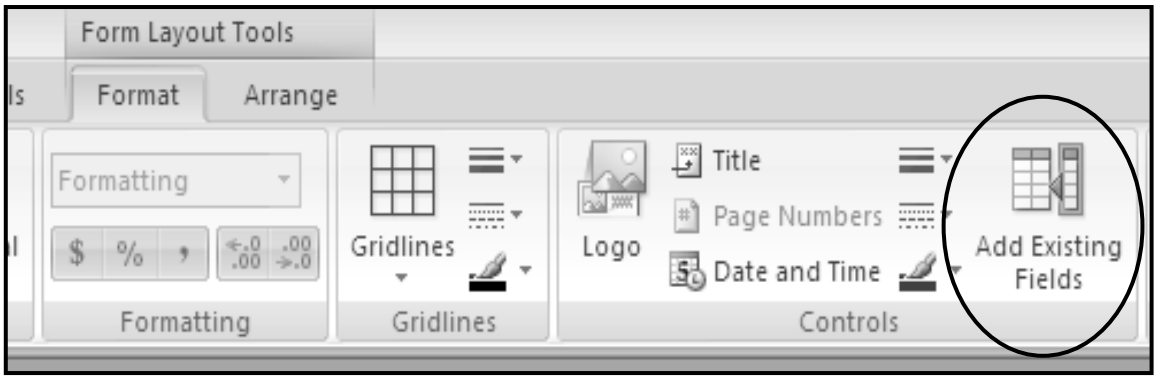
After you create a form, you can easily fine-tune its design by working in Layout View. Using the actual form data as your guide, you can rearrange the controls and adjust their sizes. You can place new controls on the form and set the properties for the form and its controls. You can also use the Property Sheet to modify the

properties for the form and its controls and sections. To display the Property Sheet, is the same as while working in Design View, simply press F4.

There are few controls that can be added if the form is in Layout View. Below are the controls that we can use:

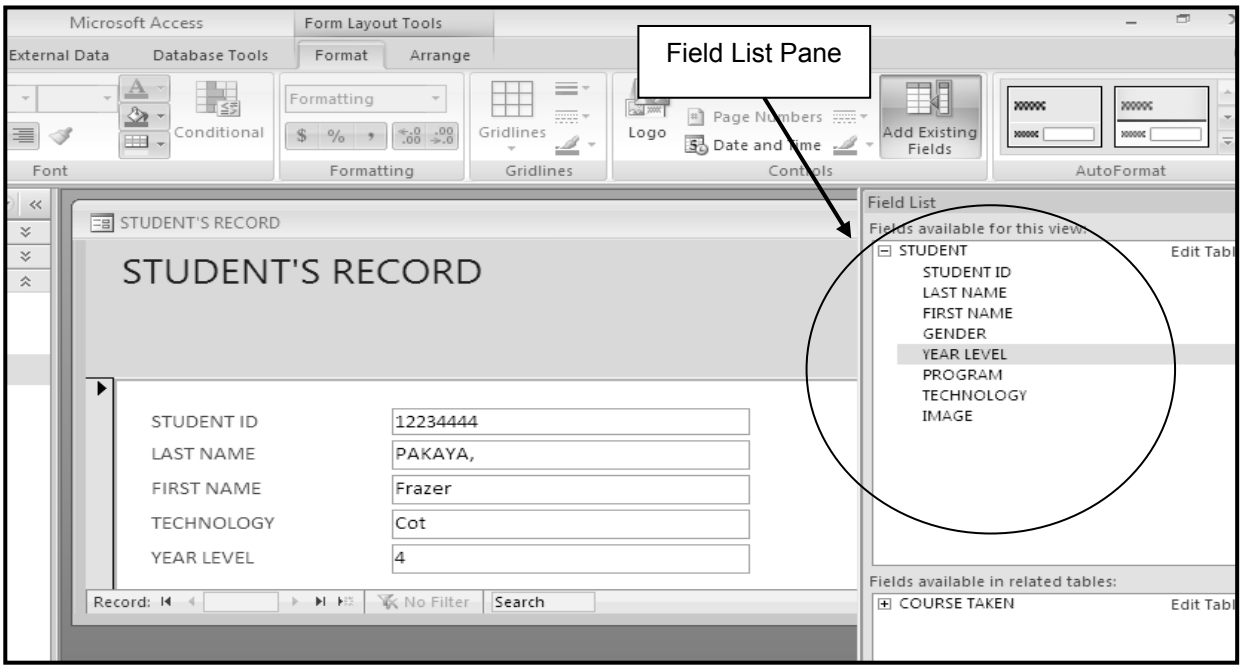
You can use the **Field List** pane to add fields from the underlying table or query to your form design. To display the **Field List** pane, do one of the following:

1. On the **Formatting** tab, in the **Controls** group, click **Add Existing Fields**.



2. Another way is simply pressing **Alt + F8** in your keyboard.

   This is how your screen will look like. You can then drag fields directly from the **Field List** pane onto your form.



- To add a single field, double-click it or drag it from the **Field List** pane to the section on the form where you want it displayed.
- To add several fields at once, hold down CTRL and click the fields that you want to add. Then drag the selected fields onto the form.

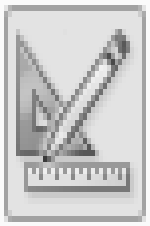
Activity 1: Identify and describe the following view icons. Write your answer on the space provided.

1. 

_____
_____
_____
_____

2. 

_____
_____
_____
_____

3. 

_____
_____
_____
_____

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answers. Make sure you do the necessary corrections before moving on to the next part of this lesson.

Summary

You have come to the end of Lesson 22. In this lesson, you learned how and when to use Layout View and Design View. There are certain controls that can only be added using Design View. On the other hand, there are certain modifications that can be easily done using Layout view.

NOW DO PRACTICE EXERCISE 22 ON THE NEXT PAGE.

Practice Exercise 22

A. Put a check mark if the statement is correct and cross mark if not.

1. In Design View you can see the Header, Detail and Footer sections of the form. _____
2. In Layout View the form is actually running and you can see your data much as it appears in Form View. _____
3. There are certain tasks you can perform more easily in Design view than in Layout View. _____
4. You can edit your text box control in Layout View. _____
5. In Layout View, you can resize the sections, such as the Form Header, or the Detail section. _____
6. You can switch views using the View tool bar. _____
7. Access offers three (3) ways to view a form. _____
8. F4 is the key to press to view the Property Sheet of each control in the form. _____
9. The Property Sheet gives you access to a large number of properties that you can set to customise your form. _____
10. The properties displayed in a Property Sheet are the same in all controls. _____
11. Layout View offers more controls than Design View. _____
12. Controls can be viewed in the Design tab. _____
13. We can view the Field List Pane by pressing CTRL + F8. _____
14. There are certain form properties that cannot be changed in Layout View. _____
15. In Design View the form is not actually running. _____

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 4.

Answers to Activity 1

1. This is the icon for Form View. In this view you can see the actual form. The form is running and you can only add, delete, change or navigate within the records.

2. This is the icon for Layout View. In this view the form is running but at the same time you can modify the form. You can add controls and add existing fields.

   This view is useful when you want to see simultaneously the changes you have made in your form.

3. This is the icon for Design View. In this view the form is not running. You can add more controls in this view compare to Layout view.

Lesson 23: Inserting Images into the Form

Welcome to Lesson 23 of Unit 3. In Lesson 22, you learned how and when to use Layout View and Design View.

In this lesson you will learn how to insert graphic images to a form. It explains how to store images and display on your forms and on controls, such as buttons and text labels.

Your Aims:

- add graphic or image to a form
- modify graphic images in the form
- add logo or background image to a form
- delete image to a form

Adding a Graphic to a Form

Access provides several ways to store and display your images – digital photographs, computer graphics, and scanned art. In Access 2010 you can upload images to the database, and then easily reuse and update them in multiple forms.

Part of working with images in Access is you need to learn some terminology and know the answers to some key questions:

- Do you want to use bound or unbound images? You use bound images when you want to display a different image as you move among the records in a database or the pages in a report. For example, if you have Students database and you want to display a picture of each student, you use bound images.

  In contrast, unbound images do not change as you move among the records and pages. If you want to display a corporate logo or background image on your forms, use an unbound image.

- Do you want to link to an image or embed that image? Linking saves space because Access stores just the link information. An embedded image is actually inserted in the database itself. This can rapidly increases the size of your database file and possibly cause it to run slowly, but embedding also ensures that an image is always available.

