

- ii> Processor Management
- iii> Device
- iv> File
- v> Security

### Device Management:-

⇒ An OS manages device communication via their respective drivers. It does the following activities for device management —

- i> Keep track of all devices. Program responsible for this task is known as the I/O Controller.
- ii> Decide which process gets the device when and for how much time.
- iii> Allocate the device in the efficient way and deallocate the device.

### Topic :- Types of an OS

#### i> Batch Operating System:-

⇒ The users of a Batch operating system do not interact with the computer directly. Each user prepares his job on an offline device like punch card and submit it to the computer operator. To speed up processing jobs with similar



needs are batched together and run as a group. The programmer divide their program with the operator and the operator then send the programs with similar requirement into batch. The Problem with batch system are as follow—

a) Lack of interaction b/w the user and a job

b) CPU is often ideal because the speed of the mechanical input output device is slower than the CPU.

c) Difficult to provide the desired priority.

ii) Distributed operating system:-

⇒ A distributed system is a collection of processor that do not share memory clock. Each processor has its own local memory. The processor communicate with one another through various communication network such as high speed buses or, telephone lines. The processor in a distributed system may vary large in size and function. It made in small micro-



Processor, work Stations, mini Computer and large general Purpose Computer System. There are four measure advantage of distributed System—

- a) ~~the~~ with resource sharing facility a user at one side may be able to use the resources available at another.
- b) Speed of the exchange of data with one another via electronic mail.
- c) If one side fails in a distributed system the remaining sides can potentially continue operating.
- d) Better service to the customers.  
Reduction of the load on the host computers.

- iii) Real time OS
- iv) Time-Sharing OS
- v) Network OS
- vi) Single user multitasking OS
- vii) Multiprocessing OS.



## Topic:- Processor Management.

Process is the unit of work in a modern <sup>time</sup> sharing system also a Process is a Program in execution in a Single Processor System only one process can run at a time.

If there are more than one process then the CPU will be allocated to anyone of the process and rest of the process will have to wait. A process is executed until it must complete its execution.

The objective of multiprogramming is to have some process running at all times to maximize the CPU utilization with the multiprocess programming concept we tried to use this waiting time productively. Several processes are kept in the memory at one time. When one process has to wait,

The operating system takes the CPU to another process. This process continues everytime one process has to wait another process can take over use of the CPU.

Scheduling is a



Fundamental operating system function.

Almost all computer resources are scheduled before use.

A CPU employs different scheduling algorithms to achieve this multi-programming concept. Such as first come, first serve (FCFS), shortest job first (SJF), Priority scheduling, Round Robin Scheduling (RRS).

Topic: I/O file management.

File Types:-

| S.NO. | File Type   | usual Extension                              | Functions                             |
|-------|-------------|--|---------------------------------------|
| 1.    | Executable  | .exe, .com, .bin or none                     | Ready to run machine language program |
| 2.    | Object      | .obj,  | compiled machine language.            |
| 3.    | Source code | .C, .CPP, .VBP, .Java, .doc, .ppt, .xls, --- | Source code in various language       |
| 4.    | Batch       | .bat, .sh                                    | Command to the command interpreter    |



|     |                |   |   |
|-----|----------------|---|---|
| 5.  | Text           | • .txt, • .doc                          | Textual data documents.                                 |
| 6.  | Word Processor | • .txt, • .wp, • .rtf, • .doc           | various word processor formats.                         |
| 7.  | Library        | • .dll, • .lib, • .so                   | Libraries of routines for programs.                     |
| 8.  | Printer view   | • .pdf, • .jpg, • .jpeg, • .bmp         | ASCII or binary file in a format for printing/viewing.  |
| 9.  | Archive        | • .arc, • .zip, • .tar                  | Related files are grouped into one file and compressed. |
| 10. | Multimedia     | • .mpeg, • .mov, • .avi, • .avx, • .mp3 | Binary file containing an information.                  |



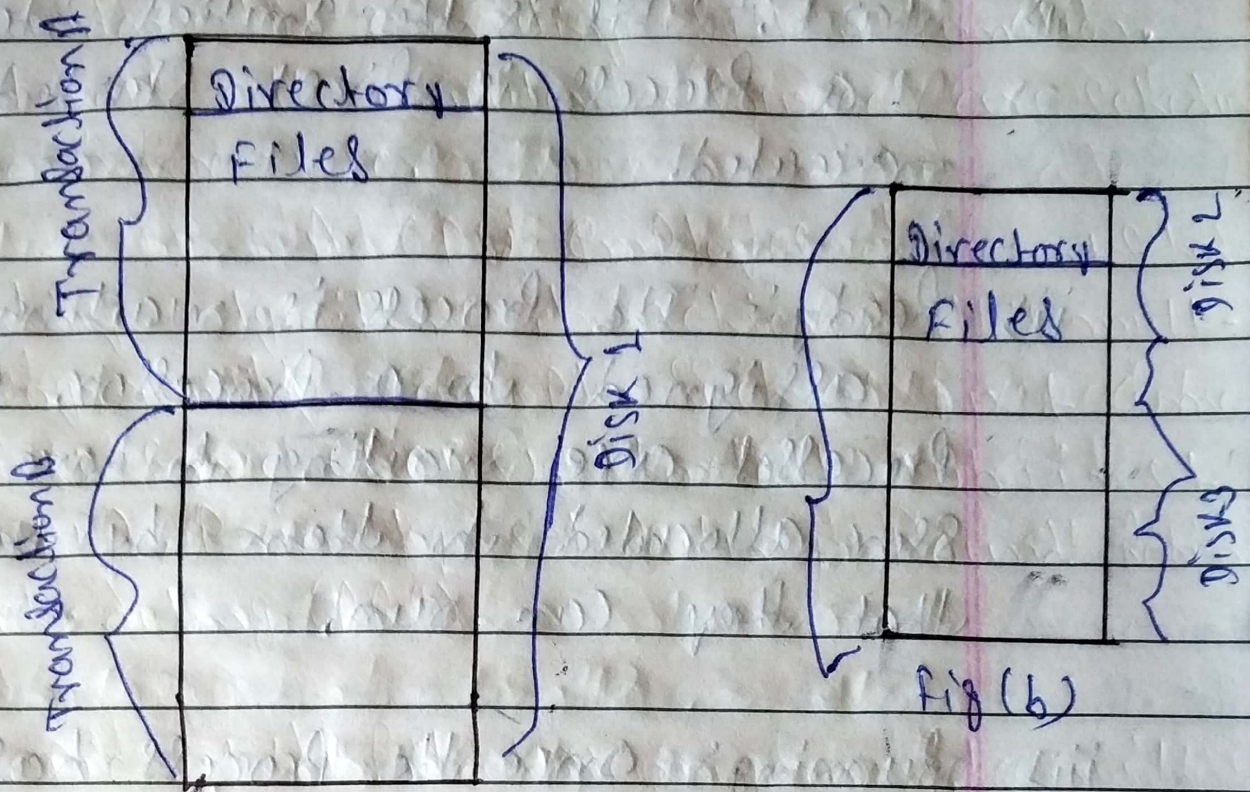


Fig Fig (a)

Fig (b)

## \* A Typical File System Organisation \*

Topic:- Process.

⇒ A Process is basically a Program execution. The execution of the Process Progress in sequential fashion.

Topic:- Process Lifecycle.

⇒ When a Process executes, It passes through different steps. These stages may differ in different O/S and the name of these states are also not standardised. In general, a Process can have of the following 5 states at a time —