

# Operating System: ✓ Process Management



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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**Subjects Taken:**  
Computer Organization,  
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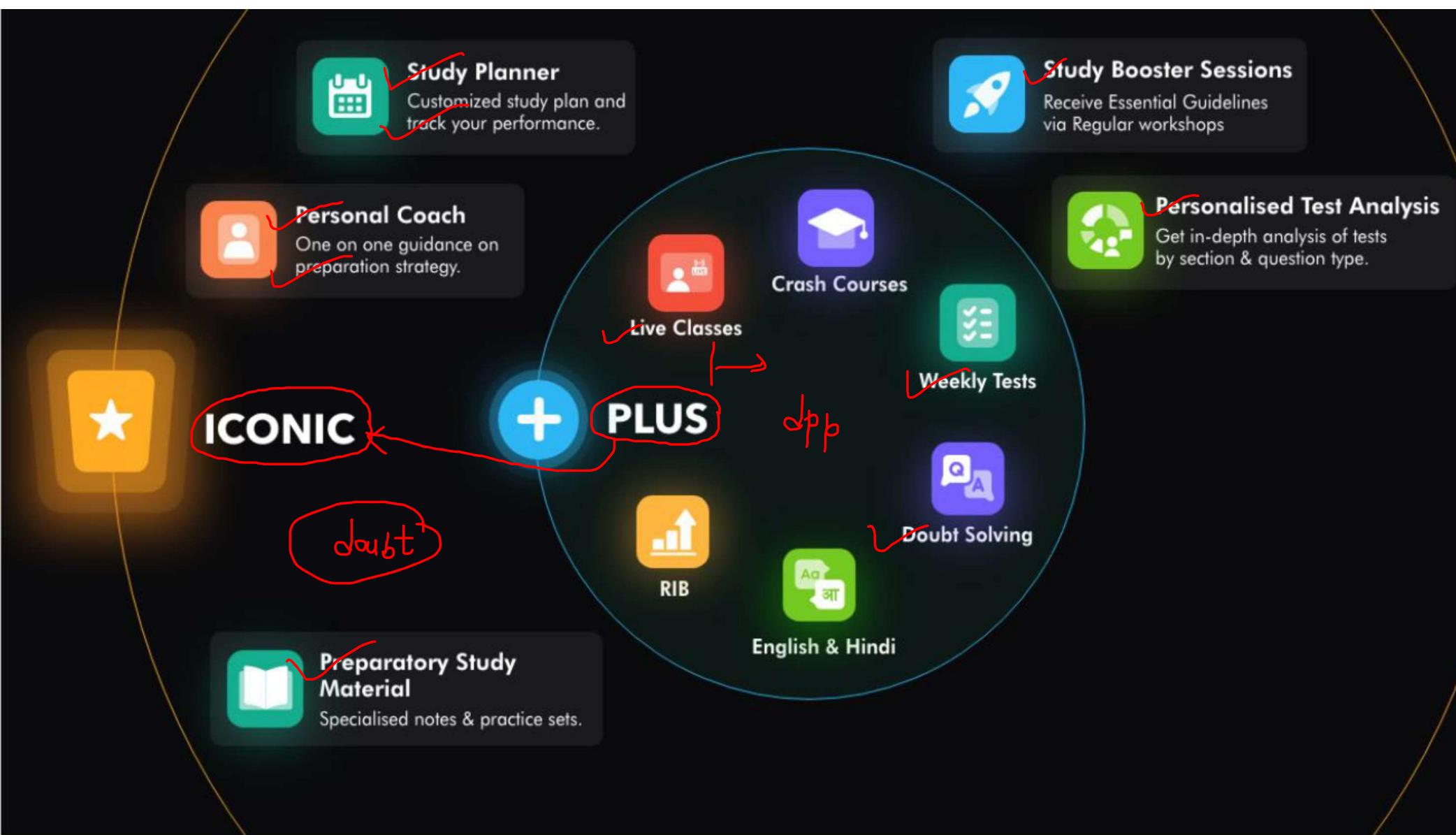
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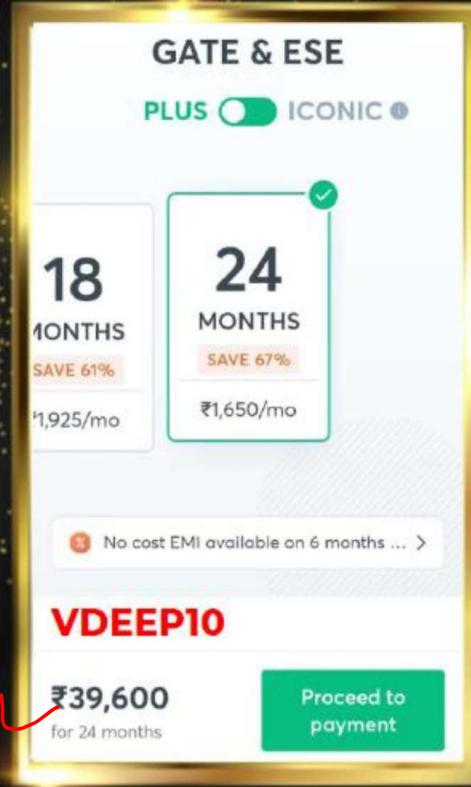
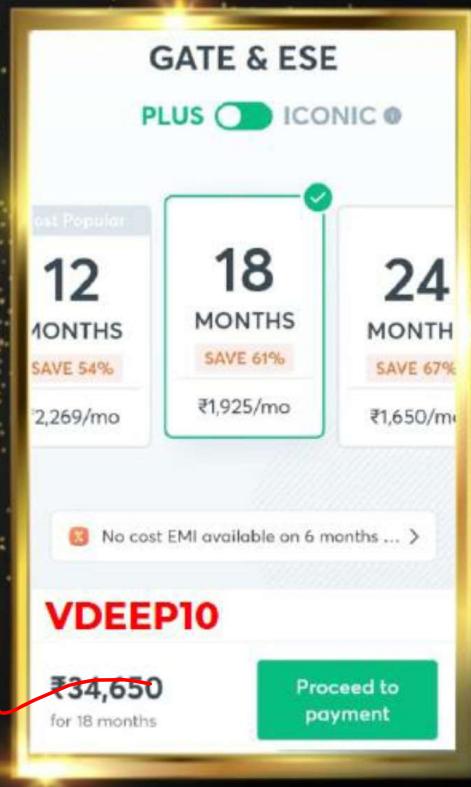
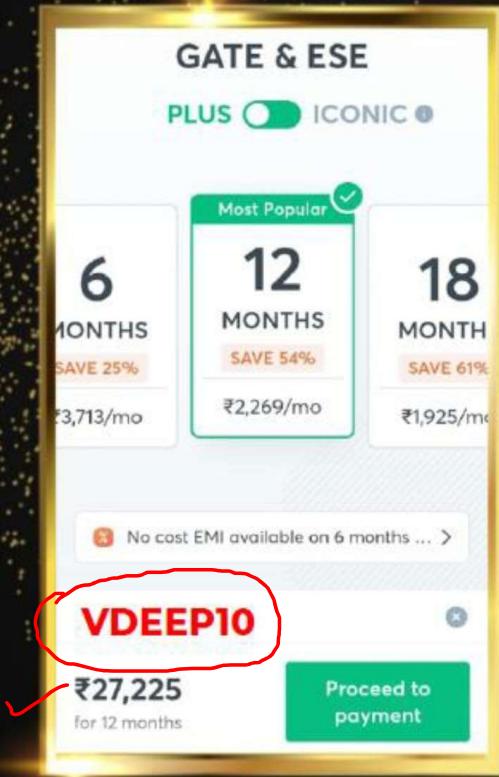


