

# Operating System: Introduction



By: Vishvadeep Gothi

Contact For Queries:  
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# VISHVADEEP GOTHI SIR

# AIR 19

in GATE 2010



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



**13+ Years of Teaching Experience,  
9+ Years in GATE/IES**



**Subjects Taken:**  
Computer Organization,  
Data Structure, OS, C lang,  
Coding Interview Problems

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## Expected Questions on Data Structure: Part 1

Starts on May 16, 2021 • 9:30 AM

In this session Vishvadeep Gothi will have a live interactive problem solving on data structure. The questions will be in such a way that learners will recall all topics.



{ 16 May 2021 (Sunday)

{ Time: 9:30AM



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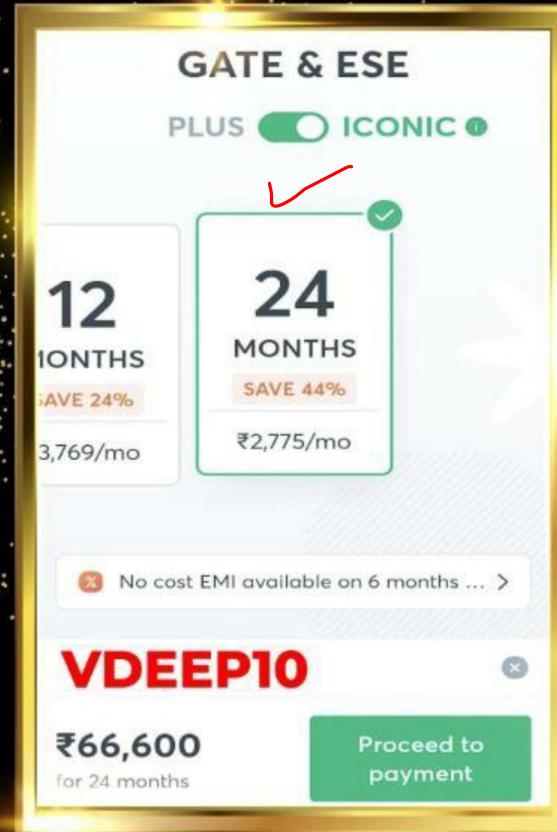
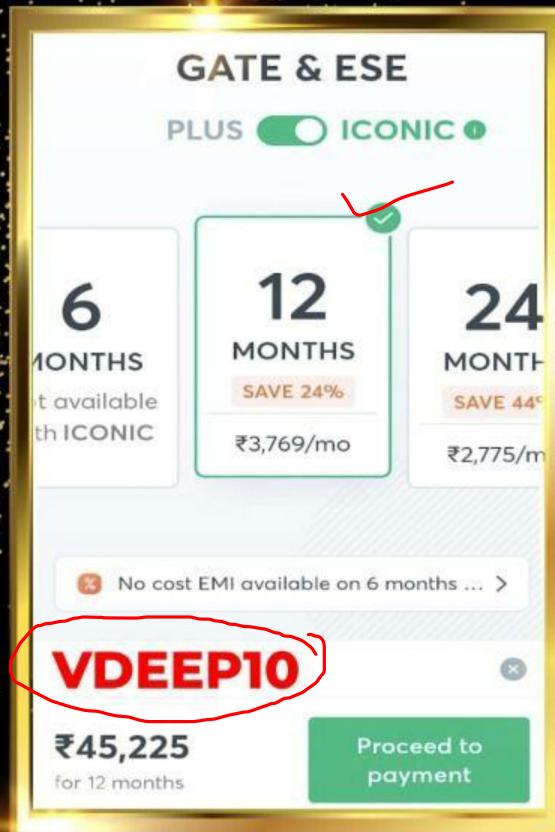
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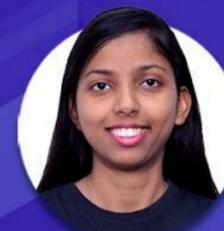
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# Operating System



# Operating System



- Software abstracting hardware
- Interface between user and hardware
- Set of utilities to simplify application development/execution
- Control program
- Acts like a government



# Course Structure

Seq. Number	Chapter Name
1.	Introduction ✓
2.	Process Management ✓
3.	CPU Scheduling ✓
4.	Threads & Multithreading ✓
5.	Process Synchronization & Deadlock ✓
6.	Memory Management ✓
7.	Virtual Memory ✓
8.	File System ✓

