

Al-Mustaqal University
Collage of Pharmacy



Introduction to Operating System

Lecture 2

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Operating System OS's

An operating system (OS) is the software that manages computer hardware and software resources, and provides common services for computer programs.

User

Application

Operating System

Hardware



Types of Operating Systems

Real-time OS:

A real-time operating system prioritizes the execution of tasks based on their timing requirements and ensures that critical operations are completed within strict **deadlines**. It is commonly used in applications where timing and responsiveness are crucial, such as in aerospace, **medical devices, and robotics**.

Single-user/Multi-user

A single-user operating system is designed for individual users, providing a personal computing environment where a single user can perform tasks and run applications. On the other hand, a multi-user operating system allows multiple users to share the same system resources and run applications concurrently, making it suitable for environments like offices, universities, and servers.

Multi-tasking/Single-tasking OS:

A multi-tasking operating system enables users to run multiple tasks or processes simultaneously, allowing for efficient utilization of system resources and improved productivity. Users can switch between different applications and perform tasks concurrently. In contrast, a single-tasking operating system only allows one task to run at a time, requiring users to complete one task before moving on to the next.

Example of Operating Systems

Windows

Windows is a widely used operating system for personal computers. It's known for its user-friendly interface and compatibility with a wide range of software and hardware.

Linux

Linux is an open-source operating system that is known for its stability and security. It's popular among developers due to its flexibility and customizable features.

Android

Android is a mobile operating system that is widely used on smartphones and tablets. It's known for its customizable interface and the availability of a wide range of apps on the Google Play Store.

Differences Between OS and Software Applications

Definition of Operating System

An operating system (OS) is a software program that manages computer hardware and software resources and provides common services for computer programs.

Definition of Software Applications

Software applications, also known as applications or apps, are programs designed to perform specific tasks on a computer or other electronic devices.

Key Differences between OS and Software Applications

Operating System	Software Applications
An operating system is the foundation of a computer system.	Software applications are built on top of the operating system.
An operating system manages and controls the hardware resources of a computer.	Software applications perform specific tasks or provide specific functionalities.
An operating system provides a user interface and manages the execution of software applications.	Software applications interact with users and perform specific functions or operations.
An operating system is essential for the functioning of a computer.	Software applications are optional and can be installed or uninstalled based on user needs.
An operating system is responsible for the overall security and stability of a computer system.	Software applications may have their own security and stability considerations.

Powering On and Off a Computer

1

Power On

Press the power button to start the computer's booting process.

2

Operating System Loads

The OS initializes and loads all necessary components and drivers.

3

Power Off

Shut down the computer using the provided power options in the OS.
In Windows : press the start button > Power options > shutdown

Using a Mouse and Its Buttons

Left Button

- Primary button
- Mainly used for selection

Middle Button

- Scroll wheel
- Used for vertical scrolling

Right Button

- Secondary button
- Opens context menus with additional options

What Is GUIDE?

: Introduction to GUI

Graphical User Interface development environment, provides a set of tools for creating graphical user interfaces (GUIs). These tools greatly simplify the process of designing and building GUIs.

You can use the GUIDE tools to

- **Lay out the GUI**

Using the GUIDE Layout Editor, you can lay out a GUI easily by clicking and dragging GUI components such as panels, buttons, text fields, sliders, menus, and so on into the layout area.

