

# INTRODUCTION TO LINUX

- Concepts and File System Hierarchy

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# Operating System

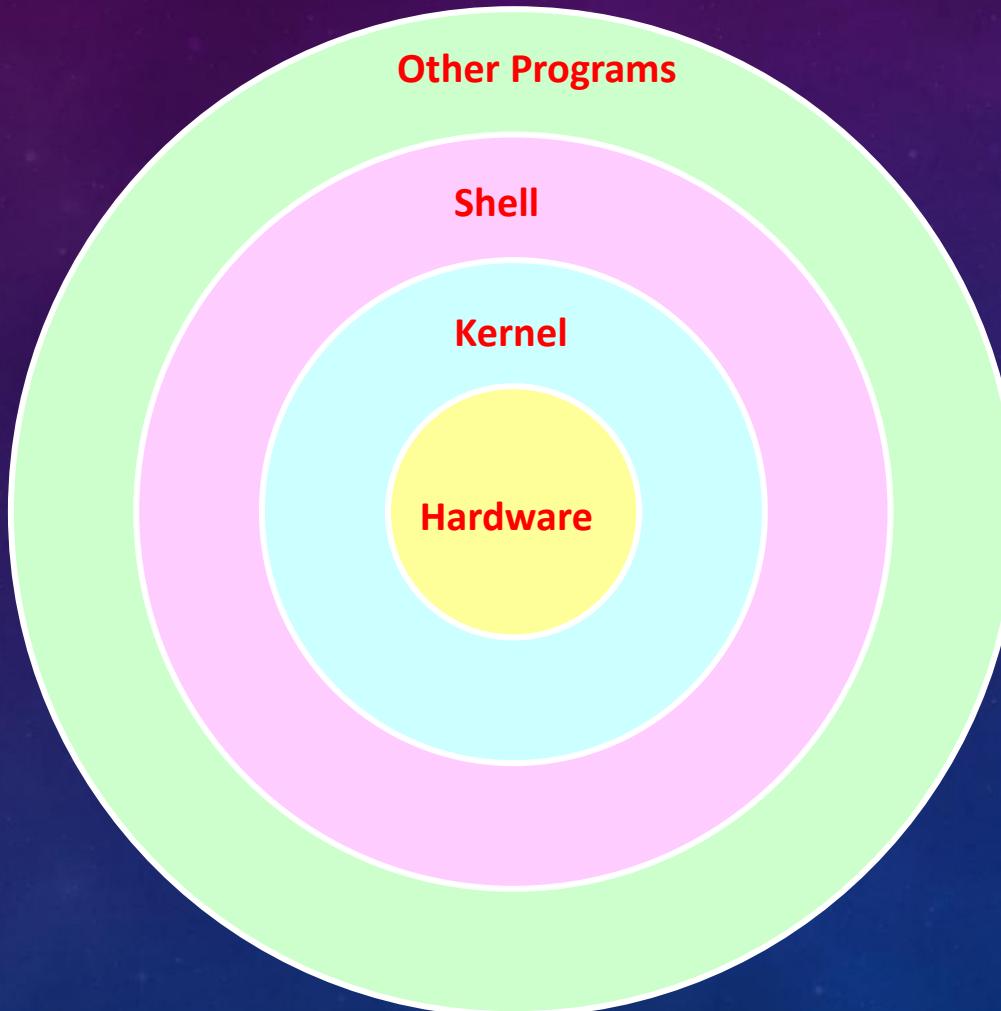
## DEFINITION

**Operating System is a collection of programs that coordinates the operation of computer hardware & software.**

## FUNCTIONS OF OPERATING SYSTEM

- Process Management
- Memory Management
- Data Management
- I/O Management

# Linux Architecture



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# Kernel

- A set of functions that make up the heart of an OS
- It is used to provide an application interface between programs and physical devices.

