

Operating System: Process State Transition

By: Vishvadeep Gothi



VISHVADEEP GOTHI SIR

AIR 19

in GATE 2010



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



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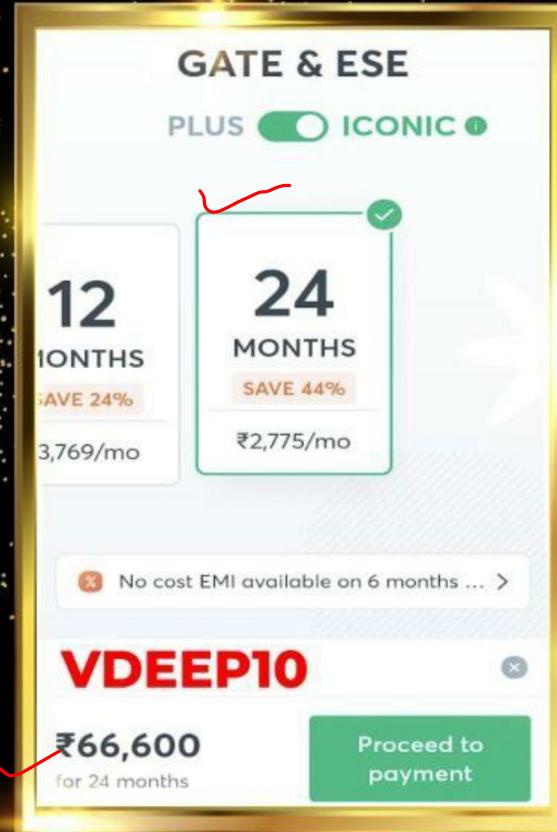
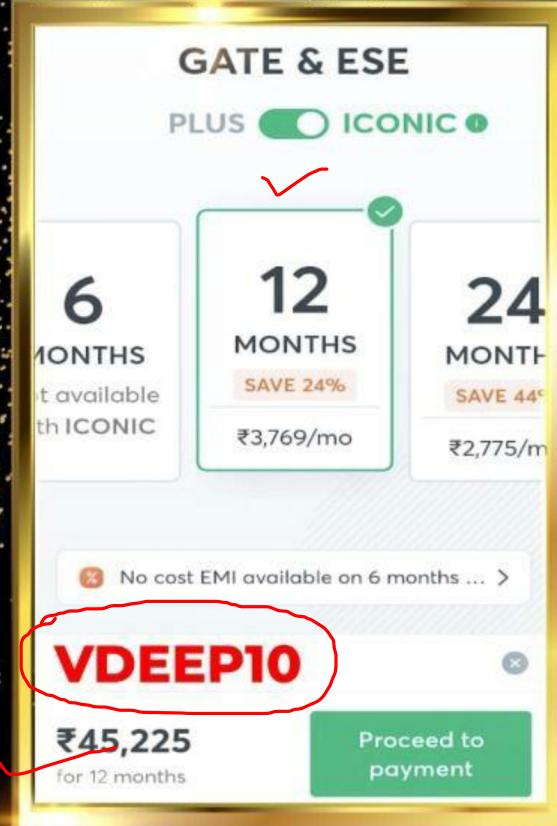
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Process

Process:

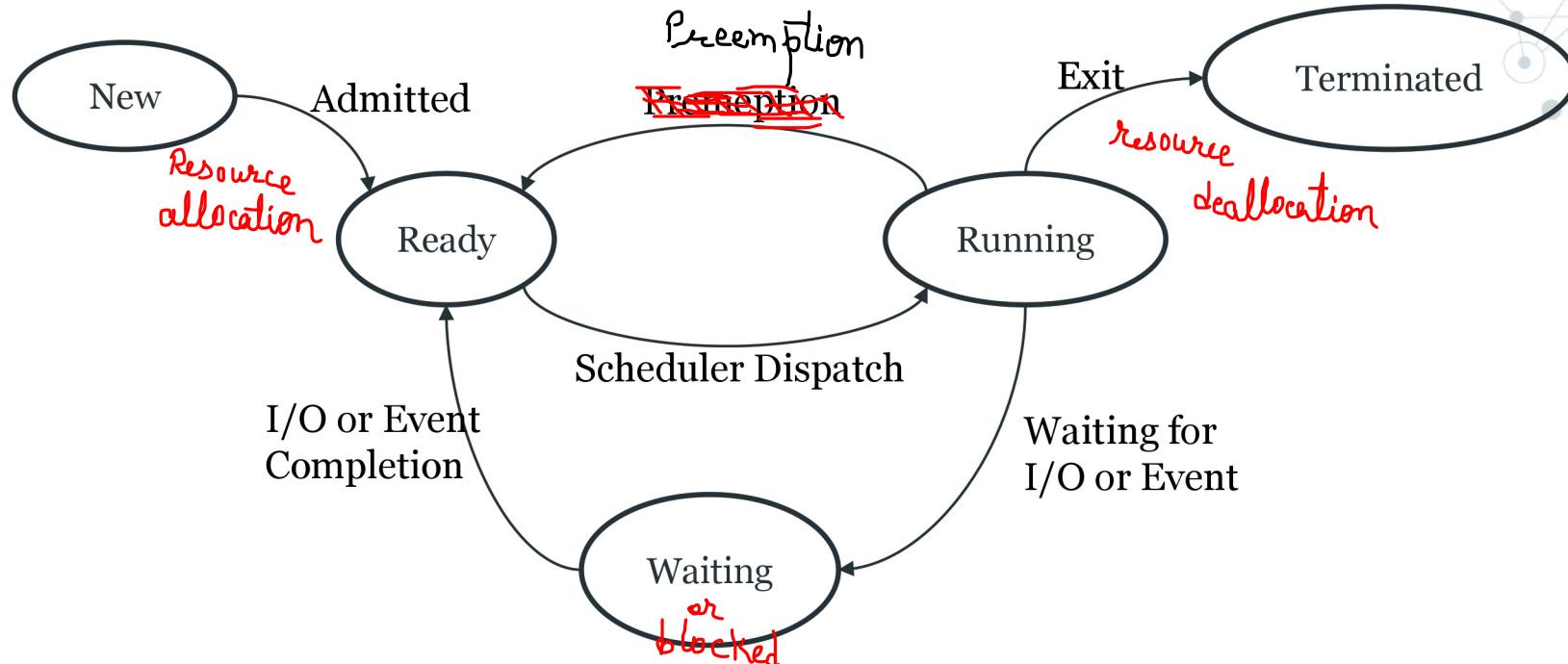
- Program under execution
- An instance of a program
- Schedulable/Dispatchable unit (CPU)
- Unit of execution (CPU)
- Locus of control (OS)



