

Operating System: Process Scheduling

By: Vishvadeep Gothi



VISHVADEEP GOTHI SIR

AIR 19

in GATE 2010



**ME from IISc Bangalore
MTech BITS Pilani (Data Sc.)**



**13+ Years of Teaching Experience,
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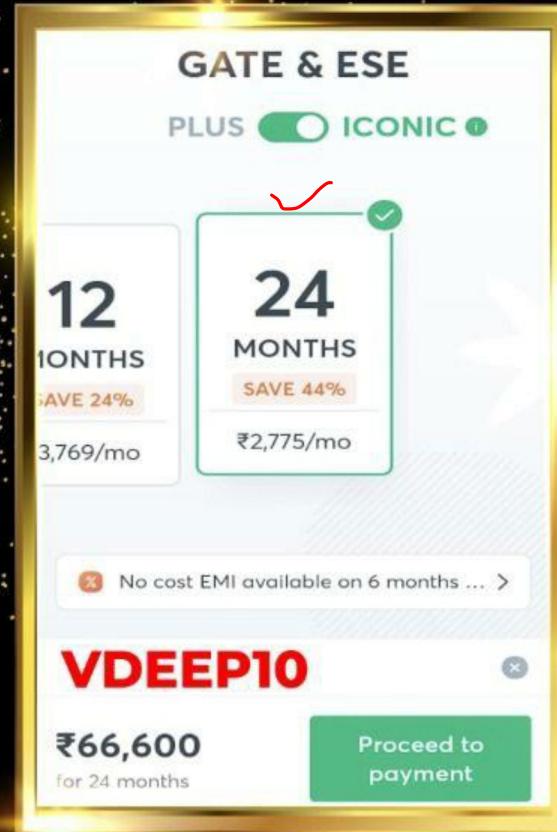
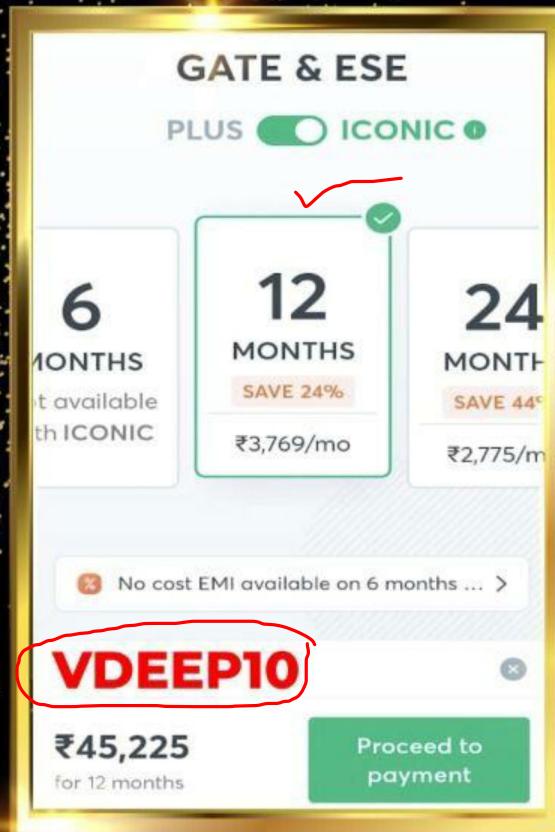
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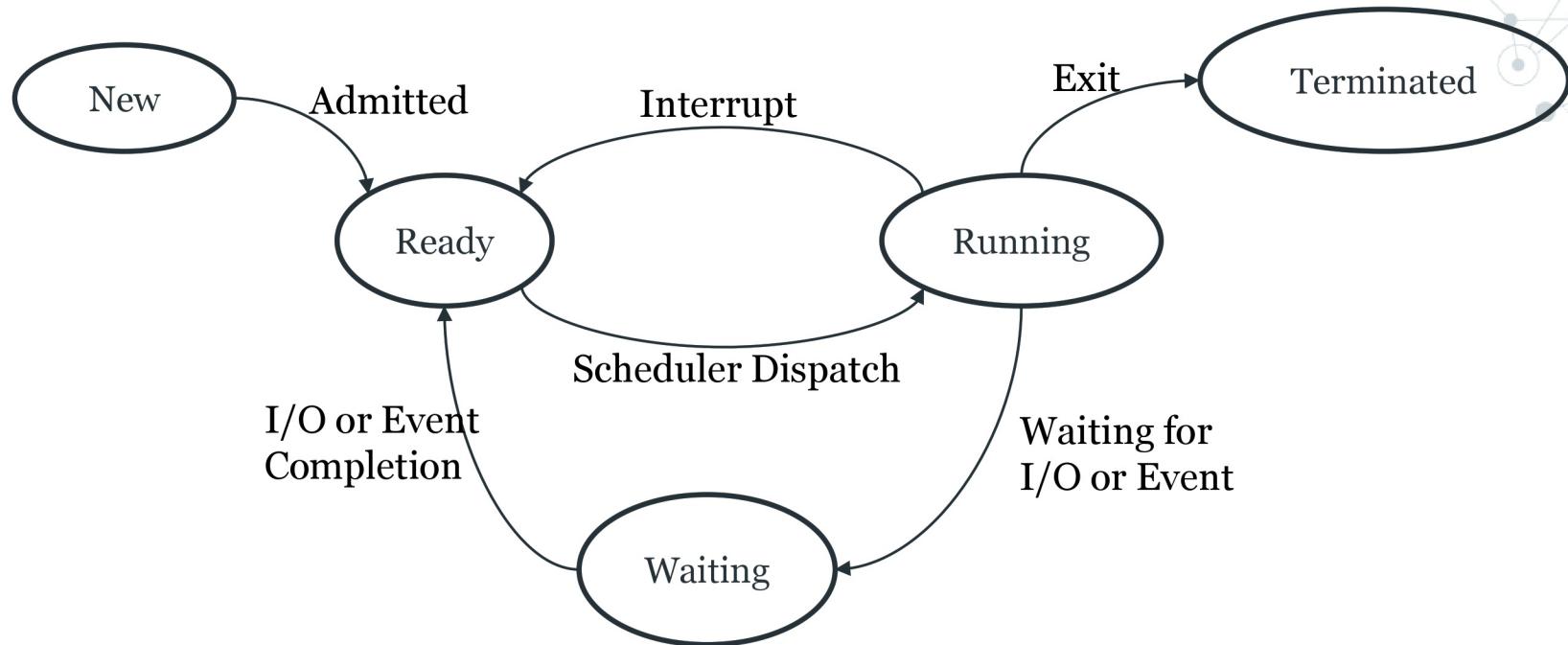


