



# Operating System

# Instructor

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Office : AB2-001/2

Office Hours : 08:30 AM - 04:30 PM

# Rules

- Raise your hand before asking any question and then **WAIT** for the permission
- Never miss a class
- Never sleep in the class
- Never use mobile phone
- Always communicate in the official communication language

# Books

Operating Systems Concepts, by Abraham Silberschatz

Modern Operating Systems, 4th edition by Andrew S. Tanenbaum

# Tentative Evaluation Break Down

<b>Assignments(5)</b>	<b>10</b>
<b>Quizzes(5)</b>	<b>10</b>
<b>Project(1)</b>	<b>5</b>
<b>Midterm</b>	<b>25</b>
<b>Final</b>	<b>50</b>
<b>Total</b>	<b>100</b>

# Course Execution

3 Lectures Per Week

2 Lab Hours

# Prerequisite For this Course

**Data Structures and Algorithms**

# Course Outline

Operating systems basics, system calls, process concept and scheduling, inter-process communication, multithreaded programming, multithreading models, threading issues, process scheduling algorithms, thread scheduling, multiple-processor scheduling, synchronization, critical section, synchronization hardware, synchronization problems, deadlocks, detecting and recovering from deadlocks, memory management, swapping, contiguous memory allocation, segmentation & paging, virtual memory management, demand paging, thrashing, memory-mapped files, file systems, file concept, directory and disk structure, directory implementation, free space management, disk structure and scheduling, swap space management, system protection, virtual machines, operating system security





# Computer System

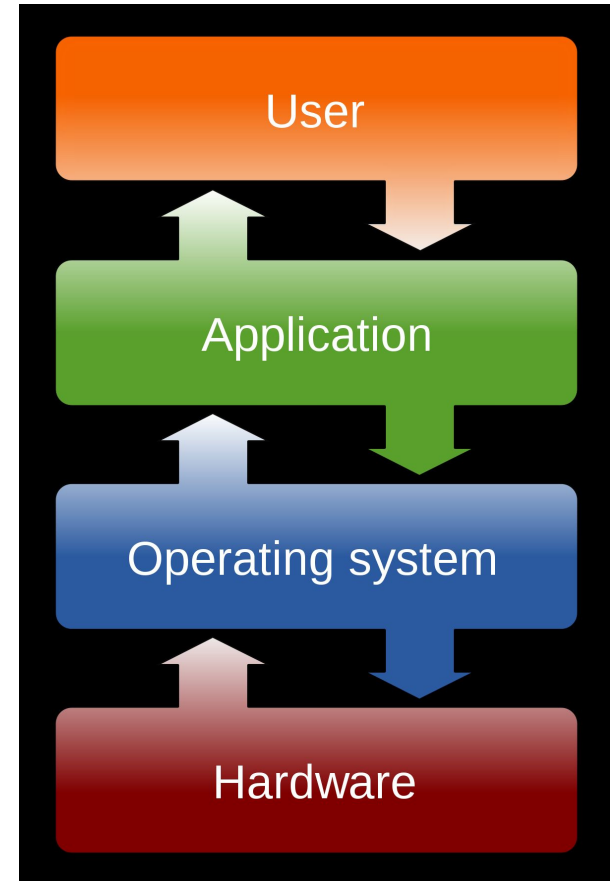
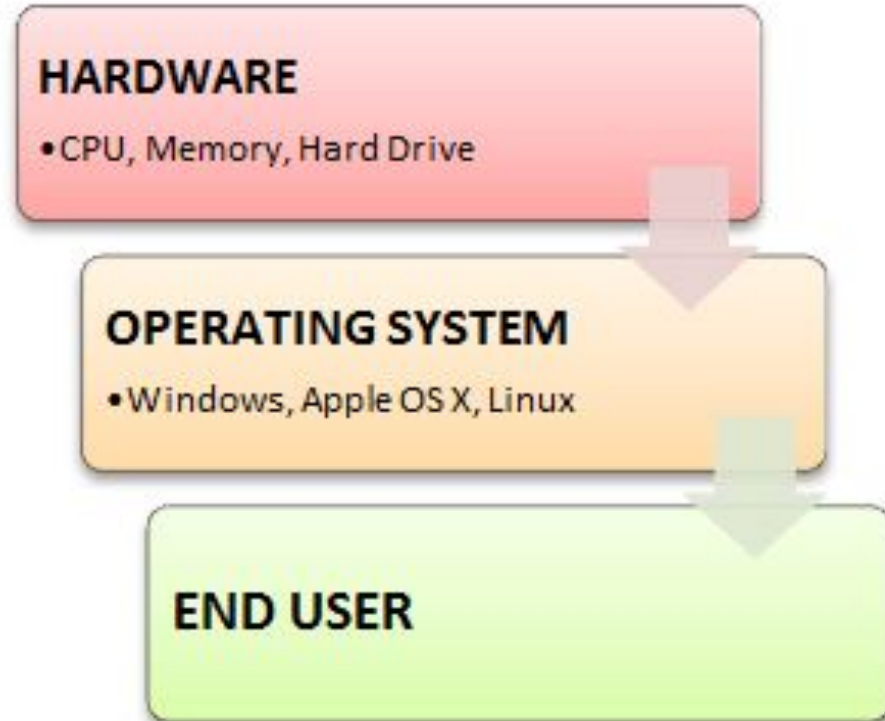
# Computer System

Hardware

Operating System

Application Program

User



# Purpose of Computer System

Computer systems consist of software and hardware that are combined to provide a tool to implement solutions for specific problems in an efficient manner to execute programs

# Operating System

## **What is Operating System?**

An operating system, or "OS," is software that communicates with the hardware and allows other programs to run

Every desktop computer, tablet, and smartphone includes an operating system that provides basic functionality for the device

# Types of Computer Operating System



Apple's iOS is a popular operating system for smartphones. It works on Apple hardware, including iPhone's and iPad tablets.



Since 1985 Microsoft Windows has been in one form or another and remains the most common home and office software operating system.



Mac OS

Apple's macOS is running on Apple laptops and desktops as the successor of the popular operating system OS X.



Linux is a computer operating system which is like Unix built under the development and distribution model of free and open-source software.

# Operating System Concepts

