

* PCB (Process Control Block) :-

- o Process Control Block (PCB) is a data structure used by operating system to store all the information about a process.
- o It is also known as Process descriptor, task Control block.
- o The PCB should be identified by an integer Process ID (PID) ← unique id
 - It helps you to store all the information required to keep track of all the running process.
- o PCB is maintained for a process through its lifetime.
 - When a process is created, the Operating System creates a corresponding process control block.
 - Delete when process terminates.
- o "Each process has a single PCB"

* Structure of the PCB:-

| Pointers | Process |
|----------|-------------------------------|
| | Process number |
| | Program Counter |
| | Registers |
| | Memory Management information |
| | I/O status information |
| | File Management information |
| | Accounting information |

(PCB)

(i) Pointer: - Pointer is a simple data structure element that points towards the memory of the stored variable (Process).

(ii) Process State: - This specifies the Process state i.e. new, ready, running, waiting or terminated.

(iii) Process Number or id: - Each Process is allocated a unique number for the purpose of identification.

(iv) Program Counter: - The counter indicates the address of next instruction to be executed.

(v) Registers: - The registers usually hold the data to be processed, the

results of calculations.

They may include accumulators, index registers, general purpose registers etc.

(VI) Memory Management information: - PCB also stores information such as amount of memory units allocated to a process.

It also includes addresses of the memory areas, value of page tables etc.

(VII) I/O Status Information: - This information includes the list of I/O devices used by process, the list of files, pending I/O tasks etc.

(VIII) File Management information: - Information such as the number of files, list of open files, and the access rights of the file open such as read only, write etc.

(IX) Accounting information: - This information includes the time limits, account numbers, amount of CPU used.