

Ex.No: 1
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BASIC UNIX COMMANDS

Aim

To understand the basic commands used to work with Unix environment.

General Command Structure

Syntax:

Command [-options] arguments

Where,

Command	name of the command
Arguments	file name, user name or some other information that the program needs.
Options	which is a option for a program. So it is put inside square brackets.

BASIC COMMANDS

1. Command : **who**
Purpose : It is used to get the information about all the users currently working in the system.
Syntax : who
Example : \$ who
2. Command : **who am i**
Purpose : It is used to know in which terminal the user is currently logged on.
Syntax : who am i
Example : \$ who am I
3. Command : **date**
Purpose : It is used to display the system date and time.
Syntax : date
Example : \$ date
4. Command : **cal**
Purpose : It prints the calender for the specified year and month.
Syntax : cal<month><year>
Example : \$ cal 05 2003
5. Command : **id**
Purpose : It is used to display the login name.
Syntax : id
Example : \$ id
6. Command : **clear**
Purpose : It is used to clear the screen.
Syntax : clear
Example : \$ clear

7. Command : **uname**
 Purpose : It is used to display the details about the OS in which we are working.
 Syntax : `uname [options]`
 Example : `$ uname -n`

8. Command : **tty**
 Purpose : It is used to know the terminal name on which we work.
 Syntax : `tty`
 Example : `$ tty`

9. Command : **pwd**
 Purpose : It is used to display the absolute pathname of current working directory.
 Syntax : `pwd`
 Example : `$ pwd`

10. Command : **bc**
 Purpose : It is used to perform simple mathematical calculations.
 Syntax : `bc filename`
 Example : `$ bcpp`

11. Command : **echo**
 Purpose : It echoes the argument on the standard output textce.
 Syntax : `echo [options] <string>`
 Example : `$ echo 'BOOM'`

12. Command : **man**
 Purpose : It gives details about the unix commands.
 Syntax : `man <command name>`
 Example : `$ man echo`

FILE MANIPULATION COMMANDS

1. Command : **cat**
 Purpose : It is used to create a new file
 Syntax : `cat ><file name>`
 Example : `$ cat >`
 This is sample File in Unix
 Ctrl – d

To append the content of already existing file.

Example : `$ cat>>`

It is also used to display the contents of the files as well as used to create a new file.

Syntax : `cat <file name>`

Example : `$ cat`
 This is sample File in Unix

To display the contents of two or more files, specify the filenames with the cat commands separated by a space in between them.

Example:

\$cat 1 2 3

1 file

2 file

3 file

2. Command : **ls**

Purpose : It is used to display the files in the current working directory.

Syntax : ls [options] <arguments>

Options

a - to list all directory entries

d - to list name of directories

l - to list files in long form

r - to list file in the reverse order

t - to list the files sorted by time

lrt - list content of current directory. Output will be sorted based on modification date & time.

Example : \$ ls -l

3. Command : **tail**

Purpose : It is used to Print the last several lines of the specified files.

Syntax : tail [options] <file name>

Example : \$ tail -5 text

4. Command : **head**

Purpose : It is used to display the top portion of the file where top portion represents the no's of lines.

Syntax : head [options] <file name>

Example : \$ head -5 text

5. Command : **cmp**

Purpose : Compare two files, and if they differ, tells the first byte and line number where they differ.

Syntax : cmp file1 file2

Example : \$ cmp a1 a2

6. Command : **diff**

Purpose : The diff command analyses line by line and displays a list of changes between two files.

Syntax : diff file1 file2

Example : \$ diff a1 a2

7. Command : **wc**

Purpose : It is used to count the number of lines, words and characters in a file or group of files.

Syntax : wc [options] <file name >

Example : \$ wc .txt

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19CSE060

2 15 95 .txt

The options used with **wc** commands are listed.

Option	Description
-c	Count number of characters in the file
-w	Counts the number of words in the file
-l	Counts number of lines in the file

Example:

```
$ wc -c .txt
95 .txt
$ wc -w .txt
15 .txt
$ wc -l .txt
2 .txt
```

8. Command : **sort**
Purpose : Sorts the specified files. The command has many useful arguments..
Syntax : sort [options] <file name >
Option-r reverse
Example : \$ sort .txt
9. Command : **pr**
Purpose : It is used to display the contents of the file by separating them into pages and each page begins with the header information.
Syntax : pr [options] <file name >
Example : \$ pr
10. Command : **cut**
Purpose : It is used to extract selected fields or columns from each line of one or more files and display them on the standard output textce.
Syntax : cut [options] <file name >
Example : \$ cut -c5
11. Command : **paste**
Purpose : It concatenates the line from each input file column by column with tab characters in between them.
Syntax : paste [options] <file name >
Example : \$ paste f1 f2
12. Command : **join**
Purpose : It is used to extracts common lines from two sorted files and there should be the common field in both file.
Syntax : join [options] <file name1 ><file name 2>
Example : \$ join -a1 f1 f2
13. Command : **uniq**
Purpose : It compares adjacent lines in the file and displays the output by eliminating duplicate adjacent lines in it.

