Tishk International University
Faculty of Applied Science
Department of Cybersecurity and Artificial Intelligence
CBS 111 and AI 115 Intro to IT

2026 Jan 27

Operating System
Windows vs Linux

Lecture 3

yasameen.sami@tiu.edu.iq

Learning Outcome

- Define what an Operating System (OS) is and explain its role in managing computer hardware and software resources.
- Identify and explain the main components of an Operating System, such as the kernel, shell, file system, user interface, and system utilities.
- Use basic command-line commands in both Windows and Linux to perform common tasks such as navigating directories, managing files, and viewing system information.

Outline

- What is Operating System?
- OS Structure
- Component of OS
- Basic Windows vs Linux Commands

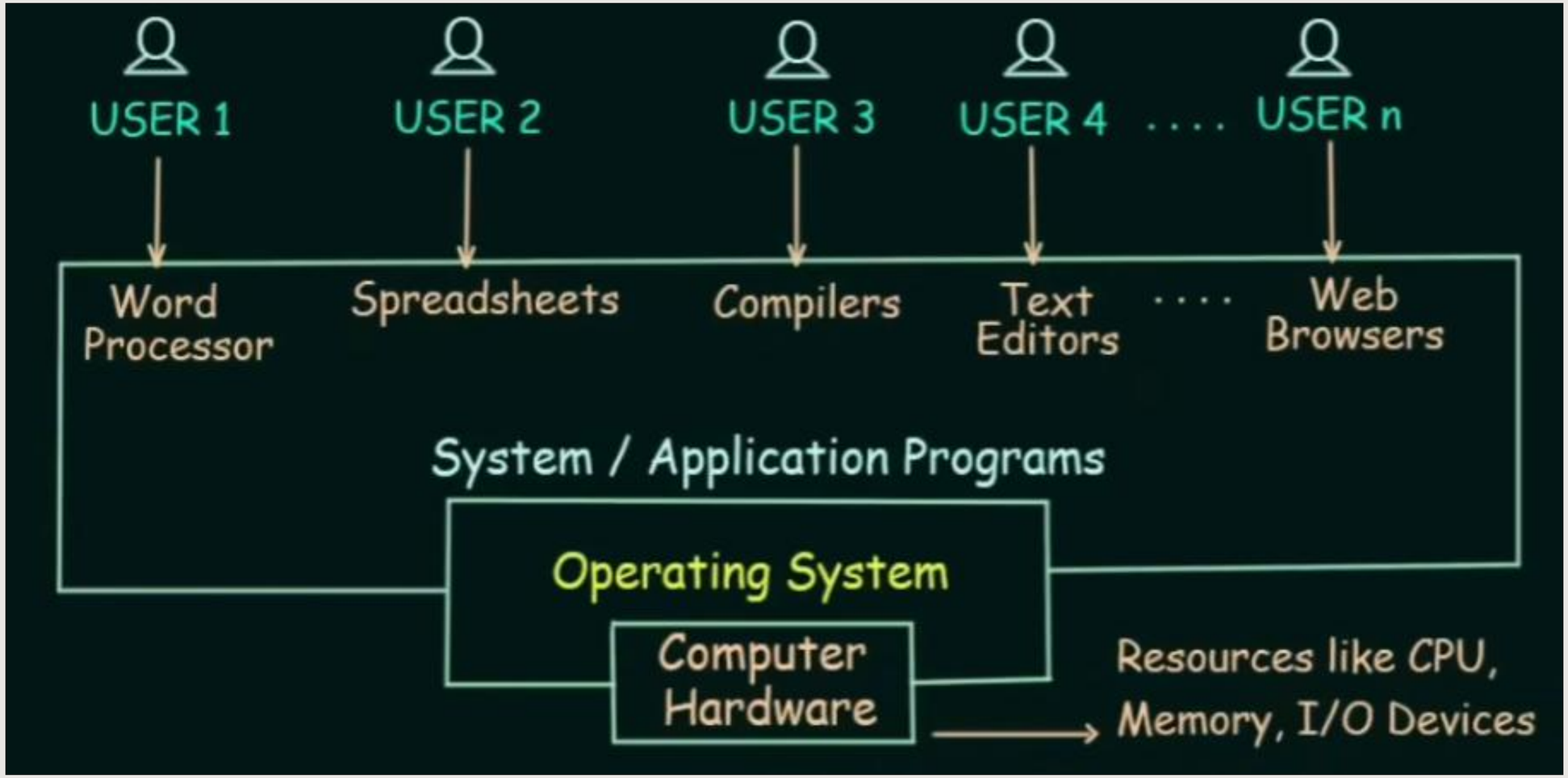
Take Note

“Not all topics explained in class are covered in the lecture.”