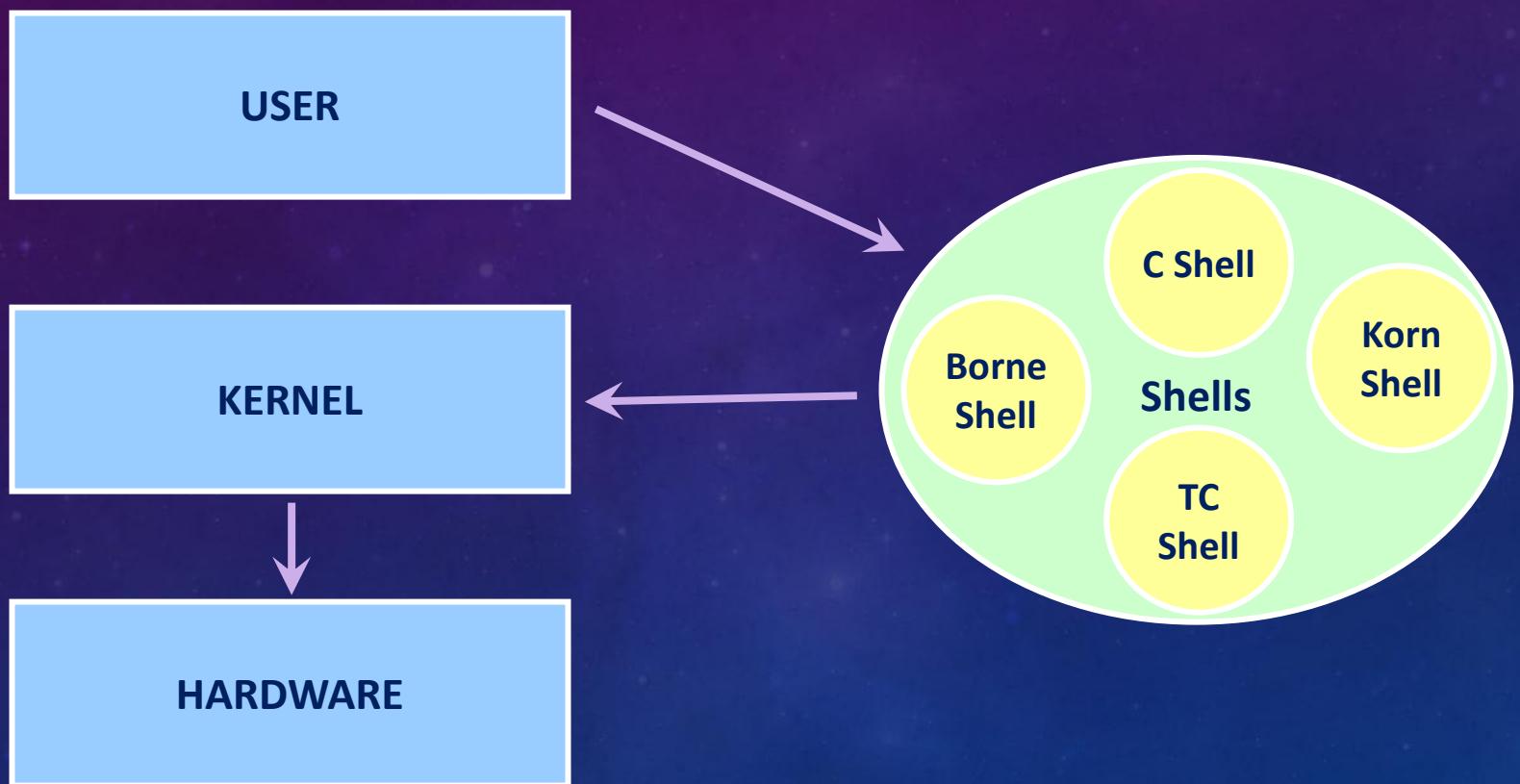
## Services provided by the kernel

- Controls execution of processes.
- Scheduling of processes.
- Allocating memory.

