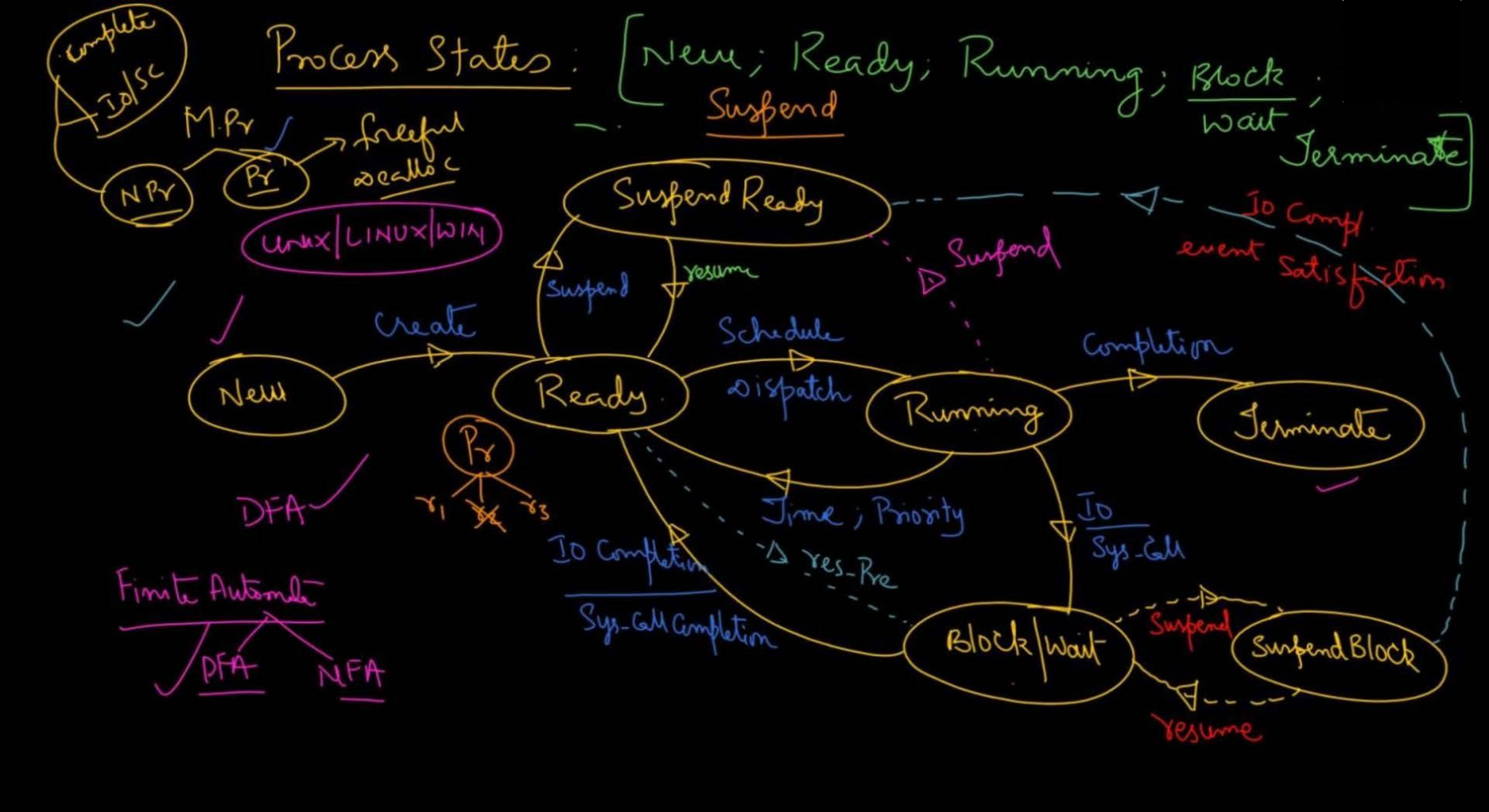

Process States : [New ; Ready ; Running ; Block / wait ; Suspend ; Terminate]
complete I/O/SC
M.Pr
NPr
Pr
freeful dealloc
Linux/LINUX/WIN
Suspend Ready
Suspend
resume
IO Compl event Satisfaction
Create
Schedule dispatch
Completion
New
Ready
Running
Terminate
DFA
Pr
r1
r3
Time ; Priority
IO Completion
Sys-Call Completion
yes-Re
IO
Sys-Call
Finite Automata
DFA
NFA
Block/wait
Suspend
Suspend Block
resume