# Services of Operating Systems

- User Interface
- Program Execution ✖ 

Baki kuch ho ya na ho. Program Execution hona must hai. Without Program Execution OS cannot be created as Program Execution is the main work of OS
- I/O Operation
- File-System Manipulation ✓
- Communication (Inter-process Communication)
- Error Detection ✓
- Resource Allocation ✓
- Accounting ✓
- Protection & Security ✓

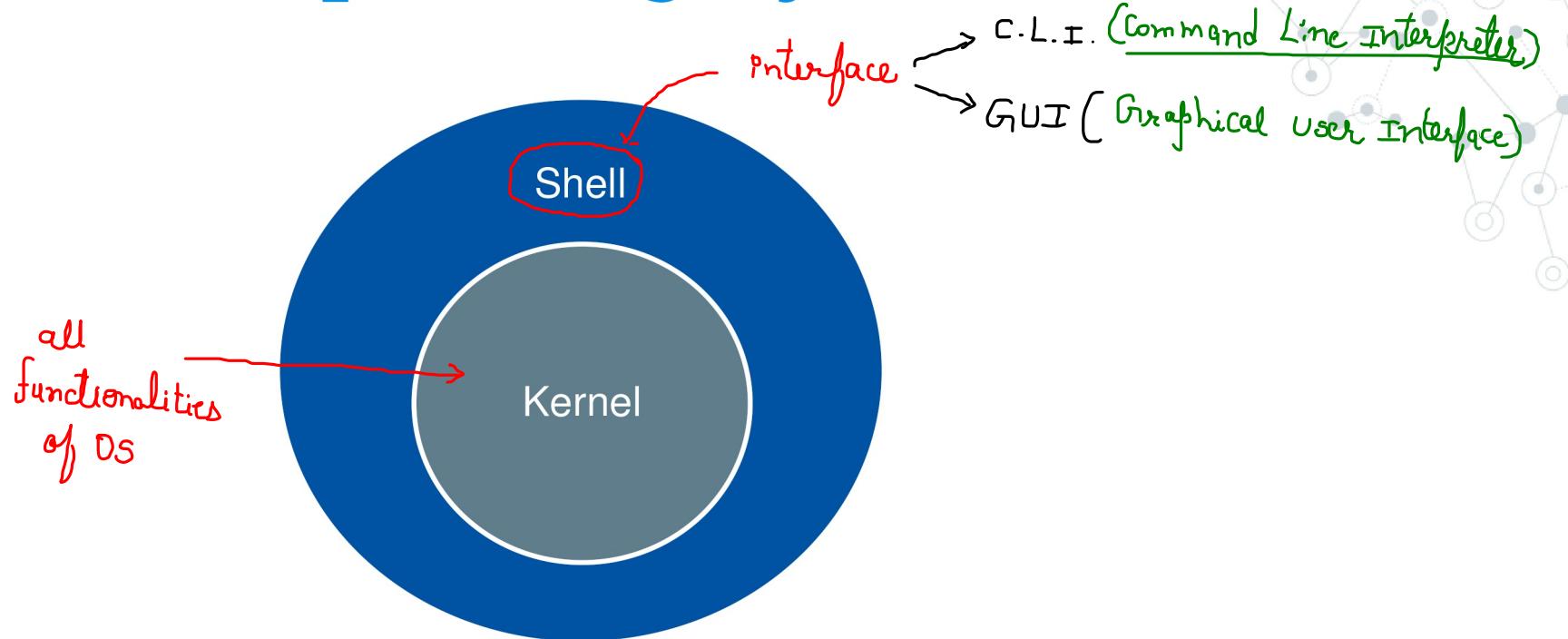
# Goals of Operating Systems

- Convenience (User-friendly) ✓
- Efficiency ✓
- Portability ✓
- Reliability ✓
- Scalability ✓
- Robustness ✓

Portability means OS can run on any machine like windows or linux even if the architecture differences.

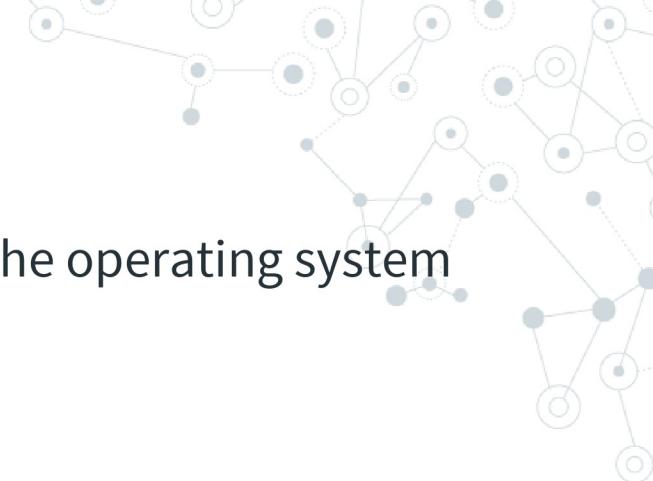
Scalability means OS versions are upgradable

