



## Operating System (OS)

**SUPERVISOR :**

Lec. Dr. Taif Alawsi

**GROUP :**

Doaa, et al.

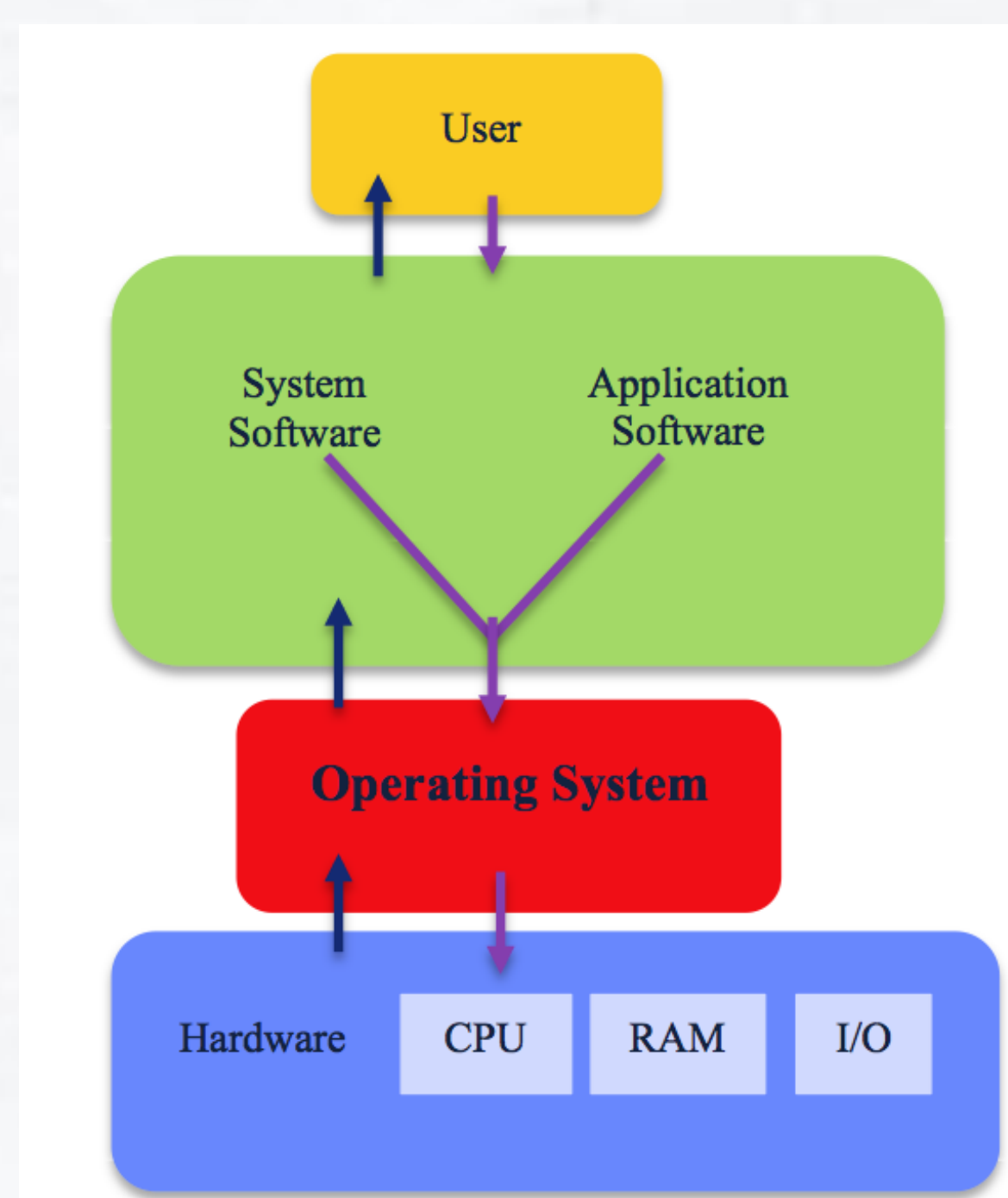
### INTRODUCTION :

An operating system (OS) is software that acts as an interface between the end-user and computer hardware. There exist different categories of OS in the computer and other devices such as tablets, mobile phones, and other interfaces, including Batch, Multitasking/Time-Sharing, Multiprocessing, Real-Time, Distributed, Network & Mobile OS. Personal Computer Operating Systems were first developed in the late 1950s to manage tape storage.