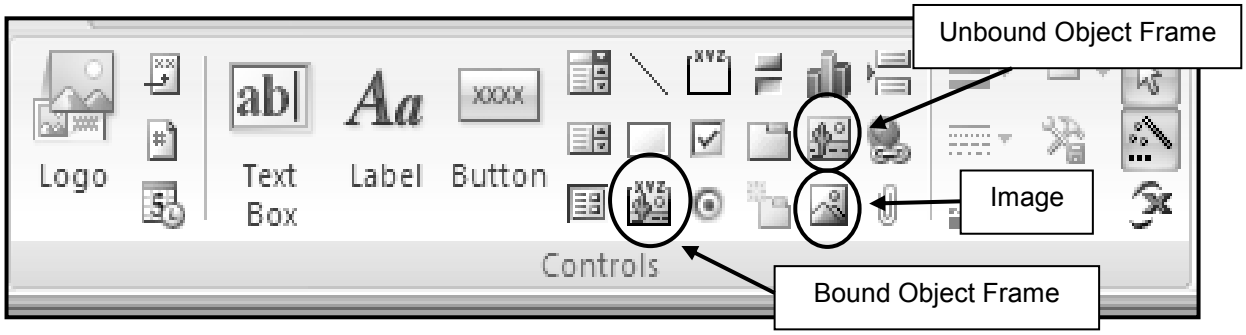
Understanding bound and unbound images

Before you use an image or a set of images in your database, you need to decide between using a bound or an unbound image. If you want your image to change as you move among the records in your database or on the form you use a bound image.

Bound images typically reside in a table in your database. The table can store links to the images, or it can store the images as embedded objects. However, remember that embedded images can rapidly increase the size of your database and cause it to run slowly.

If you want the image to remain constant as you move between records or pages, you use an unbound image. Unbound image can reside in your database or on your hard disk.

The decision to use bound or unbound images also determines the type of control that you place on your form. If you use bound images, you use a control called the bound image frame. You can locate the bound image frame in the Controls panel.



To display unbound images, you can choose between either the image control or the unbound object frame, or you can add image to your form as a background or watermark.

Supported Graphics File Formats
The image control supports a larger set of graphics file types than do the unbound and bound object frames. The following are the supported graphic file format of the image control:

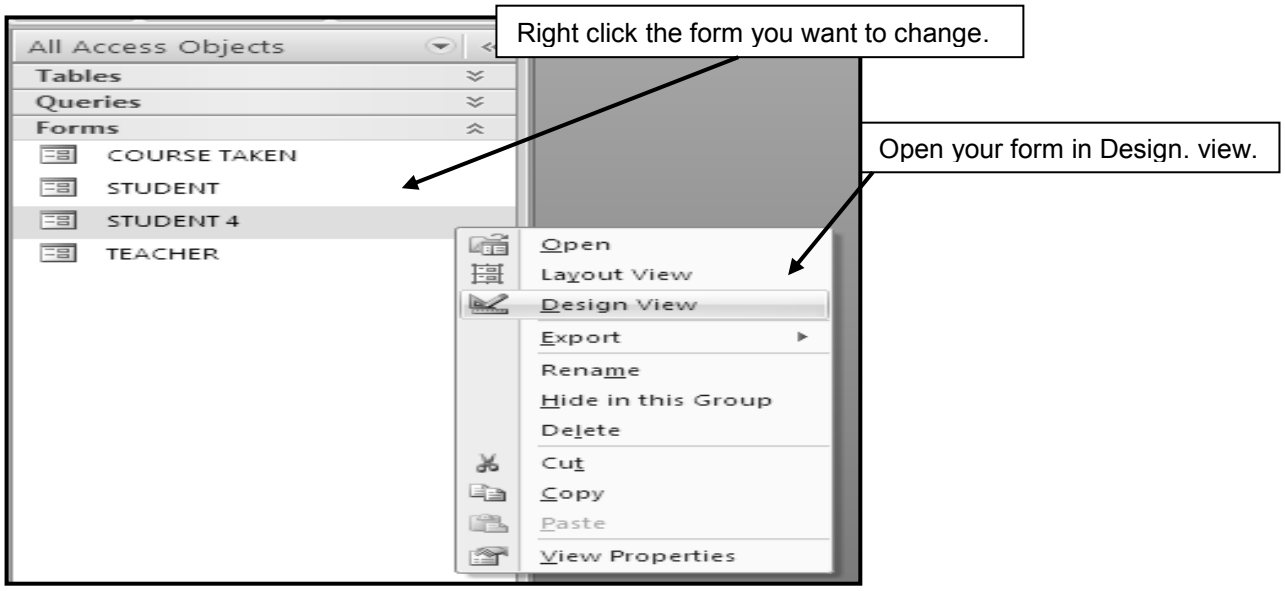
1. Computer Graphics Metafile (.cgm)
2. CorelDraw (.cdr)
3. Encapsulated PostScript (.eps)
4. Graphics Interchange Format (.gif)
5. Icon (.ico)
6. Joint Photographic Experts Group (JPEG) (.jpg)
7. Macintosh PICT (.pict)
8. Portable Network Graphics (.png)
9. Windows Bitmap (.bmp)
10. WordPerfect Graphic (.wpg)

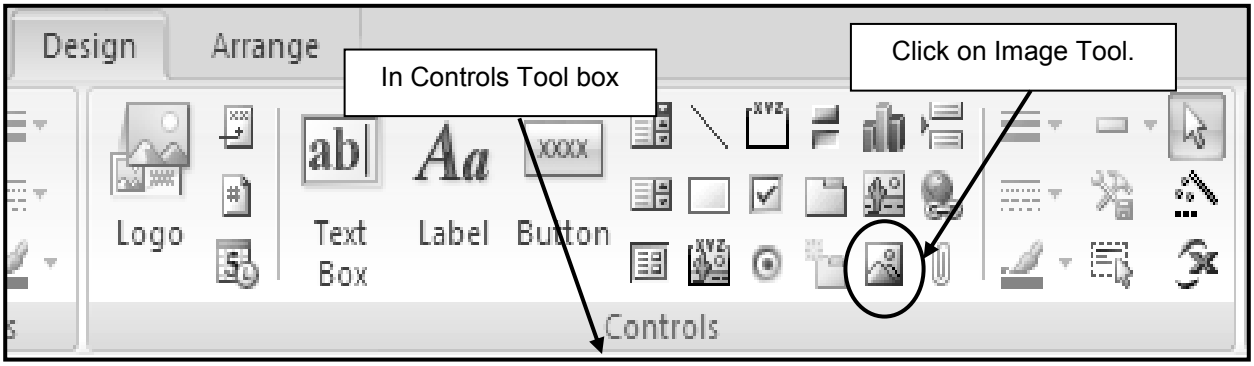
The bound and unbound object frames support only these types of graphics files:

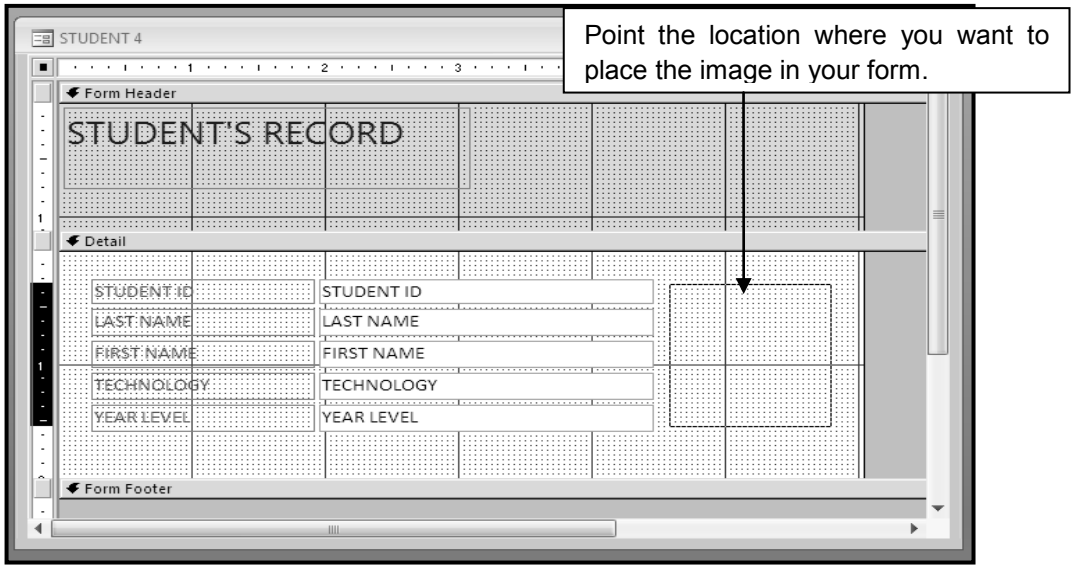
1. Windows Bitmap (.bmp)
2. Device-independent bitmap (.dib)