# Parts of Operating Systems



# System Call

A system call is a way for programs to interact with the operating system



# Dual Mode of Operation

↳ used to implement protection

2 modes:

- ✓ User Mode (mode bit = 1)
- ✓ Kernel/System/Supervisor/Privileged Mode (mode bit = 0)

# Dual Mode of Operation

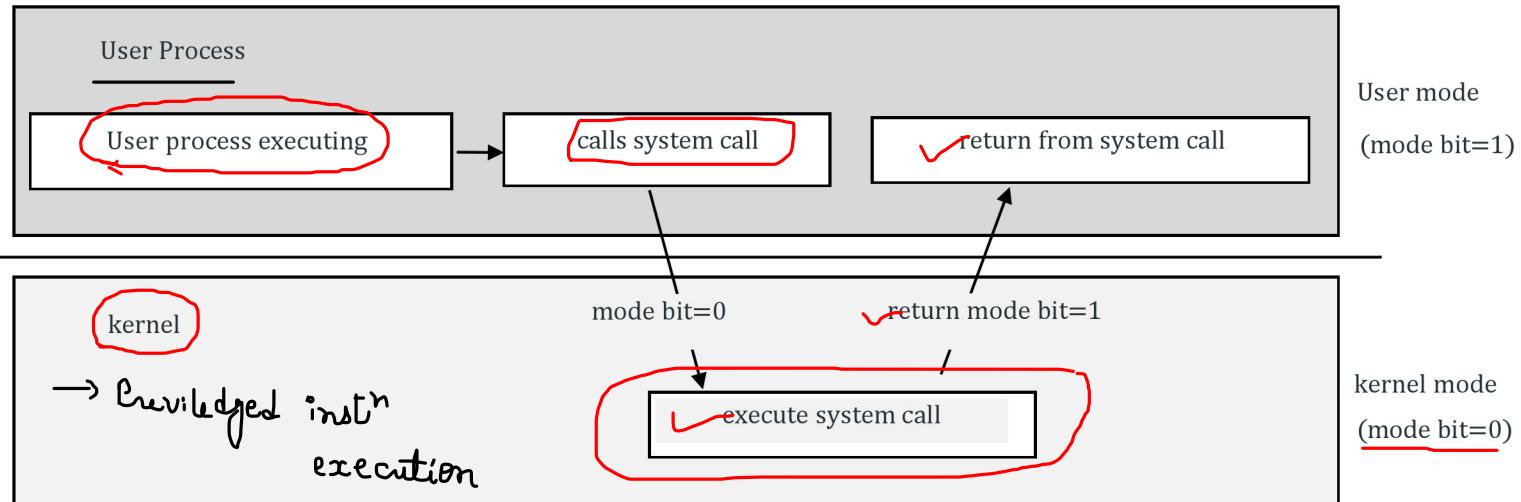
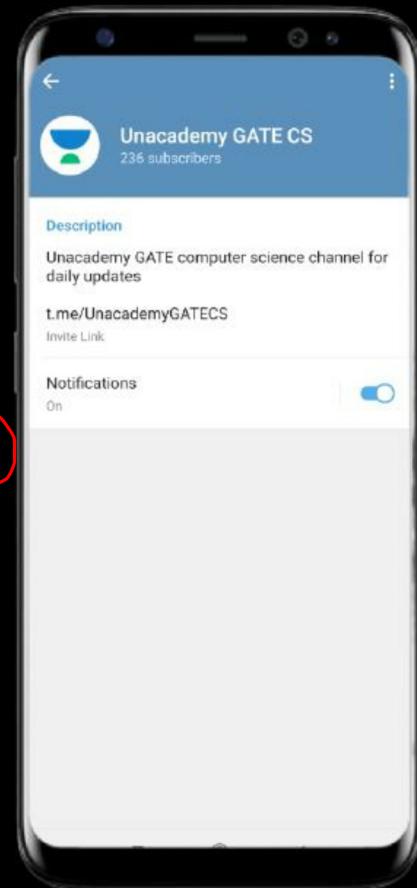


Fig. Transition from user to kernel mode.



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MONTHS

SAVE 24%

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24  
MONTHS

SAVE 44%

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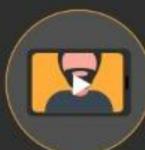
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