COMPUTER SCIENCE & IT

OPERATING SYSTEM

Process State Transition Diagram

LECTURE No.-03

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State Transition Diagram

Queues and State Queuing Diagram

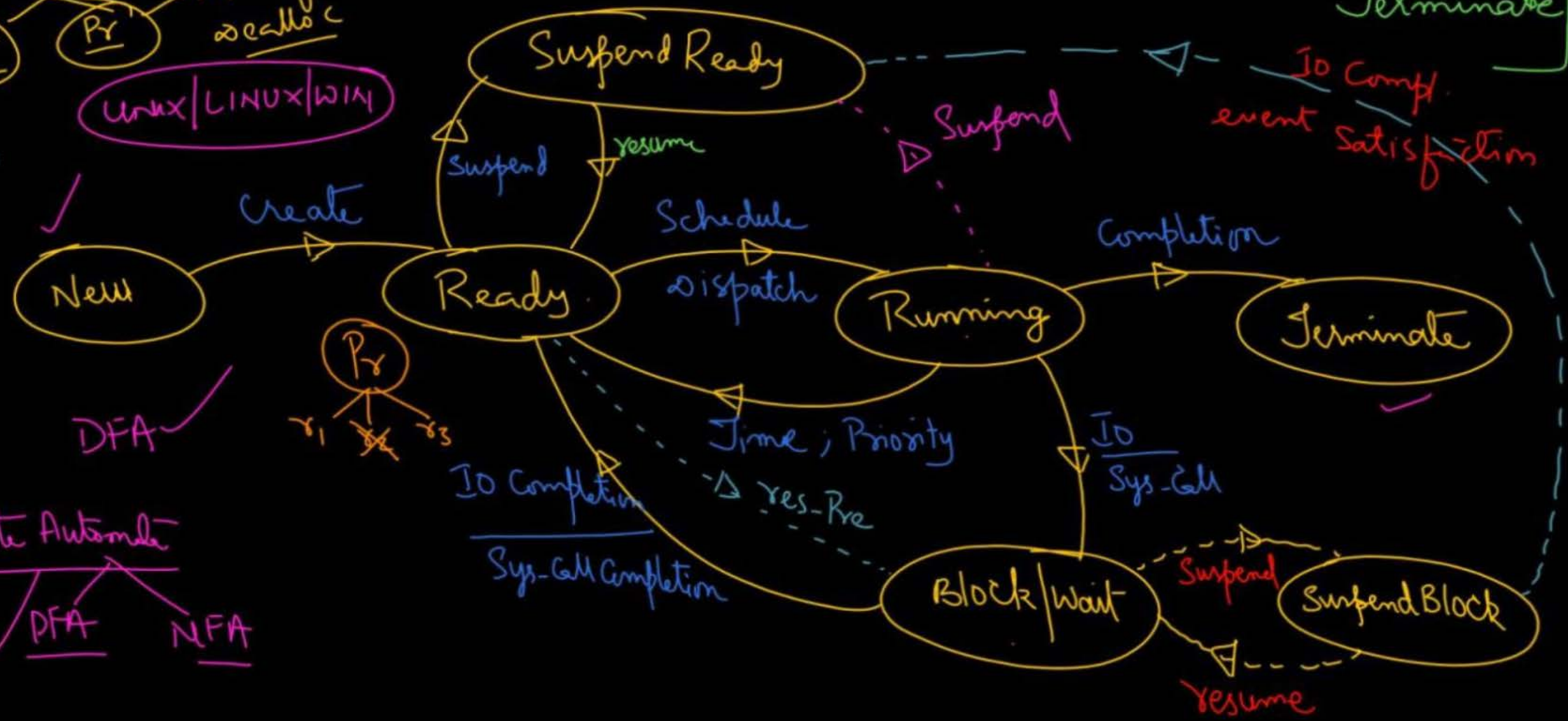
Process States: [New; Ready; Running; Block/Wait; Terminate]