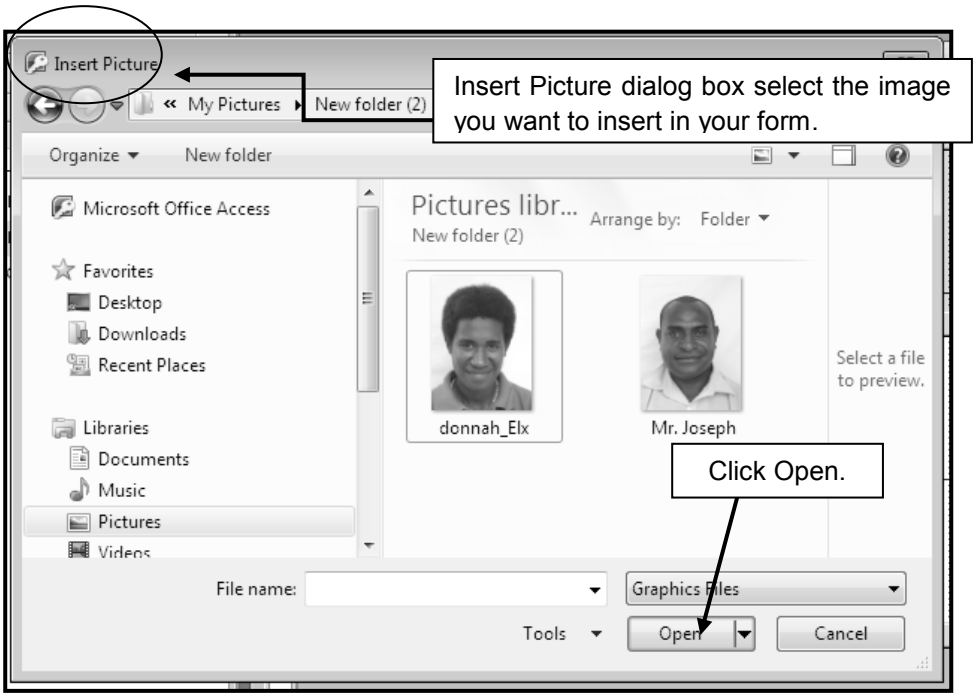
Add an Image to an Existing Form
Follow the steps below on how to add an image to an existing form.

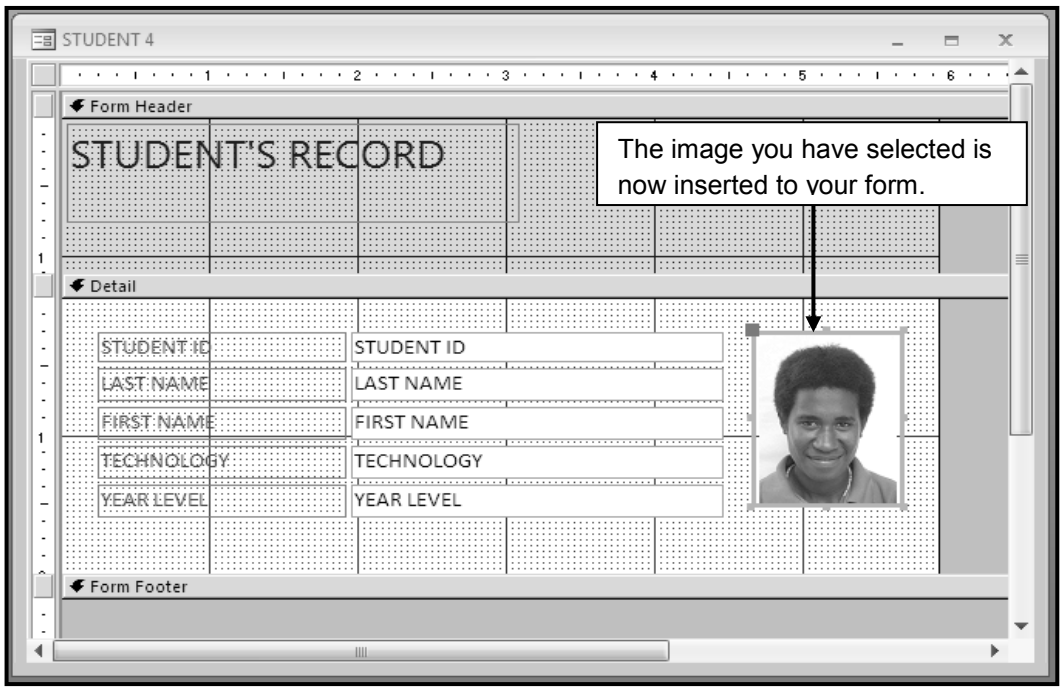
1. Open the database that you want to work on and display the Database window.
2. On the **Objects bar** or in the Navigation Pane, click **Forms**; select the form that you want to change.
3. Right click on the selected form and open the form in **Design view**.
4. On the Controls, click the **Image tool**.
5. Point the location on the form where you want to display your image, and click once to place the control on the form.
6. In the **Insert Picture Dialogue box**, browse to the image that you want to display.
7. Select the image, and then click **Open**.






Point the location where you want to place the image in your form.
STUDENT 4
Form Header
STUDENT'S RECORD
Detail
STUDENT ID
LAST NAME
FIRST NAME
TECHNOLOGY
YEAR LEVEL
Form Footer


Insert Picture
Insert Picture dialog box select the image you want to insert in your form.
My Pictures
New folder (2)
Organize
New folder
Microsoft Office Access
Favorites
Desktop
Downloads
Recent Places
Libraries
Documents
Music
Pictures
Videos
Pictures libr...
Arrange by: Folder
New folder (2)
donnah_Elx
Mr. Joseph
Select a file to preview.
Click Open.
File name:
Graphics Files
Tools
Open
Cancel


STUDENT 4
Form Header
STUDENT'S RECORD
The image you have selected is now inserted to your form.
Detail
STUDENT ID
LAST NAME
FIRST NAME
TECHNOLOGY
YEAR LEVEL
Form Footer

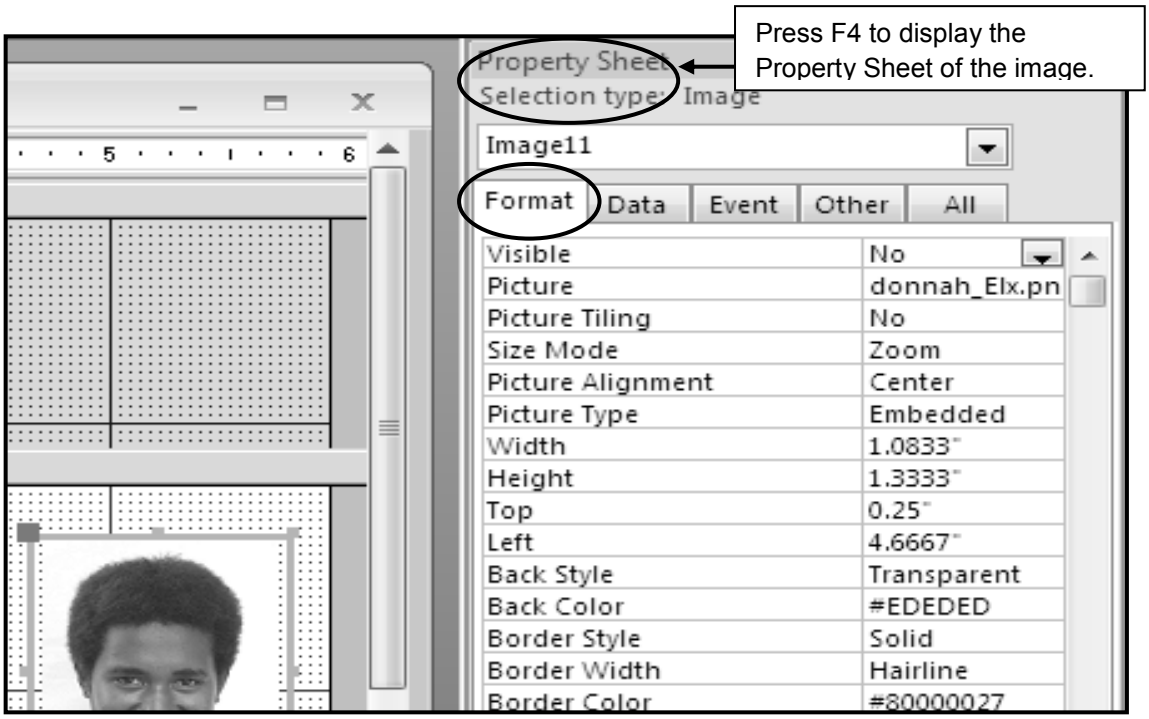
Modifying the Image in the Form

We can modify the image or the graphics we have inserted in the form with the use of the property window. You can use the Property Sheet to modify the properties of the image control.

As discussed in Lesson 22, to display the Property Sheet, press F4. The Property Sheet of the image control will be displayed, and now you can modify the size, visibility or border of the image you have just inserted. If you want to see the changes you have made in your form, you have to switch your view from Design View to Form View.

Using the image you have inserted, let us modify the image with the following steps:

1. On the property sheet of the image, click the Format tab, and set the properties for the image.



2. Use (for example) the Picture Type property box to specify whether you want to embed or link the image

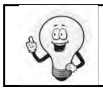
3. Click on the Size Mode property if you want to clip, stretch or zoom the image.

    a. Clip – displays the picture at actual size. If the picture is larger than the image control, Access cuts off the image.

    b. Stretch – sizes the picture to fit the image control. Depending on the shape of the image control, this setting may distort the image.

    c. Zoom – keeps the height and width of the image in correct proportion, regardless of how you size or resize the image control.

