

DIRECT TO POINTS

- The Bulldozer -



COMPUTER APPLICATIONS IN

**Word | PowerPoint | Excel
Access & Publisher**



Plus Support Files

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*Direct to Points,
ICT books to be precise,
Illiteracy to fight,
With eased Comprehension.*

*It will always be there,
To literates you one by one,
You won't be challenged,
"DIRECT TO POINTS" is power.*

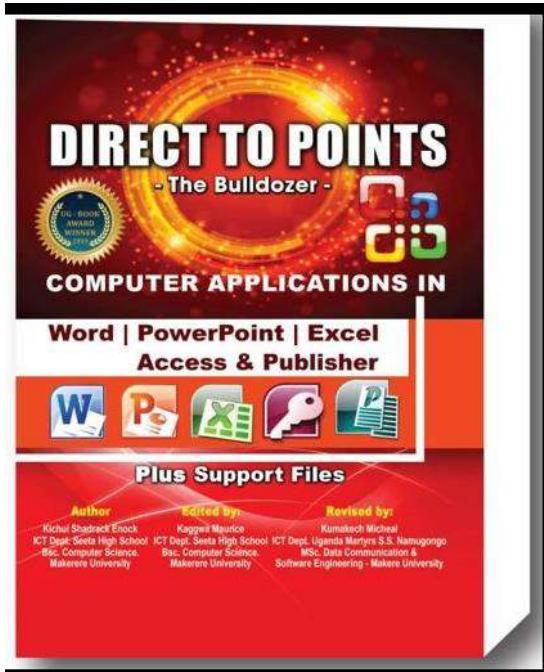
*You know how it works,
It hits the point right away,
Trumping the violent fear,
For great Technologists.*

*The enemy is on our way,
Thickened digital illiteracy,
The astute use DIRECT TO POINTS,
To propel POWERFUL confrontation!*

Part One

Microsoft Word

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TOPIC ONE

INTRODUCTION TO WORD

Word Processing

- Word processing is a program that can be used to create, edit, format, store, and print a document that contains text and graphics. A text document is anything that can be keyed in, such as a letter.
- There are various types of word processing programs:
 - i) Microsoft word
 - ii) AbiWord
 - iii) OpenOffice.Org. Writer
 - iv) La Text Edit
 - v) LyX
 - vi) Corel WordPerfect
 - vii) WordStar
 - viii) Lotus WordPro.

Basic operations of word processing include:

- i) **Creation:** Involves entering text or numbers, inserting graphics, and performing other tasks using an input device such as a keyboard and a mouse.
- ii) **Editing:** Making changes to the document to fix errors or to improve its content, for example deleting a sentence, correcting a misspelled name, copying or moving a paragraph.
- iii) **Formatting:** To adjust the appearance of the document to make it look appropriate and attractive. E.g. bolding, aligning text, or changing font size.
- iv) **Storing (Saving):** Is the process of copying a document from the computer memory to a storage medium such as a floppy disk or hard disk.
- v) **Printing:** Is the producing of the document on paper, using a printer connected to the computer.

Popular features of word processing:

- i) **Word wrap:** This feature allows a user to type continuously without pressing the Enter key at the end of the line.
- ii) **Spell Checker:** Allows a user to check the spelling errors of the whole document and suggest the corrections.
- iii) **Grammar Checker:** Reports grammatical errors and suggests ways to correct them.
- iv) **Thesaurus:** Suggests the alternative words with same meaning (i.e. synonyms) for use in the document.
- v) **Find and Search:** Allows a user to locate all occurrences of a particular character, word or phrase existing in a document.
- vi) **Mail merge:** Create form letters, mailing labels, and envelopes and it is used when letters of the same contents have to be sent to different individuals.
- vii) **Automatic page numbering:** Numbers the pages automatically in a document.
- viii) **Tables:** Allows a user to organize information into rows and columns.
- ix) **Multicolumn:** Arranges text in two or more columns that look similar to a newspaper or magazine.
- x) **Clip art gallery:** Allows a user to insert drawings, diagrams, and photographs into a document.
- xi) **Template:** Allows a user to create documents with pre-defined format.
- xii) **Printing:** Allows a user to produce a document on paper (Hardcopy)

Common Editing Features

1. **Inserting feature:** This feature helps the user to fix extra information before the rest of the typed work. When text is inserted, the surrounding words automatically move to make room for the inserted text.
2. **Deleting:** This feature is used to delete some of the text document. When text is deleted or removed from the document, the surrounding words automatically move to fill in the gaps left by the deleted text.
3. **Cutting:** Cutting is the action that makes the original part of the document to be removed from its place to another specified location. The cut document is stored in a temporary memory location called clipboard before it is copied from the clipboard to the new location.
4. **Copying:** Copying is the action that duplicate the original part of the document and store it to the temporary memory location called clipboard before it is copied to another part of the document. The original text remains in place.
5. **Pasting:** Pasting describes the act of transferring the contents of the clipboard (cut or copied part of document) to the new specified location of the same or another document.
6. The part of the document can be cut and pasted or copy and pasted.

What is the difference between Cut - paste and Copy – paste?

- i) Cut and paste collect and remove part of the document from one location to another without leaving the original text in place.
- ii) Copy and paste duplicate the original part of the document leaving the original in place.

Formatting

Formatting involves changing the appearance of a document as suitable as user's requirement.

Formatting can be of several types:

- i. **Character formatting:** This involves changing the font, font size, or font style of the text. The most common way to emphasize text is to apply **boldface**, **italics** or underline character style.
- ii. **Paragraph formatting:** Involves text alignment, line spacing, indentations, tab settings, and borders. A paragraph can be a single line of text or an entire page, and may be formatted independently from the rest of the document.
- iii. **Section formatting:** Lets you specify page numbers, headers and footers, for different sections or chapters of the document.
- iv. **Document Formatting (Page formatting):** specifies the overall 'page layout for printing which includes choosing the paper size (letter, legal, A4, A3), page orientation (portrait or landscape) and also involves changing the margins (left, right, top, or bottom).

Undo and Redo

- i. **Undo** allows actions that have been performed to be reversed, such that if some text was accidentally deleted or accidentally typed, then the action can be undone.
- ii. **Redo** performs the actions redoing the undone work by the undo feature.

Saving a document

- This is the process of copying a document from the memory to a storage medium such as floppy disk or hard disk.
- Any document that has been saved exists as a file, which is a named collection of data, instructions, or information.
- Each file must be given a unique name if the files are stored in the same folder in the computer.

Save and Save As

- The “save” command allows the user to save a new document and give it a file name or to save the changes (edited parts of the document) to your storage medium.
- The “Save As” allows a user to save the existing document with a new document file name, especially after making some changes. Example, a file named “FILE1” to be Saved As “FILE2”.

Printing a document

- This is the process of sending a file to a printer to generate output on a medium such as paper.
- A user can decide to choose either Portrait (horizontal) orientation or Landscape (vertical) orientation.
- A user can also choose the paper size for the printout.

Advantages of word processing over the Typewriter:

- i. Word processing can allow the document to be formatted to look attractive
- ii. Word processing separate typing and printing where by a document can be typed, saved and printed later while a typewriter perform both typing and printing at the same time.
- iii. Word processing can allow the inclusion of graphics, pictures and other form of data while a typewriter can't.
- iv. Documents can be reviewed and corrections to be made before the final printing.
- v. Word processing can perform spell and grammar check and subsequently suggests the proper corrections unlike the typewriter.

Page Orientation

It's a layout position in which a rectangular page is oriented for normal viewing. There are two page orientations i.e. Portrait Orientation and Landscape Orientation.

Portrait orientation

It is the layout of a page where the height (vertical size) of the page is greater than the width (horizontal size).

Landscape orientation

It is the layout of a page where the width of the page is greater than the height

Print preview

-It's a feature in application programs that enables users to have a view in their document the way it would look like if printed.

-The advantage of print preview is that you can save on wasting papers by not printing unsatisfactory document before previewing it.

Footer

It's is a one or more lines of text that when inserted, automatically appear at the bottom of every page of a document.

Header

It's is a one or more lines of text that when inserted, automatically appear at the top of every page of a document.

Page break

It's a marker in an electronic document that tells the document interpreter that the content which follows is part of a new page.

Starting Microsoft word

Starting Microsoft Word program follow the following steps:

1. Point and click Start Button at the bottom left of your desktop windows. See **Fig. 1-1** below.
2. Click All Programs to access the Microsoft Office folder. See **Fig. 1-2** below.

Fig. 1-1: Starting the program from the Desktop Window

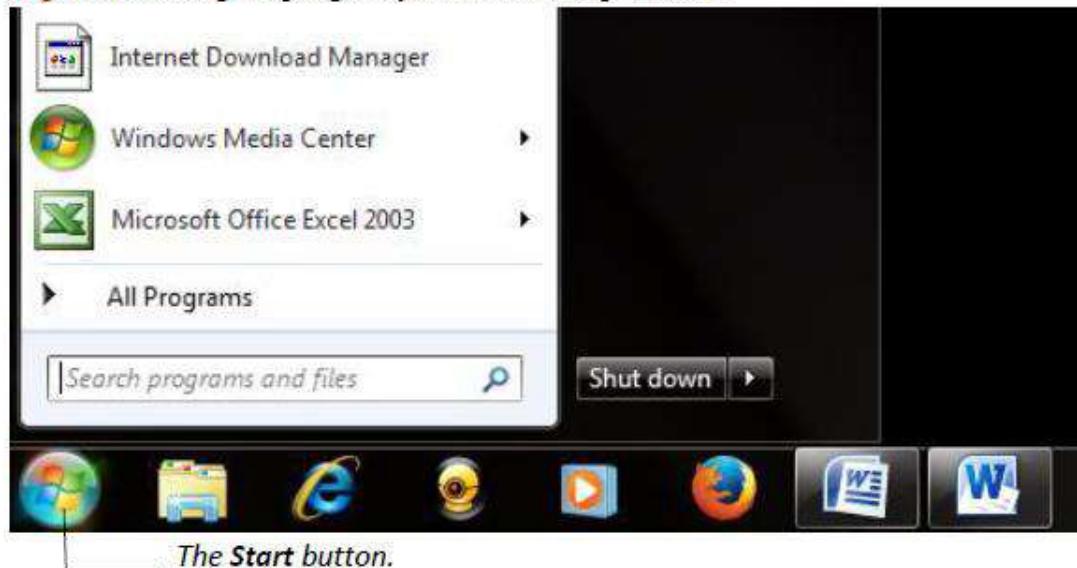
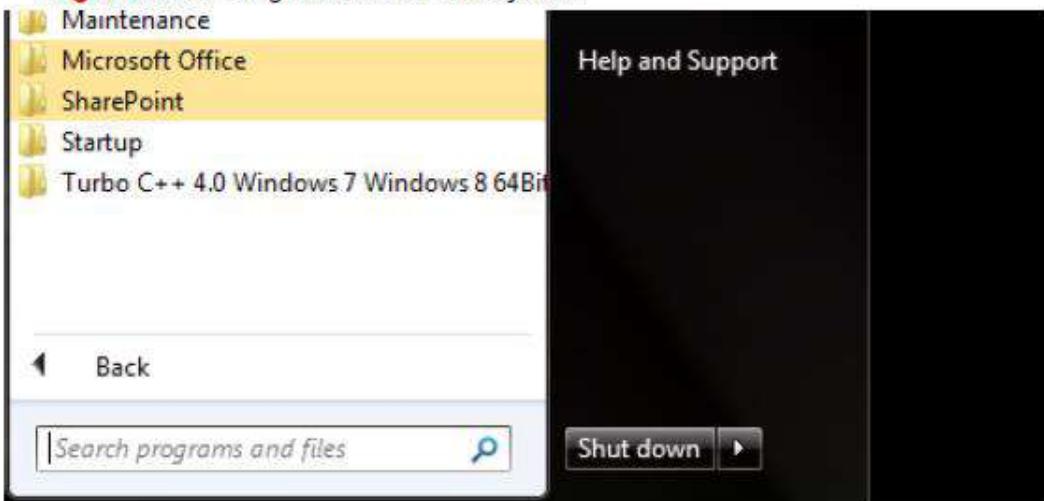


Fig. 1-2: Accessing Microsoft Office folder



3. Click Microsoft Office as seen in **Fig. 1-2** above. A menu showing all Microsoft Office programs will be displayed. See **Fig. 1-3** below.
4. Click Microsoft Word 2010. You may also Click Microsoft Word 2007 or Microsoft Word 2013 if that is the version installed on your personal computer (PC).

Fig. 1-3: Shows a list of Microsoft Office programs

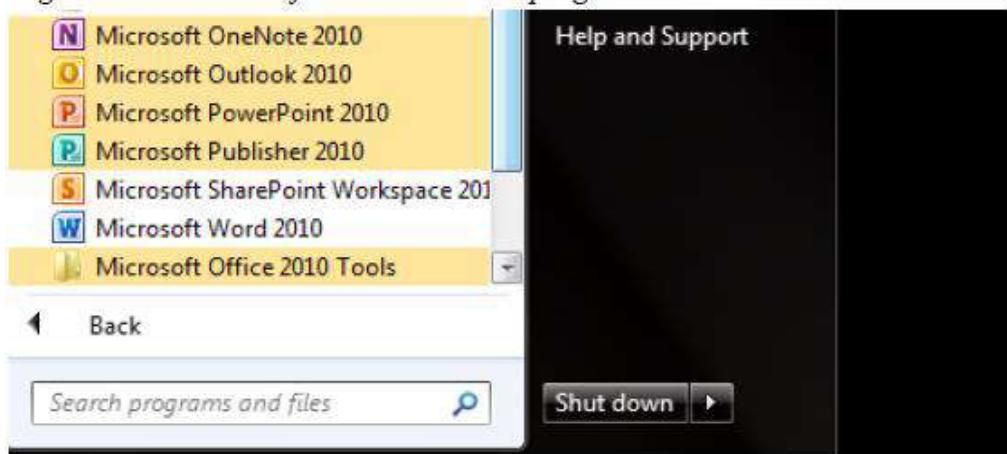
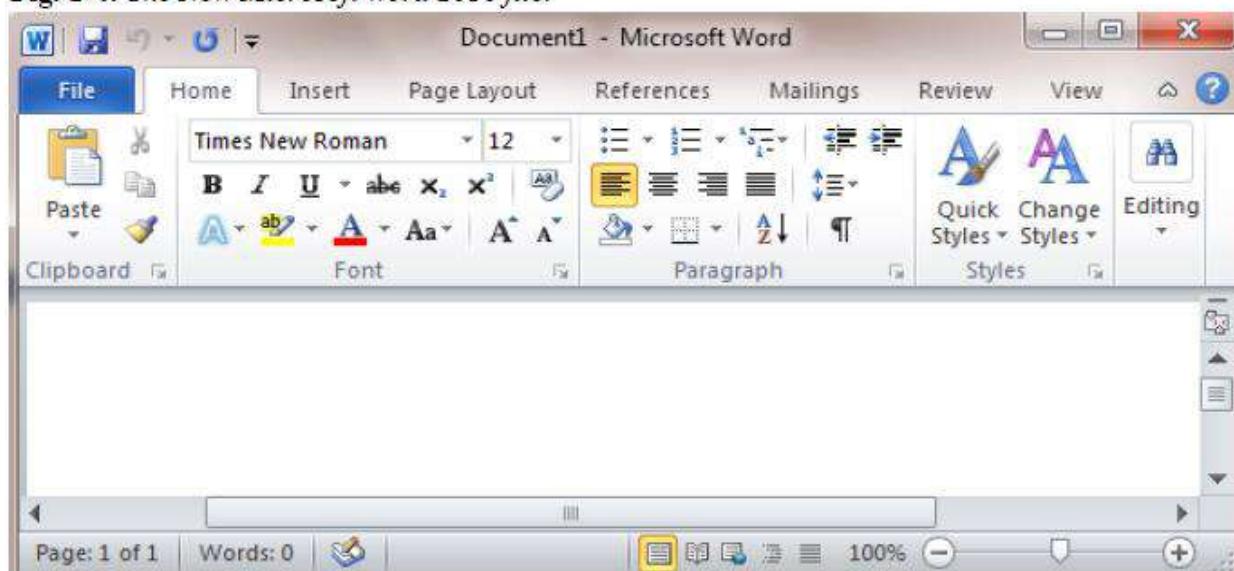


Fig. 1-4: The New Microsoft word 2010 file.



The Menu bar

Microsoft word 2007/2010/2013 has a menu bar with option list that when each option is clicked it displays a ribbon which has variety of tools. The menu bar has options that include **File**, **Home**, **Insert**, **Page Layout**, **References**, **Mailings**, **Review**, and **View**. See Fig. 1-4 above. Try to explore yourself by clicking each option to observe the different tools that you can use in Word 2010.

Creating a Simple Document

Word processing can enable its users to create documents of different kinds. This may include preparing a short letter, memo, essay that may take few pages, or editing a text book that may include thousands of pages.

A document can be created using a keyboard button combination. A user composes a document by pressing key buttons on his/her keyboard. You need to create and type several documents to acquire necessary typing skills or enhance your typing speed.

The typing speed required for users to create their documents may not need to equal that of a professional typist. However learners in their first time to use computer, especially typing using word processing need to type a particular document (the size of a page) several times to master the locations of specific key buttons on their keyboard.

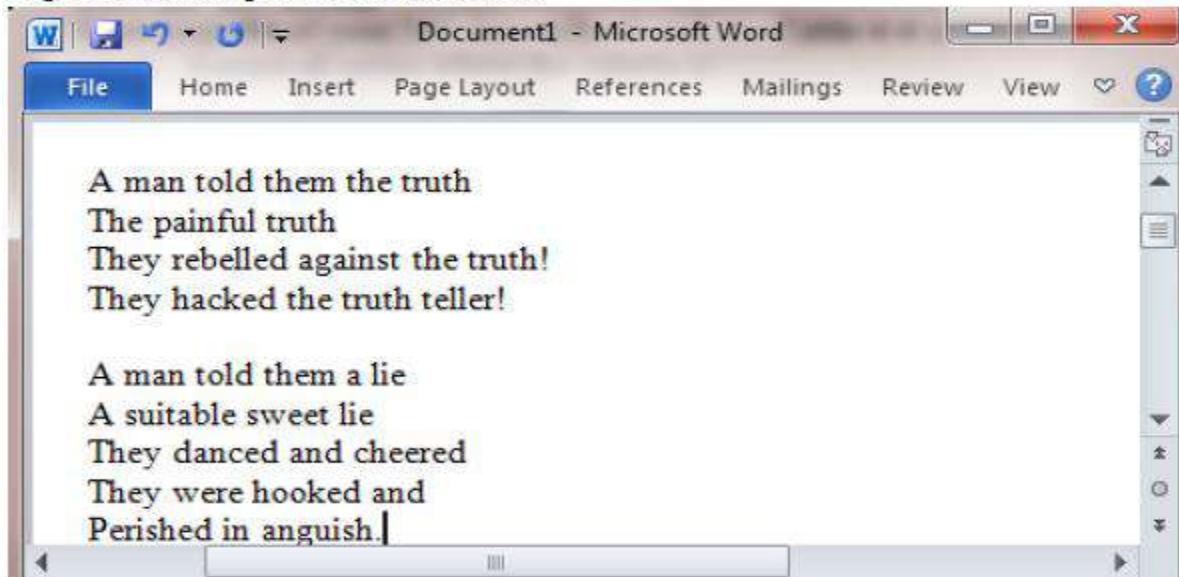
Example 1-1: Type the following simple document as seen below:

A man told them the truth [Press ENTER KEY]
The painful truth [Press ENTER KEY]
They rebelled against the truth! [Press ENTER KEY]
They hacked the truth teller! [Press ENTER KEY]
[Press ENTER KEY]
A man told them a lie [Press ENTER KEY]
A suitable sweet lie [Press ENTER KEY]
They danced and cheered [Press ENTER KEY]
They were hooked and [Press ENTER KEY]
Perished in anguish. [Press ENTER KEY]

Note that every after a line you press the Enter key on your keyboard to enable the cursor to move to the next line. The **cursor** is a small (usually dark) blinking image that marks the point on the screen that can be typed.

When you complete your document should be like the one in Fig. 1-5 below.

Fig. 1-5: The simple created document.



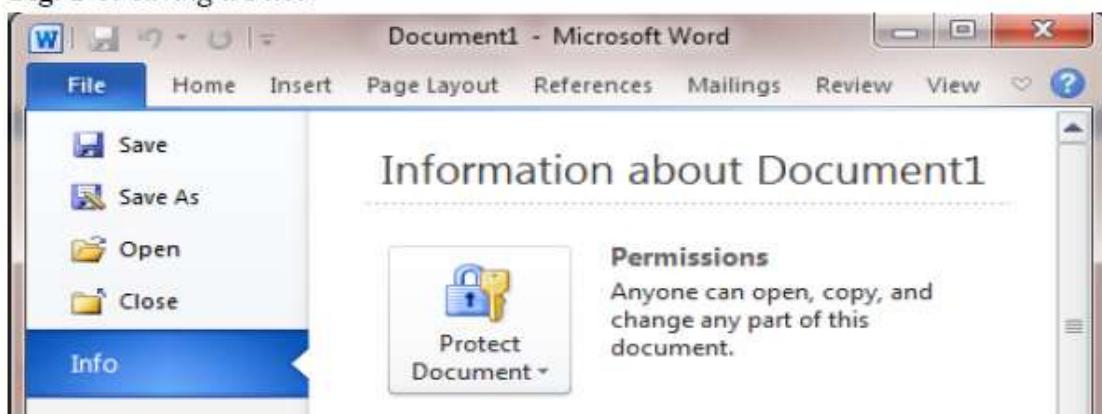
Saving a Document

After creating a document, you need to save it for future reference. You can save your document (file) right on your computer's hard disk or you can use external storage devices such as flash disk or cd-rewritable. A document must be saved with a file name.

To save a file, follow the following steps:

1. Click **File** from the menu bar to display the list of file operation options. See **Fig. 1-6** below.
2. Point and click the **Save** button as seen in **Fig. 1-6** below. The **Save As** dialog box will be displayed as seen in **Fig. 1-8** below.

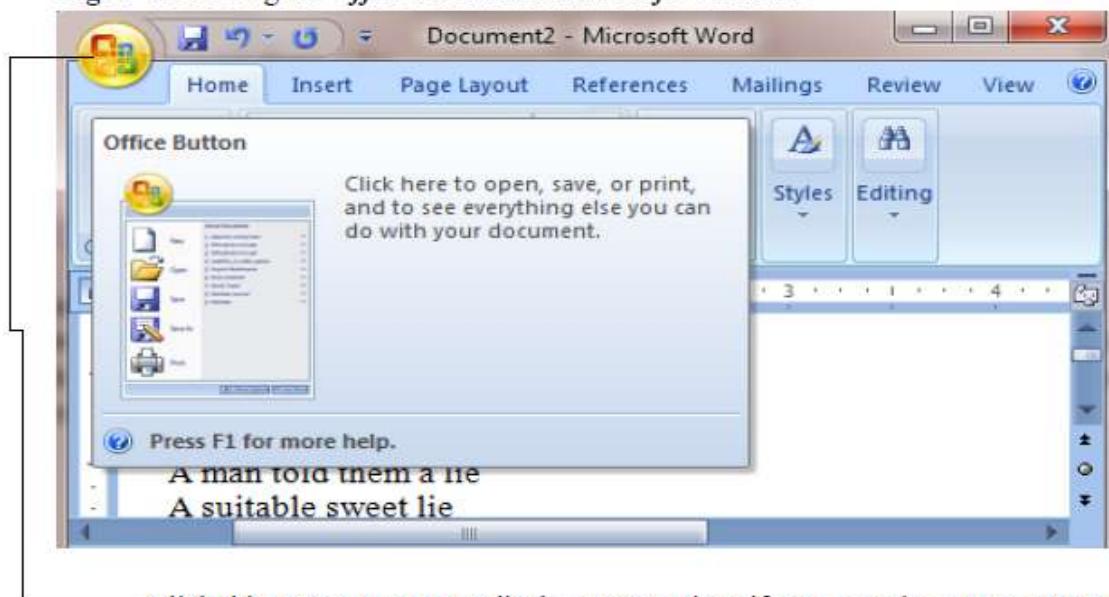
Fig. 1-6: Saving a File.



Note:

For all users of **Microsoft Word 2007** you do not have a **File** option on the menu bar. You will therefore point and click the **Office Button** when you want to **Save** your file as seen in **Fig. 1-7** below:

Fig. 1-7: Clicking the *Office Button* for Microsoft Word 2007



- Click this **Office Button** to display Save options if you are using **Microsoft Word 2007**.
3. Point and Click the **Desktop** option on the left side pane of the **Save As** dialog box as seen in **Fig. 1-8** below.

4. Move the cursor down on the **File name:** and type *My Poem* to be the name of your file just as you can see in Fig. 1-8 below.
5. Click **Save** at the bottom right of Save As dialog box to have your file saved on disk.

Fig. 1-8: The *Save As* Dialog Box

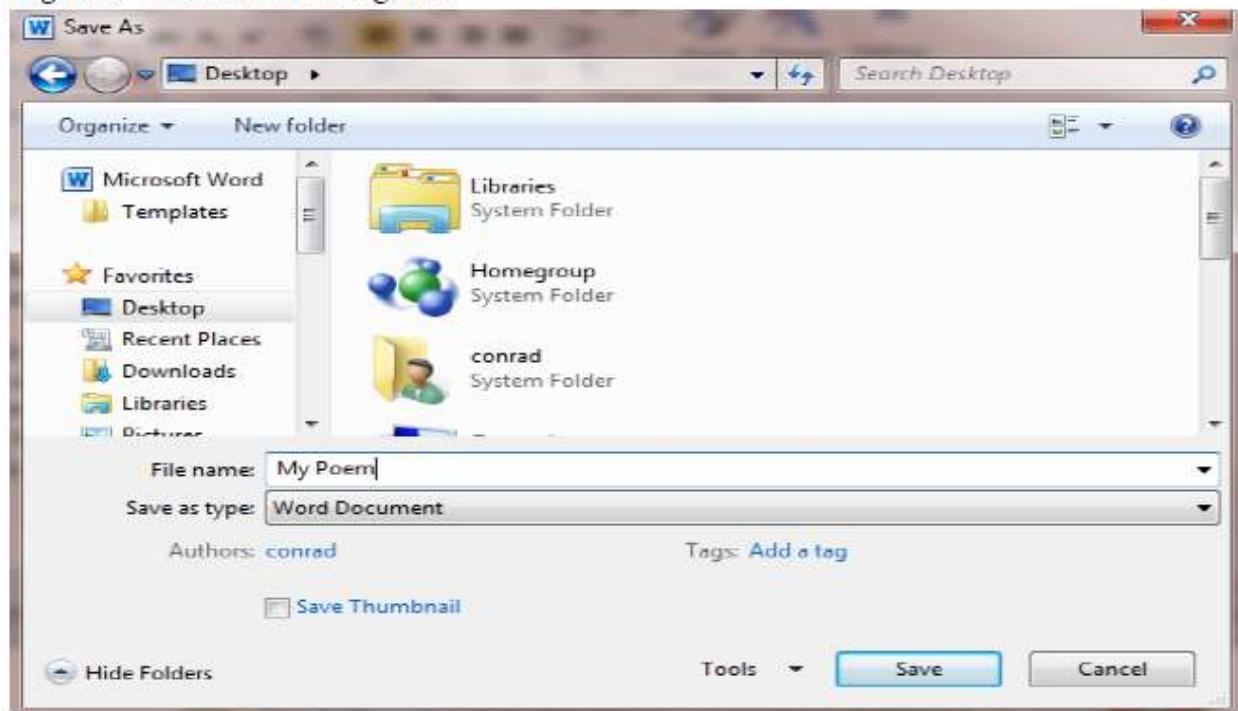
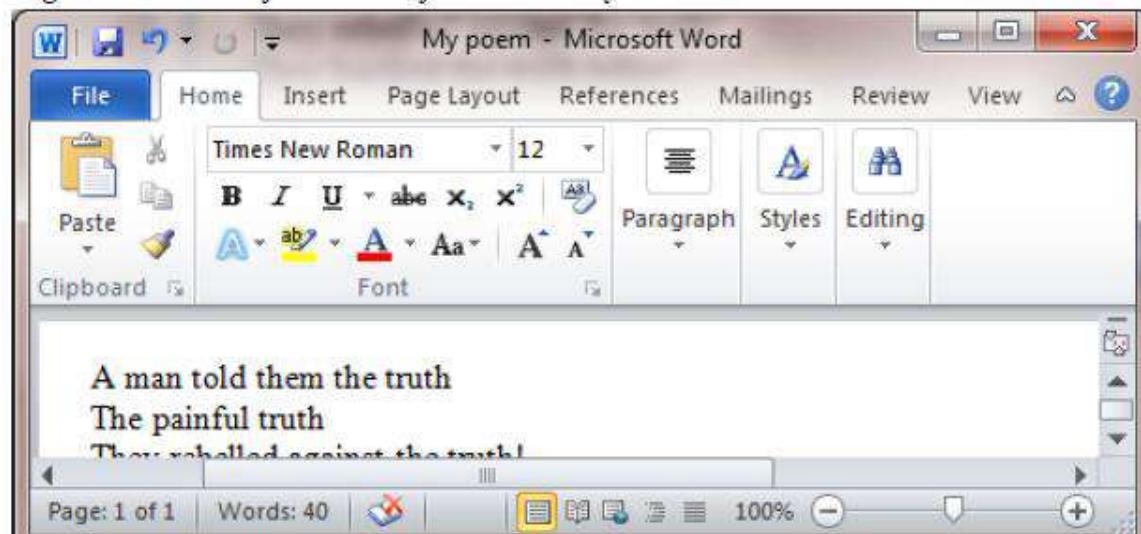


Fig. 1-9: The saved file with the file name – My Poem



Exercise 1-1: Typing Exercise.

Open your Microsoft Word program and type the following document as it is. Press the Enter key only where you are told to do so.

Modern Literacy [Press ENTER KEY]

Until the end of last century the term “Literacy” meant to people with the ability to read and write. A person is therefore referred to as “Literate” if and only if he managed to attain these two basic competencies – read and write. Persons without these skills were the ones referred to as “Illiterates”. Two major classes existed amongst people who are Literate and those who are Illiterate. However, Governments across Africa worked tooth and nail to narrow the gap that separated the two classes – the Literates and the Illiterates. [Press ENTER KEY]

Unlike today where failure to read and write appears to be uncommon and degrading, in the last century people with their Illiteracy maintained their nobility throughout their lives and at the same time managed all their affairs as it was required by their respective societies. Some even became leaders of large communities and others became soldiers that protected their own community using their skills or high level of intelligence. [Press ENTER KEY]

In this century (21st Century) when you mention the word “Literacy”, the moral aspect of someone knowing how to read and write does not come to mind. What comes to many people’s mind is that of Computer Literacy. This is the Modern Literacy I am trying to talk about. [Press ENTER KEY]

The Illiteracy as far as Computer is concerned, captures the largest population on earth. There are many challenges that force larger populations to computer illiteracy like: poverty, inaccessible electricity, lack of sensitization, opinionated people, technophobia, and many others. [Press ENTER KEY]

Digital Divide, in simple terms, describes a community with people that are having access and ability to use digital devices (computers, phones, etc) and those ones without. The divide is sharper given one community and another. Those without access to digital devices make another class all together because one can never have any touch with them even when they seem to be physically closer in distance than those who stay miles away but possess communications devices. [Press ENTER KEY]

In this century, computer knowledge is no longer a luxury but a requirement. The whole world is going digital in each and every operation in all sectors. It is now clear that any business that operates its tasks without employing digital devices shall hardly realize its maturity or cope up with the prevailing stiff competition. Similarly, any person in the coming new generations that may fail to acquire basic computer skills shall crumble into a darkened future. Such persons won’t buy or sell out their goods, study or be exposed to a vast forms of knowledge existing on the Internet, access the facilities such as telemedicine or teleconferencing, and worst of it all, being unemployable. [Press ENTER KEY]

Save the above document as: **Your name – Modern Literacy.**

TOPIC TWO

DOCUMENT FORMATTING

The most important part in a document is its general appearance. Formatting a document is making it more appealing to the user to improve its readability. To attract your readers depends on the skill that is used to arrange and format that document.

Font style and Font sizes

Fonts can be manipulated by changing its style or the size of the text. There many font styles and font sizes that can be applied by users to suit their taste.

Example 2-1: This practical is about changing the font styles and font sizes.

Those with less knowledge argue most.

Correcting them can cause a fight

They behave like monsters!

Click here Click there.....You tell them.

Yet they call themselves:

Computer programmers

Computer net-workers

Computer wizards

Computer “Configurers”

Required:

- i) Type the work in **Example 2-1** above correctly
- ii) Change line one to font size 14 and font style **Tahoma**.
- iii) Change line two to font size 16 and font style **Candara**
- iv) Change line three to font size 18 and font style **Arial**
- v) Change line four to font size 20 and font style **Arial Narrow**
- vi) Change line five to font size 22 and font style **Impact**
- vii) Fix your full name as a **header** and your country as a **footer**
- viii) Change the rest of the lines to font size **24**, **Bold**, **Italic**, and **Underlined**.
- ix) Insert a **page number** at the top right of your document
- x) Save your work as **Your Name – Argument**

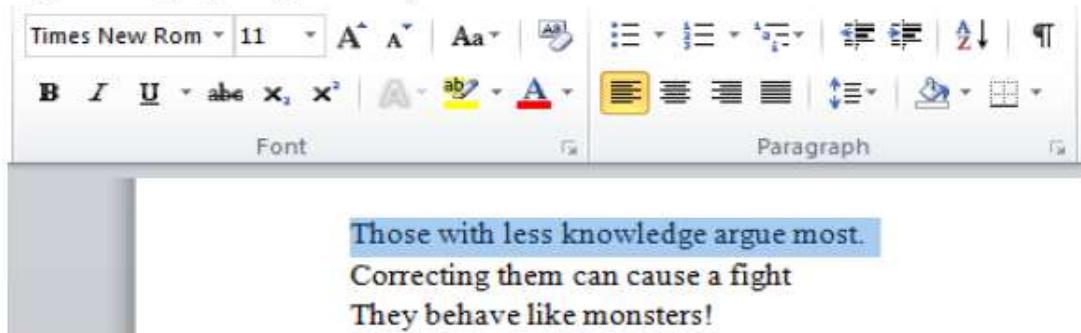
Steps

Part i: Open the Microsoft Word program and start typing the work as seen in the **Example 2-1** above.

Part ii: Changing the line one to font size **14** and font style **Tahoma**.

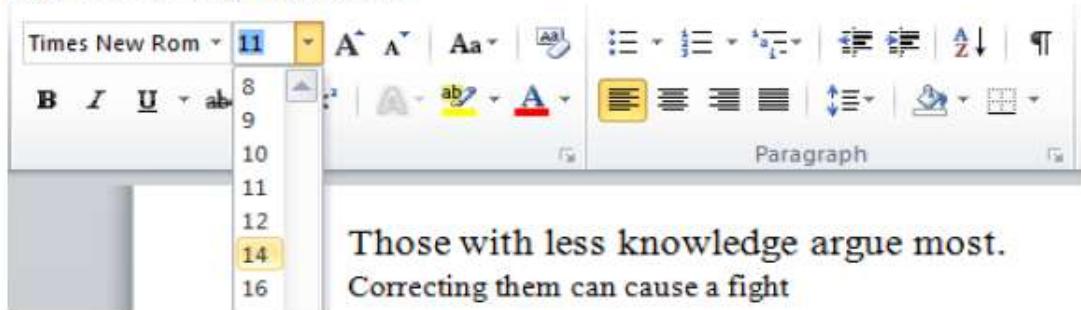
1. Point and click **Home** from the menu bar to activate most of formatting tools
2. Highlight Line one by holding the left mouse button from the left most of line one and drag without releasing to the right side of the line. See Fig. 2-1 below.

Fig. 2-1: Highlighting Portion of text



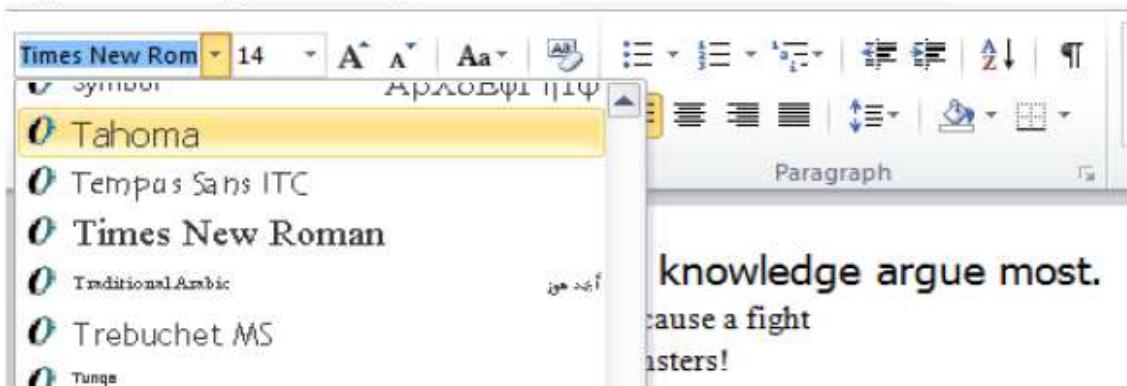
3. Point and click the tiny arrow pointing down close to number 11 seen in Fig. 2-1 above. You will see a display of a dropdown list of numbers representing different types of font sizes. See Fig. 2-2 below

Fig. 2-2: Selecting the font size.



4. Point and select option 14 from the dropdown list as seen in Fig. 2-2 above.
5. To change the font style you click another tiny arrow near *Times New Roman* style while the line one of Example 2-1 is still highlighted. A dropdown list of font styles will be displayed. Note that you have to scroll to access those font styles that are at the bottom of the dropdown list. See Fig. 2-3 below:

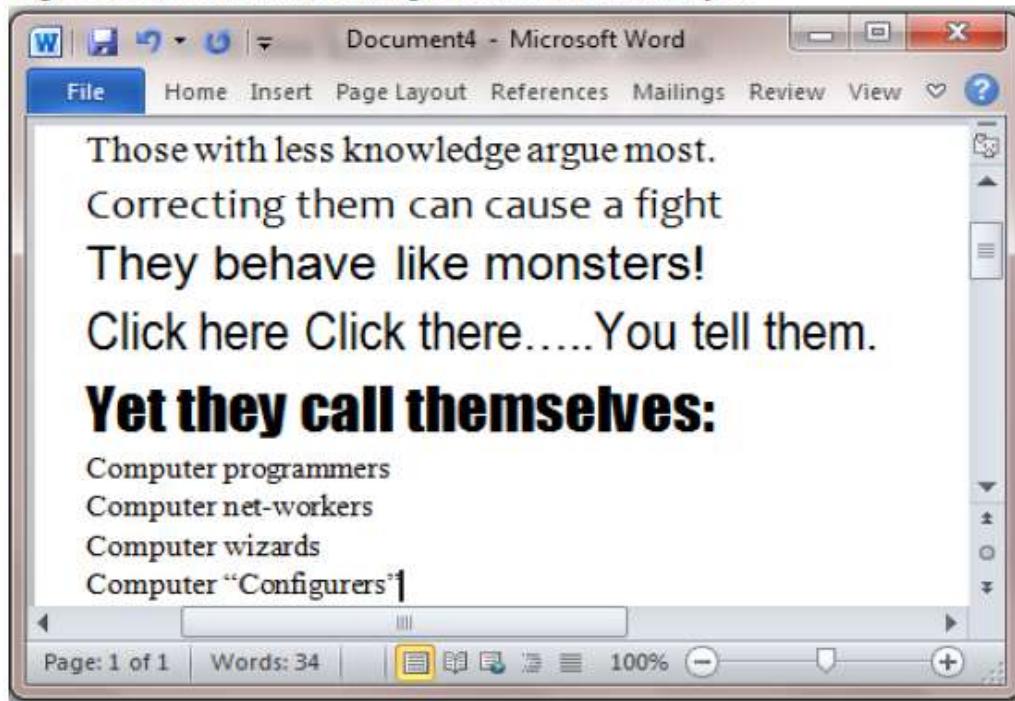
Fig. 2-3: Selecting the Font Style



6. Click **Tahoma** once to have the font style changed from **Times New Roman** to **Tahoma**.

7. Continue with the same procedures changing font sizes and font styles as directed in **Part iii** where there is **line two** up to **Part VI** where there is **line five** of Example 2-1 above. Your work should look like the one in Fig. 2-4 below when done.