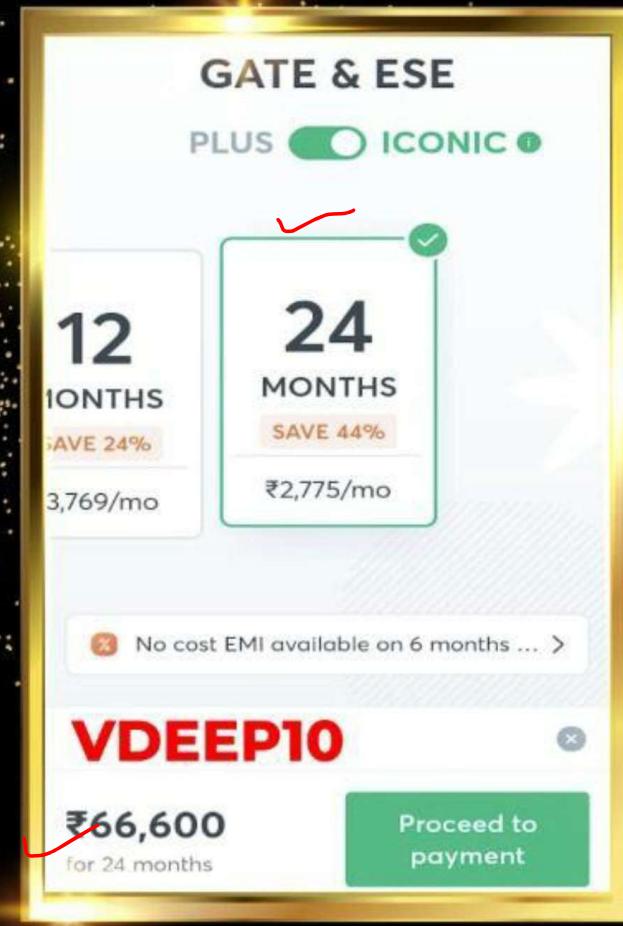
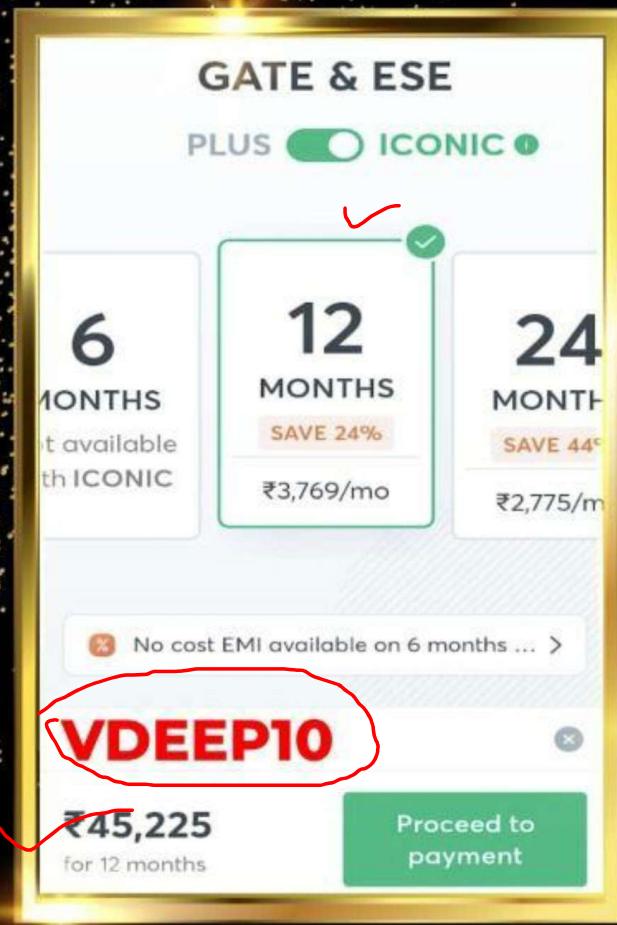
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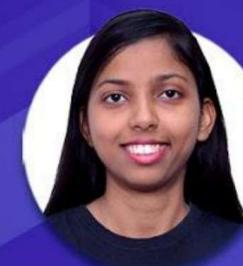
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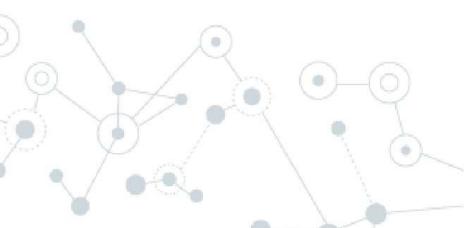
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# Process