4. Set the other properties, such as visibility and border style, and then click Save to save your changes.



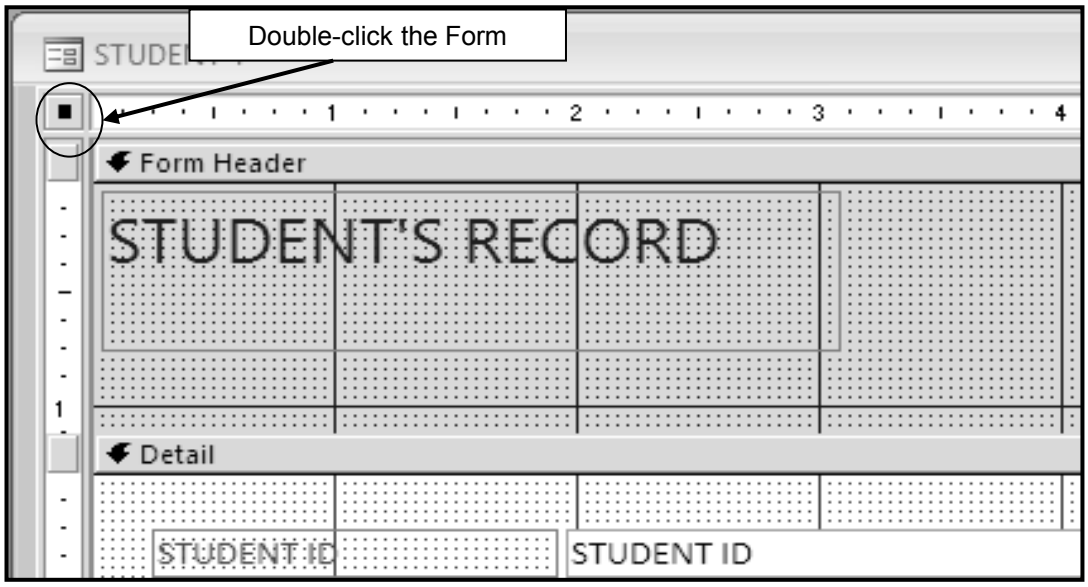
If you need help with a property, select that property and press F1.

Adding Background Image to a Form

When you add a background image or watermark, the other controls on your form sit on top of the image.

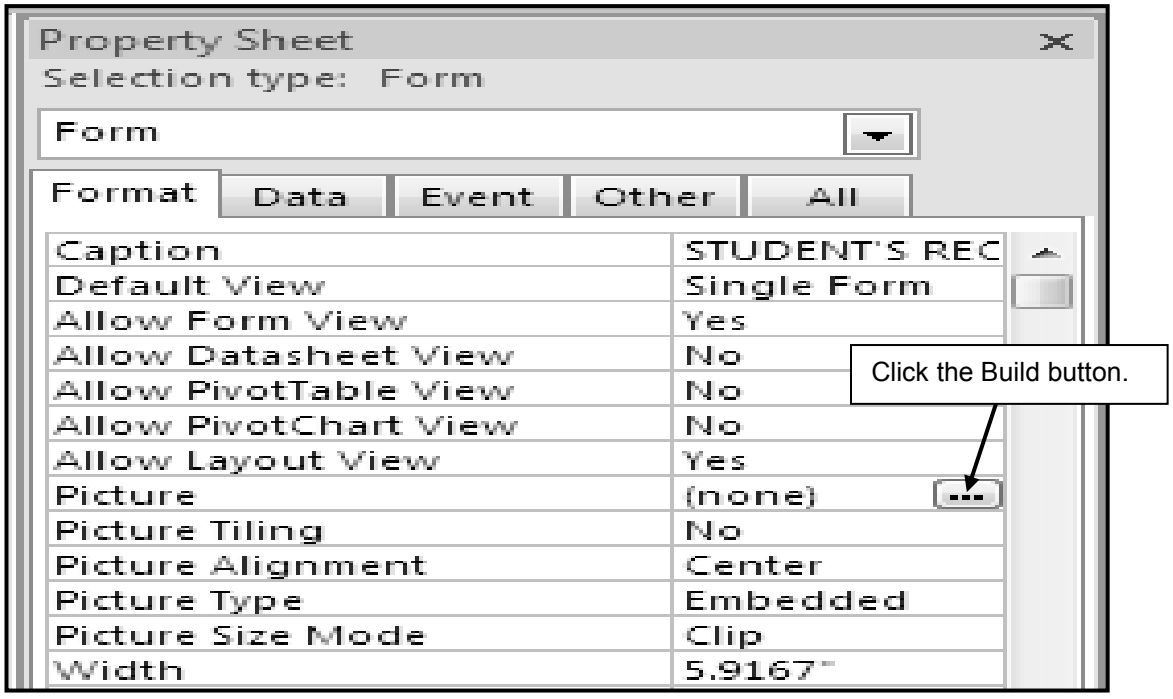
1. Open the form that you want to change in **Design View**.

2. Double-click the form selector or choose from the Selection Type of the Property Sheet or press **F4** to open the Property Sheet of the form.



3. On the **Format Tab**, in the **Picture** property box, click the build button and use the **Insert Picture Dialogue box** to locate your image.

4. In the **Picture Type property box**, specify whether you want to embed the image or link the image.



5. After you add the image to the form, click the Size Mode property and select one among clip, stretch, and zoom, stretch horizontal or stretch vertical.

6. To change the alignment of the picture, you have to click one of the settings in the Picture Alignment property box.

If you want to centre the background picture on a form, and you want the background picture to resize when you size the form window, click the Center setting. If you do not want the background picture to resize when you size the window, click the Form Center setting.

7. If you want to tile (repeat) the picture across the background of the form, set the Picture Tiling property to Yes, and set the Size Mode property to Clip. Tiling starts at the position that is specified for the Picture Alignment property.

The background picture will not tile if you set the Size Mode property to Zoom or Stretch.

Deleting an Image to a Form

If you can add an image to a form or control, you can remove that image. Delete an image from an object or image control.

Follow a different procedure for deleting unbound and bound images.

To delete unbound images:

1. In the database window, select the form that contains the image control or unbound object frame, and then click **Design View**.

2. Click the control frame, and then press **DELETE**.

To delete bound images:

1. Open the form that contains the bound image frame in **Form View** (or open a datasheet)

2. Find the record that you want to change, click the image (or the frame, if it is visible), and then press **DELETE**.

3. Access removes the image from the frame and the image data from underlying record source, but the object frame remains on the form. To delete the frame, open the form in Design View, click the control and press **DELETE**.

Delete a background image:

1. In the Database window, select the form, and then click Design View.

2. Double-click the form or press F4 to open the property sheet.

3. Clear the Picture property box.

Activity 1: Answer the following. Write your answer on the space provided.

1. What is bound image?

_____

_____

_____

2. What is unbound image?

_____

_____

_____

3. Enumerate the supported graphic file format of an image control.

_____

_____

_____

Activity 2: Create a form using Form Wizard

Open the **Flowers** form you have modified in the previous activity in Lesson 21. Add an image on each record that you have. Use the property sheet to modify the images you have inserted.

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answers. Make sure you do the necessary corrections before moving on to the next part of this lesson.

Summary

You have come to the end of Lesson 23. In this lesson, you learned how to insert images into your form. You may insert a bound or unbound image into a form depending on the functionality of your form. You can also insert a background image to your form to implement a professional look.

NOW DO PRACTICE EXERCISE 23 ON THE NEXT PAGE.

Practice Exercise 23

A. Identify what is being described below. Choose you answer from the word bank below. Write your answer on the space provided.

W O R D B A N K

CRTL + F8	DESIGN TAB	BOUND IMAGE	PICTURE TYPE
DESIGN VIEW	UNBOUND IMAGE	PROPERTY SHEET	F4
LAYOUT VIEW	PICTURE SIZE MODE	PICTURE DIALOG BOX	

1. Use this image when you want to display different image as you move among the records. _____
2. This image does not change as you move along the records. _____
3. This image typically resides in a table in your database. _____
4. The controls tool box is located in this tab. _____
5. This view is use to add or modify graphic or image in the form. _____
6. The image or picture can be browsed in this Dialogue box. _____
7. This is where you modify the properties of the image control. _____
8. To display Property Sheet of an image control press._____
9. This property box specifies whether you want to embed or link an image. _____
10. This property box specifies if you want your image to clip stretch or zoom. _____

B. Write True if the statement is correct and False if it is incorrect.

1. You can only insert image in Design View. _____
2. Image is one of the Control in Design tab that can be inserted to a form. _____
3. .gif, .jpg and .png are supported graphic format of the image control. _____
4. Zoom in Size Mode property sizes the picture to fit the image control. _____
5. You cannot remove an image from a form. _____

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 4.

Answers to Activities

Activity 1

1. Bound image resides in a table of the database. It displays different images as you navigate to different records in the form.

