

Operating System: Process Scheduling

By: Vishvadeep Gothi



VISHVADEEP GOTHI SIR

AIR 19

in GATE 2010



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



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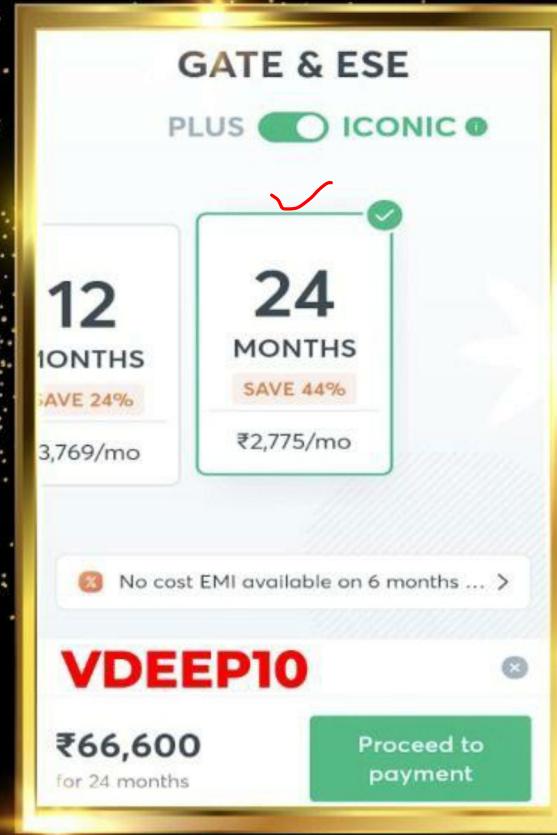
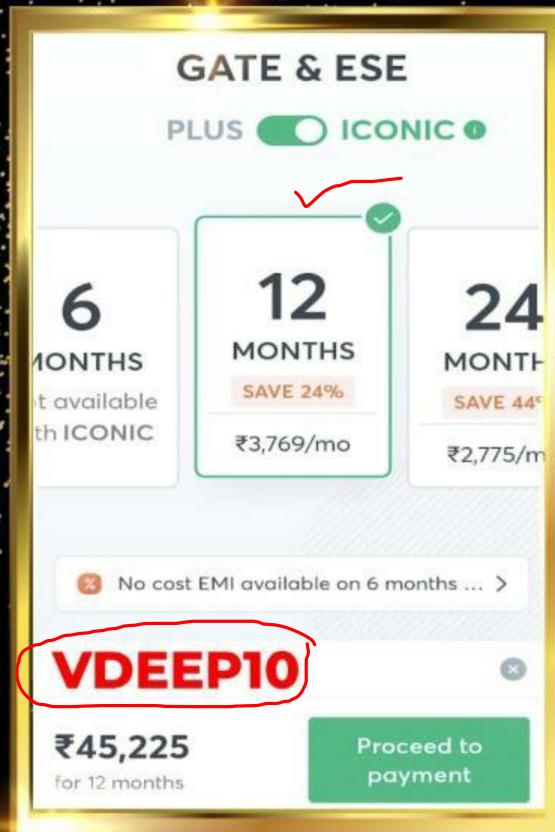
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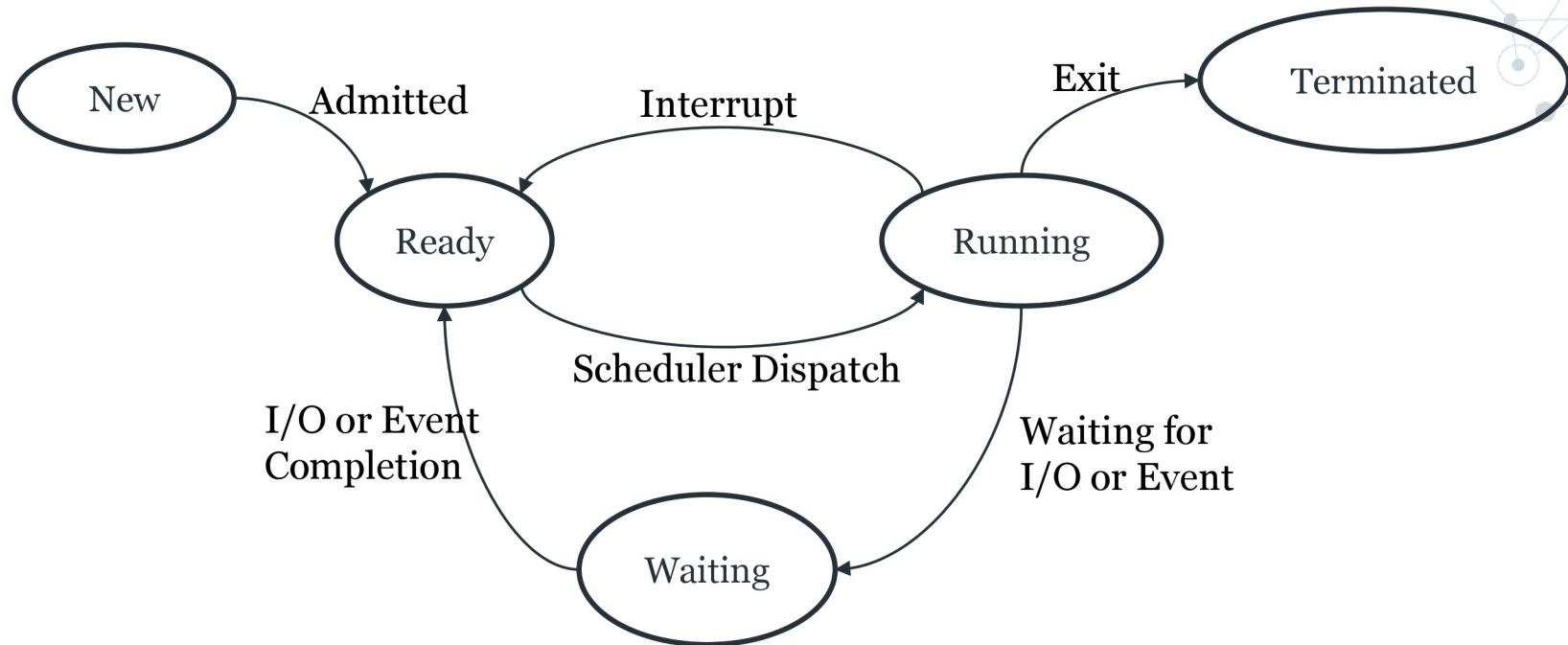


