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Introduction

- All the Linux commands are run in the terminal provided by the Linux system.
- This terminal is just like command prompt of windows operating system.
- Linux commands are case-sensitive.
- The terminal can be used to accomplish all administrative tasks. This includes
 - o Package Installation
 - o File Manipulation
 - User Management
- Execution of typed command is done only after we press the enter key.

General Commands

1. date: This command is used to display the current system date and time.

Syntax: date

Output: This command will display the Day, Month, Date, Time, Time-Zone and

Year.

2. cal: This command is used to display the calendar of a specific month or a whole year.

Syntax: cal [[month] year]

Output-1: This command will display the calendar of current month.

```
pmanish-VirtualBox: ~
manish@manish-VirtualBox:~$ cal
    December 2019
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
manish@manish-VirtualBox:~$
```

Output-2: This command will display the calendar of specified month and year.

Output-3: This command will display the calendar of specified year.

```
manish@manish-VirtualBox:~$ cal 2019
    January
                   February
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
    1 2 3 4 5
               3 4 5 6 7 8 9
                              3 4 5 6
 7 8 9 10 11 12
27 28 29 30 31
              24 25 26 27 28
                              24 25 26 27 28 29 30
                              31
                    May
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
                              Su Mo Tu We Th Fr Sa
  1 2 3 4 5 6
                       2 3 4
                     1
  8 9 10 11 12 13
              5 6 7 8 9 10 11
                              2 3 4 5 6 7 8
14 15 16 17 18 19 20 12 13 14 15 16 17 18
                              9 10 11 12 13 14 15
21 22 23 24 25 26 27 19 20 21 22 23 24 25 16 17 18 19 20 21 22
28 29 30
              26 27 28 29 30 31
                              23 24 25 26 27 28 29
     July
                   August
                                 September
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
  1 2 3 4 5 6
                              1 2 3 4 5 6 7
              4 5 6 7 8 9 10
 8 9 10 11 12 13
                             8 9 10 11 12 13 14
25 26 27 28 29 30 31 29 30
28 29 30 31
    October 0
                   November
                                  December
Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa Su Mo Tu We Th Fr Sa
    1 2 3 4 5
                         1 2
                              1 2 3 4 5 6 7
 7 8 9 10 11 12
              3 4 5 6 7 8 9
                              8 9 10 11 12 13 14
```

3. clear: This command is used to clear the terminal screen

Syntax: clear

Output: This command will clear the terminal screen.

```
Su Mo Tu We Th Fr Sa Su Mo Tu
```

```
manish@manish-VirtualBox:-$
```

4. who: This command is used to display the information about all currently logged in user on to system.

Syntax: who

Output: This command will display the Username, Terminal Number, Login Date, Login Time of all currently logged in user on to system.

```
manish@manish-VirtualBox:~
manish@manish-VirtualBox:~$ who
manish :0 2019-12-24 10:34 (:0)
manish pts/0 2019-12-24 11:08 (:0)
manish@manish-VirtualBox:~$

manish@manish-VirtualBox:~$
```

5. who am i: This command is used to get information about currently logged in user on to system.

Syntax: who am i

Output: This command will display the Username, Terminal Number, Login Date, Login Time about currently logged in user on to system.

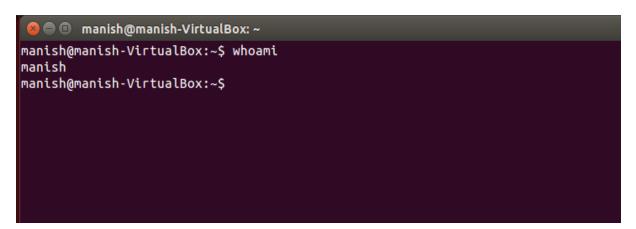
❷ □ manish@manish-VirtualBox:~
manish@manish-VirtualBox:~\$ who am i
manish pts/0 2019-12-24 11:08 (:0)
manish@manish-VirtualBox:~\$

manish@manish-VirtualBox:~\$

6. whoami: This command is used to display the username of the current user who invoked this command.

Syntax: whoami

Output: This command will display the username of the user who invoked this command.



7. exit: This command is used to exit the shell/terminal.

Syntax: exit

Output: This command will exit from the terminal.



8. history: This command is used to display the previously executed command.