Fig. 2-4: Shows lines with changed font size and font styles



Headers and Footers

A header is a short line description that when inserted appears at the top of every page in the document. The footer is also a short line description that when inserted in a document appears at the bottom of every page.

Part vii: - Inserting header and footer

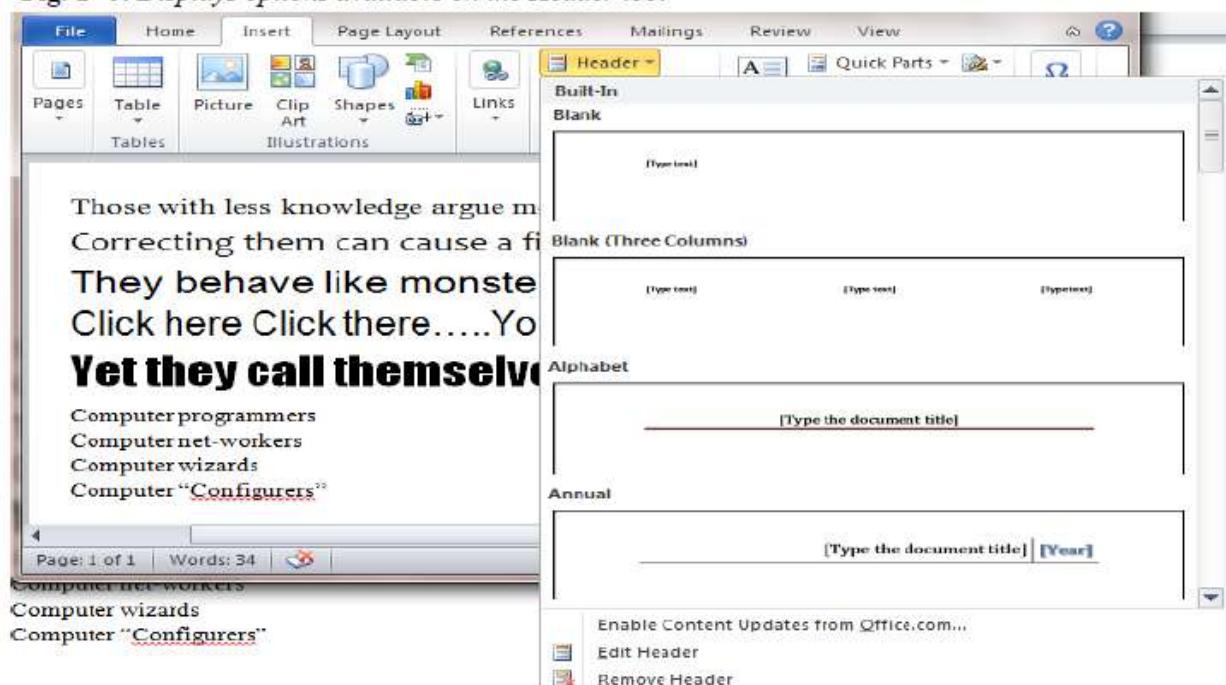
8. Point and click **Insert** from the menu bar. The options of the **Insert** menu will be displayed as seen in Fig. 2-5 below.

Fig. 2-5: Options available under Insert menu.



9. To insert the header you point and click the tiny dark arrow seen on the bottom or right of the word **Header** under the **Insert** menu.

Fig. 1-6: Displays options available on the Header tool



10. Point and click **Edit Header** at the bottom of Fig. 2-6 above. The place holder to insert your header will be displayed as seen in Fig. 2-7 below.
11. Insert your full name as the header just the way you can see it in Fig. 2-7 below.
12. Click **Close Header and Footer** when done.

Fig. 2-7: The place holder to insert the Header.

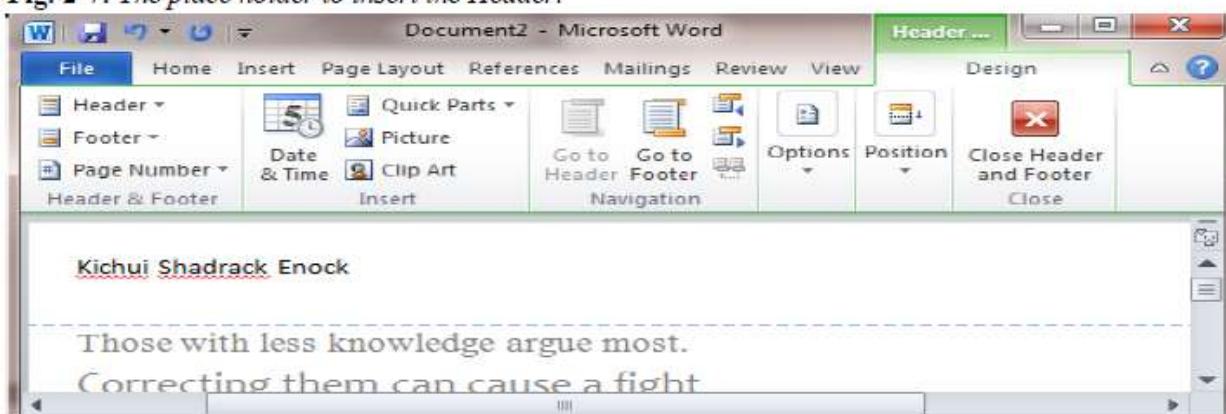
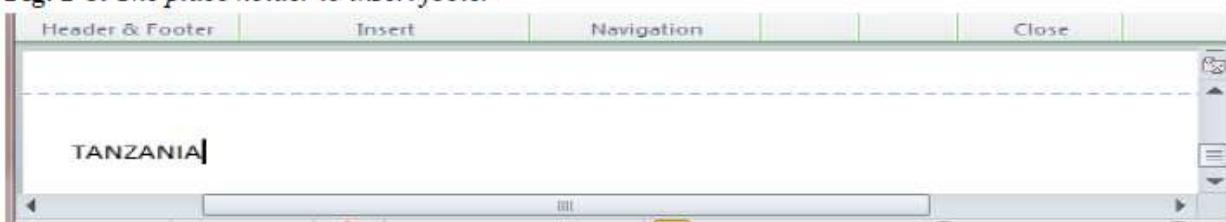


Fig. 2-8: The place holder to insert footer



13. Follow the same procedure to insert the footer. The footer will appear at the bottom side of every page as seen in Fig. 2-8 above.

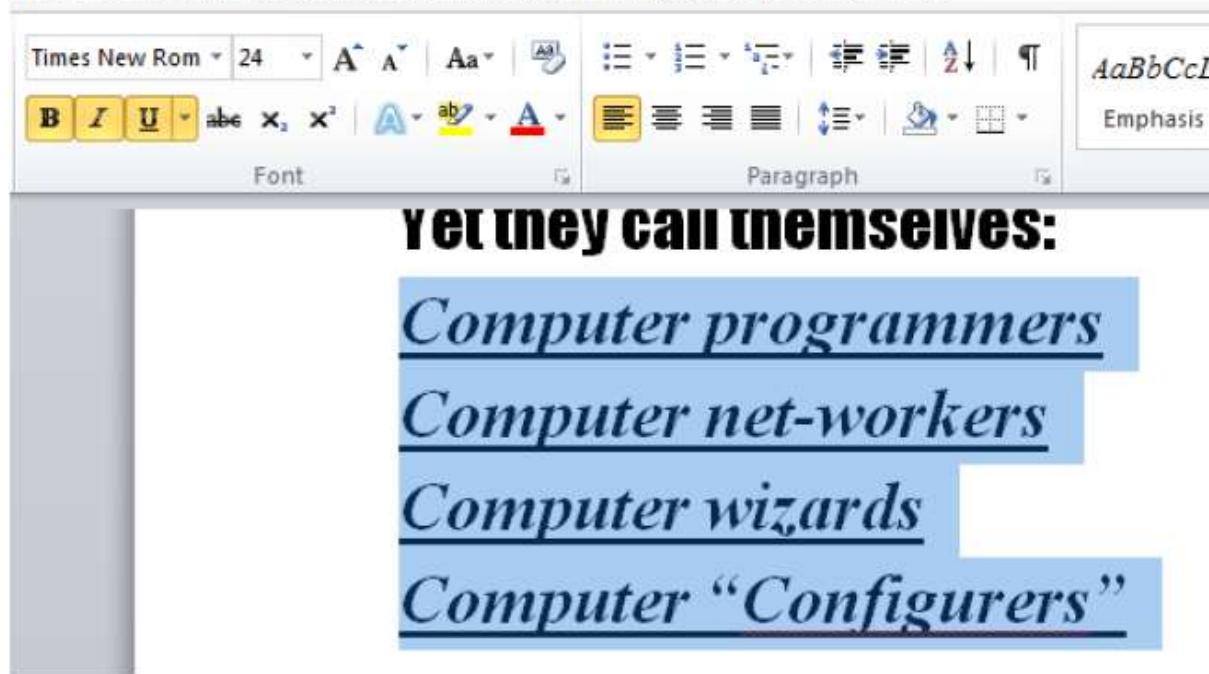
Bolding and Italicizing

Text can be emphasized by bolding, italicizing, or underlining. We can perform the mentioned operations following the **Example 2-1 part viii** as follows:

Part viii: *Bolding, Italicizing, and Underlining*

14. Highlight the rest of the lines as seen in Fig. 2-9 below. Point and click the letters **B I U** to bold, italicize and underline the rest of the lines.

Fig. 2-9: *Bolding, Italicizing, Underlining and changing the font size to 24.*



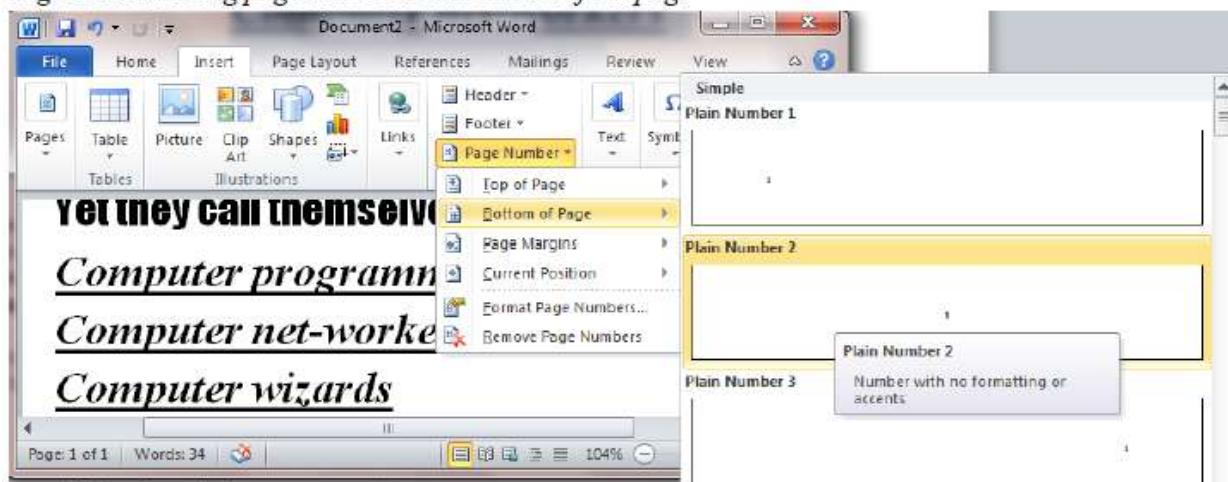
Page numbering

Pages of your document can be numbered for easy management of, especially large documents. Users can locate portions of the stored or printed documents using page numbers. We can use **Automatic page numbering** feature to have all the pages to be inserted with unique numbers across the whole document.

Part ix: *Inserting Page number*

15. Point and click **Insert** from the menu bar. A new ribbon will be displayed.
16. Click the **Page number**'s tiny dark arrow to display the available options. See Fig. 2-10 below.
17. Point and select **Bottom of Page** and select the center option as seen in Fig. 2-10 below.

Fig. 2-10: Inserting page number at the bottom of the page



Example 2-2: Type the following document and format it as instructed below.

Computer Case

A computer case (also known as a computer chassis, cabinet, box, tower, enclosure, housing, system unit or simply case) is the enclosure that contains most of the components of a computer (usually excluding the display, keyboard and mouse).

A computer case is sometimes incorrectly referred to metonymously as a CPU referring to a component housed within the case. CPU was a common term in the earlier days of home computers, when peripherals other than the motherboard were usually housed in their own separate cases.

The motherboard is the main component inside the case. It is a large rectangular board with integrated circuitry that connects the other parts of the computer including the CPU, the RAM, the disk drives (CD, DVD, hard disk, or any others) as well as any peripherals connected via the ports or the expansion slots.

Components directly attached to the motherboard include:

The CPU (Central Processing Unit) performs most of the calculations which enable a computer to function, and is sometimes referred to as the "brain" of the computer. It is usually cooled by a heat sink and fan. Most newer CPUs include an on-die Graphics Processing Unit (GPU).

The Chipset, which includes the north bridge, mediates communication between the CPU and the other components of the system, including main memory.

The Random-Access Memory (RAM) stores the code and data that are being actively accessed by the CPU. Buses connect the CPU to various internal components and to expansion cards for graphics and sound.

Required:

- i) Typing the above document precisely
- ii) Strike through the header "**Computer Case**"
- iii) Change the font size of paragraph one to 14 and justify it and put the color orange
- iv) Make the second paragraph to font size 13, italic, bold and justified.
- v) Indent the second paragraph to 1 inch left and 1 inch right

- vi) Make the third paragraph to two columns and line space of 1.5
- vii) Put your names as header and your class and school as footer. Make both footer and header centered.
- viii) Put a comment on the word “Expansion slots” as “Expansion cards to improve on memory”
- ix) Insert your name as watermark and should be diagonally aligned.
- x) Insert a Endnote as “Components of Central Processing Unit”
- xi) Insert your name as watermark and should be diagonally aligned.
- xii) Bold and engrave all the acronyms CPU, CD, DVD, RAM, GPU.
- xiii) Double underline the “Graphics Processing Unit (GPU)” and the underline should be of color red.
- xiv) Insert page number at the left bottom side of your document.
- xv) Copy and paste the last paragraphs under “Components directly attached to the motherboard” to the new page.

To format the above typed text as instructed the following procedures must be followed:

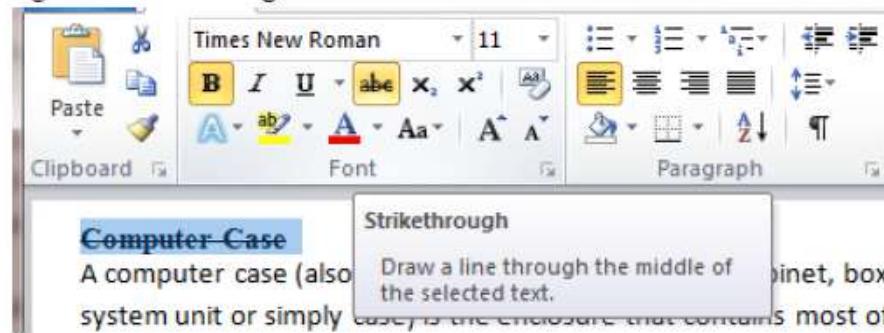
Part I: Typing the document.

1. Open the Microsoft word and type the document as it is, in Example 2-2.

Part II: Strike through the Title of the document “Computer Case”

2. Highlight the title “Computer Case” and point and click ~~abc~~ symbol to strike through the title. See Fig. 2-11 below.

Fig. 2-11: Strikethrough

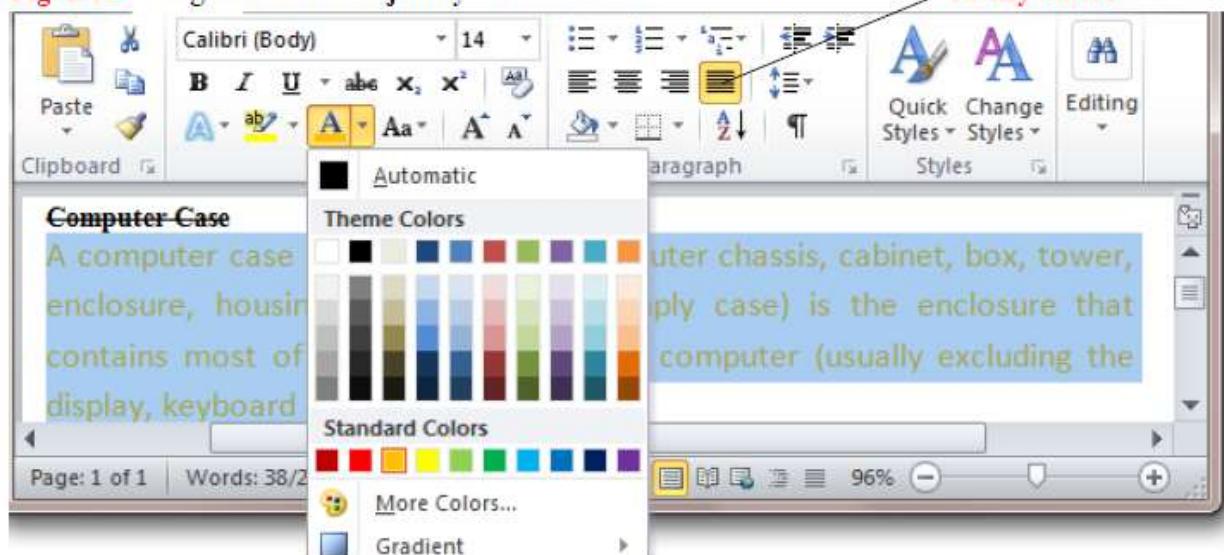


You must ensure that the **Home** option on the menu bar is activated to find the strikethrough symbol.

Part III: Changing font size of paragraph one to 14, justify and put the color orange.

3. Highlight paragraph one. Change the size of the font to 14 and then click Justify button. See Fig. 2-12 below. To Justify is to align text both right and left side to appear straight.
4. To change the font color click the symbol as seen in Fig. 2-12 below to display several option of colors. Choose the color orange.

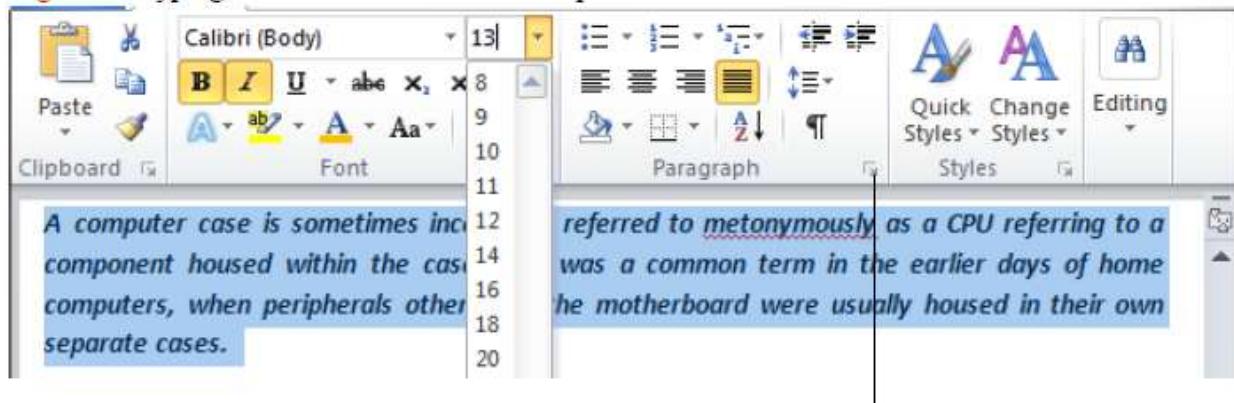
Fig. 2-12: Using font color and justify to format text.



Part IV: Making the second paragraph to font size **13**, **italic**, **bold** and **justified**.

5. Highlight paragraph two and point and click the symbols **B** **I** and **Justify** to bold, italicize and justify the text on second paragraph. See **Fig. 2-13** below.
6. To change the font size you type **13** as seen in **Fig. 2-13** below because the size 13 is not available on the dropdown list.

Fig. 2-13: Typing the font size if not in the Dropdown list.



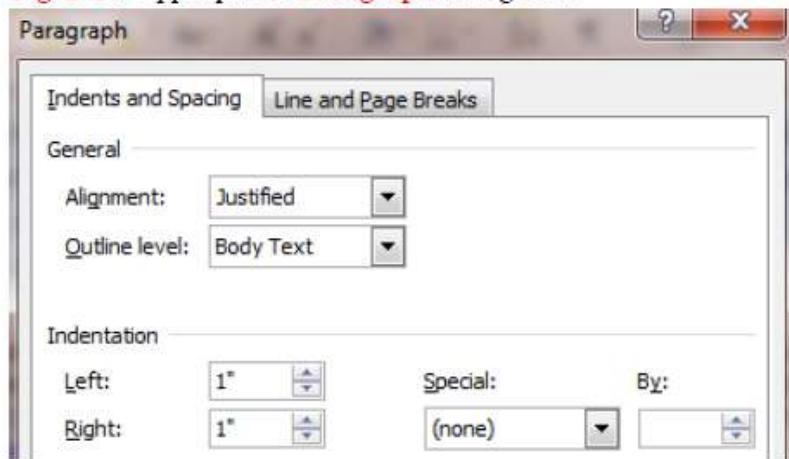
Indentation

You can indent your paragraphs towards right or left. You can choose to indent both left and right specifying the number of units in Inches or Millimeters to be indented.

Part V: To indent the second paragraph to **1 inch** left and **1 inch** right

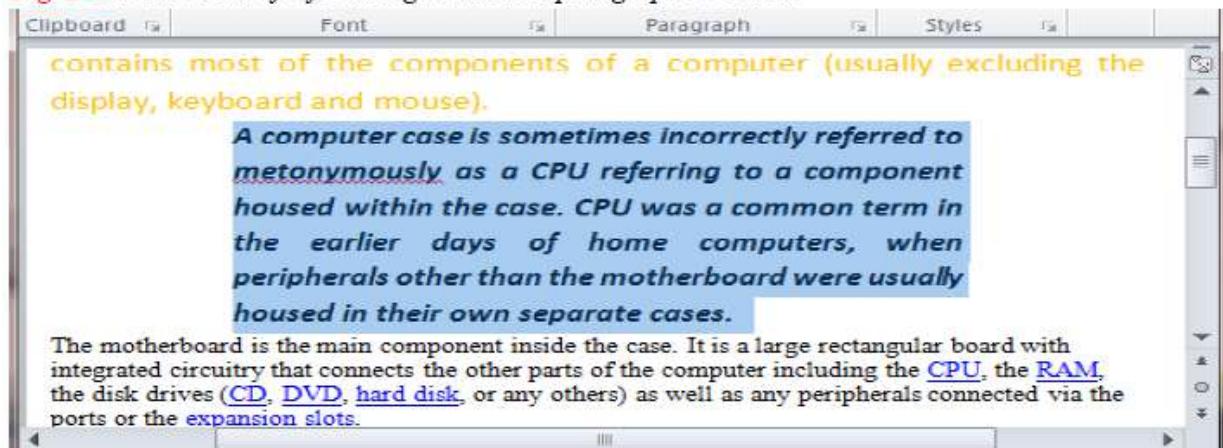
7. Highlight the second paragraph again. Point and click **Home**.
8. Click the small arrow found after the word **Paragraph** as seen in **Fig. 2-13** above to display the **Paragraph dialog box**. The **Paragraph dialog box** will be displayed as seen in **Fig. 2-14**.

Fig. 2-14: Upper part of **Paragraph** dialog box.



9. On **Indentation** change the units in inches ("") on the left to 1" and on the right to 1" as seen in **Fig. 2-14** above.
10. Click **Ok** at the bottom of Paragraph dialog box (Ok not shown here) when done. See the result in **Fig. 2-15** below.

Fig. 2-15: The result of left and right Indented paragraph at 1 inch.



Use of Columns

Paragraphs of text can be organized in columns to make the best appearance of your work. You can choose the number of columns you want your paragraph to appear.

Part VI: Make the third paragraph to two **columns** and line space of 1.5

11. Highlight the third paragraph of your document and click **Page Layout**. See **Fig. 2-16** below.
12. Point and click **Columns**: and on the dropdown list select Two to select the two columns option as seen in **Fig. 2-16** below.

Fig. 2-16: Putting the text into two Columns

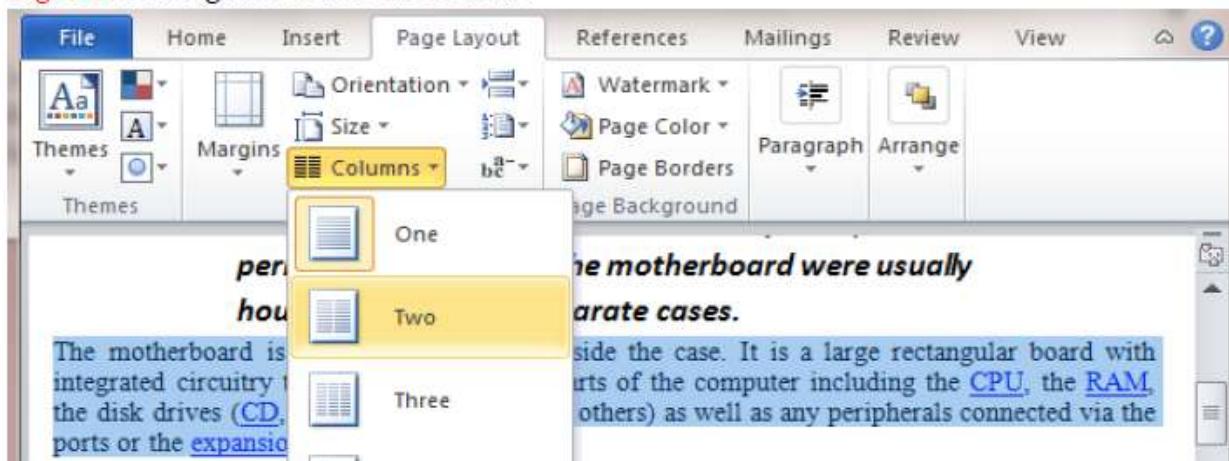
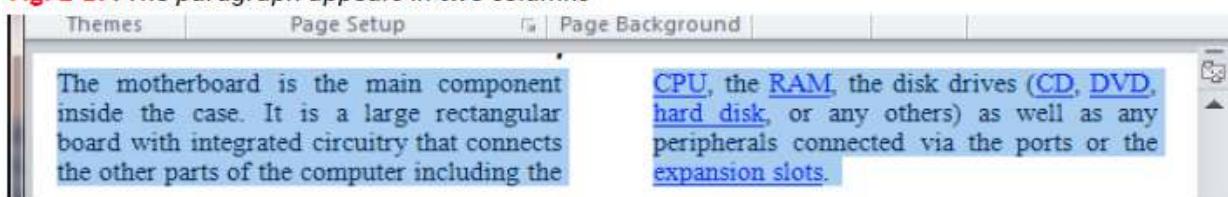
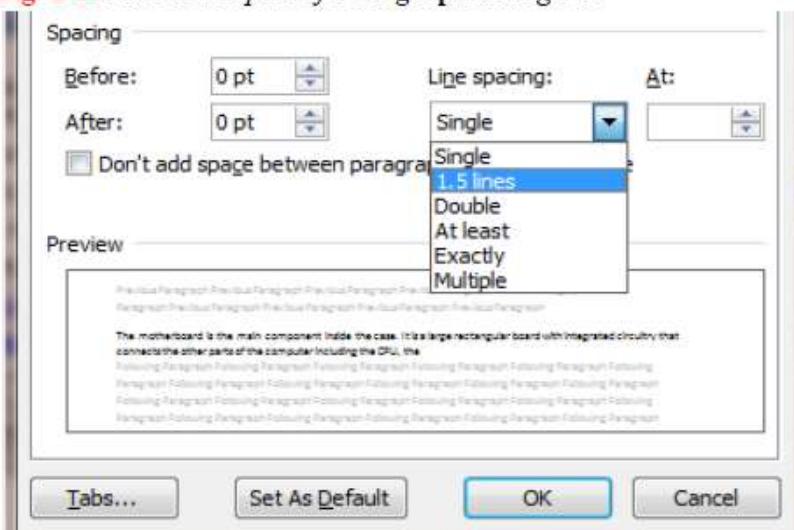


Fig. 2-17: The paragraph appears in two columns



13. To line space the paragraph at 1.5 you still highlight the third paragraph and click **Home**.
14. Click the small arrow on Paragraph as you did in **Fig. 2-13** and **Fig. 2-14** above to display the Paragraph dialog box. See **Fig. 2-18** below.
15. On **Line spacing**: click on the tiny dark arrow to display the dropdown list as seen in **Fig. 2-18** below and select **1.5 lines**. Click **Ok** when done.

Fig. 2-18: The lower part of Paragraph dialog box

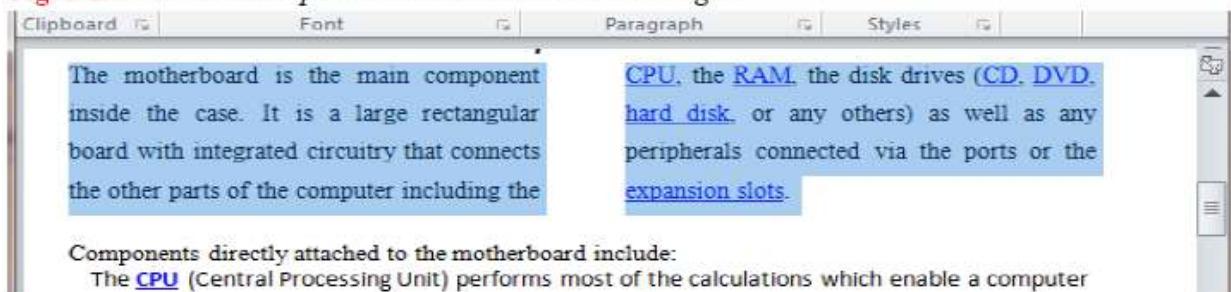


The lines in Paragraph three will appear 1.5 lines spaced and arranged in two columns. See **Fig. 2-19** below.

On **paragraph** dialog box, there are several options that you can try on your own to see what could be the effect of selecting them.

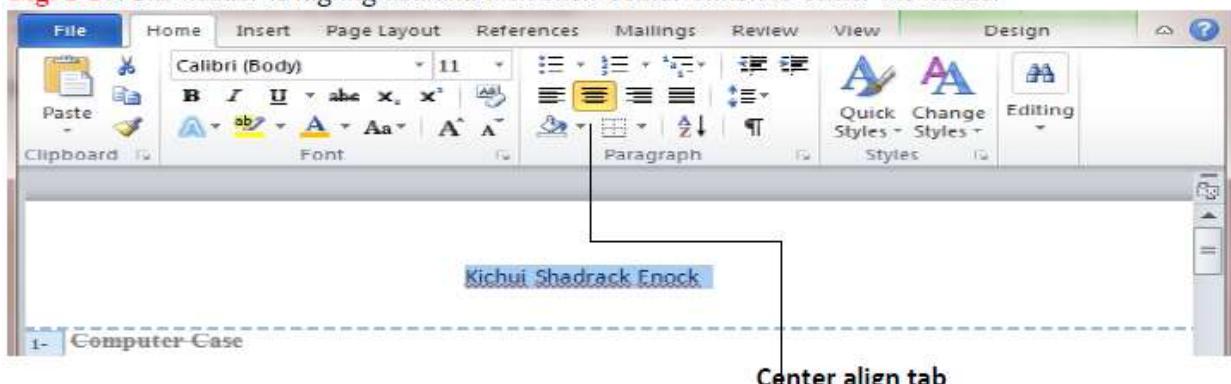
It is a good practice to get a piece of text and try out.

Fig. 2-19: The 1.5 lines spaced text and two columns arranged



Part VII: Name as a Header and name of the school as a Footer – both should be centered.

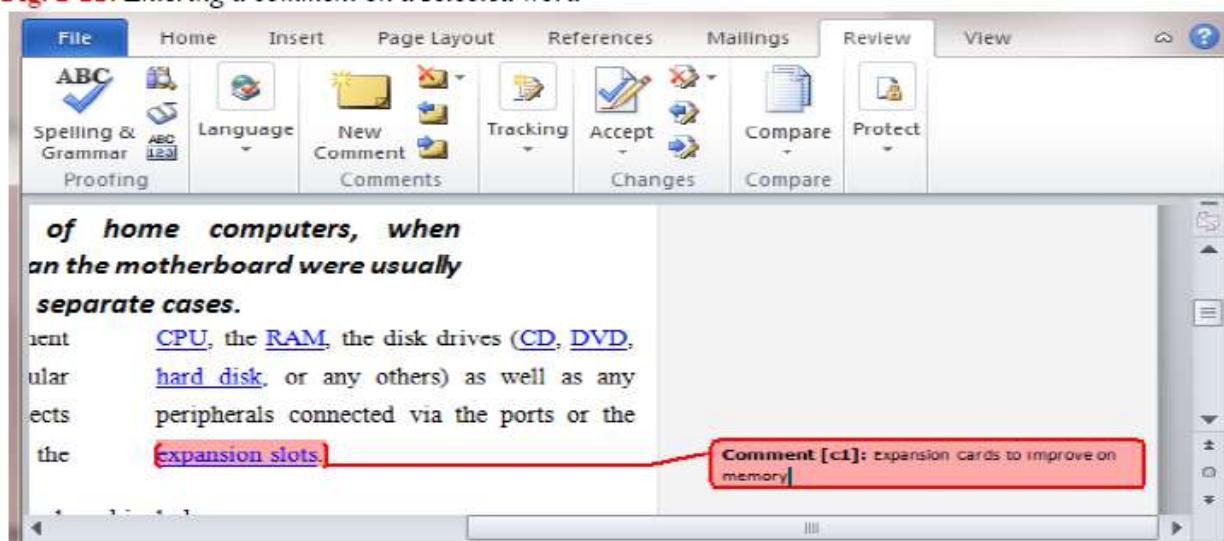
Fig. 2-20: The header is highlighted and then click Center button to center the header



Part VIII: Putting a Comment on the word “Expansion Slots”

16. Highlight the phrase “Expansion slots” and click Review from the menu bar.
17. Point and click New Comment button. You will see a colored bar prompting you to enter the comment. See **Fig. 2-21** below.
18. On Comment [c1]: type – “Expansion Cards to Improve on memory” as seen in **Fig. 2-21** below.

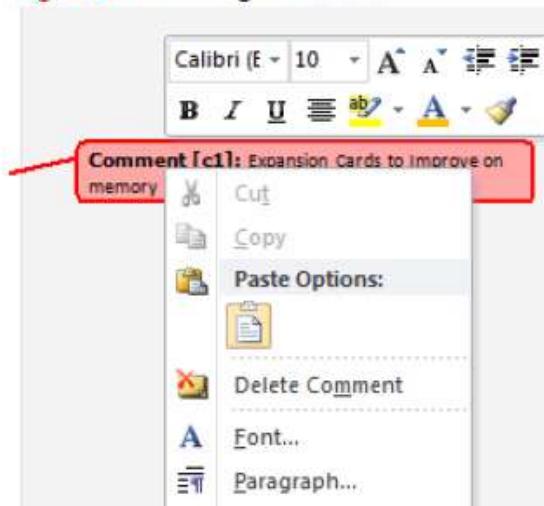
Fig. 2-21: Entering a comment on a selected word



Note:

You can remove the comment by pointing at the comment and click the *right mouse button*. On the display menu you select **Delete Comment** to remove the comment.

Fig. 2-22: Removing a comment



Not all the time you may be removing the comment but you may want to format your comment e.g. bolding, italicizing, underlining etc.

Comments are very useful in a document especially in situations where you want particular terms to be given extra elaborations.

Comments can also be useful in large documents where users may put some brief details to remind themselves on something to be done later in a particular portion of the text.

Watermark

Watermark is a background text or image that can be put in a document. Users of word program can use this feature for various purposes.

Part IX: Inserting watermark

19. Point and click **Page layout** from the menu bar. Click **Watermark**. See **Fig. 2-23** below.
20. Move the pointer down and select **Custom Watermark**. The **Printed Watermark** dialog box will be displayed as seen in **Fig. 2-24** below.

Fig. 2-23: Selecting watermark feature

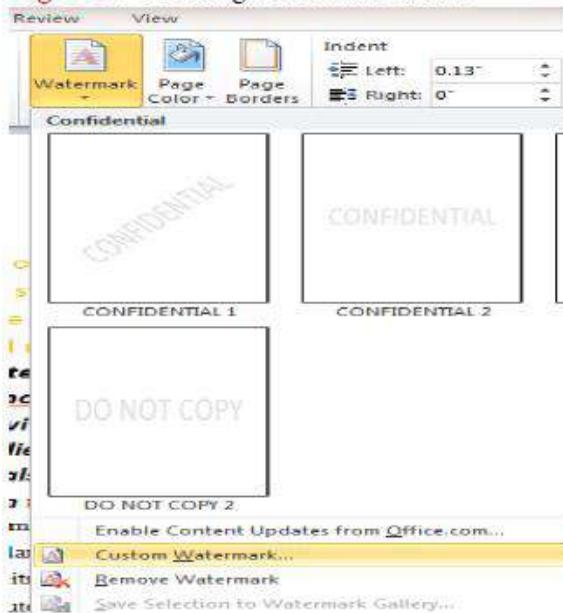
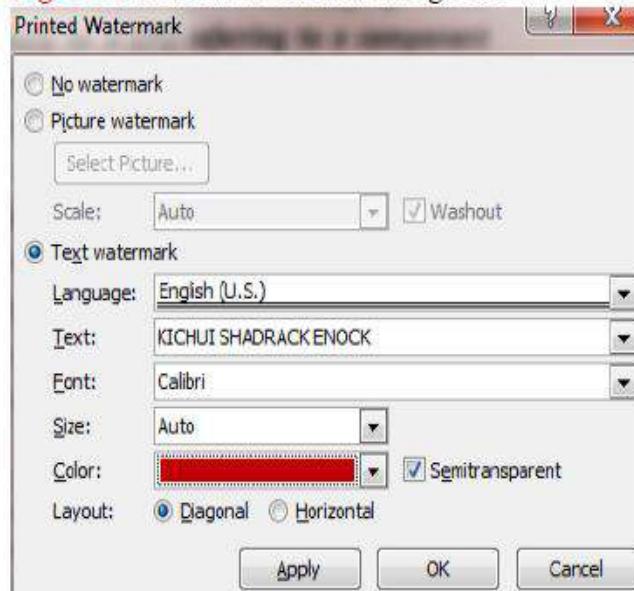


Fig. 2-24: Printed Watermark dialog box

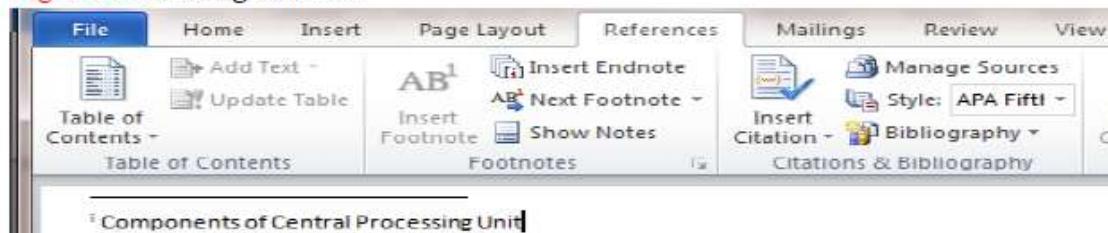


21. On Printed Watermark dialog box in **Fig. 2-24** above, select **Text watermark** and on **Layout:** select **Diagonal**
22. Type your name on **Text:** KICHUI SHADRACK ENOCK in this case. On **Color:** select **red** for the watermark font color. You can also choose a different color.
23. Click **Apply** and then click **OK**. You can now observe the result.