What is Operating System?

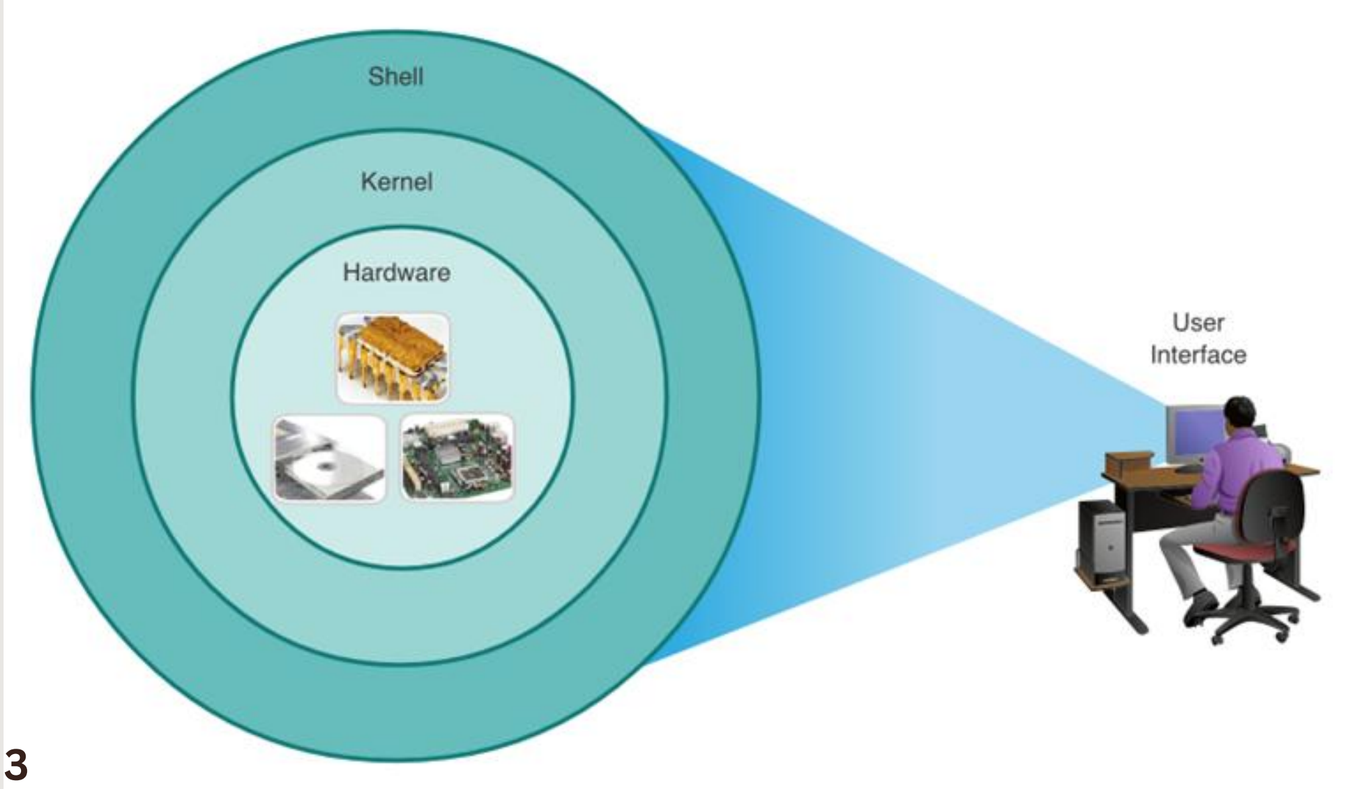
- An OS is a program that controls the computer’s hardware and helps users run applications.