## What is Shell ?

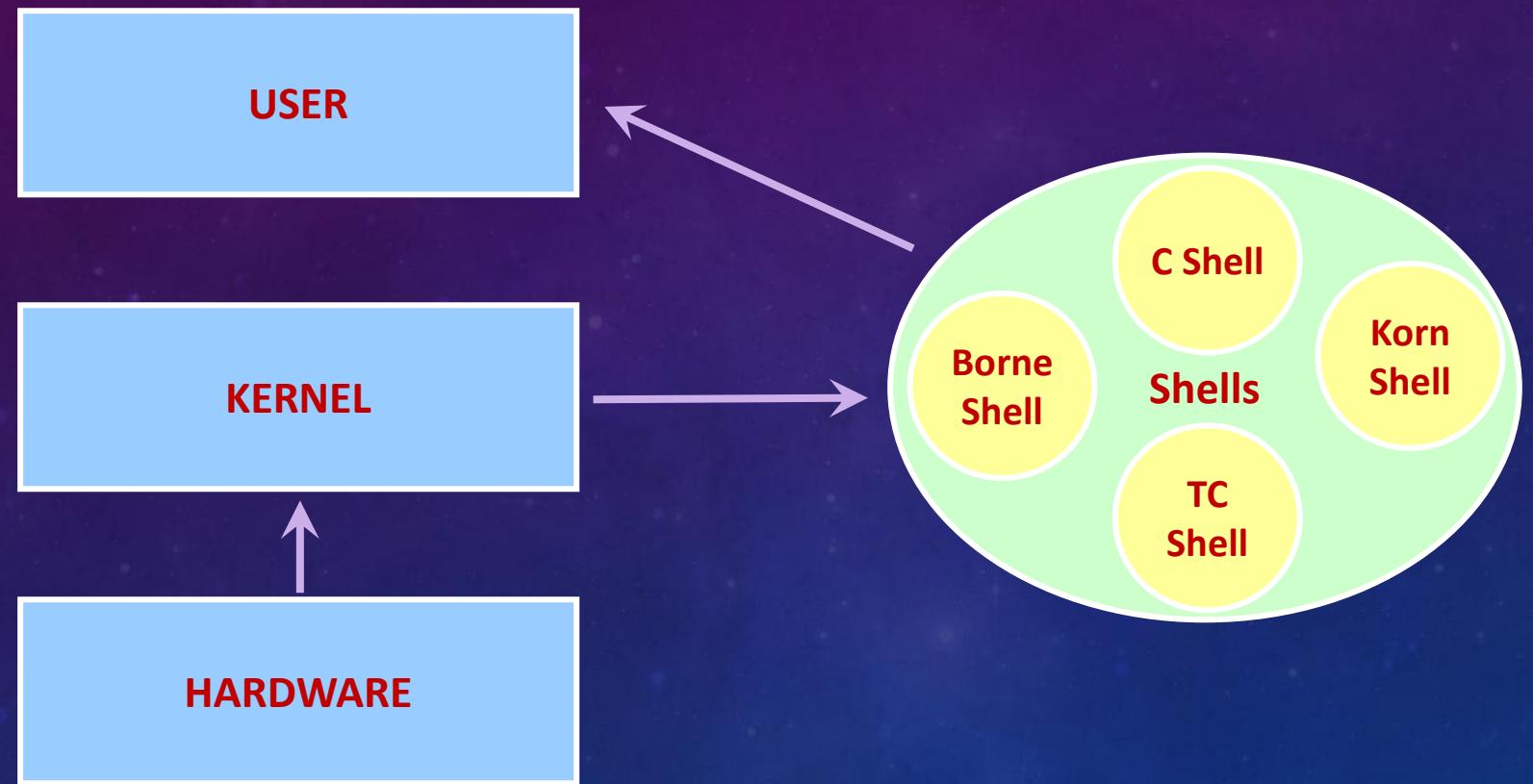
- **Shell is the interface between the user and the kernel.**
- **Services provided by the shell**
  - **It interprets all the commands to the kernel**
  - **The kernel after processing the commands gives back to the shell.**

