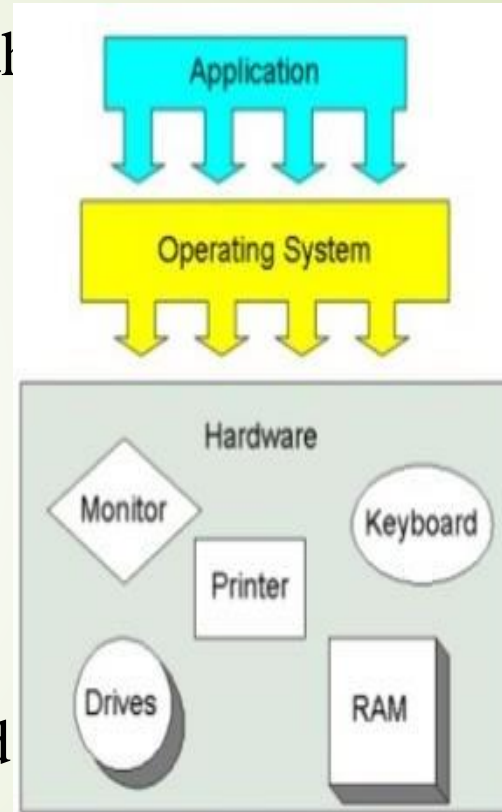# OPERATING SYSTEM

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Operating System

❑ It is a collection of operative programs that provides an interface for the user to interact with the computer.

❑ Operating system is such type of system software that allows user to run other applications on computer.

❑ It manages hardware resources and provides services for computer programs.

❑ A computer can not do anything without operating system.

❑ When the computer is started, OS will first load in to the main memory.

❑ Important operating system are Windows,DOS,Unix,Linux etc.

Objectives of operating system

❑Convenience

To makes the use of computer easy for user

❑Efficiency

OS Improve the performance of computer.

OS allows computer resources such as Input / Output devices, CPU, Memory, Internet to be used in an efficient manner.

Functions of Operating System

i. Process Management

ii. Memory Management

iii. File Management

iv. Input. Output Management

v. Resource Management

i. Process Management

❑ "A process is a program in execution."

❑ A process in execution needs resources like Processing resources (CPU, Memory, Input/ Output resources)

❑ The OS must allocate resources to processes

❑ Enables processes to share an exchange information

❑ Creation and Deletion of process and scheduling of system resources to different processes.

ii. Memory Management

❏ The process of allocating memory space for user programs in main memory(RAM).

❏ When programs are run by users, the operating system allocated portions of free memory to programs.

❏ When the program is closed, the operating system will free the memory portion used by that program for reuse.

❏ OS automatically loads user programs in available memory space and executes them

iii. Input/ Output Management

❑ "The process of controlling the operations of all the input/output devices attached to computer."

❑ Management of I/O devices is the responsibility of operating system through which user communicates with computer through Mouse, Keyboard, Monitor, Printer, etc.

iv. File Management

❑ A part of operating system that

❑ Organizes

❑ Stores

❑ Keeps track of file and folders.

❑ Files can be a document, programs, images, audio, video, etc.

❑ Os control the common operations (Creating, Editing, Opening, Renaming, Copying, Searching, Deleting) performed on a file.

v. Resource Management

❑ Os automatically manage the resources of a computer when application program are executed by computer user.

❑**Resources:**

❑ Microprocessor

❑Memory

❑All devices attached to computer.

Major types of Operating system

❑On the basis of user interface there are two types of Operating System

- **Command Line Interface**
- **Graphical User Interface**

Command Line Interface

❑ In Command line operating system, users need to write a command to perform certain task.

❑ To write commands, user need to memorize them.

❑ These operating system provide textual interface.

❑ Examples

▪ Dos (Disk Operating System)

▪ Unix

Graphical User Interface

❑ In GUI operating system,icons,windows and buttons are used as visual components.

❑ These copmonents and objects are used to perform different tasks.

❑ Users of these operating system are not required to memorize the commands.

❑ Example

▪ Windows

▪ Linux

▪ Solaris

Utility Programs

- ❑ A utility program is a type of system software that is used or effective management of computer system.

- ❑ The user can use utility program to perform maintenance tasks related to devices and programs.

- ❑ The utility programs keep the computer system running smoothly.

- ❑ Most operating system include different built-in Utility programs.

- ❑ The user can also buy stand alone utility programs.

Device Drivers

❑ Device Driver is a program that is used to operate and control a device attached to computer.

❑ Device Drivers are provided by manufactures of devices e.g. HP, DELL, TOSHIBA, SONY, etc.

❑ Typical devices are **keyboards**, **printers**, **scanners**, **digital cameras, USB** and other external storage devices.

❑ The devices cannot function properly without device drivers.