→ Program under execution

Process = *Program + runtime activity*

(Code)  
↓  
instructions

Operands & other info<sup>n</sup>



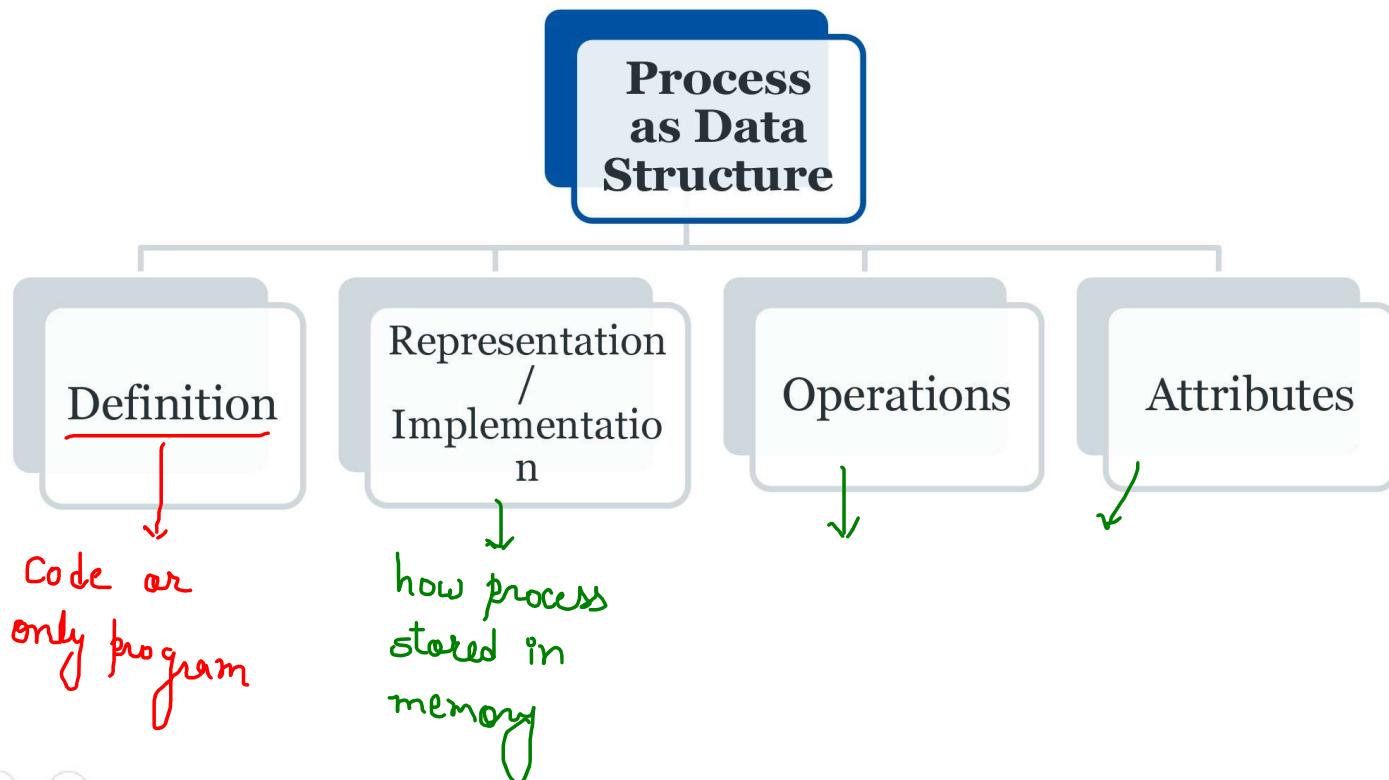
# Process

## ◎ Process:

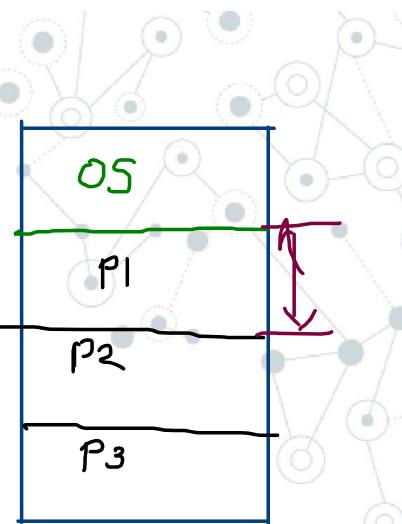
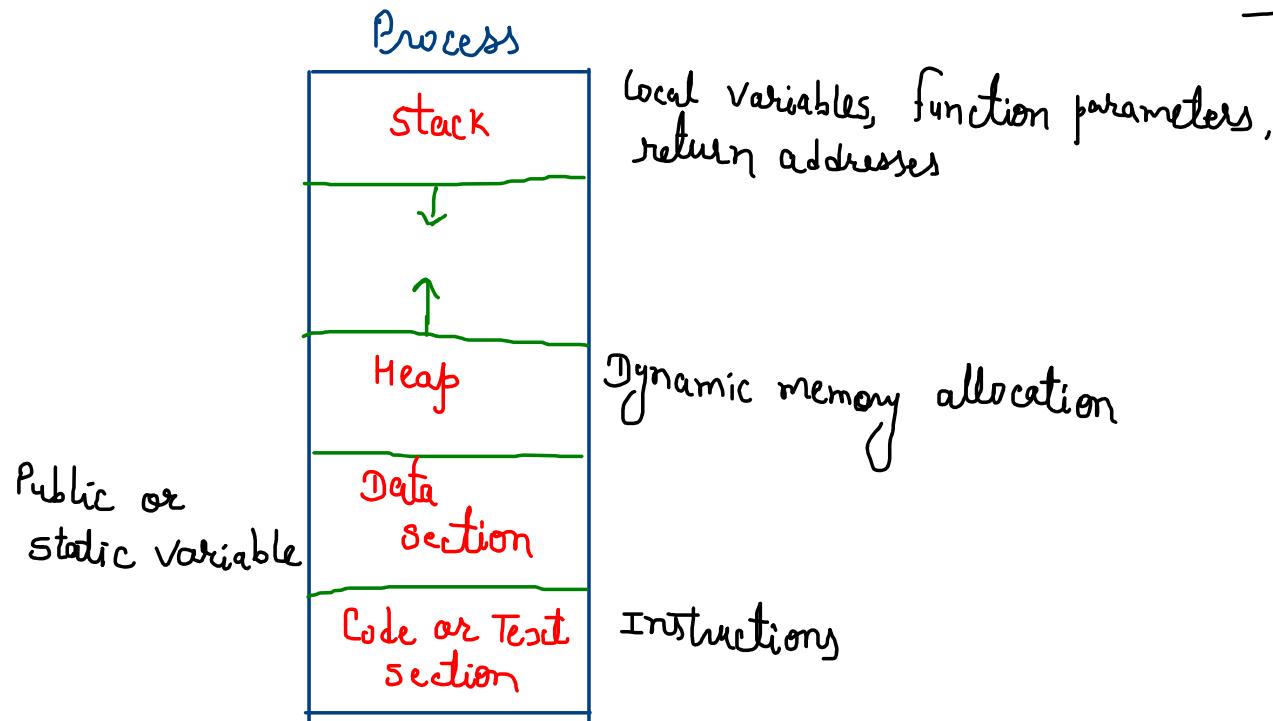
- ✓ Program under execution
- ✓ An instance of a program
- ✓ Schedulable/Dispatchable unit (CPU)
- ✓ Unit of execution (CPU)
- ✓ Locus of control (OS)



