



Assignment for Linux - WEEK 2 Activity 3

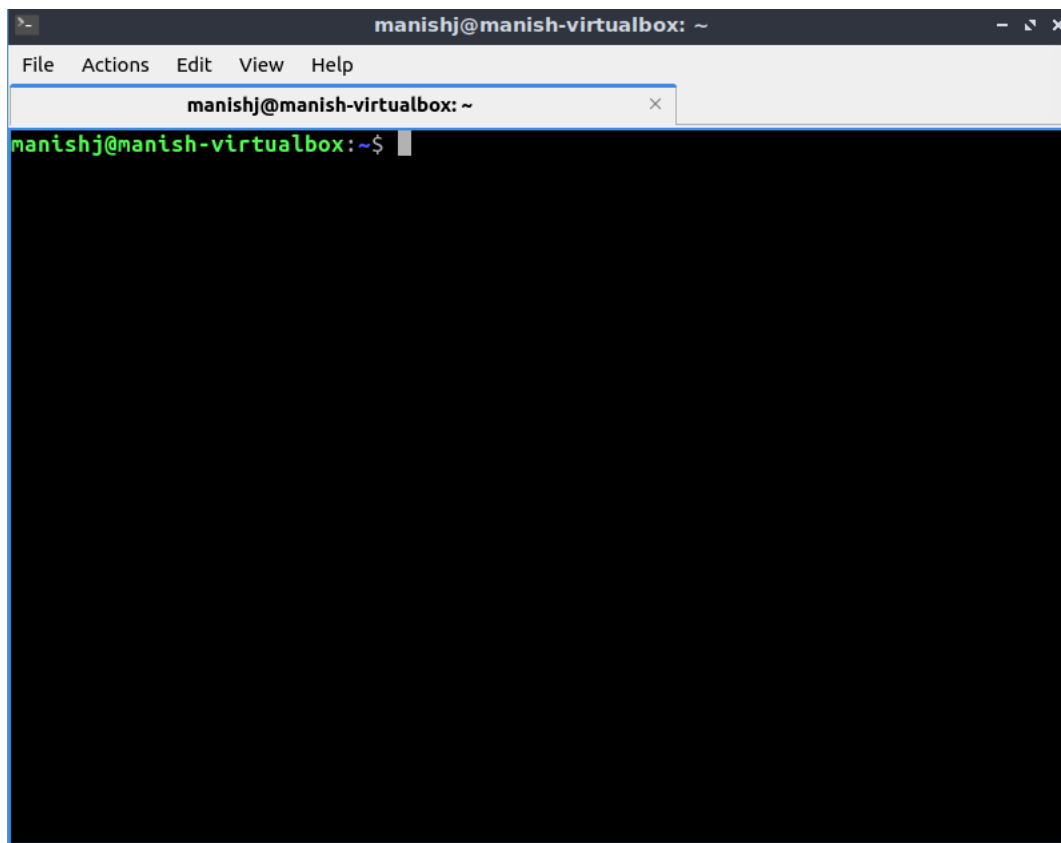
What is Linux?

Linux, a robust and community-driven operating system inspired by Unix, embraces an open-source ethos. Its versatility extends across a plethora of computing platforms, ranging from traditional computers and servers to mobile and embedded devices. Enjoying widespread support, Linux stands as one of the most universally embraced operating systems. In the following document, we explore and showcase fundamental Linux commands using QTerminal tool. Though all these activities could be performed using the graphical user interface (GUI) but being a developer, we would be using Terminal Tools over GUI.