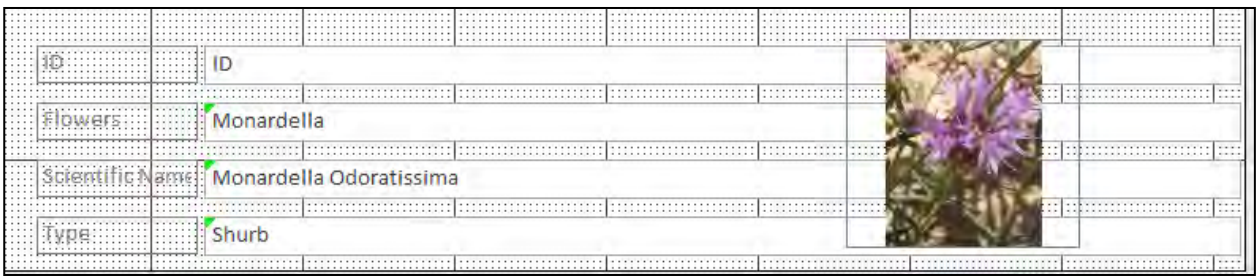
2. Unbound image do not change while navigating the records in the form.

   This image is commonly used if you want to display a corporate log or background image.

3.

- Computer Graphics Metafile (.cgm)
- CorelDraw (.cdr)
- Encapsulated PostScript (.eps)
- Graphics Interchange Format (.gif)
- Icon (.ico)
- Joint Photographic Experts Group (JPEG) (.jpg)
- Macintosh PICT (.pict)
- Portable Network Graphics (.png)
- Windows Bitmap (.bmp)
- WordPerfect Graphic (.wpg)

Activity 2



Lesson 24: Using Auto Format and Form Header

Welcome to Lesson 24 of Unit 3. In Lesson 23 you learned how insert images into your form.

In this lesson you will be able to apply, customise and create an Auto Format.

Your Aims

- apply AutoFormat
- customize an AutoFormat
- create an AutoFormat

Using AutoFormat to a Form

After you have created a form to display your table and query data, you can change the appearance of any control on the form. You can change the appearance of the individual elements in your objects, and an easier way to change the format at once is to use an AutoFormat.

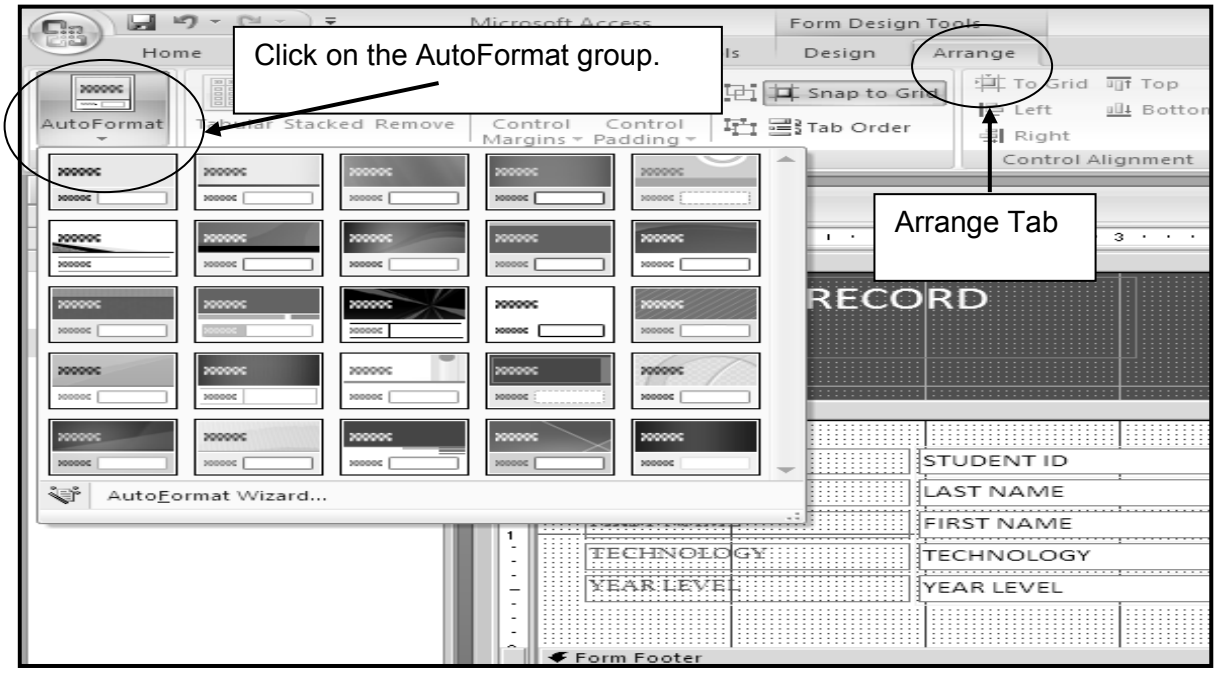
You can use an AutoFormat as it is out of the box, or you can choose to apply certain parts of the AutoFormat. If you want you can even create and modify your own AutoFormat so you can make the appearance of your forms consistent. Another useful Access capability is to create a conditional format, which changes the appearance of the data in a text box based on the data‘s value. Conditional formats are used to highlight data.

Rather than define the format of every object in your forms, you can apply one of the AutoFormats. AutoFormat lets you do more than just apply an existing format, however, you can choose which elements of an AutoFormat to apply, create new AutoFormats to match the formatting of an existing form, or modify an existing AutoFormat.

Select an AutoFormat

Follow the steps below on how to select an Auto Format.

1. Open the form you want to format in **Design View**.
2. Click the **Arrange** tab.
3. Click the **AutoFormat** group.
4. Click the **AutoFormat** you want to apply.

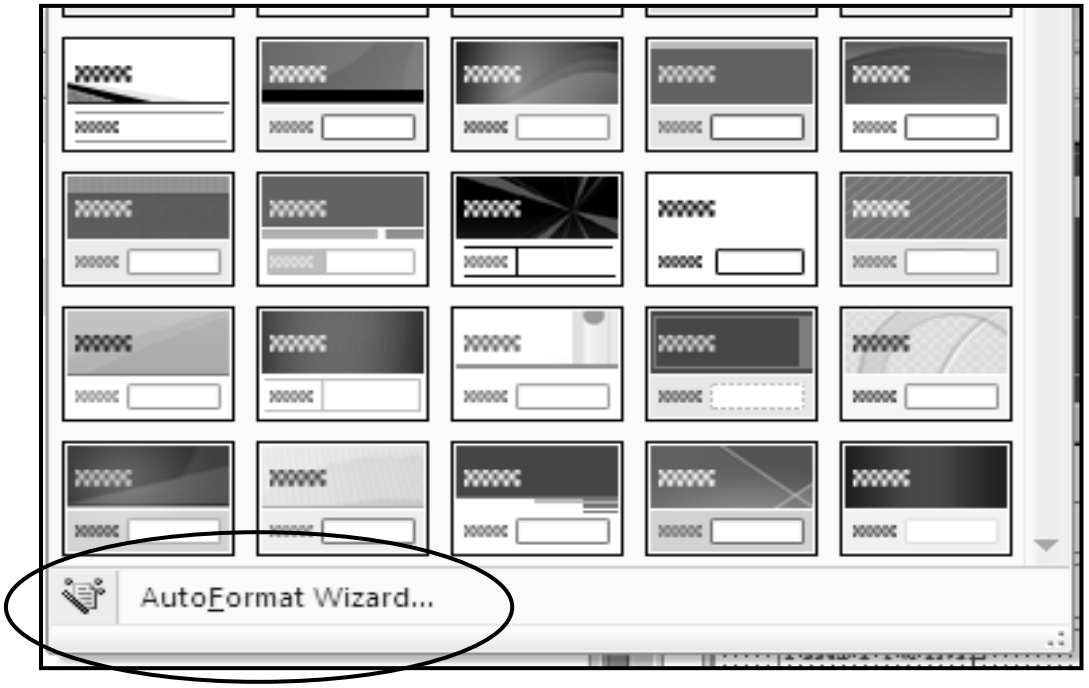


You cannot change a built-in AutoFormat. You can only change an AutoFormat you created. If you want to view the changes applied, switch Design View to Form View. If you want to see simultaneously as you apply AutoFormat to your form, you can work in Layout view.