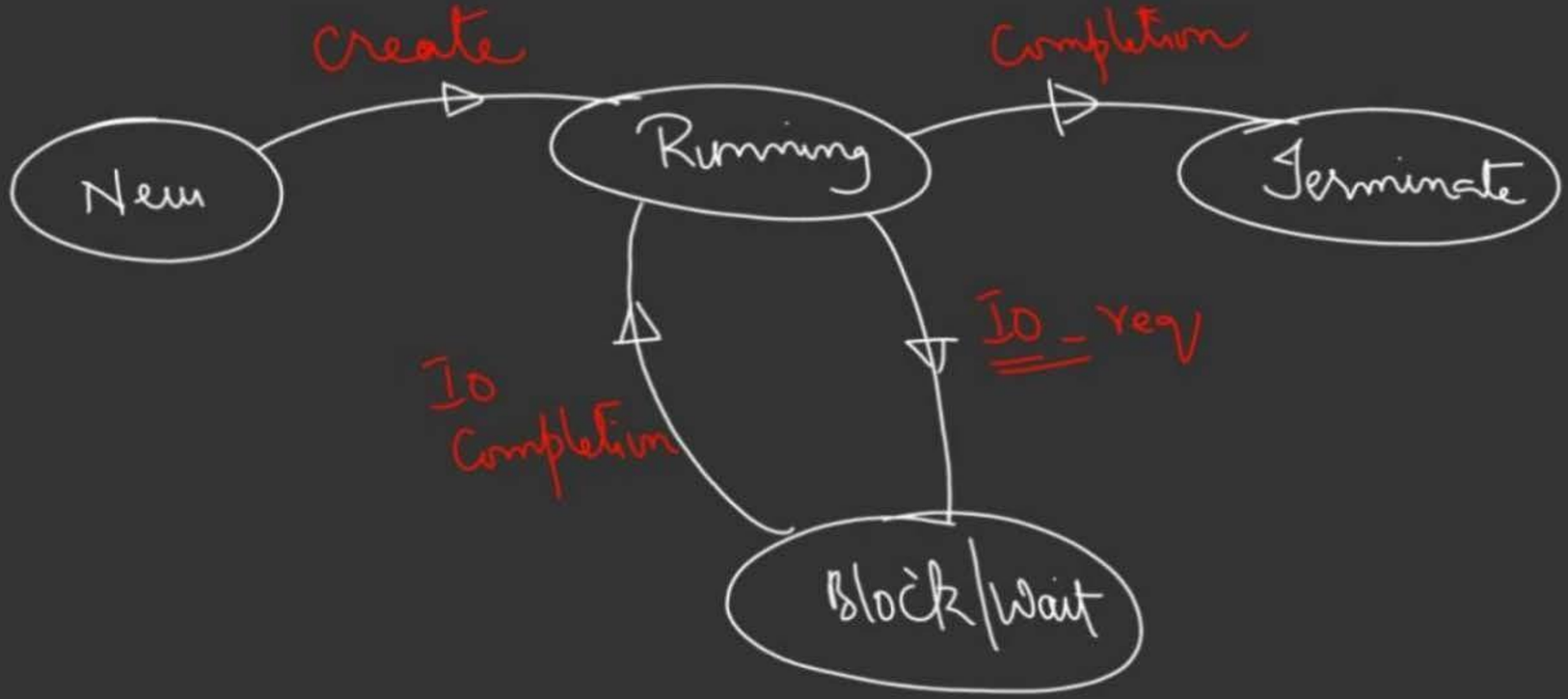
→ When the Process is in Ready, Running, Block States then it is in Main Memory

