

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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1.	Running	•
2.	Ready	•
3.	Blocked	•
4.	Suspend	•

Pointers to PCB

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 where process 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. I/O Status information: This includes a list of I/O devices allocated to the process.

Process ID
State
Pointer
Priority
Program Counter
CPU Register
I/O Info.
⋮
⋮
etc.

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

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