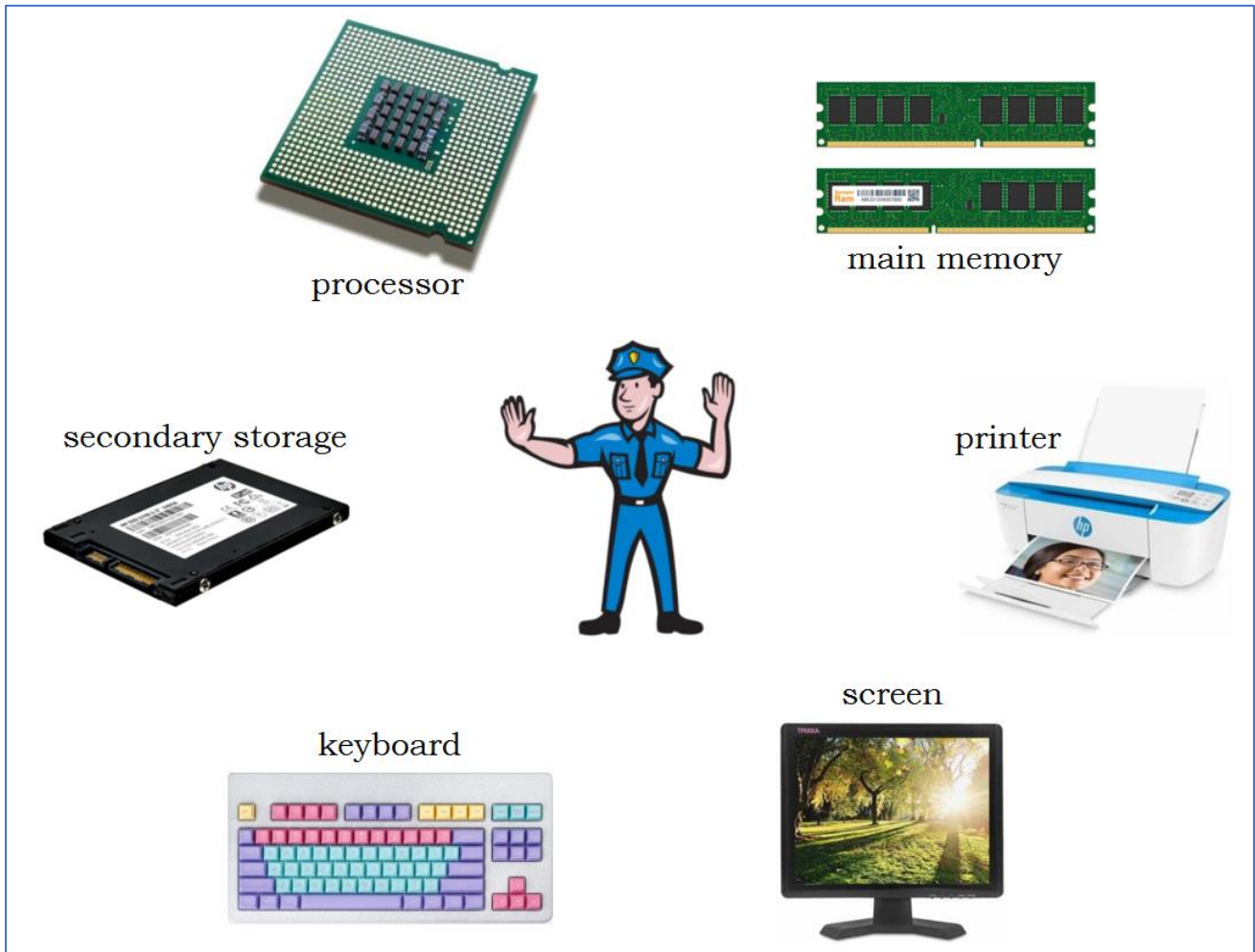


Operating Systems 1: Basic Features

What is an Operating System?

The **operating system** (OS) is the manager of the computer. It manages programs and resources.



