

Process Concept -

A Process is a program in execution.

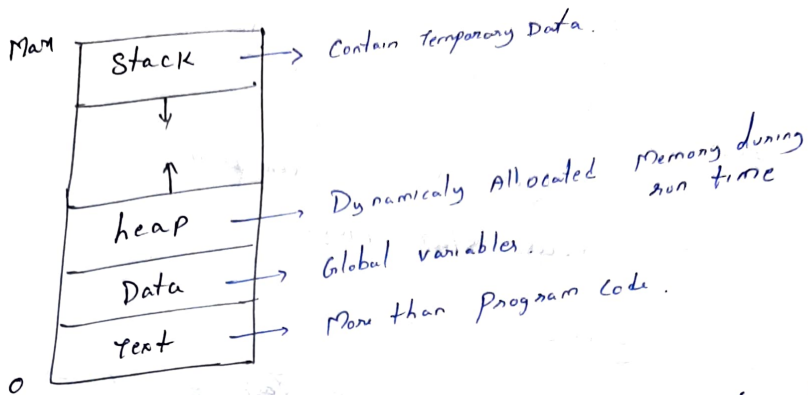


Fig 3.1 Process in Memory.

A Program → is a passive entity (Executable File)
But a process → is a Active entity in association with Program Counter.

Process state -

The state of a process is defined in part by the current activity of that process. As a process executes, it changes state.

states ⇒

- * New - The process is being created.
- * Running - Instructions are being executed.
- * Waiting - The process is waiting for some event to occur. (such as an I/O completion or reception of a signal)
- * Ready - The process is waiting to be assigned to a processor.
- * Terminated - The process has finished execution.

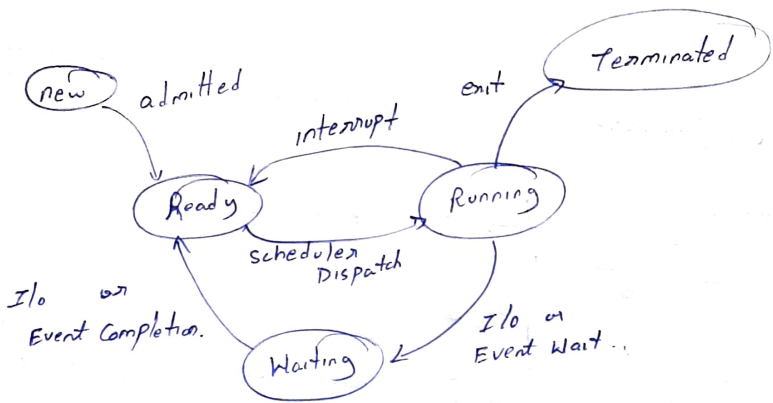


Fig Process state Diagram.

Process Control Block -

The process ctrl block or Task ctrl block represent each process in OS by the following.

- Process state - New, Ready, Running, Waiting, halted, etc.
- Program Counter - Address of next executing instruction.
- CPU Registers - Accumulators, index registers, General purpose registers, Program counter, etc.
- CPU scheduling Information - Scheduling parameters, or Priority
- Memory management Information - Base & limit registers, Segment table, Page table, etc.
- Accounting Information - CPU utilization, time limit, Job Nos, etc.
- I/O status Information - List of I/O devices, Open file list, etc.

PCB serves as a Repository for an information, that may vary from process to process.

Fig
Process Control Block (PCB)

Process state
Process number
Program counter
Registers
memory limits
List of open files
...

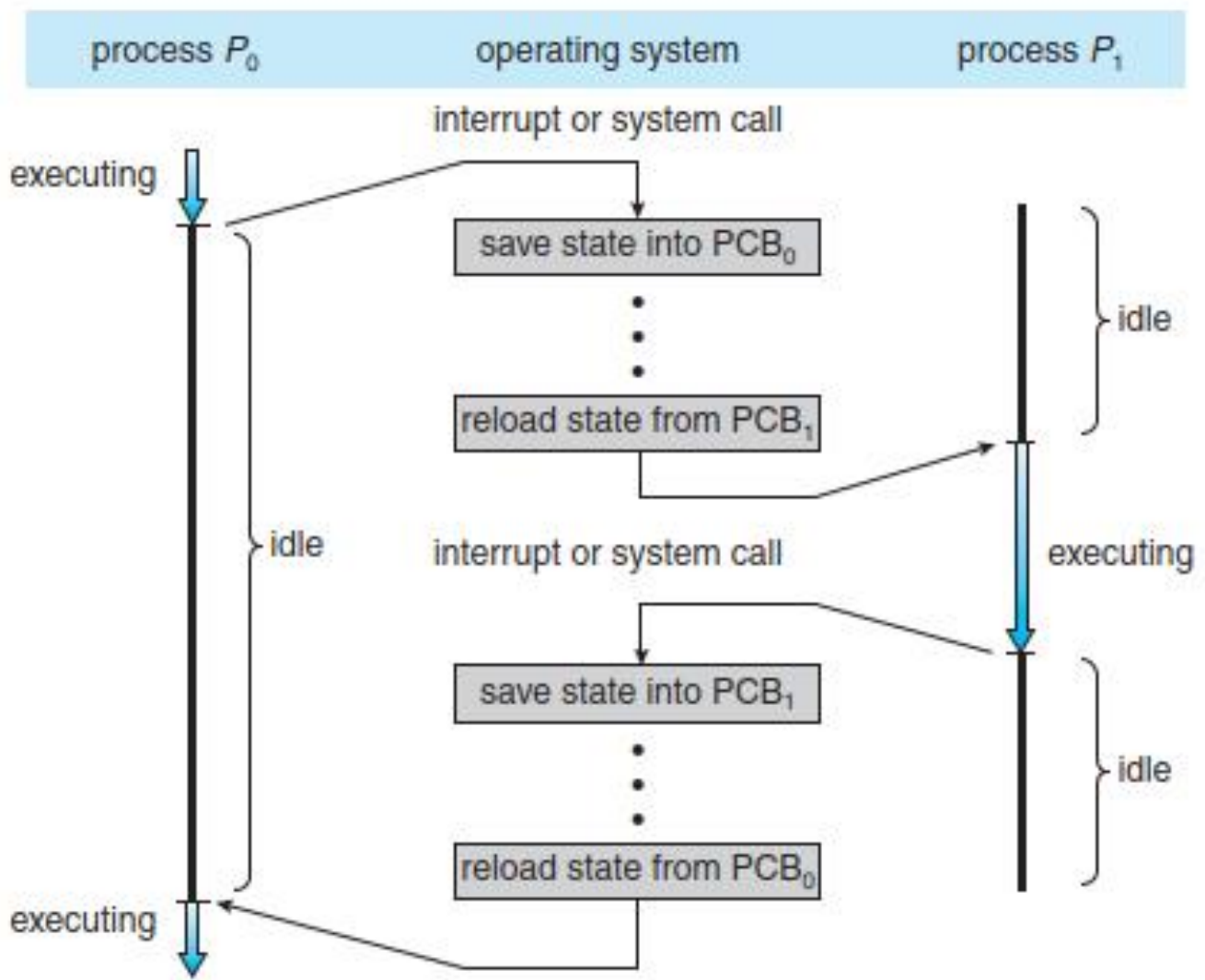


Figure 3.4 Diagram showing CPU switch from process to process.