**1.What is an Operating System?**

An **Operating System (OS)** is a software that acts as an interface between computer hardware components and the user. Every computer system must have at least one operating system to run other programs. Applications like Browsers, MS Office, Notepad Games, etc., need some environment to run and perform its tasks.

## 2.Types of Operating System (OS)

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

* Batch Operating System
* Multitasking/Time Sharing OS
* Multiprocessing OS
* Real Time OS
* Distributed OS
* Network OS
* Mobile OS

### 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 are 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 submit it to the computer operator.

### Multi-Tasking/Time-sharing Operating systems

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 as time sharing.

### Real time OS

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

### Distributed Operating System

Distributed systems use many processors located in different machines to provide very fast computation to its users.

### Network Operating System

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

### Mobile OS

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

Some most famous mobile operating systems are Android and iOS, but others include BlackBerry, Web, and watchOS.

# **3. Linux Distributions (Distros)**

Other operating systems like Microsoft combine each bit of codes internally and release it as a single package. You have to choose from one of the version they offer.

But Linux is different from them. Different parts of Linux are developed by different organizations.

Different parts include kernel, shell utilities, X server, system environment, graphical programs, etc. If you want you can access the codes of all these parts and assemble them yourself. But its not an easy task seeking a lot of time and all the parts has to be assembled correctly in order to work properly.

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| **Distribution** | **Why To Use** |
| UBuntu | It works like Mac OS and easy to use. |
| Linux mint | It works like windows and should be use by new comers. |
| Debian | It provides stability but not recommended to a new user. |
| Fedora | If you want to use red hat and latest software. |
| Red hat enterprise | To be used commercially. |
| CentOS | If you want to use red hat but without its trademark. |
| OpenSUSE | It works same as Fedora but slightly older and more stable. |
| Arch Linux | It is not for the beginners because every package has to be installed by yourself |

From here on distribution (also called as distros) comes into the picture. They assemble all these parts for us and give us a compiled operating system of Linux to install and use.

**4**. **Explain about linux?**

Linux is a community of open-source Unix like operating systems that are based on the [Linux Kernel](https://www.geeksforgeeks.org/the-linux-kernel/). It was initially released by **Linus Torvalds** on September 17, 1991. It is a free and open-source operating system and the source code can be modified and distributed to anyone commercially or noncommercially under the GNU General Public License

**5. Basic Linux Commands**

1 **ls** . List directory contents. If you know windows you would know that the command dir is used to list the contents in a directory.

2 **cd /var/log** . Change the current directory. The forward slash is to be used in Linux. The example is a Linux directory that comes with all versions of Linux.

3 **grep** . Find text in a file. The grep command searches through many files at a time to find a piece of text you are looking for.

4 **su / sudo** command . There are some commands that need elevated rights to run on a Linux system. ...

5 **pwd** Print Working Directory

6 **passwd** . Though looks similar to the pwd command the role it plays is different. This command is used to change the user account password.

7 **mv** Move a file. To move a file or rename a file you would use the mv command. Here the file name gets changed from first.txt to second.txt.

8 **cp** Copy a file. You can use ls l to see the new file created. The two files will be exactly of the same size.

9 **rm** . This command is used to remove files in a directory or the directory itself. A directory cannot be removed if it is not empty.

10 **mkdir** to make a directory.

11 **chmod** . To change mode of a file system object. Files can have r read, w- write and x-execute permissions.

12 **chown** . This command is used to change the ownership of a file/folder or even multiple files/folders for a specified user/group.

13 **cat** -. The cat command (short for concatenate ) is one of the most frequently used commands in Linux. ...

14 **echo** . This command is used to display a text or a string to the standard output or a file. ...

15 wc -. The wc (word count) command in Linux operating system is used to find out the number of new lines, word count, byte and characters count in a ...

16 **man** . This command is used to view the on-line reference manual pages for commands/programs.

17 **history** . This command is used to show previously used commands or to get information about the commands executed by a user.

18 **clear** . This command lets you clear the terminal screen.

19 apt get. It is used to install new software packages, remove available software packages, upgrade existing software packages as well as upgrade the entire operating system. ...

20 **reboot** . This command may be used to halt, power-off or reboot a system as follows. Well, Linux doesnt end here