

DIGITAL LITERACY I

(ICT 1)

level 200 (Week 5)

Plan of the day

COMPUTER SOFTWARE

- ✓ Introduction to software
- ✓ Classification of software
- ✓ Other types of software

COMPUTER SOFTWARE

Definition

Software is a set of programs that instructs the computer about the tasks to be performed. Software tells the computer how the tasks are to be performed; hardware carries out these tasks. Different sets of software can be loaded on the same hardware to perform different kinds of tasks.

For example

Softcopy output:

A user can use the same computer hardware for writing a report or for running a payroll program. The components like monitor, keyboard, processor, and mouse, constitute the hardware

TYPES OF SOFTWARE

Software can be broadly classified in two categories:

1. System Software, and
2. Application Software.

1. SYSTEM SOFTWARE

System software provides basic functionality to the computer. System software is required for the working of computer itself. The user of computer does not need to be aware about the functioning of system software, while using the computer. For example, when you buy a computer, the system software would also include different device drivers. When you request for using any of the devices, the corresponding device driver software interacts with the hardware device to perform the specified request.

The purposes of the system software are:

- ✓ To provide basic functionality to computer,
- ✓ To control computer hardware, and
- ✓ To act as an interface between user, application software and computer hardware.

system software may be broadly divided into two categories

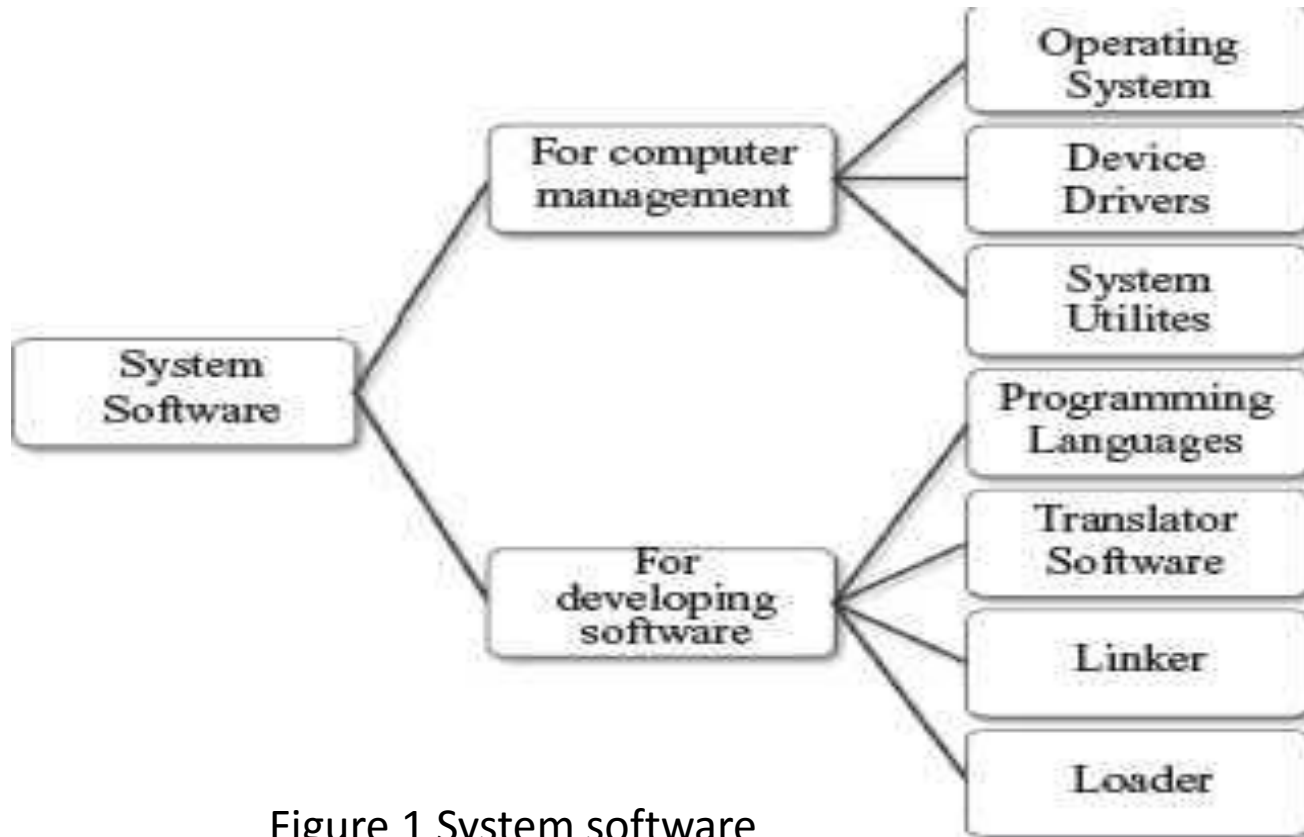


Figure 1 System software

System software for the management and functionality of computer

System software for the management and functionality of computer relates to the functioning of different components of the computer, like, processor, input and output devices etc. System software is required for managing the operations performed by the components of computer and the devices attached to the computer. It provides support for various services, as requested by the application software. Operating system, device drivers, and system utilities constitute the system software for management of computer and its resources.

System software for the development of application software

System software for the development of application software provides services required for the development and execution of application software. System software provides the software tools required for the development of application software. The programming language software, translator software, loader, and linker are also categorized as system software, and are required for the application software development.

