- An Operating System does the following activities for processor management –Keeps track of the processor and the status of the process. The program responsible for this task is known as the traffic controller.
- Allocates the processor (CPU) to a process.
- De-allocates processor when a process is no longer required.

3. Device Management

- An Operating System manages device communication via their respective drivers. It does the following activities for device management –Keeps track of all devices.
- The program responsible for this task is known as the I/O controller.
- Decides which process gets the device when and for how much time.
- Allocates the device in an efficient way.
- De-allocates devices.

4. File Management

- A file system is normally organized into directories for easy navigation and usage. These directories may contain files and other directions.
- An Operating System does the following activities for file management –Keeps track of information, location, uses, status etc. The collective facilities are often known as file systems.
- Decides who gets the resources.
- Allocates the resources.
- De-allocates the resources.

5. Security: By means of passwords and similar other techniques, it prevents unauthorized access to programs and data.

6. Control over System Performance: Recording delays between requests for service and responses from the system.

7. Job Accounting: Keeping track of time and resources used by various jobs and users.

8. Error Detecting Aids: Production of dumps, traces, error messages, and other debugging and error detecting aids.

9. Coordination between other software and users: Coordination and assignment of compilers, interpreters, assemblers, and other software to the various users of the computer systems.

Types of Operating System (OS)

Following are the popular types of OS (Operating System):

1. Batch Operating System

- Some computer processes are very lengthy and time-consuming.
- To speed the same process, a job with a similar type of needs is batched together and run as a group.
- The user of a batch operating system never directly interacts with the computer.
- In this type of OS, every user prepares his or her job on an offline device like a punch card and submits it to the computer operator.

2. Multitasking/Time Sharing OS

- The time-sharing operating system enables people located at a different terminal(shell) to use a single computer system at the same time.
- The processor time (CPU) which is shared among multiple users is termed time sharing.

3. Multiprocessing OS: Multiprocessing system means, there are more than one processor which work parallel to perform the required operations. It allows the multiple processors, and they are connected with physical memory, computer buses, clocks, and peripheral devices.

4. Real-Time OS

- A real-time operating system's time interval to process and respond to inputs is very small.
- Examples: Military Software Systems and Space Software Systems are the Real-time OS example.

5. Distributed OS: Distributed systems use many processors located in different machines to provide very fast computation to their users.

6. Network OS: Network Operating System runs on a server. It provides the capability to serve to manage data, users, groups, security, application, and other networking functions.

7. Mobile OS: Mobile operating systems are those OS which are especially that are designed to power smartphones, tablets, and wearables devices.

Functions of Operating System

Some typical operating system functions may include managing memory, files, processes, I/O system & devices, security, etc.

Main Functions of the Operating System

1. Process Management: Process management helps OS to create and delete processes. It also provides mechanisms for synchronization and communication among processes.

2. Memory Management: The memory management module performs the task of allocation and de-allocation of memory space to programs in need of these resources.

3. File Management: It manages all the file-related activities such as organization storage, retrieval, naming, sharing, and protection of files.

4. Device Management: Device management 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.