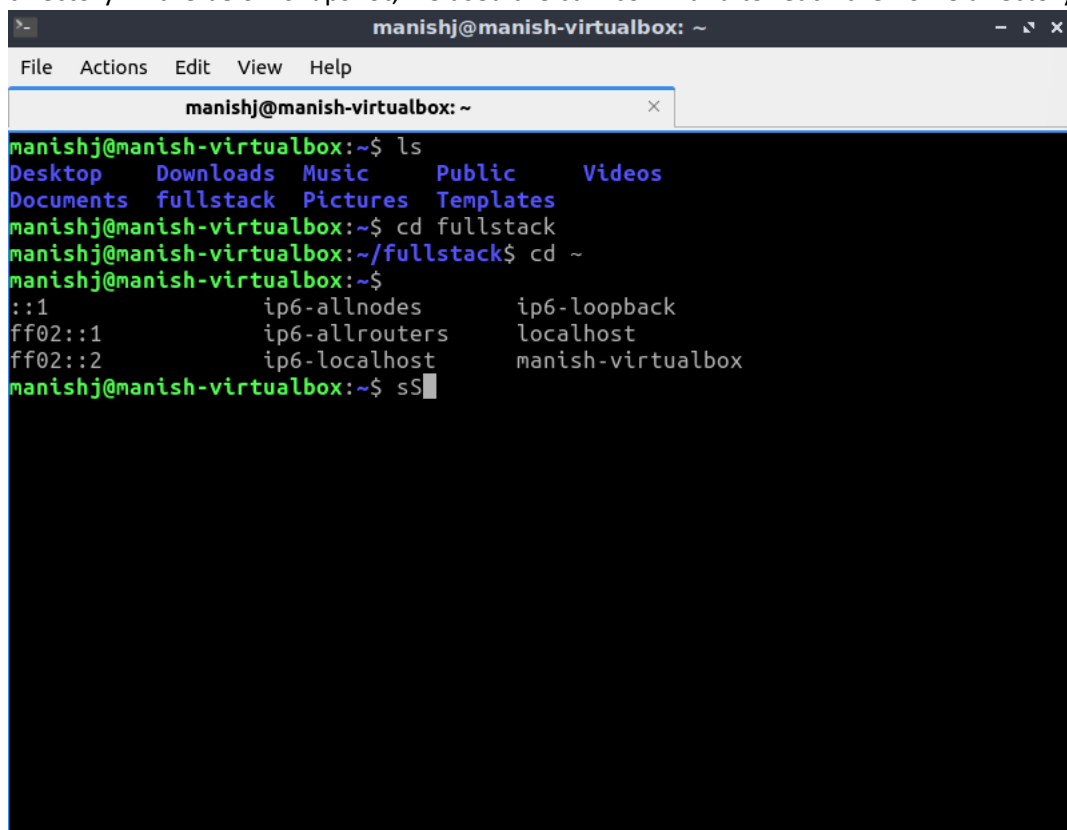
1. **Snapshot** of the the Virtual Machine is taken with the name Snapshot 2. This helps in restoring the machine instance in case it is corrupt or some wrong doings are performed.

Name	Taken
✓  Snapshot 2	17-02-2024 11:55 (24 seconds ago)
 Current State	

1. Machine is logged In using the password.

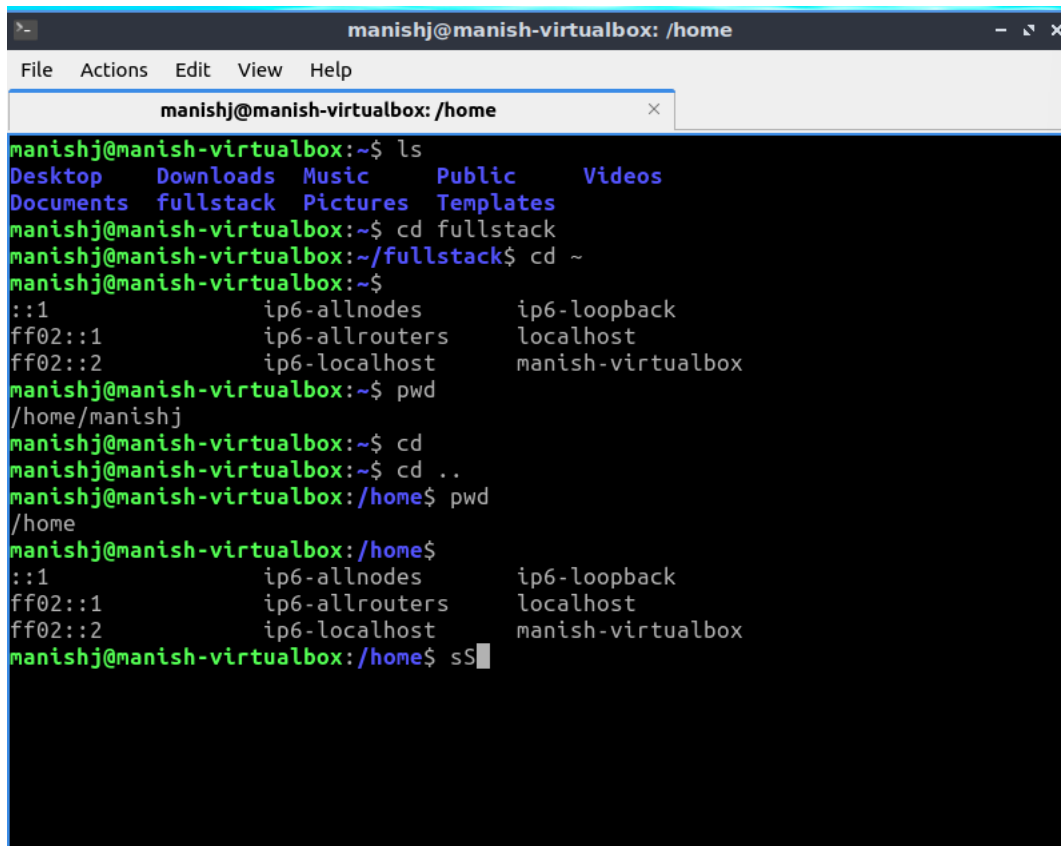
A terminal window titled 'manishj@manish-virtualbox: ~' with a menu bar (File, Actions, Edit, View, Help). The terminal shows a single prompt 'manishj@manish-virtualbox:~\$' with a cursor.

