

COMPUTER FUNDAMENTALS

What is a Computer?

A computer is basically a programmable computing machine. The word “computer” comes

From the word computer which means to calculate. A computer can, not only store and process data, but also retrieve data i.e. take out data from its memory or storage as and when desired. Thus, computer is a general term that refers to an electronic data processing machine used for a wide range of activities.

Laptops and Notebooks

A laptop PC is a small, compact and portable machine which runs on battery power. You can unfold it and work with it on your lap and hence the name, it can be carried in your suitcase easily. The notebook is a smaller and lighter than the laptop model.

COMPUTER OF A COMPUTER SYSTEM

Five major components of a computer system are:

- a) CPU
- b) Peripheral devices
- c) Storage devices
- d) Media
- e) Communication Interface

Each of these units is described in succeeding sections.

CENTRAL PROCESSING UNIT (CPU)

A CPU is the brain of a computer. Its primary function is to execute. Program Besides executing programs, the CPU also control the operations of all other components such as memory, input devices. Under its control, programs and data are stored in the memory and outputs are displayed on the monitor screen or printed on. Paper, once processing has taken place. A microprocessor contains a control units and arithmetic and logic unit (ALU), When memory is added to a microprocessor, it forms a CPU.

The major section of CPU are:

- a) Primary Memory
- b) Arithmetic Memory
- c) Control Unit

Primary memory

Memory is the computer's working storage. It is one of the most important parts of the computer, as it determines the size and number of programs that can be simultaneously held within the computer, as well as the amount of data that can be processed immediately. Primary memory is a fast random access memory (RAM) it also Stores the necessary programs of system software, which are require to execute users programs. The main memory is directly addressed by the CPU.

Arithmetic Logic Unit (ALU)

The arithmetic logic unit (ALU) of a computer system is the place where the actual execution of instruction takes place during the processing operation. To be more precise, all calculation are performed and all comparisons (decisions) are made in the CPU.

Control unit (CU)

Control unit is responsible for controlling the entire functioning of the ALU. It receives the instructions from the memory and execute them after recording. It also transfers data between memory by input/output devices.

Peripheral devices

The input/output (I/O) devices and secondary storage unit of a computer are called Peripheral devices.

Input devices

Input devices are those devices which are used to enter information into a computer or the data processing devices. These devices are :

- a) Keyboard
- b) Mouse
- c) Joystick
- d) Light pen
- e) Scanner
- f) Optical mark
- g) Bar code reader
- h) Web camera
- i) Video camera

Output device

Output devices are those devices of computer system that supplies information or result either in the form of hardcopy (printer) or software (monitor). Some the common output devices are as follows:

- a) Monitor
- b) Printer plotters
- c) Multimedia projector

Monitor

Monitor come in two types:

- a) CRT (Cathode Ray Tube)
- b) TFT-LCD(Liquid crystal display)

Printers

Printer provides information in a permanent readable form. They produce printed outputs of results, programs and data. The printer can be classified as:

- a) Impact- printers
- b) Non-impact printers
- c)

Impact printers used an electro-mechanical mechanism that causes hammers or pins to strike against a ribbon and paper to print the text. Two types of impact character printers and letter quality printers.

Non-impact printers use thermal, chemical, electrostatic, laser beam or inkjet technology for printing the text. Usually a non-impact type printer is faster than an impact type.

Laser printer

Laser printers are non-impact type printers. They print one page at a time.

Plotters

Plotters are output devices. They are used to produce presize and good quality graphics and drawing under control of the computer. They used ink pen or inkjet to draw graphics or drawing. Either single color or multicolored pens can be employed for drawings.

MAIN STORAGE

RAM (Random Access Memory)

RAM is a read/write memory. Information can be written into and read from a RAM. It is a Volatile memory. It retains the stored information as long as it is supplied with power supply.

Mouse

A mouse is pointing devices. The mouse can also be used to draw sketches, diagrams etc. on the monitor screen.