# Process as Data Structure



# Representation of a Process

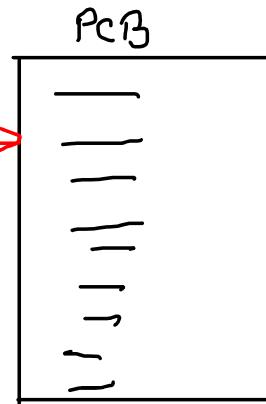
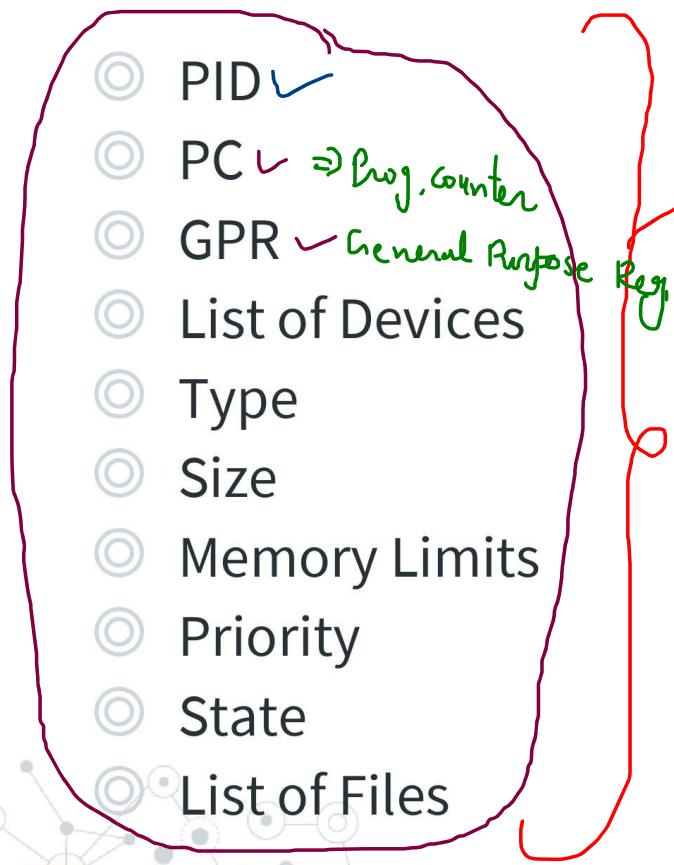


# Operations on a Process

- ✓ Create (Resource Allocation)
- ✓ Schedule, Run
- ✓ Wait/Block
- ✓ Suspend, Resume
- ✓ Terminate (Resource Deallocation)