2. CD command is used to change the directory into the newly created directory or home directory. In the below snapshot, we used the `cd ~` command to reach the home directory.

A terminal window titled 'manishj@manish-virtualbox: ~' with a menu bar (File, Actions, Edit, View, Help). The terminal shows the following commands and output:

```
manishj@manish-virtualbox:~$ ls
Desktop  Downloads Music    Public  Videos
Documents fullstack Pictures Templates
manishj@manish-virtualbox:~$ cd fullstack
manishj@manish-virtualbox:~/fullstack$ cd ~
manishj@manish-virtualbox:~$
:::1          ip6-allnodes      ip6-loopback
ff02::1       ip6-allrouters    localhost
ff02::2       ip6-localhost      manish-virtualbox
manishj@manish-virtualbox:~$ sS
```

3. PWD command is used to print the working directory details.



```
manishj@manish-virtualbox: /home
File Actions Edit View Help
manishj@manish-virtualbox: /home x
manishj@manish-virtualbox:~$ ls
Desktop Downloads Music Public Videos
Documents fullstack Pictures Templates
manishj@manish-virtualbox:~$ cd fullstack
manishj@manish-virtualbox:~/fullstack$ cd ~
manishj@manish-virtualbox:~$
:::1 ip6-allnodes ip6-loopback
ff02::1 ip6-allrouters localhost
ff02::2 ip6-localhost manish-virtualbox
manishj@manish-virtualbox:~$ pwd
/home/manishj
manishj@manish-virtualbox:~$ cd
manishj@manish-virtualbox:~$ cd ..
manishj@manish-virtualbox:/home$ pwd
/home
manishj@manish-virtualbox:/home$
:::1 ip6-allnodes ip6-loopback
ff02::1 ip6-allrouters localhost
ff02::2 ip6-localhost manish-virtualbox
manishj@manish-virtualbox:/home$ sS
```

