# **TYPES OF SOFTWARE**

## COMPUTER SOFTWARE

Computer software is the set of programs that makes the hardware perform a set of tasks in particular order. Hardware and software are complimentary to each other. Both have to work together to produce meaningful results. Computer software is classified into two broad categories; system software and application software.

### System Software:

System software consists of a group of programs that control the operations of a computer equipment including functions like managing memory, managing peripherals, loading, storing, and is an interface between the application programs and the computer. MS DOS (Microsoft's Disk Operating System), UNIX are examples of system software.

## Application software:

Software that can perform a specific task for the user, such as word processing, accounting, budgeting or payroll, fall under the category of application software. Word processors, spreadsheets, database management systems are all examples of general purpose application software.

#### Types of application software are:

- Word processing software: The main purpose of this software is to produce documents. MS-Word, Word Pad, Notepad and some other text editors are some of the examples of word processing software.
- Database software: Database is a collection of related data. The purpose of this software is to organize and manage data. The advantage of this software is that you can change the way data is stored and displayed. MS access, dBase, FoxPro, Paradox, and Oracle are some of the examples of database software.
- **Spread sheet software:** The spread sheet software is used to maintain budget, financial statements, grade sheets, and sales records. The purpose of this software is organizing numbers. It also allows the users to perform simple or complex calculations on the numbers entered in rows and columns. MS-Excel is one of the example of spreadsheet software.
- **Presentation software:** This software is used to display the information in the form of slide show. The three main functions of presentation software is editing that allows insertion and formatting of text, including graphics in the text and executing the slide shows. The best example for this type of application software is Microsoft PowerPoint.
- **Multimedia software:** Media players and real players are the examples of multimedia software. This software will allow the user to create audio and videos. The different forms of multimedia software are audio converters, players, burners, video encoders and decoders.

## COMPUTER LANGUAGE

Computer language or programming language is a coded syntax used by computer programmers to communicate with a computer. Computer language establishes a flow of communication between software programs. The language enables a computer user to dictate what commands the computer must perform to process data. These languages can be classified into following categories (Fig. 1.10).



Fig. 1.10: Computer Languages

- 1. Machine language
- 2. Assembly language
- 3. High level language

# 1. Machine Language

Machine language or machine code is the native language directly understood by the computer's central processing unit or CPU. This type of computer language is not easy to understand, as it only uses a binary system, an element of notations containing only a series of numbers consisting of one and zero, to produce commands.

## 2. Assembly Level Language

Assembly Level Language is a set of codes that can run directly on the computer's processor. This type of language is most appropriate in writing operating systems and maintaining desktop applications. With the assembly level language, it is easier for a programmer to define commands. It is easier to understand and use as compared to machine language.

# 3. High Level Language

High Level Languages are user-friendly languages which are similar to English with vocabulary of words and symbols. These are easier to learn and require less time to write.

They are problem oriented rather than 'machine' based.

Program written in a high-level language can be translated into many machine languages and therefore can run on any computer for which there exists an appropriate translator.

# Compiler & Interpreter

These are the programs that execute instructions written in a high-level language. There are two ways to run programs written in a high-level language. The most common is to compile the program; the other method is to pass the program through an interpreter.

## a. Compiler

A compiler is a special program that processes statements written in a particular programming language called as source code and converts them into machine language or "machine code" that a computer's processor uses.

Compiler translates high level language programs directly into machine language program. This process is called compilation. (Fig 1.11)

#### b. Interpreter

An interpreter translates high-level instructions into an intermediate form, which it then executes. Compiled programs generally run faster than interpreted programs. The advantage of an interpreter, however, is that it does not need to go through the compilation stage during which machine instructions are generated. This process can be time-consuming if the program is long. (Fig 1.12)



Fig. 1.11: Compilation



Fig. 1.12: Interpretation

## Open source software:

Open source refers to a program or software in which the source code (the form of the program when a programmer writes a program in a particular programming language) is available to the general public for use and/or modification from its original design free of charge.

Open source code is typically created as a collaborative effort in which programmers improve upon the code and share the changes within the community.

The rationale for this movement is that a larger group of programmers not concerned with proprietary ownership or financial gain will produce a more useful and bug-free product for everyone to use.

The basics behind the Open Source Initiative is that when programmers can read, redistribute and modify the source code for a piece of software, the software evolves. Open source sprouted in the technological community as a response to proprietary software owned by corporations.

Proprietary software is privately owned and controlled. In the computer industry, proprietary is considered the opposite of open. A proprietary design or technique is one that is owned by a company. It also implies that the company has not divulged specifications that would allow other companies to duplicate the product.

## OPERATING SYSTEM

An operating system is a software component of a computer system that is responsible for the management of various activities of the computer and the sharing of computer resources.

It hosts several applications that run on a computer and handles the operations of computer hardware. Users and application programs access the services offered by the operating systems, by means of system calls and application programming interfaces. Users interact with a computer operating system through Command Line Interfaces (CLIs) or Graphical User Interfaces known as GUIs. In short, an operating system enables user interaction with computer systems by acting as an interface between users or application programs and the computer hardware. Some of the common operating systems are LINUX, Windows, etc.