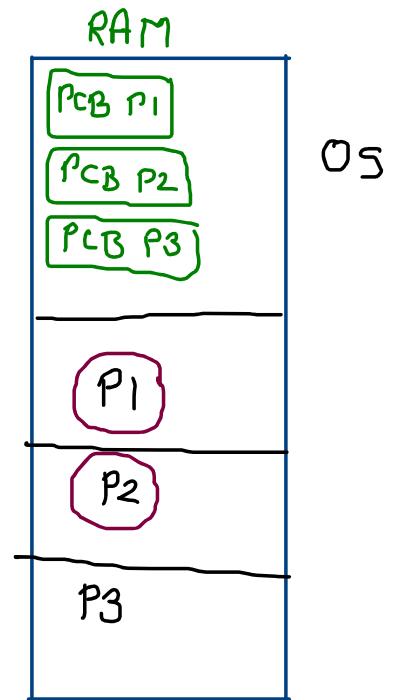


# Attributes of a Process



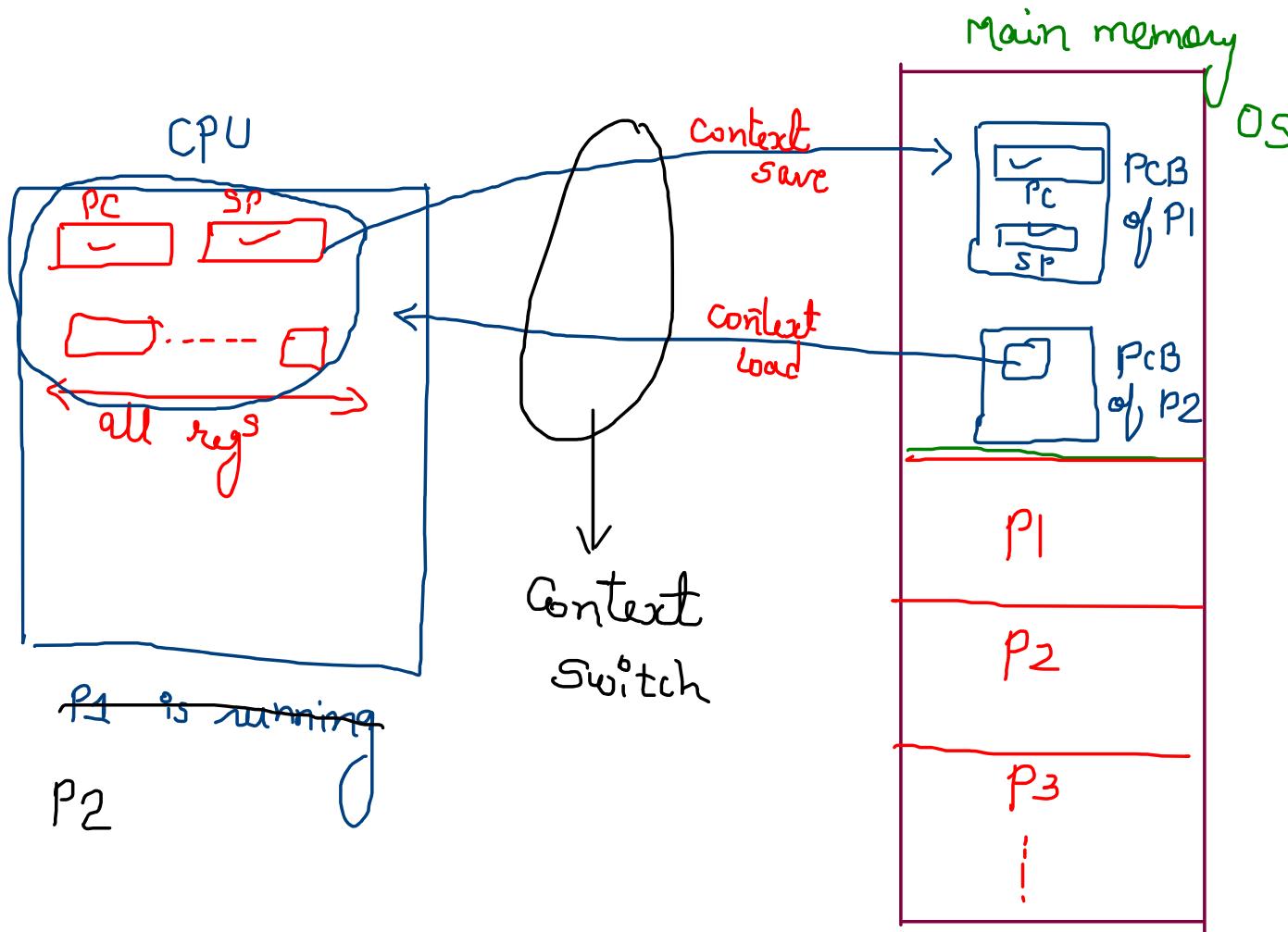
# PCB (Process Control Block)

- Also known as process descriptor



↓  
stored in OS area  
which is protected.





