MONTH 2 – CHAPTER 2

Operating System (Advanced)

1. What is an Operating System?

An Operating System (OS) is system software that acts as an interface between the user and hardware, manages resources, and controls program execution.

2. Functions of Operating System

Process Management: Manages running programs and allocates CPU to processes.

Memory Management: Controls RAM usage and allocates memory to programs.

File System Management: Organizes and manages files and folders.

Device Management: Controls hardware devices using drivers.

Security: Protects system and manages user access.

User Interface: Allows interaction (CLI and GUI).

3. Types of Operating Systems

Single User OS: One user at a time.

Multi-User OS: Multiple users simultaneously.

Multitasking OS: Runs multiple applications at once.

Real-Time OS: Immediate processing for critical systems.

Distributed OS: Multiple computers work together.

4. Examples of Operating Systems

Windows, Linux, macOS, Android, iOS

5. Booting Process

Booting is starting the computer.

Cold Boot: Start from OFF.

Warm Boot: Restart.

Steps: Power on → BIOS/UEFI → OS loads → Ready.

6. Device Drivers

Software that allows OS to communicate with hardware devices.

7. Important Concepts

Kernel: Core of OS that interacts with hardware.

Shell: Interface between user and OS.

Key Points

OS manages hardware and software resources.

Kernel is the core of OS.

Drivers connect hardware to OS.

Booting starts the system.