Suspend

complete
IO/SC

M.Pr
NPr
Pr → freeful
∞ alloc

UNIX|LINUX|WIN



Finite Automata
DFA
NFA

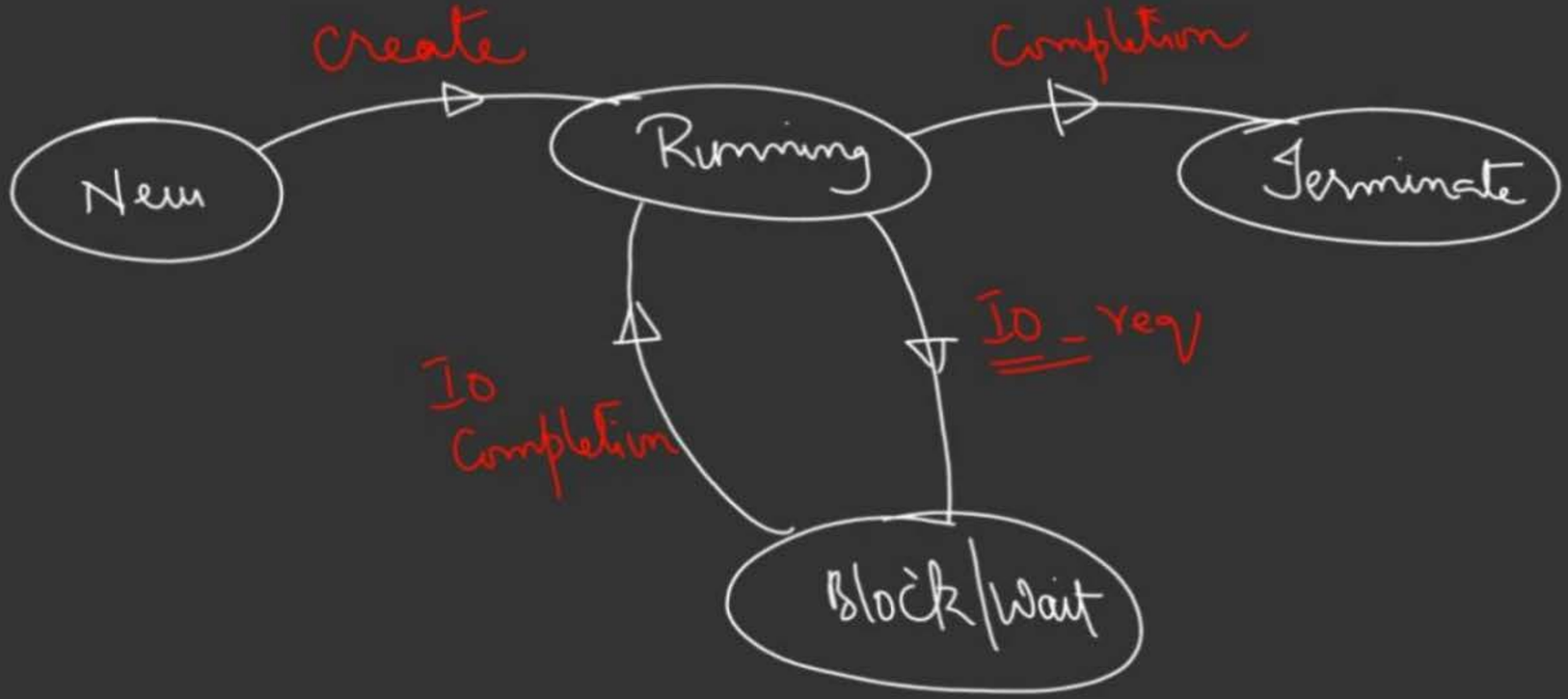
→ When the Process is in Ready, Running, Block States then it is in Main Memory