Part X: Inserting Endnote

24. Point and click **References** from the menu bar. Click **Endnote** and type: "Components of Central Processing Unit". See **Fig. 2-25** below.

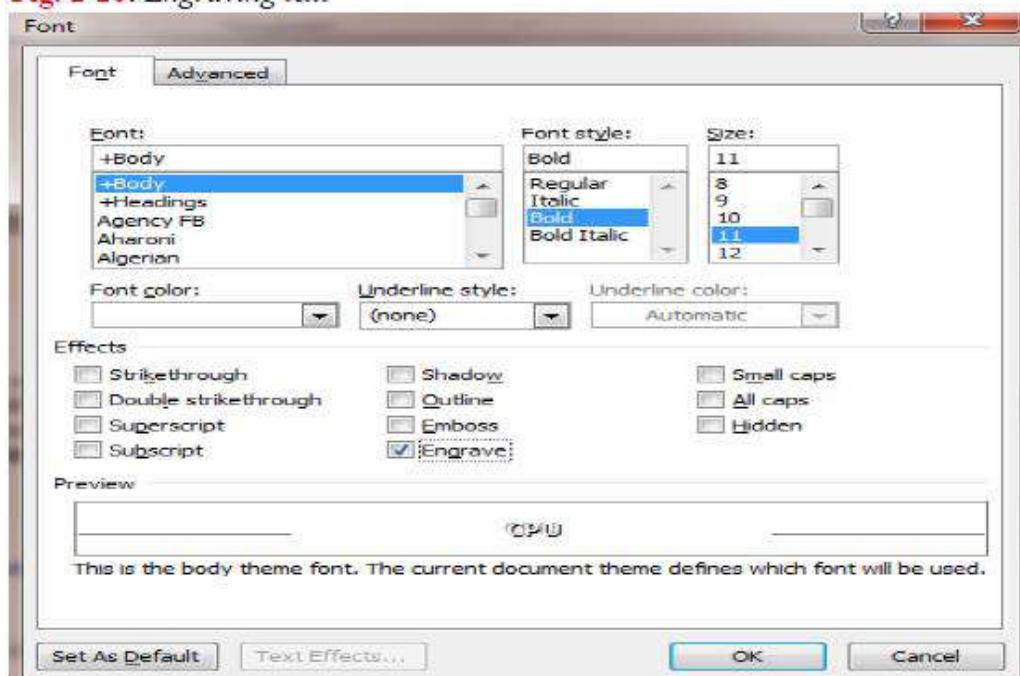
Fig. 2-25: Inserting Endnote



Part XI: Bold and engrave all the acronyms CPU, CD, DVD, RAM, GPU.

25. Highlight one of the acronyms and then hold control (Ctrl) key down and highlight all the other acronyms one after another around the document.
26. Click **B** to bold all the acronyms. Point one of the acronyms while still highlighted and click the right mouse button. The dropdown menu will be displayed.
27. Select **Font...** from the dropdown list. The **Font** dialog box will be displayed. See **Fig. 2-26** below.
28. Select **Engrave** to have all the acronyms engraved. Click **OK** when done.

Fig. 2-26: Engraving text

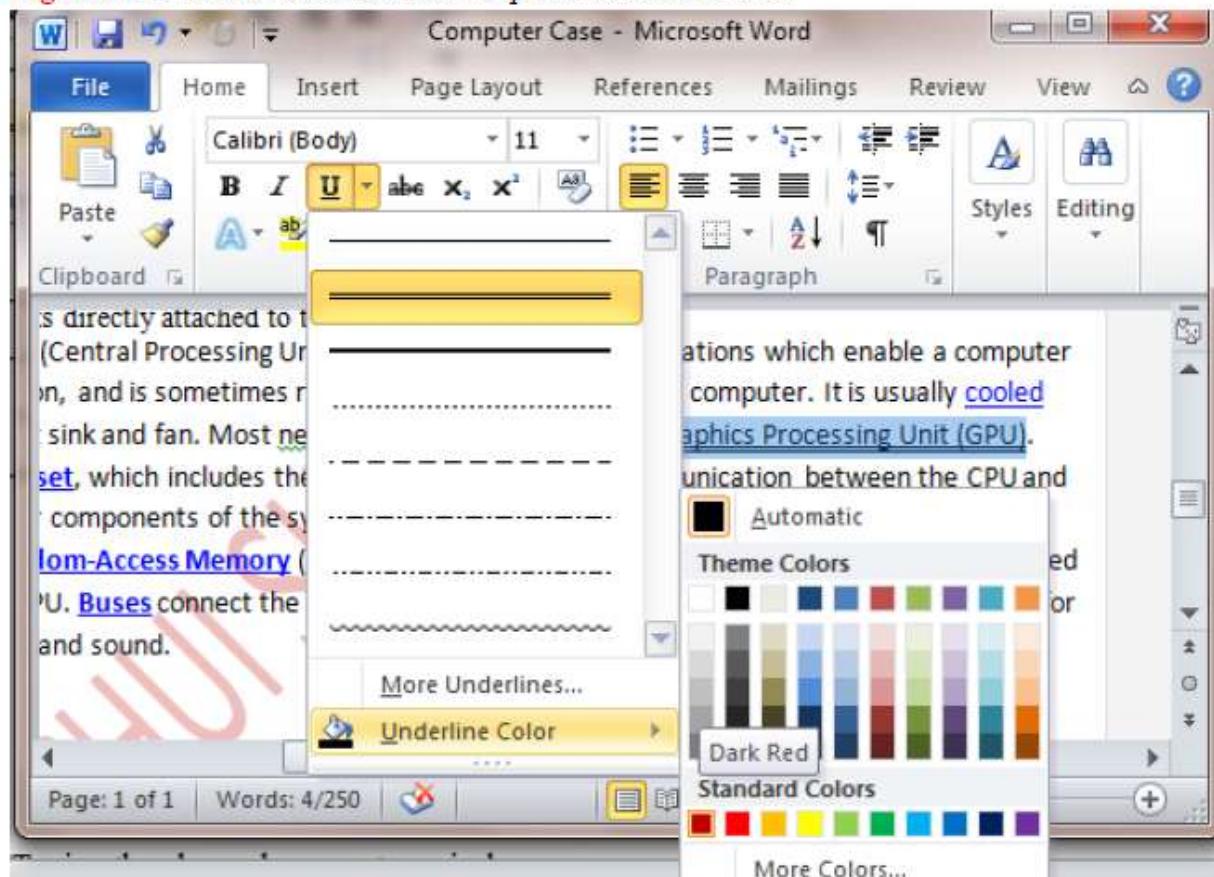


Note from **Fig. 2-26** above that apart from Engrave, several other options can be selected like Emboss, Outline, Shadow, etc.

Part XII: Double underline the “Graphics Processing Unit (GPU)” and the underline should be of color red.

29. Highlight the text to be double underlined.
30. Point and click the tiny arrow near the **U** button. See **Fig. 2-27** below.
31. Select the *double underline* to have the highlighted text double underlined as seen in **Fig. 2-27** below.

Fig. 2-27: To double underline text and put the underline color



32. To change the underline color click the tiny dark arrow again near the underline (**U**) symbol and point at **Underline Color**. Select the red color or any other color of your choice.

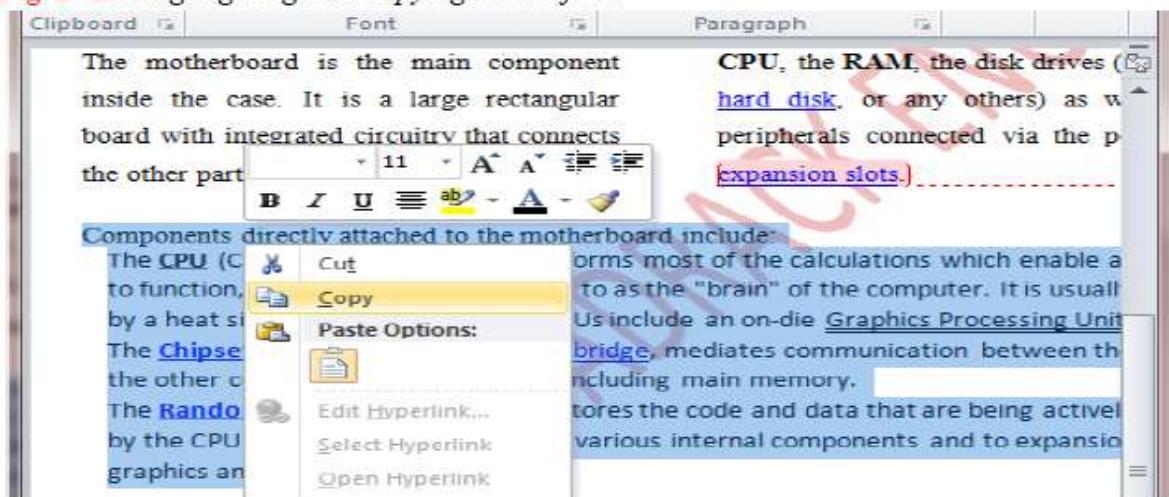
Part XIII: Inserting page number

Try to follow previous example and apply the same procedures of inserting page number. Make a reference on **Fig. 2-10** above.

Part XIV: Copying and pasting portion of the text to the new page within the same document

33. Highlight the portion of the text to be copied and pasted.
34. Click the right button of your mouse. See **Fig. 2-28** below.

Fig. 2- 28: Highlighting and Copying block of text



35. Put the blinking cursor at the extreme end of your document (after the last line) by clicking the left mouse button at the end of your document.
36. Point and click **Insert** from the menu bar. See **Fig. 2-29** below.
37. Click the **Page Break** to create a new page to paste the copied text. The new page will be created.
38. Right click your left mouse button and click paste to have copied content to appear on the new page.

Fig. 2-29: Applying the Page Break



Example 2-3: Type the following document and perform the necessary formatting as directed in the **Required** list.

STORAGE DEVICES

Compact Disk drives use lasers to read (retrieve) data from a CD, and many CD drives can also write (record) data onto CDs. If you have a recordable disk drive, you can store copies of your files on blank CDs. You can also use a CD drive to play music CDs on your computer.

DVD drives can do everything that CD drives can, plus read DVDs. If you have a DVD drive, you can watch movies on your computer. Many DVD drives can record data onto blank DVDs. If you have a recordable CD or DVD drive, periodically back up (copy) your important files to CDs or DVDs. That way, if your hard disk ever fails, you won't lose your data.

Floppy disk drives store information on floppy disks, also called floppies or diskettes. Compared to CDs and DVDs, floppy disks can store only a small amount of data. They also

retrieve information more slowly and are more prone to damage. For these reasons, floppy disk drives are less popular than they used to be, although some computers still include them.

Required:

- i) Apply the drop cap on the first paragraph to three lines.
- ii) Shade the second paragraph with grey color and surround it with a thick border.
- iii) Set the page margin to be 2" for all top, bottom, left and right sides.
- iv) Format the heading using the style Title and centered.
- v) Indent the last paragraph 0.9" both left and right and set the line spacing double.

Drop Cap

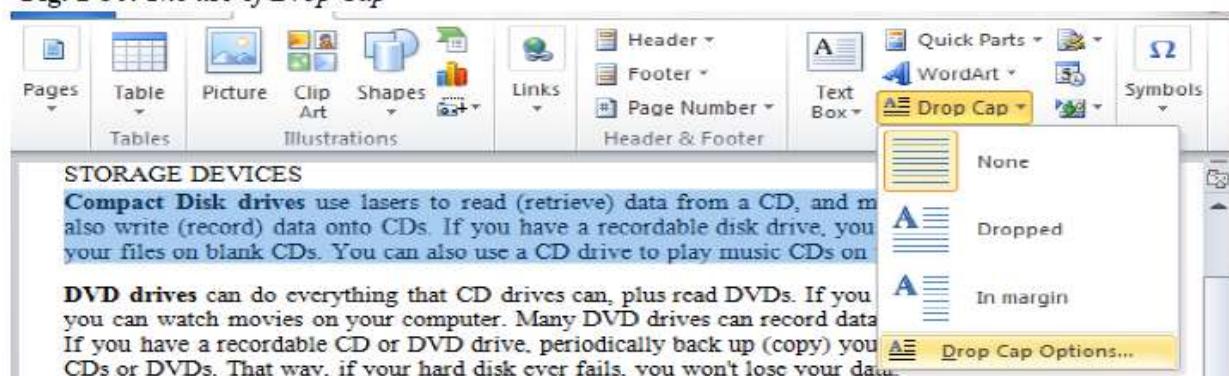
Users can have the first letter enlarged a specified number of lines downwards. This practice is known as Drop Cap. There different option format on the drop cap that users can opt.

Procedures of Example 2-3

Part I: Dropping the Cap of the first paragraph

1. Highlight the first paragraph and then click Insert from the menu bar.
2. Point and click the Drop Cap tab on the right side. See Fig. 2-30 below.

Fig. 2-30: The use of Drop Cap

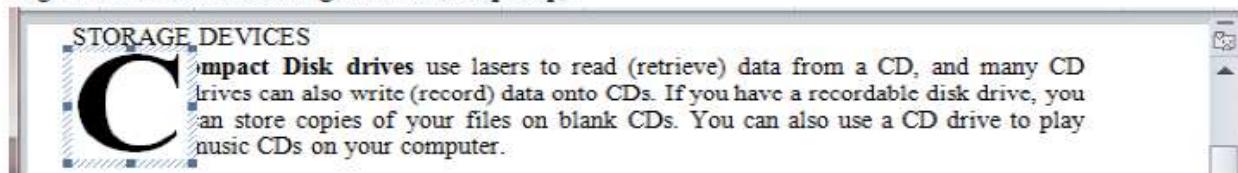


3. Point and click Drop Cap Options... to customize the nature of the Drop Cap. This will enable you specify the number of lines the drop cap should cover. See Fig. 2-31 below.
4. Click Ok when done. Your work should be similar to the one in Fig. 2-32.

Fig. 2-31: The Drop Cap dialog box



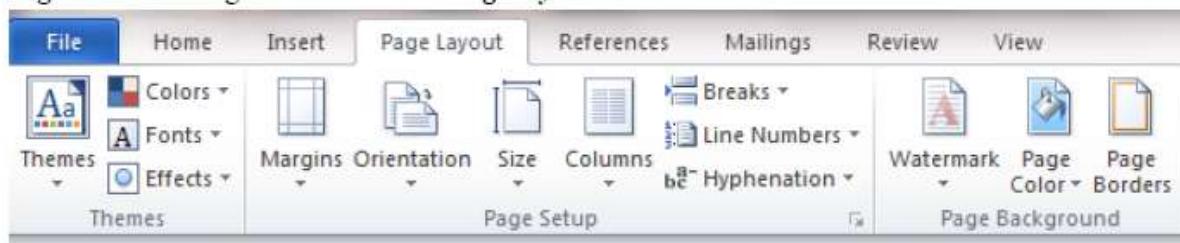
Fig. 2-32: Shows the enlarged letter (Drop Cap)



Part II: Shading and surrounding the second paragraph with a thick border.

5. Highlight the second paragraph and click Page Layout from the menu bar. See Fig. 2-33 below.
6. Point and click the Page Borders tab to activate Borders and Shading dialog box. The Borders and Shading dialog box will be activated as seen in Fig. 2-34 below.

Fig. 2-33: Showing tools available in *Page layout* menu



7. On Borders and Shading dialog box click the Borders tab. See Fig. 2-34 below.
8. Point and click Box. On Style: scroll and select the thick border as you can see in Fig. 2-34. Ensure that where there is Apply to: shows the word Paragraph.
9. Point and click Shading. On Fill: where there is No color, click the dark arrow to display several colors. See Fig. 2-35 below.
10. Select grey color and click Ok when done.

Fig. 2-34: Applying thick borders.

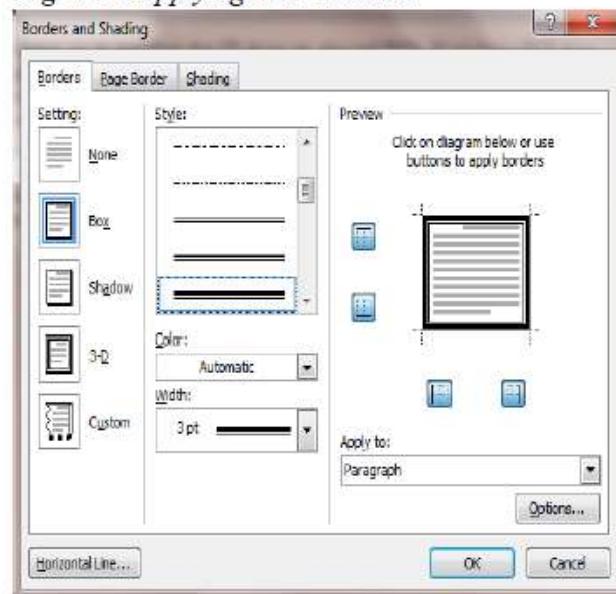


Fig. 35: Applying Shading

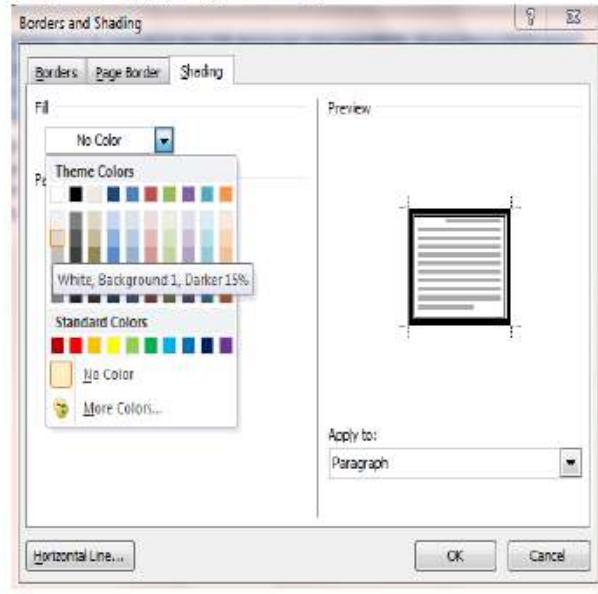
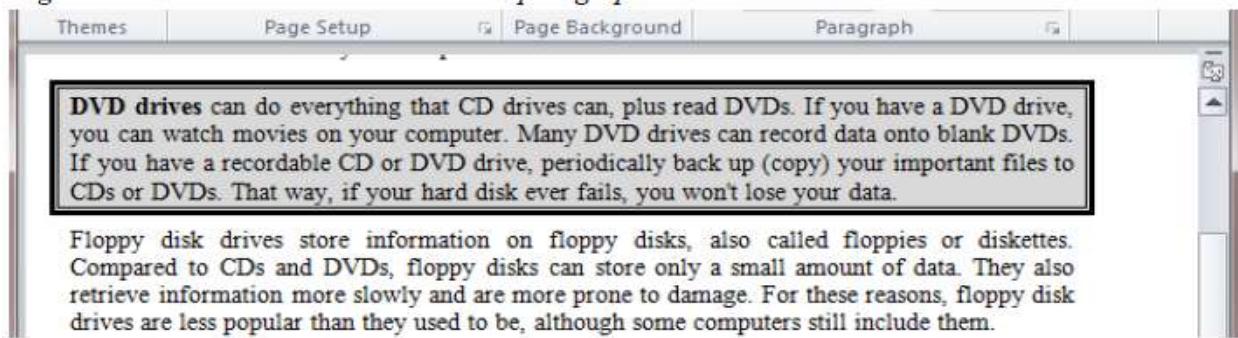


Fig. 2-36: Shows the bordered and shaded paragraph

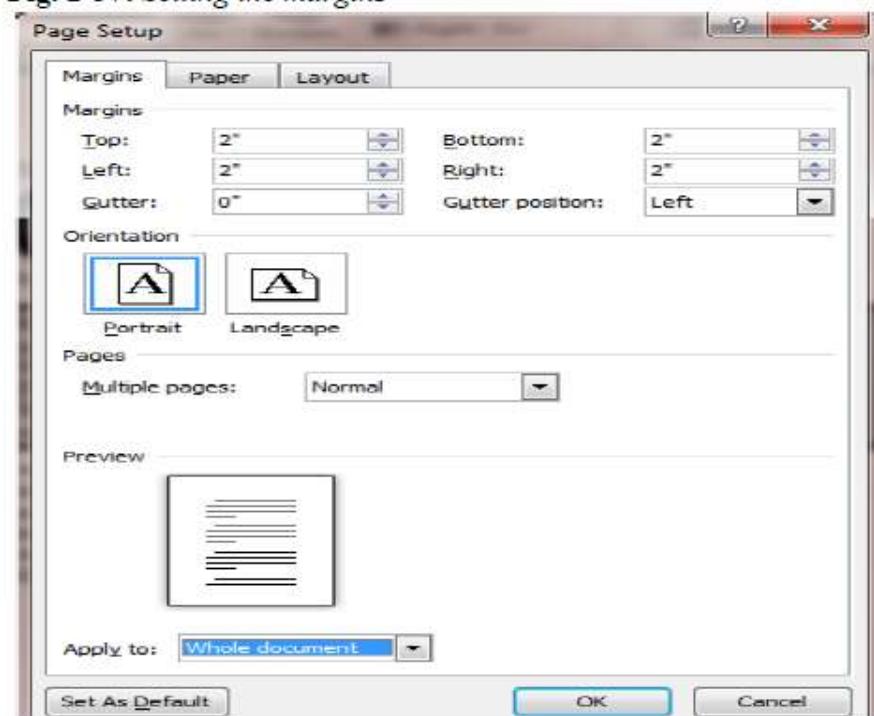


Floppy disk drives store information on floppy disks, also called floppies or diskettes. Compared to CDs and DVDs, floppy disks can store only a small amount of data. They also retrieve information more slowly and are more prone to damage. For these reasons, floppy disk drives are less popular than they used to be, although some computers still include them.

Part III: Set 2" for all top, bottom, left, and right margins.

11. Point and click **Page Layout**. You will see a **Margins** tab as seen in Fig. 2-33 above.
12. Click the **Margins** tab to display the margin options. You will see a list of options for you to choose.
13. Move the pointer and select **Custom Margins...** The **Page Setup** dialog box will be displayed as seen in Fig. 2-37 below.
14. Click **Margins** tab seen in Fig. 2-37 below and change all the top, bottom, left and right margins to 2". Click **OK** when done.

Fig. 2-37: Setting the margins



Part IV: Formatting the heading using the style Title and centered.

15. Highlight the heading "STORAGE DEVICES" and then point and click the **Center** tab.
16. On **Styles** select style **Title AaB** as seen in Fig. 2-38 below. You can always scroll and locate different styles of your choice.

Fig. 2-38: Choosing Title Style and centering the heading.

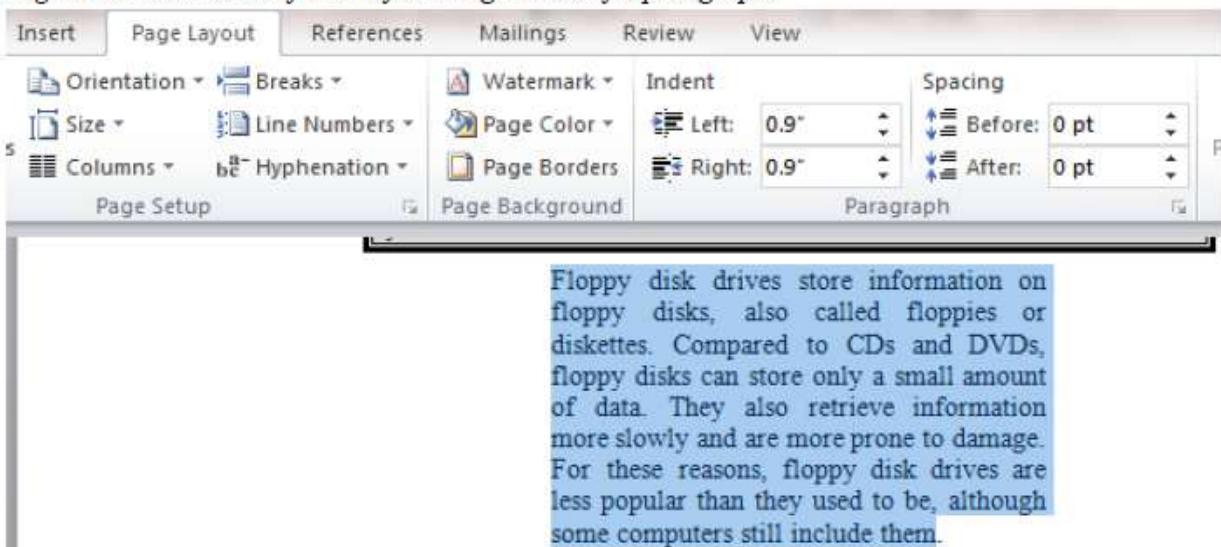


Compact Disk drives use lasers to read (retrieve) data from a CD, and many CD drives can also write (record) data onto CDs. If you have a recordable disk drive, you can store copies of your files on blank CDs. You can also use a CD

Part V: Indenting the last paragraph to 0.9" on both left and right sides and setting the line spacing double.

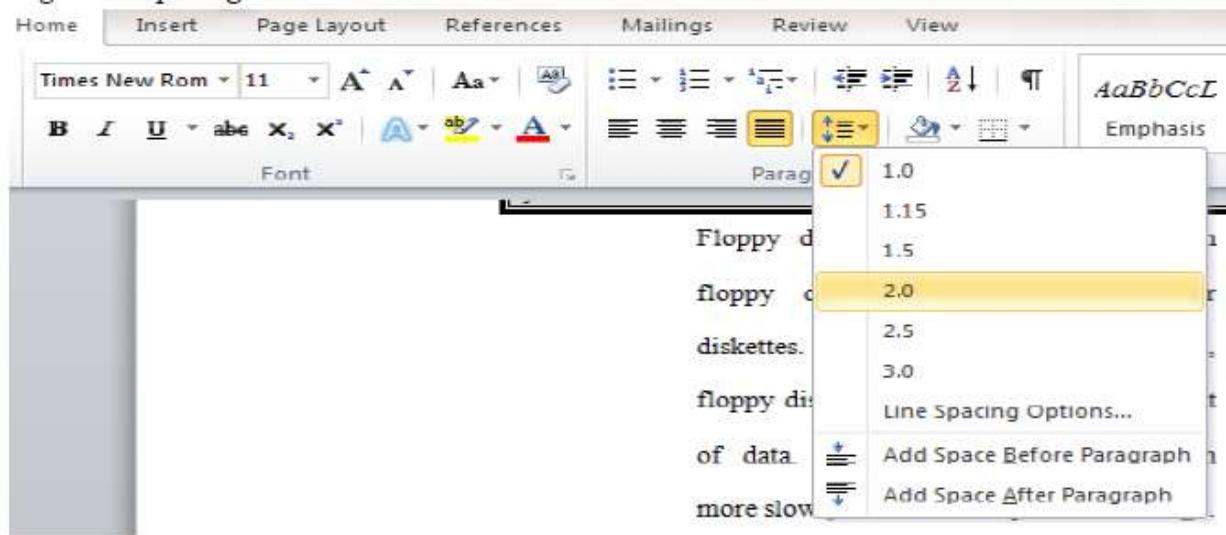
17. Highlight the last paragraph and click Page Layout from the menu bar.
18. On **Indent:** set the **Left:** to 0.9" and the **Right:** to 0.9" as seen in Fig. 2-39 below.

Fig. 2-39: Indentation of both left and right sides of a paragraph.



19. Point and click Home tab from the menu bar. Point and click Line and Paragraph Spacing tab and select 2.0 as seen in Fig. 2-40 below. You can see that all the lines in the last paragraph are spaced to 2.0.

Fig. 2-40: Spacing the lines



Example 2-4: Type the following document and format it according to the specifications given in the Required list.

SYSTEMS ANALYSIS AND DESIGN

Systems Analysis and Design is a six-phase problem solving procedure for examining an information system and improving it. The six phases makeup what is called the Systems Development Life Cycle (SDLC). Conducting Systems Analysis and Design enables one to explain his/her present job, improve personal productivity, and reduce risk of project's failure. The point of Systems Analysis and Design is to ascertain how a computer and communications system works and then take steps to make it better.

A system is a collection of related components that interact to perform a task in order to accomplish a goal. An organization's computer based information system consists of hardware, software, people, procedures, data, and communications setups. These components of a computer based information system work together to provide management with information for running the organization.

Required:

- i. Change the case on the title to Capitalized each word.
- ii. Change the **Character Space** of the first paragraph to **Expanded** and at 1.8 points.
- iii. Insert an animal **Clip Art** and wrap it behind the text in the second paragraph.
- iv. Set your document layout as **Landscape**.
- v. Save your document as **Your names – Analysis**

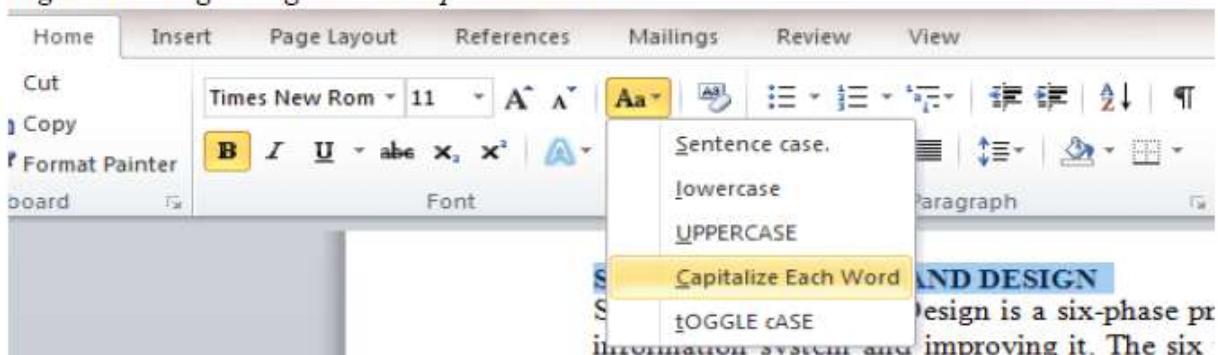
Procedures

Part I: Capitalizing each word on the Title

1. Highlight the title SYSTEMS ANALYSIS AND DESIGN.
2. Point and click **Home** tab. Select the symbol labeled **Aa** to display the **Change Case** options. See **Fig. 2-41** below.

3. Select Capitalize Word from the Change Case list. Notice that each word of the title will have only the first letter capitalized.

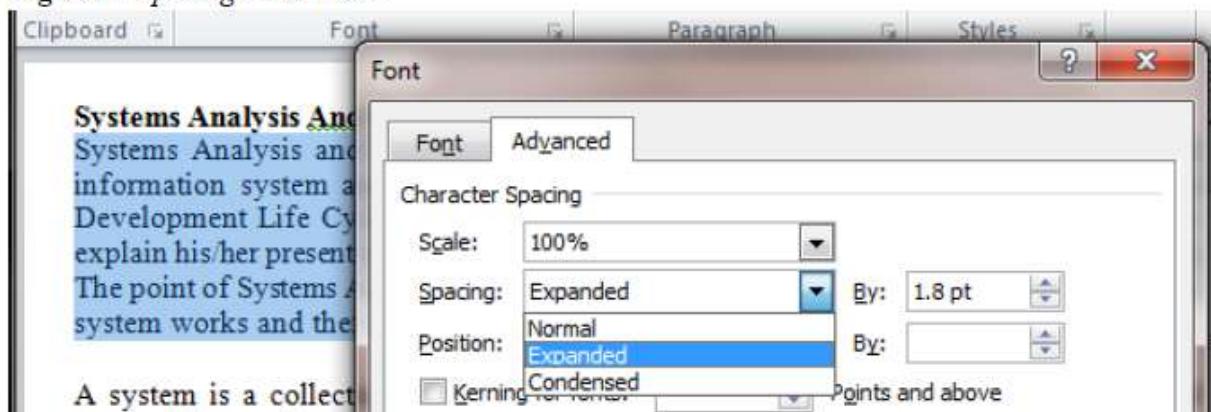
Fig. 2-41: Using Change case to capitalize words.



Part II: To change the character space to Expanded by 1.8 points

4. Highlight the first paragraph. Click the Home tab from the menu bar.
5. Activate the Font dialog box by clicking the tiny arrow near the word Font. See Fig. 2-42 below showing the Font dialog box.
6. On Font dialog box click Advanced tab and on Spacing: click the tiny arrow and select Expanded then put By: 1.8pt as seen in Fig. 2-42 below. Click Ok when done.

Fig. 2-42: Spacing Characters.



Part III: Inserting the Animal clip art and wrap behind the text.

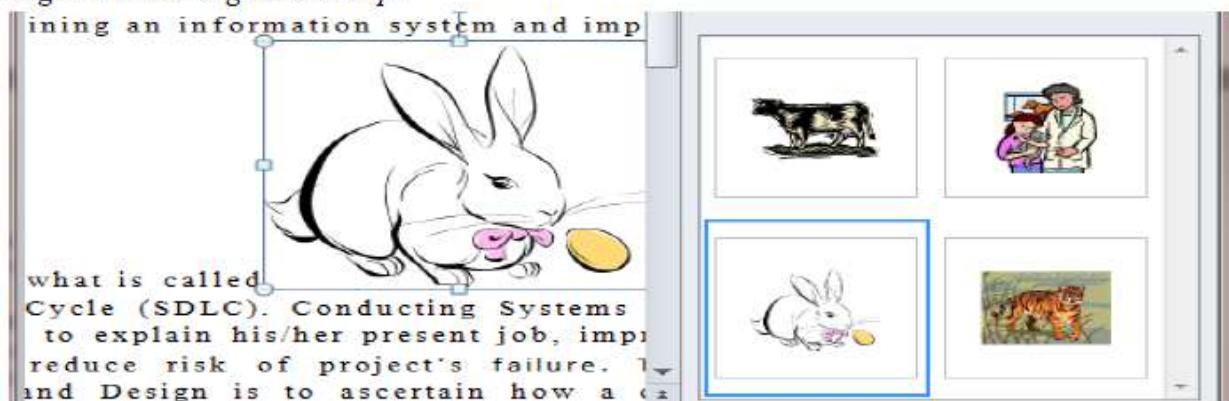
7. Point and click Insert from the menu bar and the click Clip Art. The Clip Art pane will be displayed usually on the right side of your document. See Fig. 2-43 below.
8. On the Clip Art pane look at the Search for: area and type the word animal and then click Go. Several animal clips will be displayed as seen in Fig. 2-44 below.

Fig. 2-43: Activating the Clip Art pane



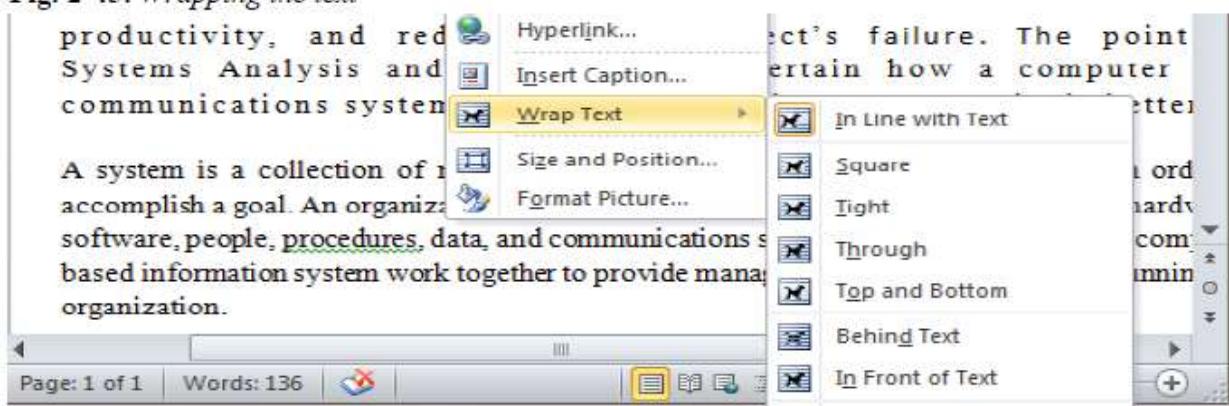
9. On Fig. 2-44 select the animal clip of your choice by clicking it once.

Fig. 2-44: Showing Animal Clips



10. Close the Clip Art pane by clicking on the letter X on the right upper side of the pane.
11. Point and click the right mouse button. On the menu list point Wrap Text and point to click Behind the text. See Fig. 2-45 below.

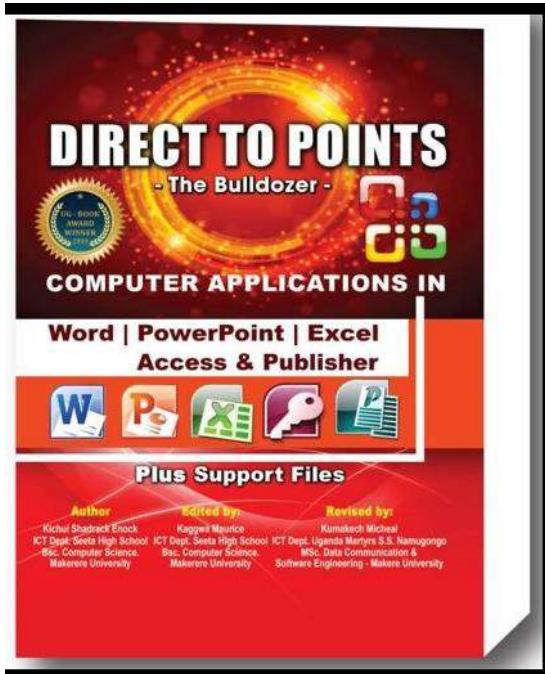
Fig. 2-45: Wrapping the text



Part Two

Microsoft PowerPoint

Get the Complete Book from Bookshops or Call: 0709660974/0774568543



Kichui Shadrack Enock – Order the complete set of the book and learn fully: +256709660974/774568543

TOPIC SEVEN

MICROSOFT POWERPOINT

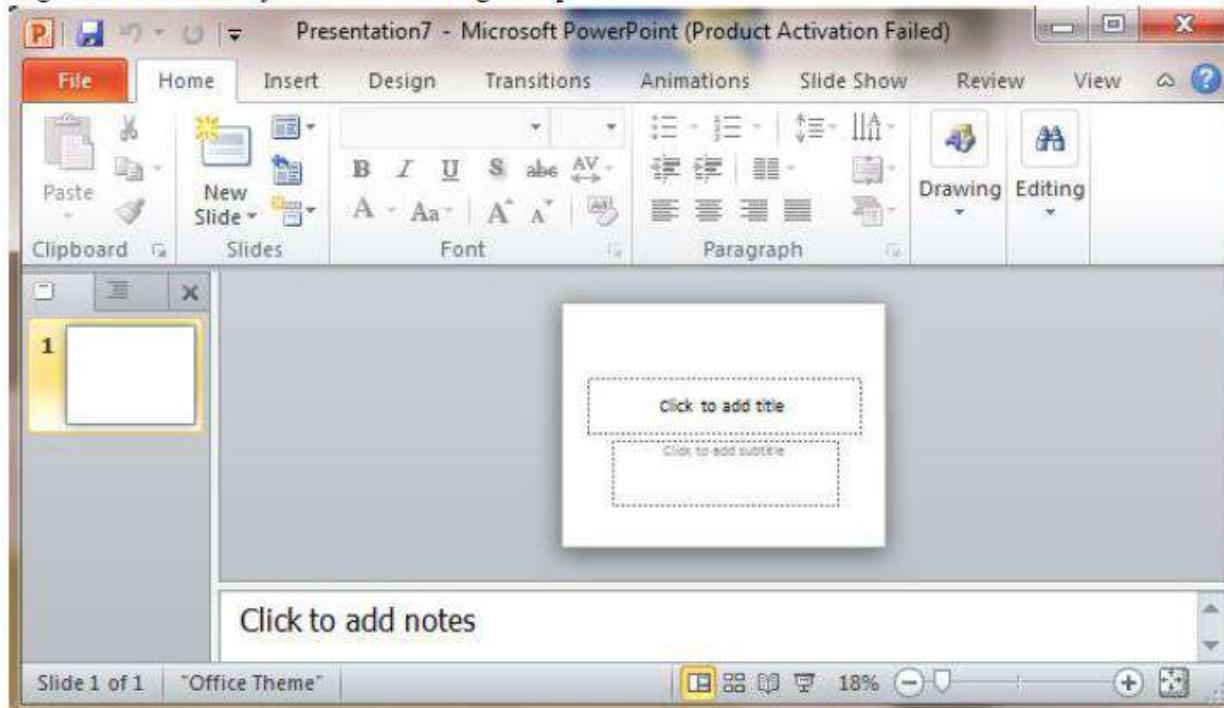
PowerPoint program is one of the presentation software that is very useful for presenting highlights of particular topic to a large audience. A topic can be summarized using PowerPoint program and eventually it can be projected to the targeted group of interest.