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Process States



Process Scheduling

- ◎ Needed Because?

→ better resource utilization



Scheduling Queues

Job Queue

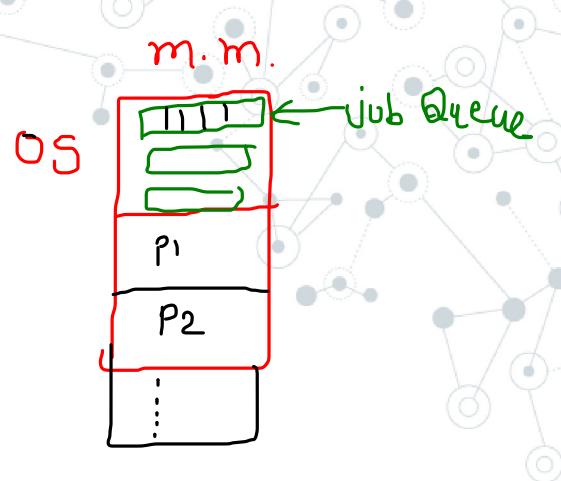
all processes which are in new state.

Ready Queue

all processes which are in ready state

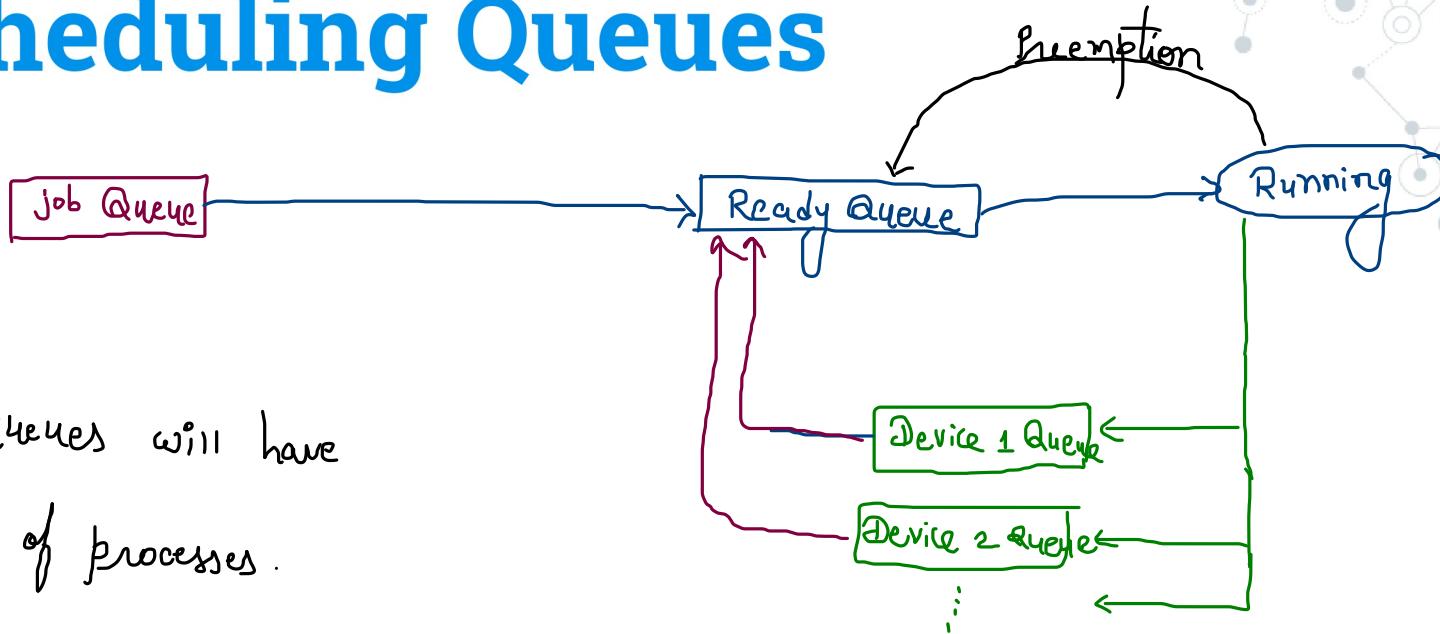
Device Queue

all process which are waiting for a specific device.



Scheduling Queues

all queues will have
PCBs of processes.



Each I/O device will have its own queue

Types of Schedulers

- 1. Long-Term Scheduler (Job)
- 2. Short-Term Scheduler (CPU)
- 3. Mid-Term Scheduler (Medium-term)