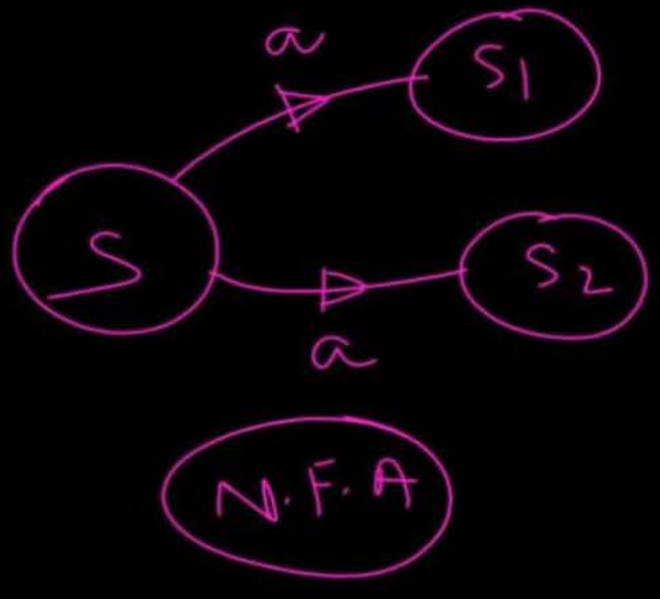
→ There can be many Ready Processes, many Block Processes and one Running Process (for one cpu)

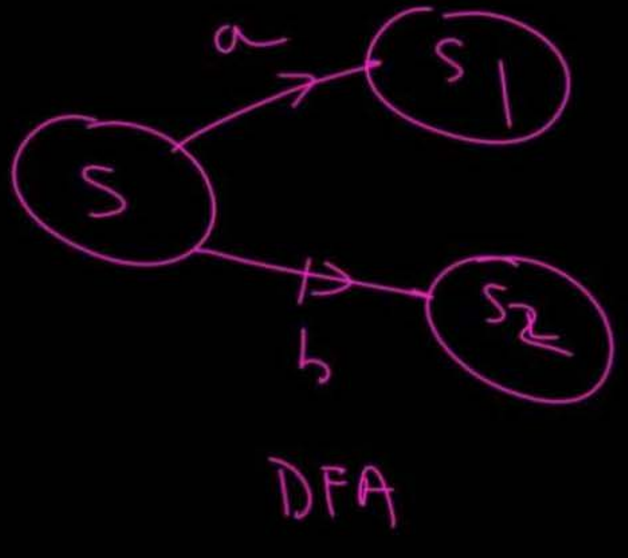
→ processes may get Suspended from Memory onto disk for performance reason;