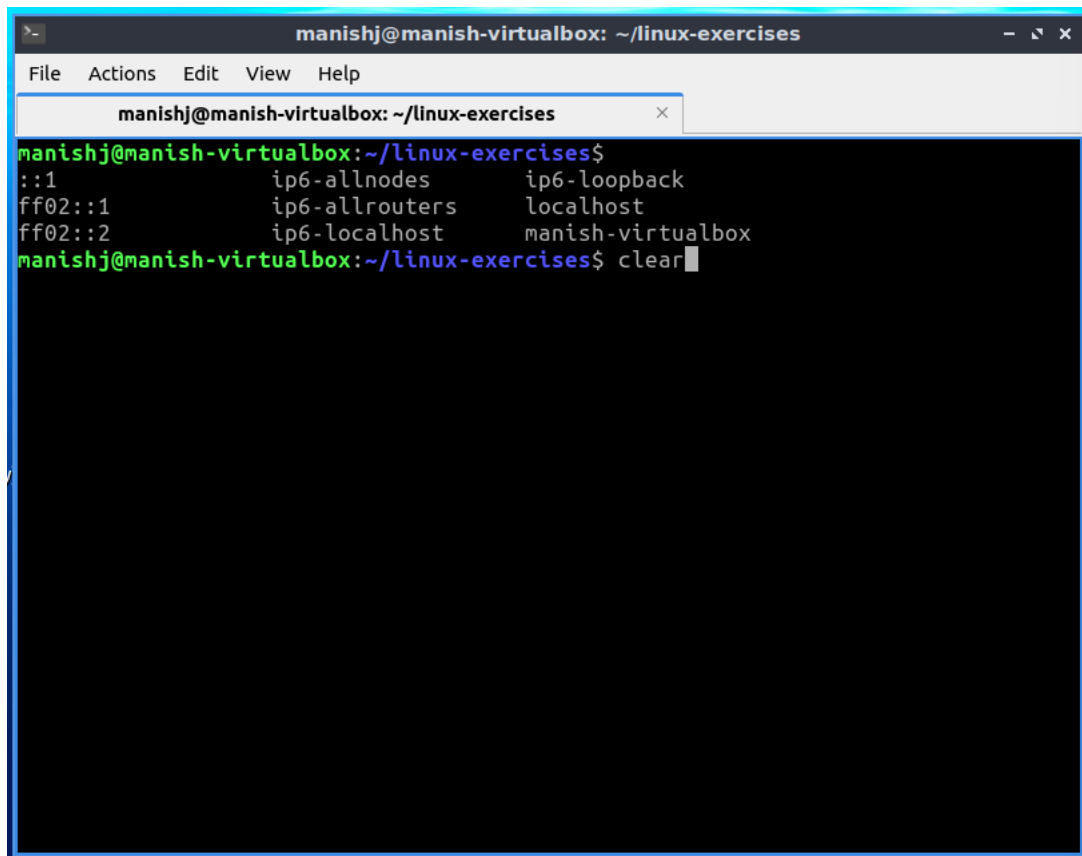
4. MKDIR command is used to create new directory. In the snapshot below we created two directories named DEV and FULLSTACK.

```
manishj@manish-virtualbox: ~  
File Actions Edit View Help  
manishj@manish-virtualbox: ~  
ff02::2      ip6-localhost      manish-virtualbox  
manishj@manish-virtualbox:~$ pwd  
/home/manishj  
manishj@manish-virtualbox:~$ cd  
manishj@manish-virtualbox:~$ cd ..  
manishj@manish-virtualbox:/home$ pwd  
/home  
manishj@manish-virtualbox:/home$  
::1          ip6-allnodes      ip6-loopback  
ff02::1      ip6-allrouters    localhost  
ff02::2      ip6-localhost      manish-virtualbox  
manishj@manish-virtualbox:/home$ mkdir dev fullstack  
mkdir: cannot create directory 'dev': Permission denied  
mkdir: cannot create directory 'fullstack': Permission denied  
manishj@manish-virtualbox:/home$ ls  
manishj  
manishj@manish-virtualbox:/home$ cd ~  
manishj@manish-virtualbox:~$ dir  
Desktop  Downloads  Music      Public     Videos  
Documents fullstack  Pictures   Templates  
manishj@manish-virtualbox:~$ mkdir dev fullstack  
mkdir: cannot create directory 'fullstack': File exists  
manishj@manish-virtualbox:~$ ls  
Desktop  Documents  fullstack  Pictures  Templates  
dev      Downloads  Music      Public    Videos  
manishj@manish-virtualbox:~$
```

5. TOUCH command is used to create the new files. In the below snapshot we created file.txt, file2.html and file.txt in the linux-exercises directory.

```
manishj@manish-virtualbox: ~/linux-exercises  
File Actions Edit View Help  
manishj@manish-virtualbox: ~/linux-exercises  
manishj@manish-virtualbox:~$ ls  
Desktop  Documents  fullstack  Pictures  Templates  
dev      Downloads  Music      Public    Videos  
manishj@manish-virtualbox:~$ mkdir linux-exercises fullstack-exercises  
manishj@manish-virtualbox:~$ ls  
Desktop  Downloads      linux-exercises  Public  
dev      fullstack     Music            Templates  
Documents fullstack-exercises  Pictures          Videos  
manishj@manish-virtualbox:~$ cd linux-exercises  
manishj@manish-virtualbox:~/linux-exercises$ touch file.txt file2.html file3  
manishj@manish-virtualbox:~/linux-exercises$ ls  
file2.html file3 file.txt  
manishj@manish-virtualbox:~/linux-exercises$
```

