COMPUTER SOFTWARE

COMP101 / COMP-111

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Chapter 5

Computer Software

Q.1 What is Computer Software?

A Software is a set of instructions given to the computer to solve a particular problem or to perform a specific task. It is also called a computer program. A computer cannot do anything without software. Software tells the computer what to do and how to do. Hardware operates under the control of a given set of instructions. Therefore, a computer performs different operations according to the given instructions. Software is developed in a particular computer programming language.

There are two Types of computer software

- Application Software
- System Software

System Software

Q. 2 What is System Software?

System Software is set of programs to control and manage the actual operations of computer hardware. It controls the usage and allocation of different hardware components. It also enable application programs to execute properly. It controls and coordinates different operations of a computer system or mobile device. System software is an essential part of the computer system. It controls the basic operations such as saving data on disk, making computer to work for us, printing a document etc.

There are Four Categories of System Software as follows

- Operating system
- Device driver
- Utility software
- Language processors

Q.3 Write a note on categories of System software.

Operating System: An operating system is a set of programs that manages all computer components and operations. It is the most important software that runs on a computer. A computer cannot do anything without an operating system. Operating system must be installed on every computer. The operating system acts an interface between the computer user and the hardware. The users interact with the computer through operating system. Examples of operating system are Microsoft windows, linux, unix, Mac OS etc.

Device driver: A device driver is a type of system software. It is also known as driver. An operating system uses a device driver to communicate with device. Many device drivers are

automatically installed

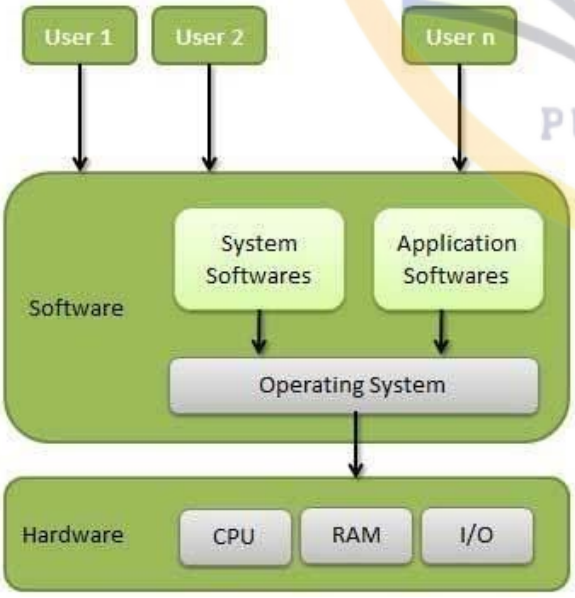
with Microsoft Windows. All devices attached to computer need the device drivers such as printers, modem, sound cards etc. A device cannot work properly if its required device driver is not installed properly.

Utility software: A utility program is a type of system software that is used for effective management of computer system. The user can use utility program to perform maintenance tasks related to different devices and programs. The utility programs keep the computer system runny smoothly. Most operating systems includes different built-in utility programs. Examples of utility programs are Windows Explorer, Disk cleanup, disk defragmentation, windows picture and Add or Remove programs.

Language processors: Language processor is also a type of system software. Language processor translated a source code into machine code. Every computer language has its own translator. Computer understands only machine language. A program written in high level language is called source code. A program written in machine language is called machine code or object code. Source code cannot be run on a computer directly. It must be converted into machine code using a language processor before execution.

Q.4 Write a note on operating system and its functions.

Operating system: An operating system is a set of programs that manages all computer components and operations. A computer cannot do anything without an operating system. Operating system must be installed on every computer. User interact with computer through operating system. When computer is turned on, the operating system runs and checks that all part of computer are functioning properly. It manages all operations on the computer after loading into memory. Operating system acts as an interface between user and computer.



The operating system's job:

Your computer's **operating system** (**OS**) manages all of the **software** and **hardware** on the computer.
Most of the time, there are several different computer programs running at the same time, and they all need to access your computer's **central processing unit (CPU)**, **memory**, and **storage**. The operating system coordinates all of this to make sure each program gets what it needs.

Operating system performs the following **functions**.

Booting: It is a process of starting and restarting computer. It can be initiated by hardware such as a button press, or by a software command. In the **Booting process**, System will check all the hardware's and Software's those are installed or attached with the system and all the Files those are required for running a system, also loads

into memory.

Memory Management: It is most important function of operating system. Different programs, data and processes are executed in memory. So memory management cannot be done without operating system. Without operating, a system will not work properly as there are chances of programs to mix with each other.