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Process States



Process Scheduling

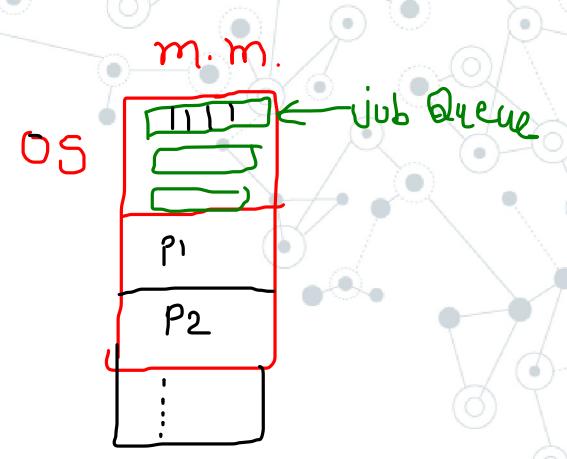
- ◎ Needed Because?

→ better resource utilization



Scheduling Queues

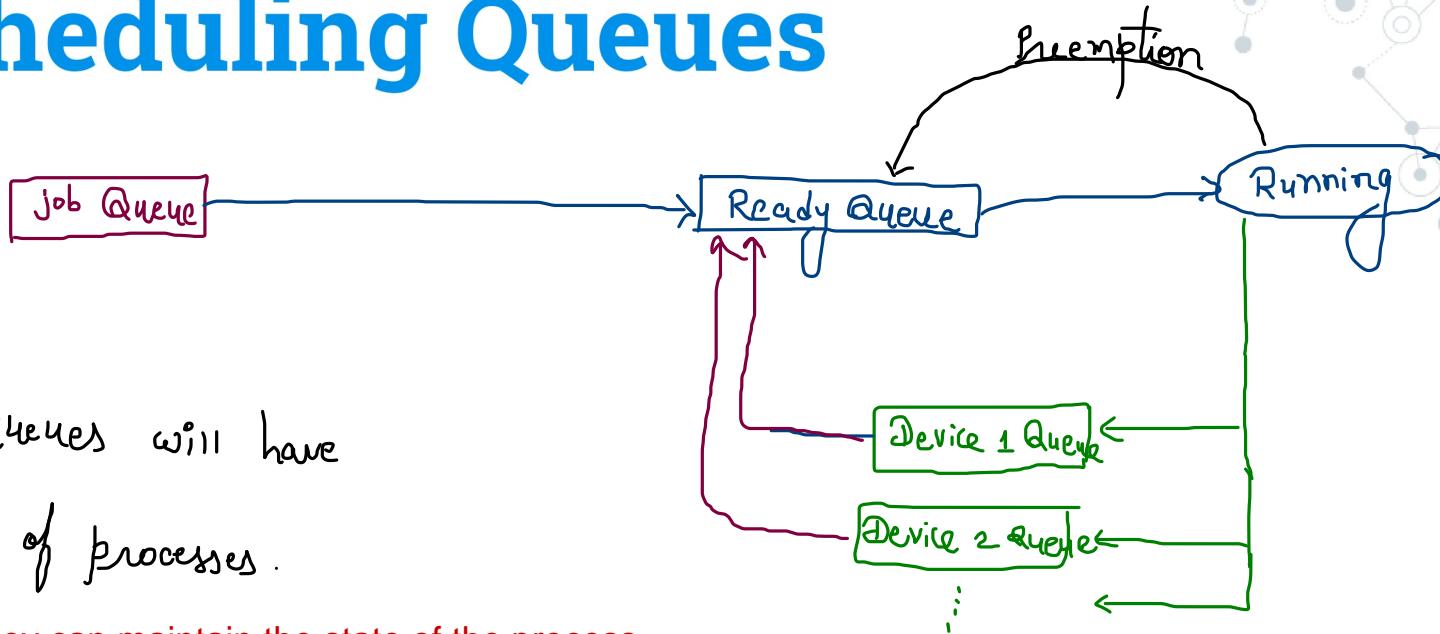
- Job Queue → all processes which are in new state.
- Ready Queue → all processes which are in ready state
- Device Queue → all process which are waiting for a specific device.



Every Device has its own Device Queue



Scheduling Queues



so that they can maintain the state of the process

Example : to move process p1 from blocked to ready state we move PCB of process p1 from device queue to ready queue inside OS

