What is Linux?

❇ It is an operating system, by using that, users/applications can communicate with hardware components.

❇ It was developed/created in 1960s.

❇ With lot of extensions and improvements to base version, several flavours introduced by organization/companies (flavours like Redhat linux, ubuntu, CentOS etc)

Features of Linux:

1) It is FOSS (Freeware and Open Source Software)

2) UNIX can be used by multiple users simultaneously and hence it is Multi User

operating System.

3) Several tasks can be executed simultaneously and hence it is multi tasking operating

system.

4) It is user friendly and provides both CUI and GUI Support.

5) When compared with windows, UNIX is more secured.

Flavours of Linux:

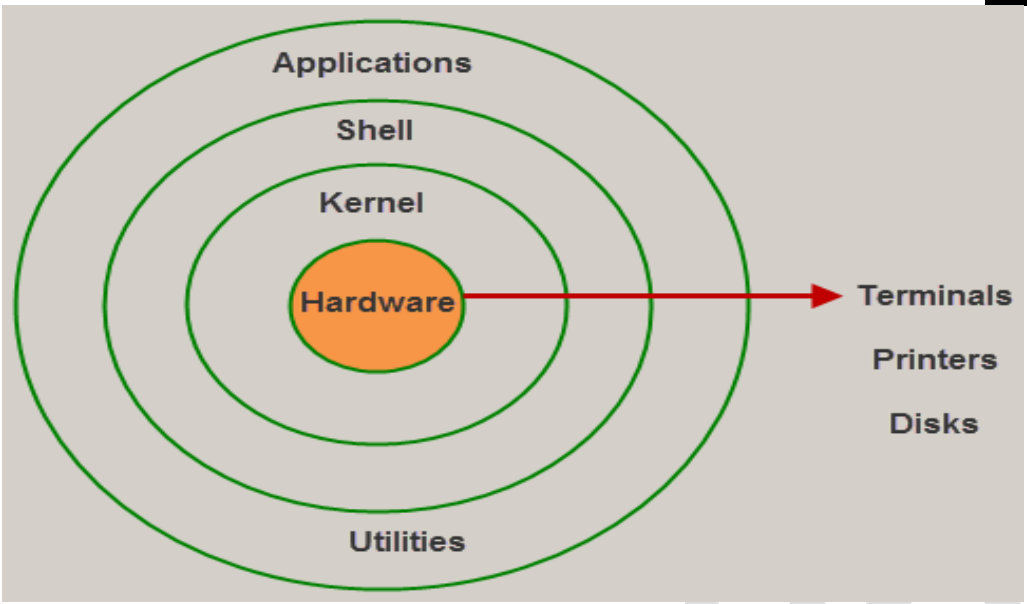
As UNIX is open source, multiple flavours are available with lot of extensions and improvements.

- Ubuntu
- RedHat
- Centos
- Fedora
- Slackware
- open solaries
- Suse Linux Enterprise server (SLES)
- Open Suse

All these flavours have lot of similarity. Hence if we are perfect with one flavour, we can work on any other flavour very easily.

Note: We can view a detailed list of Linux flavours in www.distrowatch.com

LINUX ARCHITECTURE



Shell:

✻ It is the outer layer of UNIX operating System.

✻ It reads our command, verify syntax and check whether the corresponding command related application is available or not.

✻ If everything is proper, then shell interprets our command into kernel understandable form and handover to the kernel.

✻ Shell acts as interface between user and kernel.

Kernel:

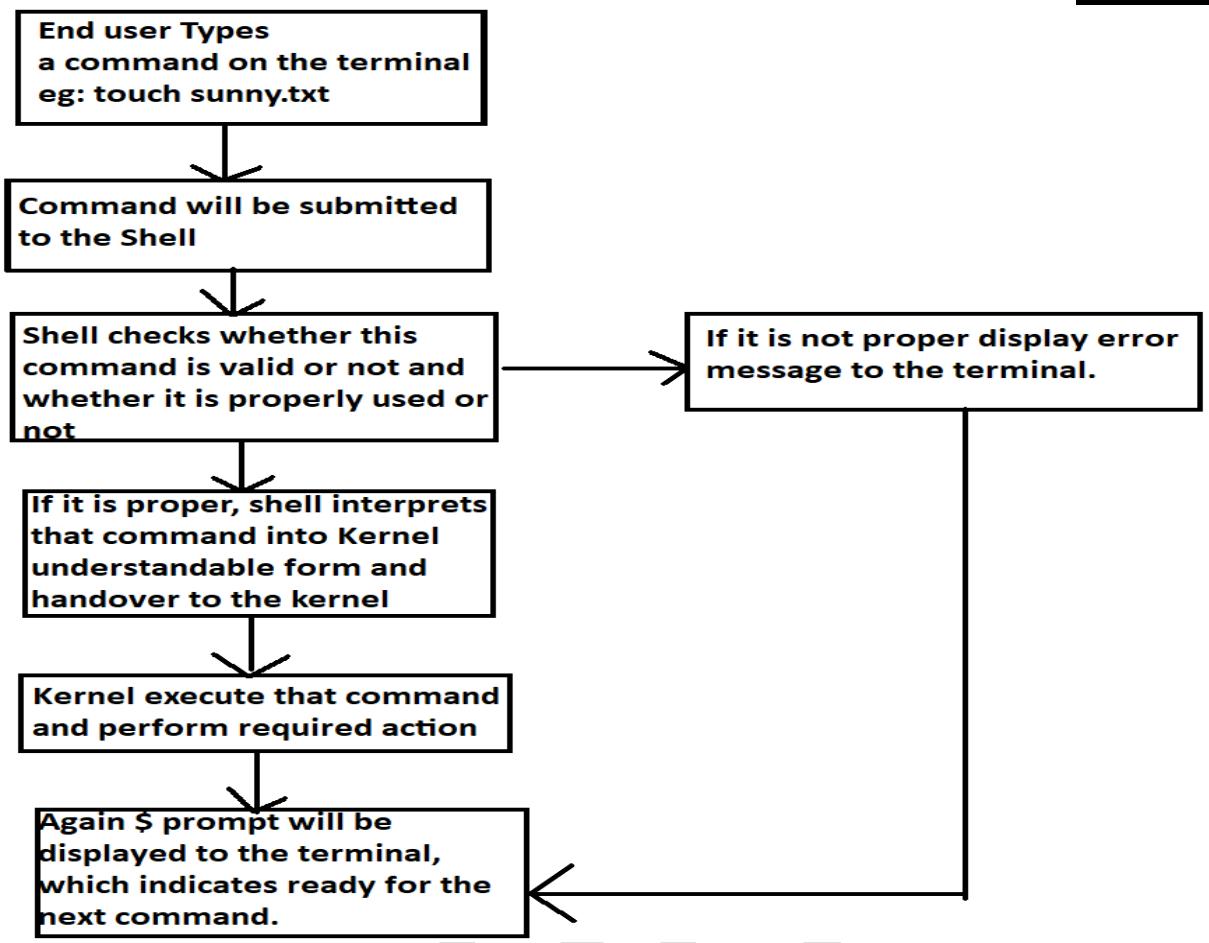
✻ It is the core component of LINUX operating system.

✻ It is responsible to execute our commands.

✻ It is responsible to interact with hardware components.

✻ Memory allocation and processor allocation will takes care by kernel.

Command Execution Flow



1) User types the command in the terminal.

touch pythonlife.txt

2) Shell reads that command. It will check whether that command is valid or not and whether it is used properly or not. If everything is proper, then shell interprets/translates that command into kernal understandable form.

3) Shell handovers that interpreted command to the kernal.

4) Kernal executes that command and perform required activity.

5) Once command execution completed, then shell returns unix prompt ($ OR # OR %).

6) $ OR # OR % represents it is ready for the next command.

COMMANDS

Pwd: The pwd (print working directory) command displays the current working directory (i.e., the directory you are currently in). This can be helpful when navigating through the file system.

syntax

pwd [OPTION]

Who: The who command displays information about users who are currently logged in to the system, including their username, terminal, login time, and IP address. It can also display information about the system uptime.

syntax

who

whoami: The whoami command displays the username of the current user.

syntax

whoami

w: The w command displays information about users who are currently logged in to the system, including their username, terminal, login time, and CPU usage. It can also display information about the system load average.

syntax

w [OPTION]

DATE-COMMAND

The date command is a command-line utility that is used to display or set the date and time on a Linux system.

Syntax: date [OPTION]... [+FORMAT]

1) date +%D

To display only date in the form: mm/dd/yy

2) date +%T

To display only time in the form: hh:mm:ss

3) date +%d

To display only day value

4) date +%m

To display only month value

5) date +%y

To display only year value in yy form

6) date +%Y

To display only year value in yyyy form.

7) date +%H

To display only Hours value (in 24 hours scale format)

8) date +%M

To display only Minutes value

9) date +%S

To display only Seconds value

Eg 1: To display current system date in dd-mm-yyyy format.

default format: mm/dd/yy

date +%d-%m-%Y

Eg 2: Create an empty file where file name contains current system date.

touch "codingradjobs$(date +%d%m%Y).log"

Eg 3: Create an empty file where file name contains current system date and time

touch "devopsjobs$(date +%d%m%Y%H%M%S).log"

cal Command

$ cal --->To display current month calendar.

$ cal 2023 ----> To display total year calendar.

$ cal 1 ----> To display 1st year calendar.

$ cal 08 2020 -----> To display august 2020th calendar

PACKAGES

sudo yum install tree –y

sudo: The sudo command is used to execute a command as another user, typically the superuser or root

yum: yum stands for "Yellowdog Updater, Modified". It is a package manager for Linux systems that is used to manage software packages and dependencies. The yum command is a package manager for Linux systems that is used to manage software packages and dependencies. It is commonly used on systems that are based on Red Hat Enterprise Linux (RHEL), CentOS, or Fedora

install: The install command is used to install software packages on the system

tree: The tree package is a command-line utility that displays the directory structure of a filesystem in a tree-like format. It is a useful tool for visualizing the layout of a directory and its subdirectories.

-y: The -y option is used to automatically answer "yes" to any prompts or questions that are presented during the installation process

"y": Selecting "y" will confirm that you want to install the package and will proceed with the installation process

d": Selecting "d" will download the package but will not install it.

n": Selecting "n" will cancel the installation process and will not install the package. This option is useful if you have changed your mind about installing the package