- **Program the GUI**

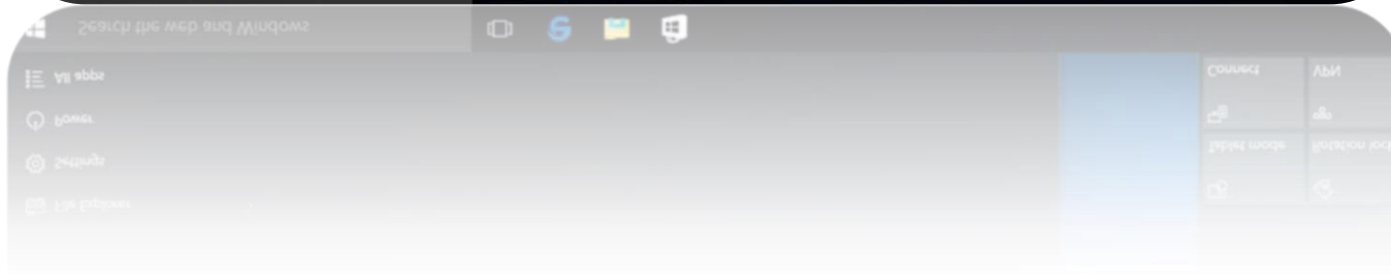
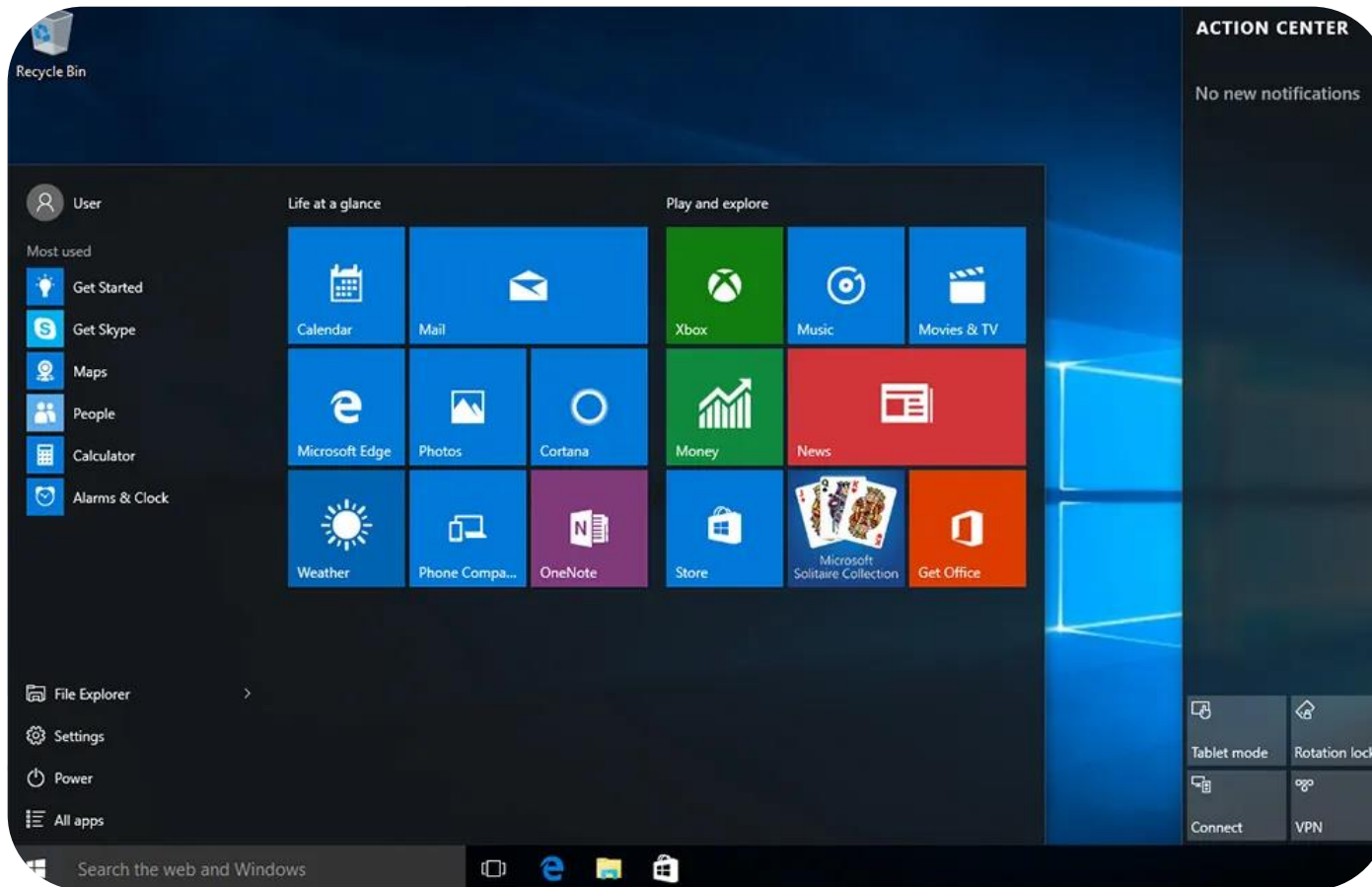
GUIDE automatically generates an M-file that controls how the GUI operates. The M-file initializes the GUI and contains a framework for all the GUI callbacks — the commands that are executed when a user clicks a GUI component. Using the M-file editor, you can add code to the callbacks to perform the functions you want them to.

What is an example of a user interface?

A user interface (UI) is what allows people to interact with a computer or software application. It's like a bridge between you and the digital world.

Here are some everyday examples of user interfaces:

1. Smartphone screen
2. Computer desktop
3. Website
4. ATM
5. Car dashboard
6. Video game console
7. Microwave oven panel
8. TV remote control



What are the types of user interface?

1. Haptic Interfaces
2. Neural Interfaces
3. Tactile Interfaces
4. Multimedia Interfaces
5. Biometric Interfaces
6. Emotion-Based Interfaces
7. Biofeedback Interfaces
8. Assistive Interfaces
9. Proximity Interfaces

1. اجهات لمسية
2. واجهات عصبية
3. واجهات ملموسة
4. واجهات متعددة الوسائط
5. واجهات البيومترية
6. واجهات قائمة على العاطفة
7. واجهات مساعدة
8. واجهات القرب

- Thanks for lessening ..

Any questions?