Syntax-1: history

Output-1: This command will display the history of executed commands.

```
manish@manish-VirtualBox:~

manish@manish-VirtualBox:~$ history

1 ls

2 ls -a

3 clear

4 history

manish@manish-VirtualBox:~$

■
```

Syntax-2: history -c

Output-2: This command will clear the history of executed commands.

```
manish@manish-VirtualBox:~

manish@manish-VirtualBox:~$ history

1 ls

2 ls -a

3 clear

4 history

5 clear

6 history

manish@manish-VirtualBox:~$ history -c

manish@manish-VirtualBox:~$ history

1 history

manish@manish-VirtualBox:~$
```

9. bc: This command is used to start command line calculator. To exit type "quit".

Syntax: bc

Output: This command will open command line calculator.

```
manish@manish-VirtualBox:~

manish@manish-VirtualBox:~$ bc
bc 1.06.95
Copyright 1991-1994, 1997, 1998, 2000, 2004, 2006 Free Software Foundation, Inc.
This is free software with ABSOLUTELY NO WARRANTY.
For details type `warranty'.
25+65+30
120
quit
manish@manish-VirtualBox:~$
```

10. alias: This command is used to give user defined name to a command or sequence of commands.

Syntax: alias <user_defined_name>=<command>

Output: This command will create a command "D" for "date" command.

manish@manish-VirtualBox: ~
manish@manish-VirtualBox: ~ \$ D
D: command not found
manish@manish-VirtualBox: ~ \$ alias D=date
manish@manish-VirtualBox: ~ \$ D
Tue Dec 24 15:38:35 IST 2019
manish@manish-VirtualBox: ~ \$ ■

11. shutdown: This command is used to shutdown the system. We can shutdown the machine immediately, or schedule a shutdown using 24 hour format. When the shutdown is initiated, all logged-in users and processes are notified that the system is going down, and no further logins are allowed. Only root user can execute shutdown command.

Syntax-1: sudo shutdown –P now

Output-1: This command will shut down and power off the system immediately after executing this command.

Syntax-2: sudo shutdown -P +5

Output-2: This command will shut down and power off the system after five minutes from executing this command.

Syntax-3: sudo shutdown –P +5 "Message"

Output-3: This command will shut down and power off the system after five minutes from executing this command and broadcast the message "Message" to all users.

Syntax-4: sudo shutdown –c

Output-4: This command will cancel the scheduled shut down.

Syntax-5: sudo shutdown –c "Message"

Output-5: This command will cancel the scheduled shut down and broadcast the message "Message" to all users.

12. reboot: This command is used to restart or reboot the system. Only root user can execute reboot command.

Syntax: sudo reboot

Output: This command will restart or reboot the system immediately after executing this command.

13. Banner: This command is used to print the string in large letter to standard output. Double quote is optional. Maximum 10 characters are displayed in a single line.

Syntax: banner "Message"

Output: This command will display the "Linux" in large letter.

Note: If the terminal shows banner not found, then use 'sudo apt install sysvbanner' command to install the banner.

File Related Commands

1. mkdir: This command is used to create directories. It is also used to create multiple directories at once.

Syntax-1: mkdir < directory_name>

Output-1: This command will create a directory name "A"

Syntax-2: mkdir <directory_name1> <directory_name2>....... <directory_nameN> **Output-2:** This command will create three directories named "X", "Y", "Z"

Syntax-3: mkdir –p <directory_name1>/<directory_name2>/<directory_name3> **Output-3:** This command will create three directories. "F3" inside "F2", "F2" inside "F1" and "F1" in present directory.

2. rmdir: This command is used to remove empty directory.

Syntax: rmdir <directory_name>

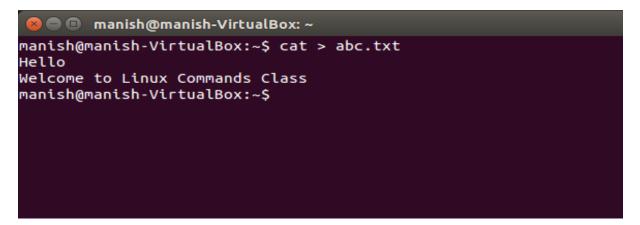
Output: This command will remove the directory name "A" only if (A is empty)

```
🤊 🖃 🗊 manish@manish-VirtualBox: ~
manish@manish-VirtualBox:~$ ls
         Desktop
                    Downloads
                                      manish
                                             Pictures
                                                       Templates
                                                                  x1.txt
abc.txt~ Documents examples.desktop
                                      Music
                                              Public
                                                        Videos
manish@manish-VirtualBox:~$ rmdir A
manish@manish-VirtualBox:~$ ls
abc.txt~ Documents examples.desktop Music
                                                Public
                                                          Videos
         Downloads manish
Desktop
                                      Pictures
                                               Templates x1.txt
manish@manish-VirtualBox:~$
```

3. cat: This command is used to create file, display content of file and append data into file.