Starting PowerPoint program

To start PowerPoint program you follow the following steps:

1. Point and click the Windows Start button at the left bottom side of your desktop screen.
2. Click All Programs and then select Microsoft Office folder.
3. Point and select Microsoft Office 2007 or 2010 or 2013. The Microsoft PowerPoint program will open as seen in Fig. 7-1 below.

Fig. 7-1: The Microsoft PowerPoint Program opens



Slide Layout

There are several slide layouts that can be used that include Title Slide. Which slide layout to be used basically depends on the nature of information or the kind of work organization that is desired by the user which is to be presented. The layout may be for only text, text and graphics or perhaps, having only graphics.

Example 7-1: Prepare a presentation that can be used to educate your society about HIV AIDS in East Africa. Your presentation should include the following:

Slide I: The Title of the Topic and the name of the Presenter.

Slide II: The Definition of HIV AIDS.

SLIDE III: The actual ways that HIV spreads

SLIDE IV: The visible Symptoms of HIV AIDS

SLIDE V: The devastating effects of HIV AIDS in East Africa

SLIDE VI: Preventive measures to be taken to fight against HIV AIDS in East Africa.

SLIDE VII: A Comparison Pie Chart showing the extent of population affected by HIV AIDS if Uganda is 1500000, Tanzania is 1800000, Kenya is 1200000, Burundi is 300000, Rwanda is 500000 and S. Sudan 1000000 population of people.

The presentation should include:

- i. Illustrating image (s) that support the above topic.
- ii. The font size should be clear and visible when projected.
- iii. Action buttons that are linked to enable the presenter link back and forth on each slide.
- iv. Include minimal animation effects.

Steps

1. On the title slide click the place holder labeled **Click to add title** as seen in Fig. 7-1 above and then add the title **HIV AIDS in East Africa**.
2. Click again the lower placeholder labeled **Click to add subtitle** and type your name as the name of presenter, in this case **Maeda Kavinje**. See Fig. 7-2 below.

Inserting New Slides

A new slide is to be inserted every time you want to add new content in your presentation. While inserting the new slide is also important to select an appropriate slide layout.

3. To insert a new slide point and click **Home** from the menu bar and then click **New Slide**. Several Slide Layouts will be displayed as seen in Fig. 7-3 below.
4. Select **Title and Content** slide layout. This kind of layout commonly used. Fig. 7-4 shows the new inserted slide.
5. Type in the Definition of HIV AIDS as seen in Fig. 7-5 below. Notice that the definition is a bit lengthy almost covering the slide.

Fig. 7-2: Adding the title slide.

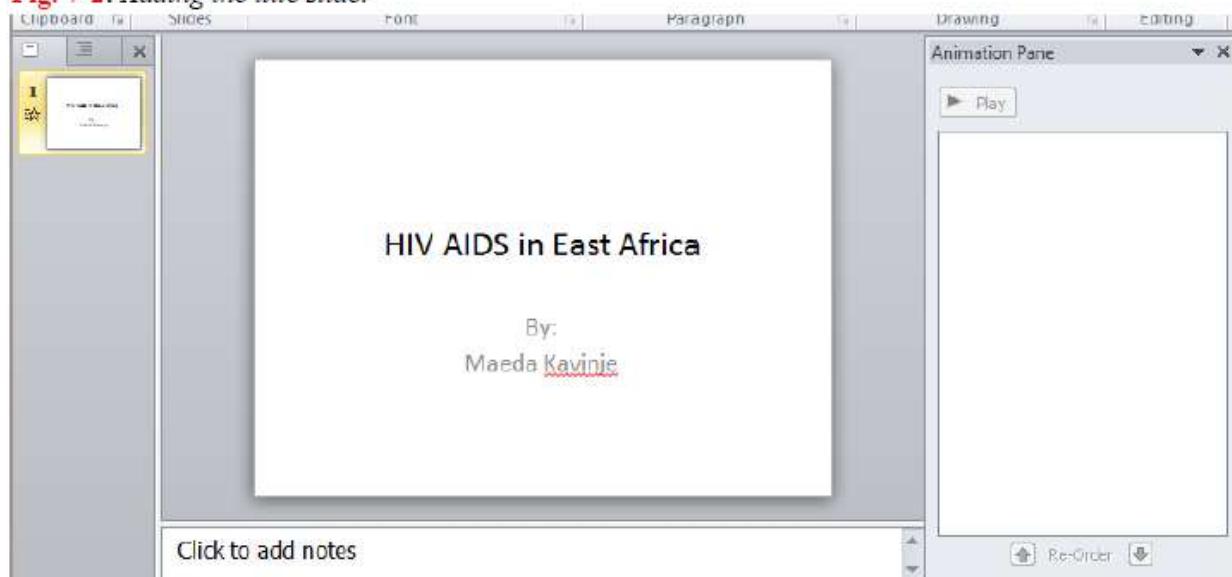
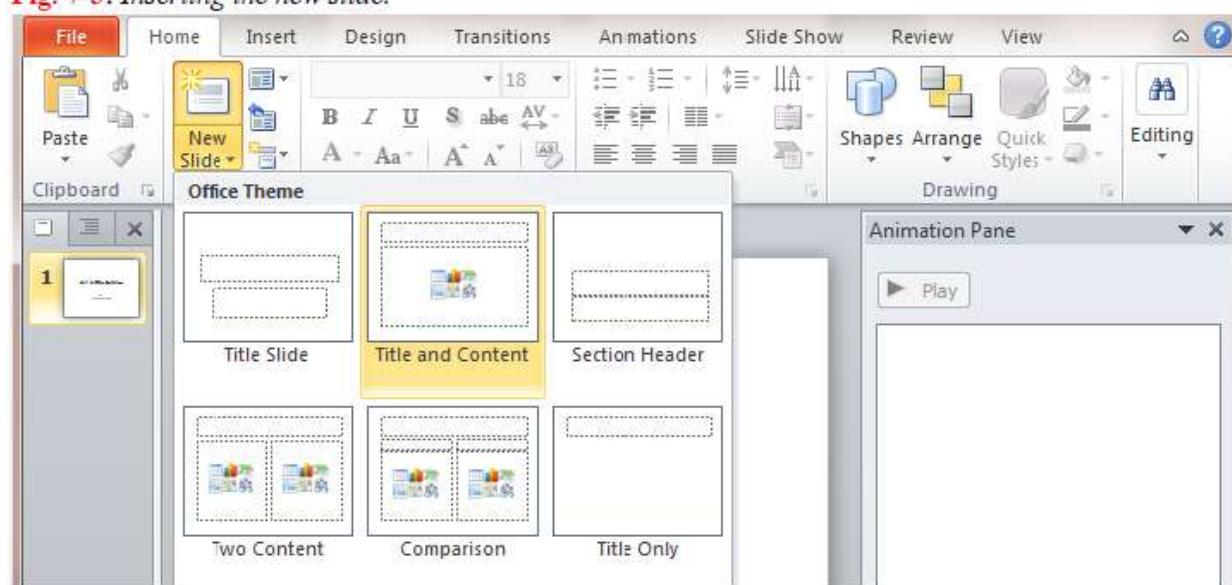


Fig. 7-3: Inserting the new slide.



Formatting the Slides

It is possible to have the slide formatted such as font size, colors, font face and also putting other designs such as background colors.

6. Select the Title placeholder where the word **Definition** is typed in Fig. 7-5 below and then click Format from the menu bar.
7. On the colors labeled **Abc** you can scroll and select the color of your choice to highlight the word **Definition** as seen in Fig. 7-5 below.

Fig. 7-4: New Slide layout

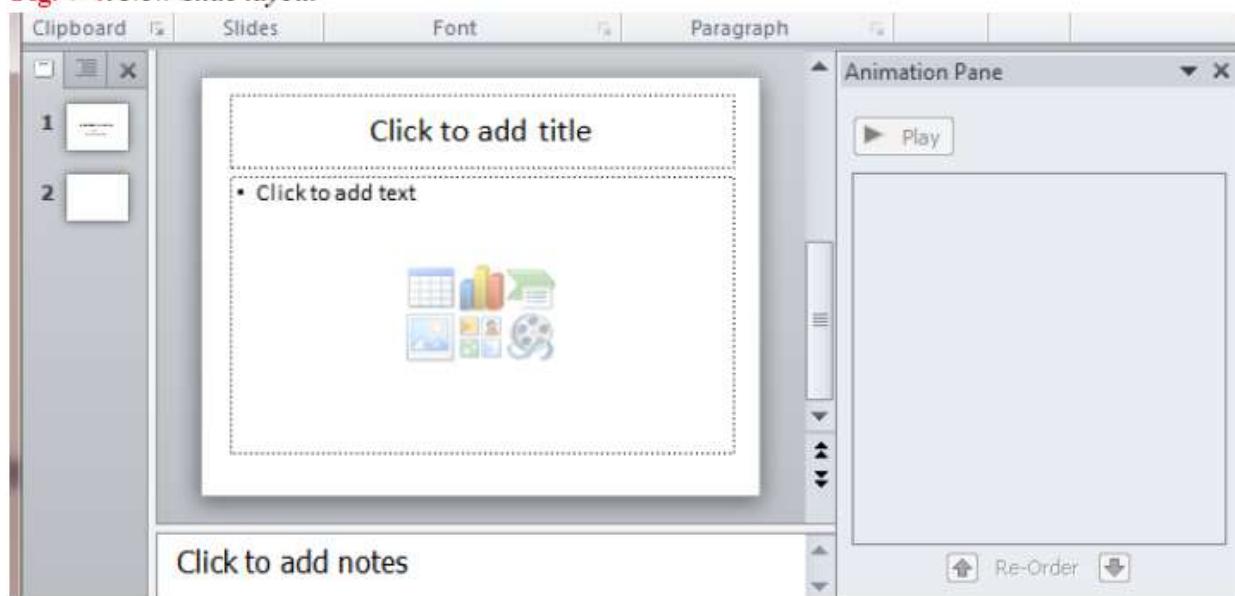
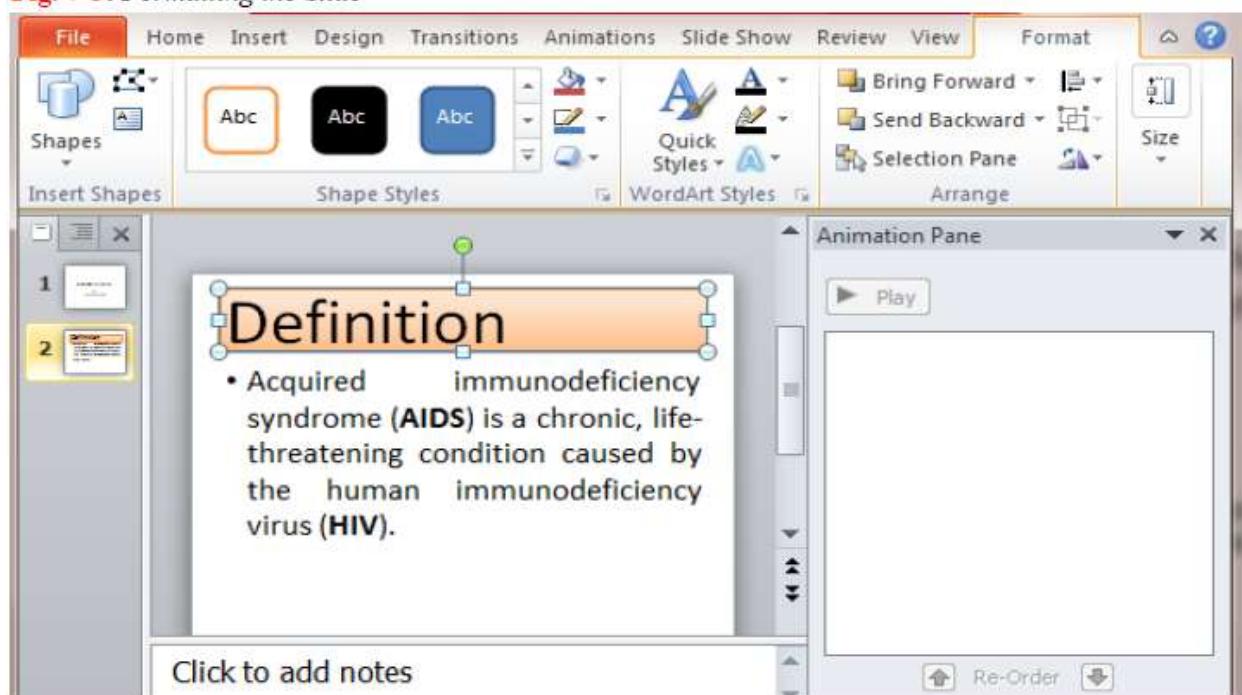


Fig. 7-5: Formatting the Slide



8. Insert the New Slide (Slide III) where you will outline the way HIV is spread. See **Fig. 7-6** below.
9. Highlight the bulleted lines and click Home from the menu bar and the click paragraph (symbol to activate the Paragraph dialog box as seen in **Fig. 7-7** below.
10. On Line spacing: select 1.5 lines, as seen in **Fig. 7-7**. Click Ok when done. The resulting slide should look like the one in **Fig. 7-8** below.
11. Insert the new slide (Slide IV) for Symptoms of HIV AIDS. See **Fig. 7-9** below.

Fig. 7-6: Slide III – ways HIV spreads

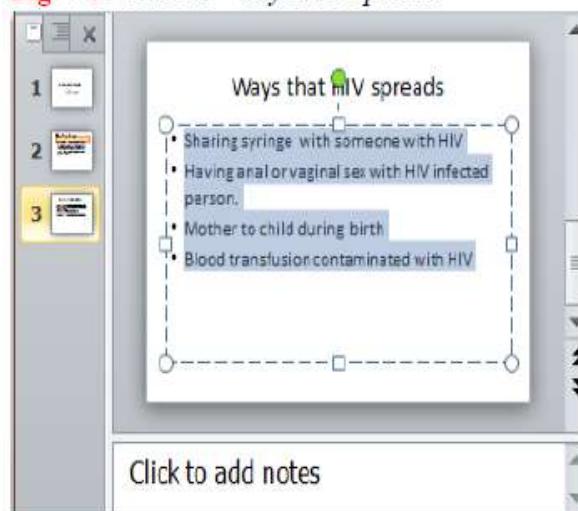


Fig. 7-7: Line spacing the Slide's paragraph

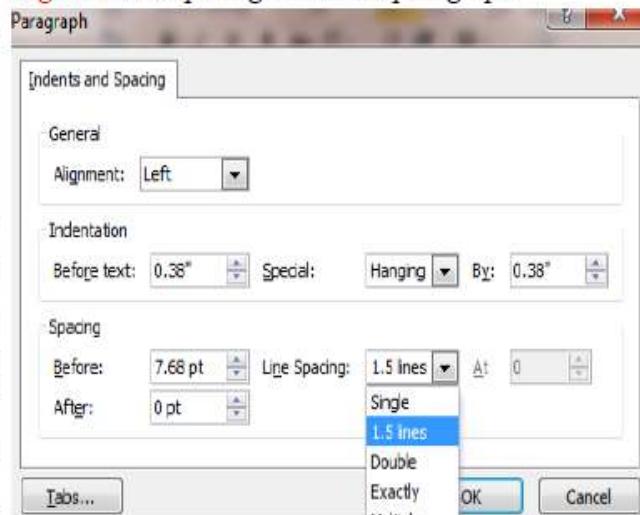


Fig. 7-8: Shows space lines of Slide III

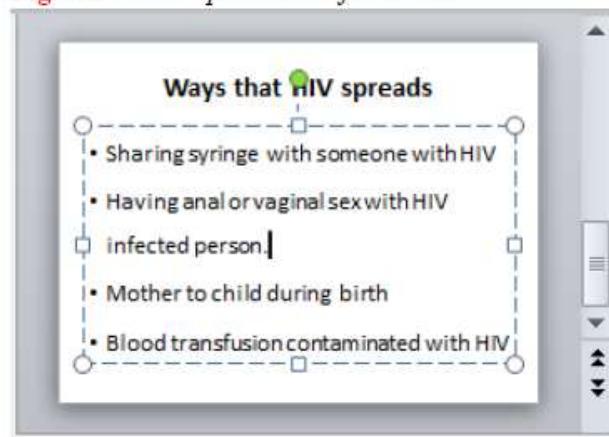
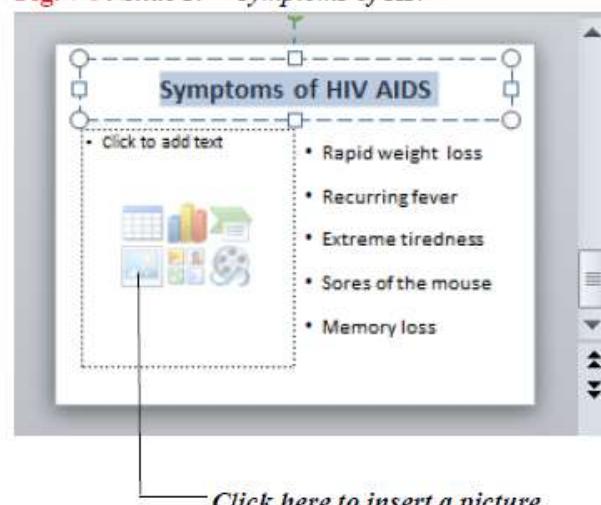


Fig. 7-9: Slide IV – symptoms of HIV



Inserting a Picture

An appropriate picture can be inserted in one of your slides. A picture can improve or double the attention of your audience. It is important to select the slide layout that can allow you to add both text and a picture and without having a picture overlapping on your text. For instance, Fig. 7-9 above shows the slide layout with two parts, where one part can be used for text and the other side can be used for a picture. Pictures to be inserted can come from any source which may be office library, from the Internet or you can have self-prepared pictures using your own camera.

12. To insert a picture point and click the area which can allow you to insert a picture as shown in Fig. 7-9 above. The Insert picture dialog box will be displayed as seen in Fig. 7-10 below.
13. Select the picture and click Insert to insert the picture to your slide. See Fig. 7-11 below. Note that pictures can be got from your computer or from the Internet.
14. Insert the new slide (Slide V) and outline the effects of HIV AIDS. See Fig. 7-12 below.

Fig. 7-10: Browsing to select a Picture.



NOTE

You can also use Paint Brush graphic program and draw or edit a simple picture and save it in the My Pictures folder. You can then use the same procedures to insert the picture in your slide. This can be done only if the presenter has the ability to sketch a picture which can bring the same environment discussed in the topic.

Fig. 7-11: Slide IV with inserted picture

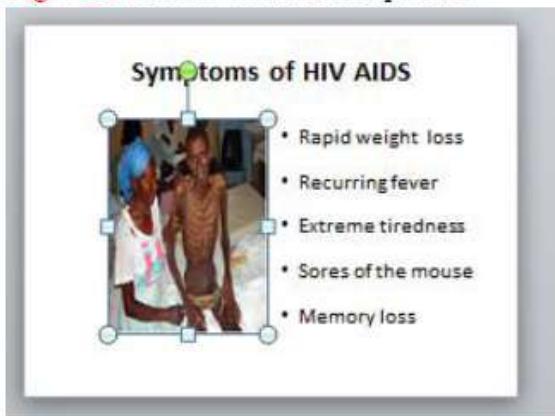
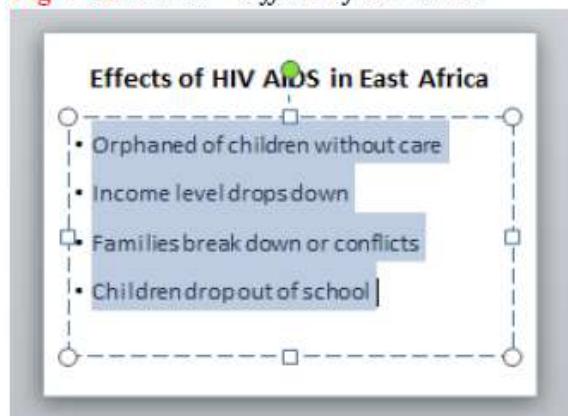


Fig. 7-12: Slide V – Effects of HIV AIDS



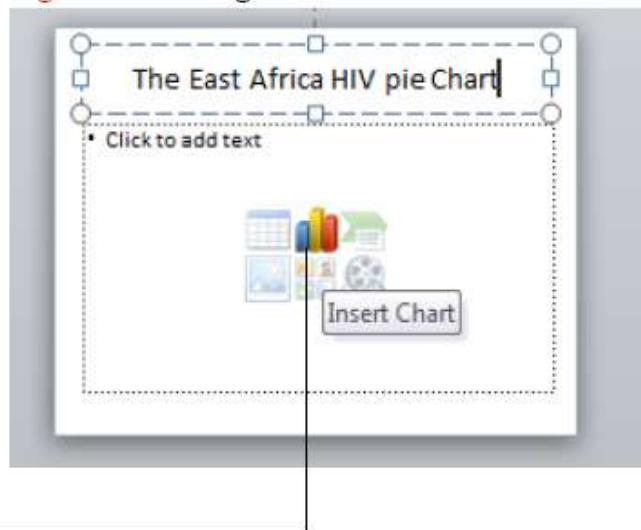
15. Insert New Slide (Slide VI) and outline the preventive measures to safeguard against HIV AIDS. See **Fig. 7-13** below.
16. Insert New Slide to be used to create HIV population summarized in a pie chart. See **Fig. 7-14** below.

Inserting Charts

Fig. 7-13: Slide VI – HIV Prevention



Fig. 7-14: Inserting the Pie Chart



Click here to insert a chart

Fig. 7-15: The Insert Chart dialog box

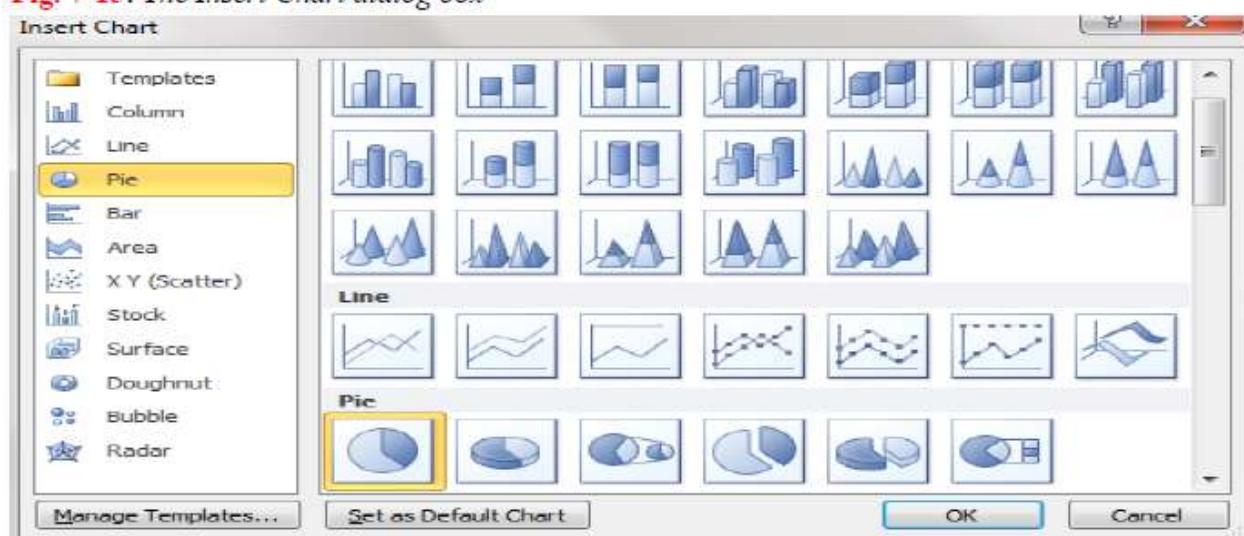


Fig. 7-16: The Microsoft Excel worksheet to edit data for the chart.

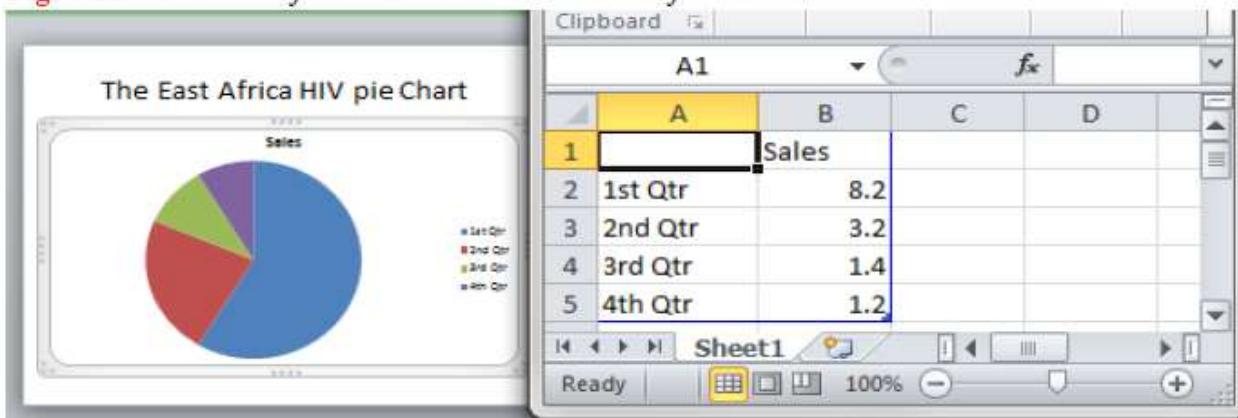


Fig. 7-17: Customizing data for the Chart

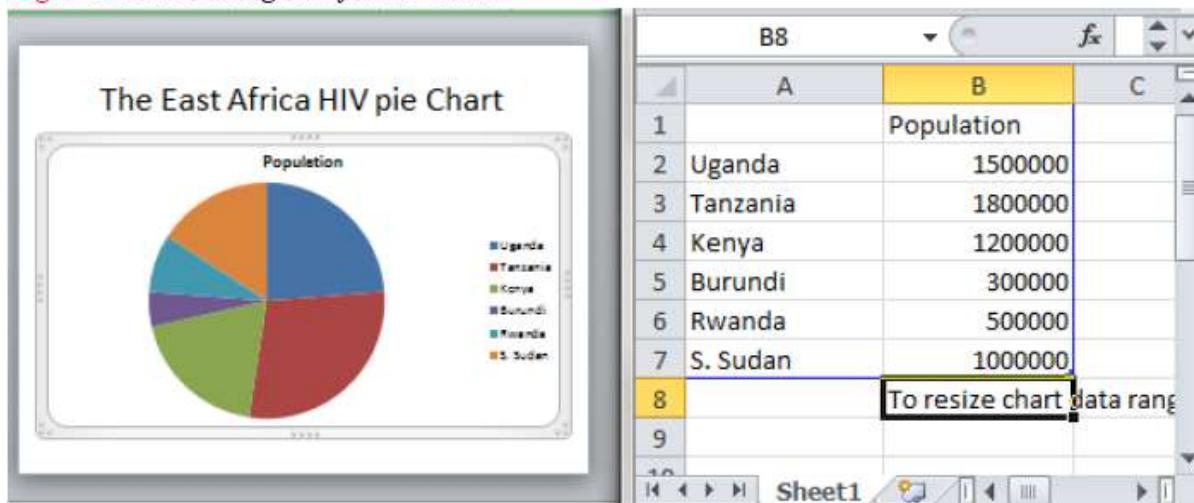


Fig. 7-18: Slide VII – the Inserted Pie chart

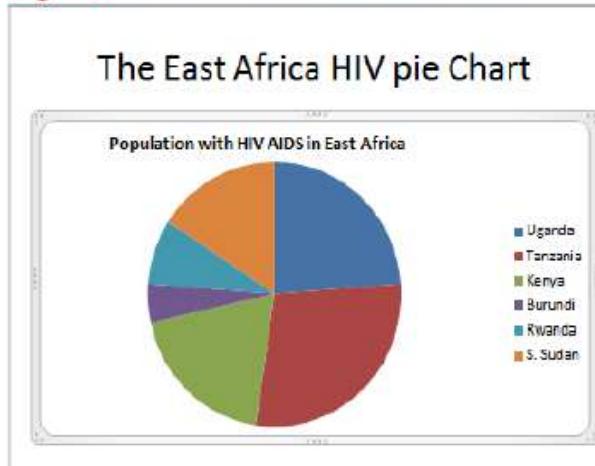
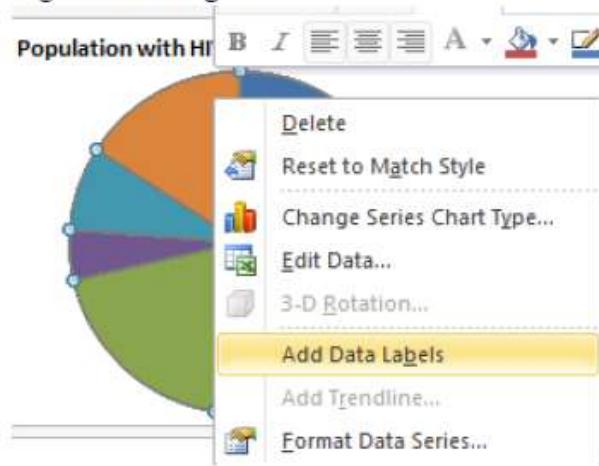


Fig. 7-19: Adding labels to a chart



17. Click the chart bar to insert the chart as seen in **Fig. 7-14** above. The **Insert Chart** dialog box will be displayed as seen in **Fig. 7-15** above.
18. Point and click **Pie** and select any of the **Pie Chart** styles to insert the pie chart in your slide.
19. A Microsoft Excel sheet with default values and a pie chart will be displayed as seen in **Fig. 7-16** above.
20. Edit the values to reflect the type of information you want to present to your audience as seen in **Fig. 7-17** above.
21. Close the Microsoft Excel Sheet when done. Your work should look like the one in **Fig. 7-18** above.

Adding Labels to the Chart

You can add labels, values or percentages on your pie chart. This can make your chart more interpretable and therefore easily understandable to your audience. It is also important not to crowd your chart with all values, labels, percentages, etc. all together. You can select only one.

22. To add values on your chart, point on the chart and click the right mouse button. See **Fig. 7-19** above. On the display menu select **Add Data Labels** It will bring the Values on your chart as seen in **Fig. 7-20** below.
23. To put the percentage values, right click again on your chart and on the display menu select **Format Data Labels...** See **Fig. 7-21** below. The **Format Data Labels** dialog box will be displayed as seen in **Fig. 7-22** below.

Fig. 7-20: Shows the data values

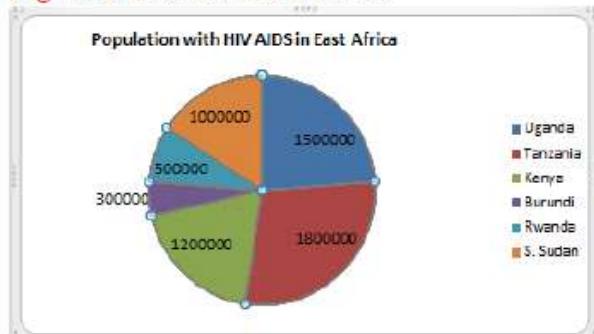


Fig. 7-21: Format Data labels

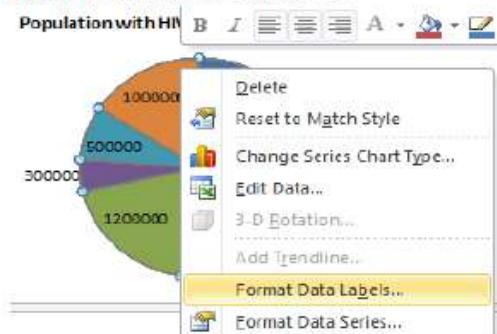
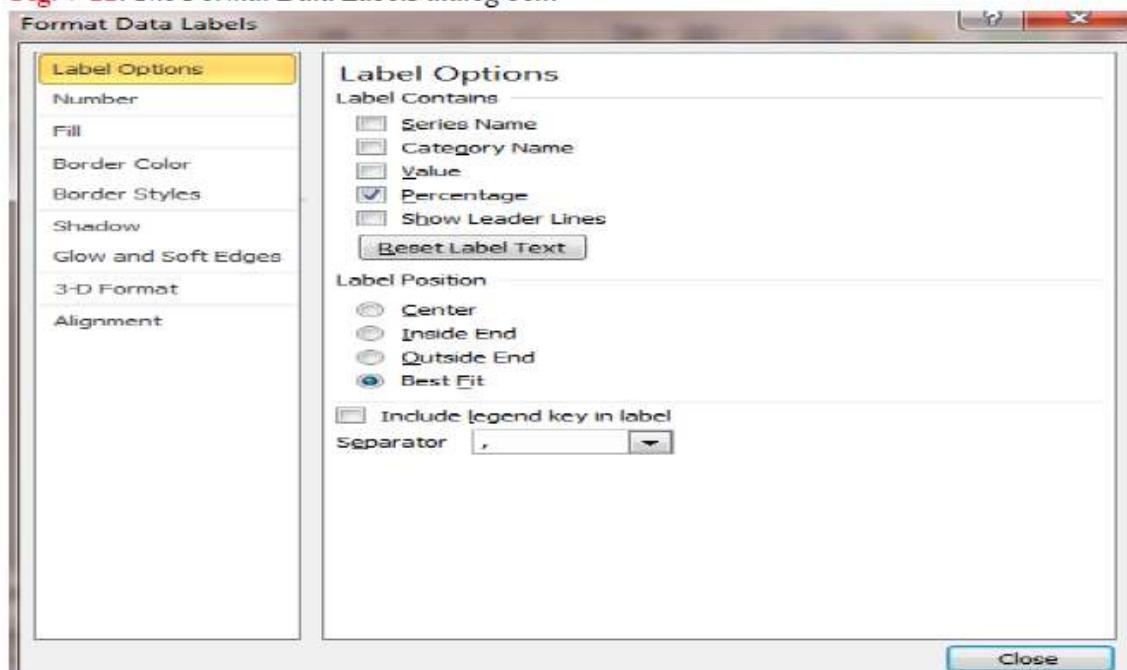


Fig. 7-22: The Format Data Labels dialog box.

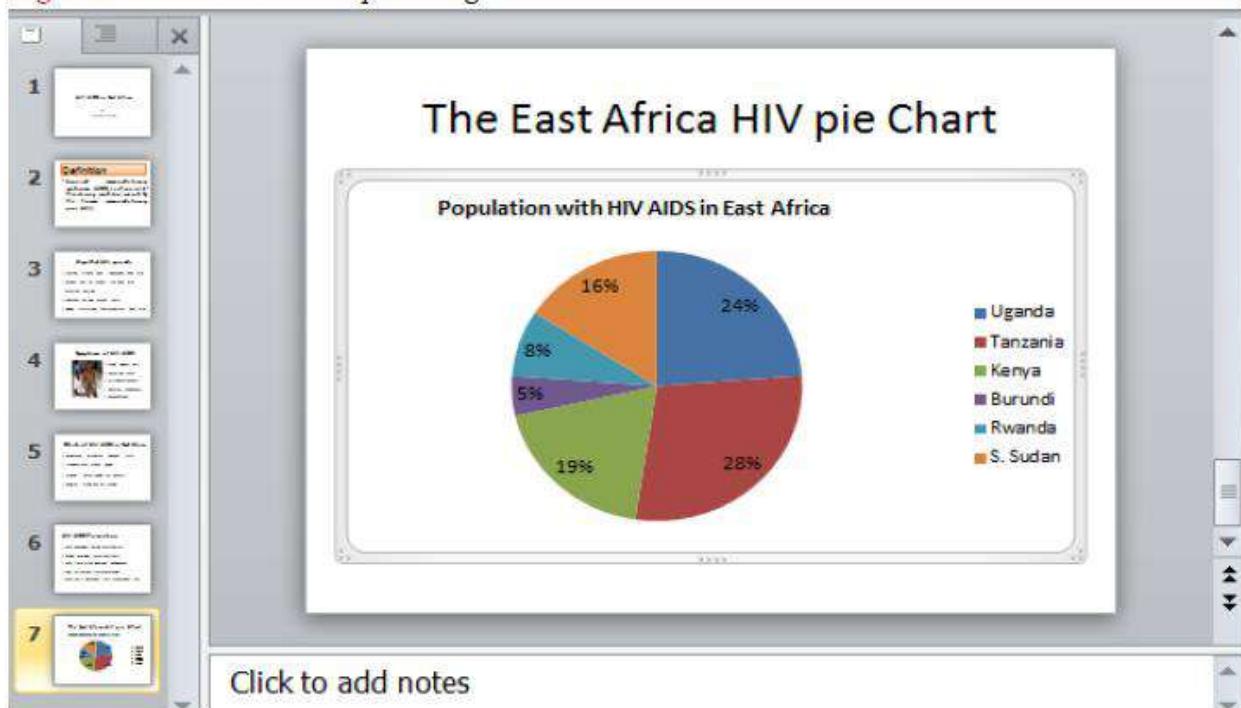


24. Point and click **Close** tab when done. Your work should now look like the one in **Fig. 7-23** below showing the percentages in each chart division.

Note:

Note that each slide must contain only a summary of bulleted items and one should not crowd many items in one slide. Ideally, they should be four to five lines to allow better spacing and ensuring of the fairly big font size of your text. If you have more points, you can insert a new slide but you should maintain the same subtitle as you add new points to new slides.

Fig. 7-23: The Pie Chart with percentage values



Linking Slides

It may be desirable to most users to have their presentation slides linked up to direct access from one slide to another. You can link your slide such that out of, say ten slides, you can directly move from slide two to slide ten or slide seven to slide three and so on.

25. Point and select **Slide I** (The Title Slide). We shall have **Slide I** having a link to each and every slide and each slide must be able to link back to **Slide I**.
26. Point and click **Insert** from the menu bar and then click **Shapes** to display various drawing shapes and then select **Right Arrow** pointer as seen in **Fig. 7-24** below.
27. Start drawing the Right Arrow shape on the Title Slide as seen in **Fig. 7-25** below.
28. Continue drawing the same arrows or you can copy and paste (to copy you click on the arrow, right click and select **Copy**, then **Paste** to another location) until they are six. See **Fig. 7-26** below.
29. To label the arrows to describe the slides they are to link to you click on the arrow and then right click once. You then select **Edit Text** from the display menu. See **Fig. 7-27** below.
30. Continue labeling all the arrows and you can increase the font size of the text to **32** and make the font color **black** and **bolded**. See **Fig. 7-28** below.
31. Point the arrow labeled **Slide 2** and click on it once. You then click **Insert** from the menu bar and then select **Action**. The **Action Settings** dialog box will be displayed as seen in **Fig. 7-29** below.
32. On **Action Settings** in **Fig. 7-29** below select **Hyperlink to:** and then scroll around until you locate and select the word **Slide...** before you click **Ok**. The **Hyperlink to slide** dialog box will be displayed as seen in **Fig. 7-30** below.
33. On **Slide Title:** in **Fig. 7-30** below select slide 2. **Definition** and then click **Ok**. The arrow labeled **Slide 2** will change into a hyperlink as seen in **Fig. 7-31** below.