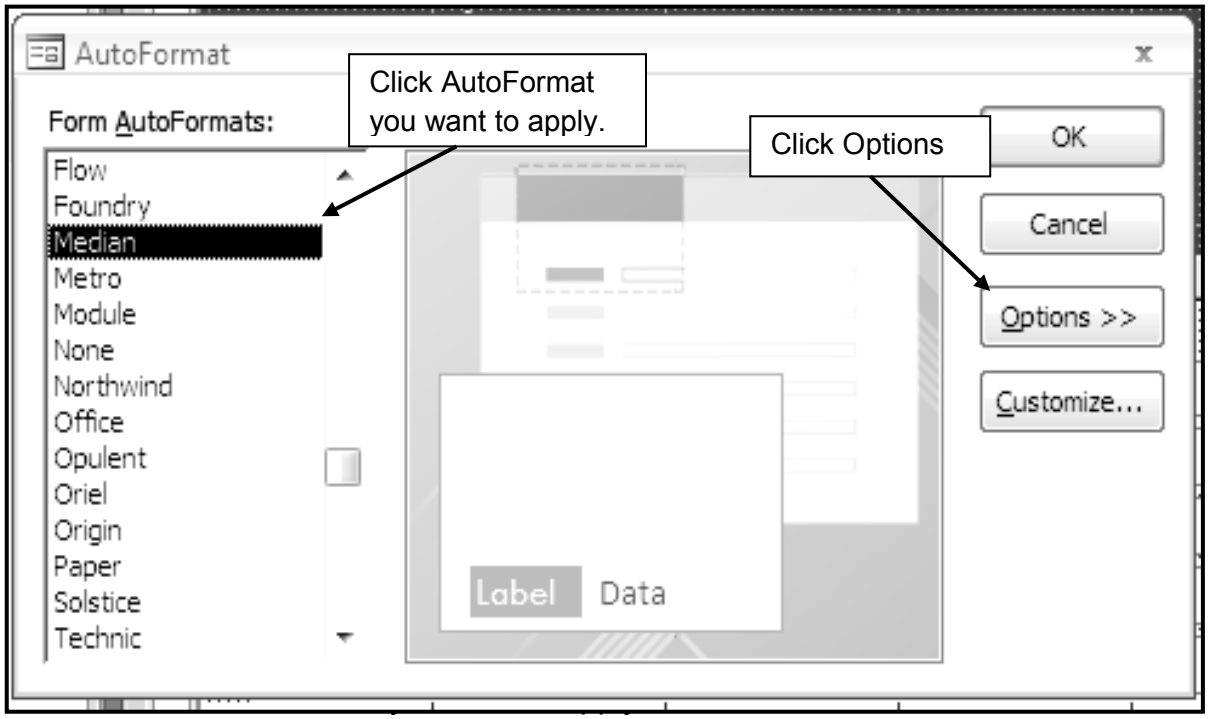
Applying AutoFormat Elements

Follow the steps below on how to select an Auto Format.

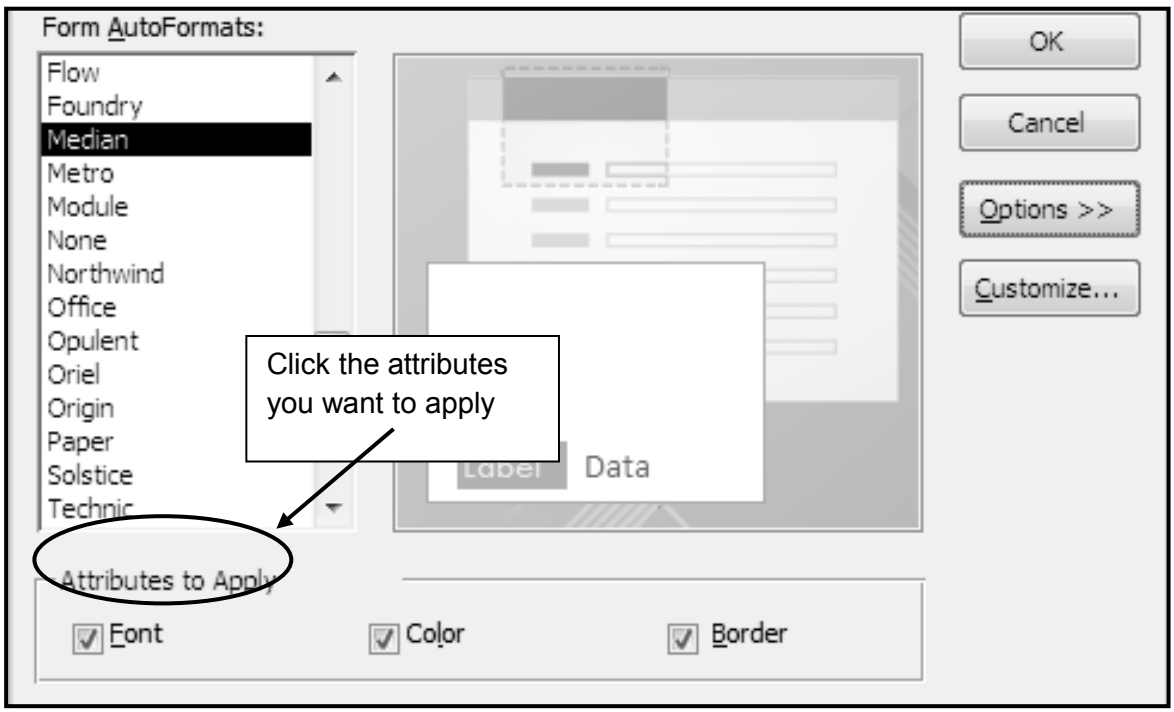
1. Open the form you want to format in **Design View**.
2. Click the **Arrange** tab.
3. Click the **AutoFormat** group.
4. Click the **AutoFormat Wizard**.



5. Click the **AutoFormat** you want to apply.
6. Click **Options**.



8. Click **OK**.

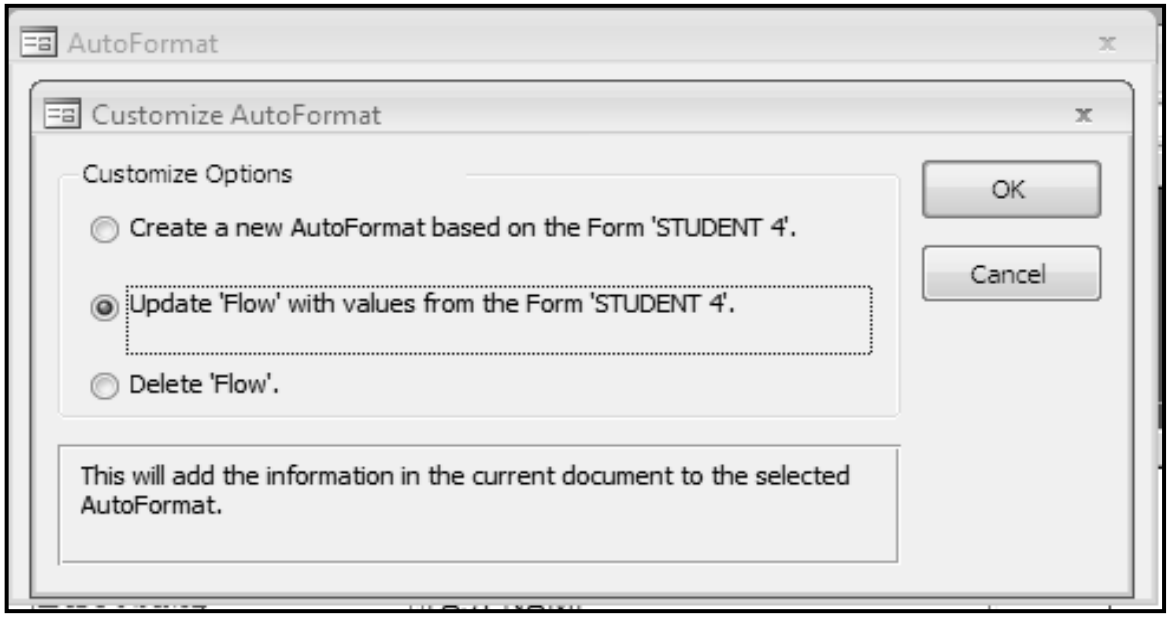


Customising an AutoFormat
Follow the steps below on how to customise an Auto Format.

1. Open the form you want to format in **Design View**.
2. Click the **Arrange** tab.

3. Click the **AutoFormat** group.
4. Click the **AutoFormat Wizard**.
5. Click the **AutoFormat** you want to customise. You can only customise an AutoFormat you created.
6. Click **Customise**.

7. Select the **Update** option to modify the selected AutoFormat to match the formatting of the active form.



8. Click **OK** to close the Customise AutoFormat Dialogue box.
9. Click **OK** to close the AutoFormat Dialogue box.

Creating an AutoFormat
Follow the steps below on how to create an Auto Format.

1. Open the form you want to format in **Design View**.
2. Click the **Arrange** tab.
3. Click the **AutoFormat** group.
4. Click the **AutoFormat Wizard**.
5. Click the **AutoFormat** you want to customise.
6. Click **Customise**.
7. Select the **Create a New AutoFormat** in the **New Style Name** Dialogue box.
8. Click **OK** to close the New Style Name Dialogue box.
9. Click **OK** to close both the Customise AutoFormat and AutoFormat Dialogue boxes.

To delete an AutoFormat, open the AutoFormat Dialogue box, click the AutoFormat that you want to delete, click Customise, select the Delete option, and then click Ok twice to close the Dialogue boxes.

Activity 1: Answer the following. Write your answer on the space provided.

1. What is AutoFormat?

_____

_____

_____

2. How can you customise an AutoFormat?

_____

_____

_____

_____

_____

_____

_____

_____

_____

Activity 2: Create a form using Form Wizard.

Open the **Flowers** form you have modified in the previous activity in Lesson 21. Modify the form by applying AutoFormat. Follow the step by step procedure discussed in this lesson.

Thank you for completing this activity. Now, you may go to the end of this lesson to check your answer. Make sure you do the necessary corrections before moving on to the next part of this lesson.

Summary

You have come to the end of Lesson 24. In this lesson, you learned how to change the appearance of your form using AutoFormat. There are ways on how to create and modify your own AutoFormat to make the appearance of the form consistent.

NOW DO PRACTICE EXERCISE 24 ON THE NEXT PAGE.