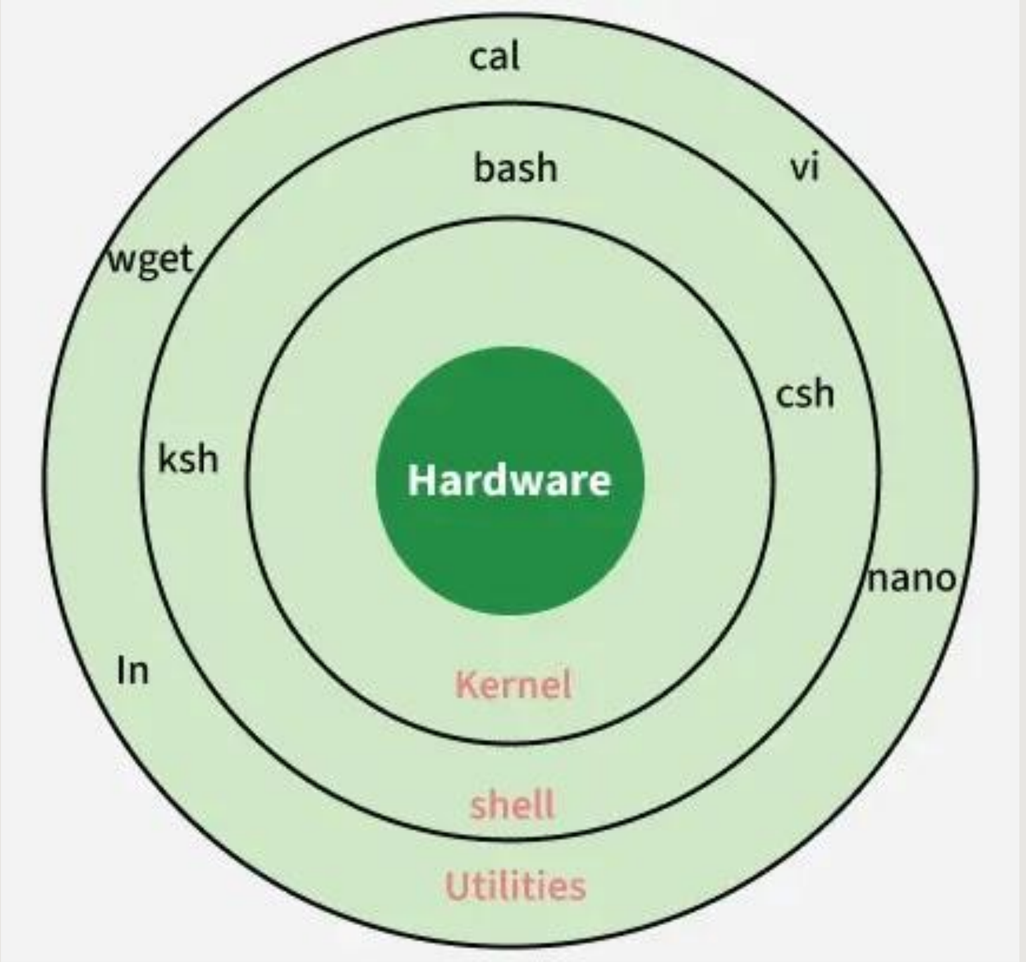
OS - Structure



Components of Operating System

- Kernel
- Shell
- User Interface





User Interface (GUI VS CLI)

1. GUI (Graphical User Interface) A GUI lets users interact with the computer using visual elements like windows, icons, buttons, and menus.