Types of Schedulers

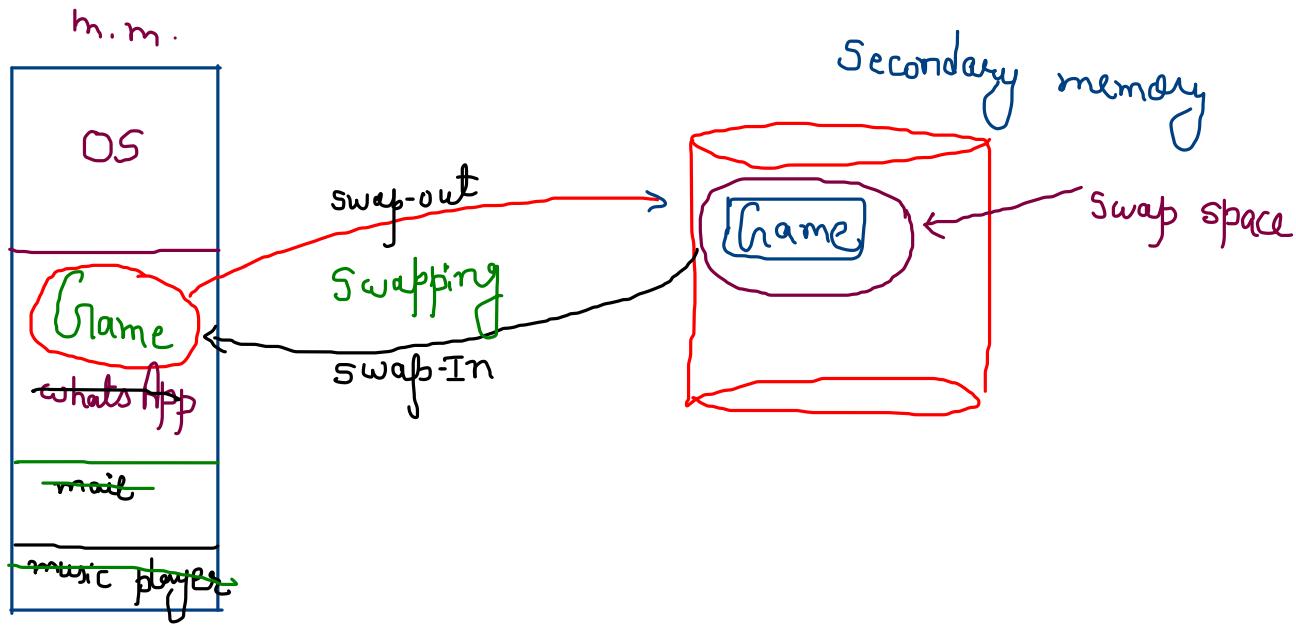
- 1. Long-Term Scheduler (Job)
- 2. Short-Term Scheduler (CPU)
- 3. Mid-Term Scheduler (Medium-term)

because of freq. of usage

LTS schedules 2 types of processes :

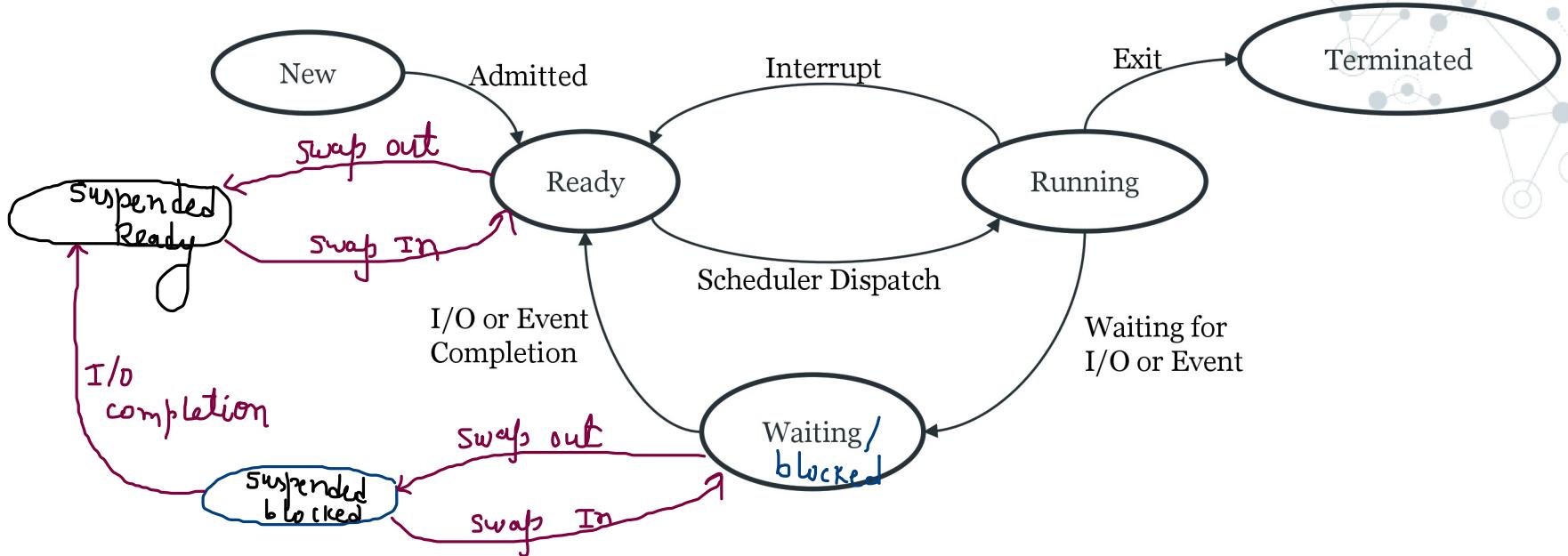
1) User initiated 2) background processes (OS gives instruction to LTS)

