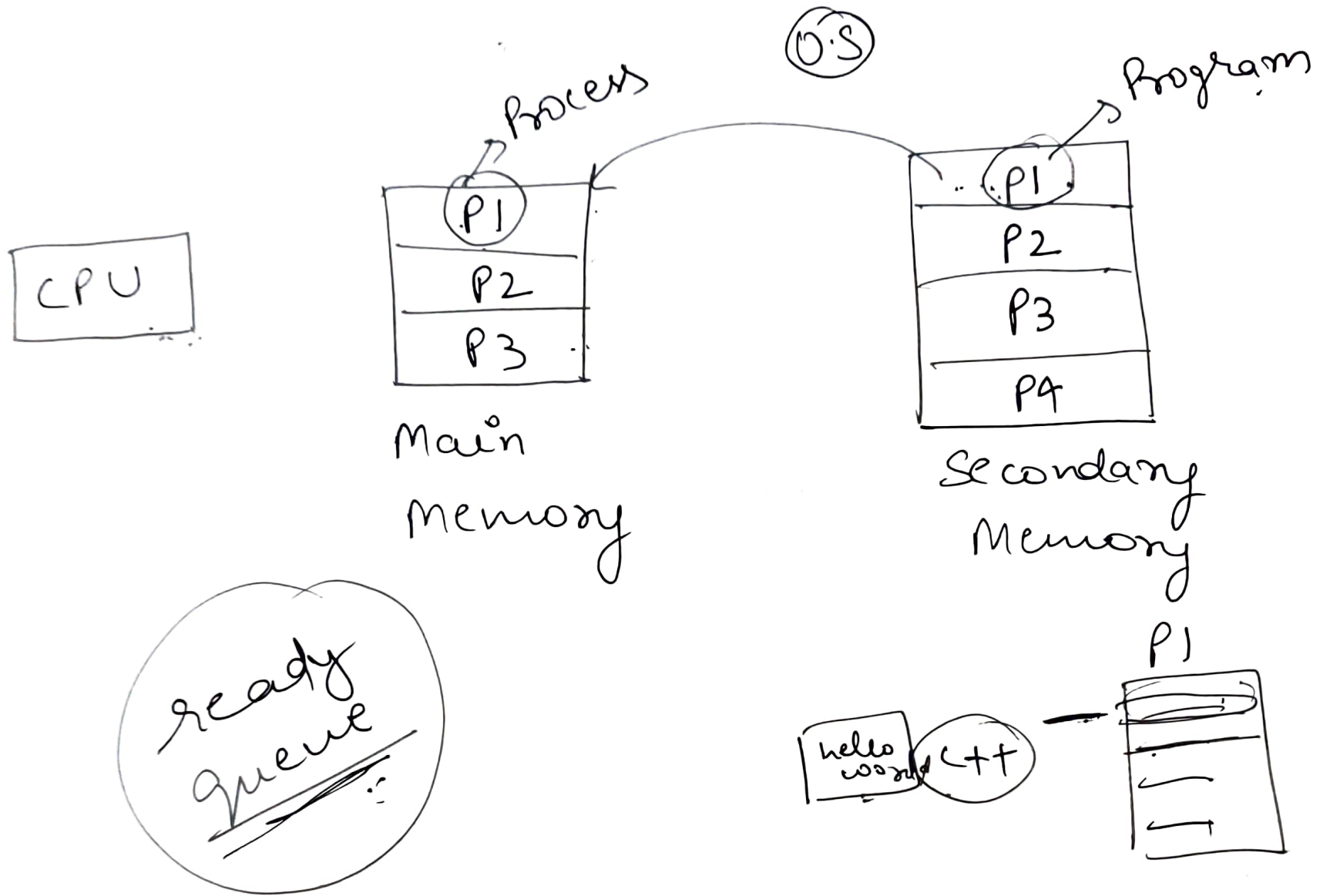


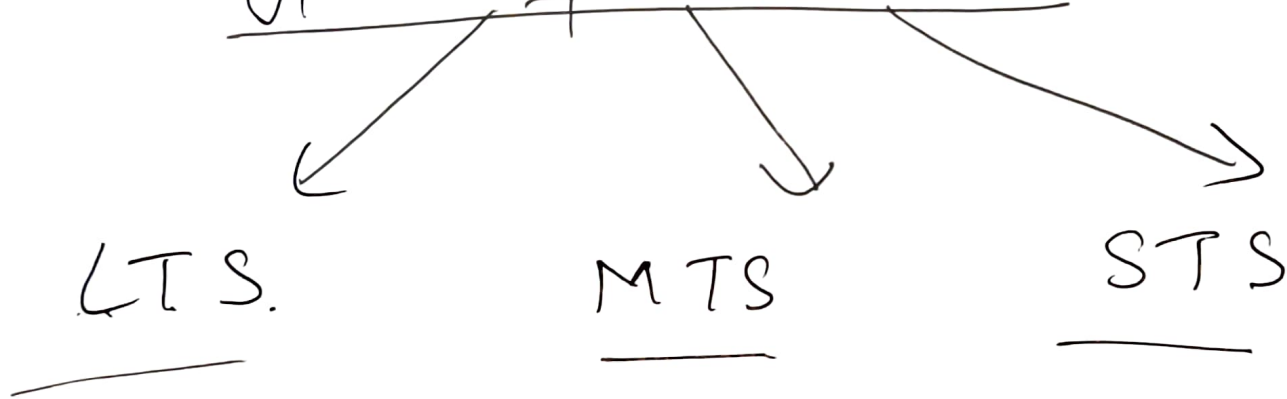
Process Management



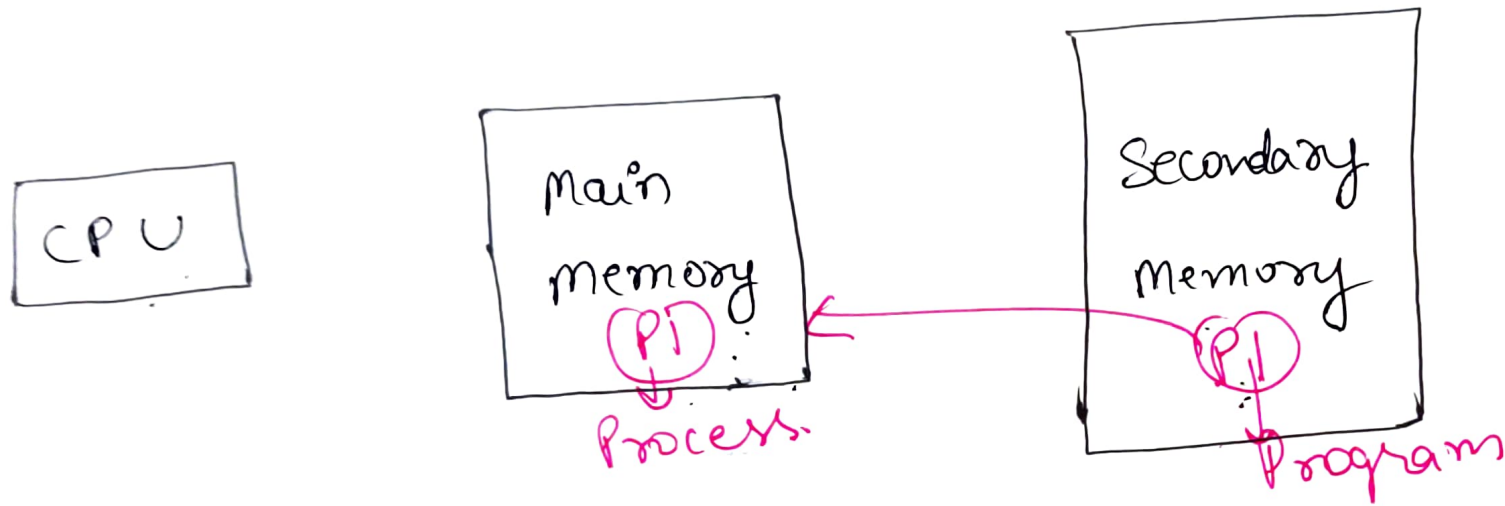
Process Management

Scheduler → Manages the processes.

Types of Schedulers



Process Management



Defination of Process → The Program under execution
is called as Process.