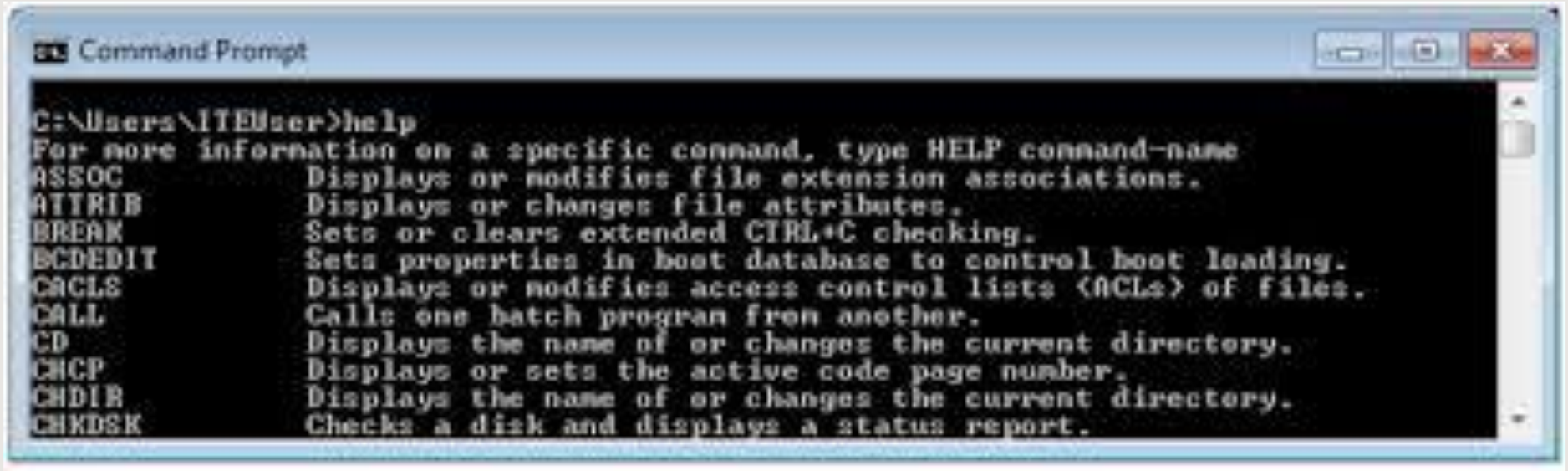
2. CLI (Command Line Interface) A CLI allows users to interact with the system by typing text commands into a terminal or console.

