



OPERATING SYSTEM

Handwritten NOTES



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TOPPERWORLD
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Operating System

⇒ operating System :- An operating system is a program that manages the computer hardware.

- It also provides a basis for application programs and acts as intermediary between the computer user and the computer hardware.

⇒ Generations of operating System :-

a.) 1st Generation (1945-1955)

Vacuum Tubes and Plug boards.

b.) 2nd Generation (1955-1965)

Transistors and Batch Systems.

c.) The 3rd Generation (1965-1980)

Integrated Circuits and Multi programming.

d.) 4th Generation (1980-Current)

Personal computer.

* Types of operating System

1.) Simple Batch System :- In this, there is no direct interacting between the user

and the computer.

⇒ The user has to submit a job (written on cards or tape) to a computer operator.

* Advantages of Batch System

- 1.) No interaction between user and computer
- 2.) No mechanism to prioritise the processes.

2. Multi-processor system

A system consist of several processors that share a common physical memory. Multi-processor provides high computing power and speed. In multiprocessor system all processors operates under single operating system

* Advantages of Multiprocessor system

- 1.) Enhanced performance.
- 2.) ~~the~~ execution of several task by different processors concurrently, increases the system's throughput speeding up the execution of a single task.

3. Desktop System

earlier, CPUs and PCs lacked the features needed to protect an operating system from user programs. PC operating system therefore were neither multi-user nor multi-tasking. However, goals of these

operating systems changed with time, instead of maximising CPU and peripheral utilization the systems opt for maximising user convenience and responsiveness. These systems are called Desktop systems. for ex:- Apple Macintosh

4.) Distributed Operating System

The motivation behind developing distributed operating system is the availability of powerful and inexpensive microprocessor and advanced in communication technology. The main benefit of distributed system is its low price / performance ratio.

* Advantages Distributed operating System

1. Fast processing
2. less load on the Host machine.

* Types of distributed operating System:-

1. client server System
2. Peer to Peer Systems

5.) Real time Operating System

The Real time operating system which guarantees the maximum time for critical operations and complete them on time.

* Operating System Services

- a.) User Interface :- ~~All~~ almost all user interface (U-I). This interface can take several forms. One is a command-line interface (CLI), which uses text commands and a method for entering them.
- b.) Program execution :- The system must be able to load a program into memory and to run that program. The program must be able to end its execution, either normally or abnormally (indicating error).
- c.) I/O operations :- A running program may require I/O, which may involve a file or an I/O device. For specific devices, special functions may be desired (such as recording to CD or DVD drive or blanking a display screen). For efficiency & protection, user usually cannot control I/O devices directly. Therefore, the OS must provide a means to do I/O.
- d.) file - system manipulation :- The file system of a particular interest, obviously need to read and write files and directories. They also need to create and delete them by name, search for a given file, and list file information. Finally, some operating