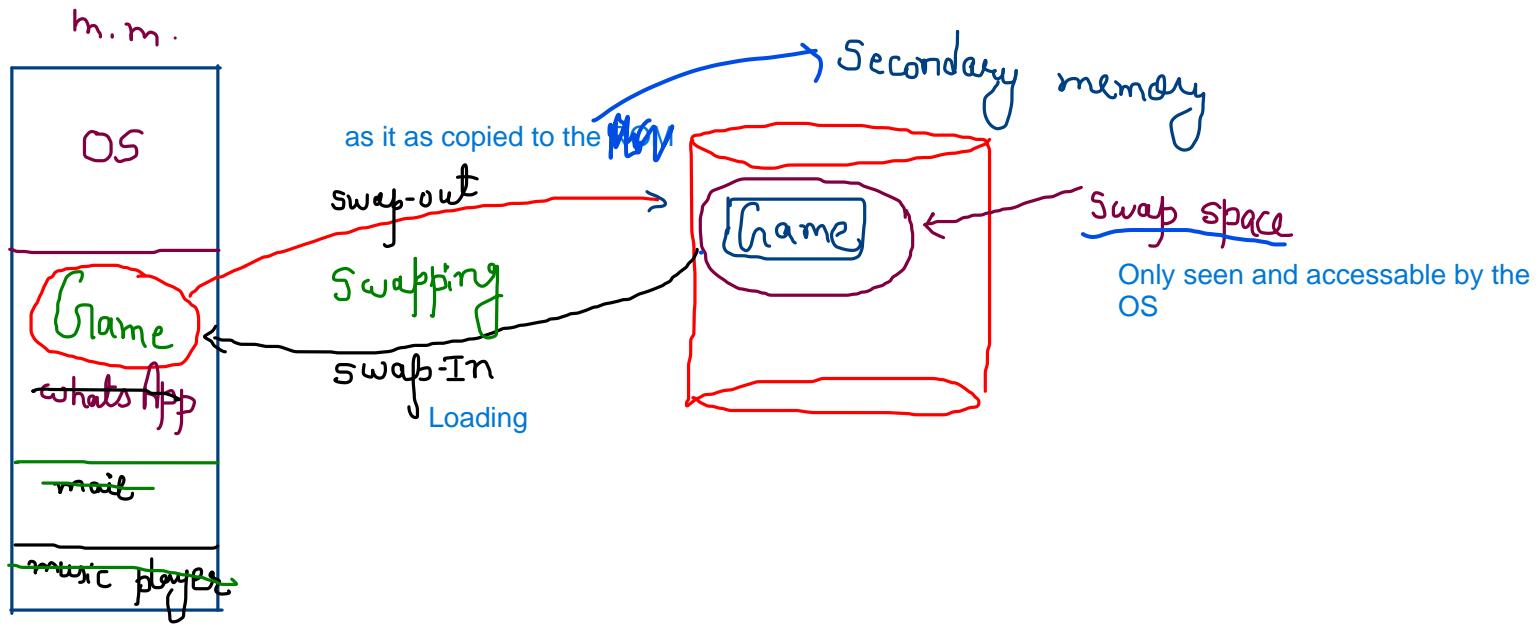
because of freq. of usage

from new state to ready state
(Resource allocation)

Dont bring process from one state to another ,only selects process to go into the running state first.