6. CLEAR command is used to clear the terminal screen.



The screenshot shows a terminal window titled "manishj@manish-virtualbox: ~/linux-exercises". The window has a menu bar with "File", "Actions", "Edit", "View", and "Help". Below the menu bar is a tab labeled "manishj@manish-virtualbox: ~/linux-exercises". The terminal content shows the following commands and output:

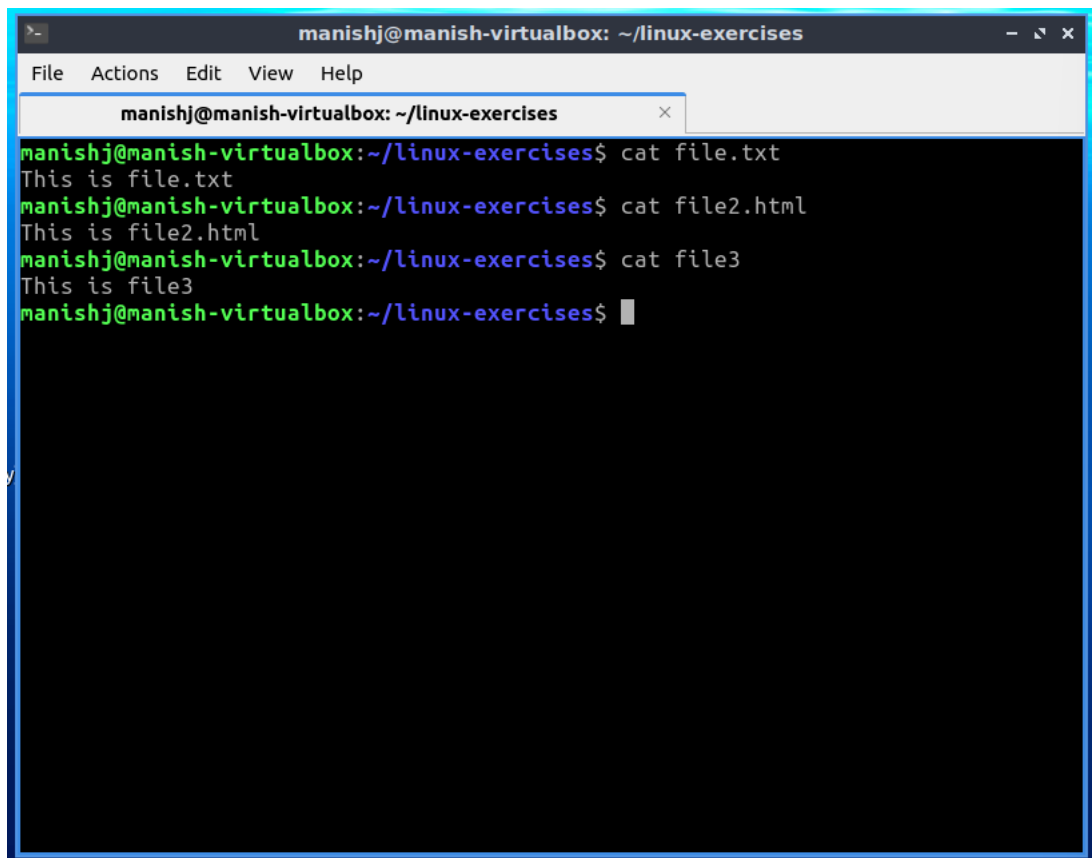
```
manishj@manish-virtualbox:~/linux-exercises$  
::1          ip6-allnodes    ip6-loopback  
ff02::1      ip6-allrouters localhost  
ff02::2      ip6-localhost  manish-virtualbox  
manishj@manish-virtualbox:~/linux-exercises$ clear
```

The terminal screen is now cleared, showing a solid black background.