- Syntax : `uniq [options] <file name >`
 Example : `$ uniq -c text`
14. Command : **nl**
 Purpose : It is used to add the line numbers to the file.
 Syntax : `nl [options] [filename]`
 Example : `$ nl text`
15. Command : **tr**
 Purpose : It is used to translate or delete a character or a string from the standard input to produce the required output.
 Syntax : `tr [options] <string1><string2>`
 Example : `$ tr -s 'a' 'b' < text`
16. Command : **tee**
 Purpose : It is used to read the contents from standardinput or from output of another command and reproduces the output to both in standardoutput and direct into output to one or more files.
 Syntax : `command | tee [options] <file name >`
 Example : `$ date | tee dat.txt`
17. Command : **grep**
 Purpose : It is used to search the specified pattern from one or more files.
 Syntax : `grep [options] <pattern><file name >`
 Example : `$ grep welcometext`

DIRECTORY MANUPULATION COMMANDS

1. Command : **mkdir**
 Purpose : It is used to create new directory or more than one directory.
 Syntax : `mkdir<directory name >`
 Example : `$ mkdirsudhan`
2. Command : **cd**
 Purpose : It is used to change the control from oneworking directory to another specified directory.
 Syntax : `cd <directory name >`
 Example : `$ cd sudhan`
3. Command : **rmdir**
 Purpose : It is used to remove the directory if it is empty.
 Syntax : `rmdir<directory name >`
 Example : `$ rmdirsudhan`

You can use the `-r`(recursive) option with the `rmdir` command so that it deletes the directory even when it is not empty.

For example, `$rmdir -r haran`

4. Command : **cp**
 Purpose : It is used to copy one or more files.

Syntax :cp<source file name ><destination file name>
Example : \$ cp text1

5. Command : more
Purpose : It is used to control the information on the screen from a line to a screen full.
Syntax : more options <file name >
Example :\$ more

This command displays one screen full of information from the file. To display the next screen press enter key or space bar. To quit press Q.

6. Command :passwd
Example : passwd user
Changes the current user's password, or that of the specified user (requires root privileges). The command prompts for the new password.
7. Command : mv
Purpose : It is used to move a file within a directory with different names and also used to move a file to different directory with its original name.
Syntax :mv<source file name ><destination directory name>
Example : \$ mv text1

8. **chmod command**

You set the access modes of a directory or file by using the chmod command, which has the following pattern:

chmod
nnn directory-or-file

The argument *nnn* is a three-digit number, which gives the access mode for the owner, group, and other users.

For example, the argument 751 is equivalent to *rw-r-x--x*, which gives the owner every possible permission, gives the group read and execute permission, and gives other users execute permission.

9. Command : write
Purpose : the write command can be used by any user to write something on someone else's terminal, provided the recipient of the message permits communication
Syntax : write <user name>
Example : \$ write user2
This is sample message.
Ctrl d

On executing this command the message would be relayed to the user whose login name is user2. He would hear a beep on his terminal, followed by the message.

There are two prerequisites for a smooth write operation:

1. The recipient must be logged in; else an error message is inevitable.
2. The recipient must have given permission for messages to reach his or her terminal.

10. wall command

Prints a message to each user except those who've disabled message reception. Type **Ctrl-D** to end the message.

11. Comma : News nd

Purpose : The system administrator is the sole person who can make news under the Unix OS. He types the information which he wants everyone on the network to know of in different files in /usr/news directory.

Syntax : 1) \$news filename
2) \$news [-options]

Options : 1) -n option only lists the names of the news items from the /usr/news directory that have not yet been read by you.
2) -s option which provides a count of the unread new items in the /usr/news directory.
3) -a shows all the news.

Example 1 : \$ news sample

Where sample is the file name in which the news items are available.

Example 2 : \$news -s

It provides the count of the unread new items.