Fig. 7-24: Display of Drawing Tools

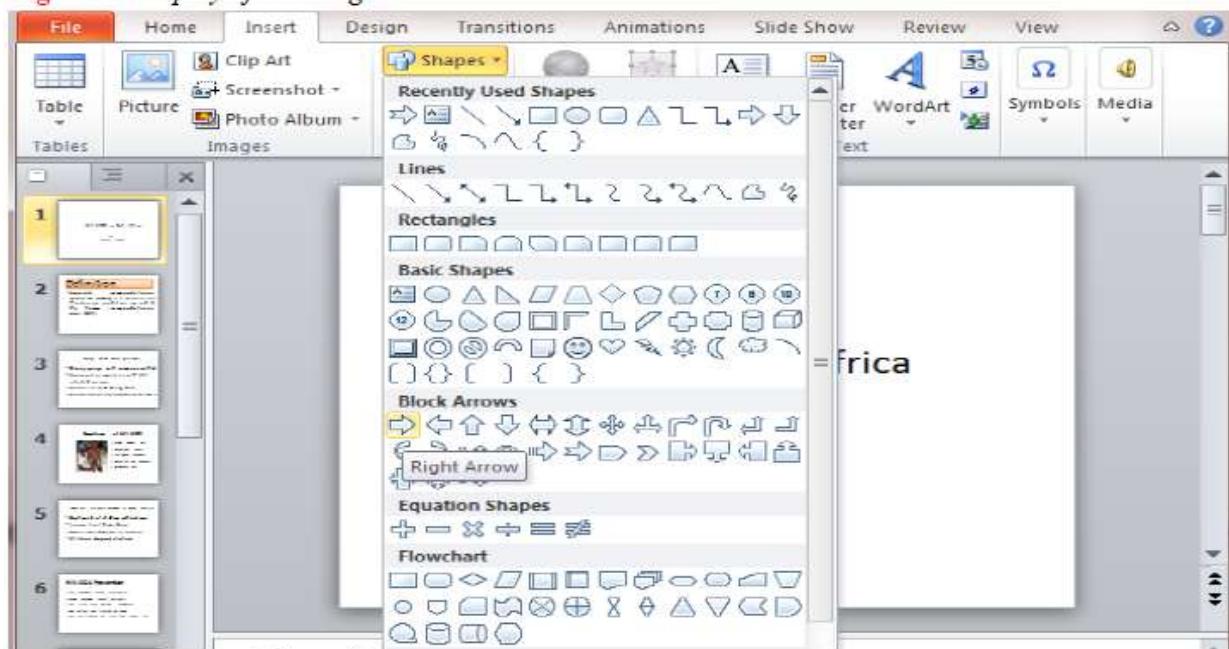


Fig. 7-25: Drawing the Right Arrow shape

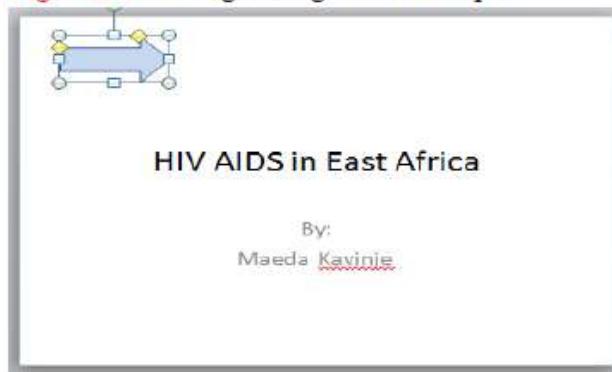


Fig. 7-26: Copying and Pasting the Right Arrow

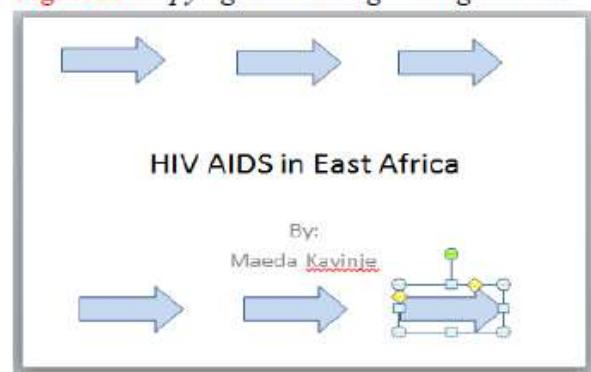


Fig. 7-27: Putting Text on the Right Arrows

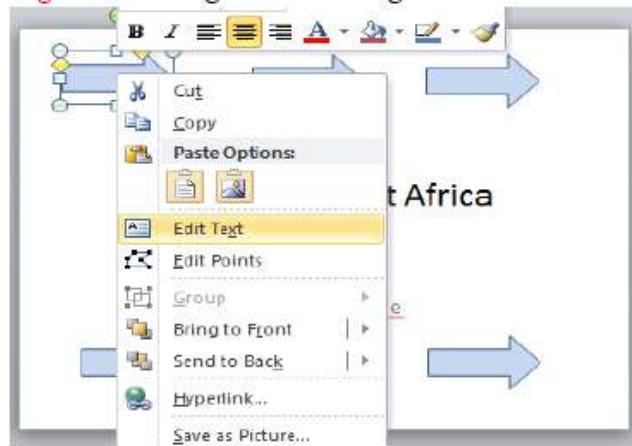


Fig. 7-28: Labeled Right Arrows

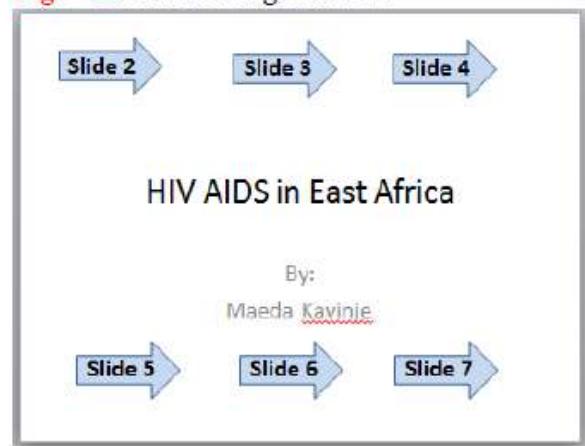


Fig. 29: Activating Action Settings dialog box

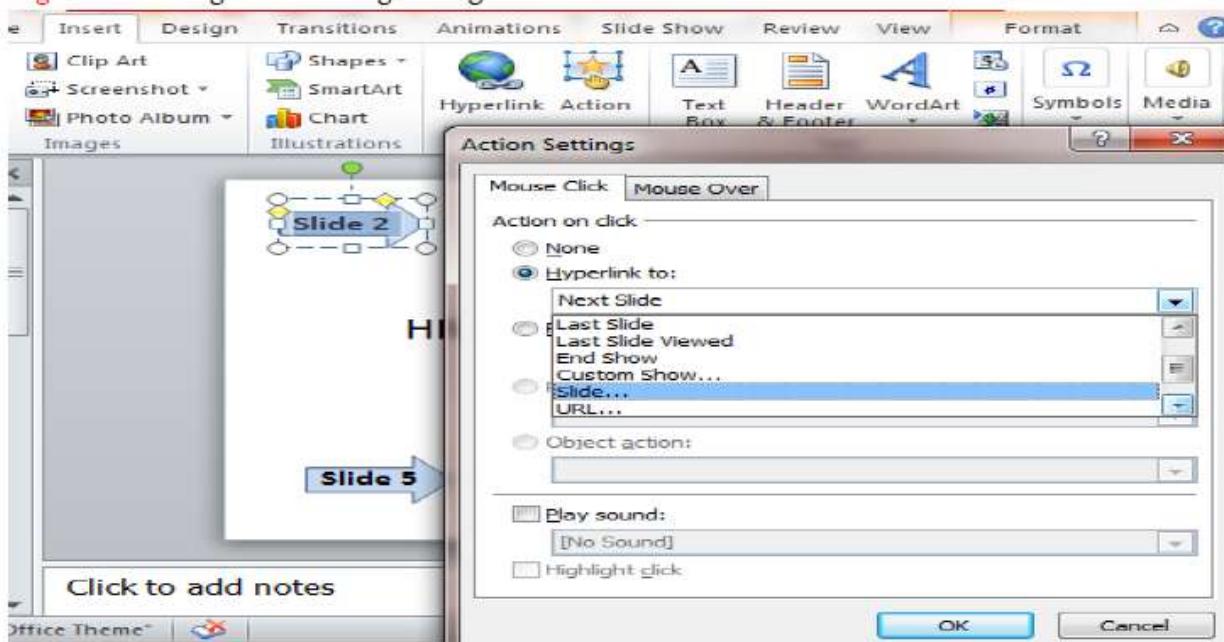


Fig. 7-30: Linking Slide I to Slide II

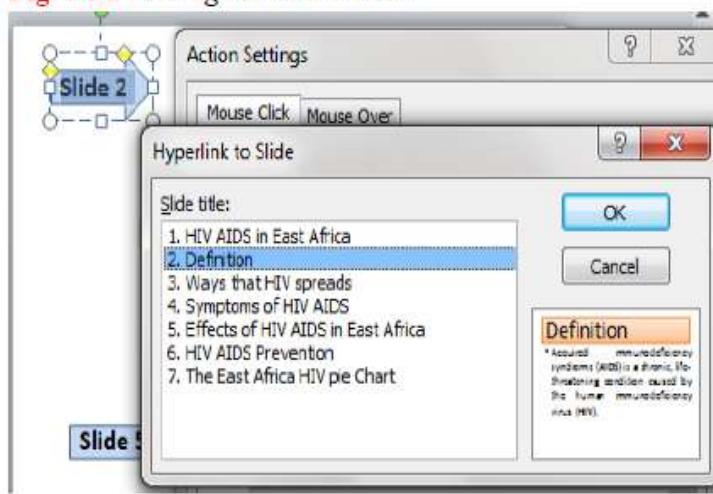
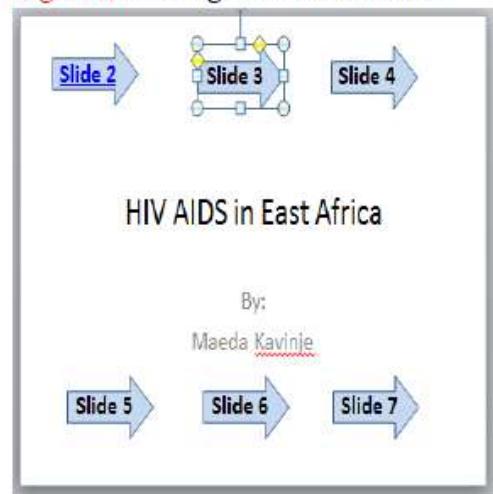


Fig. 7-31: Linking Slide I to Slide III



34. Continue selecting the arrow labeled **Slide 3** and follow the same 31 to 33 steps to make the arrow labeled **Slide 3** into a hyperlink. When you reach the **Hyperlink to Slide** dialog box you select the third slide (**3. Ways that HIV spreads**) and click **Ok**.
35. Proceed hyperlinking other labeled arrows until you reach the arrow labeled **Slide 7**. Your work should be like the one in **Fig. 7-32** below.
36. Link all the rest of your slides (i.e. **Slide II to Slide VII**) back to **Slide I** as illustrated in **Fig. 7-33** below.

Fig. 7-32: Shows Complete Hyperlinked labels.

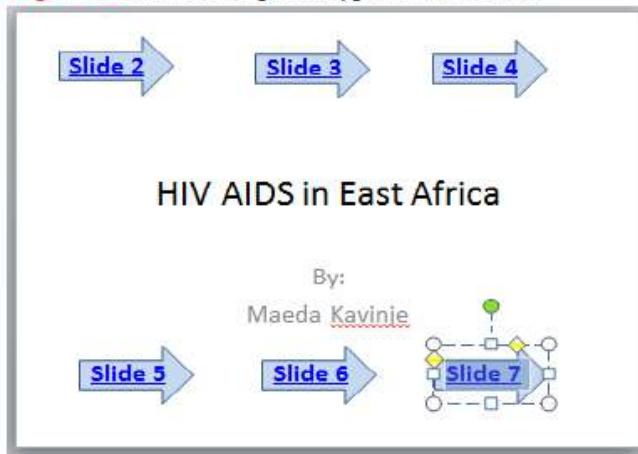
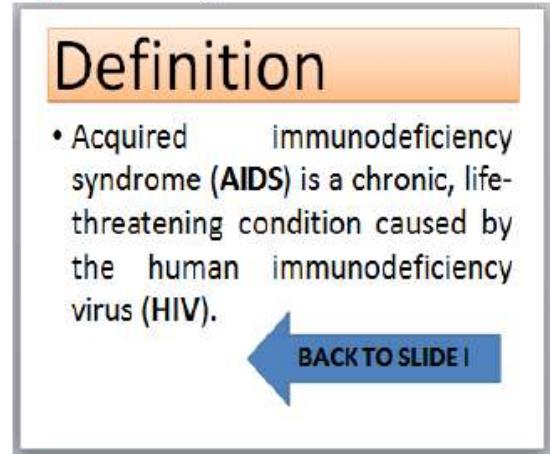


Fig. 7-33: Linking SLIDE II back to SLIDE I



Viewing the Slides

You can view your slides on full screen from the first slide to the last. This is the time you can also access slides by the use of hyperlinks.

37. To view a slide point and click **Slide Show** from the menu bar and then click the **From Beginning** tab as seen in **Fig. 7-34** below. The slide will be shown in full screen as in **Fig. 7-35** below.

Fig. 7-34: Showing a Slide

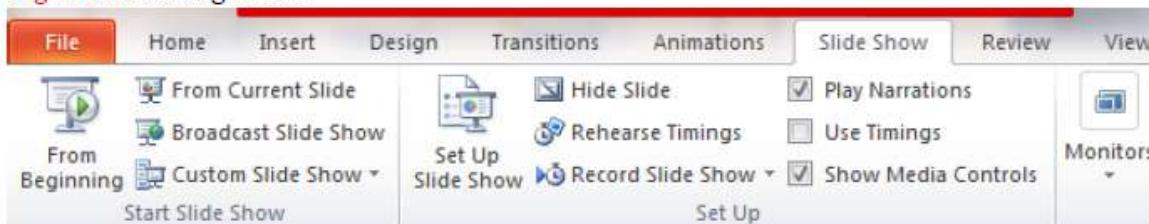


Fig. 7-35: The full screen view of Slide I

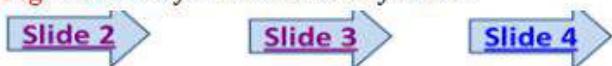
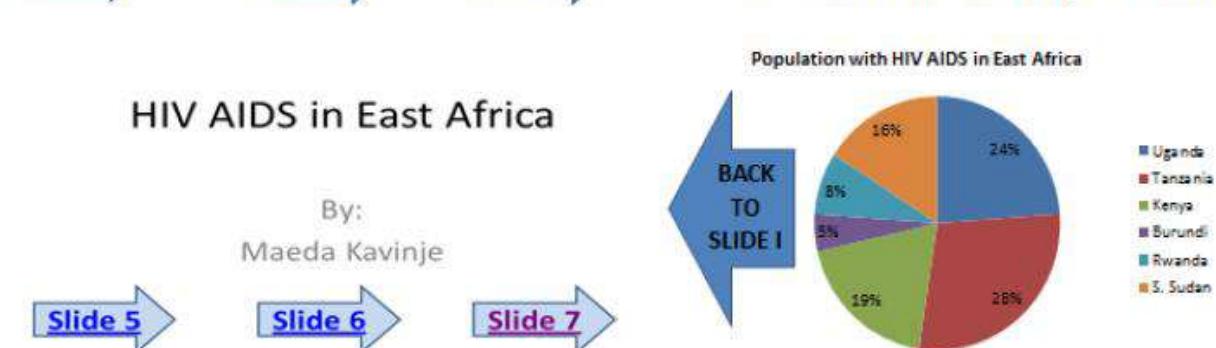


Fig. 7-36: Displaying hyperlinked slide.

The East Africa HIV pie Chart

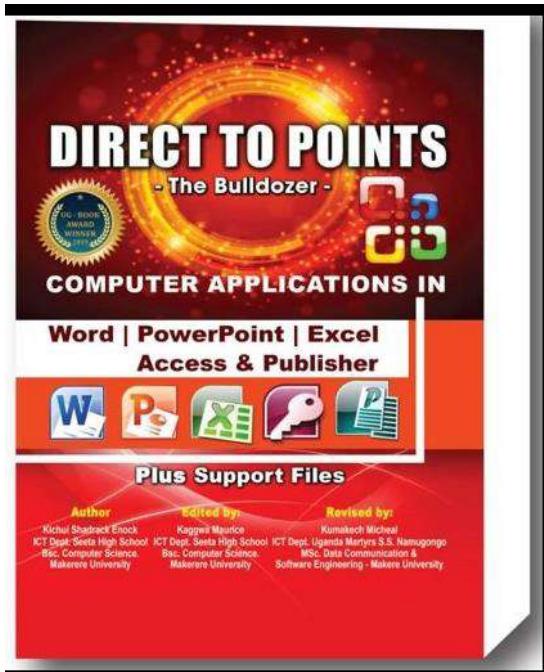


38. If you click **Slide 7** in **Fig. 7-35** above, the last slide will be displayed as seen in **Fig. 7-36** above. You can click **BACK TO SLIDE I** in **Fig. 7-36** to go back to the first slide.

Part Three

Microsoft Excel

Get the Complete Book from Bookshops or Call: 0709660974/0774568543



Kichui Shadrack Enock – Order the complete set of the book and learn fully: +256709660974/774568543

TOPIC EIGHT

INTRODUCTION TO EXCEL

Definition of Spreadsheet

A **spreadsheet** is an interactive computer application program for organization and analysis of data in tabular form. It is an electronic worksheet divided into rows and columns that can be used to analyze and present business data.

Any spreadsheet program can be used to manipulate (process) financial, statistical, accounts, and even scientific data, provided that users have learnt the necessary functions, or tools suitable for their respective problems.

Examples of electronic spreadsheets include:

- i. Microsoft Excel
- ii. Lotus 1-2-3
- iii. VisiCalc
- iv. OpenOffice.org Calc
- v. Super Cal.

One of the most popular spreadsheet programs is Microsoft Excel. MS Excel has proved to be the most user friendly program, equipped with many features thus widely used.

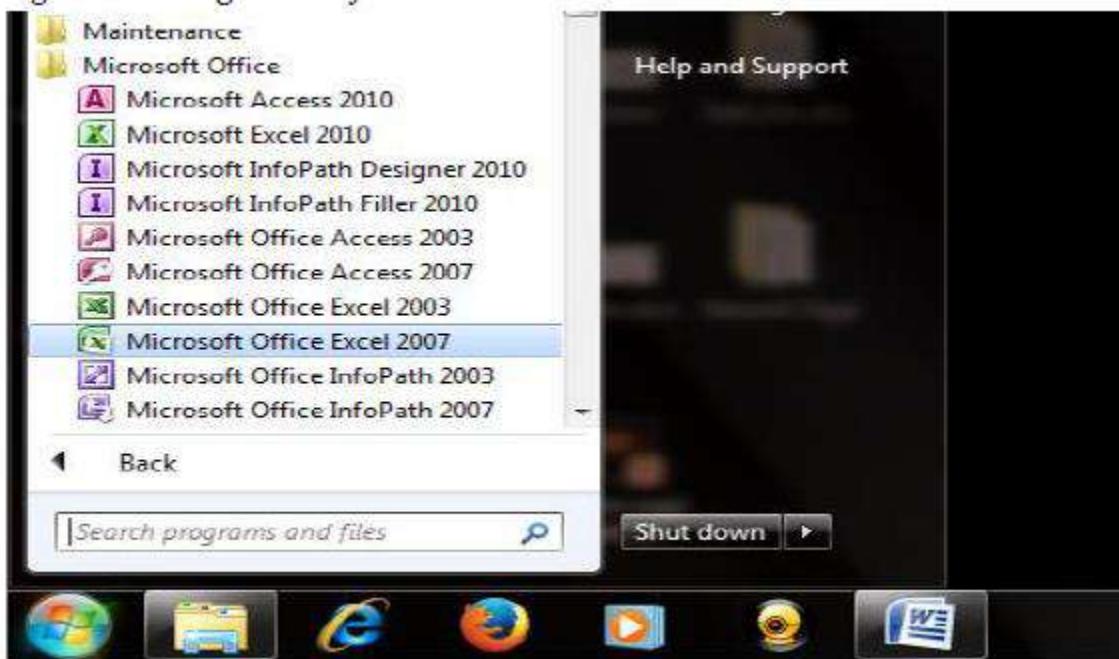
Starting Microsoft Excel Program

To start MS-Excel program you follow the procedures below:

Steps

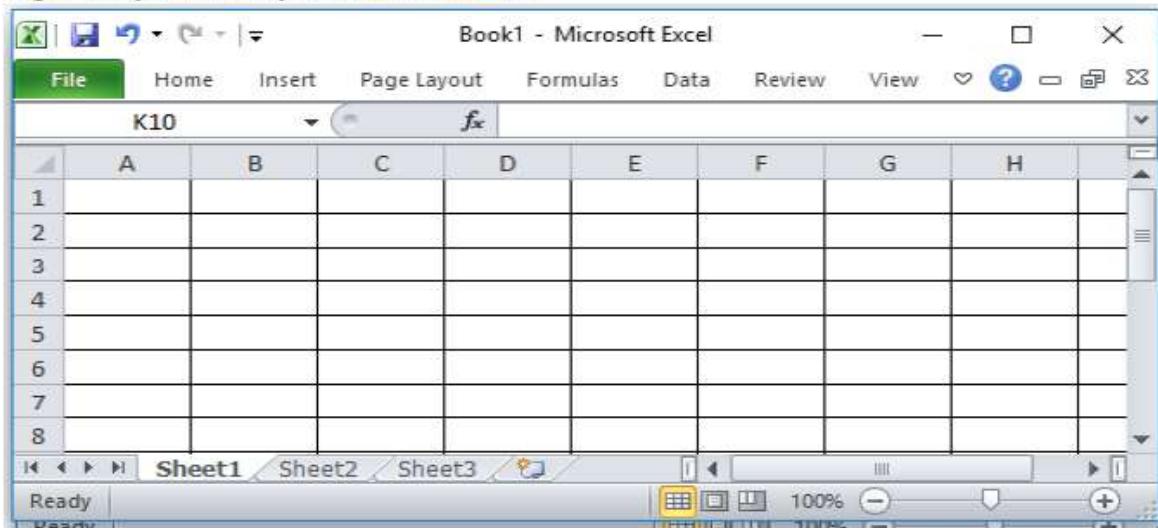
1. Click *Start* Button at the bottom left of your Window.
2. Select *All Programs*
3. Select *Microsoft Office*.
4. Point *Microsoft Office Excel 2007/2010/2013* and click once with your left mouse button.

Fig. 8-1: Starting Microsoft Excel



The *figure 8-2* below shows a full Microsoft Office Excel worksheet that opens after clicking Microsoft Office Excel in Fig. 8-1 above.

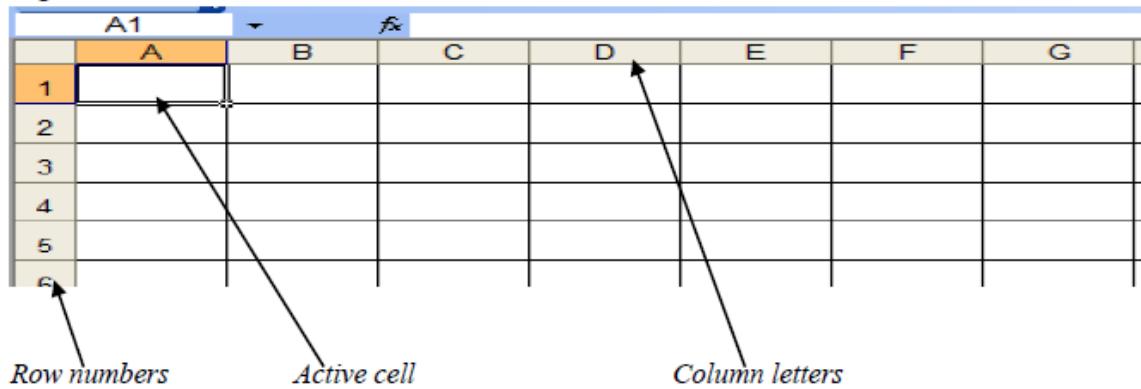
Fig. 8-2: A full screen of MS-Excel worksheet



Cells and Cell Addresses

A **cell** is an intersection of a **row** and a **column**. A typical spreadsheet must have **row numbers** (usually appearing at the left side of the worksheet) and **column letters** (usually appearing at the top side of the worksheet). See *figure 8-3* below:

Fig. 8-3: Shows row and column numbers



An **active cell** is the current cell that is ready to accept data input from the user. You must activate the cell (element) that you want to enter the data. An active cell is always surrounded by a thick border. For example, A1 in Fig. 8-3 above is an active cell.

A **cell address** is the column and row coordinates of a cell. In spreadsheet, we name or make a reference of a cell by reading the position where a column letter does intersect with a row number. See *figure 8-4* below:

Fig.8-4: Demonstrates cell address of every cell that has content.

	A	B	C	D	E	F
1	MN					
2		PQ				
3			RS			
4				TU		

The values MN, PQ, RS, and TU are having the cell addresses of A1, B2, C3, and D4 respectively.

Cell Content

A cell can contain one of the four types of information. i.e. a label, a value, a formula, or a function.

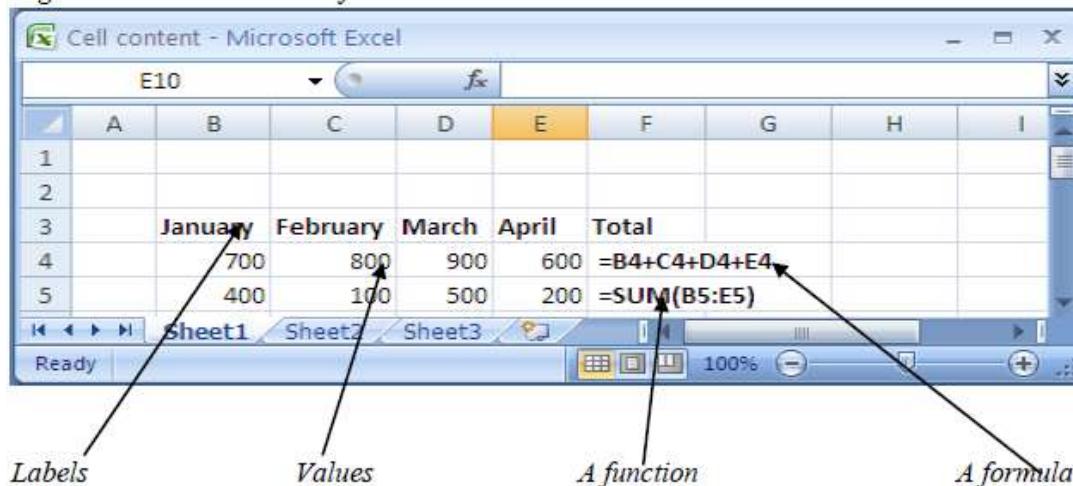
A **Label** provides descriptive information about entries in the spreadsheet. A cell that contains a label cannot be used to perform mathematical calculations.

A **value** is an actual number entered into a cell to be used in calculations. Values can also be the result of calculation.

A **Formula** is an instruction to the program to calculate a number. A formula generally contains cell addresses and one or more arithmetic operators. Formulas must be entered without spaces between the characters.

A **Function** in a preprogrammed formula. Two common functions in Excel are =SUM() and =AVERAGE().

Fig. 8-5: Possible contents of a cell.



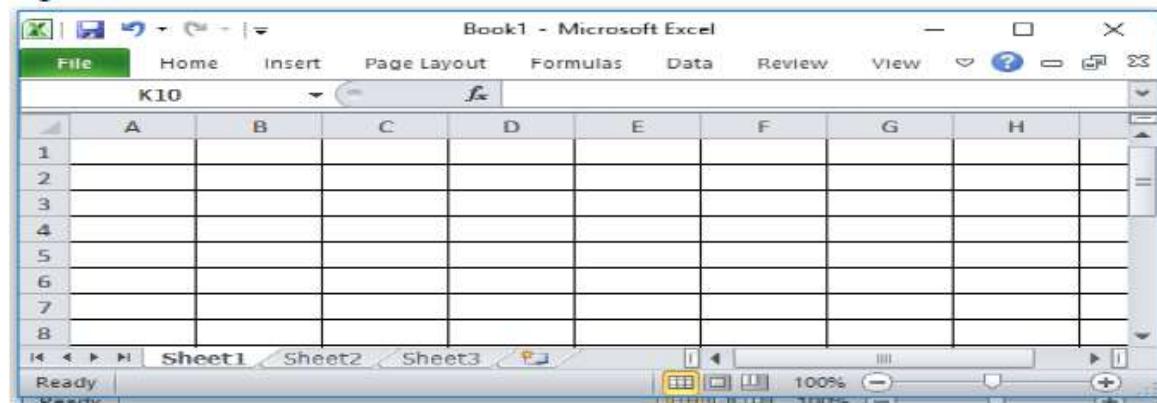
Labels describe the type of data values that follow in a particular row or column. For instance, in Fig. 8-5 above, values 700 and 400 in column B can easily be noticed that they were captured in the month of January. Therefore, failure to fix labels makes values to lose meaning.

The formula =B4+C4+D4+E4 and the function =SUM(B5:E5) are both meant to calculate the total values in row 4 and row 5 respectively.

Excel Workbook

A workbook is a collection of worksheets stored in the same file on disk. Workbook can contain several sheets. Besides worksheets, a workbook can include chartsheets, visual basic modules and macro sheets. A worksheet is a tabular sheet organized in rows and columns on a computer, on which problems are worked. See Fig. 8-6 below:

Fig. 8-6: Shows a workbook with three worksheets



The above workbook (Book2) has three worksheets. Several other sheets can be added within the same workbook. This means, you can have contents in **Sheet1** and other contents in **Sheet2** and **Sheet3**, yet all the contents within all the Sheets are of one file (or workbook). When you want to see the contents of any Sheet you have to click the Sheet name (the sheet tab) for its contents to be shown.

Range of Cells

A range is a group or block of cells in a worksheet that have been selected or highlighted. When cells have been selected they are surrounded by an outline or border. Spreadsheet program can handle data within a range of cells rather than a single cell. To treat data in a group of cells one must select (highlight) the target group of cell range for the Excel program to mark the actual data needed for operation.

Fig. 8-7: Shows highlighted range of cells – B2:D4

A screenshot of the Microsoft Excel application window showing a highlighted range of cells. The cells B2, C2, D2, B3, C3, and D3 are highlighted with a blue selection border. The rest of the cells in the grid are white. The status bar at the bottom right indicates "Ready" and "100%".

	A	B	C	D	E	F	G	H
1	8	45	6	54	76	45	44	
2	66	54	55	64	53	87	77	
3	66	56	67	45	11	34	65	
4	69	22	32	44	35	67	46	
5	58	45	78	56	86	67	65	
6								

The selected cells in Fig. 1-7 above can be referred together as **B2:D4**. To successfully highlight a range of cells as shown in Fig. 1-7 above follow these steps:

1. Select cell **B2** with a left mouse click.
2. Hold down the left mouse button without releasing.
3. Drag up to cell location **D4**.
4. Release your left mouse button once.

Note that if you click anywhere on your worksheet cells, the selected range of cells shall be deselected.

Possible operations to Grouped Cells

Possible operations that MS Excel program may handle over the selected group of data include:

- i) Sorting selected data.
- ii) Creating charts.
- iii) Copy and paste the selected range of cells in a worksheet.
- iv) Cut and paste the selected range of cells in a worksheet.
- v) Deleting the selected range of data in a worksheet.
- vi) Formatting the selected range of cells.

Navigating around the MS-Excel's worksheet

MS-Excel screen is very wide. Only a small section can fit on your screen display. The rest of the worksheet is not seen unless you scroll to see the hidden portions of the worksheet. You can use arrow keys on your computer keyboard to explore your worksheet or use scroll bars seen on the right or bottom sides of your screen.



Using the arrow keys you can move around your worksheet leftward, rightward, upward and downward. You can move the extreme bottom end of your worksheet by holding down the control key and press the downward arrow key at once. The same can be done by holding down the control key and press the arrow key showing the direction of the side you want to move.

Fig. 8-8: Shows the extreme right and bottom ends of a worksheet

	XEX	XKEY	XEZ	XFA	XFB	XFC	XFD
1048574							
1048575							
1048576							

Fig 8-8 above shows both right and bottom end sides of the worksheet. This is the result of holding down **Ctrl + →** and **Ctrl ↓**. The cell **XFD1048576** is now the active cell. An active cell is always surrounded by a thick border.

Order of Cells

If cells are to be listed or arranged in their proper ascending order, then, the first cell should be **A1**, followed by **B1, C1, D1, E1, F1** and so on. In other words, you have to arrange all cell addresses in the first row before you move on to the next row.

Example 8-1

Fig. 8-9: Order of Cells

	A	B	C	D	E	F	G
1	8	45	6	54	76	45	44
2	66	54	55	64	53	87	77
3	66	56	67	45	11	34	65
4	69	22	32	44	35	67	46
5	58	45	78	56	86	67	65

- i. List all numbers according to their cell addresses proper order that lie under the following ranges:
 - a. B2:B4
 - b. C5:C2
 - c. A3:E3
 - d. A4,B5,D2,E4
- ii. List down all numbers following the order of their addresses within the range of:
 - a. B2:C3
 - b. C3:B2
 - c. C2:B3
 - d. B3:C2
- iii. List down all the numbers following the order of their cell addresses within the range of:
 - a. B3:C4, D2:E3
 - b. B2:B3, C3:D4
 - c. C4:D5, F4:E3
 - d. B2:D4, C3:E5

TOPIC NINE

FORMULAS IN MS - EXCEL

In a formula, you need to tell MS-Excel which items to use and which operations to perform on them. To do so, you use *operands* and *operators*.

Operands

The operands in a formula specify the data you want to calculate. An operand can be:

- A constant value you enter in a formula itself (for example, $=9*20$) or in a cell (for example, $=A4*9$).
- A cell address, range address, or range name.
- A worksheet function.

Operators

MS-Excel uses arithmetic operators, logical operators, reference operators, and one text operator.

Table 9-1: Arithmetic Operators

Operator	Explanation
+	Addition
-	Subtraction
*	Multiplication
/	Division
%	Percentage
^	Exponentiation

Table 9-2: Logical Operators

Operator	Explanation
=	Equal to
\diamond	Not equal to
>	Greater than
<	Less than
\geq	Greater than or equal to
\leq	Less than or equal to

Table 9-3: Reference operators

Operator	Explanation
:	Range of continuous cells (For example, B5:D10)
,	The range of non-continuous cells (For example, A1,B4,E5)
[Space]	The cell or range shared by two references. For example, $=SUM(B1:B10\ A5:D6)$ adds the contents of the cells B5 and B6, because the cells are at the intersection of the range B1:B10 and A5:D6.

Example 9- 1

The table below shows the performance of students in Kamoja SS as seen below:

Fig. 9-1: Work of Example 9-1

A screenshot of a Microsoft Excel spreadsheet titled "Senior One Class 2013". The table has 24 rows and 8 columns. The columns are labeled A through H. Row 1 contains the title "Senior One Class 2013". Row 2 contains the header "Assessment Result". Row 3 is empty. Row 4 contains the column headers: NO., First Name, Last Name, Test-1, Test-2, Total, and Average. Rows 5 through 24 contain student data. The "Total" and "Average" columns are empty. The "Test-1" and "Test-2" columns contain numerical values. The "First Name" and "Last Name" columns contain student names. The "NO." column contains student numbers. The "Sheet1" tab is selected at the bottom.

A	B	C	D	E	F	G	H
1	Senior One Class 2013						
2	Assessment Result						
3							
4	NO.	First Name	Last Name	Test-1	Test-2	Total	Average
5	1	Haica	Joyce	78	80		
6	2	Mubiru	Emmanuel	89	89		
7	3	Majembe	Kalima	60	70		
8	4	Najjuma	Joy	80	89		
9	5	Kitimbo	Nancy	68	50		
10	6	Ddumba	James	67	89		
11	7	Mirembe	Noeline	50	87		
12	8	Majawa	Davis	80	77		
13	9	Husein	Hassan	87	77		
14	10	Jomo	Kalmax	70	87		
15	11	Haruna	Musa	56	67		
16	12	Nambi	Dovice	87	70		
17	13	Kassozi	Andrew	56	67		
18	14	Karuma	Kaijja	56	56		
19	15	Kaima	Norah	79	67		
20	16	Loumo	Dorah	57	75		
21	17	Apio	Beatrice	77	87		
22	18	Ouko	Matata	88	66		
23	19	Bakareha	Joana	77	45		
24	20	Gaga	Hamisi	54	77		

Required:

- i. Type your data as seen in the worksheet above.
- ii. Bold the headers.
- iii. Calculate by the use of formulas the total of Test-1 and Test-2 for each student.
- iv. Calculate the average performance for each student.
- v. Save your work as “Your Name - Senior One Class 2013”

Solution

Part – I & II: Typing and Bolding the headers

Procedures

1. Type your work as seen in *Fig. 9-1* above.
2. Bolding the headers you highlight (select) all the cells that contain the labels (headers) i.e. the range A4:G4. See *Fig. 9-2* below:
3. Click Home and then point and click the letter B.

Fig. 9-2: Highlighting and Bolding headers

The screenshot shows a Microsoft Excel spreadsheet titled "Senior One Class 2013". The first four rows are bolded and highlighted in orange. Row 1 contains the title "Senior One Class 2013". Row 2 contains "Assessment Result". Row 3 is empty. Row 4 contains the column headers: NO., First Name, Last Name, Test-1, Test-2, Total, and Average. The "Total" and "Average" columns are also highlighted in orange. The formula bar at the top shows "NO.". The ribbon tabs visible are Home, Insert, Page Layout, Formulas, Data, Review, View, Add-Ins, and a small icon.

1	Senior One Class 2013						
2	Assessment Result						
3							
4	NO.	First Name	Last Name	Test-1	Test-2	Total	Average
5	1	Haica	Joyce	78	80		

Part – III: Calculating the Totals

This time you are to use a formula to add Test – 1 and Test – 2 for each student in the worksheet. We construct the formula based on cell addresses. We are going to start with adding marks for Haica Joyce in row 5, moving down to other students in subsequent rows. You can see that Test-1 and Test-2 for Haica Joyce are located in cell D5 and E5 respectively. Haica Joyce's calculated Total should be in cell F5. Using cell reference, the formula must turn to be $=D5+E5$, where D5 points the value 78 and E5 points the value 80 of Test-1 and Test-2 respectively.

However, all the formulas and functions used in MS-Excel must begin with an equal (=) sign. So, the formula to be typed in cell F5 must be typed as $=D5+E5$. If you ignore the equal (=) sign in either formula or a function, none of them will work.

Procedures

1. Select cell F5 as seen in *Fig-9-1* above.
2. Type the formula $=D5+E5$ in cell F5 as seen in *Fig. 9-3* below.

Fig. 9-3: Shows a formula to calculate Total

The screenshot shows the same Excel spreadsheet as Fig-9-1. In cell F5, the formula $=D5+E5$ is being typed. The formula bar at the top shows "SUM" and the formula $=D5+E5$. The cell F5 is highlighted with a green border. The data in the table remains the same as in Fig-9-1.