## WINDOWS XP DESKTOP ELEMENTS

## Start Menu

When clicked on the start button, start menu appears on the screen giving all the available options to start using the windows (see fig. 1.13). Desktop icons provide access to commonly used programs, folders and files.



Fig. 1.13

Task	Description		
All Programs	Displays a list of installed program, which a user can start or use		
My Documents	Displays a list of documents used by the current user		
My Recent Documents	Displays a list of recently used documents by the current user		
My Picture	Displays a list of pictures/photos used by the current user		
My Music	Displays a list of music/songs used by the current user		
Control Panel	Displays a list of utilities to configure the computer system and install software and hardware		
Printers and Faxes	Displays a list of currently installed printers and faxes in the current computer system		

Help and Support	Start the XP help and support program to find how to do a task in windows
Search	Helps the user to find any file or folder from a list of document used by the current user.
Run	Starts an application program or executes a DOS command
Log Off	Log off the currently logged in user of the system
Turn Off Computer	Close currently opened program, log off the current user and switch off the computer system.

#### Task Bar

When you start the computer system, then start button and task bar appears on the bottom of the screen and by default remains visible when Windows is running (See Fig. 1.14).

Whenever a program is run or a window is opened, an icon representing the program appears on the taskbar. To switch between windows or program, click on the icon representing the window on the task bar. When the program or window is closed, the icon disappears from the task bar.





The system tray is part of the task bar and displays the current time as well as the status icons.

## Start a Program

To start a program, do the following;

- 1. Click on the **Start** Button.
- 2. Click on the **All Programs**, you will see a list of all the program icons and program folders.
- 3. Point to the desired folder say **Accessories** and select the desired program to run such as **Paint**.

## Quit a Program

To quit a program, select the close button ( $\times$ ) in the upper-right corner of the window OR

Click on File menu and select Close option.

# Getting Help

Online help and support provided is of great help in using and learning windows. One can get help on a specific topic or on current task which is being executed. To start help

- click on the Start button
- click on Help and support option

A list of help and support topics and online tutorial is displayed on the screen (see Fig. 1.15). One can use the tabs in the screen to search for the desired information in several ways.



Fig. 1.15

- Click on a topic or task to know more about how to get the job done or type in a search word to locate the help on a specific topic.
- Click on the **Index** tab to locate specific topic listed alphabetically and the follow the instructions displayed on the screen.
- Click on Favourites tab to add Help Topics, search results to your Favourites list to make them easy to locate in the future
- Click on **History** to pick from a list of Help and Support pages that you have read in the past.
- Click on Support to get various kind of online support such as Microsoft online support, News Group on Windows.
- Click on **Option** to configure the help and support center as per your requirement.
- To close Help and Support windows, select the close button (×) in the upper-right corner of the window.

# Searching Files and Folders

If you don't know where a document or folder is located, you can use the Search option to locate it in the local storage such as Hard Disk, CD or in the network drive (if the system is part of a network). The Indexing Service provided by the Search maintains an index of all the files on your computer, making searches faster.

To search for a file or folder

- 1. Click **Start**, and click on **Search**.
- 2. Select **All files and folders** from the left hand side of the windows (see Fig. 1.16).
- 3. Type the name of the file or folder in part or full, or type a word or phrase that exists in the file to be searched.
- 4. If you do not know either piece of information select one or more of the remaining options:
  - In Look in, click the drive, folder, or network you want to search.



Fig. 1.16

- Click on When was it modified? to look for files that were created or modified on or between specific dates.
- To look for files of a specific size, click on What size is it? Select a size.
- Click on More advanced options to specify additional search criteria.

5. Once you finish specifying the search criteria, click on Search to locate the file.

Similarly you can search for specific information on Internet, or people in your address book, search for a printer or a computer on your network.

# Changing System settings

By using Control Panel's tools you can customize the way Windows look and work! Also you can install new hardware, add and remove (install/uninstall) software programs, change the look and feel of your desktop and much more. It also includes a number of administrative tools in Administrative

Tools option for better administration of Windows in terms of User Management, Event viewer, Component Service etc. To start Control Panel and use the available tool, do the following;

- Click on Start
- Click on Control Panel
- Select the desired tool to use

For example to create a new or modify the settings for an existing user click on 'User Account' icon in the control panel.

# Using 'My Computer'for browsing your disk drivers

Your disk drives hold all the information on your computer: all the files, folders, programs as well as the documents.

My Computer displays the contents of floppy, hard disk, CD-ROM, and network drives. One can also search for and open files and folders, and use options in Control Panel to modify computer's settings.

• To use My Computer, click on **Start**, and then click on **My Computer** or double click the **My computer** icon on the desktop. My computer windows opens to show all the drives present on your computer. (see Fig. 1.17).

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Shared Documents	Raju's Documents		
Hard Disk Drives			
Local Disk (C:)	Local Disk (D:)	Local Disk (E:)	
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Fig. 1.17