

# computer fundamentals Lab

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**A computer** : is an electronic device that can receive, process, store, and output data. It operates based on instructions provided by software, making it capable of performing a wide range of tasks, from simple calculations to complex simulations.

**The computer can be divided into:**

- Computer Hardware.
- Computer Software.



**Computer Hardware** : represents the physical and tangible components of a computer, i.e. the components that can be seen and touched.

### Examples of Hardware are the following

- Input Units.
- Output Units.
- Secondary storage devices -Hard disk, CD, DVD, etc.
- Internal components – CPU, Motherboard, RAM, etc.

#### Examples of Computer Hardware



CPU



Motherboard



Keyboard



Mouse



RAM



Hard Disk

**Input Units** are devices or components that allow users to provide data or commands to a computer. These devices convert user inputs into a format that the computer can process and understand.

**Examples of Input Units:**

- Keyboard.
- Mouse.
- Touchpad.
- Touchscreen.
- Microphone.
- Scanner.
- Webcam.
- Joystick/Game Controller.
- Barcode Reader .
- Biometric Devices.
- Card Reader.
- etc.



**Output Units** are the devices or components that a computer uses to communicate results or information to the user or to another system. These devices convert the processed data from the computer into a human-readable or usable format.

### Examples of Output Units:

- Monitor (Display Screen).
- Printer.
- Speaker.
- Headphones/Earphones.
- Projector.
- etc.



**Computer Software** : is a set of programs, which is designed to perform a well-defined function. A program is a sequence of instructions written to solve a particular problem.

There are two types of software :

- System Software.
- Application Software



# System Software (Operating System)

**OS:** is system software that acts as an intermediary between the computer hardware and the user. It manages hardware resources, provides a user interface, and serves as a platform for running application software. The OS ensures that the computer operates efficiently, securely, and in an organized manner.

## OPERATING SYSTEMS



DESKTOP

MOBILE



# Application Software

**Application Software** : refers to software programs designed to perform specific tasks or functions for users. Unlike system software, which manages and controls hardware components (such as operating systems), application software enables users to complete tasks such as writing documents, analyzing data, or editing images.

**Examples of application software include:**

- Microsoft Office (Word, Excel, PowerPoint)
- Adobe Photoshop
- VLC Media Player
- Google Chrome
- Mozilla Firefox
- Communication Software (Skype ,Zoom ,Google Meet ) .





# Steps to use a computer

## 1. Turn on-computer

To start working on the computer, you must first make sure that all the connections are connected correctly, then look for the power button which is typically found on the front or side of the computer. Then Press the power button to turn on the computer and start working.

- ❖ Once the computer is turned on, it will take some time before you can use it. This process takes between 15 seconds and 5 minutes, and this period is called the computer boot phase.

## 2. Use the Mouse and Keyboard:

- Use the mouse to move the pointer and click on icons.
- Use the keyboard to type and enter commands.

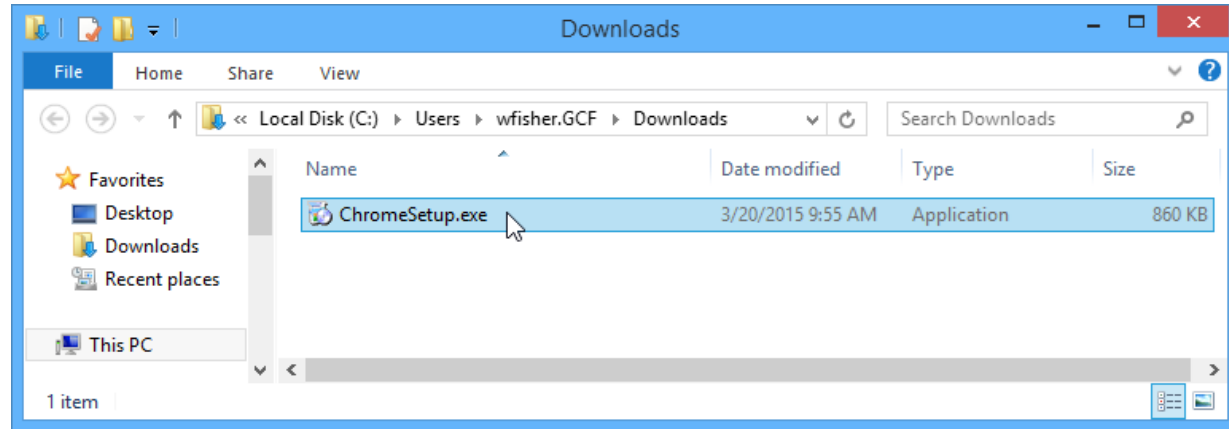


### 3.Install software

Of course, it is a basic principle of computers that when you first start using them, you will not find all the programs you may need, so you will have to install the program you need.

The process of installing programs is often very straightforward. Just follow the instructions that came with the program. You can also find out how to install each program by searching the Internet.

❖ The extension of the programs is always (.exe)



## 4. Icons and folders

After the boot process is complete, you will be directed to the desktop, which acts as the home screen of your computer. From here, you can access all the programs that have been installed and the files stored on your system.

**Icons** are small graphical images that represent files, applications, or functions, and they serve as visual shortcuts.

**Folders** are containers used to organize and store files and other folders (subfolders). They help users categorize their files logically, making it easier to access and manage them.

Each icon provides a thumbnail image that indicates of the program or file.



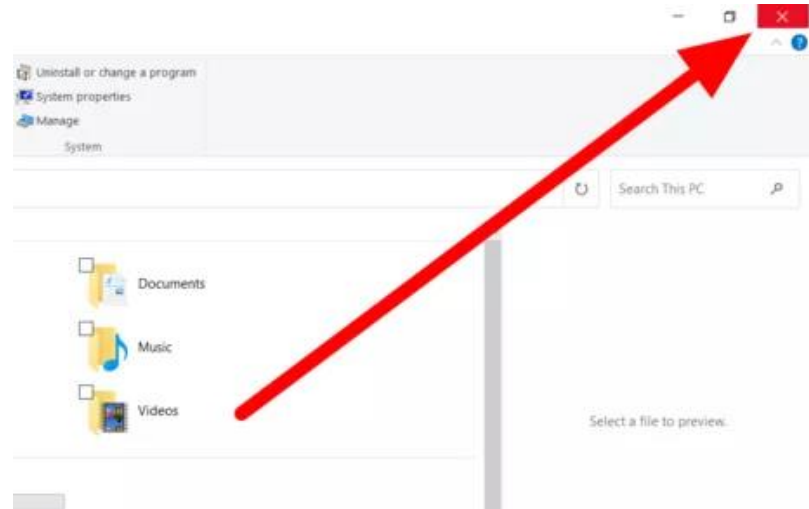
## 5. Opening applications and files:

Double-clicking on an icon opens the corresponding file or launches the associated application.

- ❖ To view all available programs, you can click the menu button, which is usually located in the bottom corner of the screen. This will display a complete list of programs installed on your computer

## 6. Close Applications:

When you're done using an application, you can close it by clicking the "X" button in the upper-right corner of the window.



## 7- Turn off or restart the computer

You can do this when you finish working on your computer, by simply clicking on the menu at the bottom of the screen and clicking on the same power icon that we talked about previously, and then you can select the option to turn off the computer and confirm your desire to do this. Or you can choose to restart the computer to restart the process of shutting down and restarting automatically. This process is usually used to apply some changes to the system