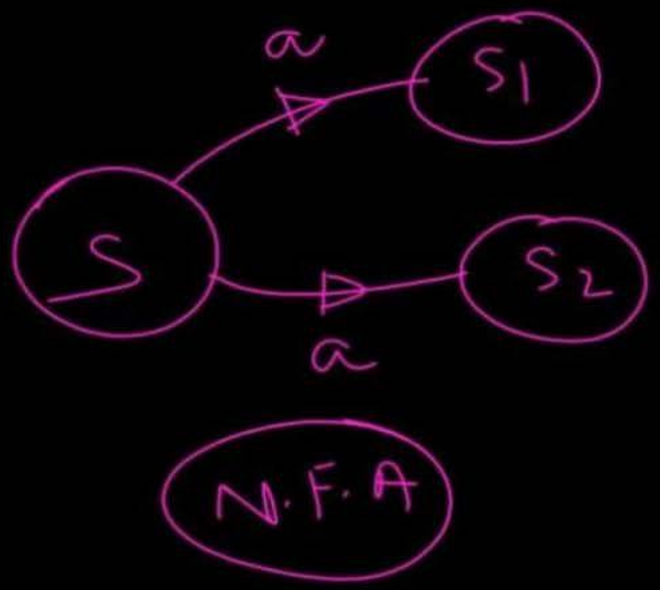
→ There can be many Ready Processes, many Block Processes and one Running Process (for one cpu)

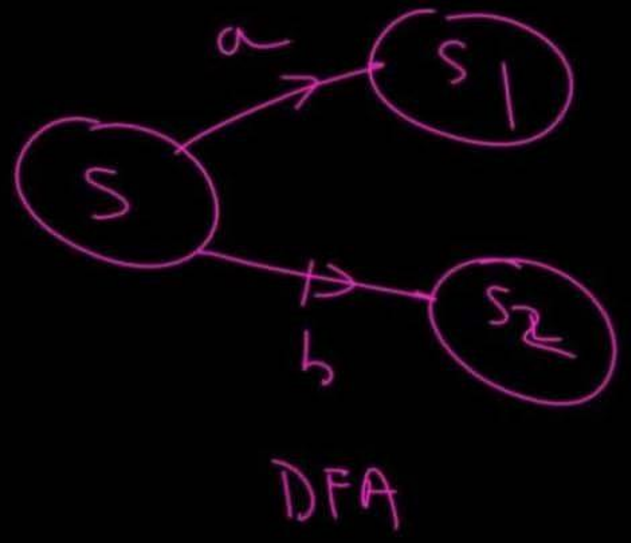
→ processes may get Suspended from Memory onto disk for performance reason;

→ If a process has to complete IO/Block in SuspendBlock, then Temporarily, it is brought in Memory, Satisfy the request & again Suspended → If a ready Process is preempted of its resource then it gets Blocked;

