Process Management

Process

↳ process is the execution of a program that perform the action specified in that program. It can be defined as an execution unit where a program runs. The OS helps you to create, schedule and terminate the process which is used by CPU. A process created by the main process is called a child process

↳ process operation can be easily controlled with the help of PCB (process control block). We can consider it as the brain of the process, which contain all the crucial information related to processing like processid, priority state, CPU register etc.

process management

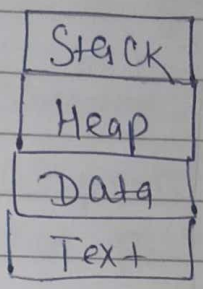
↳ process managment involves various task like creation scheduling termination of processes and a dead lock.

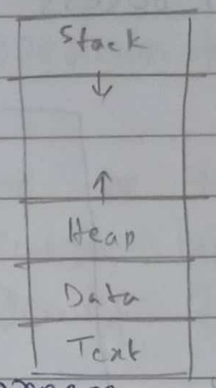
process is a program that is under execution, which is an important part of modern-day ~~operation~~ operating system. the OS must allocate resource that enable processes to share and exchange information. It also protect the resource of each process from other methods and allow synchronization among process.

↳ It is the job of OS to manage all the running processes of the system. It handles operation by performing task like

process Scheduling and such as resource allocation

Process Architecture





Here, is an Architecture of the process

↳ Stack - the Stack Stores temporary data like function parameter, return

↳ Heap Allocate memory, which may be processed during its run time

↳ Data: It Contains the Variables

↳ Text: Text Section includes the Current activity, which is represented by the value of the program Counter.

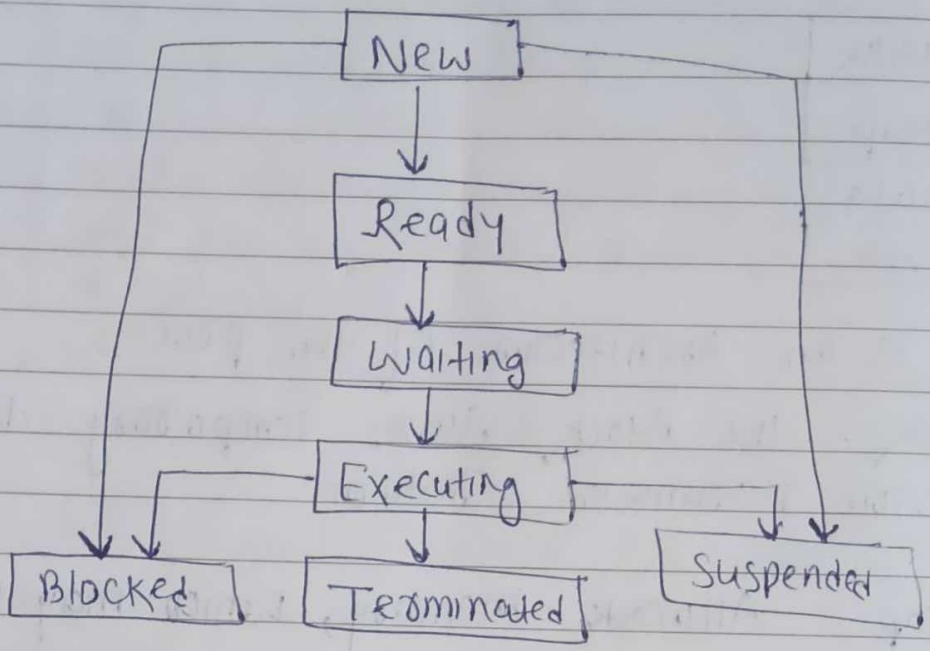
Process Control Blocks

↳ PCB Stands for process Control Block. It is a data Structure that is mainted by the Operating System for every process. the PCB Should be identified by an integer process ID. It helps you to Store all the information required to keep track of all the running processes.

↳ It is also accountable for Storing the Content of processor registers. they are Saved when the process moves from the

running state and then return back to it.

Process States



↳ A process state is a condition of the process at a specific instant of time. It also define the current position of the process.

There are mainly seven stage of process which are

1) New: The new process is created when a specific program calls from secondary memory / hard disk to primary memory Ram
2) Ready: In a ready state the process should be loaded into primary memory which is ready for execution.
3) Waiting: The process is waiting for the allocation of cpu time and other resource for execution.

Executing: The process is an execution state

Blocked: It is a time interval when a process is waiting for an event like I/O operation to complete.

Suspended: Suspended state define the time when a process is ready for execution but has not been placed in the ready queue by OS.

Terminated: Terminated state has specifies the time when a process is terminated

Process Control Block (PCB) (Part 2).

↳ Every process is represented in the operating system by a process control block which is also called task control block.

Here are Important Components of PCB

1) Proccess State
2) program Counter
3) CPU register
4) CPU Scheduling Information
5) ACCounting and Business Information
6) memory managment ~~Sys~~ Information
7) I/O Status information