The Process have Various attributes -

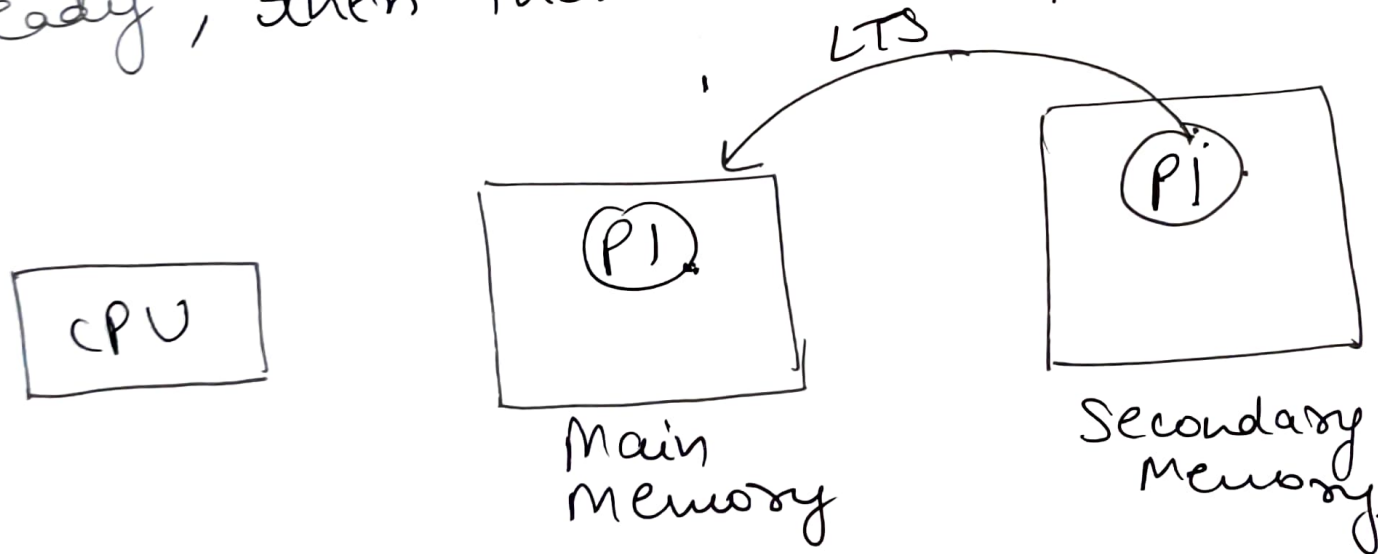
- (1) Process ID
- (2) Process state
- (3) Program Counter
- (4) Priority
- (5) General purpose register
- (6) List of open files
- (7) List of open devices
- (8) Protection information

Process Management

Types of Schedulers :-

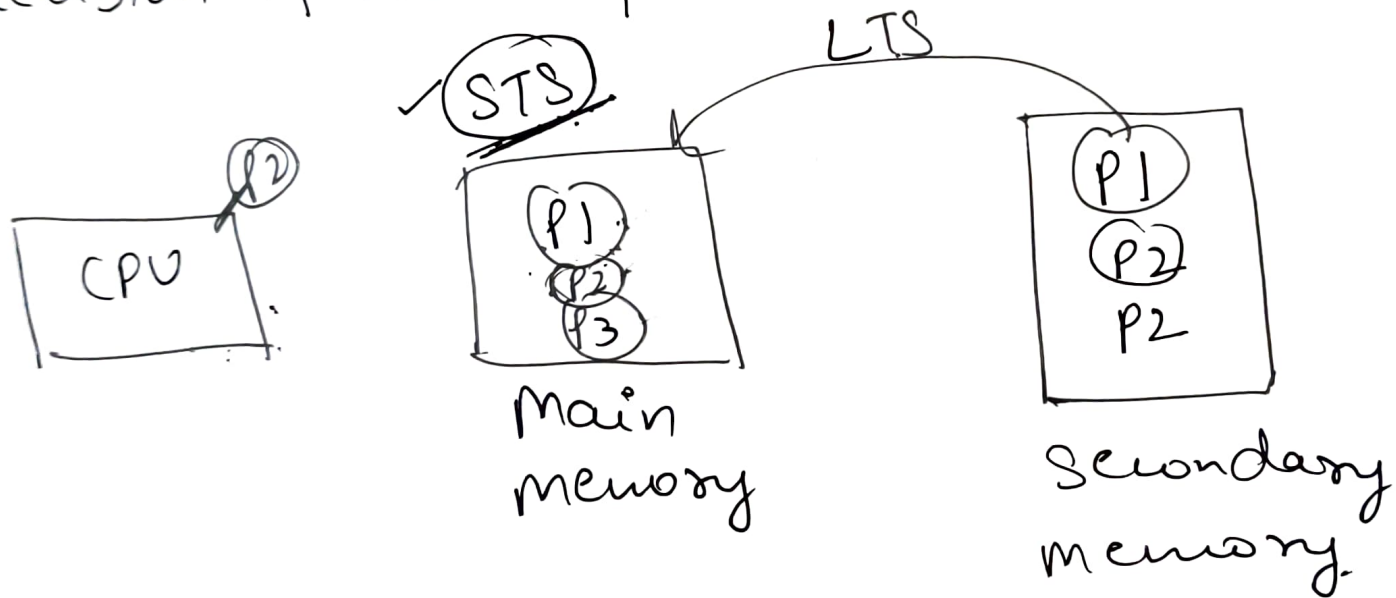
- ① Long Term Scheduler (LTS) → It selects processes from the queue and loads them into the memory. when the Process changes the state from new to ready, then there is use of LTS.