1	Senior One Class 2013						
2	Assessment Result						
3							
4	NO.	First Name	Last Name	Test-1	Test-2	Total	Average
5	1	Haica	Joyce	78	80	$=D5+E5$	
6	2	Mubiru	Emmanuel	89	89		

Notice that when you type your formula the referenced cells, D5 and E5, are surrounded by coloured borders. This can help the user to verify the correctness of the referenced cells.

3. Press the Enter key on your keyboard. Notice that the formula won't be seen again after pressing the Enter key. The result of the formula is the one to be seen.
4. Continue with other subsequent cells to have all the Totals of other students calculated i.e. $=D6+E6$, $=D7+E7$, and so on.

Part IV: Calculating the Average

To calculate the average value of Test-1 and Test-2 you also need to construct the formula first. In this case, average is got by having the Total divided by two (number of tests done). To have this formula you still need to use the cell addresses.

The formula for average can therefore be: $=F5/2$ or $=(D5+E5)/2$. The first formula points at the calculated Total value and divide by 2, while the second, points at Test-1 and Test-2 values, add them and divide by 2 directly.

Procedures

1. Point and click cell **G5**.
2. Type the formula $=F5/2$ as seen in Fig. 9-4 below.

Fig. 9-4: Shows a formula to calculate the average

	SUM		=F5/2				
1	A	B	C	D	E	F	G
2	Senior One Class 2013						
3	Assessment Result						
4	NO.	First Name	Last Name	Test-1	Test-2	Total	Average
5	1	Haica	Joyce	78	80	158	$=F5/2$
6	2	Mubiru	Emmanuel	89	89	178	

3. Press the **Enter** key on your keyboard.
4. Continue typing formulas that can calculate average values for other students in subsequent cells i.e. $=F6/2$, $F7/2$ and so on.

You will learn in later chapters on how to type a formula once and copy it to other cells. For now you can just type them for mastery of cell addresses.

Part V: Saving the work

One of the most important tasks to do is to save your work before shutting down your computer. You have to create a file on your computer hard disk and save it for future reference. Unsaved work won't be recovered when you switch off the power.

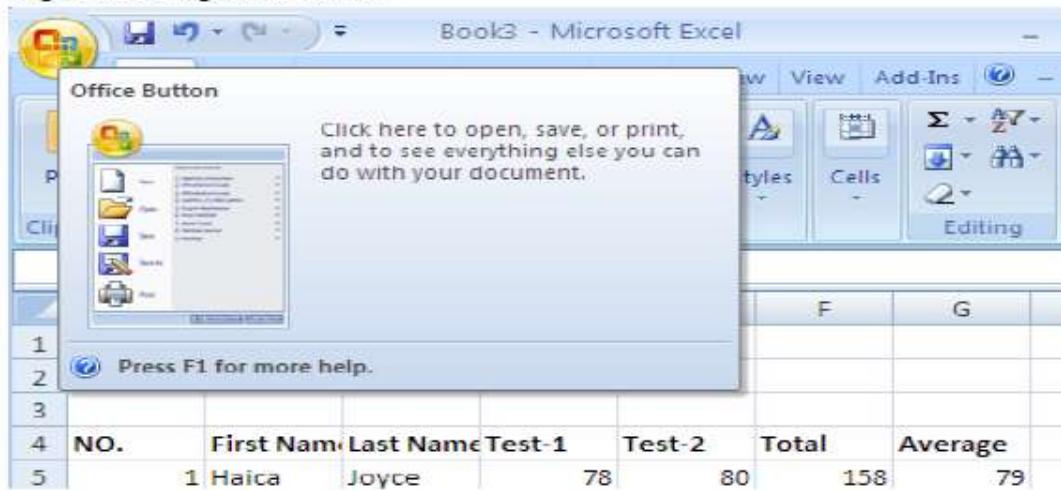
Computer files can be saved on other storage media like flash disks, floppy disks, compact disks (CDs) or external hard disks. These storage devices are called flexible storages because one can easily save his work and move with them, possibly use them elsewhere.

Procedures



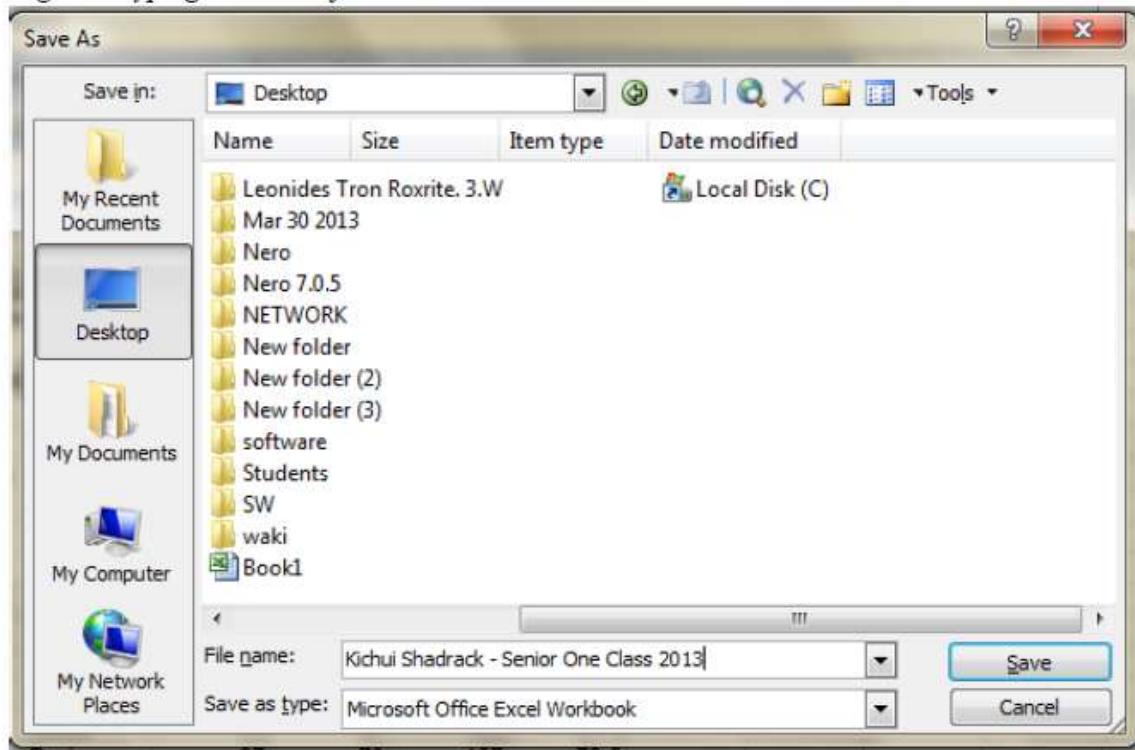
1. Point and click the **Office Button** from the menu bar. See Fig. 9-5 below.
2. Point and click Save with your left mouse button. The Save As dialog box shall be displayed as seen in Fig. 9-6

Fig. 9-5: Saving the document



3. Point and click Desktop button on the left side of Fig. 2-6 below.

Fig. 2-6: Typing the name of the File



4. Type the name of your file using your names and the name of the class e.g. "**Kichui Shadrack – senior One Class 2013**" as your file name and Click the Save button at the bottom right of Fig. 2-6 above.

Example 9-2

The worksheet contains the Arusha Shopping Center's price increase.

Fig. 9-7: Arusha Shopping Center

	A	B	C	D	E	F
1	Arusha Shopping Center					
2						
3	No of Item	Item Name	Old Price	New Price	Increased Amount	%Increased
4	1	Bar of Soap	3000	4000		
5	2	Blue Band	4500	5000		
6	3	Tooth Paste	3800	4000		
7	4	Long Ruler	2200	2700		
8	5	Counter Book	4700	5200		
9	6	Mathematical Set	1500	2100		
10	7	Black Currant	8000	12000		
11	8	Powdered Milk	10000	12500		
12	9	Babby Soap	3400	4000		
13	10	School Tshirt	21000	25000		
14	11	Computer Mouse	15000	20000		
15	12	Toy Phone	4000	5000		
16	13	Electric Circuit	12000	13000		
17	14	Apple Fruit	1000	1200		
18	15	Mineral Water	1200	1200		
19	16	Padlock	15000	21000		
20	17	Cooking oil	6000	7000		
21	18	Kakira Sugar	3000	4000		
22	19	Open Shoes	20000	23000		
23	20	Rat Trap	5000	7000		

Required

- i. Enter the data as seen in the worksheet table above.
- ii. Use a formula to calculate the increased price amount.
- iii. Use the formula to calculate the percentage of the price increased in column F.
- iv. Bold all the calculated figures of the increased amount in Column E.
- v. Shade Figures of the Increased Amount in column E with a red colour.
- vi. Save your work as “Your Name – Arusha”

Solution

Part I: Entering Data

Open the Spreadsheet worksheet and type the work in *Fig. 9-7* as done in the previous examples. Ensure that accuracy is maintained.

Part II: Calculating the increased amount.

To calculate the increased amount you subtract the old price from the new price. Cell references are going to be used to construct formulas. Our calculations need to start with the very first item, Bar of Soap, in the table.

From the table, the Bar of soap's Old Price and New Price are located in cell C4 and D4 respectively. So, in cell E4, you type =D4-C4 and then press the Enter key. See *Fig. 9-8* below.

Fig. 9-8: Calculating the Increased Amount

	A	B	C	D	E	F
1	Arusha Shopping Center					
2						
3	No of Item	Item Name	Old Price	New Price	Increased Amount	%Increased
4	1	Bar of Soap	3000	4000	=D4-C4	
5	2	Blue Band	4500	5000		

Proceed to complete calculating the increased amount for all the rest items.

Part III: Calculating the %Increase

In mathematics you calculate the %Increase by having **Increased Amount** divide by **Old Price** times 100 i.e.

$$\% \text{Increase} = \frac{\text{Increased Amount}}{\text{Old Price}} \times 100$$

But, our **Old Price** and **New Price** of the first item (Bar of Soap) are located in cell **C4** and **D4** respectively. **E4** contains the calculated Increased Amount of the first item.

So, the formula to be typed in cell **F4** must be: $=E4/C4*100$. See Fig. 9-9 below. Remember that every formula or a function must begin with an equal (=) sign.

Fig. 9-9: Calculating the percentage increase

	SUM =E4/C4*100					
	A	B	C	D	E	F
1	Arusha Shopping Center					
2						
3	No of Item	Item Name	Old Price	New Price	Increased Amount	%Increased
4	1	Bar of Soap	3000	4000	1000	=E4/C4*100
5	2	Blue Band	4500	5000	500	
6	3	Tooth Paste	3800	4000	200	
7	4	Long Ruler	2200	2700	500	
8	5	Counter Book	4700	5200	500	
9	6	Mathematical Set	1500	2100	600	

You press the Enter key to see the final result. Thereafter, you type the formulas for the subsequent items to calculate the percentage increase i.e. $=E5/C5*100$, $=E6/C6*100$ and so on. Note that the arithmetic operation for multiplications is the star (*) sign.

Save your work following the procedures of the previous examples.

Example 9-3

The figure below shows the monthly salary of Copper Miners in Zambia. The company gives the miners 20% Food allowance from their Basic Salary. The Taxing Body of Zambia also imposes 12% tax from Basic salary of the miners.

Fig. 9-10: Use of Percentage (%) Operator

	A	B	C	D	E	F	G	H	I
1	Zambia Mining Company								
2									
3	NO	LASTNAME	FIRSTNAME	DESCRIPTION	BASIC SALARY	ALLOWANCE	GROSS PAY	TAX	NET PAY
4	1	Mahoga	James	Manager	1000000				
5	2	Banda	Maige	Miner	500000				
6	3	Chiluba	Tom	Accountant	700000				
7	4	Kaunda	Julius	Miner	400000				
8	5	Membe	Barijje	Miner	450000				
9	6	Mwaka	Makale	Miner	490000				
10	7	Mwijasu	Yusuph	Miner	510000				
11	8	Uhoka	Themy	Miner	400000				
12	9	Mimi	Joyce	Accountant	78000				
13	10	Mahoka	Brian	Watchman	350000				
14	11	Kiwala	Norah	Senior Manager	1600000				
15	12	Gaga	Haruna	Miner	500000				
16	13	Mwanaula	Kahemba	Miner	500000				
17	14	Migiro	Mary	Miner	500000				
18	15	Halega	Hellen	Accountant	800000				
19	16	Kalema	Jerome	Miner	450000				
20	17	Mandala	Katumba	Miner	460000				
21	18	Mugabe	Krima	Miner	530000				
22	19	Mitama	Talca	Miner	300000				
23	20	Farija	Mercy	Miner	390000				

Required:

- i) Use word wrap to format long headers
- ii) Use formulas to calculate the monthly allowance for each employee in the above table.
- iii) Construct a formula to calculate Gross Pay in column G for each and every worker.
- iv) Use a formula to calculate Tax amount imposed to each and every worker in column H.
- v) Calculate the Net Pay for all workers.
- vi) Save your work as “Your Names – Zambia Miners”

Example 9-3: Solution

Part I

Part one is to format lengthy headers that cannot fit properly in the cell.

Procedures

1. Highlight all the cells that you want to have their content to be word wrapped i.e. the range of C3:G3. See Fig. 9-11 below:

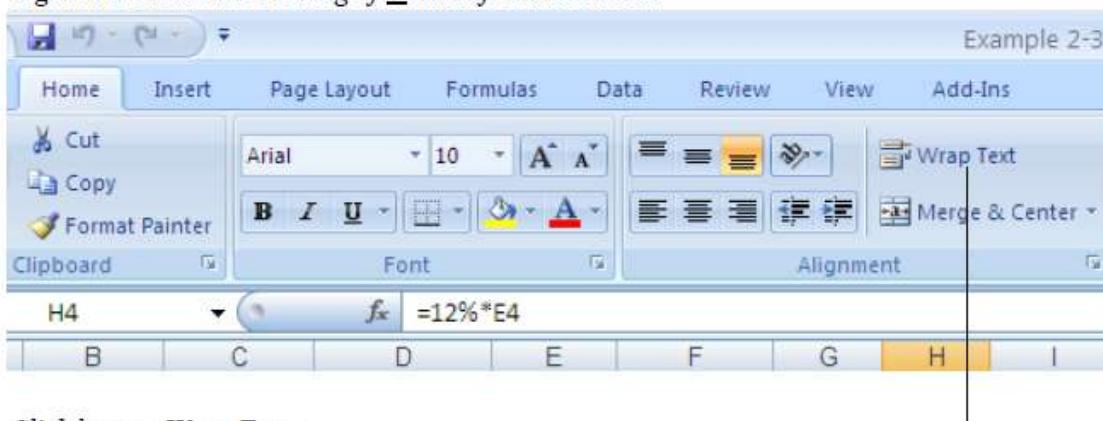
Fig. 9-11: Highlighted cells for word wrapping.

	C3			FIRSTNAME					
1	Zambia Mining Company								
2									
3	NO	LASTNAME	FIRSTNAME	DESCRIPTION	BASIC SALARY	ALLOWANCE	GROSS PAY	TAX	NET
4	1	Mahoga	James	Manager	1000000	200000	1200000	120000	1080000

You will notice that cell C3 is selected but does not show the highlight. Usually the first cell that you begin to highlight does not show the highlight but it's selected. Point and click Home from the menu bar.

2. Point and click Wrap Text seen in Fig. 9-12 below:

Fig. 9-12: Shows the Clicking of Format from menu bar.



Part II: Monthly Allowance

From the above question, monthly allowance for each miner is to be calculated from the Basic Salary which is 20%.

Therefore,

$$\text{Allowance} = 20/100 * \text{Basic Salary}.$$

But, in MS-Excel formulas, we use cell references. In cell F4 as seen in Fig. 9-13 below type =20%*E4. Remember that percentage (%) sign is an arithmetic operator in MS-Excel. When you type a number in a cell succeeded by % sign, like 20%, means 20/100 in MS-Excel. See Fig. 9-13 below:

Fig. 9-13: Allowance from Basic Salary

	A	B	C	D	E	F	G	H
1	Zambia	Mining	Company					
2								
3	NO	LASTNAME	FIRSTNAME	DESCRIPTION	BASIC SA	ALLOWANCE	GROSS	TAX
4	1	Mahoga	James	Manager	1000000	=20%*E4		
5	2	Banda	Maige	Miner	500000			

You can now proceed to other subsequent rows to have the other workers' allowance calculated.

Part III: Calculating the Gross Pay

Gross pay is Total of all payments that you receive from the organization. In this case, workers get their Basic Salary and 20% food allowance. When the two payments are added you get what we call Gross pay.

Therefore,

$$\text{Gross pay} = \text{Basic Salary} + \text{Allowance}.$$

In cell G4 type $=E4+F4$ as seen in Fig. 9-14 below:

Fig. 9-14: Formula to Calculate Gross pay

	A	B	C	D	E	F	G	H	I
1	Zambia	Mining	Company						
2									
3	NO	LASTNAME	FIRSTNAME	DESCRIPTION	BASIC SA	ALLOWANCE	GROSS PAY	NET TAX PAY	
4	1	Mahoga	James	Manager	1000000	200000	=E4+F4		
5	2	Banda	Maige	Miner	500000				

Part IV: Calculating the Tax

Tax is what is taken away from your income. In this case, the tax is imposed to Basic Salary only at 12%.

Therefore,

$$\text{Tax} = 12/100 * \text{Basic Salary}$$

The formula to be typed in cell H4 should be $=12\%*E4$. See Fig. 2-15 below:

Fig. 9-15: Shows a formula to calculate Tax

	A	B	C	D	E	F	G	H	I
1	Zambia Mining Company								
2									
3	NO	LASTNAME	FIRSTNAME	DESCRIPTION	BASIC SALARY		GROSS PAY	NET PAY	
4	1	Mahoga	James	Manager	1000000	200000	1200000	=12%*E4	

Part V: Calculating the Net Pay

Net pay is the actual amount of money the employees take home after all deductions like taxes are fulfilled. In this case payments are made of Basic pay and allowances creating the Gross Pay.

Therefore,

$$\text{Net Pay} = \text{Gross Pay} - \text{Tax}$$

The formula to be typed in cell I4 should be =G4-H4. See Fig. 9-16 below:

Fig. 9-16: Calculating the Net Pay.

	A	B	C	D	E	F	G	H	I
1	Zambia Mining Company								
2									
3	NO	LASTNAME	FIRSTNAME	DESCRIPTION	BASIC SALARY		GROSS PAY	NET PAY	
4	1	Mahoga	James	Manager	1000000	200000	1200000	=G4-H4	

Example 9-4

Traders in Jinja Town have decided to have the price of all their products increased by 35% to cope up with the operational costs. They also agreed to give a discount of 7% to all products if a customer takes many products.

Fig. 9-17:

	A	B	C	D	E	F	G
2	NO.	Product (in Kg)	Old Price	New Price	Final Price		
3	4	1 Sugar	3000				
4	5	2 Maize	2000				
5	6	3 Soya Beans	4000				
6	7	4 Maize flour no-1	3400				
7	8	5 Maize flour no-2	2500				
8	9	6 Maize flour no-3	2000				
9	10	7 Wheat flour	5000				
10	11	8 Millet flour	2500				
11	12	9 Ground nuts	5600				
12	13	10 Sorghum flour	4000				
13	14	11 Corns	3400				
14	15	12 Sim sim	4800				
15	16	13 Super rice	4000				
16	17	14 Kaliro rice	3200				
17	18	15 Ufuta	6000				
18	19	16 Beans	3000				
19	20	17 Tilda rice	3800				
20	21	18 Irish Potatoes	2000				
21	22	19 Sweet Potatoes	2300				
22	23	20 Cassava flour	2300				

Required:

- i) Open the MS-Excel program and type the work in Fig. 9-17 above.
- ii) Calculate the New Price for each and every product in the above worksheet.
- iii) Calculate the Final Price if Traders decide to give a customer a discount of 7% calculated from the New Price.
- iv) In column F, find the difference between New Price and Final Price.
- v) Save your work as “Your Names – Jinja Traders”

Example 9-4: Solution

Part I: Type your work as seen in Fig. 2-17

Part II: Calculating the New Price – 35% increase from Old Price.

We are asked to calculate the new price basing on 35% increase of Old Price. To do this, you need to construct a formula to calculate the amount increased only. Thereafter, you add the Old Price and Increased amount.

Firstly,

$$\text{Increased Amount} = 35/100 * \text{Old Price.}$$

Secondly,

$$\text{New Price} = \text{Increased Amount} + \text{Old Price}$$

Thus:

$$\boxed{\text{New Price} = 35/100 * \text{Old Price} + \text{Old Price}}$$

Therefore, the formula to calculate New Price to be typed in cell D4 is $=20\% * C4 + C4$.

However, you can instead calculate New Price by taking $(100\% + 35\%) * \text{Old Price}$. This can be a shortcut. The formula will change to $=135\% * C4$ which, if used in cell D4 it will also produce the same results.

See Fig 9-18 and Fig. 9-19 that demonstrate the two alternative formulas.

Fig. 9-18: The formula to calculate New Price.

	A	B	C	D	E
2					
3	NO.	Product (in Kg)	Old Price	New Price	Final Price
4	1	Sugar	3000	$=35\% * C4 + C4$	

OR

Fig. 9-19: Alternative formula of one in Fig. 9-18

	A	B	C	D	E
2					
3	NO.	Product (in Kg)	Old Price	New Price	Final Price
4	1	Sugar	3000	$=135\% * C4$	

Note that, both formulas in Fig. 9-18 and Fig. 9-19 produce the same result.

Part III: Calculating the Final Price

Given the question in Example 9-4, Final Price is got after deducting the discount of 7% from New Price of which, the discount is also calculated from the New Price.

The formula to calculate discount can be:

$$\text{Discount} = 7/100 * \text{New Price}$$

And,

$$\text{Final Price} = \text{New Price} - \text{Discount}$$

Whereby

$$\text{Final Price} = \text{New Price} - 7/100 * \text{New Price}$$

It is also possible to have final price by taking $(100\% - 7\%)$ times the New Price to achieve the same answer i.e. $\text{Final Price} = 93\% * \text{New Price}$

In the worksheet, you will then type: $=D4-7\%*D4$ or $=93\%*D4$ in cell E4. See Fig. 9-20 and Fig. 9-21 below:

Fig. 9-20: Calculating final price.

SUM		$=D4-(7\%*D4)$			
	A	B	C	D	
2					
3	NO.	Product (in Kg)	Old Price	New Price	Final Price
4	1	Sugar	3000	4050	$=D4-(7\%*D4)$

OR

Fig.9-21: Alternative formula of one in Fig. 9-20

SUM		$=97\%*D4$			
	A	B	C	D	
2					
3	NO.	Product (in Kg)	Old Price	New Price	Final Price
4	1	Sugar	3000	4050	$=97\%*D4$

The two formulas in Fig. 9-20 and Fig. 9-21 are meant to produce the same answer. Always use the one you are comfortable with.

Part IV: Calculating the difference of Final Price and New Price.

The difference should be New Price minus Final Price. In cell F4 you type $=D4-E4$ as seen in Fig. 9-22 below.

Fig. 9-22: Formula to calculate the difference between New Price and Final Price

SUM		$=D4-E4$			
	A	B	C	D	E
2					
3	NO.	Product (in Kg)	Old Price	New Price	Final Price
4	1	Sugar	3000	4050	$=D4-E4$

Example 9-5

You are given the equations $Y = X^2$, $Y=X^3$, $Y=X^4$. Use MS-Excel to compute the values of Y using the given values of X.

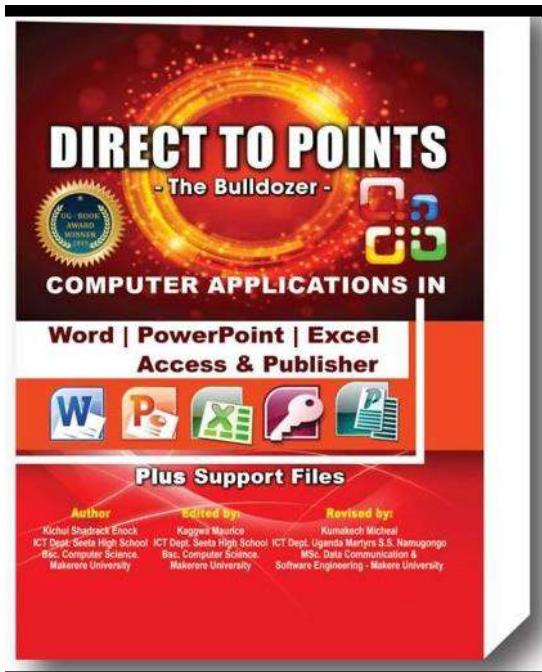
Fig. 9-23: Shows Values of X

B3					
	A	B	C	D	E
1	The equation $Y = X^2$, $Y=X^3$, $Y=X^4$				
2	X	Y1	Y2	Y3	
3	7				
4	6				
5	5				
6	4				
7	3				
8	2				
9	1				
10	0				
11	-1				
12	-2				
13	-3				
14	-4				
15	-5				
16	-6				
17	-7				

Part Four

Microsoft Access

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TOPIC SIXTEEN

INTRODUCTION TO DATABASE

What is Database?

- A “Database” is an organized collection of related data files.
- Data are unevaluated facts and figures that can’t portray any meaning.
- The most important non – human asset of a company is its data.
- Typical data pertains to customers, suppliers, employees, and sales
- Information is processed data that can be used for decision making, e.g. a report or sorted file.
- Examples of simple database in our day –to- day life is when we use phone book, looking in a library’s card catalog, or take a file out of a file cabinet.
- Unfortunately, as the amount of data increases, creating, storing, changing, sorting, and retrieving data become overwhelming tasks.

Database Management Systems (DBMS)

- A DBMS is a set of programs that create, manage, protect, and provide access to the data.
- DBMS organizes data in a way that allows fast and easy access to the data.
- With a DBMS you can create, modify, store, and retrieve data in a variety of ways.

Relational Database

The relational database relates, or connects, data in different files through the use of a key field, or common data element. Good examples of relational database are Paradox and MS Access.

Fields, Records, and Files

In a relational database, a table is called a “relation”. Rows are called a tuples, records, or entities. Columns are called attributes or fields.

Table - 1

LAST NAME	FIRST NAME	STREET	CITY	ZIPCODE	STATE
AKERS	TED	4202 Lemon Ave	OARLAND	94709	CA
BROWN	JOY	345 WILLOW RD	PALOALTO	94025	CA
CHANDLER	SUSAN	4572 COLLEGE AVE	BERKELEY	94705	CA
JAMES	KEN	822 YORK ST	SAN FRANSISCO	94103	CA
MEAD	ANN	8 ROCKLYN AVE	TIBURON	94903	CA
KELVIN	MARY	611 ADAMS AVE	QUINCY	94804	CA

- Notice that each box in the *table-1* above contains a piece of data, known as a **data item**. Each column of the table represents a **field**, or **attribute**.
- The specific data items may vary, but each field contains the same type of data, for example, **first names** or **Zip codes**.
- In a given relation there is a fixed number of fields. All the data in any given row is called a record, or a tuple.
- A **relation** or a **table** is also called a **file**.
- A **field** is a complete unit of information, e.g Address field.
- A **record** is a combination of related fields, e.g. customer’s record, student’s record, etc.
- A **file** is a combination of related records, e.g. customers file.

Primary key

The primary key of a relational table is a key that uniquely identifies each record in the table. e.g. social security number, account number or admission number, etc.

Primary keys may consist of a single attribute or multiple attributes in combination.

Data Types

Tables in database need to be designed in consideration of type of data to be stored. If a record (a combination of related fields) is to be entered it's obvious that different fields may have different data types.

Common data types used in Microsoft Office Access include:

- i) **Text** – Used for text or combinations of text and numbers, such as addresses, or for numbers that don't require calculations, such as phone numbers, or postal code.
- ii) **Memo** – used for lengthy text and numbers, such as notes or descriptions.
- iii) **Number** – Used for data to be included in mathematical calculations such as number of items.
- iv) **Date/Time** – Used for only dates and time data format such as Date of birth or purchasing date.
- v) **Currency** – Used for values with monetary units such as amount in dollars, or amount in pound.
- vi) **AutoNumber** – Used for unique sequential or random numbers that are automatically inserted when a record is added.
- vii) **Yes/No** – Used for Boolean values, data that can be only one of two possible values, such as Yes/No, True/False, On/Off. Null values are not allowed.
- viii) **OLE Object** - Used for OLE objects such as pictures, sounds that were created in other programs using the OLE protocol.
- ix) **Hypertext** – It is used to store the location of a file on your computer, a local network, or the World Wide Web.
- x) **Lookup Wizard** – It is a feature that allows the creation of dropdown list of values that can be read from another table. This dropdown list is also known as combo box.

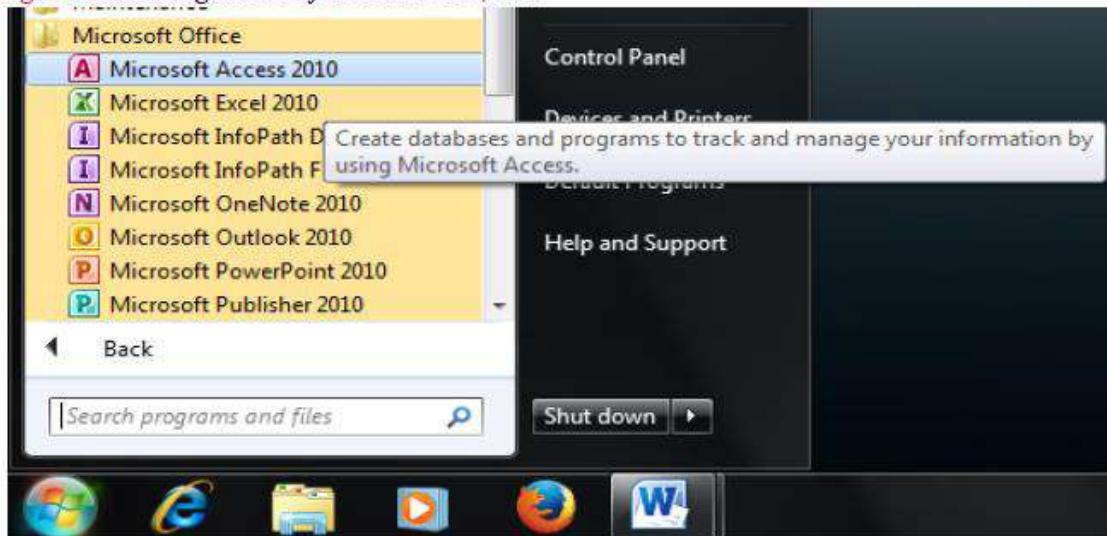
Creating Database

Several DBMS exist that can be used to create database. However, Microsoft Access is going to be used throughout this book.

Opening MS-Access

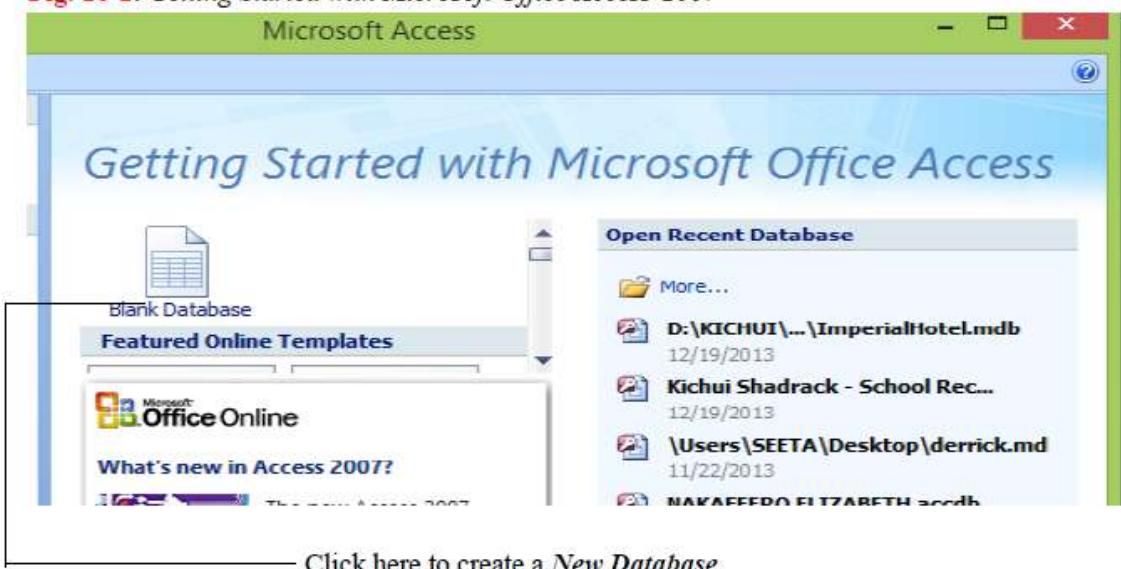
1. Click Start/All Programs/Microsoft Office
2. Click Microsoft Office Access 2007|2010. See **Fig-16-1** below:

Fig. 16-1: Starting Microsoft Access 2007|2010



You should be able to see the dialog box as seen in **Fig-16-2** below

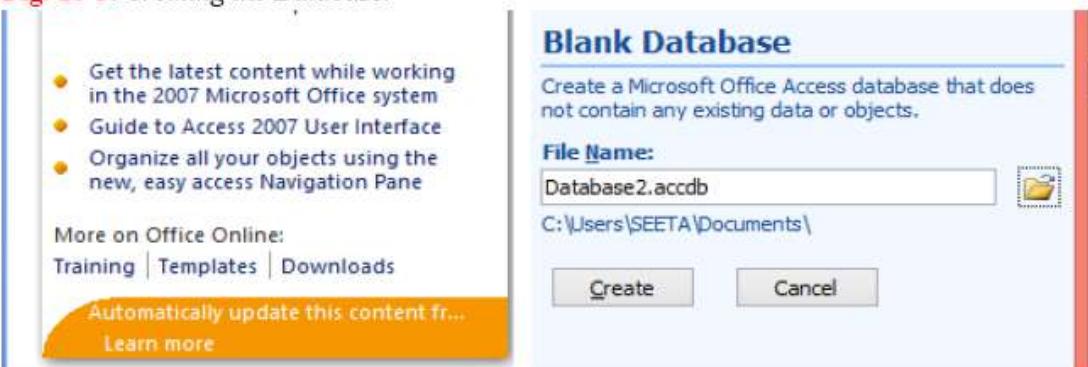
Fig. 16-2: Getting Started with Microsoft Office Access-2007



3. Click **Blank Database** as seen in **Fig. 16-2** above.

You will see a new display as seen in **Fig. 16-3** below allowing you to type the name of the new database on File Name:

Fig. 16-3: Creating the Database.



4. Erase (delete) the default database name "Database1.accdb" that you see in **Fig. 16-3** above. Type the name of the new database as **Kichui Shadrack Enock – School Record**. See **Fig. 16-4** below.

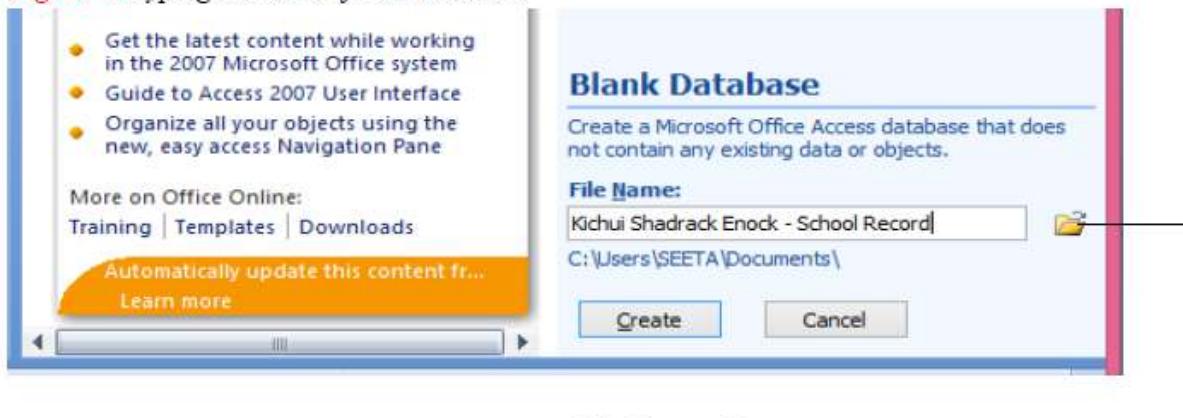
Before you click **Create**, it is important to browse around and see which folder to be used to store your newly created database.

Students should always save their newly created databases on the **desktop**. It will be easier for them to burn or transfer their work on the **CD-RW or Flash disk**.

Desktop allows files and folders to be viewed on top of your screen display the moment you open your computer.

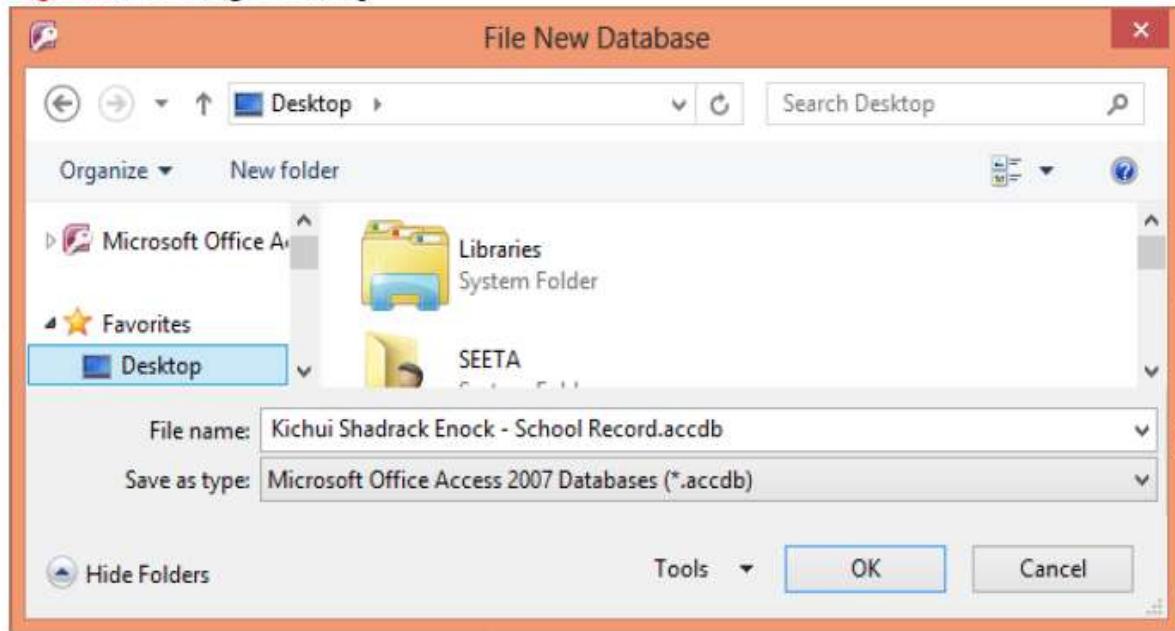
5. Click **Browse** button found in **Fig. 16-4** below to determine the folder to store your database.

Fig. 16-4: Typing the name of New Database



6. Click Desktop as seen in **Fig. 16-5** below to have your file (database name) saved on your desktop.
Note that if you click Create directly as seen in **Fig. 16-4** above, your file will be saved on the default folder namely Documents.

Fig. 16-5: Browsing to Desktop



7. Click Ok graphic button in **Fig. 16-5** above. Notice that the folder Documents has now changed to Desktop. See **Fig. 16-6** below.
8. Click Create to create Kichui Shadrack Enock – School Record database as seen in **Fig. 16-6** below.