# Context

The content of PCB of a process are collectively known as 'Context' of that process



# Context Switch

- Context save
- Context load

}  
stop a running process &  
run another process

⇒ Context switch is done by dispatcher. in the OS



# Question 1

While running a process can access its PCB from main memory?

True/False

false



## Question 2

A process in the context of computing is:

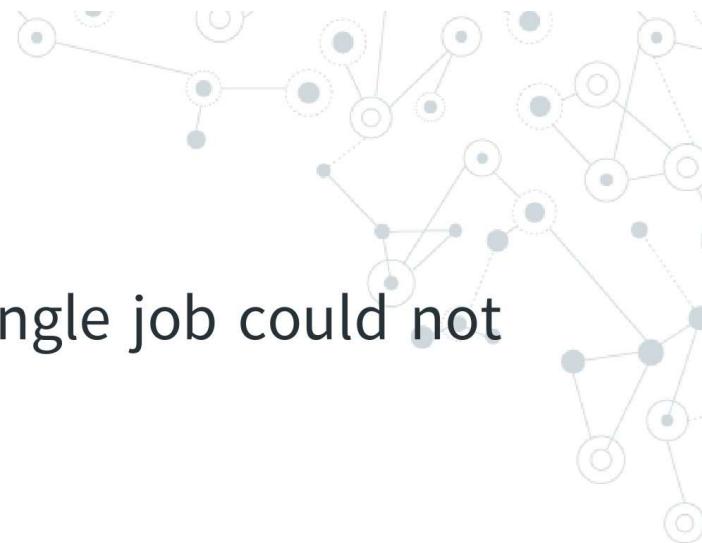
- a) A set of instructions to be executed on a computer → *program*
- b) A program in execution
- c) A piece of hardware that executes a set of instructions
- d) The main procedure of a program



# Question 3

Which technique was introduced because a single job could not keep both CPU and IO devices busy?

