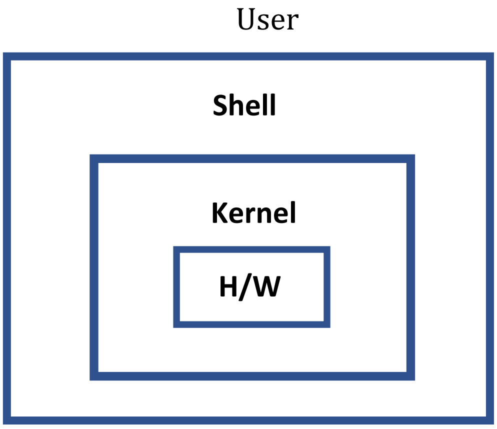
Unix

It is portable operating system that is designed for multi-tasking and multi user functions. It was written in C and it is control under shell



Kernel :- Kernel in Unix OS is the master program that control the computer resource. Kernel does not deal directly with user. User need to write the program / command in shell

Shell :- it is interface between user and system. And it is command interpreter that execute the command

There are two types of logging screen

1) CUI (character user interface) Virtual console
2) GUI (Graphical user interface) Graphical console

Unix :- It run on CUI and it is licensed and Free ware depends on the flavour

Linux :- It is like Unix but not Unix, freely available to everyone (RedHat, Ubuntu, Fedora) Mac

Terminal :- Used to write the command and get output

Student@localhost ~]$
User, machine_name home_directory Unix prompt

In Unix folder is said to be directory

Feature of Unix

- Multiuser :- multiple user access the system by connecting to points is known as terminal
- Multitasking :- several user can run multiple program on one system
- Provide better security by specific user permission

Unix Commands

1) man :- It give the manual of command

To quit press q button

2) pwd :- shows current working directory (present working directory)

3) ls :- shows the non-hidden content of current directory

   ls -a :- Shows hidden content of current directory

   ls -l :- gives the details of files in directory

   ls -al :- gives the details of hidden files in directory

   ls -r :- gives the file list in reverse order (oldest first)

   ls -R :- gives details of directory, sub directory and present files in directory

4) cd :- change current working directory to specific folder

Syntax :- cd folder_name => cd Desktop

   cd .. :- move one step back

   cd **OR** cd ~ :- Navigate to home directory

5) mkdir folder1 :- create new directory

   mkdir {folder1,folder2,folder3} :- create multiple new directory

   mkdir folder1/test1 :- create sub directory if directory is available

   mkdir folder1/{test1,test2} :- create multiple sub directory

   mkdir -v folder10 :- created directory with success message

   mkdir -p folder10 :- create directory with sub directory when directory hasn't been created previously

6) rmdir folder10 :- remove empty directory

   rmdir (folder2,folder3} :- remove multiple empty directory

7) rm a.txt :- remove the file
   ls

   rm -i a.txt :- remove the file with confirmation
   y

   rm -rv folder1 :- remove non empty directory

8) wc automation.txt :- return no of lines, words and characters of file

9) vi java.txt :- It is editor in Unix, create new file and if present then open it
   esc + : + wq + enter

10) cat java.txt :- It read the data from file

    cat java.txt javaprog.txt :- Read data from multiple files

    cat -n java.txt :- It read the data from file with line number

11) grep :- global regular expression pattern, used to search the text
    Syntax :- grep “automation” java.txt

    Syntax :- grep -c "am" java.txt :- gives count of line where search word exist

12) touch abc.txt => create blank file, but it has no editor window

13) head automation.txt => shows first 10 lines

    head -11 automation.txt => shows first 11 lines

    tail automation.txt => shows last 10 lines

    tail -11 automation.txt => shows last 11 lines

14) cp automation.txt automation1.txt => copy content of one file to other file (replace)

    cp abc.txt /Users/Zenith/Desktop/Suraj => copy one file to directory

15) mv automation.txt automationByJava.txt => Rename the file
    cat automationByJava.txt

    mv Unix InnerUnix => Rename the directory ls

mv a.txt /Users/Zenith/Desktop/UnixDes => Moving file from one directory to other

16) less/more => display content of file page by page
less abc.txt => shows content of file
space => next page
b => back page
G => last page
g => first page
To exit from file press q

17) top => Display all running process

18) kill processed => kill or terminate the process
kill process_d => kill 123

19) Ps => show current working process

20) chmod

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drwxr-xr-x  11 Zenith  staff    352 Feb 19 20:08 Learning
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permission-field-user_group-group_owner-size-date-file_name

There are three types of permission
r – read   w – write   x – execute

at the start of file details
“-”Indicate file
“d” – indicate directory
“|” indicate link

There are three types of owner
User owner => u
Group owner => g
Others => o

Changing permission by symbolic method
Syntax :- chmod whowhatwhich file/directory
Ex. chmod o+w file.txt

Where who => u, g, o for user, group, other owner
what => +, -, = for add remove assign

which => r, w, x for read write execute permission

to add permission => chmod g+rw file.txt

to remove permission => chmod g-rw file.txt

to assign permission => chmod o=u file.txt

set all the permission => chmod o+rwx file.txt

Changing permission by numeric way

4 – read 2 – write 1 – execute

Ex. r w x
↓ ↓ ↓
4 2 1 Total = 7

If there is a permission which is 640 then

6	4	0
user	group	other
(4 + 2 + 0)	(4 + 0 + 0)	(0 + 0 + 0)

User 547 permission
chmod 547 file.txt
o/p =>

Output redirection (>) (>>)
Syntax :- command > output file name
Ex. ls > file.txt
All the content of ls will be copied to file.txt and if file exist then it will overwrite

If we want previous content too then use below syntax
ls >> file.txt

Soft link and hard link.

Soft link => It is symbolic link called as shortcut of file
Hard link => It is copy of file called as backup of file
Both link work as pointers in linux

Creation of soft link
Syntax :- ln -s original_file_name softlink_file_name
Ex. ln -s file.txt newfile.txt

Creation of hard link
Syntax :- ln original_file_name hardlink_file_name
Ex. ln file.txt backupfile.txt

Shows all the links
ls -li => show all nodes

- inode (index node) of hardlink file and original file are same
- inode of softlink file and original file is different
- if we made changes in original file same changes will be observed in softlink and not in hardlink file
- if we delete original file then hardlink file will be as it is and short link file not get deleted (but it is unable to navigate/open the original file)