Joystick

A joystick is also a pointing device. It is used to move the cursor position on a monitor screen its function is similar to that of a mouse and is used to playing game. A joystick can be moved right or left, forward or backward.

Light pen

A light pen is a pointing device. It is used to select a displayed menu option on the monitor. It is a photosensitive pen-like device. It is capable for sensing a position on the monitor screen when its tip touches the screen.

Scanner

Scanner are a kind of input devices. They are capable of entering data or text or pictures directly into the computer. The main advantage of direct entry of information is that users do not have to type the information is that users do not have to type the information. This provides faster and more accurate data entry.

Bar-code Reader

Bar-code readers are special devices used to read bar coded data. Bar code is a specialized code used for fast identification of items. These are primarily used for identification of goods such as books, postal package, badges etc.

Camera Web

A web camera allows a computer to accept input just by focusing on an object. The camera is focused on the input object to take a picture of the object. Pictures so taken can be transferred over computer network to a distant place.

Video camera

A video camera is a camera that takes continuous pictures and generates single for display on a monitor or for permanents recording.

SECONDARY STORAGE DEVICES

Magnetic Disk (Hard Disk)

Hard disk is a device for mass storage of data. The data stored on a hard disk can be retrieved at a very fast speed.

FLOPPY DISK

A Floppy disk, also called a disk or diskette, is a removable storage disk used for storing data. It is called a floppy disk because the round film inside the disk's plastic shell is flexible (floppy).

Pen Drive

USB flash drives or pen drives are NAND-type flash memory data storage devices integrated with a USB (universal serial bus) interface. They are typically small, lightweight, removable and rewritable. It is a flash memory card that plugs into the computer's USB port.

Advantages of pendrives

It is more compact, faster, hold more data, and are more reliable due to their lack of moving parts, and more durable design. It uses the USB mass storage standard, supported natively by modern operating system such as window, Linux and UNIX.

Hardware

The physical components of a computer are called hardware. Such items may be electronic, electrical, magnetic, mechanical or optical components, example of components are microprocessor, hard disks, optical disks, monitors, keyboard, printer, plotter, etc.

Software

A sequence of instruction given to a computer to perform a particular task is called software or a program. The software required to execute user's program is known as system software. The term software includes both system software and user's program. The system software. The system software includes operating system, assembler, compiler, interpreter, debugging programs, text editors, etc.

MICROSOFT WORD

TO START WORD

Click start button, highlight all programs and click MS Office word.

WHY USED WORD?

You can use word as word processor for printing letters, preparing mailing lists, creating documents and reports. The speed of this operation is much faster and easier than what is possible on any other word processing package. You can get help to select appropriate words in a sentence. You can add page number or change margins. You can emphasize selected words by printing them in boldface, italics or in bold italics.

WORD PROCESSING TERMINOLOGIES

WORD WRAP

A word processor automatically moves the text to the next line when you type beyond the right margin. This is known as word wrap.

HEADER AND FOOTER

A header is a special text which is printed at the top of each page above the normal text. A footer is a special text which is printed at the bottom of each page.

DISPLAYING OR HEADING RULES

To display the ruler

1. On the view tab, in the Show/Hide groups, select the Ruler check box.
2. Horizontal and vertical ruler appears above and to the left of the page.

Different Kinds of tabs

Left-aligned

Characters appears to the left of the tab as you type, indicated by an L-shaped angle in the box.

Centre-aligned

Characters are centered at the tab position; indicated by an angle with the vertical bar centered over the base line.

Right-aligned

Characters extend to the right of the tab as you; indicate by a reverse L-shaped angle.

Decimal

The decimal point aligns with the tab as you type; indicated by the symbol for a symbol for a centre-aligned tab with a decimal point of the vertical member.

THE STATUS BAR

The status bar, seen at the bottom of the word. Window shows information about the active document or the work you are processing.

MOUSE TERMINOLOGY

Points

Position the mouse pointer on an item.

Single click

If you single-click the mouse, word 2010 move the cursor wherever you click.