Fig. 16-6: Saving File on Desktop

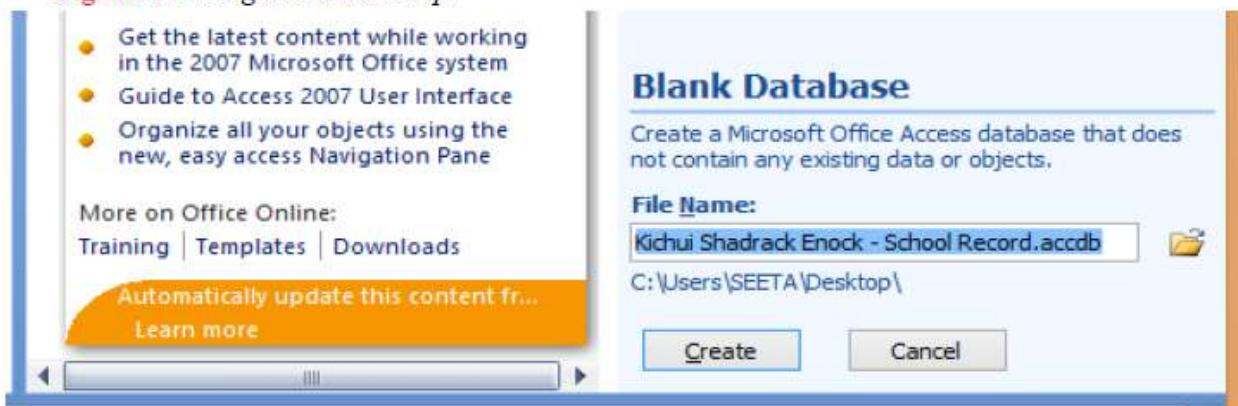
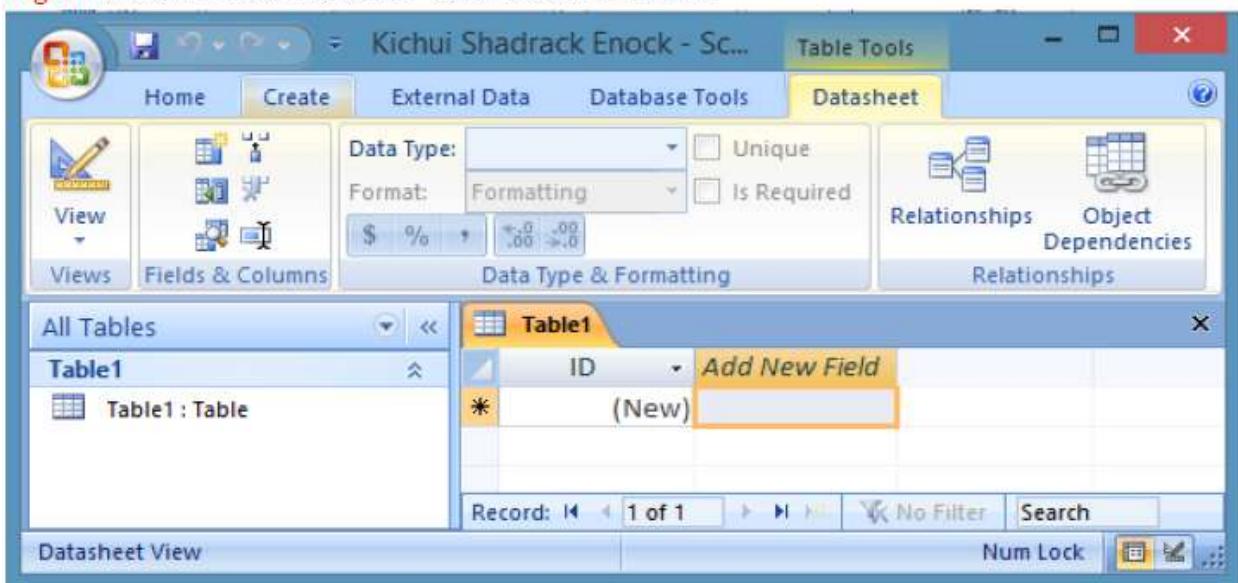


Fig. 16-7: Kichui Shadrack Enock – School Record Database



Database Objects

A database is composed of objects such as tables, queries, forms, reports, pages, macros, and modules. The objects are designed and stored within a database.

Kichui Shadrack Enock - School Record, the database you have just created can potentially have many related tables such as Students' Records, Teachers' Records, Books' Records, etc. Many queries, forms, reports and so on can also be created.

Designing a Table

Database tables are quite different from spreadsheet worksheet where the former gives you a ready organized table to enter the data. The latter, doesn't provide a readymade table for you. Instead, you have to design the table using database facilities before entering your data.

Let's now create a table called *Students Records* which will be used to store records of all students in the school. The structure of the table to be designed is described by the type of data fields to be included in your table.

Table 16-2 contains the structure of the table to be designed.

Table 16-2 The structure of *Students Records* table

Field Name	Data Type	Description
Adm No	<i>Text</i>	Student's admission number in the school
FirstName	<i>Text</i>	Student's first name
LastName	<i>Text</i>	Student's last name
DateOfBirth	<i>Date/Time</i>	Student's Date of birth
Class	<i>Number</i>	Student's year of study
FeePaid	<i>Currency</i>	Student's amount of fees paid

To create the above table within the newly created database i.e. *Kichui Shadrack Enock – School Record* seen in **Fig. 16-7** above, follow these steps:

9. Point and click **Create** on your left mouse button as seen in **Fig. 16-8** below. You will realize a change on your upper pane as seen in **Fig. 16-9** below.
10. Click **Table Design** to open the new blank table object in design view. See Fig. 1-10 below.
11. Type **AdmNo** in **Field Name** column of **Fig. 16-10**.
12. Press the **Tab** key on the left side of your keyboard to move the cursor on the **Data Type** column. You can also use the left mouse button to click.
13. Click the tiny arrow on the right of **Data Type** column of **Fig. 1-10** to dropdown the list of data types. Select **Text** data type.

Fig. 16-8: Creating a Table in Design View



Fig. 16-9: Showing several Database Objects

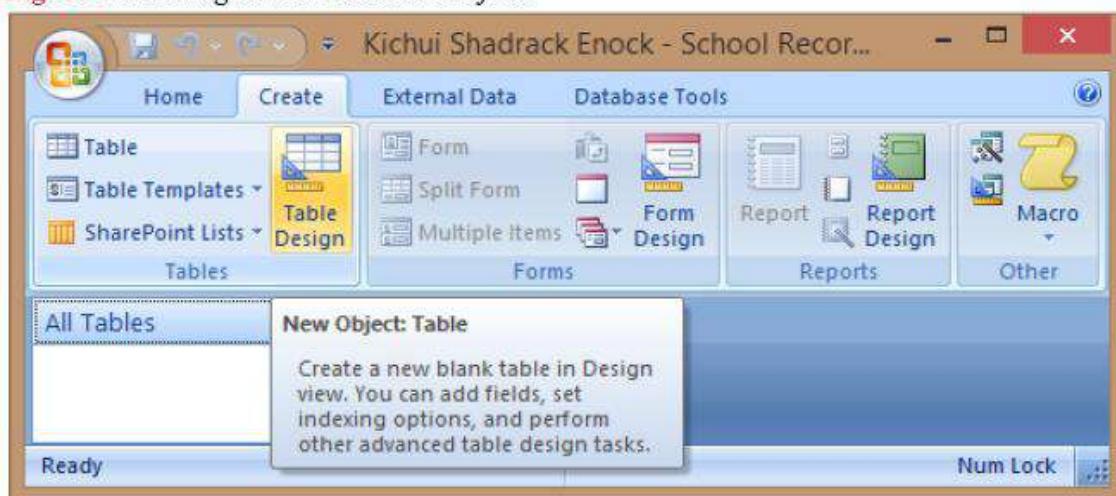
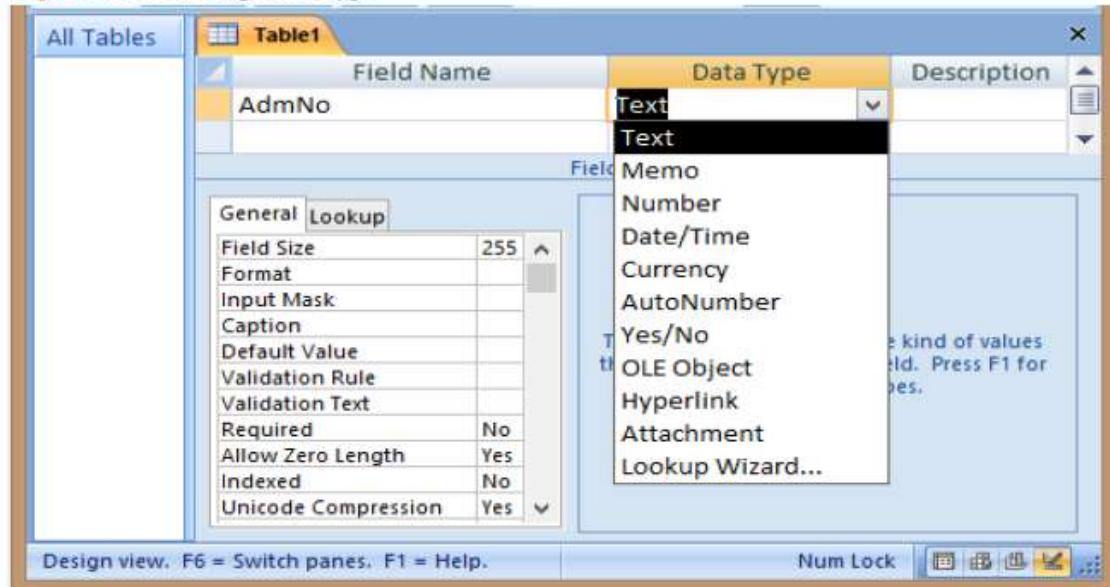
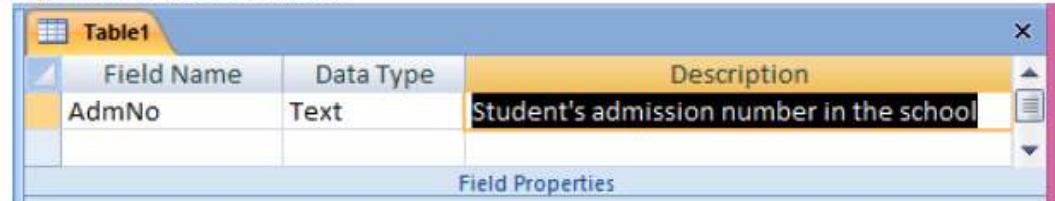


Fig. 16-10: Selecting Data Type



14. Press the Tab key again to position the cursor on the Description column. Type: *Student's admission number in the school*. See Fig. 16-11 below.

Fig. 16-11: Field Description



15. Continue creating other fields as shown in Table 16-2 above. You should be able to have a complete table in design as seen in Fig. 16-12 below.

Fig. 16-12: Complete Table Design.

Field Name	Data Type	Description
AdmNo	Text	Student's admission number in the school
FirstName	Text	Student's first name
LastName	Text	Student's last name
DateOfBirth	Date/Time	Student's Date of birth
Class	Number	Student's year of study
FeePaid	Currency	Student's amount of fee paid

16. Place the cursor on AdmNo field name and click Design from the menu bar as seen in Fig. 16-13.
17. Click Primary Key button to make the AdmNo field name the primary key, the key that will uniquely identify the record. See Fig. 16-13 below.

Fig. 16-13: Making AdmNo the Primary key field.

Field Name	Data Type	Description
AdmNo	Text	Student's admission number in the school
FirstName	Text	Student's first name

You can alternatively place the cursor on **AdmNo** and click the right mouse button the select **Primary Key** to make **AdmNo** the primary key.

Making the **AdmNo** field to be the primary key means that this field shall only accept unique values to be stored in the table. No two or more students shall be accepted to have the same admission number.

Other fields like **FirstName** or **Class** cannot be made the *primary key* because it is possible for the students to share their first name, last name, class and so on.

18. To save your table, click the **Save** button as seen in Fig. 16-14. On **Save As?** dialog box type your table name as: **Students Records** and Click **Ok**.

Fig. 16-14: Saving the Table.

Save As

Table Name:
Students Records

OK Cancel

Click here to Save your table.

Notice that the default table name **Table1** is now replaced with **Students Records** as the name of your created table. You should also remember that **Students Record** is a table created within a database called **Kichui Shadrack Enock – School Record**.

Entering data in the Table

After finishing the design of the table, entering data is the next step. You need to view the interface of the table that can enable you to enter the data.

To view your table while in design view you simply click the View button on the upper left side of Fig. 16-14 above. You will see a table ready for you to enter your data. See Fig. 16-15 below.

Fig. 16-15: Table in Datasheet View. Data can be Entered from here.

The screenshot shows the Microsoft Access Datasheet View for a table named 'Students Records'. The table has six columns: AdmNo, FirstName, LastName, DateOfBirth, Class, and FeePaid. The first row is highlighted in orange, indicating it is the current record. The status bar at the bottom shows 'Record: 1 of 1'.

AdmNo	FirstName	LastName	DateOfBirth	Class	FeePaid

After entering your data you will have your table looking like the one in Fig. 16-16 below:

Fig. 16-16: The table showing the complete data entry.

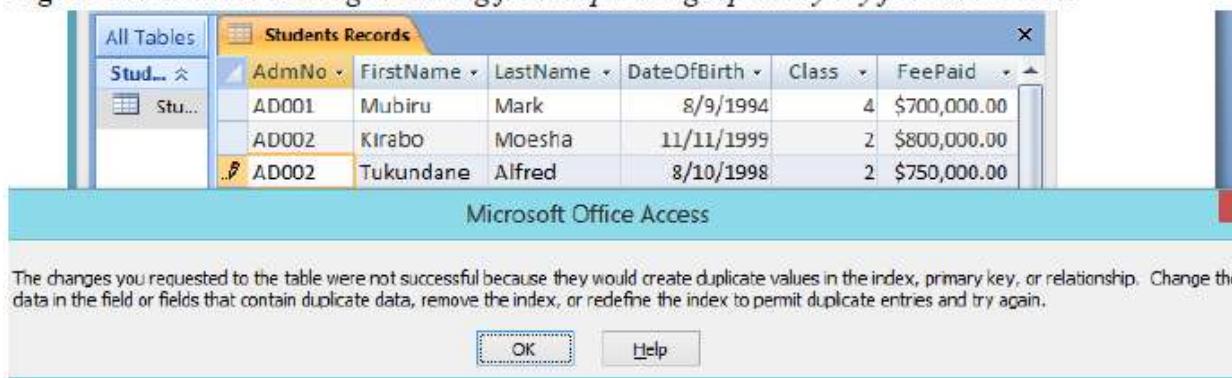
The screenshot shows the Microsoft Access Datasheet View for the 'Students Records' table after data entry. The table now contains 15 records, each with unique values in all fields. The last record, AD015, is highlighted in orange. The status bar at the bottom shows 'Record: 15 of 15'.

AdmNo	FirstName	LastName	DateOfBirth	Class	FeePaid
AD001	Mubiru	Mark	8/9/1994	4	\$700,000.00
AD002	Kirabo	Moesha	11/11/1999	2	\$800,000.00
AD003	Tukundane	Alfred	8/10/1998	2	\$750,000.00
AD004	Mulindwa	John	9/2/1997	3	\$790,000.00
AD005	Mshana	Juma	2/3/1996	5	\$690,000.00
AD006	Marandu	Paul	12/11/1995	6	\$700,000.00
AD007	Waweru	Ann	3/9/1994	6	\$590,000.00
AD008	Yuwieri	Daudi	4/8/1997	2	\$600,000.00
AD009	Gwokyalya	Christine	4/12/1999	2	\$800,000.00
AD010	Olega	Mathew	1/6/1999	2	\$780,000.00
AD011	Nabukenya	Lucia	6/8/1997	4	\$760,000.00
AD012	Ssemwezi	Danis	11/12/1998	4	\$800,000.00
AD013	Auma	Mercy	12/11/1998	2	\$800,000.00
AD014	Bizimana	Luke	5/11/1996	5	\$750,000.00
AD015	Maeda	Julius	7/9/1997	4	\$670,000.00

Note

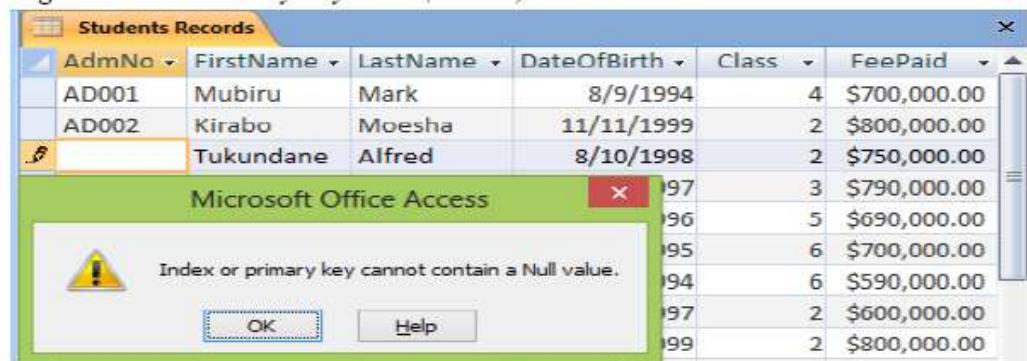
1. If you duplicate values appearing in AdmNo (the primary key) field e.g. changing the value AD003 to AD002, you will receive an error message when you move the cursor to the next record as seen in Fig.16-17 below:

Fig. 16-17: An Error Message resulting from duplicating a primary key field in the table



- The primary key field cannot be null (without any value). If you attempt to make any of the value in AdmNo field null, an error message will show up as seen in *Fig. 16-18* below.

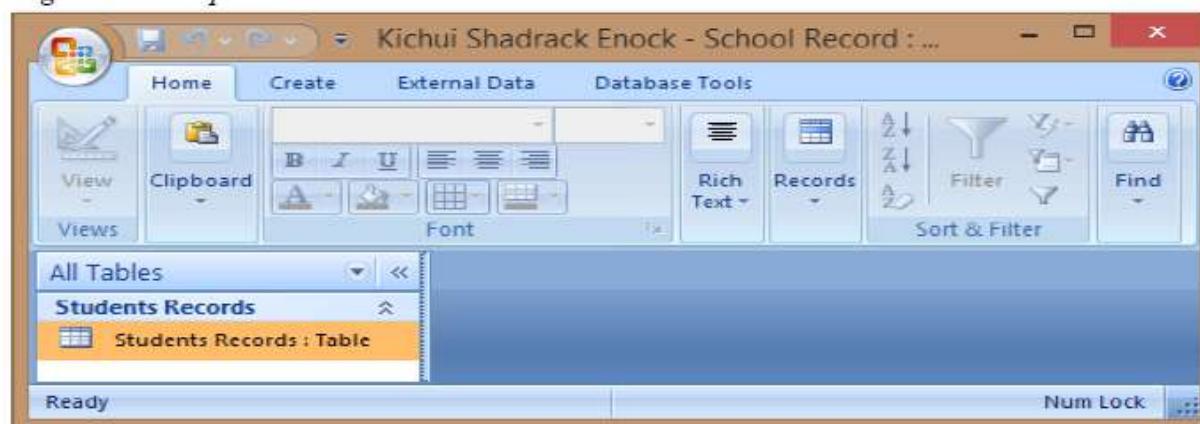
Fig. 16-18: The Primary Key value (AdmNo) cannot be null.



- When you enter data in the FeePaid column don't type dollar (\$) or comma (,) signs. They will be fixed automatically.
- Practice to enter your data one row after the other. Avoid entering your data column by column to minimize risks of violating data entry rules such as fields which can not contain null values.

Close your table by clicking the X symbol at the upper right corner of your table. The table of your database will be closed leaving your database open indicating that it has one table: *Students Records* as seen in *Fig – 16-19* below:

Fig. 16-19: An open Database with a one closed table.



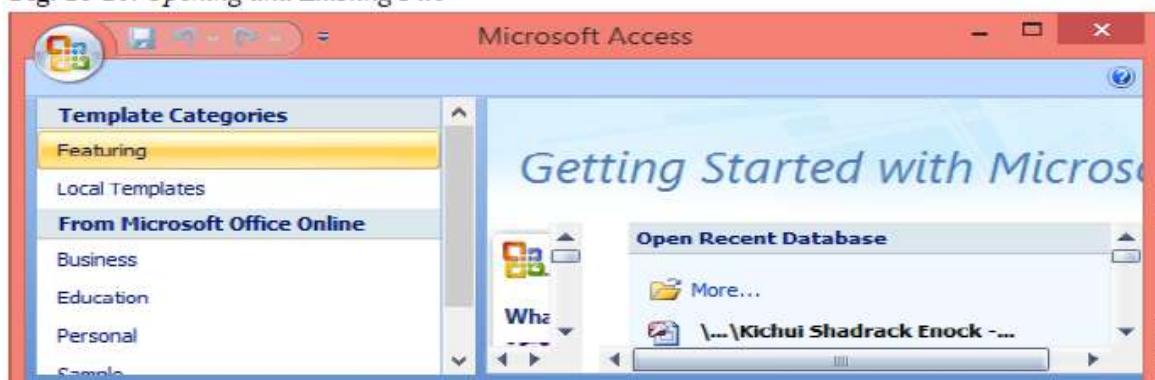
Opening Existing Database

There are times, perhaps, you may wish to open an existing database for reference or wanting to continue editing its contents.

For instance, if you want to open the database you have just created, you follow the following steps:

- Open your Microsoft Office Access 2007/2010 program. The following Interface will open. See *Fig. 16-20* below:

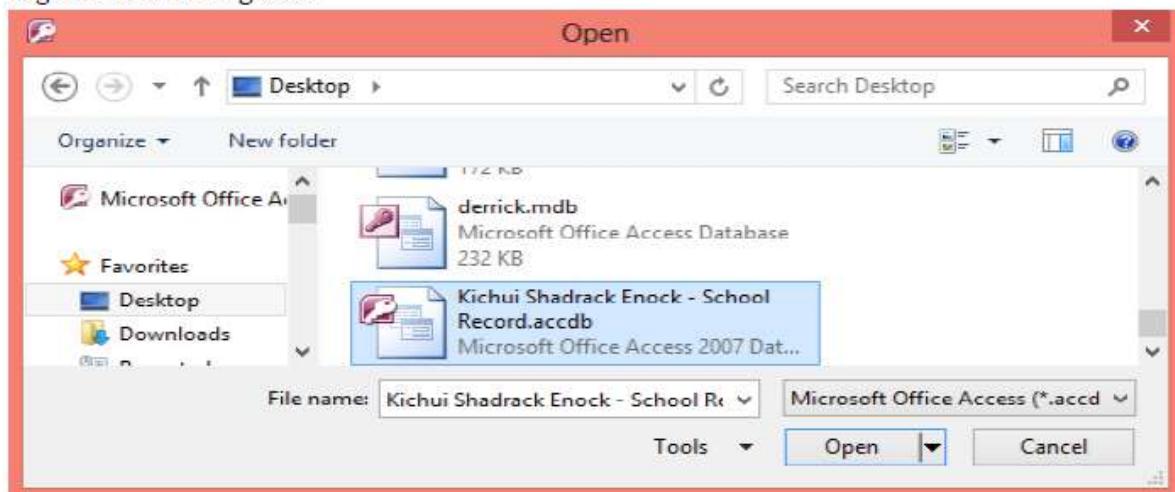
Fig. 16-20: Opening and Existing File



- Click More... in Fig. 16-20 above to look for more files. The Open dialog box will open. See Fig. 1-21 below.

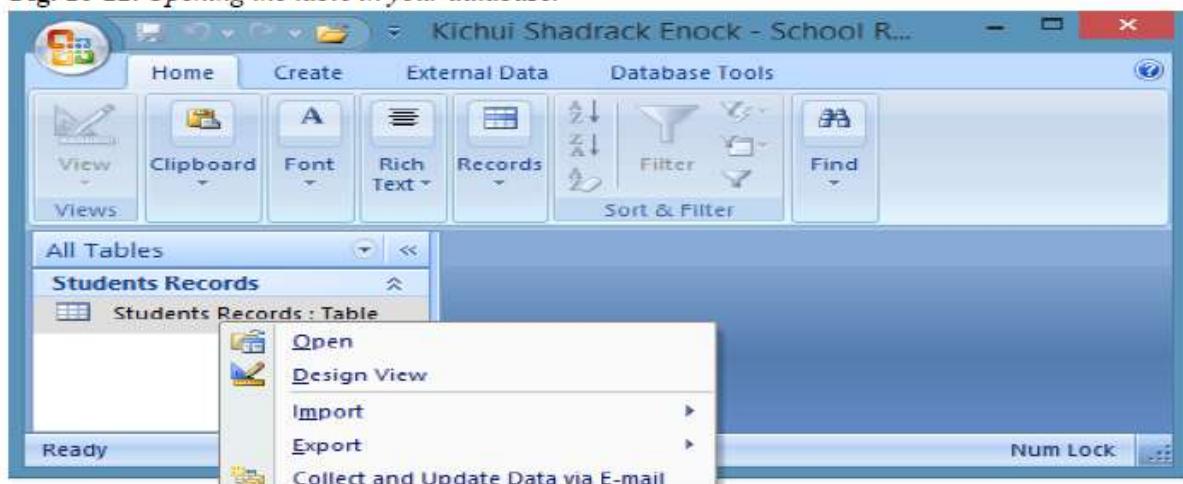
Notice that for recently stored files you simply click the name of your database if you see it on the list. Your database will open automatically in this case.

Fig. 16-21: Browsing Files



- Click Open in the Fig. 16-21 above. Your database will open. See Fig. 16-22 below.

Fig. 16-22: Opening the table in your database.



4. To open your **Students Records** table you point and right click the table name. You will see a display menu as seen in Fig. 16-22 above.
5. You click **Open** if you want to open and see your data or click **Design View** to open your data in Table Design View.
You can open your table in Design View especially when you want to add or edit your fields.
If you click **Open**, your table named **Students Records** will open. See Fig. 16-23.

Fig. 16-23: Shows the database and its opened table.



Exercise 16-1

Create a database called **Business**. Within this database create a table called **Product**. Enter your data in the created table as seen below:

Table 16-3

ProNo	ProdName	Quantity	ManfDate	Description	Price
PD001	Computers	10	12/12/1999	Used for storing records	1000000
PD002	Tractors	15	09/09/2004	They are used to clear fields	40000000
PD003	Mattresses	90	07/07/2009	Used for sleeping or resting	150000
PD004	UPSSes	100	08/12/2006	Used for storing power	200000
PD005	Switches	23	09/11/2007	Used for distributing data	5000000
PD006	Printers	78	09/08/2011	Used for printing documents	7000000
PD007	Fridges	70	07/01/2000	Used for cooling drinks only	800000
PD008	TV sets	69	01/07/2009	Used for entertainment & news	700000
PD009	Flat Irons	88	09/03/2010	Used for ironing clothes	30000
PD010	Wall Clocks	150	11/12/2001	Used for reading time	15000
PD011	Radios	190	06/09/2004	Used for entertainment and news	56000
PD012	Extension cables	87	12/01/2008	Used to extend power to remote devices.	35000

Required

- i. Use appropriate data types
- ii. Describe your fields accordingly

TOPIC SEVENTEEN

CREATING QUERIES

- A “Select query” is a stored question about the data stored in a database’s table. They underlie most forms and reports, and they allow you to view the data you want, when you want.
- You use simple “select query” to define the tables and fields whose data you want to view and also to specify the criteria that limits the data the query’s output display.

Working with Simple Criteria

- You can limit the records that you see in the result of a query by adding criteria to the query.
- For example, you might want to see just the customers in “Zambia”, or you might want to view just the orders with sales over Sh. 5000000/=.
- You could also want to view sales that occurred within a specific date range. By using criteria, you could easily accomplish any of these tasks.

Using an Exact Match Query

An exact match query locates data only when there is an exact match with the criteria that you enter.

Rules for Criteria, Based on Type of Fields

- Text – After you type text, Access puts quotes around the text entered.
- Number/Currency – You type the digits, without commas, or dollar signs (\$) but with decimals, if applicable.
- Yes/No – For a “Yes”, you type “Yes” or “True”. For a “No” you type “No” or “False”.

Creating a Query

To create a query you must have an existing table to whom a query is to extract records that satisfy a given criteria.

To do this, let us use examples that lead us from database creation, table creation and finally query creation.

Example 17-1

Create a Database called **Kichui-Kampala Trading Centre** and design a table called **Customers** within this database as seen in *Table – 17-1* below

Table-17-1 –Customer Table

CustID	Lname	Fname	District	Sex	DateB	TelNo
C001	Kalema	James	Jinja	Male	12/09/1980	0773885544
C002	Namiro	Loy	Busia	Female	11/08/1976	0773556543
C003	Opio	James	Soroti	Male	09/09/1971	0756454243
C004	Ajambo	Mercy	Busia	Female	07/06/1969	0712345665
C005	Omondi	Tom	Malaba	Male	08/12/1978	0789675655
C006	Ojambo	Lamek	Busia	Male	01/01/1971	0756555655
C007	Nambi	Ann	Jinja	Female	03/08/1982	0776565445
C008	Matata	Juma	Busia	Male	09/09/1975	0797876766
C009	Kisembo	Timothy	Mbale	Male	11/12/1984	0756765651
C010	Dawati	Lakati	Soroti	Male	12/01/1980	0712376565

Required

- i) Create the database and the table in design view. Enter the data as see above.
- ii) Create the query in design view to display only the customers from **Jinja**.
- iii) Create the query to display only **Female** customers
- iv) Create the query to display only **Female** customers from **Busia**.
- v) Create the query to display customers from **Mbale** or any other customer who is **Female** by gender.
- vi) Create a query to display all customers from **Jinja** or **Soroti** districts.

- vii) Create a query to display **Busia** or **Male** customers, Lname field should be sorted in ascending order and the field **CustID** and **Fname** should be hidden in the datasheet view.
- viii) Create a query to display customers from **Kampala**

Let's follow the following steps to create the database, its table and subsequently creating the underlying queries:

Step 1: Creating Database

1. Click Start/All Programs/Microsoft Office/Microsoft Office Access to start the database program.
2. Click **Blank Database**. On File Name type: **Kichui – Kampala Trading Centre** as your database name. Browse and select Desktop to have your database saved on the desktop. See **Fig. 2-1** below:

Fig. 17-1: Creating a new Database



Note:

- If you still have problems with database and table creation you can revisit chapter one of this book.
- Where I used my name **Kichui**, you should use your names instead.
- It is possible to save your files elsewhere apart from the Desktop folder. We only use the desktop for now such that new learners can easily burn.

3. Click **Create** to have your database created. See **Fig. 17-2** below:

Fig. 17-2: An New Database without Tables



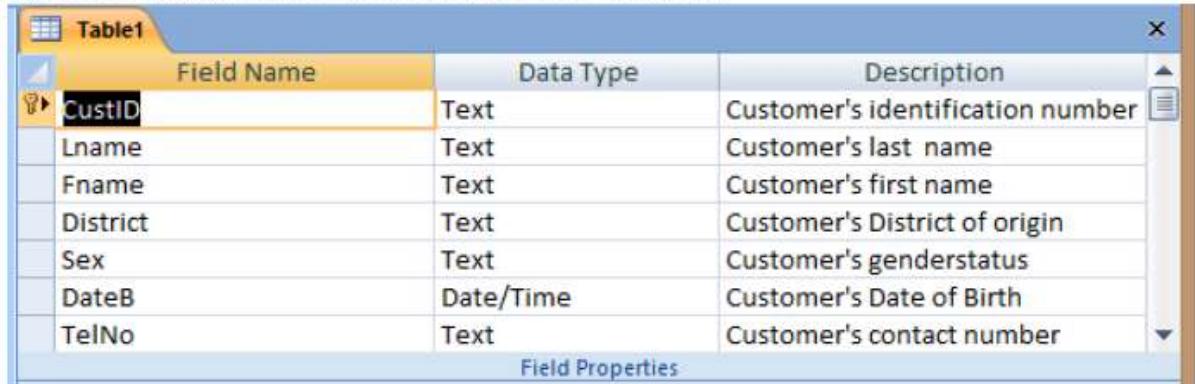
4. Click **Create** from Fig. 17-2 above to open the design tool pane.
5. On design tool pane Click **Table Design** in Fig. 17-3 below.

Fig. 17-3: Design Tool Pane



6. Use the field headers in **Table 17-1** above and design your table on all *Field Name*, *Data Type* and *Description* as seen in **Fig. 17-4** below.

Fig. 17-4: Defining Field Names, Data Types and Description



The screenshot shows the Microsoft Access Table Design View window titled "Table1". It contains seven columns: "Field Name", "Data Type", and "Description". The "Field Name" column has entries: CustID, Lname, Fname, District, Sex, DateB, and TelNo. The "Data Type" column has entries: Text, Text, Text, Text, Text, Date/Time, and Text respectively. The "Description" column has entries: Customer's identification number, Customer's last name, Customer's first name, Customer's District of origin, Customer's genderstatus, Customer's Date of Birth, and Customer's contact number. The "Field Properties" button is visible at the bottom right of the grid.

Field Name	Data Type	Description
CustID	Text	Customer's identification number
Lname	Text	Customer's last name
Fname	Text	Customer's first name
District	Text	Customer's District of origin
Sex	Text	Customer's genderstatus
DateB	Date/Time	Customer's Date of Birth
TelNo	Text	Customer's contact number

7. Select **CustID** as seen in **Fig. 17-4** above and then click **Primary Key** on the left upper pane as seen in **Fig. 17-5** below:

Fig. 17-5: Creating the Primary Key and Saving the Table

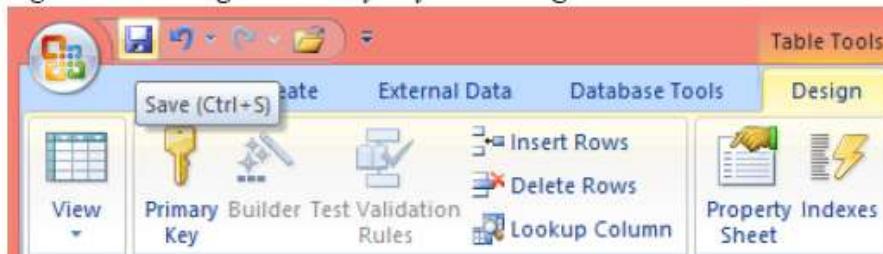
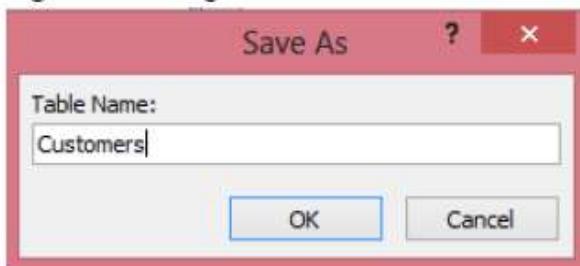


Fig. 17-6: Saving the Table



Step 2: - Entering Data

1. Point and Click **View** in the left upper pane of **Fig. 17-5** above. Your table will open ready for you to enter your data.
2. Type your data which is in **Table 17-1** above.
Your table will look like the one in **Fig. 17-7** below when completed.

Fig. 17-7: The complete Data Entry in Customer Table

The screenshot shows the Microsoft Access application window. On the left, there's a navigation pane titled 'All Acces...' with a 'Tables' section containing a highlighted entry 'Cus...'. The main area is titled 'Customers' and displays a table with the following data:

CustID	Lname	Fname	District	Sex	DateB	TelNo
C001	Kalema	James	Jinja	Male	12/9/1980	077388554
C002	Namiro	Loy	Busia	Female	11/8/1976	077355654
C003	Opio	James	Soroti	Male	9/9/1971	075645424
C004	Ajambo	Mercy	Busia	Female	7/6/1969	071234566
C005	Omondi	Tom	Malaba	Male	8/12/1978	078967565

Below the table, status bar text reads 'Customer's identification number' and 'Num Lock'. Navigation buttons like 'Record', 'Search', and 'Filter' are also visible.

- Close your Table by clicking the closing button (X) at the top right of this Windows.

Step 3: Creating Queries

You are required to create a query which will display only customers from **Jinja** as per **Example 17-1** of this chapter.

To create this query, follow the following procedures:

- Click **Create** and then Click **Query Design** as seen in Fig. 17-8 below:

Fig. 17-8: Creating a Query.

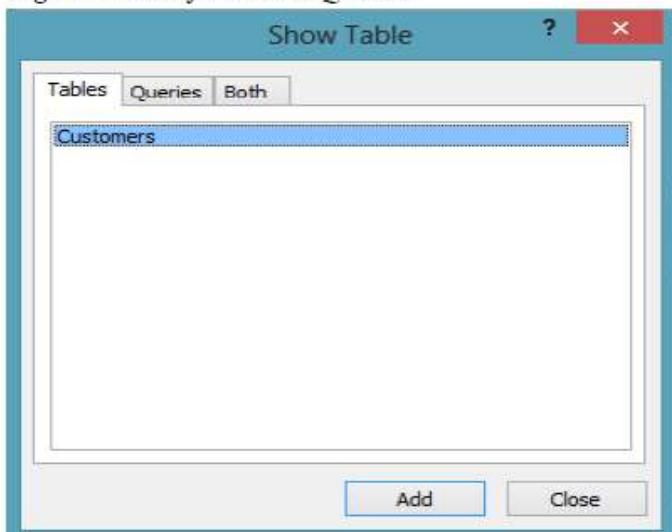


- On Show Table dialog box shown in Fig. 17-9 select **Customers** table and then click Add only once.
- Click Close to close the dialog box. See Fig. 17-10 below showing you the *Query By Example (QBE)* interface.

Note:

Ensure you don't click **Query Wizard** instead of **Query Design**. **Query Wizard** can also be used to create queries but you need to be familiar with **Query Design** tools for more effective queries. In any case, **Query Wizards** can also be used anyway.

Fig. 17-9: List of Tables or Queries.

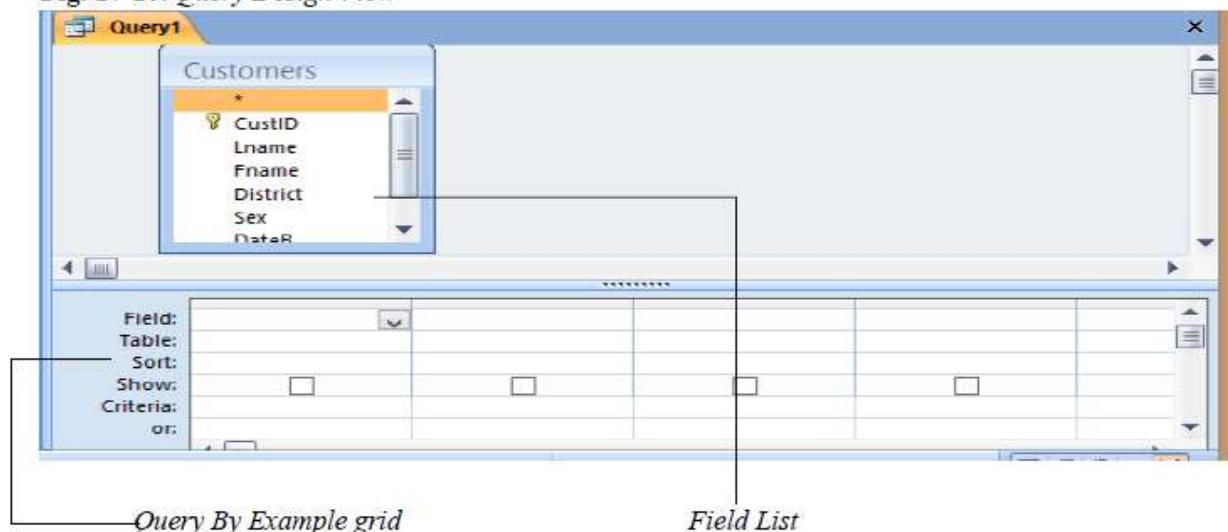


The **Show Table** dialog box provides a means of choosing tables that are to be used to build the query.

A Query can be built from many tables, other Queries or from both Tables and Queries.

Click **Tables** tab in **Fig. 17-9** to list all the tables or **Queries** tab when you want to list all queries or **Both** tab when you want to list both tables and queries combined.

