**What is Linux?**

Linux is an operating system based on UNIX and was first introduced by Linus Torvalds. It is based on the Linux Kernel and can run on different hardware platforms manufactured by Intel, MIPS, HP, IBM, SPARC, and Motorola. Another popular element in Linux is its mascot, a penguin figure named Tux.

## What is the difference between UNIX and LINUX?

Unix originally began as a propriety operating system from Bell Laboratories, which later on spawned into different commercial versions. On the other hand, Linux is free, open source and intended as a non-propriety operating system for the masses.

## What is BASH?

BASH is short for Bourne Again SHell. It was written by Steve Bourne as a replacement to the original Bourne Shell (represented by /bin/sh). It combines all the features from the original version of Bourne Shell, plus additional functions to make it easier and more convenient to use. It has since been adapted as the default shell for most systems running Linux.

## What is Linux Kernel?

The Linux Kernel is a low-level systems software whose main role is to manage hardware resources for the user. It is also used to provide an interface for user-level interaction.

## What is the advantage of open source?

Open source allows you to distribute your software, including source codes freely to anyone who is interested. People would then be able to add features and even debug and correct errors that are in the source code. They can even make it run better and then redistribute these enhanced source code freely again. This eventually benefits everyone in the community.

## What are the basic components of Linux?

Just like any other typical operating system, Linux has all of these components: kernel, shells and GUIs, system utilities, and an application program. What makes Linux advantageous over other operating system is that every aspect comes with additional features and all codes for these are downloadable for free.

## Describe the root account.

The root account is like a systems administrator account and allows you full control of the system. Here you can create and maintain user accounts, assigning different permissions for each account. It is the default account every time you install Linux.

## What is CLI?

CLI is short for Command Line Interface. This interface allows the user to type declarative commands to instruct the computer to perform operations. CLI offers greater flexibility. However, other users who are already accustomed to using GUI find it difficult to remember commands including attributes that come with it.

## What is GUI?

GUI, or Graphical User Interface, make use of images and icons that users click and manipulate as a way of communicating with the computer. Instead of having to remember and type commands, the use of graphical elements makes it easier to interact with the system, as well as adding more attraction through images, icons, and colors.

## How do you change permissions under Linux?

Assuming you are the system administrator or the owner of a file or directory, you can grant permission using the chmod command. Use + symbol to add permission or – symbol to deny permission, along with any of the following letters: u (user), g (group), o (others), a (all), r (read), w (write) and x (execute). For example, the command chmod go+rw FILE1.TXT grants read and write access to the file FILE1.TXT, which is assigned to groups and others.

## What are filenames that are preceded by a dot?

In general, filenames that are preceded by a dot are hidden files. These files can be configuration files that hold important data or setup info. Setting these files as hidden makes it less likely to be accidentally deleted.

## What is the pwd command?

The pwd command is short for print working directory command.

## What are the kinds of permissions under Linux?

There are 3 kinds of permissions under Linux:- Read: users may read the files or list the directory- Write: users may write to the file of new files to the directory- Execute: users may run the file or lookup a specific file within a directory

## What are the different modes when using vi editor?

There are 3 modes under vi:- Command mode – this is the mode where you start in- Edit mode – this is the mode that allows you to do text editing- Ex mode – this is the mode wherein you interact with vi with instructions to process a file

## Why we use LINUX?

LINUX is used widely because it is completely different from other operating systems where every aspect comes with something extra i.e. some additional features. Some of the major reasons to use LINUX are listed below

* It is an open-source operating system where programmers get the advantage of designing their own custom OS
* Software and the server licensing required to install Linux is completely free and can be installed on many computers as required
* It has low or minimum but controllable issues with viruses, malware, etc
* It is highly secured and supports multiple file systems

**Enlist some Linux distributors (Distros) along with its usage?**

Different parts of LINUX say kernel, system environment, graphical programs, etc are developed by different organizations. LINUX Distributions (Distros) assemble all these different parts of Linux and give us a compiled operating system to be installed and used.

There are around six hundred Linux distributors. Let us see some of the important ones

* ***UBuntu:*** It is a well known Linux Distribution with a lot of pre-installed apps and easy to use repositories libraries. It is very easy to use and works like a MAC operating system.
* ***Linux Mint:***It uses cinnamon and mates desktop. It works on Windows and should be used by newcomers.
* ***Debian:***It is the most stable, quicker and user-friendly Linux Distributors.
* ***Fedora:***It is less stable but provides the latest version of the software. It has a GNOME3 desktop environment by default.
* ***Red Hat Enterprise:***It is to be used commercially and to be well tested before release. It usually provides a stable platform for a long time.
* ***Arch Linux:***Every package is to be installed by you and is not suitable for beginners.

**Explain the Linux Directory commands along with the description?**

Enlisted below are the directory commands along with descriptions

* ***pwd:***It is a built-in command which stands for **‘print working directory’**. It displays the current working location, working path starting with / and directory of the user. Basically, it displays the full path to the directory you are currently in.
* ***Is:***This command list out all the files in the directed folder.
* ***cd:***This stands for ‘change directory’. This command is used to change to the directory you want to work from the present directory. We just need to type cd followed by the directory name to access that particular directory.
* ***mkdir:***This command is used to create an entirely new directory.
* ***rmdir:***This command is used to remove a directory from the system.

**Explain Linux Shell?**

For executing any commands user uses a program known as the shell. Linux shell is basically a user interface used for executing the commands and communicating with Linux operating system. Shell does not use the kernel to execute certain programs, create files, etc. There are several shells available with Linux which includes the following

* BASH (Bourne Again SHell)
* CSH ( C Shell)
* KSH ( Korn Shell)
* TCSH

## What is a Shell script?

As the name suggests, the shell script is the script written for the shell. This is a program file or says a flat text file where certain Linux commands are executed one after another. Although the execution speed is slow, Shell script is easy to debug and can also simplify everyday automation processes.

**Explain the Linux ‘cd’ command options along with the description?**

‘cd’ stands for change directory and is used to change the current directory on which the user is working.

cd syntax : $ cd {directory}

Following purposes can be served with ‘cd’ commands

* Change from current to a new directory
* Change directory using the absolute path
* Change directory using the relative path

Few of the ‘cd’ options are enlisted below

* **cd~:** Brings you to the home directory
* **cd-:** Brings you to the previous directory
* **. :** Bring you to the parent directory
* **cd/:** Takes you to the entire system’s root directory

## What are the basic components of Linux?

Just like other operating systems, Linux has all components like kernel, shells, GUIs, system utilities and application programs.

## Define shell

It is an interpreter in Linux.

## Name the Linux loader.

LILO is the Linux loader.

## If you have saved a file in Linux. Later you wish to rename that file, what command is designed for it?

The **'mv'** command is used to rename a file.

## What is the maximum length for a filename in Linux?

255 characters.

## How to delete information from a file in vi?

The following commands are used to delete information from vi editors.

1. **x** deletes a current character.
2. **dd** deletes the current line.