Practice Exercise 24

A. Arrange the steps on how to create an AutoFormat. Use numbers 1-9 to arrange the steps.

_____ Click OK to close both the Customise AutoFormat and AutoFormat Dialogue boxes.

_____ Open the form you want to format in Design View.

_____ Click OK to close the New Style Name Dialogue box.

_____ Select the Create a New AutoFormat in the New Style Name Dialogue box.

_____ Click Customise.

_____ Click the AutoFormat Wizard.

_____ Click the Arrange tab.

_____ Click the AutoFormat group.

_____ Click the AutoFormat you want to customise.

CHECK YOUR WORK. ANSWERS ARE AT THE END OF TOPIC 4.

Answers to Activities

Activity 1

1. AutoFormat is a way of modifying the appearance of a form in easier way for it provides ready to use format for a form. There are certain parts of the AutoFormat that are ready for use. It also provides feature where you can create or modify your own AutoFormat.

2. To create a customise AutoFormat do the following:

   a. Open the form you want to format in Design View.

   b. Click the Arrange tab.

   c. Click the AutoFormat group.

   d. Click the AutoFormat Wizard.

   e. Click the AutoFormat you want to customise. You can only customise an AutoFormat you created.

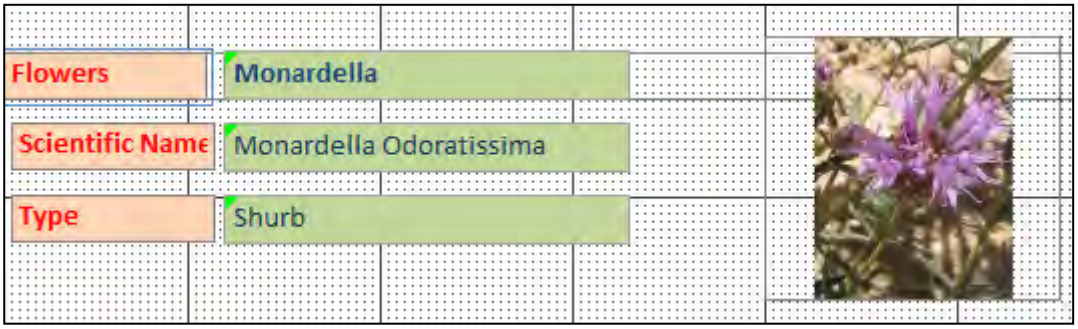
   f. Click Customise.

g. Select the Update option to modify the selected AutoFormat to match the formatting of the active form.

h. Click OK to close the Customise AutoFormat Dialogue box.

i. Click OK to close the AutoFormat Dialogue box.

Activity 2



Answers to Practice Exercises

Practice Exercise 19

A.

1. form
2. form
3. clarity and control
4. split form
5. multiple-item form

B.

4 - In the Form Wizard Dialogue box, select the fields that you want to include in your form

1 - On the Object List, click the table or query you want to use

3 - Click More Forms and select Form Wizard

5 - Select the Layout you want to apply to your form

2 - Click the Create tab on the Ribbon

7 - Give a title name to your form and click Finish button

6 - Select the Style that you want to apply to your form

Practice Exercise 20

A.

1. True
2. True
3. True
4. False
5. False
6. True
7. True

8. True

9. True

10. True

B.

1. a. navigation

   b. position

   c. searching

2. a. In the Home menu tab, click on Delete and choose Delete Form; OR

   b. You can select the whole record by clicking the margin with small arrow on the form window‘s left side and press delete.

Practice Exercise 21

A.

1 - Select the form you want to modify.

3 - Click control that you want to move.

2 - On the tool bar, click View and choose Design View.

4 - To move the label click on the big handle on the upper left corner of the label‘s border.

B.

2 - On the tool bar, click View and choose Design View.

4 - In the Font tool bar you can select the font, style and size. Apply colour to our font and fill the color of the text box.

3 - Click on the label and move the box to your desired place, you can resize the actual box, simply click and drag the handles.

1- Select the form you want to modify.

6 - Click on the Fill color on the Font tool bar, to apply a background color on the Form Header, Detail, or Form Footer.

5 - To apply color on the actual background of the form, click on the horizontal bar of Form Header, Detail, or Form Footer.

7 - To view the changes you made click the Form view in the View tool bar.

C.

1. Font color
2. Fill color
3. Font name
4. Font Style
5. Font Size

Practice Exercise 22

1. √
2. √
3. √
4. √
5. X
6. √
7. √
8. √
9. √
10. X
11. X
12. √
13. √
14. √
15. √

Practice Exercise 23

A.

1. bound image
2. unbound image
3. bound image
4. Design tab
5. Design View
6. picture Dialogue box
7. Property Sheet
8. F4
9. picture type

10. pictre size mode

B.

1. true
2. true
3. true
4. false
5. false

Practice Exercise 24

9 - Click OK to close both the Customise AutoFormat and AutoFormat Dialogue boxes.

1 - Open the form you want to format in Design View.

8 - Click OK to close the New Style Name Dialogue box.

7 - Select the Create a New AutoFormat in the New Style Name Dialogue box.

6 - Click Customise.

4 - Click the AutoFormat Wizard.

2 - Click the Arrange tab.

3 - Click the AutoFormat group.

5 - Click the AutoFormat you want to customise.

End of Topic 4

Now Do Exercise 4 in Assignment Book 4.

Access workspace. A workspace that uses the Access database engine to access a data source. The data source can be an Access database file, an ODBC database, such as a Paradox or Microsoft SQL Server database, or an ISAM database.

Application background. The background area of an application window.

Autoformat. A collection of formats that determines the appearance of the controls and sections in a form or report.

AutoNumber data type. In an Access database, a field data type that automatically stores a unique number for each record as it is added to a table. Three kinds of numbers can be generated: sequential, random, and Replication ID.

Calculated control. A control that is used on a form, report, or data access page to display the result of an expression. The result is recalculated each time there is a change in any of the values on which the expression is based.

Calculated field. A field, defined in a query, that displays the result of an expression rather than displaying stored data. The value is recalculated each time a value in the expression changes.

Column. A location within a database table that stores a particular type of data. It is also the visual representation of a field in a datasheet and, in an Access database, the query design grid or the filter design grid.

Column area. The part of PivotTable view that contains column fields.

Column field. A field in the column area of PivotTable view. Items in column fields are listed across the top of a PivotTable list. Inner column fields are closest to the detail area; outer column fields are displayed above the inner column fields.

Column selector. The horizontal bar at the top of a column. You can click a column selector to select an entire column in the query design grid or the filter design grid.

Combo box. A control used on a form that provides the combined functionality of a list box and a text box. You can type a value in a combo box, or you can click the control to display a list and then select an item from that list.

Command button. A control that runs a macro, calls a Visual Basic function, or runs an event procedure. A command button is sometimes called a push button in other programs.

Current record. The record in a recordset from which you can modify or retrieve data. There can be only one current record in a recordset at any given time, but a recordset may have no current record — for example, after a record has been deleted from a dynaset-type recordset.

Data collection. A method of gathering information from users by sending and receiving HTML forms or InfoPath 2007 forms from Access 2007. In Access, you create a data collection request and send it to users in a form contained in an e-mail message. Users then complete a form and return it to you.

Database application. A set of objects that can include tables, queries, forms, reports, macros, and code modules that are designed to work together to make a database easier to use. A database application is typically deployed to a group of users.

Database objects. An Access database contains objects such as tables, queries, forms, reports, pages, macros, and modules. An Access project contains objects such as forms, reports, pages, macros, and modules.

DB2. Is a database product from IBM. It is a relational Database Management Systems. DB2 is designed to store, analyse and retrieve that data efficiently. DB2 product is extended with the support of the Object-Oriented features and non-relational structures with XML.

dBaseIII. Is a database software, which means it manipulates data stored in a database. It contains a large number of commands, operators, and functions that can perform the actions necessary to perform the work you want to do.

Field data types. A characteristic of a field that determines what kind of data it can store. For example, a field whose data type is Text can store data consisting of either text or numeric characters, but a Number field can store only numerical data.

Field List pane. A pane that lists all the fields in the underlying record source or database object.

Field selector. A small box or bar that you click to select an entire column in a datasheet.

Fill. A report magnification that fills the Report Snapshot window by fitting either the width or the height of a page, depending on whether the report is in portrait or landscape orientation.

Filter. A set of criteria applied to data in order to display a subset of the data or to sort the data. In Access, you can use filtering techniques, such as Filter By Selection and Filter By Form, to filter data.

Filter area. The part of a PivotTable view or PivotChart view that contains filter fields.

Filter By Form. A technique for filtering data that uses a version of the current form or datasheet with empty fields in which you can type the values that you want the filtered records to contain.

Filter By Selection. A technique for filtering records in a form or datasheet in which you retrieve only records that contain the selected value.

Filter Excluding Selection. A technique in which you filter records in a form or datasheet to retrieve only those records that don't contain the selected value.

Form. An Access database object on which you place controls for taking actions or for entering, displaying, and editing data in fields.