Fig. 17-10: Query Design View



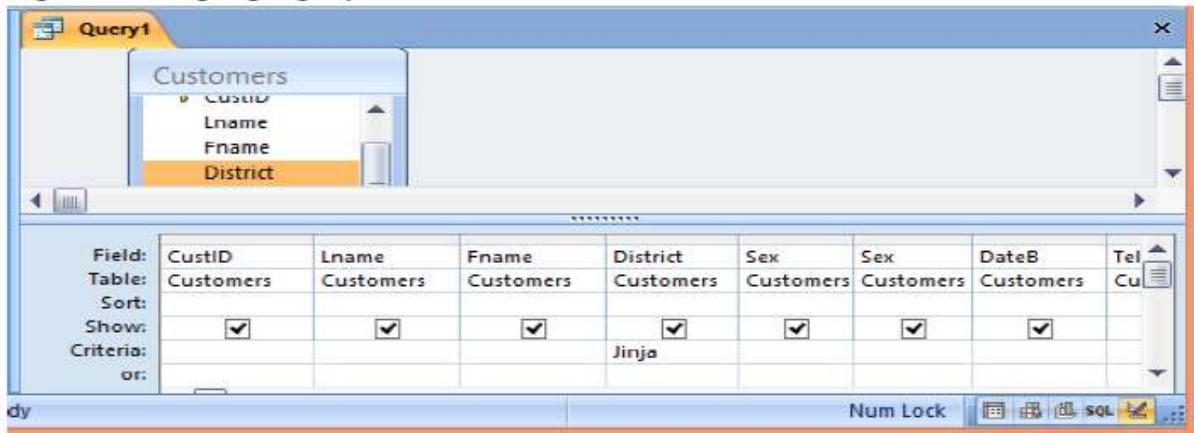
Purpose of Query By Example grid

- **Field**:- This row contains the field from the **Field List** that you want to include in a query. This can also contain an expression (a temporary field that you make which may contain a result of calculated query).
- **Table**:- Displays the name of the table that the field is in. This is useful if you are basing your query on more than one table, especially if you have fields in the different tables that have the same name.
- **Sort**:- Allows you to specify which field (s) to base the sort order on.
- **Show**:- Determines whether or not to display the field in the datasheet displays.
- **Criteria**:- Allows you to include, or not to include, records based on individual or combined field values.

4. Drag or double click all the fields from the **Field List** to the **Field:** row. See **Fig. 17-11** below:

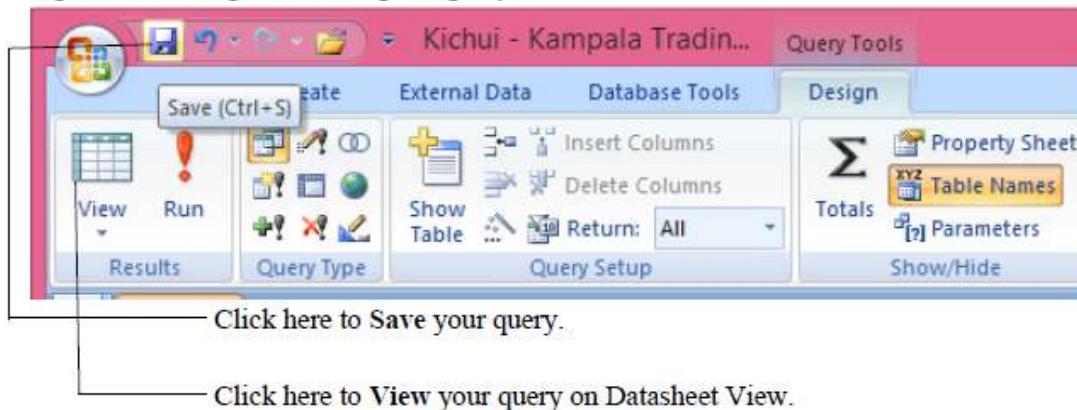
5. On Criteria: row and District column type **Jinja**. Note that where **Jinja** is typed, upwards reads District field and sideways reads Criteria:

Fig. 17-11: Designing a Query



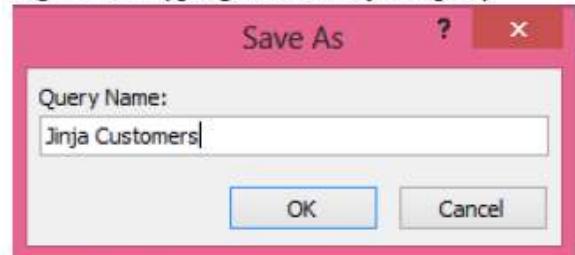
6. Click Save button to save your query. See Fig. 17-12 below. The Save As? dialog box will be displayed as seen in Fig. 17-13 below.
 7. On Query name: Type *Jinja Customers* as seen in Fig. 17-13 and then click Ok button. If you click Cancel button means that you don't want to have your query saved.

Fig. 17-12: Saving and Viewing the Query.



8. Click View button seen in Fig. 17-12 above to see the result of your query. See Fig. 17-14 below.

Fig. 17-13: Typing the name of the query



You should always name your queries using descriptive names i.e. the name that describes what the query does.

For instance the name given to a query **Jinja Customers** can easily tell you this query is aimed at displaying only customers from **Jinja**.

Fig. 17-14: The result of the query – Ninja Customers

CustID	Lname	Fname	District	Expr100	Sex	DateB	TelN
C001	Kalema	James	Jinja	Male	Male	12/9/1980	07738
C007	Nambi	Ann	Jinja	Female	Female	3/8/1982	07765

- Close your query by clicking the closing button (X) at the right upper corner.
You can also click **View** to view your query in **Design View** in case you want to make any adjustments.

Next is to create the subsequent queries. The same steps are to be followed except looking at what criteria the query is to use. Part (iii) of the *Example 17-1* wants you to create a query to display only **Female** customers.

This can be done by typing **Female** in the criteria: row and **Sex** field as seen in *Fig-17-15* below.

Fig. 17-15: Query design – Female customers.

Female Customers						
Customers						
	CustID	Lname	Fname	District	Sex	DateB
Field:	CustID	Customers	Customers	Customers	Customers	Customers
Table:	Customers	Customers	Customers	Customers	Customers	Customers
Sort:						
Show:	<input checked="" type="checkbox"/>					
Criteria:	"Female"					
or:						

You can click **View** button at the left upper pane of the query design tools (see *Fig. 17-12* above) to view the result of your query. See *Fig. 17-16* below.

You will notice in *Fig. 17-16* below that only Female customers are to be displayed. This is so because in the Criteria: row and **Sex** field in the query design (*Fig. 17-15*) you typed “**Female**” as your criterion for a record to be displayed.

Fig. 17-16: Datasheet View – Female customers.

CustID	Lname	Fname	District	Sex	DateB	TelNo
C002	Namiiro	Loy	Busia	Female	11/8/1976	0773556543
C004	Ajumbo	Mercy	Busia	Female	7/6/1969	0712345665
C007	Nambi	Ann	Jinja	Female	3/8/1982	0776565445

Save your query as **Female customers** and Click X at the right upper corner of your query to close.

Queries Based on Multiple Conditions.

- This may be time when you want to create a query that contains two or more conditions. You would do this, for example, if you only wanted records in the District of “Busia” that had sales within a certain data range to appear in the output.
- The “**AND**” condition is used to indicate that both of two conditions must be met in order for the row to be included in the resulting record-set.
- You can use the “**AND**” condition in the same field or on multiple fields.

Example 17-1 part (iv) wants you to display **Female** customers but only those ones from **Busia**. This means that the criteria to be used are **Female** and **Busia**. Here there is a condition that a record will only show up if a customer is a **Female** and must be from **Busia**.

Procedures of creating this query won’t differ as in the case of part (ii) and (iii) of **Example 17-1**. The only difference is that we’re now using multiple criteria or conditions, which state that “a customer must be **Female** and from **Busia** district”. See the **Fig-17-17** below.

Fig. 17-17: Query in Design View – Female from Busia.



Fig. 17-18: Query in Datasheet View – Female from Busia.

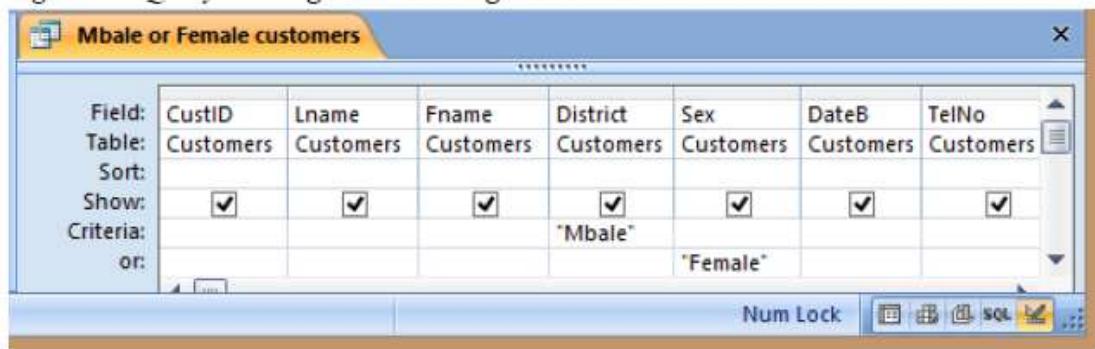
CustID	Lname	Fname	District	Sex	DateB	TelNo
C002	Namiiro	Loy	Busia	Female	11/8/1976	0773556543
C004	Ajambo	Mercy	Busia	Female	7/6/1969	0712345665

Notice that the result of the query shown in **Fig. 17-18** above clearly shows that only **Female** customers from **Busia** district are displayed in this query.

Using OR Condition (Multiple Fields)

Example 17-1 part (v) wants you to create a query that can extracts records from the **Table 17-1** that must have customers from **Mbale** district or the customers should be **Female**. This means all customers from Mbale even if they are males will show up and all Female customers even if they are from other districts even if not from Mbale will also show up in the query. To create this query see **Fig-17-19** below:

Fig. 17-19: Query in Design View – Using OR Condition



Note that *Mbale* was typed in **Criteria:** row and *Female* was typed in **Or:** row of Query By Example grid. You should do this when you are using **OR** condition.

Note also that while typing your criteria you must ensure that you don't misspell or add other characters like a period (.) i.e. [Female.] or the comma (,) i.e. [Female,]. They should only be included if they were typed like that in the table.

You can click **View** to view your query in **Datasheet View**. See Fig. 17-20 below:

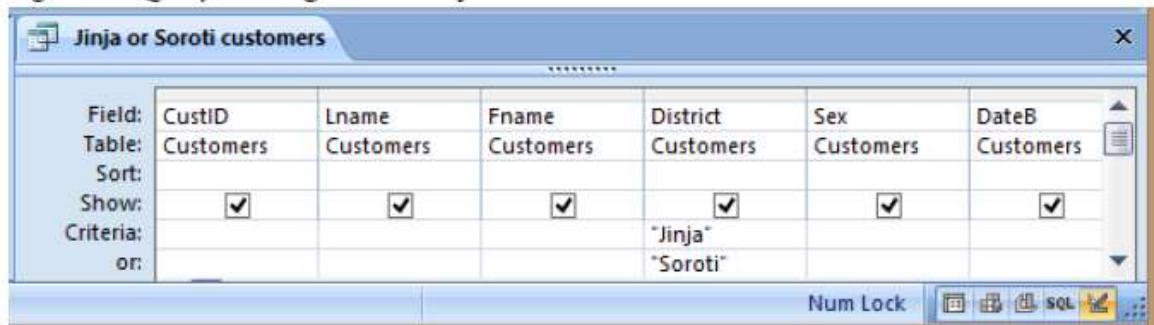
Fig. 17-20: Query in Datasheet View – Mbale or Female customers

Mbale or Female customers						
CustID	Lname	Fname	District	Sex	DateB	TelNo
C002	Namiiro	Loy	Busia	Female	11/8/1976	0773556543
C004	Ajambo	Mercy	Busia	Female	7/6/1969	0712345665
C007	Nambi	Ann	Jinja	Female	3/8/1982	0776565445
C009	Kisembo	Timothy	Mbale	Male	11/12/1984	0756765651

Using Or Condition (Single Field)

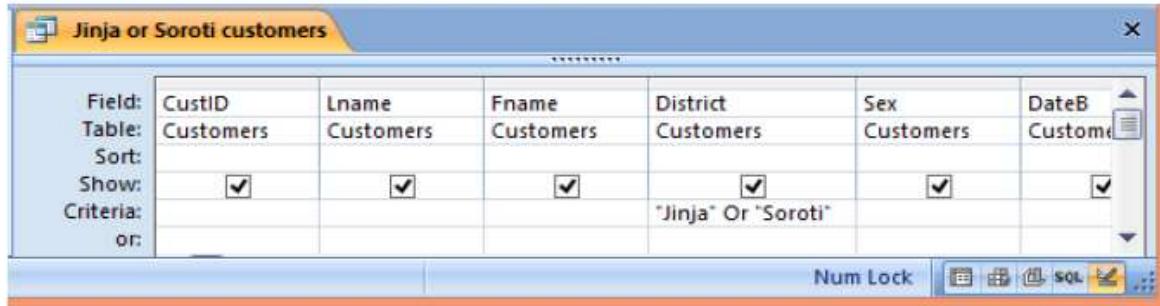
Example 17-1 part (vi) gives us a situation where **OR** condition can be used in the same field. Fig. 17-21 below demonstrates the use of **OR** condition in a single field.

Fig. 17-21: Query in Design View – Jinja or Soroti customers



OR

Fig. 17-22: Alternative method – Ninja or Soroti customers



Note that in **Fig. 17-21** Ninja is typed in **Criteria:** row while Soroti is typed in **Or:** row. Alternatively, as seen in **Fig. 17-22**, you can type both Ninja and Soroti conditions in **Criteria:** row except you have to separate them with the logical **OR** operator.

To view the result of this query click **View** button and your query will be displayed in **Datasheet View** as seen in **Fig. 17-23** below.

Fig. 17-23: Query in Datasheet View – Ninja or Soroti customers

CustID	Lname	Fname	District	Sex	DateB
C001	Kalema	James	Jinja	Male	12/9/1980
C003	Opio	James	Soroti	Male	9/9/1971
C007	Nambi	Ann	Jinja	Female	3/8/1982
C010	Daati	Lakati	Soroti	Male	12/1/1980

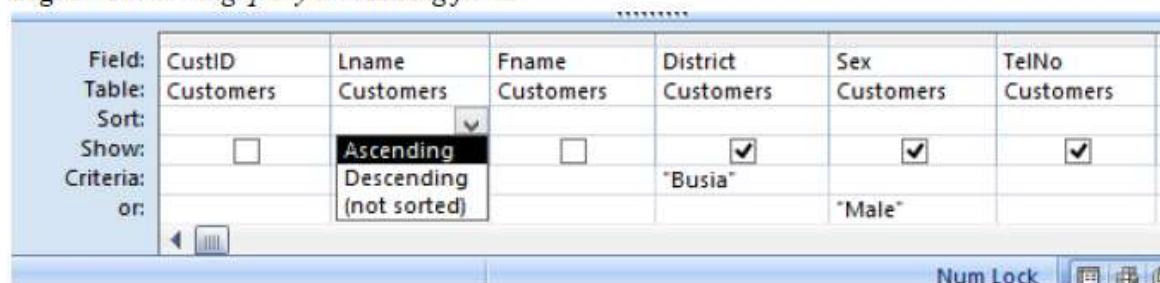
Sorting Fields in a Query

You might need your query to be displayed while sorted in either ascending or descending order using any field of your choice. You may as well decide to have other fields hidden from the display.

To do this, let's make the query to display **Busia** or **Male** customers. In this query we want **Lname** to be sorted in ascending order and we also want **CustID** and **Fname** not to be displayed (hidden) in the query's datasheet view.

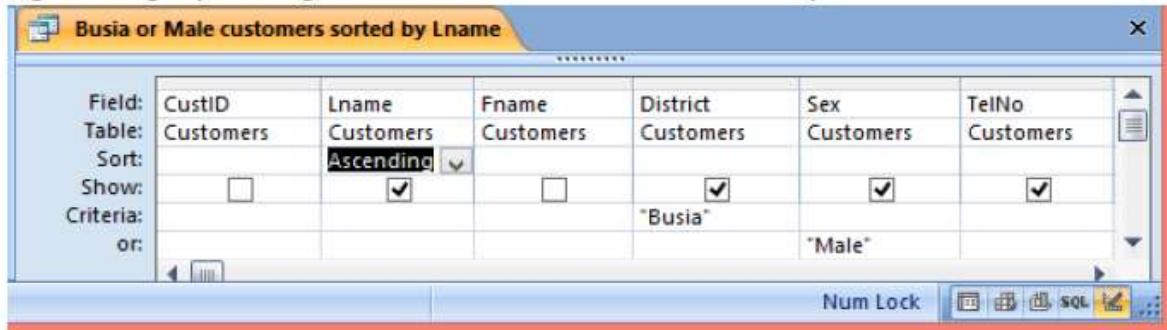
To sort your query by **Lname** Click the tiny arrow pointing down intersecting the **Sort:** row and the **Lname** field. On the dropdown list select *Ascending*. See **Fig. 17-24** below:

Fig. 17-24: Sorting query and Hiding fields



Your final design should finally look like the one in Fig. 17-25 below:

Fig. 17-25: Query in Design View – Busia or Male customers sorted by Lname.



Notice that on that **Show:** row some boxes are not ticked (to deselect you click on the ticked box once). This means that the deselected fields won't display when we apply **Datasheet View** feature. You can also see that on the **Sort:** row we selected **Ascending** under the **Lname** to have this field appears in alphabetical order. See *Fig. 17-26* below:

Fig. 17-26: Shows Sorted data and hidden fields

Lname	District	Sex	TelNo
Ajambo	Busia	Female	0712345665
Daati	Soroti	Male	0712376565
Kalema	Jinja	Male	0773885544
Kisembo	Mbale	Male	0756765651

Fig. 17-26: Shows Sorted data and hidden fields

Lname	District	Sex	TelNo
Ajambo	Busia	Female	0712345665
Daati	Soroti	Male	0712376565
Kalema	Jinja	Male	0773885544
Kisembo	Mbale	Male	0756765651

When you put the criterion that does not exist you should expect the blank display. In **Example 17-1** part (viii) wanted you to display customers from **Kampla**. But those customers are not available in the Table 17-1 entries. The blank sheet will show up when you display your design as seen in *Fig. 17-27* below.

Fig. 17-27: No customers from Kampala.

CustID	Lname	Fname	District	Sex	DateB	TelNo
*						

Fig. 17-28 below shows a list of queries that you created in the previous examples.

Fig. 17-28: Shows a database with a list of created Queries.

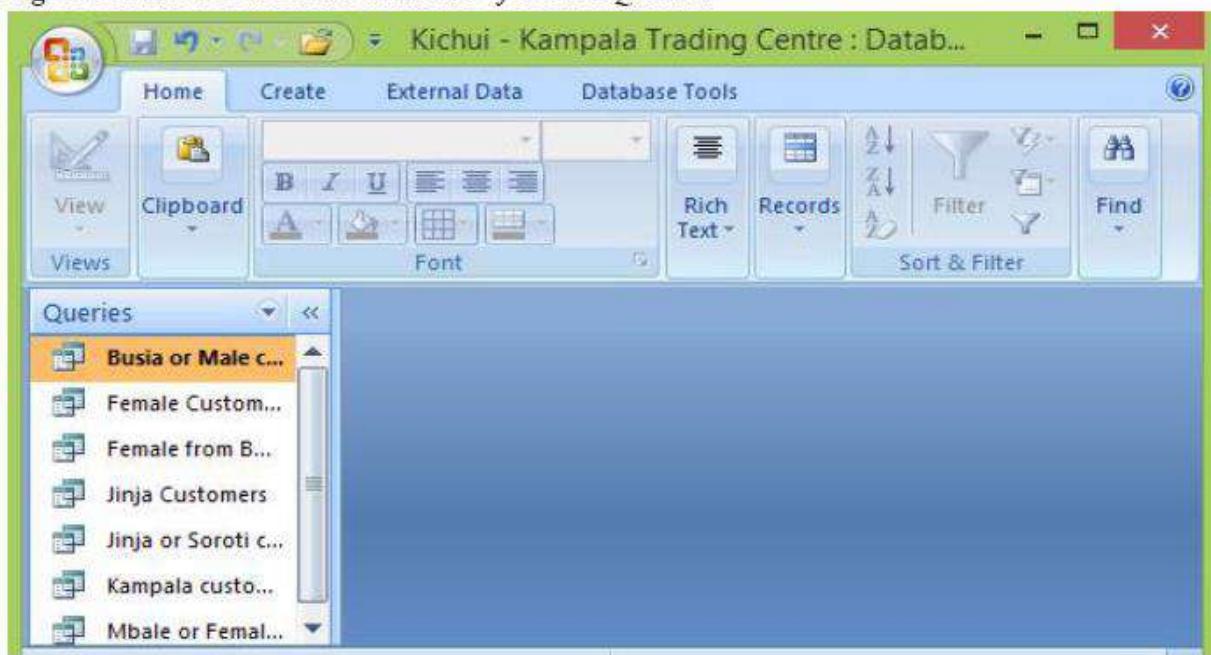
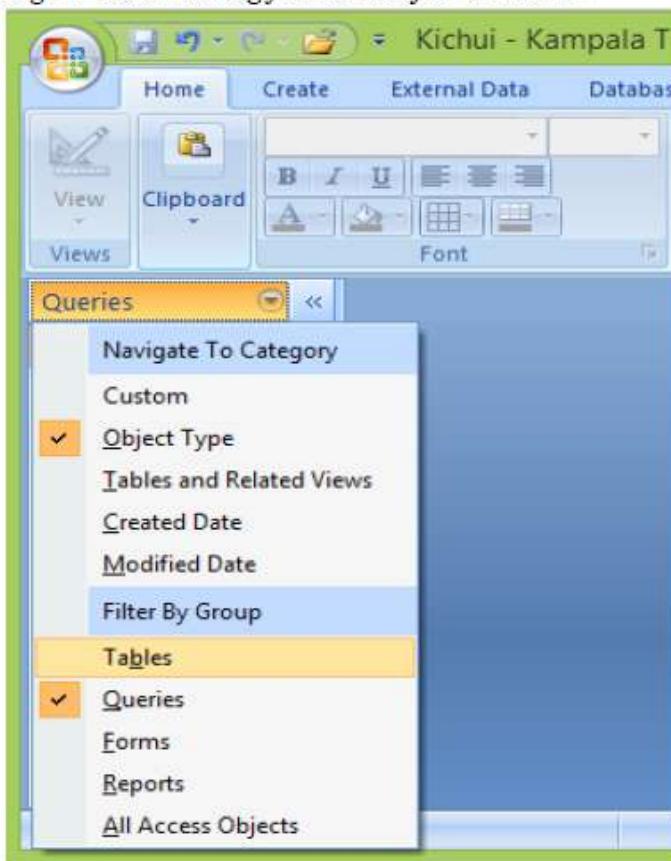


Fig. 17-29: Switching from one object to another



Note that Fig.17-28 above shows a list of closed queries. To open any of the queries you select and right click your mouse button and click **Open** to have your query open in Datasheet View. You click **Design View** if you want your query to open in **Query Design View**.

Note also that you can switch from one object to another. i.e. Tables, Queries, Forms, Reports, etc. You do this by clicking the tiny arrow pointing down to have a dropdown of the list of objects. See Fig. 17-29. Select **Tables** to have a list of tables instead of the list of queries seen in Fig. 17-28 above.

If you select **All Access Objects** you will have your tables displaying all the objects you created you created in the database; Tables, Forms, Queries, Reports, etc. listed together.

Example 17-2

Create a database called *ImperialHotel*. Within this database design a table called *Guests* that will be used to enter the information as seen in the *Table-17-2* below

Table-17-2

GNO	Lname	Nationality	RoomNo	Date	Rstatus	AccFee	NDays
G001	Maina	Kenyan	89	01/12/2012	Executive	80000	10
G002	Jimmy	American	4	01/12/2012	Royal	60000	20
G003	Loy	Tanzanian	11	02/12/2012	Executive	95000	30
G004	Dominic	American	15	03/12/2012	VIP	120000	45
G005	Mathew	British	19	03/12/2012	Royal	56000	15
G006	Norah	Kenyan	17	04/12/2012	VIP	130000	60
G007	Hilda	American	12	05/12/2012	Executive	95000	13
G008	Tim	British	9	05/12/2012	VIP	140000	70
G009	Nancy	American	67	06/12/2012	VIP	140000	60
G010	Laura	Tanzanian	81	07/12/2012	Executive	96000	15

Required

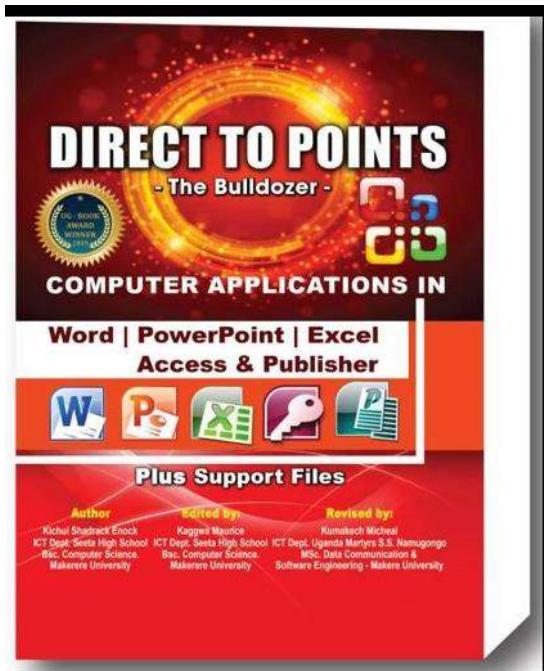
- i) Create the database and its table in design view
- ii) Populate your table as seen in the table
- iii) Create a query to display all the guests that are *Tanzanian* nationals.
- iv) Create a query that will display all the guests who are not in *VIP* rooms.
- v) Create a query to display all guests who are either *Kenyan* or *Tanzanian* nationals.
- vi) Create the query to display all the *American* nationals who booked *VIP* rooms.
- vii) Create a query to display all the *American* nationals that did not book *VIP* rooms.
- viii) Create a query to display all guests whose accommodation fee is less than *90000*.
- ix) Create a query to display all the guests whose accommodation fee is above *100000*.
- x) Create a query to display all the guests whose accommodation fee is above *80000* but below *120000*.
- xi) Create a query to calculate the **Total Fee** paid by each customer.
- xii) Create a query which will display **New Accommodation Fee** for guests who booked *VIP* rooms if a *20%* discount was offered.

Solution to Example-17-2

You now know how to create a database and a table within a database. After creating your database, you are expected to have a display as one in Fig. 17-30 below.

Part Five

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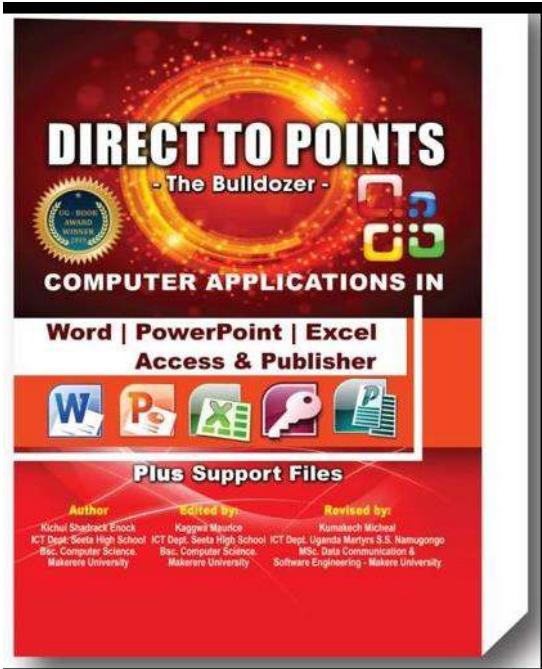
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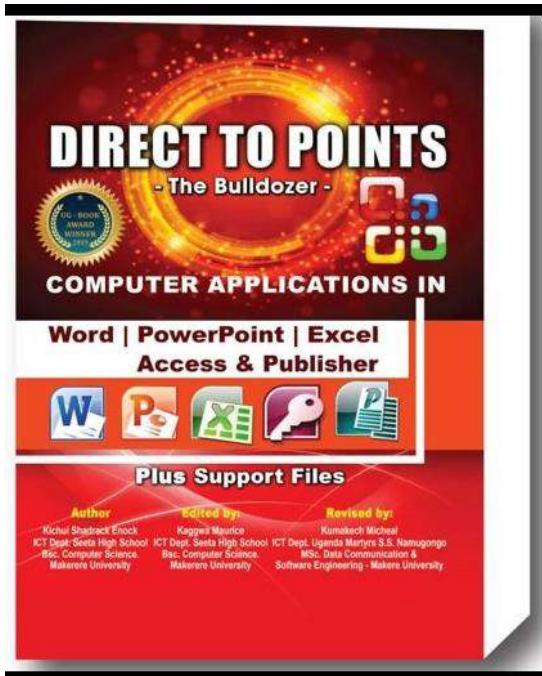
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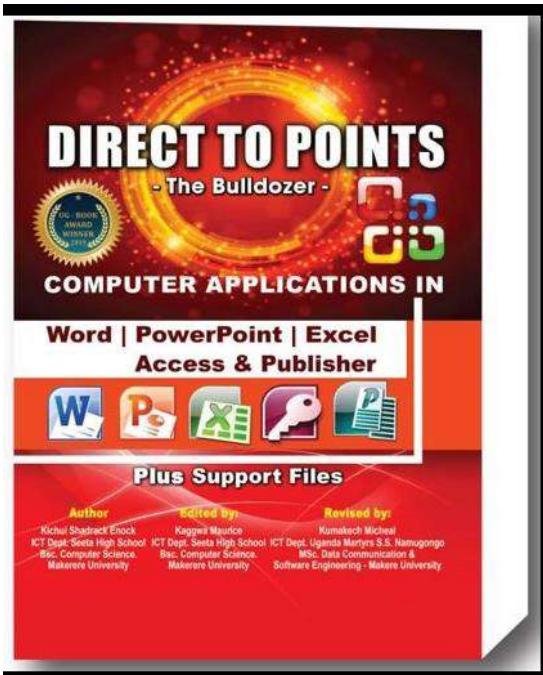
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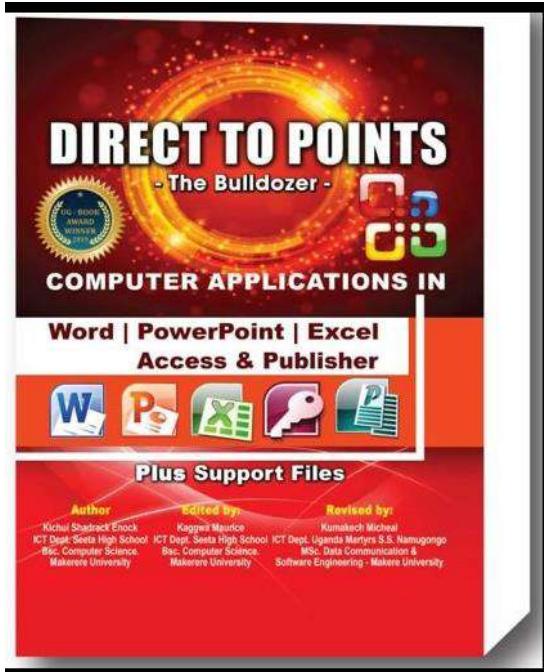
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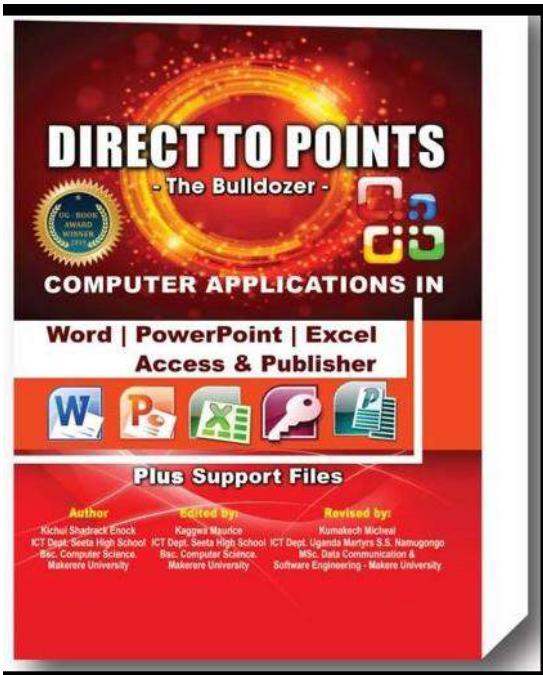
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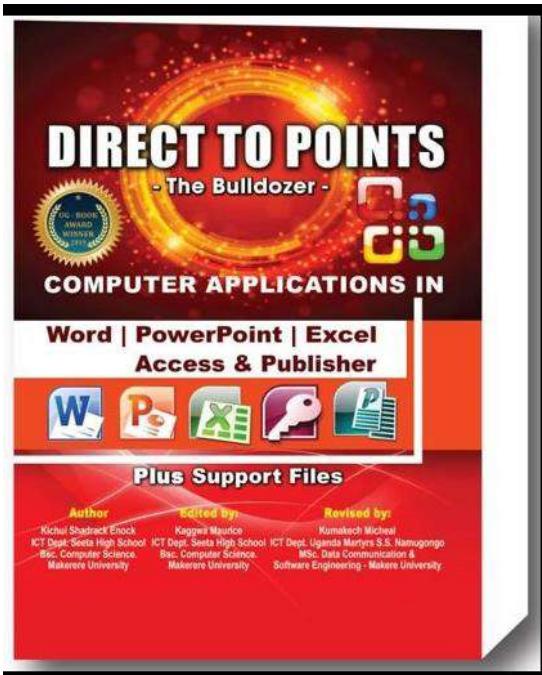
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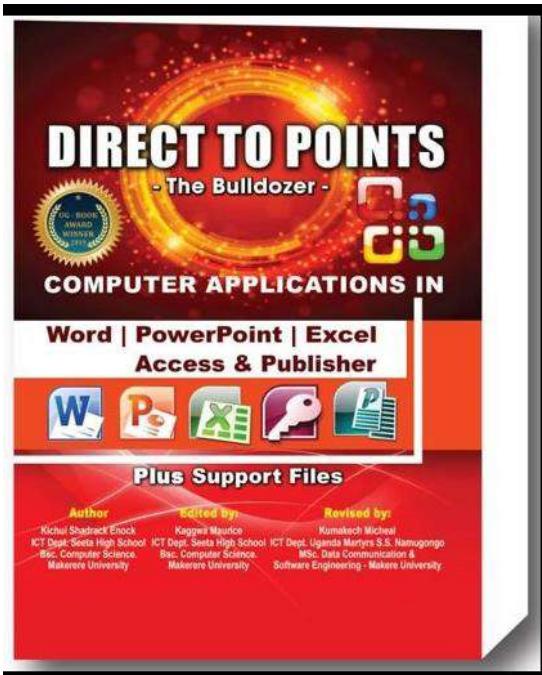
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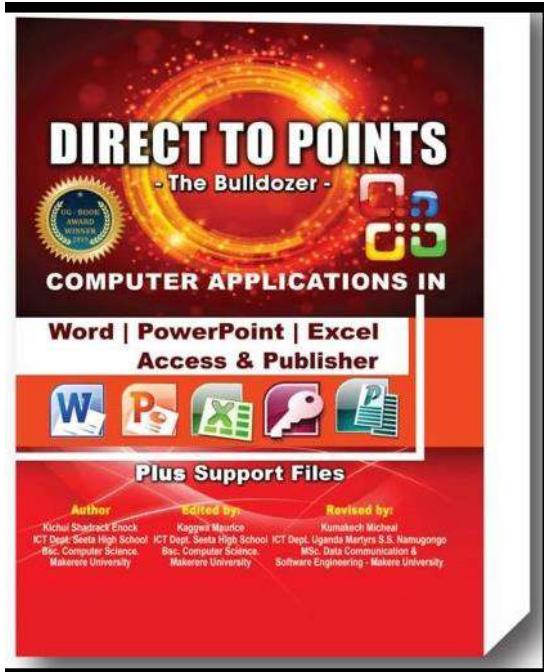
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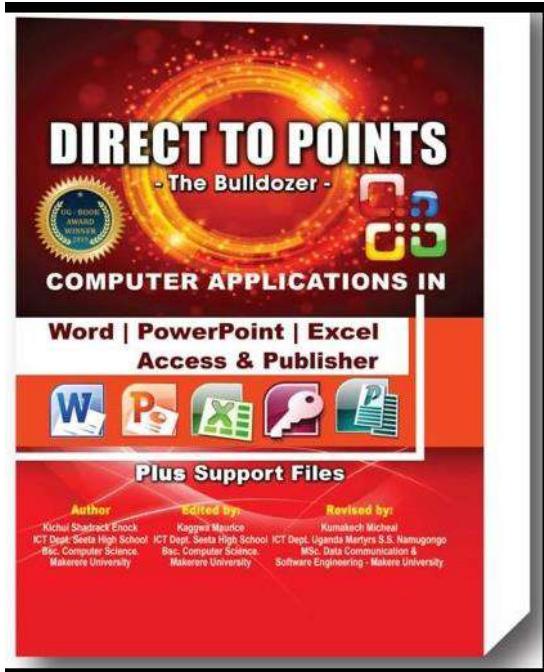
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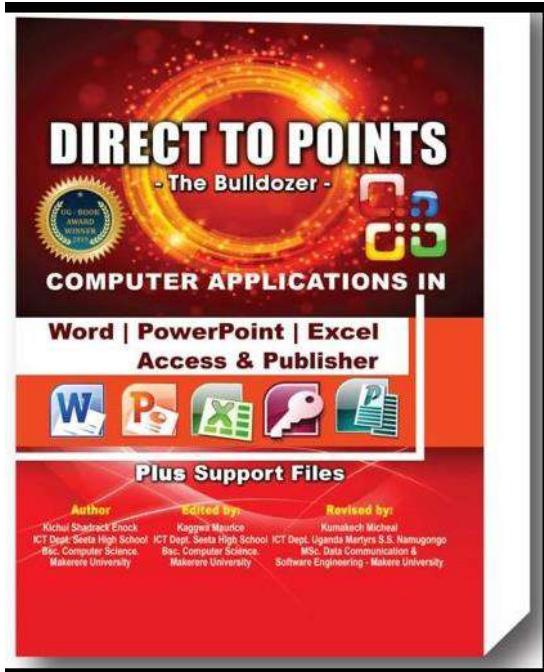
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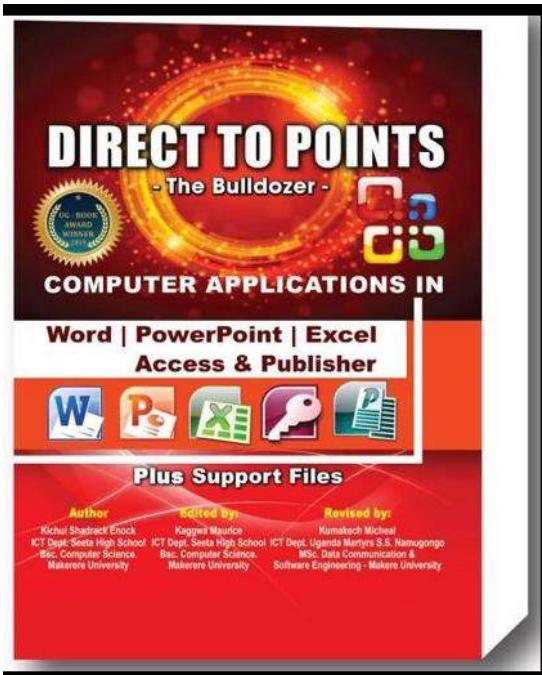
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