### Who invented Linux? Explain the history of Linux?

Linus Torvalds created Linux. Linus Torvalds was a student at the University of Helsinki, Finland in 1991. He started writing code on his own to get the academic version of Unix for free. Later on, it became popular as Linux Kernel.

**Is it legal to edit Linux Kernel?**

Yes, it is legal to edit Linux Kernel. Linux is released under the General Public License (General Public License). Any project released under GPL can be modified and edited by the end users.

**What is LILO?**

**LILO** stands for **LI**nux **LO**ader. LILO is a Linux Boot Loader that loads Linux Operating System into the main memory to begin execution. The advantage of using LILO is that it allows fast boot of Linux OS.

**Which are the Shells used in Linux?**

The most common Shells used in Linux are

* **bash: B**ourne **A**gain **Sh**ell is the default for most of the Linux distributions
* **ksh:** **K**orn **Sh**ell is a high-level programming language shell
* **csh: C Sh**ell follows C like syntax and provides spelling correction and Job Control
* **zsh: Z** **Sh**ell provides some unique features such as filename generation, startup files, login/logout watching, closing comments etc.
* **fish: F**riendly **I**nteractive **Sh**ell provides some special features like web-based configuration, auto-suggestions, fully scriptable with clean scripts

**What is Swap Space?**

Swap Space is the additional spaced used by Linux that temporarily holds concurrently running programs when the RAM does not have enough space to hold the programs. When you run a program, it resides on the RAM so that the processor can fetch data quickly. Suppose you are running more programs than the RAM can hold, then these running programs are stored in the Swap Space. The processor will now look for data in the RAM and the Swap Space. Swap Space is used as an extension of RAM by Linux.

**What command would you use to check how much memory is being used by Linux?**

You can use any of the following commands:

free -m

vmstat

top

htop

**What are inode and process id?**

inode is the unique name given by the operating system to each file. Similarly, process id is the unique id given to each process.

**Which are the Linux Directory Commands?**

There are 5 main Directory Commands in Linux:

pwd: Displays the path of the present working directory.

Syntax: $ pwd

ls: Lists all the files and directories in the present working directory.

Syntax: $ ls

cd: Used to change the present working directory.

Syntax: $ cd <path to new directory>

mkdir: Creates a new directory

Syntax: $ mkdir <name (and path if required) of new directory>

rmdir: Deletes a directory

Syntax: $ rmdir <name (and path if required) of directory>

**What is Virtual Desktop?**

Virtual Desktop is a feature that allows users to use the desktop beyond the physical limits of the screen. Basically, Virtual Desktop creates a virtual screen to expand the limitation of the normal screen.

There are two ways Virtual Desktop can be implemented:

1. Switching Desktops
2. Oversized Desktops

What are the process states in Linux?

The process states are as follows:

Ready: The process is created and is ready to run

Running: The process is being executed

Blocked or wait: Process is waiting for input from the user

Terminated or Completed: Process completed execution, or was terminated by the Operating System

Zombie: Process terminated, but the information still exists in the process table.

**Explain grep command.**

Grep stands for **Global Regular Expression Print.** The grep command is used to search for a text in a file by pattern matching based on regular expression.

**Syntax**: grep [options] pattern [files]

**Example**:

$ grep -c "linux" interview.txt

This command will print the count of the word “**linux**” in the “**interview.txt**” file.

**What is a Microprocessor?**

A Microprocessor is a device that executes instructions. It is a single-chip device that fetches the instruction from the memory, decodes it and executes it. A Microprocessor can carry out 3 basic functions:

1. Mathematical operations like addition, subtraction, multiplication, and division
2. Move data from one memory location to another
3. Make decisions based on conditions and jump to new different instructions based on the decision.

What is a Latch?

A Latch is a temporary storage device controlled by timing signal which can either store 0 or 1. A Latch has two stable states (high-output or 1, and low-output or 0) and is mainly used to store state information. A Latch can store one bit of data as long as it is powered on

**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.

* 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

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

**Answer:** The Linux Directory commands along with descriptions are as follows:

* **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.

What is the basic difference between BASH and DOS?

The key differences between the BASH and DOS console lie in 3 areas:

- BASH commands are case sensitive while DOS commands are not;

- Under BASH, / character is a directory separator and \ acts as an escape character. Under DOS, / serves as a command argument delimiter and \ is the directory separator

- DOS follows a convention in naming files, which is 8 character file name followed by a dot and 3 characters for the extension. BASH follows no such convention.