~~②~~

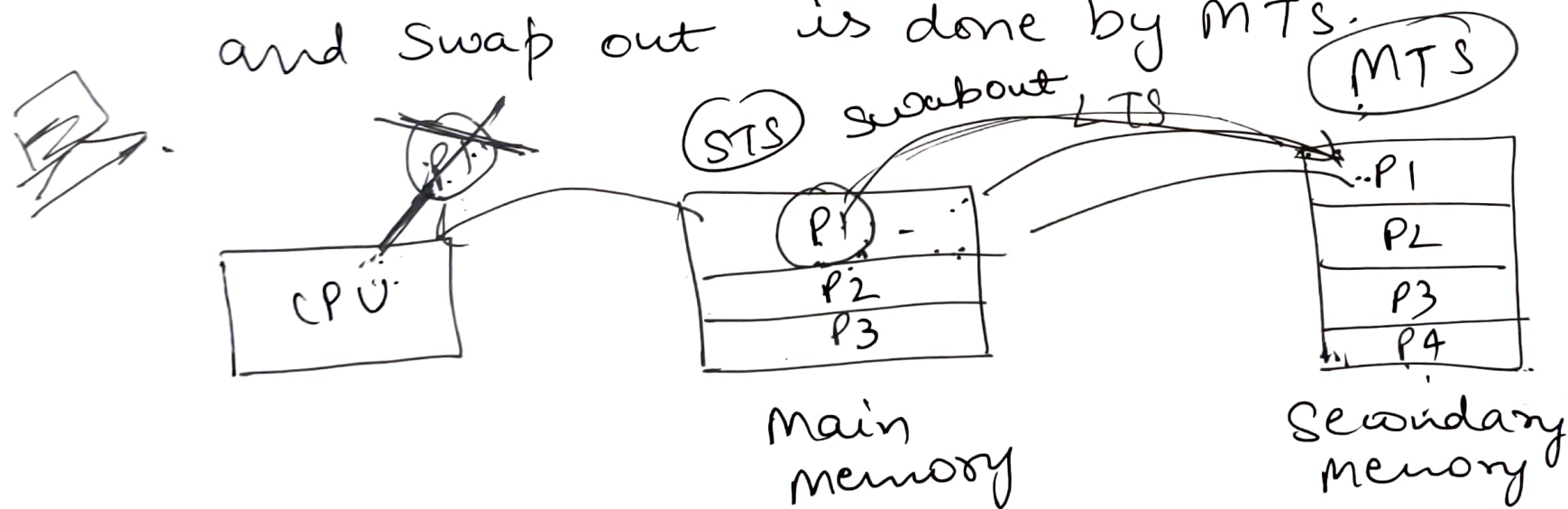


(2) Short Term Scheduler (STS) → It is also called as CPU scheduler or dispatcher. STS selects a process among the processes that are ready to execute and allocates CPU to one of them.

That means STS / CPU scheduler make the decision of which process to execute next.



2) Medium Term Scheduler (MTS) → It is a part of Swapping. Some running process requires I/O operation. In this condition, process suspends from main memory and placed on the secondary memory, and then these process after a while reloaded in memory and continued where they left earlier. Swap in and swap out is done by MTS.