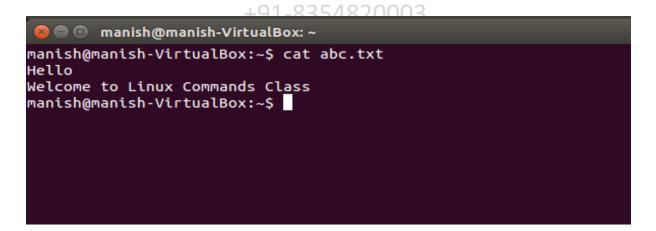
Syntax-1: cat > <file_name>

Output-1: This command will create a file "abc.txt". Use ctrl+d to save the file content.



Syntax-2: cat <file_name>

Output-2: This command will display the content of file "abc.txt".



Syntax-3: cat <file_name1> <file_name2> <file_name3> **Output-3:** This command will display the content of all files "x1.txt" "x2".

Syntax-4: cat >> <file_name>

Output-4: This command will append the text in file "abc.txt". Use ctrl+d to save the file content.

```
manish@manish-VirtualBox:~

manish@manish-VirtualBox:~$ cat abc.txt

Hello

Welcome to Linux Commands Class

manish@manish-VirtualBox:~$ cat >> abc.txt

By Manish Gupta

Department of CS/IT

manish@manish-VirtualBox:~$ cat abc.txt

Hello

Welcome to Linux Commands Class

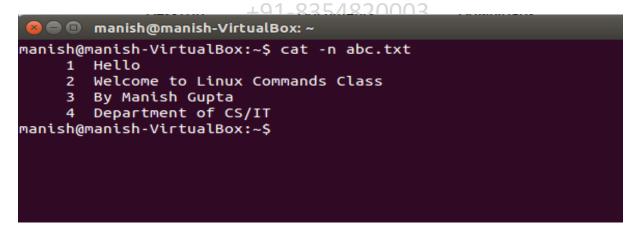
By Manish Gupta

Department of CS/IT

manish@manish-VirtualBox:~$
```

Syntax-5: cat -n <file_name>

Output-5: This command will display the content of file "abc.txt" proceeding with line numbers.



4. ls: This command is used to display files and directories.

Blue Colour : DirectoriesWhite Colour : General FilesGreen Colour : Executable Files

Syntax-1: ls

Output-1: This command will display files and directories in current directory.

Syntax-2: ls -R

Output-2: This command will display all the files in present directories and subdirectories

```
manish@manish-VirtualBox:-$ ls -R
.:
abc.txt abc.txt- Desktop Documents Downloads examples.desktop manish Music Pictures Public Templates Videos x1.txt
./Desktop:
./Documents:
./Downloads:
./manish:
scripts
./manish/scripts:
example1.scpt example2.scpt example2.scpt-
./Music:
./Pictures:
./Public:
./Templates:
./Videos:
manish@manish-VirtualBox:-$
```

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Syntax-3: ls -a

Output-3: This command will display files and directories in current directory along with hidden files (represented by dot symbol).

```
🤊 🖃 📵 manish@manish-VirtualBox: ~
manish@manish-VirtualBox:~$ ls -a
               .bash_logout Desktop
                                               .gconf
                                                              Pictures
               .bashrc
                             .dmrc
                                               .ICEauthority .profile
abc.txt
               .cache
                                                              Public
                             Documents
                                               .local
abc.txt~
                             Downloads
                                               manish
                                                              Templates
              .compiz
.bash_history .config
                                                              .vboxclient-clipbo
                            examples.desktop Music
manish@manish-VirtualBox:~$
```

Syntax-4: ls <Directory Path>

Output-4: This command will display files and directories in the specified directory "Downloads".

5. rm: This command is used to remove files from the system without confirmation.

