What is Script ?

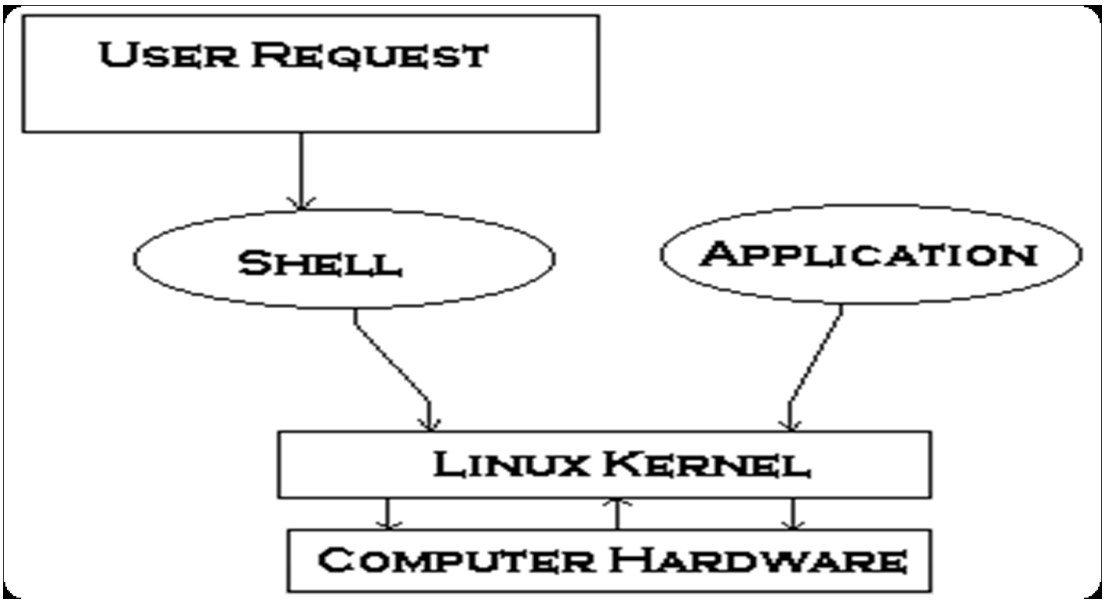
- A **scripting** or **script** **language** is a programming language for a special run-time environment that automates the execution of tasks.
- the tasks could alternatively be executed one-by-one by a human operator using CLI on command prompt screen.

What is Shell Scripting ?

- shell script is a computer program designed to be run by the Unix/Linux shell.
- *Shell Script is **series of command** written **in plain text file**. Shell script is just like batch file is MS-DOS*

Why we use shell scripting ?

1. Shell scripts can be used to prepare input files, job monitoring, and output processing.
2. Useful to create own commands.
3. Save lots of time on file processing.
4. To automate some task of day to day life.
5. System Administration part can be also automated.
6. Daily application backup and monitoring
7. Reduce admin work load
8. Can manage lot of server from any single place using shell script
9. Smart work ….etc



What is Shell ?

- Shell accepts your instruction or commands in English (mostly) and if it is a valid command, it is pass to kernel.
- Shell Basically is an interface between user and kernel.
- Shell is an environment in which we can run our commands, programs, and shell scripts.
- A Shell provides you with an interface to the Unix system. It gathers input from you and executes programs based on that input.
- Shell reads your input after you press Enter. It determines the command you want executed by looking at the first word of your input.
- Computer understand the language of 0's and 1's called binary language. In early days of computing, instruction are provided using binary language, which is difficult for all of us, to read and write. So in OS there is special program called Shell.

- Shell is an command language interpreter that executes commands read from the standard input device (keyboard) or from a file.

Types of Supported Shell in Linux ?

- Bourne shell (sh) ➔ /bin/sh
- Bourne Again shell (bash) ➔ /bin/bash
- Korn shell (ksh) ➔ /bin/ksh
- C shell (csh) ➔ /bin/csh
- Turbo C shell (tcsh) ➔ /bin/tcsh

```
# which sh
# which bash
# which perl
# which python
# echo $SHELL
# echo $BASH
# echo $BASH_VERSION
```

What is Kernel ?

- Kernel is an heart of Linux OS.
- The **Linux kernel** is the main component of a **Linux** operating system (OS) and is the core interface between a computer's hardware and its processes.
- It is an interface between Application and computer hardware as well as shell.
- It manages resource of Linux OS. Resources means facilities available in Linux.
- Kernel decides who will use this resource, for how long and when.
- It runs your programs (or set up to execute binary files).
- The kernel acts as an intermediary between the computer hardware and various programs/application/shell

What the kernel does

- **Memory management:** Keep track of how much memory is used to store what, and where
- **Process management:** Determine which processes can use the central processing unit (CPU), when, and for how long
- **Device drivers:** Act as mediator/interpreter between the hardware and processes
- **System calls and security:** Receive requests for service from the processes

- I/O management
- Process management
- Device management
- File management
- Memory management

How we can check the kernel version ?

uname

uname -r

ls /boot

My first Shell Scripting

[root @ krnetworkcloud ~] # vim demo.sh

```
#! /bin/bash
# My first shell script
clear
echo “welcome to KR Network Cloud”
```

:wq

sh demo.sh OR # ./demo.sh

chmod +x demo.sh

Variable

Variables are symbolic names that represent values stored in memory.

In Linux (Shell), there are two types of variable:

1- System defined variables (SDV)

- Created and maintained by Linux itself. This type of variable defined in CAPITAL LETTERS.

2- User defined variables (UDV)

- Created and maintained by user. This type of variable defined in lower letters.