Loading and execution: Before execution every program is loaded into memory. Operating system provides facility to load programs into memory for execution.

Data security: Data is important part of computer system. The operating system protects the data stored on computer from illegal use, modifications or deletion.

Providing interface: User interface is used to interact with the computer. User interface controls how you enter data and instructions and how information is displayed on the screen.

Operating system provides two kinds of interface.

1. **Graphical User Interface:** In this interface user communicate with the computer through visual environment provided by operating system. It uses icons, windows, menus and other graphical objects to issue commands.
2. **Command-line interface:** In this interface user type different commands to communicate with computer.

Process management: CPU can perform one task at a time. If there are multiple tasks at a time, operating system decides which task should get CPU first.

Disk management: Operating system provide facility of disk management. It has ability to manage stored files and folders in a proper way.

Device controlling: Operating system controls the devices attached to it. It controls with the help of installed software called device drivers.

Printing controlling: Printer is attached to computer. Operating system controls printing function. If user issues multiple printing commands, operating system does not mix up data of these multiple files and print them separately.

Q5 Write a note on Categories/Types of Operating system.

There are three categories of operating system.

1. Stand-alone operating system.
2. Server Operating system.
3. Mobile Operating system.

Stand-alone operating system:

A **standalone operating system** is complete and works on a notebook or desktop computer. Some standalone operating systems includes network capabilities to setup small network for home or small business whereas some standalone operating systems works with network operating systems and are called as client operating system. A client operating system can work with or without a network. Some examples of standalone operating systems are DOS, Windows, Linux, Unix, Mac OS and Chrome OS etc

Server Operating system:

A server operating system (OS) is a type of operating system that is designed to be installed and used on a server computer. It is an advanced version of an operating system, having features and capabilities required within a client-server architecture or similar enterprise computing environment. A server operating system usually resides on a server. The client computers on the network depends on the network resources. Many standalone operating systems work as clients and interact with server operating system. Server operating system are specially designed to support all sizes of networks from medium to large businesses and web servers. Some examples of server operating system are as follows:

- Windows Server Operating system
- OS X server
- Unix Server
- Linux Server
- Solaris Server
- NetWare Server

Mobile Operating system:

A **mobile operating system**, also called a **mobile OS**, is an **operating system** that is specifically designed to run on **mobile** devices such as **mobile** phones, smartphones, PDAs, tablet computers and other handheld devices. It provides graphical user interface (GUI) and different features such as touch screen support, navigation system, wireless connectivity, speech recognition, email support and web browsing etc. Some examples of mobile operating systems are Android, IOS, Windows phone, Blackberry, Firefox OS etc.

Application Software

Q.6 What is Application Software?

A program or set of programs that are specially designed to perform a specific task or to solve a specific problem is called application software. Today, various application software are available for different purposes. Some application software are developed for a particular organization or customer such as software developed to maintain the records of students of a particular college. Similarly, some application software are developed by software development organizations (or any programmer) to solve some common problem of many people or users such as word processing software

Categories of Application Software are:

- Packaged software
- Custom software
- Shareware
- Freeware
- Public domain software
- Open software

Q.7 Write a note on categories of Application Software.

Packaged software: Packaged software is a copyrighted available software for different type of users. It is not developed for some specific user or organization. Examples of word processing, spreadsheet software etc.

Custom software: It is designed for a particular customer or an organization. It is developed to meet exact requirements of a particular or organization. The cost of custom software is more than packaged software.

Shareware: Shareware is a copyrighted software that is available free of cost for limited time period. The user can use shareware for a certain time period. The user has to purchase it if he wants to use it further. It has to be uninstalled from the computer if the user don't want to use it further.

Freeware: It is a copyrighted software that is available free of cost for unlimited time period. Many software programs are produced for educational purpose.

Public domain software: It is also a free software. It is basically doted for public use. It has no copyright. Any person can use or distribute public domain software.

Open software: Open source software is provided for use, modification and redistribution. Anyone can modify the instructions of software and redistribute it. Open source software are usually downloaded from internet.

Q.8 Write a note on productivity software.

Productivity Software: Software which is used for creating documents, worksheets, presentations, and graphs, etc. is called productivity software. It is used to solve some common problems of many people or users. Examples of productivity software are Word Processing Software, Spreadsheet Software, Presentation Software, Database Management Software and Software Suite etc.

