

CH-1

Definition & Purpose

Interface: Between User and hardware
Manages hardware resources

Computer System Structure
Hardware - CPU, memory, I/O
OS: Controls and coordinates hardware Applications: Programs run by users

Introduction

Operating System Concepts

Types of Systems

Protection and Security

Controlled access to resources
Security from malicious software

System Calls

User Interface (CLI, GUI)
Program execution
I/O operations
File system - manipulation
Communication
Error detection
Resource allocation
Accounting
Protection and Security

Virtual Machines

Interface b/w process and OS categories:
• Process control
• File management
• Device management
• Information - maintenance
• Communication
• OS Generation & booting

OS Generation & Booting

OS generation based on system needs.
Booting from BIOS to OS
OS Generation & Booting
OS generation based on system needs

Storage Structure

- Register
- Cache
- Main memory
- Secondary storage (disks)
- Tertiary storage (optical / disks / tapes)

Protection and Security

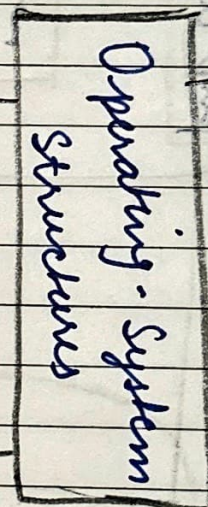
CH-2: Operating-System Structures

OS Services

- User interface (CLI, GUI)
- Program execution
- I/O operations
- File system communication

Categories

- Interface b/w process and OS
- Categories:
 - Process control
 - File management
 - Device management
 - Information maintenance



OS Structure

- Simple structure (MS-DOS)
- Layered approach
- Microkernels
- Modules
- Hybrid systems

OS Generation techniques

- Abstraction of entire computer system
- Multiple OS environments