GUI- Linux

GUI- Windows

CLI - Linux

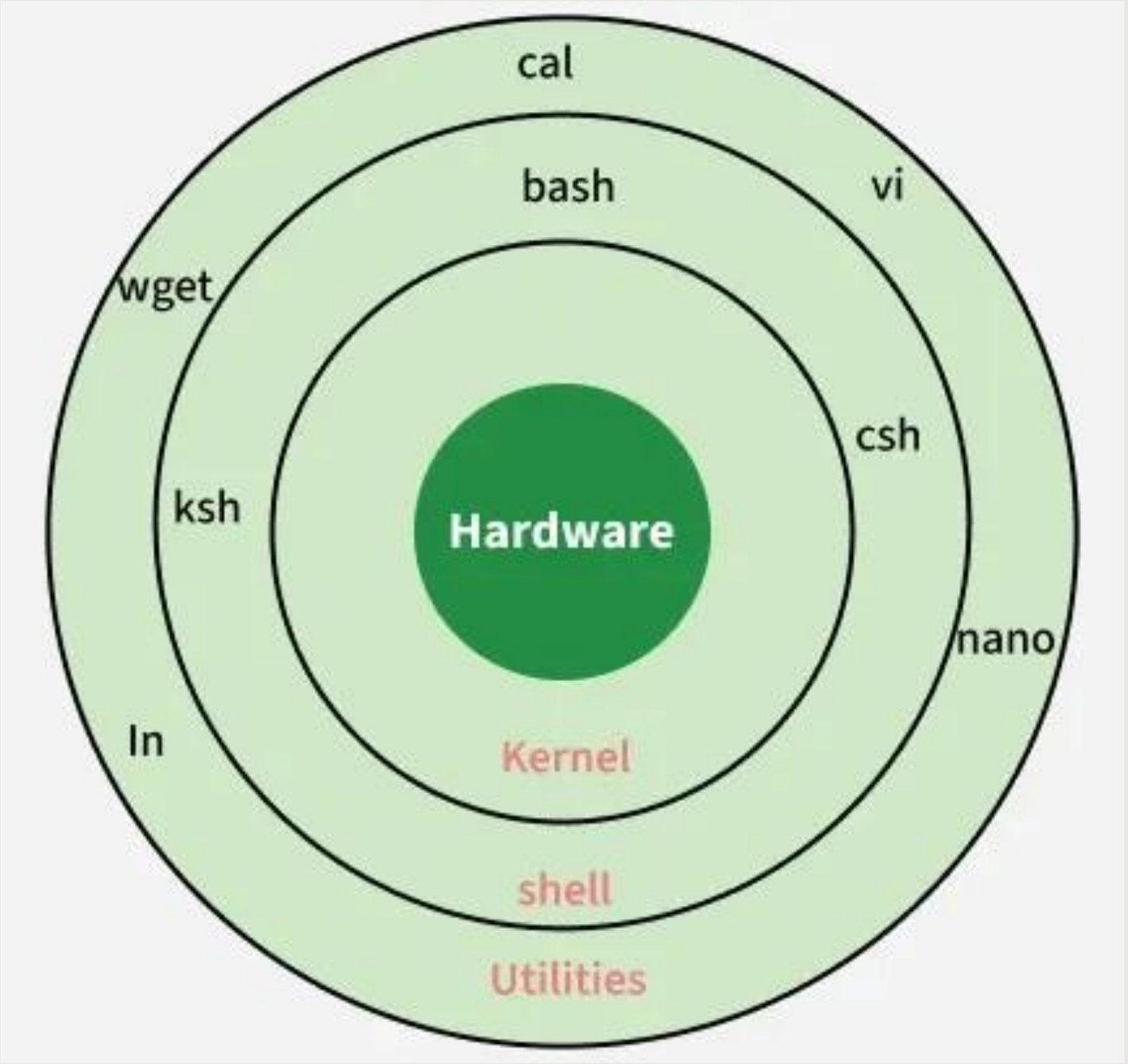
CLI - Windows



Shell

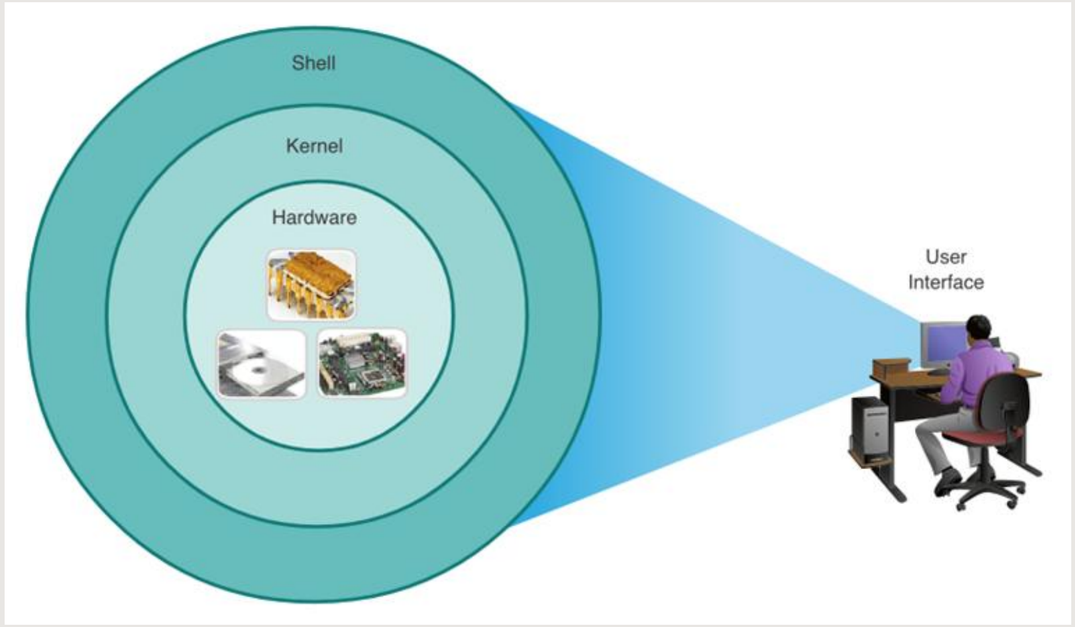
- computer shell is a user interface for accessing an operating system's services, typically via a Command Line Interface (CLI) or Graphical User Interface (GUI).

1. Shell Symbols in Windows
   - C:\>
2. Shell Symbols in Linux $



Kernel

- The core part of the OS.
- Manages CPU, memory, and device communication.
- Provides low-level services to applications (like process scheduling, memory management, and interrupt handling).



Assignment
Deadline 31 January, 2026
at 11:59 PM

2025 Dec 23

THANK YOU