Process States



Process States



Process States



New:

All installed processes are known to be in new state

Ready:

All processes which are waiting to run on CPU are known to be in ready state



Process States

Running:

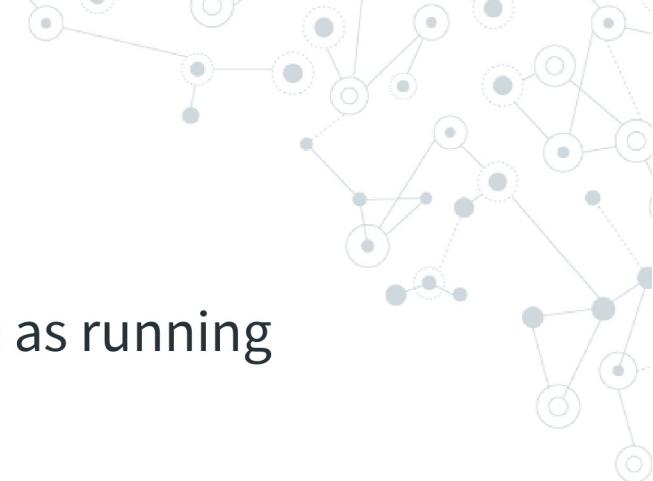
A process which is running on CPU has its state as running

Terminated:

A completed process has its state as terminated

Blocked:

All processes which are waiting for any IO or event



Process States Transitions

New To Ready: When process is admitted by OS — *by OS*

Ready to Running: When a process is dispatched to CPU — *by OS*

Running to Terminated: When a process is completed — *by process*

Running to Blocked: When a process goes for IO or event — *by process*

Running to Ready: When a process is preempted — *OS*

Blocked to Ready: When a process completes IO or event

OS

Process States Transitions

2 Transitions are voluntary:

- Running to Terminated
 - Running to Blocked

Ques:-

Ques:- n processes m CPUs $m < n$

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mas

I. Running

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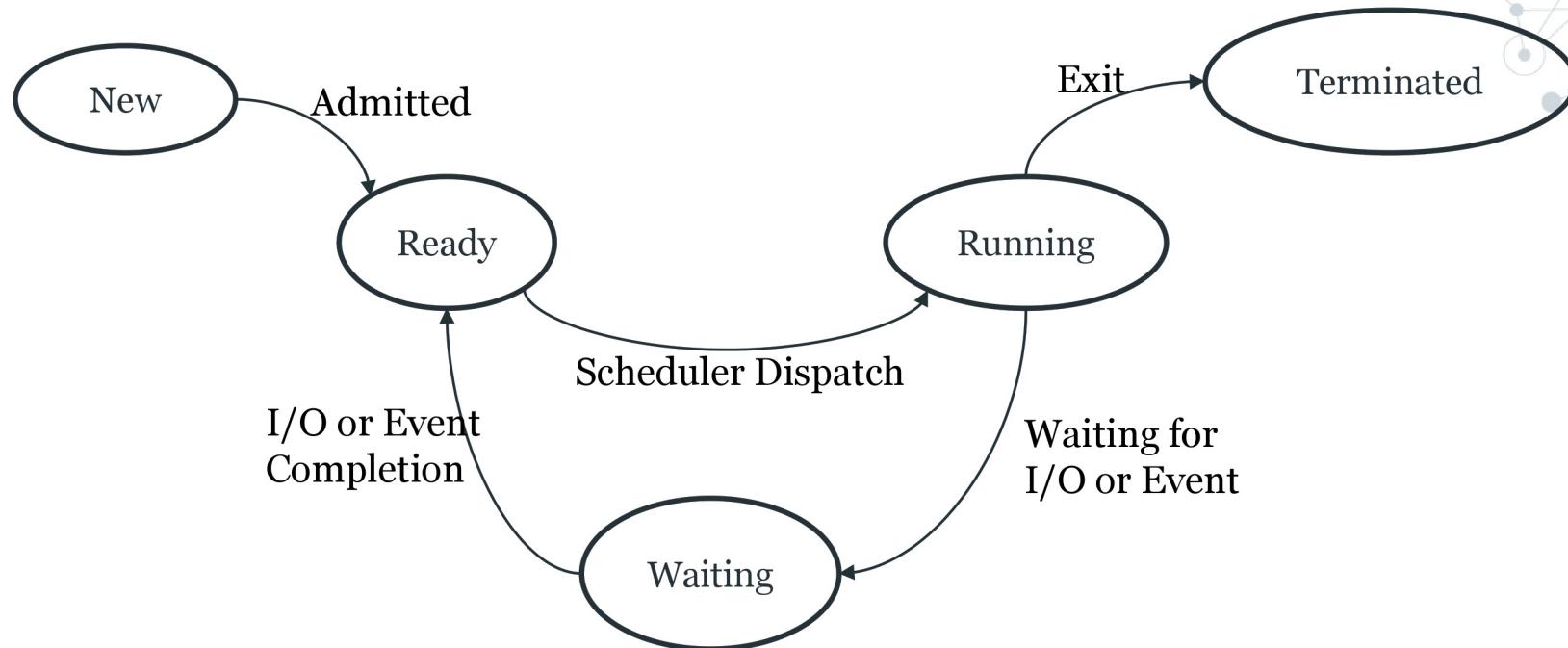
2. Ready

1

3. Blocked

□ 1

Process States: Non-preemptive



CPU vs IO Bound Process

CPU Bound: If the process is intensive in terms of CPU operations

IO Bound: If the process is intensive in terms of IO operations



Question 1

Which of the following state is/are initiated by process itself?

- a) Running
- b) Ready
- c) Terminated
- d) Blocked



Question 2

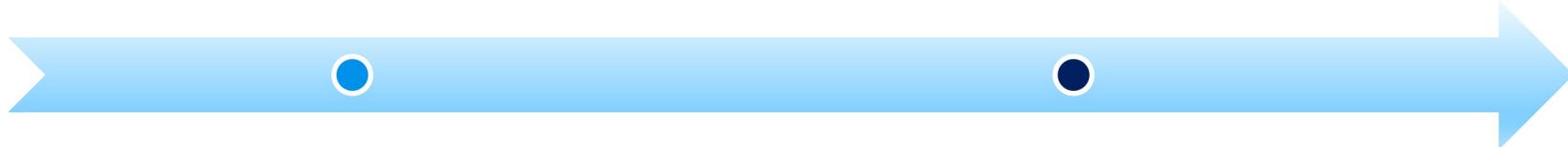
A process which has just terminated but has to relinquish its resources is called?

- a) Suspended Process
- b) Zombie Process
- c) Blocked Process
- d) Terminated Process



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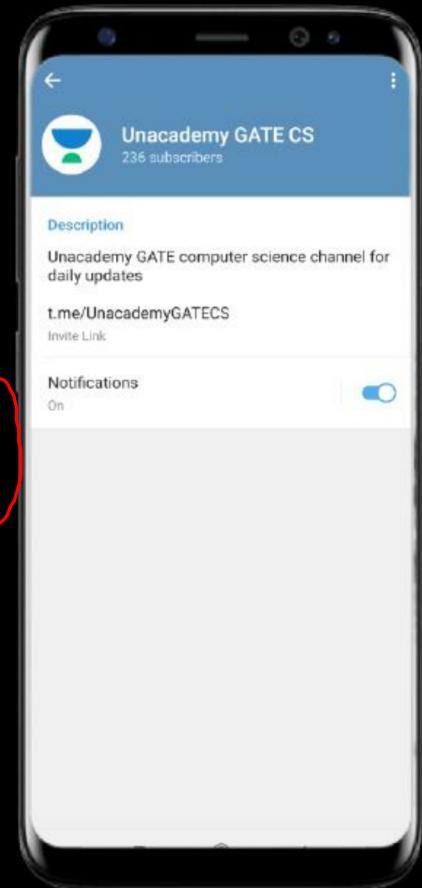


✓ Process Scheduling





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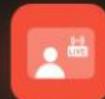
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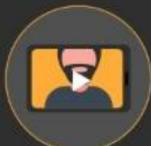
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