Uni-programmed O.S State Diagram



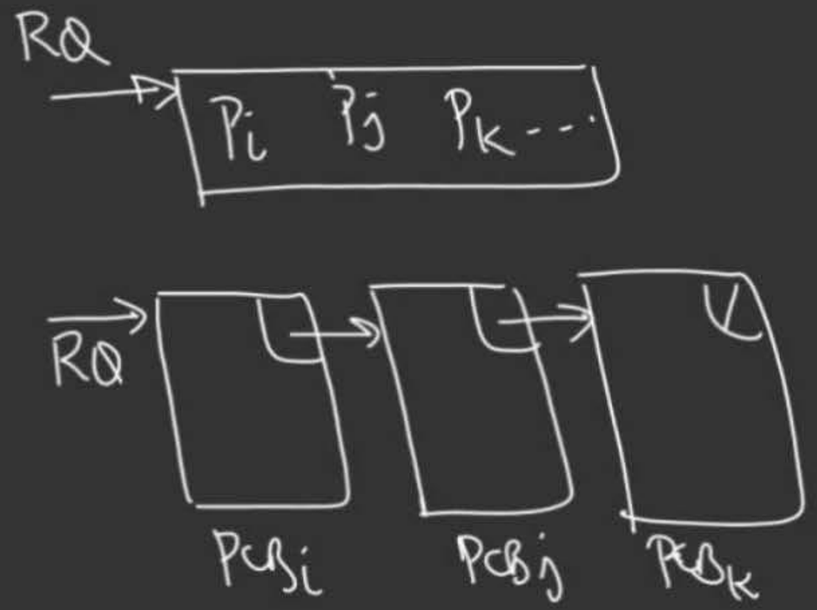

a
S1
S
S2
a
N.F.A


a
S1
S
S2
b
DFA

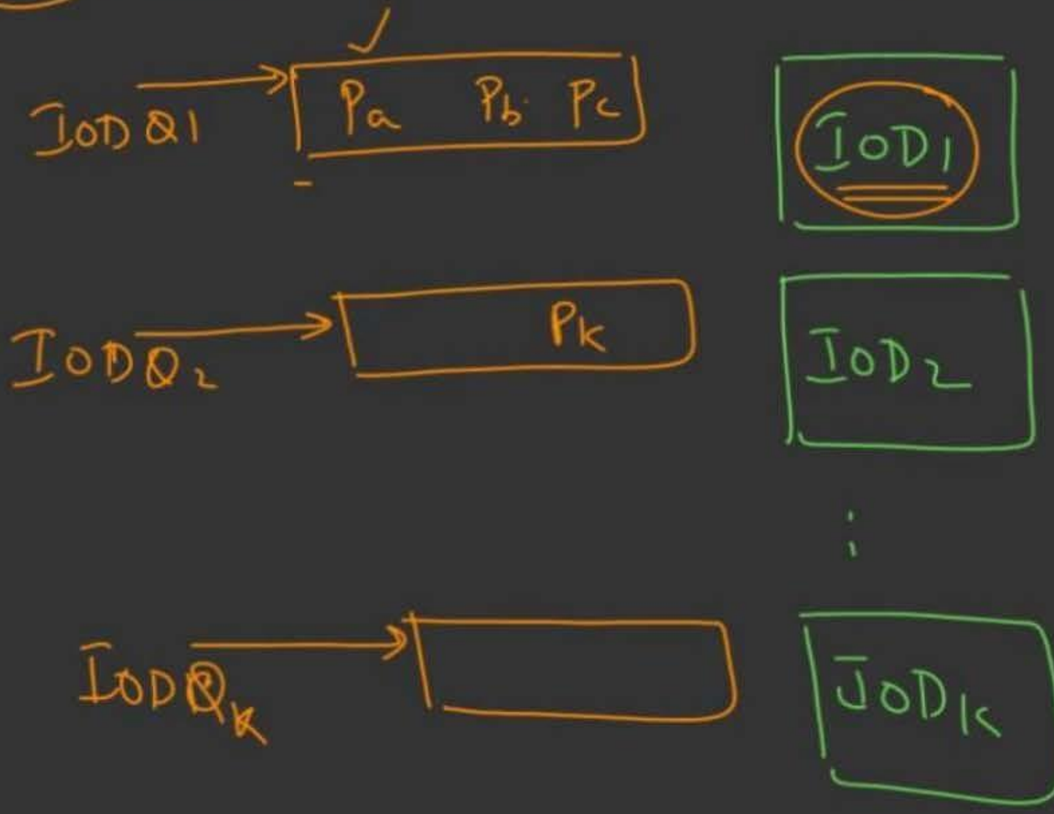
Scheduling Queues & State-Queueing diagram

- In-Memory
  - 1) Ready-Q
  - 2) Block_Q
- On-Disk
  - 3) Input-Q / Job-Q
  - 4) Suspend-Q

→ Contains list of PCB's of Ready Processes



2) Block-Q : list of PCB's of Blocked Processes onto that device;



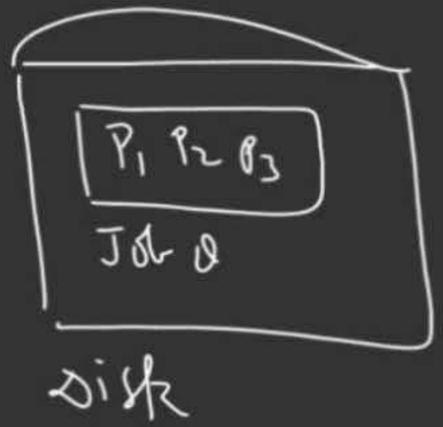
PCB: Process Control Block

On-Disk-Q's

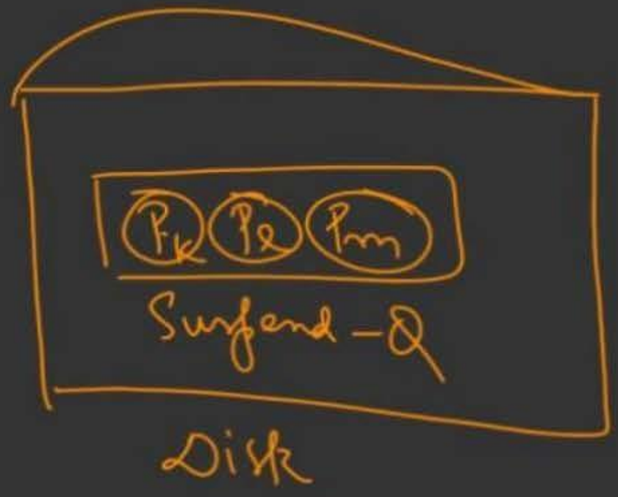
3) Input-Q / Job-Q :