- 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:

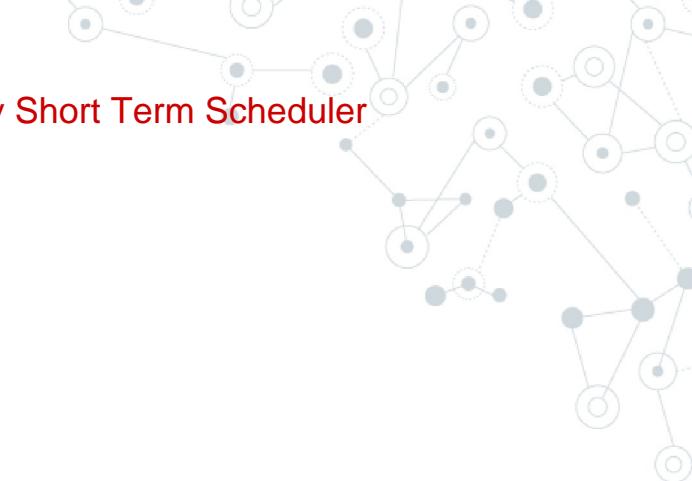
Make a selection

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



CPU Scheduling

Managed by Short Term Scheduler



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

Degree of Multiprogramming is CONTROLLED by both Long term (increases) and mid-term (decreases) Scheduler

Next Class

Scheduling Times ✓

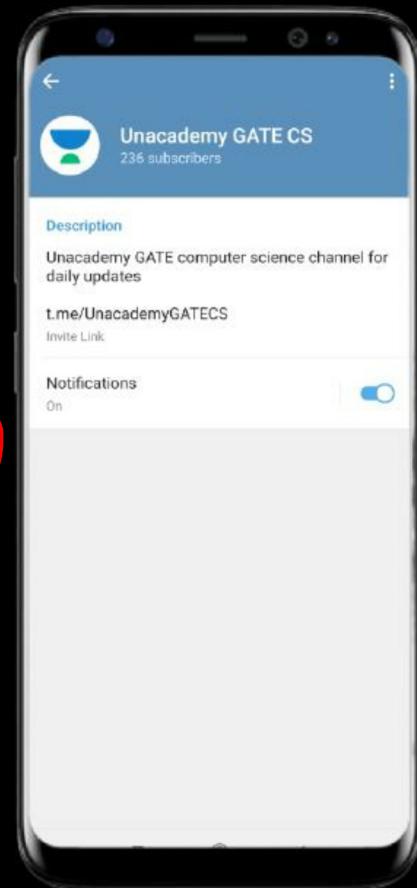


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