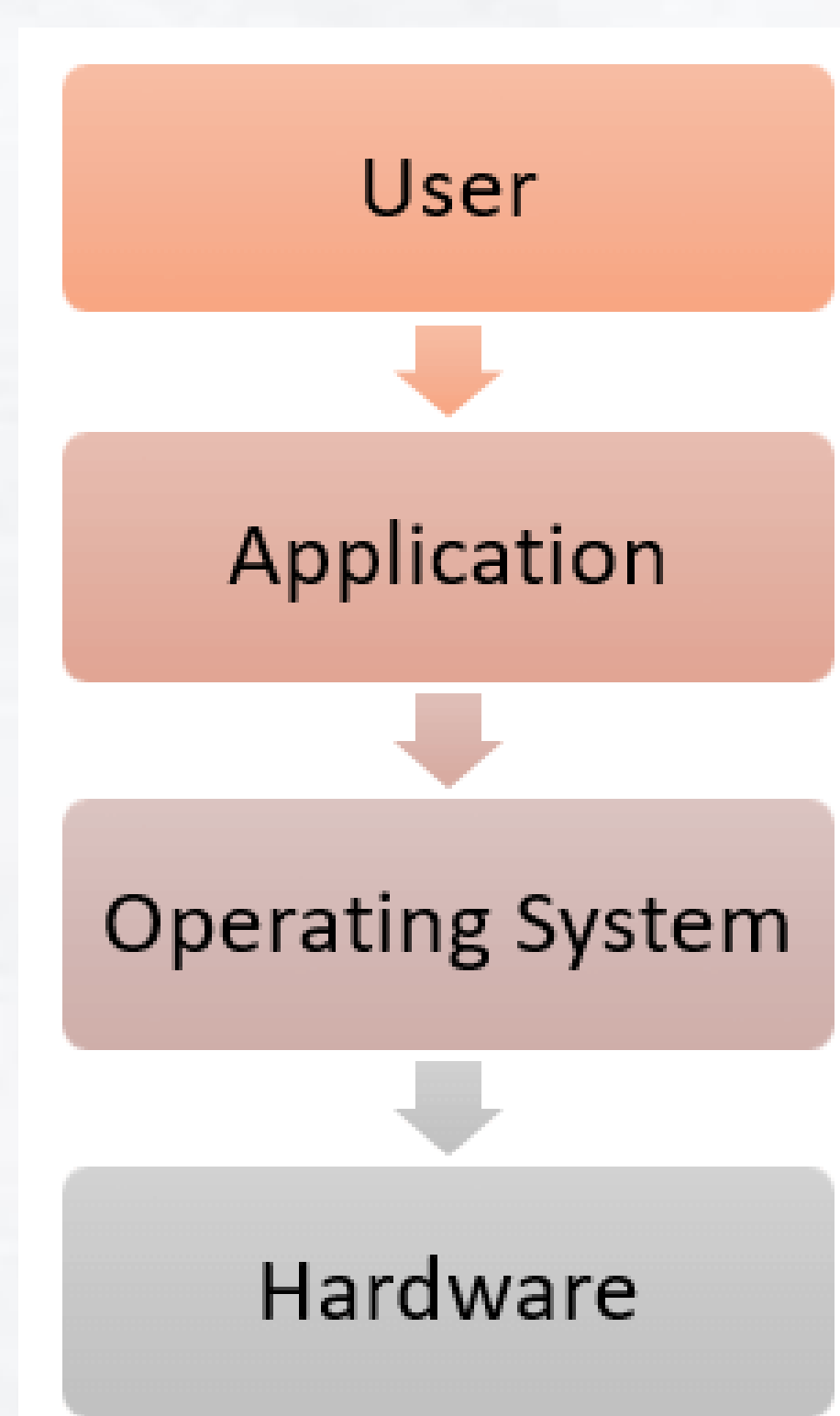
### How does it work?

The operating system (OS) manages all of the software and hardware on the computer. It performs basic tasks such as file, memory, and process management, handling input and output, and controlling peripheral devices such as disk drives and printers. Most of the time, there are several different computer programs running at the same time, and they all need to access your computer's central processing unit (CPU), memory, and storage. The operating system coordinates all of this to make sure each program gets what it needs.



### Features of OS

- ❖ Protected and supervisor mode.
- ❖ Allows disk access and file systems
  - Device drivers Networking Security
- ❖ Program Execution
- ❖ Memory management Virtual Memory
  - Multitasking
- ❖ Handling I/O operations
- ❖ Manipulation of the file system
- ❖ Error Detection and handling
- ❖ Resource allocation
- ❖ Information and Resource Protection



### Functions of OS

- Process Management: It helps OS to create and delete processes. It also provides mechanisms for synchronization and communication among processes.
- Memory Management: It performs the task of allocation and de-allocation of memory space to programs in need of these resources.
- File Management: It manages all the file-related activities such as organization storage, retrieval, naming, sharing, and protection of files.
- Device Management: It keeps track of all devices. This module also responsible for this task is known as the I/O controller. It also performs the task of allocation and de-allocation of the devices.
- I/O System Management: It hides the peculiarities of the hardware device from the user.
- Storage Management: It includes primary storage, secondary storage, and cache storage. Instructions and data must be stored in primary storage or cache so that a running program can reference them.
- Security: It protects the data and information of a computer system against malware threats and authorized access.
- Command Interpretation: It interprets commands given by the acting system resources to process those commands.
- Networking: A distributed system is a group of processors that do not share a memory, hardware devices, or a clock. The processors communicate with one another through the network.
- Job Accounting: Keeping track of time & resources used by various jobs and users.
- Communication Management: Coordination and assignment of compilers, interpreters, and other software resource of the various users of the computer systems.

### Types of OS