Double- click

If you double- click the mouse, word 2010 select a single word.

Drag

Point to an item (i.e. any word or paragraph). Press and hold the left mouse button as you move the to a new location, and then release the mouse button.

Triple -click

If you triple-click the mouse, word 2010 selects the entire paragraph where you clicked the mouse.

USING WORD 2010

While using word 2010, you will perform to the following operation:

- Creating a document
- Typing and editing a document
- Opening and saving a document
- Moving around in a document
- Printing a document
- Closing a document and quilting

OPENING AN EXISTING DOCUMENT

To save a document

1. Click office button and choose open. Click the open button on the Quick Access Toolbar the open dialog box appears.
2. In the open dialog box choose the location of the file you want to open choose the open drop down list and choose the desired option.

SAVING A DOCUMENT

To save a document

1. Click the office button. A drop-down menu appears. Click save or choose the save button on the Quick Access Toolbar.
2. When you save a document for the first time, word 2007 display the save As... dialog box so that you can type a name for the document.

CLOSING, OPENING DOCUMENT AND QUILTING WORD

To Close a Document and exit word:

1. If you want to close the open document, choose office button and then select close.
2. To quilt word click office button and Exit word button.

To UNDO OR REDO CHANGES:

1. Undo: press Ctrl+ Z

2.Redo: press Ctrl + Y

On Quick Access Toolbar.

DELETING A PARAGRAPH MARK

A paragraph mark indicates the end of a paragraph formatting. This marks stores the formatting for the text and graphics in the paragraph.

Selecting word with a keyboard

- **Home:** Move cursor to beginning of the current line (Home key).
- **End:** Move cursor to the end of the current line(End line).
- **Ctrl + Shift +Left/Right arrow:** Select text by whole words. (Alt+ Shift + Left/Right arrow on Mac)
- **Ctrl + Home:**cursor Moves to beginning of the document.
- **Ctrl+ End:** cursor Moves to the end of the document.
- **Shift+ Left/Right Arrow:**Select characters one at a time.
-
- **Shift+ Ctrl+ Up/Down:** Select paragraphs. (Shift+ Alt+ Up/Down on Mac)
- **Shift+ Up/Down arrow:** Select text by entire lines
-
- **Shift+ Page Up/Page Down:** Select one screen's height of text
- **Shift+ Home/End:** Select all the text from the current caret position to the beginning or end of the current line. (Cmd+ Shift+ Left/Right arrow on Mac).
- **Ctrl+ Shift +Home/End:** Select all the current caret position to the beginning or end of the document. (Cmd + Shift+ Up/Down arrow on Mac).
- **Ctrl+ A:** Select the entire document (Command + A on Mac)

KEYBOARD SHORTCUTS FOR MOVING AND COPYING TEXT OR GRAPHICS

- Copy the selected text or the graphics to the clipboard Ctrl + c keys press together.
- Move the selected text or the graphics to the clipboard Ctrl + X or Shift + Del Keys press together.

- Paste clipboard contents into a document Ctrl + V or Shift + INS Keys press together.
- Press Alt+ Shift+ arrow key together sentence gets selected, becomes bold, sets left alignment and changes its style.

CHARACTER FORMATTING USING THE FONT COMMAND

To change the font of an existing text

1. Selector text you want to format.
2. Click the HOME tab of font group. Click font launcher dialog box. The font dialog box appears.
3. Click on the FONT tab of the font dialog box.
4. The font tab property sheet appears. It offers the options for changing the font style and size.
5. To change the font, enter the name of the font in the FONT: use the scrollbox on the right of the font list to see the all fonts available
6. To change the font style options, type the desired option in the font style: select from the list box below the font style: box.
7. The size: text box displays the current font size: to change the size enters the new size in the size: select the font size from list box just below the size: text box.
8. Underline style: drop down list offers different understanding options as explained. Click the drop down arrow to see the various understanding options.