- **Word Processing Software:** This software is used for creating and editing documents such as letters, memos, reports, essays, etc. Example: Microsoft Word
- **Spreadsheet Software:** Spreadsheet software is used to organize data into an electronic sheet in the form of rows and columns and to perform calculations on the data. Columns and rows collectively are called a **worksheet.** Spreadsheet software also provides the facility to create various types of charts for displaying data graphically. Example: MS Excel
- **Presentation Software:** Presentation software is used to create slides for making presentations to communicate ideas, messages, and other information to a group. Example: Microsoft PowerPoint
- **Database Management Software:** A database is a collection of related data or records on any subject such as records of the books in a library, and information about the students of the college. Data in a database can be accessed very easily. Database management software is used to create, access, and manage databases. Examples:

Microsoft Access, Oracle, and MySQL

- **Software Suite:** A software suite is a collection of individual-related applications available as a single package. It is also called an application suite or productivity suite. Example: Microsoft Office

Q.9 Write a note on graphic and media software.

Graphics and Media Software: Graphics software is used to create, manipulate, and print graphics. Graphics can be any drawing, sketch, picture, or photograph. Mostly engineers, architects, desktop publishers, and graphics artists use graphics and media software.

Types are:

- **Computer-Aided Design (CAD):** CAD software is a type of 3-D graphics application. It is mostly used by engineers, architects, and scientists for creating engineering, architectural, scientific designs and models. Engineers use CAD software to create designs of vehicles, electronic devices, roadways, bridges, and designs of security systems, etc. Similarly, architects use CAD software to design the structures of buildings. Scientists use them to create designs of molecular structures. Examples AutoCAD and Chief Architect
- **Desktop Publishing Software:** Desktop Publishing (DTP) software is used to design high-quality commercial documents that contain text and graphics and different combinations of colors. DTP software is ideal for designing or producing high-quality textbooks, brochures, newsletters, marketing literature, advertisements, postcards, greeting cards, letterheads, business cards, banners, calendars, logos, product catalogs, and annual reports. Examples are Adobe InDesign, Adobe PageMaker, Microsoft Publisher, and QuarkXPress
- **Paint Software:** Paint software is used to create and modify graphics. Paint software is also called Illustration software. This software allows users to draw pictures, shapes, and many other graphical images. Examples are MS Paint.
- **Image Editing Software:** Image editing software also provides the same capabilities as Paint software but it has additional capabilities that are used for editing or modifying the existing images. Examples are Coral Draw and Macromedia Free-hand
- **Photo Editing Software:** Photo editing software is a type of image editing software. It is used to edit and customize digital photos. This software provides features to improve the quality of photos by modifying contrast & brightness and adding special effects such as shadows and glows. Examples Adobe Photoshop and Microsoft Office Picture Manager.
- **Video & Audio Editing Software:** Video consists of full-motion images played at various speeds. Video Editing software is used to modify a section or part of a video, called a **clip.** For example, it can be used to change (reduce) the length of a video clip, reorder a series of clips, or add special effects to clips such as words that move horizontally across the screen. Examples are Adobe Premiere PRO.
- **Web Page Authoring Software:** Web page authoring software is used to create web

pages that include graphical images, videos, audios, animations, and other special effects. This software

also allows users to organize, manage, and maintain their websites. Examples are WordPress, Dreamweaver, and Microsoft FrontPage.

Q.10 Write a note on software for communication.

Software for communication is used by the people for exchanging information electronically among each other. Computer files can also be transferred from one computer to another through communication software. Many communication applications/software are available

- **Email Software:** Email stands for electronic mail. Email software is used to exchange messages and files through a computer network (such as the Internet). Examples are Microsoft Outlook
- **Browsing Software:** Browsing software is used to access and view web pages on the Internet. Browsing software is called the web browser or simply browser. Examples are Google Chrome, Firefox, Safari, and Internet Explorer
- **Chat Software:** A chat is a real-time online typed conversation with one or more online users. Chat client software is used to chat with others who are online at the same time. Chat client programs are built-in in some operating systems, websites, and most browsers. These programs are also available for free on the web. Examples are ICQ.
- **Video Conferencing Software:** Video conferencing software is used for conducting live conferences between two or more participants at different sites through a computer network. Examples are Zoom, CU-SeeMe, GoToMeeting, iMeet, and WebRTC

Q.11 Differentiate b/w System Software & Application Software.

System Software	Application Software
It is general purpose software	It is specific purpose software.
It is used to manage computer resources	It is used to solve a particular problem.
It executes all the time in computer	It executes as and when required.
The number of system software is less than application software.	The number of application software is much more than system software.
System software is essential for a computer to work.	Application software is not essential for a computer to work.
System software interact with hardware directly.	Application software interact with hardware indirectly via system software.