→ 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



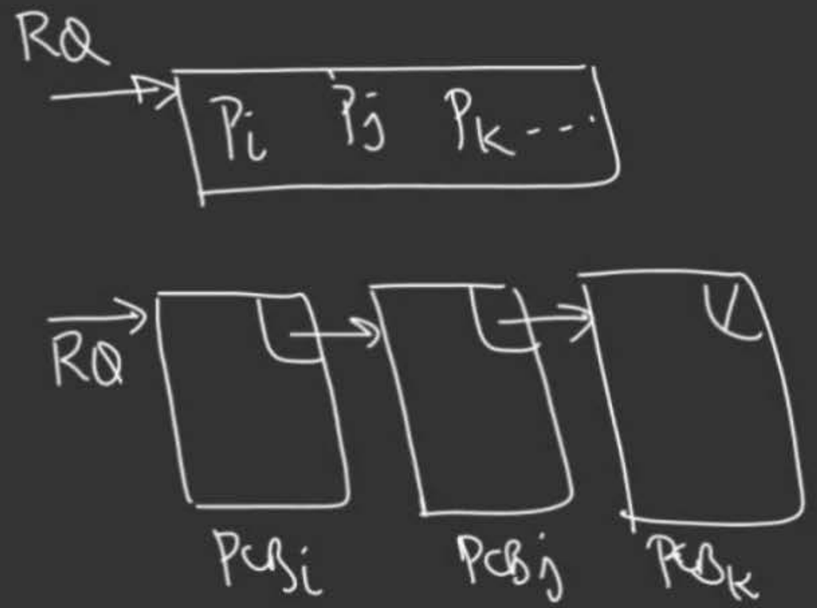

a
S1
S
S2
a
N.F.A


a
S1
S
S2
b
DFA

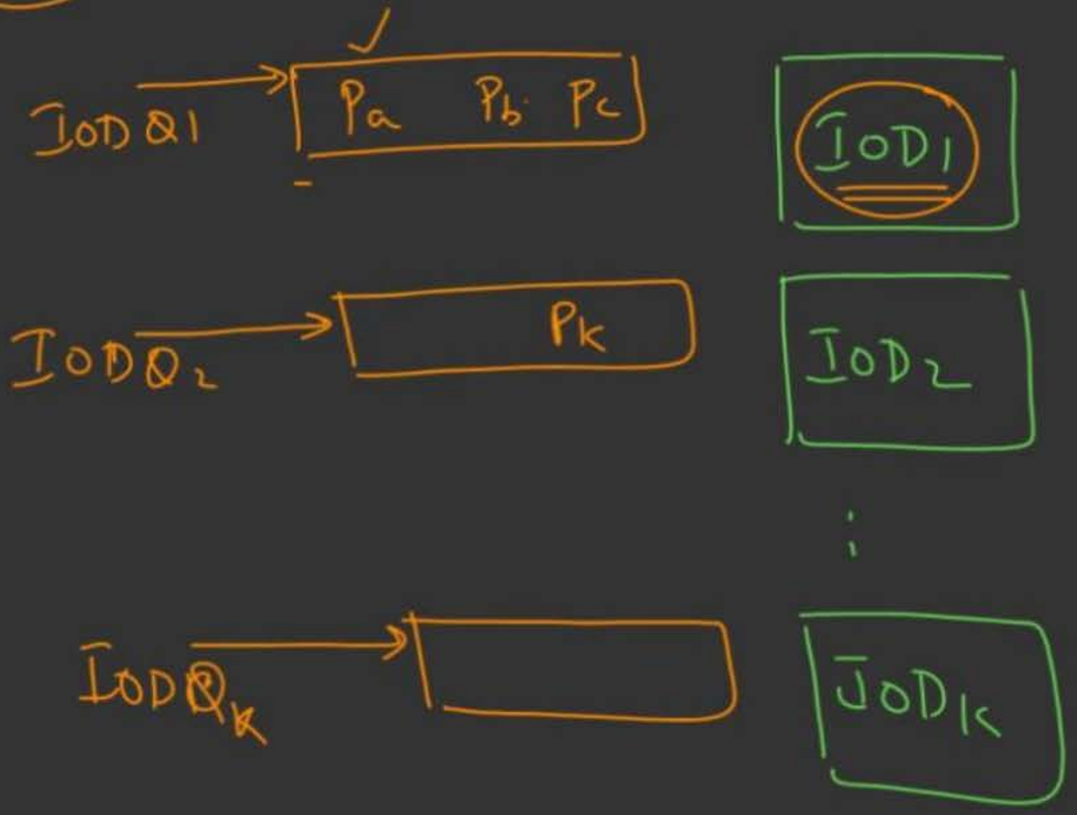
Scheduling Queues & State-Queuing diagram

- 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;



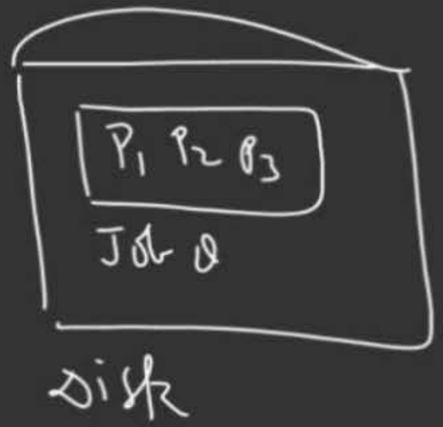
PCB: Process Control Block

On-Disk-Q's

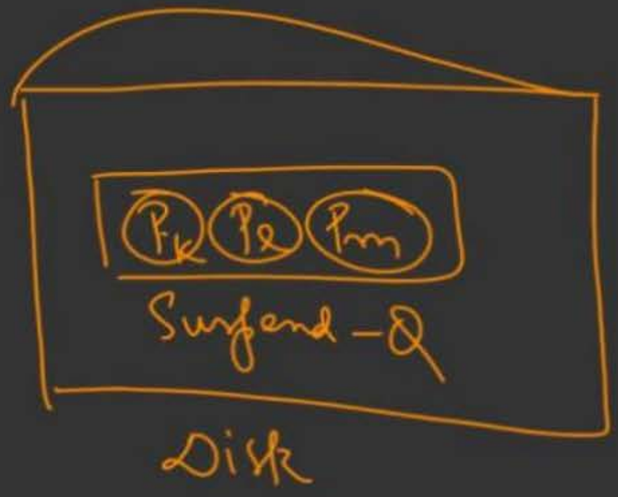
3) Input-Q / Job-Q :