Form footer. Used to display instructions for using a form, command buttons, or unbound controls to accept input. Appears at the bottom of the form in Form view and at the end of a printout.

Form header. Used to display a title for a form, instructions for using the form, or command buttons that open related forms or carry out other tasks. The form header appears at the top of the form in Form view and at the beginning of a printout.

Form object tab. An object tab in which you work with forms in Design view, Form view, Datasheet view, or Print Preview.

Form properties. Attributes of a form that affect its appearance or behavior. For example, the DefaultView property is a form property that determines whether a form will automatically open in Form view or Datasheet view.

Form selector. The box where the rulers meet, in the upper-left corner of a form in Design view. Use the box to perform form-level operations, such as selecting the form.

Form view. A view that displays a form that you use to show or accept data. Form view is the primary means of adding and modifying data in tables. You can also change the design of a form in this view.

Format. Specifies how data is displayed and printed. An Access database provides standard formats for specific data types, as does an Access project for the equivalent SQL data types. You can also create custom formats.

FoxPro. Is a relational database procedural programming language. It was originally developed by Fox Software and later merge with Microsoft in 1992.

Grid (Datasheet view). Vertical and horizontal lines that visually divide rows and columns of data into cells in a table, query, form, view, or stored procedure. You can show and hide these grid lines.

Grid (Design view). An arrangement of vertical and horizontal dotted and solid lines that help you position controls precisely when you design a form or report.

Interbase. Is a relational database management system currently developed and marketed by Embarcadero Technologies. Interbase is distinguished from other RDBMS by its small footprint, close to zero administration requirements, and multigenerational architechture.

ISAM (Indexed Sequential Access Method). A file management system developed at IBM that allows records to be accessed either sequentially (in the order they were entered) or randomly (with an index). Each index defines a different ordering of the records.

Label. A control that displays descriptive text, such as a title, a caption, or instructions, on a form or report. Labels may or may not be attached to another control.

Many-to-many relationship. An association between two tables in which one record in either table can relate to many records in the other table. To establish a many-to-

many relationship, create a third table and add the primary key fields from the other two tables to this table.

Microsoft Access data file. An Access database or Access project file. An Access 2007 database stores database objects and data in an .accdb file, and earlier versions of Access use the .mdb format. A project file does not contain data, and is used to connect to a Microsoft SQL Server database.

Microsoft Access database. A collection of data and objects (such as tables, queries, or forms) that is related to a particular topic or purpose.

Microsoft Access object. An object, defined by Access, that relates to Access, its interface, or an application's forms and reports. In addition, you can use a Microsoft Access object to program the elements of the interface used for entering and displaying data.

Microsoft Access project. An Access file that connects to a Microsoft SQL Server database and is used to create client/server applications. A project file doesn't contain any data or data-definition-based objects, such as tables and views.

Microsoft SQL (Structured Query Language). A special-purpose programming language designed for managing data held in a relational database management system (RDBMS), or for stream processing in a relational data stream management system (RDSMS).

Microsoft SQL Server. Is a relational database management system developed by Microsoft.

MySQL. Is an open source relational database management system. It is based on the structure query language (SQL), which is used for adding, removing, and modifying information in the database.

Navigation buttons. The buttons that you use to move through records. These buttons are located in the lower left corner of the Datasheet view and Form view. The buttons are also available in Print Preview so that you can move through the pages of your document.

Navigation Pane. The pane that appears when you open an Access database or an Access project. The Navigation Pane displays the objects in the database, and can be customized to sort and group objects in different ways.

Null. A value you can enter in a field or use in expressions or queries to indicate missing or unknown data. In Visual Basic, the Null keyword indicates a Null value. Some fields, such as primary key fields, can't contain a Null value.

Null field. A field containing a Null value. A null field is not the same as a field that contains a zero-length string (" ") or a field with a value of 0.

Number data type. In an Access database, a field data type designed for numerical data that will be used in mathematical calculations. Use the Currency data type, however, to display or calculate currency values.

Numeric data type. In an Access project, an exact numeric data type that holds values from -10^38 - 1 through 10^38 - 1. You can specify the scale (maximum total number of digits) and precision (maximum number of digits to the right of the decimal point).

Object data type. A fundamental data type representing any object that can be recognized by Visual Basic. Although you can declare any object variable as type Object, it is best to declare object variables according to their specific types.

Object type. A type of object exposed by a program through Automation; for example, Application, File, Range, and Sheet. Use the Object Browser in the Visual Basic Editor or refer to the program's documentation for a complete listing of available objects.

Object variable. A variable that contains a reference to an object.

One-to-many relationship. An association between two tables in which the primary key value of each record in the primary table corresponds to the value in the matching field or fields of many records in the related table.

One-to-one relationship. An association between two tables in which the primary key value of each record in the primary table corresponds to the value in the matching field or fields of one, and only one, record in the related table.

Open Database Connectivity (ODBC). An open standard application programming interface (API) for accessing a database. By using ODBC statements in a program, you can access files in a number of different databases, including Access, dBase, DB2, Excel, and Text.

Option button. A control, also called a radio button, that is typically used as part of an option group to present alternatives on a form or report. A user cannot select more than one option.

Oracle (Oak Ridge Automatic Computer and Logical Engine). Is a powerful relational database management system that offers a large feature set. It is widely regarded as one of the two most popular full-featured database systems on the market.

Page footer. Used to display page summaries, dates, or page numbers at the bottom of every page in a form or report. In a form, the page footer appears only when you print the form.

Page header. Used to display a title, column headings, dates, or page numbers at the top of every page in a form or report. In a form, the page header appears only when you print the form.

Primary key. One or more fields (columns) whose values uniquely identify each record in a table. A primary key cannot allow Null values and must always have a unique index. A primary key is used to relate a table to foreign keys in other tables.

Query. A question about the data stored in your tables, or a request to perform an action on the data. A query can bring together data from multiple tables to serve as the source of data for a form or report.

Query window. A window in which you work with queries in Design view, Datasheet view, SQL view, or Print Preview.

Record navigation control. A control used on a data access page to display a record navigation toolbar. In a grouped page, you can add a navigation toolbar to each group level. You can customize the record navigation control by changing its properties.

Record number box. A small box that displays the current record number in the lower-left corner in Datasheet view and Form view. To move to a specific record, you can type the record number in the box, and press ENTER.

Record selector. A small box or bar to the left of a record that you can click to select the entire record in Datasheet view and Form view.

Relationship. An association that is established between common fields (columns) in two tables. A relationship can be one-to-one, one-to-many, or many-to-many.

Relationships object tab. An object tab in which you view, create, and modify relationships between tables and queries.

Report. An Access database object that that you can print containing information that is formatted and organized according to your specifications. Examples of reports are sales summaries, phone lists, and mailing labels.

Report footer. A report section that is used to place information that normally appears at the bottom of the page, such as page numbers, dates, and sums.

Report header. A report section that is used to place information (such as a title, date, or report introduction) at the beginning of a report.

Report module. A module that includes Visual Basic for Applications (VBA) code for all event procedures triggered by events occurring on a specific report or its controls.

Report object tab. An object tab in which you work with reports in Design view, Layout Preview, or Print Preview.

Report selector. The box where the rulers meet in the upper-left corner of a report in Design view. Use the box to perform report-level operations, such as selecting the report.

Row selector. A small box or bar that, when clicked, selects an entire row in table or macro Design view or when you sort and group records in report Design view.

Section. A part of a form or report, such as a header, footer, or detail section.

Section header. The horizontal bar above a form or report section in Design view. The section bar displays the type and name of the section. Use it to access the section's property sheet.

Section selector. The box on the left side of a section bar when an object is open in Design view. Use the box to perform section-level operations, such as selecting the section.

Sybase. Is a computer software company that develops and sells database management system.

Tab control. A control that you can use to construct a single form or dialog box that contains several pages, each with a tab, and each containing similar controls, such as text boxes or option buttons. When a user clicks a tab, that page becomes active.

Table. A database object that stores data in records (rows) and fields (columns). The data is usually about a particular category of things, such as employees or orders.

Table data type. In an Access project, a special data type that is used to store a result set in a local variable or return value of a user-defined function for later processing. It can be used in place of a temporary table stored in the tempdb database.

Table object tab. In an Access database, an object tab in which you work with tables in Design view or Datasheet view.

Table properties. In an Access database, attributes of a table that affect the appearance or behavior of the table as a whole. Table properties are set in table Design view, as are field properties.

Text box. A control, also called an edit field, that is used on a form or report to display text or accept data entry. A text box can have a label attached to it.

Text data type. In an Access project, a variable-length data type that can hold a maximum of 2^31 - 1 (2,147,483,647) characters; default length is 16.

Text data type. In an Access database, this is a field data type. Text fields can contain up to 255 characters or the number of characters specified by the FieldSize property, whichever is less.

Toolbox. A set of tools that is available in Design view for adding controls to a form or report.

ToolTips. Brief descriptions of the names of commands and buttons on the Ribbon. A ToolTip is displayed when the mouse pointer rests on these commands and buttons.

Xbase. Is the generic term for all programming languages that derive from the original dBase programming language and database formats. These are sometimes informally known as dBase —clones."