Syntax: rm <file_name>

Output: This command will remove the file name "abc.txt".

```
🛑 💷 manish@manish-VirtualBox: ~
manish@manish-VirtualBox:~$ ls
abc.txt
         Desktop
                   Downloads
                                     manish Pictures
                                                       Templates
                                                                  xvz.txt
abc.txt~ Documents examples.desktop Music
                                             Public
                                                       Videos
manish@manish-VirtualBox:~$ rm abc.txt
manish@manish-VirtualBox:~$ ls
abc.txt~ Documents examples.desktop Music
                                               Public
                                                          Videos
         Downloads manish
Desktop
                                     Pictures Templates xyz.txt
manish@manish-VirtualBox:~$
```

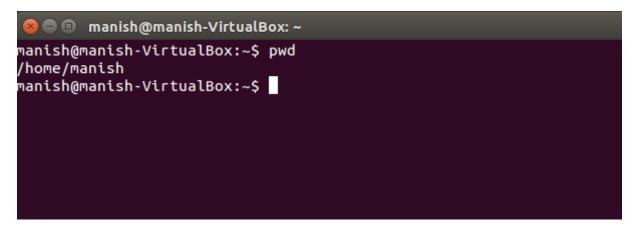
6. pwd (**Print Working Directory**): This command is used to print the path of the current working directory, starting from the root directory.

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Syntax: pwd

Output: This command will display the path of the current working directory.



7. find: This command is used to search and locate the list of files and directories.

Syntax-1: find –name <file_name>

Output-1: This command will find all the files whose name is "xyz.txt" in a current working directory.

Syntax-2: find <directory path> –name <file_name>

Output-2: This command will find all the files whose name is "xyz.txt" from the root directory.

```
manish@manish-VirtualBox: ~/manish

manish@manish-VirtualBox: ~/manish$ sudo find / -name xyz.txt

/var/tmp/xyz.txt

/home/manish/manish/scripts/xyz.txt

/home/manish/Downloads/xyz.txt

/home/manish/xyz.txt

/home/manish/Untitled Folder/xyz.txt

manish@manish-VirtualBox: ~/manish$
```

Note: Only root user can search a file or directory from root directory.

Syntax-3: find –type d –name <directory_name>

Output-3: This command will find the entire directories whose name is "manish" in a current working directory.

Syntax-4: find <directory path> –type d –name <directory_name> **Output-4:** This command will find all the directories whose name is "manish" from the root directory.

```
manish@manish-VirtualBox: ~

manish@manish-VirtualBox: ~$ sudo find / -type d -name manish

/var/lib/sudo/manish

/var/lib/lightdm-data/manish

/media/manish

/home/manish

/home/manish/manish

manish@manish-VirtualBox: ~$
```

Note: Only root user can search a file or directory from root directory.

8. gzip: This command is used to compresses files. Each single file is compressed into a single file. After compression it deleted the original file. The compress file would have an extension ".gz"

Syntax: gzip <file_name>

Output: This command will compress the file name "xyz.txt".

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9. gunzip: This command is used to decompresses or expand files. After decompression it deleted the original file.

Syntax: gunzip <file_name>

Output: This command will decompress the file name "xyz.txt.gz".

- 10. wc (word count): This command is used to find out number of lines, word count, byte and characters count in the specified files. By default it displays four-columnar output.
 - First column shows number of lines
 - Second column shows number of words
 - Third column shows number of characters
 - .Fourth column is the file name

Syntax: wc <file_name>

Output: This command will display the number of lines, words and characters in the file "abc.txt".

11. cd (change directory): This command is used to change current working directory.

Syntax-1: cd [directory_name]

Output-1: This command will change current working directory to a subdirectory "Download".

```
🛑 🗊 manish@manish-VirtualBox: ~/Downloads
manish@manish-VirtualBox:~$ ls
ab
         В
                    Downloads
                                      Music
                                                Templates
                                                                          z
                                                Untitled Folder xyz.txt
abc.txt
         Desktop
                   examples.desktop Pictures
                                      Public
abc.txt~ Documents manish
                                                Videos
manish@manish-VirtualBox:~$ cd Downloads
manish@manish-VirtualBox:~/Downloads$ pwd
/home/manish/Downloads
manish@manish-VirtualBox:~/Downloads$
```

Syntax-2: cd/

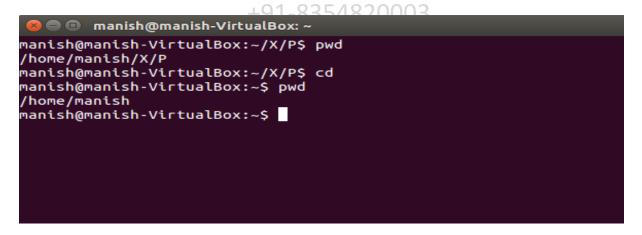
Output-2: This command will change current working directory to root directory, the root directory is the first directory in Linux file system hierarchy.

Syntax-3: cd <directory_name1>/<sub_directory_name2>

Output-3: This command will change current working directory to "P" which is a sub directory of "X" directory.

