

Process : Data Structure Used - Process Table
&

Process Control Block (PCB)

Process Table : The OS manages and controls the resources by having a table. Tables are important Data structures to store information about every process and resources.

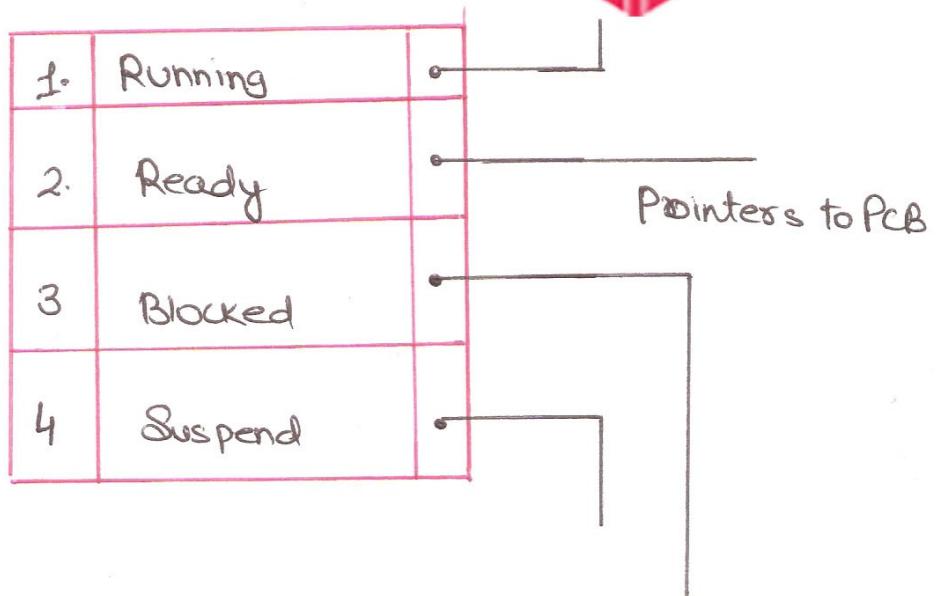
This is the reason the OS maintains memory tables, I/O tables, and process tables.

The process tables store the ID of every process and corresponding to it, the pointer to its PCB.



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Process Control Block :- A Process Control Block is a data structure maintained by the OS for every process.

** Some Operating System maintain only PCB in that PCB has all entries stored by a process Table. **

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A PCB keeps all the information needed to keep track of a process:-

1. Process State: Current state of the process i.e., Ready, Running or Waiting etc.
2. Process privileges: Allow / disallow access to System Resource.
3. Process ID: Unique identification for each of the process in the Operating System.
4. Pointer: A pointer to parent process.
5. Program Counter: Program Counter is a pointer to the address of the next instruction to be executed for this process.
6. CPU registers: Various CPU registers whose values need to be stored for execution for running state.
7. CPU Scheduling info.
8. Memory Management information: info. of page table, memory limit, Segment table info.
9. Accounting info: It includes the amount of CPU used for process execution, time limits, Execution ID etc.
10. IO Status information: This includes a list of IO devices allocated to the process.

Process ID
State
Pointers
Priority
Program Counter
CPU Registers
IO Info.
:
:
etc.

The PCB is maintained for a process throughout its lifetime, and is deleted once the process terminates:-

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