DIFFERENT TYPES OF UNDERLINE

- Font color: drop down left offers different color option to the text. You would see the displays of the text in color if you have a color monitor printer.
- The effect box of the font tab enables you to give various font effects.

CHANGING THE COLOR OF TEXT

1. Change the color of text (font color).
2. Highlight the text with a different color (Text Highlight Color).

To change the color of the text using ribbon.

1. Select the text you want to color.
2. Click the Home tab of font group.
3. Click the downward-pointing arrow to the right of the font color icon.
4. When you move the mouse pointer over the Theme Color, you can see the color appears in the text.
5. Click a desired color you want. After you choose a color, that color appears directly on the font color icon. Now you can select text and click directly on the font color icon.

HIGHLIGHTING TEXT

To select highlight text using ribbon

1. Select the text you want to highlight
2. Click the Home tab of font group
3. Click the downward- pointing arrow to the right of the Text Highlight color icon. A color palette appears. Click the mouse pointer over the color you can see the changes appearing in selected text. Choose the desired color you want to apply.
4. Press Esc key (or click the text highlight color icon again) to turn of the text Highlight.
5. Color command.

APPLYING CHARACTER FORMATTING USIING KEYBOARD

To formats using shortcut key

- Bold CRTL+ B
- Italic CRTL+ L
- Single underline CRTL+ U
- Word underline CRTL+ SHIFT+W
- Double Underline CRTL+ SHIFT+ D
- SMALL CAPS CRTL+ SHIFT+ K
- ALL CAPS CRTL+SHIFT+ A
- Hidden text CRTL+ SHIFT+ H
- Superscript CRTL+ SHIFT+ =
- Subscript CTRL+=

- Copy formatting CTRL+SHIFT+C
- Paste formatting CTRL+SHIFT+V
- Remove formatting CTRL+SPACEBAR
- Change case of letters SHIFT+F3
- Font CTRL+ SHIFT+F
- Symbol font CTRL+SHIFT+Q
- Point size CTRL+ SHIFT+P
- Next large point size CTRL+>
Available for selected fonts
- Next large point size CTRL+<
Available for selected fonts
- Up one point size CTRL+]
- Down one point size CTRL+[

COPYING CHARACTER FORMATTING

To copy character formatting using mouse

1. Select the text that has the format you want to copy.
2. Click the Home tab of clipboard group. Click the format painter command.
3. When the mouse pointer change to a paint brush icon with an I-bean, select the text you want to format.

After you finish copying character formatting, click the format painter button or press Esc key to restore the normal I-bean pointer.

To copy character formatting using the keyboard

1. Select the text that has the format you want to copy and press Ctrl+ shift+ c keys together.
2. Select the text that has format you want to change and then press Ctrl+ shift+ keys together.

FORMATTING PARAGRAPHS

- Alignment
- Indents
- Line spacing
- Space before and after the paragraph

APPLYING BORDER

To apply border to a paragraph, or group of paragraph

- Position the insertion point anywhere in the paragraph to be enclosed in a border or select multiple or select the text to be enclosed. In page setup groups, click layout tab choose border. A drop-down menu appears choose the selected border you want to apply for paragraph.
- In paragraph groups, click on drop down arrow, select border and shadings..

REMOVE SHADING USING MOUSE

1. Select the paragraph or paragraphs from which you want to remove shading.
2. Click Ok.
3. In borders and shading dialog box, select the shading tab.
4. Choose no fill from the fill group and also clear style from the pattern group.

INSERTING SELECTION BREAK

To insert section break

1. Position the insertion point where you want the break to occur.
2. In the page layout tab of page setup groups, in the top right corner, click insert page and section break command. The list of options appears.

INSERTING SECTION BREAK

To insert page numbers

1. On the insert tab, in the header and footer group, click Page Number.
2. Click top of page, bottom of page, or page margins, depending on where you want page number to appear in your document.
3. Choose a page numbering design from the gallery. The gallery includes page option such as bold numbers 1; plain numbers 1, Dots, thick line, Tildes, etc.
4. Select any option from the list. You can see the bottom of page appears in the document.