" Programs that are ready to be Loaded in Memory;

New

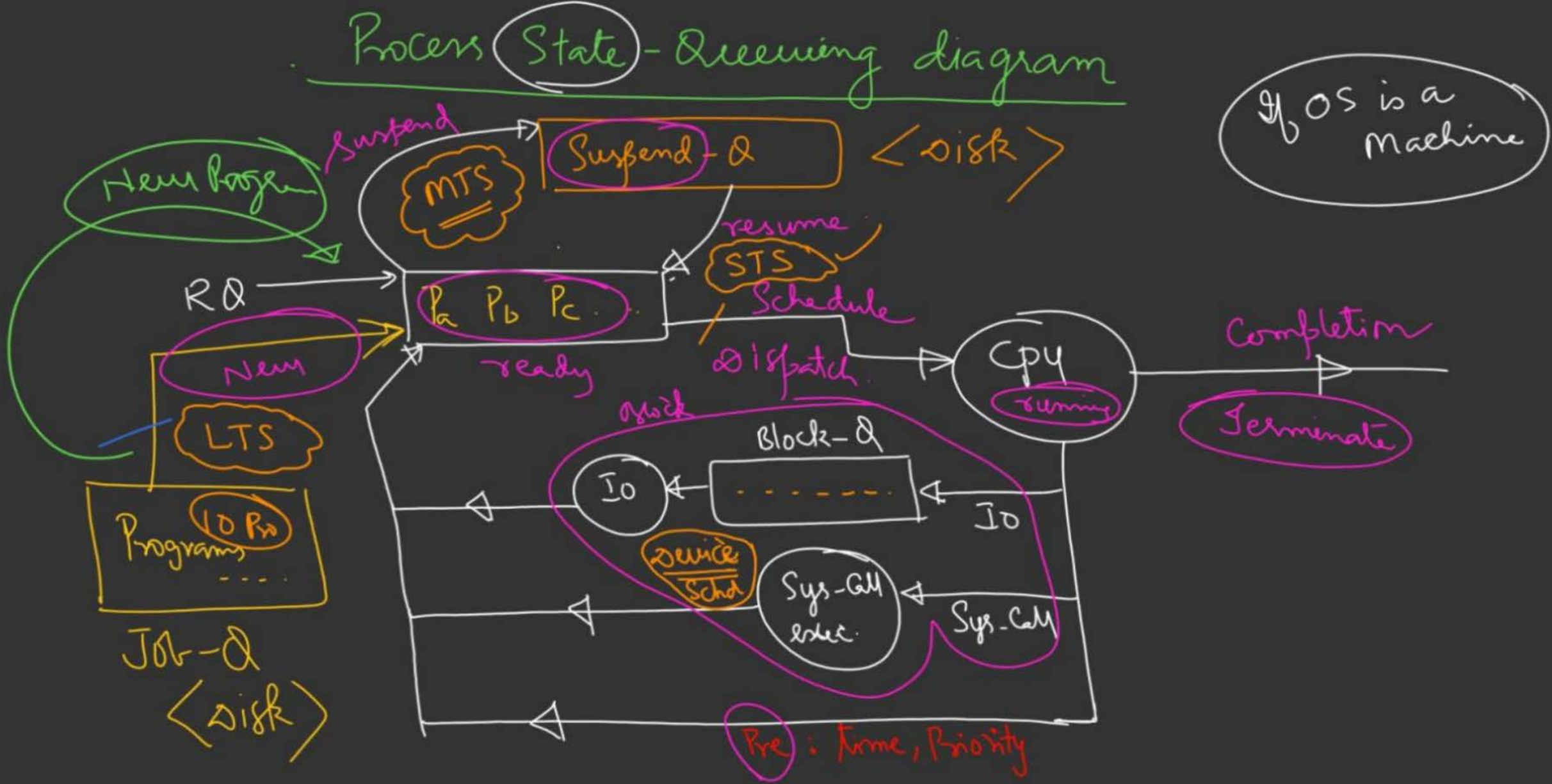


4) Suspend-Q



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

Process State - Queuing diagram



THANK
YOU!