

COMPUTER SOFTWARE

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COMPUTER SOFTWARE

- Computer Software refers to set of programs (instructions) and data that tell a computer how to perform specific tasks or functions.
- These programs and data are intangible and exist as digital information stored on various types of media or in the computer memory.

IMPORTANCE OF SOFTWARE

1. It automates tasks, making them faster and more efficient. This helps streamline business operations, reducing human error and increasing productivity
2. It can easily updated and modified
3. It guide hardware to analyse large volumes of data quickly and accurately
4. It guides innovation by providing a platform for the development of new products and services
5. It guide hardware to facilitate people and organizations to connect and collaborate across geographical boundaries.
6. It help to saving cost by replace manual labour and reduce operational costs

TYPES OF COMPUTER SOFTWARE

- Computer software can be classified into two types:
 1. System software
 2. Application software

SYSTEM SOFTWARE

- System Software is the software that provides the basic functions to operate a computer.
- The software guides basic hardware on how they should interact.
- Examples of system software include:
 - a) Operating systems
 - b) System utilities
 - c) Device drivers

a) Operating Systems

- An operating system (OS) is software that manages all other application programs in a computer.
- It is a collection of programs that coordinate the functionality of hardware and application software in computer system. It also acts as an interface between the user and the computer hardware.
- Every computer system must have an OS to run other programs and manage computer hardware.
- Some Popular PC operating systems are Windows, Linux, UNIX, and Macintosh (Mac)

FUNCTIONS OF AN OPERATING SYSTEM

1. Process management

The operating system is responsible for starting, stopping and allocating resources to running processes.

A person may perform several tasks simultaneously such as listening to music while working on a document.

2. Memory management

The operating system manages computer memory resources,. It allows each process to run in its own isolated memory space without interference from other processes.

- **3. File management**

- File management involves controlling the creation, updating, deleting and protecting files from unauthorized users. It manage files in secondary storage and operating systems.

- **4. Hardware management**

- The operating system interacts with devices through device drivers and other related software for a particular device.

5. Interrupt management

Os ensures all activities do not overlap to overwhelm the computer and cause it to stop working

6. Security Management

OS used to protect the computer system from threats such as viruses and unauthorized access to computer resources

7. Error handling

The operating system constantly controls and monitors the computer system to detect errors and avoid faults in the computer system

CATEGORIES OF OPERATING SYSTEMS

There are four categories of OS :-

1. Single User Operating system
2. Multi-user operating system
3. Single user and Single task operating system
4. Single user and multitasking operating system

OPERATING SYSTEM PLATFORMS

There are four commonly used operating system platforms

- 1) Windowss
- 2) Unix
- 3) Macintosh (Mac)
- 4) Linux

1) Windows operating systems

The Windows family of operating systems was developed by Microsoft Corporation to run on personal computers, servers, smartphone and embedded devices

Windows OS provides Graphical User Interface(GUI), virtual memory management, multitasking and support for many peripheral devices.

Evolution of Windows OS

S/N	Windows version	Year of release
1	Windows NT Family	1993
2	Windows 95	1995
3	Windows 98	1998
4	Windows ME	2000
5	Windows 2000	2000
6	Windows server 2000	2000
7	Windows XP	2001
8	Windows Server 2003	2003
9	Windows Vista	2007
10	Windows Server 2008	2008
11	Windows 7	2009
12	Windows Server 2012	2012
13	Windows 8	2012
14	Windows 10	2015
15	Windows 11	2021

- **2) Macintosh Operating systems**

Was developed by Apple Inc runs only on Apple Computers.

3) Linux operating system

The Linux OS is free and open source operating system.

It provides graphical Window like interface. The linux runs on most PCs from popular PC manufacurers.

4) UNIX operating system

UNIX is an operating system that originated in the late 1960s at AT and T's Bell Labs

It is known for its design simplicity, modularity and powerful command line interface.

Unix has been a foundational operating system and has significantly influenced the development of various modern operating systems

MANAGING FILES AND FOLDERS

A folder is a container in which many files can be placed into groups and organized on the computer.

A file is a collection of data stored in one unit identified by name.

It can be a document, picture, audio, video, application or other collection of data

The most common file extension include:-

- a.** **.txt** a plain text file
- b.** **.xls/xlsx** data file in ms excel
- c.** **.ppt/.pptx** data file created in ms powerpoint
- d.** **.jpg/jpeg/gif/bmp/png/tif** images in various formats
- e.** **.pdf** portable Document file

CREATING A FILE

To create a file, you will need to follow these steps

- i. Open the software program that you want to use to create the file
- ii. Click on the file menu and select
- iii. Choose the type of file that you want to create
- iv. A new file will open. You can now start adding content to your file
- v. When finished click the file menu
- vi. Click **Save as** icon
- vii. Choose a location to save your file and enter a **filename**
- viii. Click on the **save** button

CREATE A FOLDER

- To create a folder, follow these steps
 - i. Open the location where you want to create the folder. This could be on your desktop or in document library
 - ii. Right click an empty area and select new
 - iii. Follow the arrow under the new command
 - iv. Click Folder from the submenu
 - v. Type a name in the specified area
 - vi. The new folder will be created.

DELETE FILES OR FOLDERS

To delete a file or folder, follow these steps

- i. Locate the file or folder that you want to delete
- ii. Right click on the file or folder, a menu appears
- iii. Click on the delete icon
- iv. If prompted click **Yes** to confirm that you want to delete the file or folder

RESTORE DELETED FOLDERS AND FILES

Deleted folders and files are put in a special place in secondary storage called Recycle Bin.

Once needed again they will be restored to their original location



SYSTEM UTILITIES

System utilities are software used to maintain and configure of the computer system.

Example

- a) Defragmentation tools
- b) Disk formatting utilities
- c) System restore utilities

TYPE OF UTILITY	FUNCTIONS
Disk Cleaner	Clean or remove unnecessary files from a hard disk
Disk defragmenter	Remove fragments from hard disk volumes so that the computer runs faster and more efficiently
Backup	Archive data to protect it from accidental loss, for example, in case a hard disk drive fails
Data recovery	Recover a file or information that has been deleted
Anti-viruses	Protect or recover programs and data against viruses and remove viruses from a computer
Data compression	Reduce the size of data to save storage and transportation space (bandwidth)

DEVICE DRIVERS

Device drivers are software that allows a specific device to communicate with the computer's operating system

Example

1. A printer
2. A Scanner
3. A Mousse
4. A Keyboard
5. A USB device

2. APPLICATION SOFTWARE

- Application Software is a software that handles a specific user task, such as writing report.
- Example
- Word processor software
- Spreadsheet software
- Databases software
- Presentation software and web browsers.

SYSTEM SOFTWARE	APPLICATION SOFTWARE
System software is used for operating computer hardware	Application software is used by user to perform specific task
System software is installed on the computer when operating system is installed	Application software is installed according to user's requirements
In general, the user does not interact with system software because it works in the background	In general, the user interacts with application software
System software can run independently. It provides platform for running application software.	Application software can't run independently. They can't run without the presence of system software.
Some examples of system software are compiler, assembler, debugger, driver, etc.	Some examples of application software are word processor, web browser, media player, etc