Operating System

Operating System (OS) is an important part of a computer. OS intermediates between the user of a computer and the computer hardware. OS controls and coordinates the use of hardware among the different application software and the users. It provides an interface that is convenient for the user to use, and facilitates efficient operations of the computer system resources.

The key functions of OS are:

- ✓ It provides an environment in which users and application software can do work.
- ✓ It manages different resources of the computer like the CPU time, memory space, file storage, I/O devices etc. During the use of computer by other programs or users, operating system manages various resources and allocates them whenever required, efficiently.

The key functions of OS are:

- ✓ It controls the execution of different programs to prevent occurrence of error.
- ✓ It provides a convenient interface to the user in the form of commands and graphical interface, which facilitates the use of computer.

Some available operating systems are

Microsoft Disk Operating System (MS-DOS), Windows 7, Windows XP, Linux, UNIX, and Mac OS X Snow Leopard.

Device Driver

A device driver acts as a translator between the hardware and the software that uses the devices. In other words, it intermediates between the device and the software, in order to use the device. Some devices that are commonly connected to the computer are: keyboard, mouse, hard disk, printer, speakers, microphone, joystick, webcam, scanner, digital camera, and monitor.

System Utilities

System utility software is required for the maintenance of computer. System utilities are used for supporting and enhancing the programs and the data in computer. Some system utilities may come embedded with OS and others may be added later on.

Some examples of system utilities are:

- ✓ Anti-virus utility to scan computer for viruses.
- ✓ Data Compression utility to compress the files.
- ✓ Cryptographic utility to encrypt and decrypt files.
- ✓ Disk Compression utility to compress contents of a disk for increasing the capacity of a disk.
- ✓ Disk Partitioning to divide a single drive into multiple logical drives. Each drive is then treated as an individual drive and has its own file system.
- ✓ Disk Cleaners to find files that have not been used for a long time. It helps the user to decide what to delete when the hard disk is full.

Some examples of system utilities are:

- ✓ Backup Utility to make a copy of all information stored on the disk. It also restores the backed up contents in case of disk failure.
- ✓ System Profiling Utility provides detailed information about the software installed on the computer and the hardware attached to it.
- ✓ Network Managers to check the computer network and to log events.

The system utilities on a computer working on Windows XP OS can be viewed by clicking <Start><All Programs><Accessories><System Tools>.

Machine Language

A program written in machine language is a collection of binary digits or bits that the computer reads and interprets. It is a system of instructions and data executed directly by a computer's CPU. It is also referred to as machine code or object code. It is written as strings of 0's and 1's,

2. APPLICATION SOFTWARE

The software that a user uses for accomplishing a specific task is the **application software**. Application software may be a single program or a set of programs. A set of programs that are written for a specific purpose and provide the required functionality is called **software package**.

Some examples of application software packages

- ❑ Word Processing Software: For writing letter, reports, documents etc. (e.g. MS-WORD).
- ❑ Image Processing Software: For assisting in drawing and manipulating graphics (e.g. Adobe Photoshop).
- ❑ Accounting Software: For assisting in accounting information, salary, tax returns (Tally software).

Some examples of application software packages

- ❑ Spreadsheet Software: Used for creating budget, tables etc. (e.g. MS-Excel).
- ❑ Presentation Software: To make presentations, slide shows (e.g. MS-PowerPoint)
- ❑ Suite of Software having Word Processor, Spreadsheet and Presentation Software: Some examples are MS-Office, Google Docs, Sun Open office, Apple iWork.

Some examples of application software packages

- ❑ CAD/CAM Software: To assist in architectural design. (e.g. AutoCAD, Autodesk)
- ❑ Geographic Information Systems: It captures, stores, analyzes, manages, and presents data, images and maps that are linked to different locations. (e.g. ArcGIS)
- ❑ Web Browser Software: To access the World Wide Web to search documents, sounds,
images etc. (e.g. Internet Explorer, Netscape Communicator, Chrome).

OTHER TYPES OF SOFTWARE

Different kinds of software are made available for use to users in different ways. The user may have to purchase the software, can download for free from the Internet, or can get it bundled along with the hardware. Nowadays with the advent of Cloud computing, many application software are also available on the cloud for use through the Internet, e.g. Google Docs.

The different ways in which the software are made available to users are:

- ❑ **Retail Software** is off-the-shelf software sold in retail stores. It comes with printed manuals and installation instructions. For example, Microsoft Windows operating system.
- ❑ **OEM Software** stands for “Original Equipment Manufacturer” software. It refers to software which is sold, and bundled with hardware. Microsoft sells its operating system as OEM software to hardware dealers. OEM software is sold at reduced price, without the manuals, packaging and installation instructions. For example, Dell computers are sold with the “Windows 7” OS pre-loaded on them.

The different ways in which the software are made available to users are:

- ❑ **Shareware** is a program that the user is allowed to try for free, for a specified period of time, as defined in the license. It is downloadable from the Internet. When the trial period ends, the software must be purchased or uninstalled.
- ❑ **Freeware** is software that is free for personal use. It is downloadable from the Internet. The commercial use of this software may require a paid license. The author of the freeware software is the owner of the software, though others may use it for free. The users abide by the license terms, where the user cannot make changes to it, or sell it to someone else.

The different ways in which the software are made available to users are:

❑ **Open-Source** Software is software whose source code is available and can be customized and altered within the specified guidelines laid down by the creator. Unlike public domain software, open-source software has restrictions on their use and modification, redistribution limitations, and copyrights. Linux, Apache, Firefox, OpenOffice are some examples of open-source software.