Syntax-4: cd OR cd ~

Output-4: This command will change current working directory to the home directory.



Syntax-5: cd ...

Output-5: This command is will change to the directory one level up from the current directory.

```
manish@manish-VirtualBox: ~/X

manish@manish-VirtualBox: ~/X/P$ pwd

/home/manish/X/P

manish@manish-VirtualBox: ~/X/P$ cd ..

manish@manish-VirtualBox: ~/X$ pwd

/home/manish/X

manish@manish-VirtualBox: ~/X$
```

Syntax-6: cd <directory_name>

Output-6: This command is will navigate to a directory with white spaces. Instead of using double quotes we can use single quotes.

```
🔊 🖨 📵 manish@manish-VirtualBox: ~/manish gupta
manish@manish-VirtualBox:~$ ls
         Desktop
                                          Public
ab
                            manish
abc.txt
         Documents
                            manish gupta Templates
                                                            xyz.txt
                                          Untitled Folder
abc.txt~ Downloads
                            Music
          examples.desktop Pictures
                                          Videos
manish@manish-VirtualBox:~$ pwd
/home/manish
manish@manish-VirtualBox:~$ cd "manish gupta"
manish@manish-VirtualBox:~/manish gupta$ pwd
/home/manish/manish gupta
manish@manish-VirtualBox:~/manish gupta$
```

12. mv (move) : This command is used to rename a file or folder. It also moves group of files to different directory.

Syntax-1: mv <filename> <new_file_name>

Output-1: This command will rename the "ab.txt" file to "a123.txt" file.

```
manish@manish-VirtualBox: ~
manish@manish-VirtualBox:~$ ls
abc.txt
         Desktop
                            manish
                                          Public
                            manish gupta
abc.txt~
         Documents
                                          Templates
                                                           xyz.txt
                                          Untitled Folder
ab.txt
         Downloads
                           Music
         examples.desktop Pictures
                                          Videos
manish@manish-VirtualBox:~$ mv ab.txt a123.txt
manish@manish-VirtualBox:~$ ls
a123.txt Desktop
                            manish
                                          Public
                                                           х
abc.txt
         Documents
                            manish gupta Templates
                                                           xyz.txt
abc.txt~ Downloads
                            Music
                                          Untitled Folder
          examples.desktop
                            Pictures
                                          Videos
                                                           z
manish@manish-VirtualBox:~$
```

Syntax-2: my file "new file path"

Output-2: This command will Moves the file "abc.txt" from present working directory to the new location the "/home/manish/X".

```
🛑 📵 manish@manish-VirtualBox: ~/X
manish@manish-VirtualBox:~$ ls
abc.txt
        Desktop examples.desktop
                                       Music
                                                 Templates
abc.txt~
          Documents
                                       Pictures
                                                 Untitled Folder
                   manish
                                                 Videos
          Downloads manish gupta
                                       Public
manish@manish-VirtualBox:~$ sudo mv abc.txt /home/manish/X
manish@manish-VirtualBox:~$ cd X
manish@manish-VirtualBox:~/X$ ls
abc.txt
manish@manish-VirtualBox:~/X$
```

Summary

1. General Commands

SR. No.	Command	Use
1.	date	Used to display the current system date and time.
2.	cal	Used to display the calendar of a specific month/year.
3.	clear	Used to clear the terminal screen.
4.	Who	Used to get information about all currently logged in user.
5.	Who am i	Used to get information about currently logged in user.
6.	Whoami	Used to display the username of the current user.
7.	exit	Used to exit the shell/terminal.
8.	history	Used to view the previously executed command.
9.	bc	Used for command line calculator.
10.	alias	Used to give user defined name to a command or sequence of commands.
11.	shutdown	Used to shutdown the system.
12.	reboot	Used to restart or reboot the system.
13.	banner	Used to print the string in large letter to standard output.

2. File/Directory Related Commands

SR. No.	Command	Use
1.	mkdir	User to create directories.
2.	rmdir	Used to remove empty directory.
3.	cat	Used to create file, display content of file and append data into
		file.
4.	ls	Used to display files and directories.
5.	rm	Used to remove files from the system without confirmation.
6.	pwd	Used to print the path of the current working directory
7.	find	Used to search and locate the list of files and directories.
8.	gzip	Used to compresses files.
9.	gunzip	Used to decompresses or expand files.
10.	wc	Used to find out number of lines, word count, byte and
		characters count in the specified files.
11.	cd	Used to change current working directory.
12.	mv	Used to rename/move a file or folder.