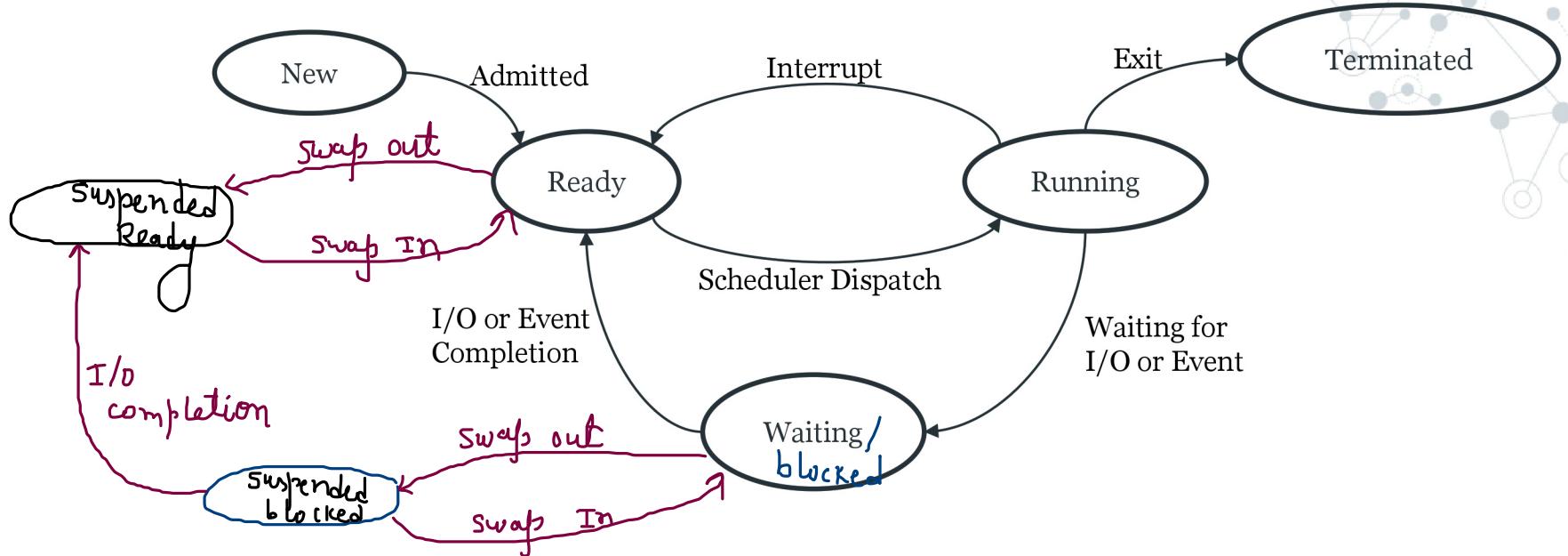
does swapping

- Long-term scheduler controls max degree of multiprogramming.
- mid-term scheduler reduces the degree of multiprogramming.



Swapping is known as rolling also, if swapping done based on priority.

Updated Process States



CPU Scheduling

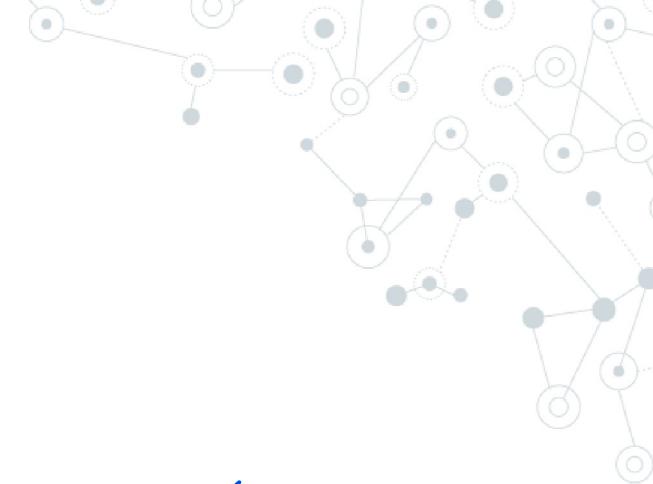
Function:

Make a selection

(one of the processes selected from ready state to run on CPU)



CPU Scheduling



Function:

Make a selection

Goal

- ✓ Minimize Wait time and Turn-around time ✓
- ✓ Maximize CPU utilization (Throughput) ✓
- ✓ Fairness ✓



Question 1

Which of the following scheduler reduces the degree of multiprogramming?

- a) Short-Term
- b) Long-Term
- c) Mid-Term
- d) Long-Term and Mid-Term both



Next Class

Scheduling Times ✓

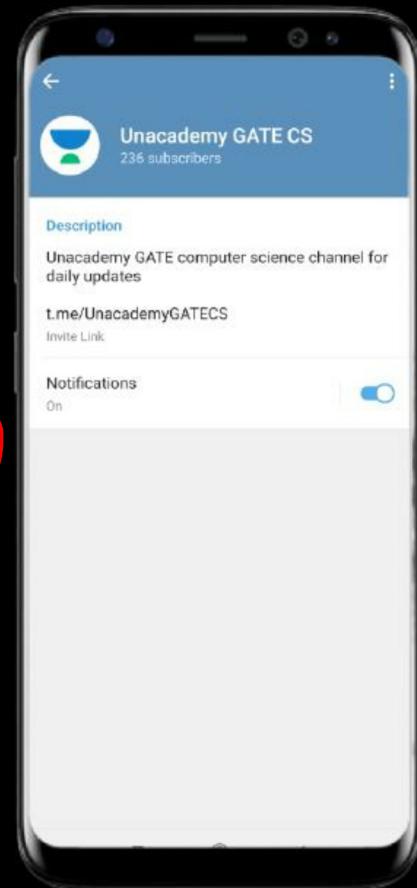


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