" Programs that are ready to be Loaded in Memory;

New

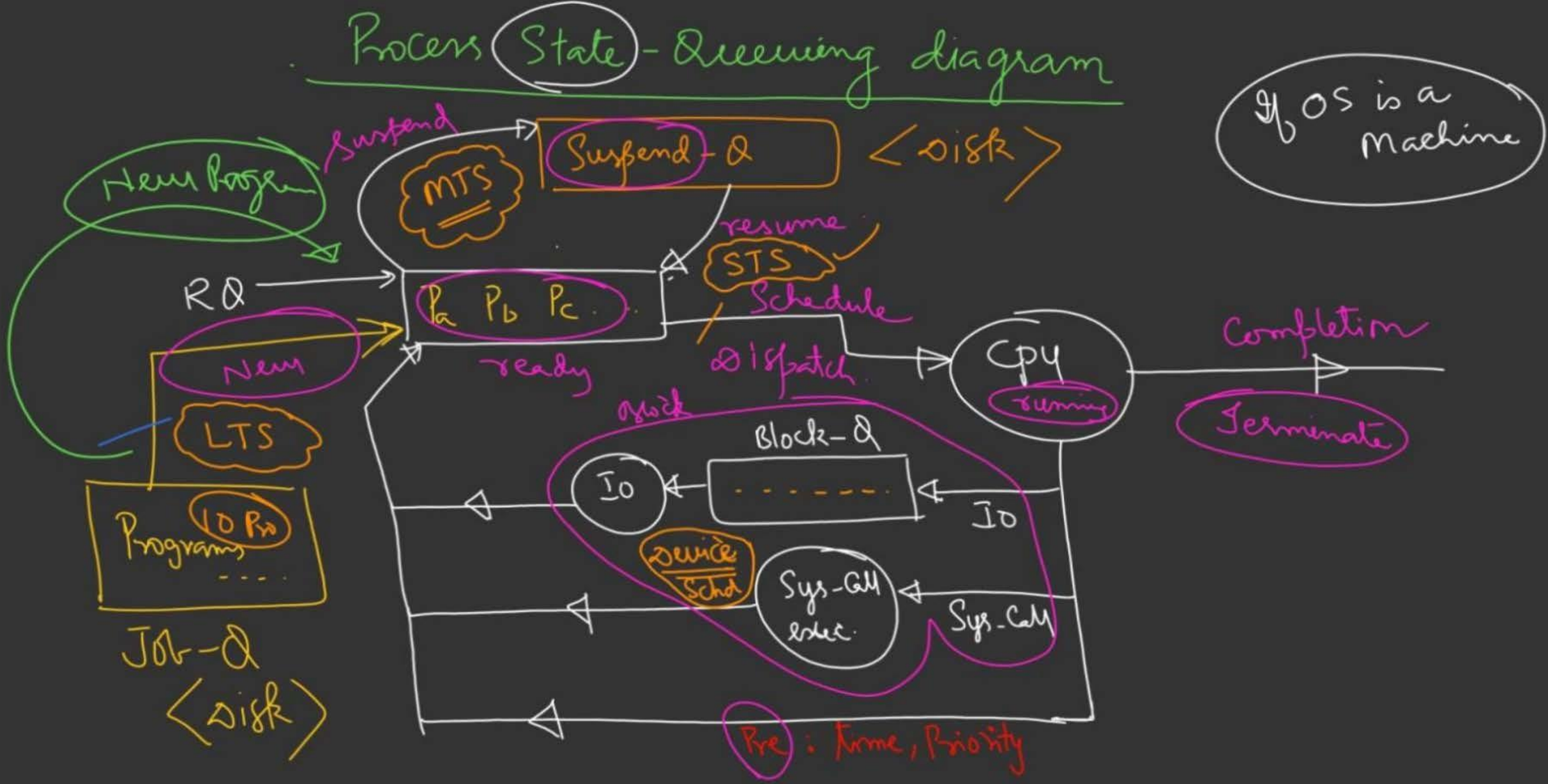


4) Suspend-Q



Processes that get Suspended from Memory are stored in Suspend-Q

Process State - Queuing diagram



OS is a Machine