- a) Real Time
- b) Spooling
- c) Preemptive Scheduling
- d) Multiprogramming

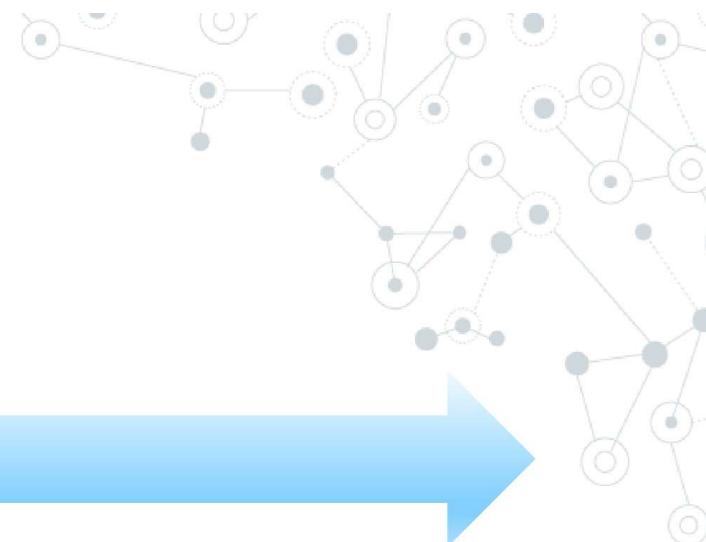


# Next Class

✓ Process States

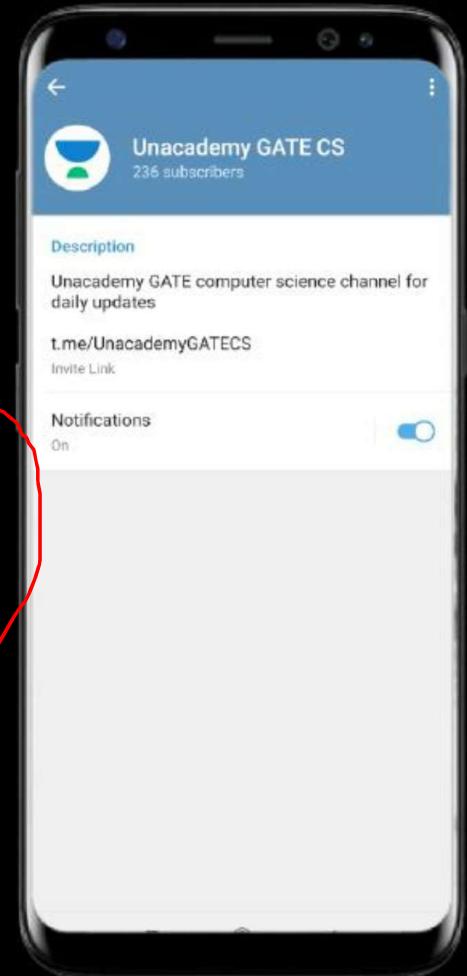


✓ Process State Transition





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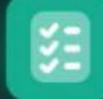
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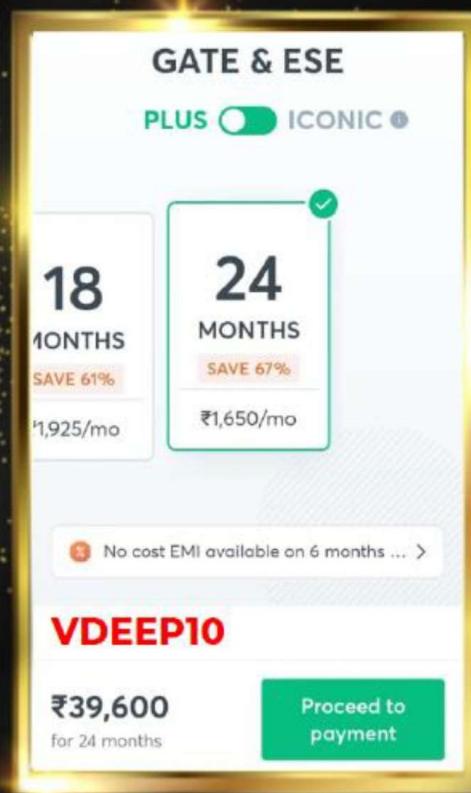
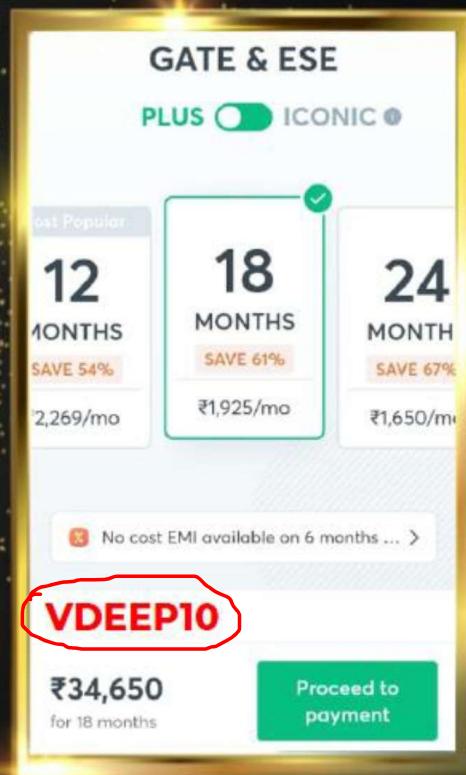
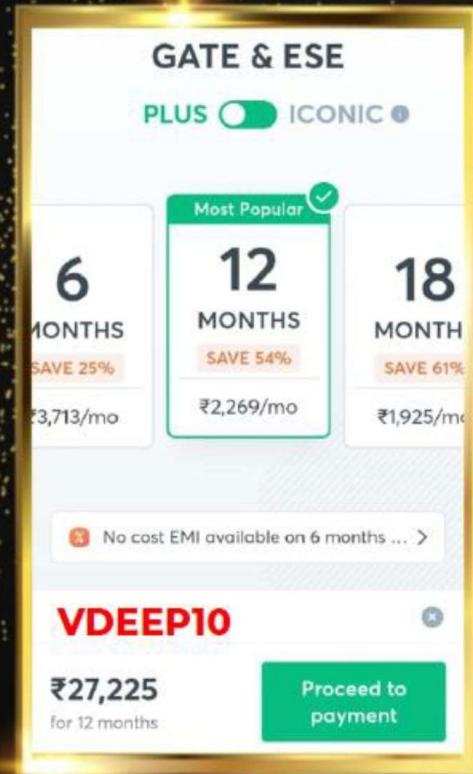


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