Types of Scheduling

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graph TD; A[Types of Scheduling] --> B[Pre-emptive Scheduling]; A --> C[Non-Pre-emptive Scheduling];
```

Pre-emptive Scheduling

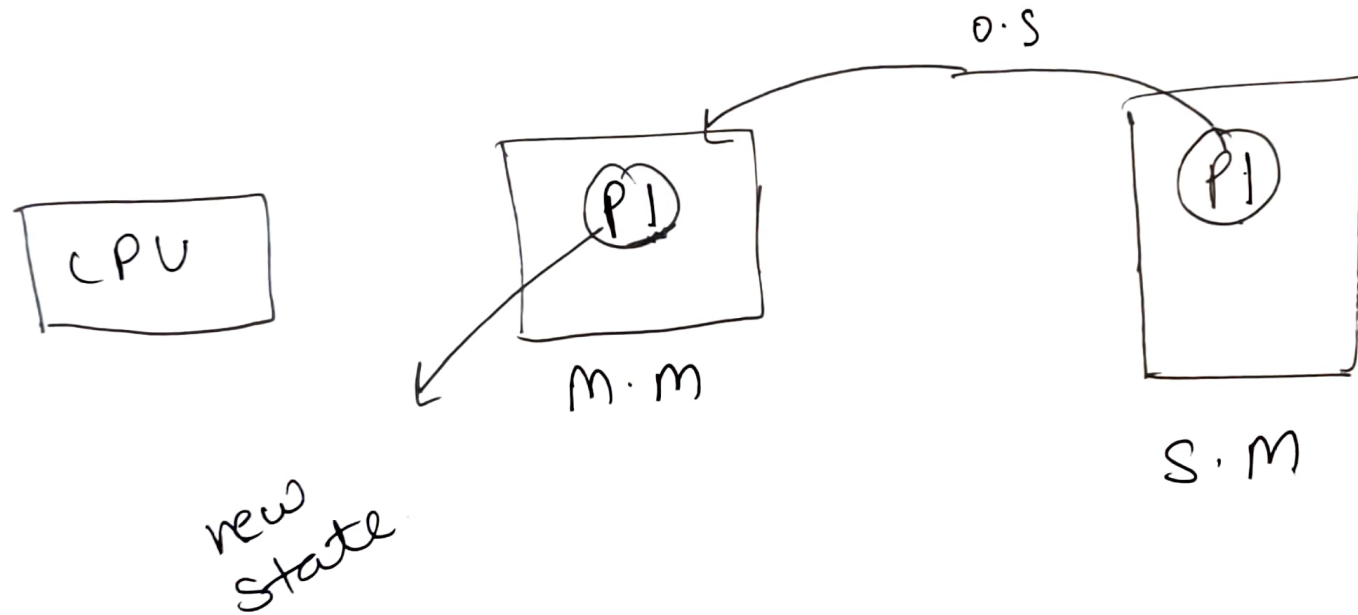
In this, a Scheduler may preempt a low priority running process anytime when a high priority process enters into a ready state.

Non-Pre-emptive Scheduling

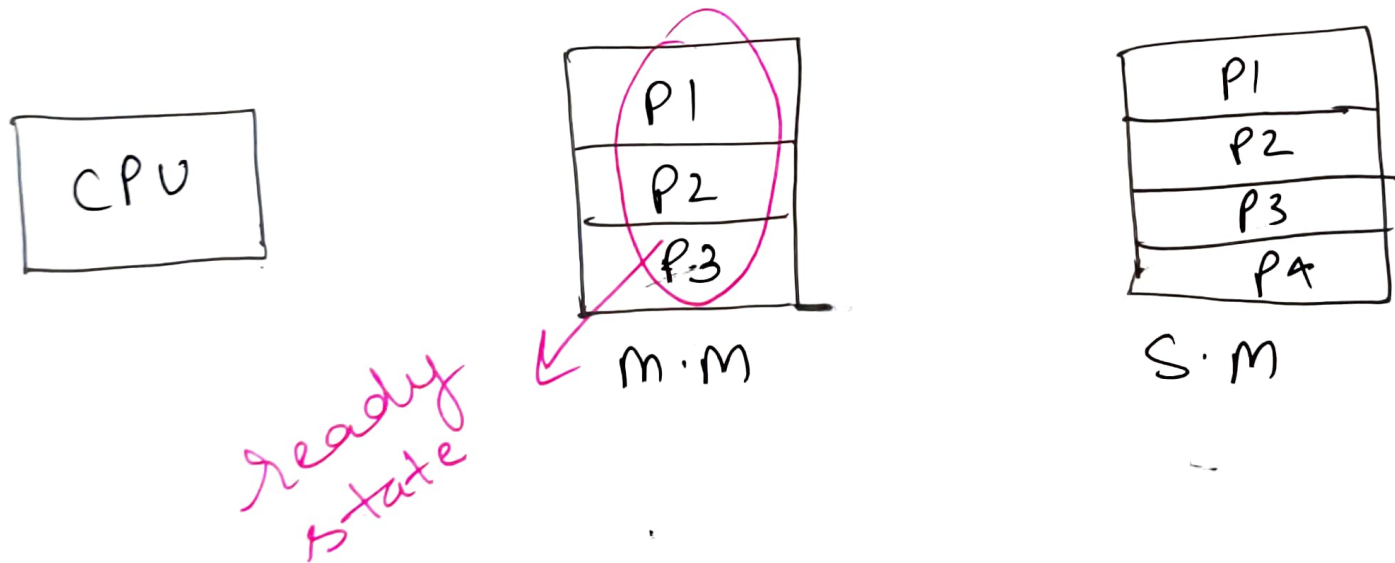
In this, once a process enters the running state, it cannot be preempted until it completes its allocated time.

Process States

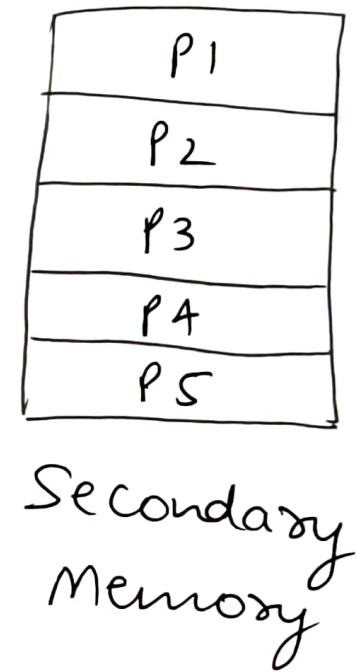
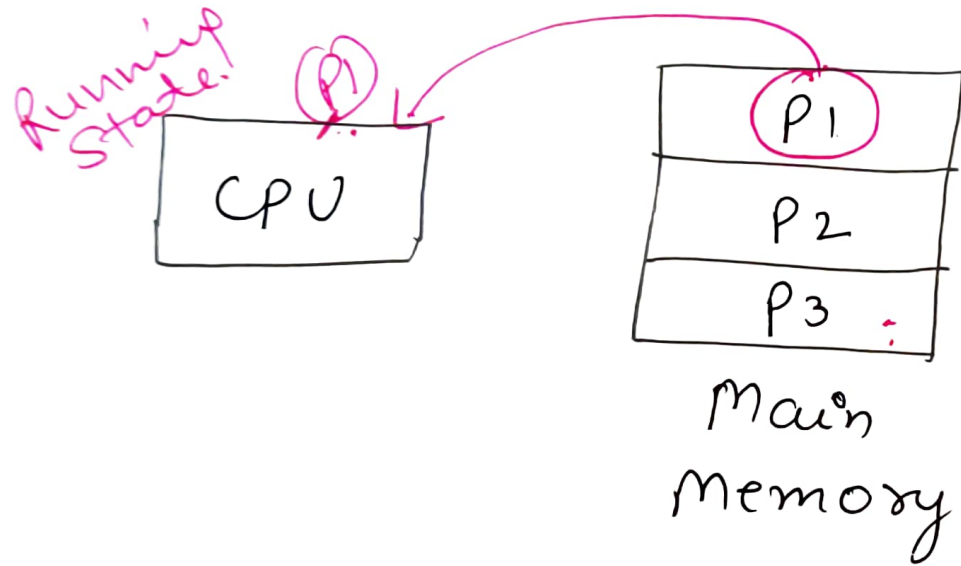
① New → A program which is going to be picked up by the O.S into the Main Memory.



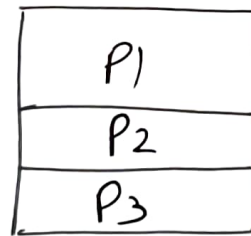
② Ready → whenever a process is created, it directly enters in the ready state, in which it waits for the CPU. The processes which are ready for the execution and reside in the main memory are called ready state ~~processes~~ processes.



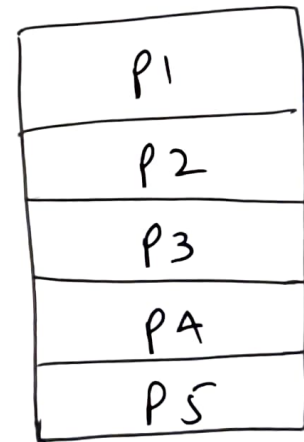
③ Running → one of the processes from the ready state will be chosen by the O.S depending upon the scheduling algorithms. The Process that is accessing the CPU, that process is in Running State



⑦ Suspend wait → If the process in wait state, requires a resource, and if there is lack of resources, then O.S removes that process and put it in the Secondary Memory. These Processes complete their execution once the main memory gets available and their wait is finished.



Main
Memory



Secondary
Memory

Process State diagram