Output:

Meet - xgz-wroi-kbf x Webmin x +

webmin.org/terminal/ ☆ 🧑

```
#####
# webmin.org - your linux ~ #
#####

- Share files with others, See /common_pool/README.txt
- See 'Root' menu for Webmin Desktop Root and Webmin Root features
- For Teachers/Students, partial sudo (plus C programming) platform available - mail us.
[tavamani@webmin.org ~]$whoami
tavamani
[tavamani@webmin.org ~]$date
Sat Feb 27 06:02:33 CET 2021
[tavamani@webmin.org ~]$
```

Home Play Profile FAQ Contact Us

Want to use Webmin with other Linux websites? [Launch it](#)

Your terminal login id is: **tavamani** Please do check your account status under 'Profile'. If that didn't help write to us via email.

Available Lessons:

Just type 'vimtutor', if you want to learn about vim text editor. If you want to change colors, please visit 'play' menu and view first screencast.

10:31 27-02-2021

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The image displays two screenshots of the Webminal interface, which is a web-based terminal environment.

Top Screenshot:

- Terminal Window:** Shows a welcome message for Webminal, including instructions on how to share files, use the 'Root' menu, and contact the support team. The user's terminal login ID is `tavamani`. The date is shown as `Sat Feb 27 06:02:33 CET 2021`.
- Webminal Website:** The website has a navigation bar with links for Home, Play, Profile, FAQ, and Contact Us. A message prompts the user to use Webminal with other Linux websites, with a "Launch it" button. Below this, it states: "Your terminal login id is: `tavamani` Please do check your account status under 'Profile'. If that didn't help write to us via email." It also lists "Available Lessons" with a "Select" dropdown menu and provides instructions on how to use the terminal (e.g., type `'vimtutor'` to learn about vim).
- Windows Taskbar:** The taskbar at the bottom shows the Windows logo, search icon, and several application icons. The system tray on the right shows the time as 10:31 on 27-02-2021.

Bottom Screenshot:

- Terminal Window:** Shows a series of failed commands entered by the user `tavamani` in the `dir2` directory:
 - `$password user`: `-sh: password: command not found`
 - `$passwd user`: `-sh: /bin/passwd: Permission denied`
 - `$mv names sub`: `mv: cannot stat 'names': No such file or directory`
 - `$chmod`: `chmod: missing operand`
 - `$chmod 752 dir2`: `chmod: cannot access 'dir2': No such file or directory`
 - `$news sub`: `-sh: news: command not found`
- Webminal Website:** The website interface is identical to the top screenshot, showing the same navigation bar, welcome message, and instructions.
- Windows Taskbar:** The taskbar at the bottom shows the same application icons. The system tray on the right shows the time as 20:46 on 07-03-2021.

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The screenshot shows a web browser window with two tabs: 'Files' and 'Webminal'. The address bar shows 'webminal.org/terminal/'. The main content area is a terminal window with the following text:

```
[tavamani@webminal.org ~]$cut -c2 sub
A
S
[tavamani@webminal.org ~]$paste names sub
tavamani      DAA
raja          OS
durai
[tavamani@webminal.org ~]$join -a1 names sub
tavamani
join: names:2: is not sorted: raja
raja
durai
[tavamani@webminal.org ~]$uniq -c names
 1 tavamani
 1 raja
 1 durai
[tavamani@webminal.org ~]$nl sub
 1 DAA
 2 OS
[tavamani@webminal.org ~]$mkdir dir2
[tavamani@webminal.org ~]$cd dir2
[tavamani@webminal.org dir2]$rmdir dir1
rmdir: failed to remove 'dir1': No such file or directory
[tavamani@webminal.org dir2]$more
Usage: more [options] file...

Options:
-d      display help instead of ring bell
-f      count logical, rather than screen lines
-l      suppress pause after form feed
-p      do not scroll, clean screen and display text
-c      do not scroll, display text and clean line ends
-u      suppress underlining
-s      squeeze multiple blank lines into one
```

The right sidebar contains a navigation menu with links: Home, Play, Profile, FAQ, and Contact Us. Below the menu, there is a 'Launch it' button and a message: 'Your terminal login id is: **tavamani** Please do check your account status under 'Profile'. If that didn't help write to us via email. Available Lessons: Just type 'vimtutor', if you want to learn about vim text editor. If you want to change colors, please visit 'play' menu and view first screencast.'

The bottom of the browser window shows a Windows taskbar with various application icons and a system tray with the date '20:43 07-03-2021'.