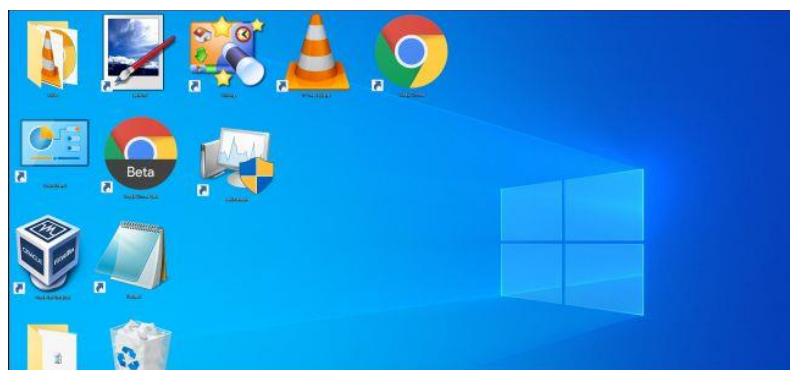
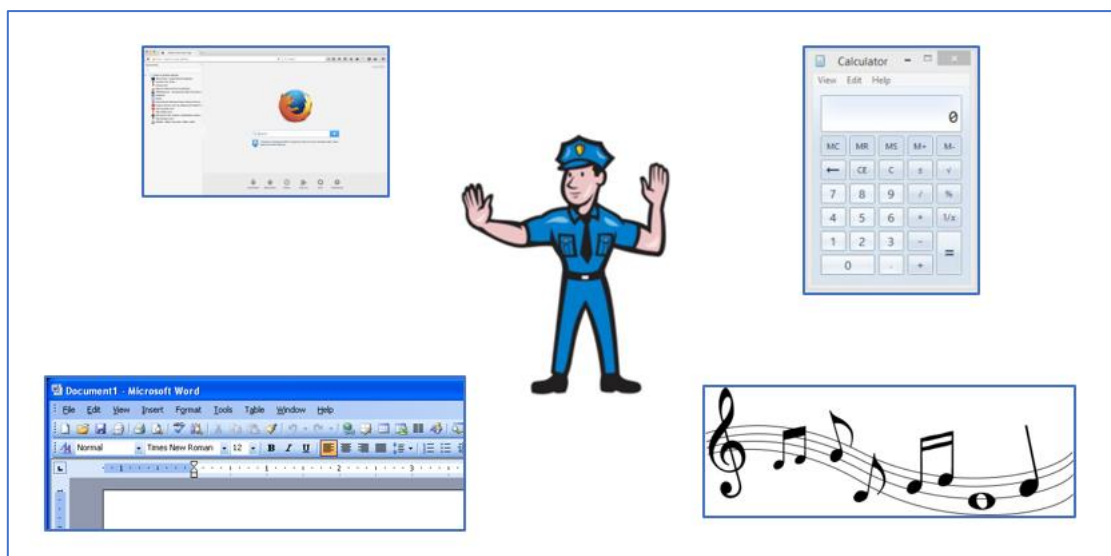
For example:

- It is the OS that instructs the processor which program to execute.
- It is the OS that decides where a program should be placed in main memory during execution.
- It is the OS that decides where a program is stored in secondary storage.
- It is the OS that decides which document is to be printed (in case there is more than one).
- It is the OS that instructs the screen what should be displayed.

- The OS is always watchful to the keys pressed on the keyboard. It reads the keypresses and decides what to do. For example, suppose you are working with a word processor:
 - If you press ‘a’ the operating system passes the letter ‘a’ to the word processor.
 - If you press ‘ctrl’ + ‘alt’ + ‘delete’ the operating system will start a program called the ‘task manager’.

Some basic features of an operating system are:

- Running several applications **concurrently**. The following diagram represents the operating system managing a computer that has four application programs running at the same time. These are:
 - A browser that is downloading a file.
 - A radio transmission application.
 - A word processing program.
 - A calculator.



- An OS also handles a **user interface** by means of which a user can communicate instructions to the OS. Today’s interfaces are called

GUIs (graphical user interfaces). By means of the GUI (see the picture above) the user can give instructions such as:

- Open a program (by double clicking on an icon).
- Remove a program from a folder and place it in another folder (dragging).
- The OS makes use of **clipboard** to exchange text and graphics data between applications. The diagram below shows a bar-chart that is copied from a spreadsheet program onto the clipboard. This image can then be copied onto other programs e.g. word-processor and a presentation program. The management of the clipboard is performed by the OS.



- The OS also takes care of the management of files. It keeps a note where they are and in which **folder** they are kept. It also takes a note when a file is deleted or renamed. These notes are always updated like for example when a file is copied and pasted somewhere else, when a file is renamed, when a file is moved from one place to another, when a folder is created or deleted, etc. (folders are also called **directories**). In this way the word spreadsheet, the word processor and the presentation application are **integrated**.