TEXT EFFECT

- Left Alignment: align the text at the left margin.
- Right Alignment: align the text to the right margin.

- Centre Alignment: centers text between the left and right margins on the center line
- Justify Alignment: Align the text at both the margins by increasing the spacing between the words.

INDENTS

Indents are the white space added to the margins and thus decreasing the text area for paragraphs.

LINE SPACING

Line spacing in a paragraph means the amount of space between the lines.

Different options of line spacing

- | | |
|---------------------|---|
| • Single spacing | No blank line space appears between the line of text. |
| • Double spacing | a blank line space appears between the line of text. |
| • 1 ½ spacing | Half the height of one line space of text appears between the |
| Line of text. | |
| • Exact line height | Specify the space you want between the lines. |

FORMATTING PARAGRAPH USING SHORTCUT KEYS

To format paragraph using the shortcut keys

Left	CTRL + L keys pressed together
RIGHT	Ctrl + R keys pressed together center
Center	Ctrl + E keys pressed together
Justify	Ctrl +J keys pressed together

To change the line spacing the keyboard shortcuts keys combination

Ctrl + 1	Creates single space lines.
Ctrl + 2	Creates double space line.
Ctrl +5	Creates one and half space line.
Ctrl + 0(zero)	Add or remove one line space proceeding a paragraph.

CREATING A TABLES

To create a table a using mouse:

1. Position the insertion point where you want to insert the table.
2. Click the insert tab of table group. Click down arrow and choose the insert table grid. Drag the mouse button to highlight the desire number of row and columns.
3. The displayed grid represents the required numbers of rows and column. Click the mouse button after getting the right number in the grid.

MODIFYING TABLES

To insert single row in the middle of a table:

1. Position the insertion point below the row where you want the new row to be inserted.
2. Click the layout tab, click insert above or below in the Row & Columns group. The new row is insert below or above the selected row.

Deleting Rows

To delete a row or row of cell:

- Select the row (s) to be deleted.
- Click the layout tab, click Row and column group. Click down arrow and choose Delete Rows.
This will delete the row and their contents. To delete the contents of cell only, but leave the cell intact, select text or graphics and Press the delete key.

INSERTING COLUMNS

To insert a single column in the middle of the table.

1. Select the column in the middle of the table.
2. Click the layout tab, click insert left or right in the rows and column group. The new column is inserted left or right to the selected column.

DELETING COLUMNS

To delete columns:

1. Select the column or columns to be deleted.
2. Click the layout tab. click table down arrow and choose Delete columns.
3. Click ok

CREATING GRAPHS AND CHARTS

To insert a chart using data in word document.

4. Move the insertion point where you want to insert a chart.
5. Click insert tab, in the Illustrations group click the chart button.
6. The insert chart dialog box opens. In the gallery on the right, under column, choose desired type of column you want. Click ok.
7. A sample column chart is inserted in the document on the left and an Excel worksheet containing the plotted sample data opens on the right.
8. Select the data contained in Excel worksheet, and then press the Del key

INSERT PICTURE COMMAND

To insert a pictures

1. Open the document in which you want to insert the graphics.
2. Position the insertion point where you want the graphics to appear.
3. Click the insert tab and choose pictures icon in the Illustration group. Insert pictures dialog box of word appears.
4. In the insert picture dialog box, displaying the contents of your sample pictures folder.
5. Select the desired picture you want to insert in the document.

To insert a clip Art

1. Open the document in which you want to insert the graphics.
2. Position the insertion point where you want the graphics to appear.
3. Click the insert tab & choose clipart icon in the Illustration group.
4. In the Clip Art task pane, select the graphics you want to insert in the document.
5. Click the arrow right side of the picture. A pop up menu appears. Click Insert.

INSERTING HEADER/FOOTER

1. Click the insert tab, in Header & Footer group , click the Header button.
2. click the down arrow . A list of header Gallery opens
3. Select the desired Style you want.