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The screenshot shows a web browser window with two tabs: 'Files' and 'Webminal'. The active tab is 'Webminal', displaying a terminal window at 'webminal.org/terminal/'. The terminal shows a series of commands and their outputs:

```
[tavamani@webminal.org ~]$head sub
DAA
OS
[tavamani@webminal.org ~]$tail names
tavamani
raja
durai
[tavamani@webminal.org ~]$cmp names sub
names sub differ: byte 1, line 1
[tavamani@webminal.org ~]$diff names sub
1,3c1,2
< tavamani
< raja
< durai
---
> DAA
> OS
[tavamani@webminal.org ~]$cat >prg.c
[tavamani@webminal.org ~]$cat >prg.c
#include<stdio.h>
{
}
[tavamani@webminal.org ~]$wc prg.c
3 3 22 prg.c
[tavamani@webminal.org ~]$wc -c prg.c
22 prg.c
[tavamani@webminal.org ~]$wc -w prg.c
3 prg.c
[tavamani@webminal.org ~]$
```

The sidebar on the right contains navigation links: Home, Play, Profile, FAQ, and Contact Us. Below these links, there is a section titled 'Want to use Webminal with other Linux websites?' with a 'Launch it' button. A message states: 'Your terminal login id is: **tavamani** Please do check your account status under 'Profile'. If that didn't help write to us via email.' Below this, there is a dropdown menu for 'Available Lessons:' with a 'Select' option. A final message says: 'Just type 'vimtutor', if you want to learn about vim text editor. If you want to change colors, please visit 'play' menu and view first screencast.'

The Windows taskbar at the bottom shows the Start button, search icon, and several application icons. The system tray on the right indicates the time as 20:27 on 07-03-2021, with language set to ENG.

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The image displays two screenshots of a web browser window. The browser has three tabs: 'Files', 'Webminal', and 'how to close cat command in lin'. The address bar shows 'webminal.org/terminal/'.

The main content area is a terminal window with the following text:

```
#####
# webminal.org - your linux ~ #
#####

- Share files with others, See /common_pool/README.txt
- See 'Root' menu for Webminal Desktop Root and Webminal Root features
- For Teachers/Students, partial sudo (plus C programming) platform ava

ilable - mail us.
[tavamani@webminal.org ~]$cat >names
tavamani
raja
durai
[tavamani@webminal.org ~]$cat names
tavamani
raja
durai
[tavamani@webminal.org ~]$cat >sub
DAA
OS
[tavamani@webminal.org ~]$cat sub
DAA
OS
[tavamani@webminal.org ~]$cat names sub
tavamani
raja
durai
DAA
OS
[tavamani@webminal.org ~]$ls
file g names sub subject
[tavamani@webminal.org ~]$
```

The sidebar on the right contains navigation links: Home, Play, Profile, FAQ, and Contact Us. Below these links is a section titled 'Want to use Webminal with other Linux websites?' with a 'Launch it' button. Further down, it says 'Your terminal login id is: tavamani Please do check your account status under 'Profile'. If that didn't help write to us via email.' There is a dropdown menu for 'Available Lessons:' with 'Select' as the current selection. Below this, it says 'Just type 'vimtutor', if you want to learn about vim text editor. If you want to change colors, please visit 'play' menu and view first screencast.'

The bottom screenshot shows the same terminal window with different commands:

```
#####
# webminal.org - your linux ~ #
#####

- Share files with others, See /common_pool/README.txt
- See 'Root' menu for Webminal Desktop Root and Webminal Root features
- For Teachers/Students, partial sudo (plus C programming) platform ava

ilable - mail us.
[tavamani@webminal.org ~]$whoami
tavamani
[tavamani@webminal.org ~]$date
Sun Mar  7 15:36:05 CET 2021
[tavamani@webminal.org ~]$cal
      March 2021
Su Mo Tu We Th Fr Sa
 1  2  3  4  5  6
 7  8  9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30 31

[tavamani@webminal.org ~]$id
uid=246061(tavamani) gid=246120(tavamani) groups=246120(tavamani) context=guest_u:gues
t_r:guest_t:s0
[tavamani@webminal.org ~]$uname
Linux
[tavamani@webminal.org ~]$tty
/dev/pts/15
[tavamani@webminal.org ~]$pwd
/home/tavamani
[tavamani@webminal.org ~]$echo 'boom'
-sh: echoboom: command not found
[tavamani@webminal.org ~]$
```

The sidebar on the right is identical to the one in the top screenshot.

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Observation(20)	
Record(5)	
Total(25)	
Initial	

Result:

Thus the basic Unix commands were executed and outputs were noted.