# Linux Architecture works



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# Linux Architecture works



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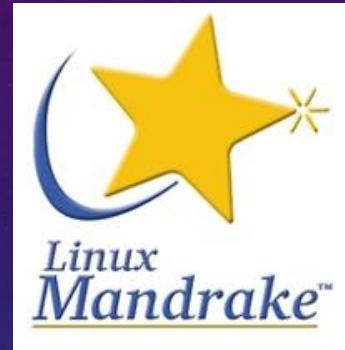
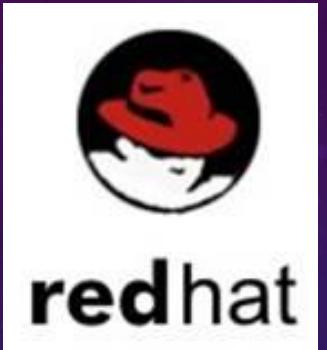
# History of Linux

- In 1990's, Linus Torvalds ,a graduate student form University of Helsinki designed a UNIX like kernel on 386 Intel machine and gave this to OSF.
- Linux Kernel was bundled with many software's from various distributors and it gave rise to many flavors of LINUX.

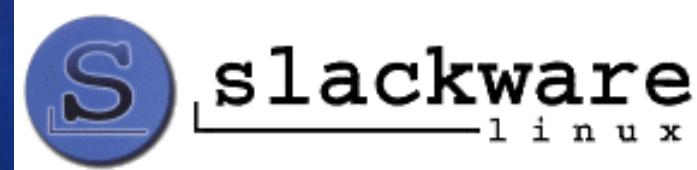


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# Linux Distribution

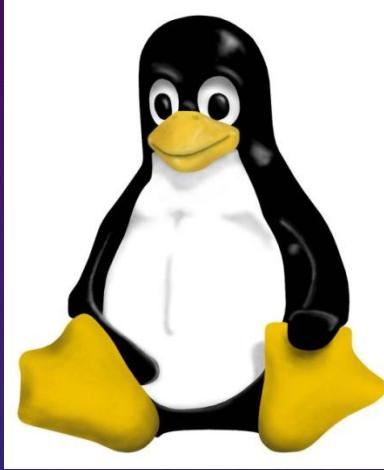


**debian**

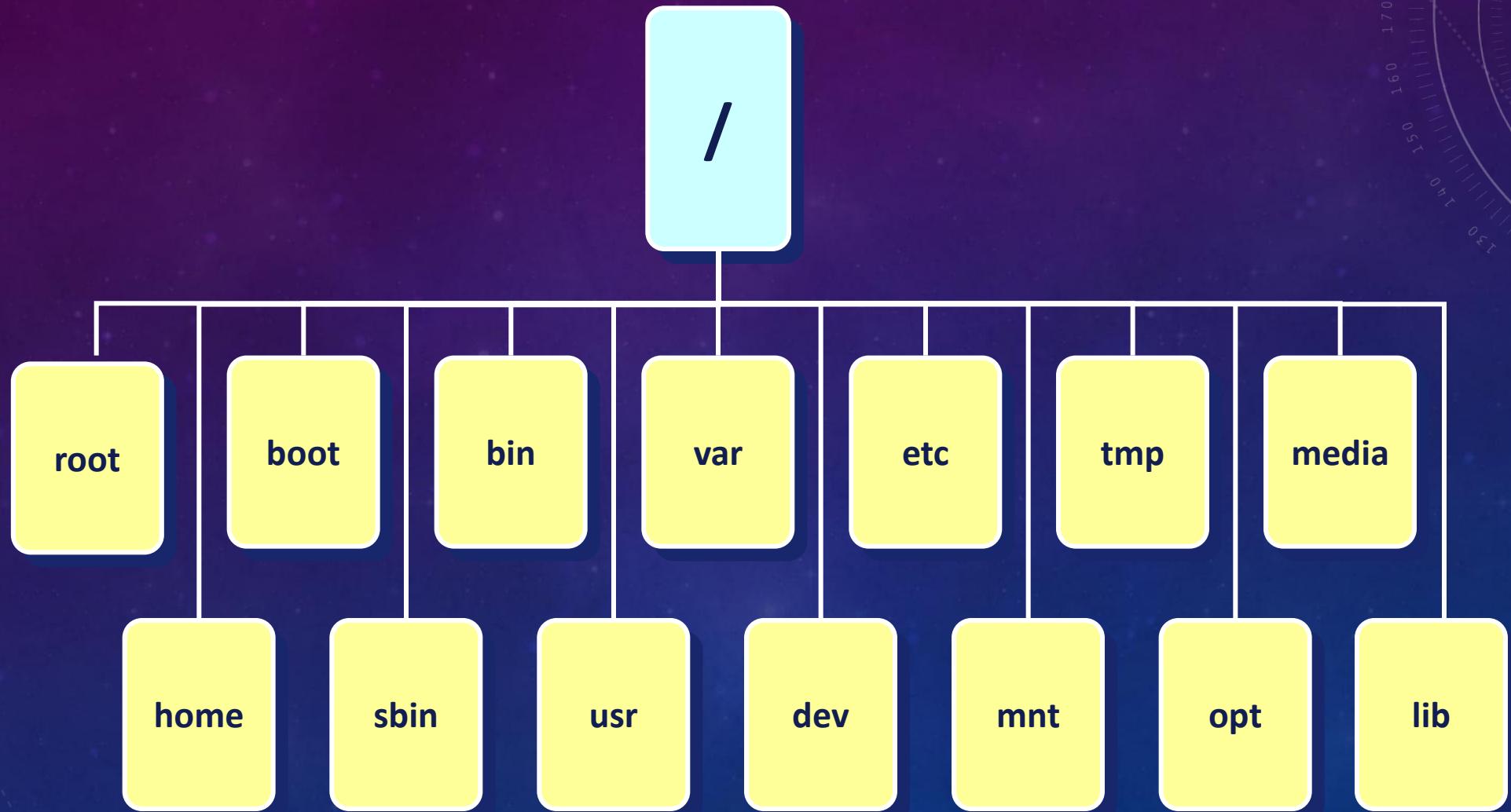


# Features of Linux

- **Open Source**
- **Multitasking**
- **Multi-User**
- **Portable**
- **Scalability**
- **Reliability**
  - Biggest servers on this planet running Linux without single second of downtime from last 10yrs
- **Security**
  - Inbuilt firewall (Iptables)



# File System Hierarchy



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/

- **This Directory is called as 'root' Directory.**
- **It is the top of the file system structure.**
- **All other Directories are mounted under it.**

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# /root

- This is the default home directory of administrator (i.e., root).

# /home

- It contains all users home directories.

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# /boot

- **This Directory contains the Kernel, the core of the operating system.**
- **This also contains the files related to booting the system such as the boot loader and the initial ram disk.**

# /sbin

- It contains administrative commands used by super user.

# /bin

- This Directory contains command used by the superuser and the normal users.

# /usr

- It contains the programs and applications which are available for users (similar to program files on windows)

/var

- It contains variable information , such as logs and print queues.

# /dev

- This Directory contains devices nodes through which the operating system can access hardware and software devices on the system.

/etc

- It contains all configuration files.

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**/opt**

- It contains the third party applications

**ex:- Corel Word Perfect**

**Sun Star Office**

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**/mnt**

- This Directory can be used for manual mounting, since it is initially empty.

**/tmp**

- This Directory contains temporary files used by the system

# /media

- It contains default mount points of removable media such as cdrom, floppy disk, pendrive.

# /lib

- It contains libraries need by number of different applications as well as Linux kernel.

THANK YOU