7. ECHO command is used to add text to the files. In the below snapshot we used echo command to add text to the files file.txt, file2.html and file.

```
manishj@manish-virtualbox: ~/linux-exercises
File Actions Edit View Help
manishj@manish-virtualbox: ~/linux-exercises x
manishj@manish-virtualbox:~$ ls
Desktop  Documents  fullstack  Pictures  Templates
dev      Downloads  Music      Public    Videos
manishj@manish-virtualbox:~$ mkdir linux-exercises fullstack-exercises
manishj@manish-virtualbox:~$ ls
Desktop  Downloads  linux-exercises  Public
dev      fullstack  Music            Templates
Documents fullstack-exercises  Pictures          Videos
manishj@manish-virtualbox:~$ cd linux-exercises
manishj@manish-virtualbox:~/linux-exercises$ touch file.txt file2.html file3
manishj@manish-virtualbox:~/linux-exercises$ ls
file2.html file3 file.txt
manishj@manish-virtualbox:~/linux-exercises$ echo "This is file.txt" >file.txt
manishj@manish-virtualbox:~/linux-exercises$ echo "This is file2.html" >file2.html
manishj@manish-virtualbox:~/linux-exercises$ echo "This is file3" >file3
manishj@manish-virtualbox:~/linux-exercises$
:::1          ip6-allnodes      ip6-loopback
ff02::1      ip6-allrouters    localhost
ff02::2      ip6-localhost      manish-virtualbox
manishj@manish-virtualbox:~/linux-exercises$
```

8. CAT command is used to read the text in the files. In the below snapshot we used the cat command to read the text that we added in the point no. 8.

A screenshot of a terminal window titled 'manishj@manish-virtualbox: ~/linux-exercises'. The window has a menu bar with 'File', 'Actions', 'Edit', 'View', and 'Help'. Below the menu bar is a tab labeled 'manishj@manish-virtualbox: ~/linux-exercises'. The terminal shows three commands being executed: 'cat file.txt' resulting in 'This is file.txt', 'cat file2.html' resulting in 'This is file2.html', and 'cat file3' resulting in 'This is file3'. The prompt 'manishj@manish-virtualbox:~/linux-exercises\$' is visible at the end of each line.

```
manishj@manish-virtualbox: ~/linux-exercises
File Actions Edit View Help
manishj@manish-virtualbox: ~/linux-exercises
manishj@manish-virtualbox:~/linux-exercises$ cat file.txt
This is file.txt
manishj@manish-virtualbox:~/linux-exercises$ cat file2.html
This is file2.html
manishj@manish-virtualbox:~/linux-exercises$ cat file3
This is file3
manishj@manish-virtualbox:~/linux-exercises$
```

9. MKDIR is used to create the new directories and RMDIR command is used to remove the directories. We used both the command to create and remove the TEST director.

```
manishj@manish-virtualbox: ~  
File Actions Edit View Help  
manishj@manish-virtualbox: ~  
manishj@manish-virtualbox:~/linux-exercises$ cat file2.html  
This is file2.html  
manishj@manish-virtualbox:~/linux-exercises$ cat file3  
This is file3  
manishj@manish-virtualbox:~/linux-exercises$ ls  
file2.html file3 file.txt  
manishj@manish-virtualbox:~/linux-exercises$ cd ..  
manishj@manish-virtualbox:~$ ls  
Desktop Downloads linux-exercises Public  
dev fullstack Music Templates  
Documents fullstack-exercises Pictures Videos  
manishj@manish-virtualbox:~$ mkdir test  
manishj@manish-virtualbox:~$ ls  
Desktop Downloads linux-exercises Public Videos  
dev fullstack Music Templates  
Documents fullstack-exercises Pictures test  
manishj@manish-virtualbox:~$ rmdir test  
manishj@manish-virtualbox:~$ ls  
Desktop Downloads linux-exercises Public  
dev fullstack Music Templates  
Documents fullstack-exercises Pictures Videos  
manishj@manish-virtualbox:~$  
::1 ip6-allnodes ip6-loopback  
ff02::1 ip6-allrouters localhost  
ff02::2 ip6-localhost manish-virtualbox  
manishj@manish-virtualbox:~$ ss
```

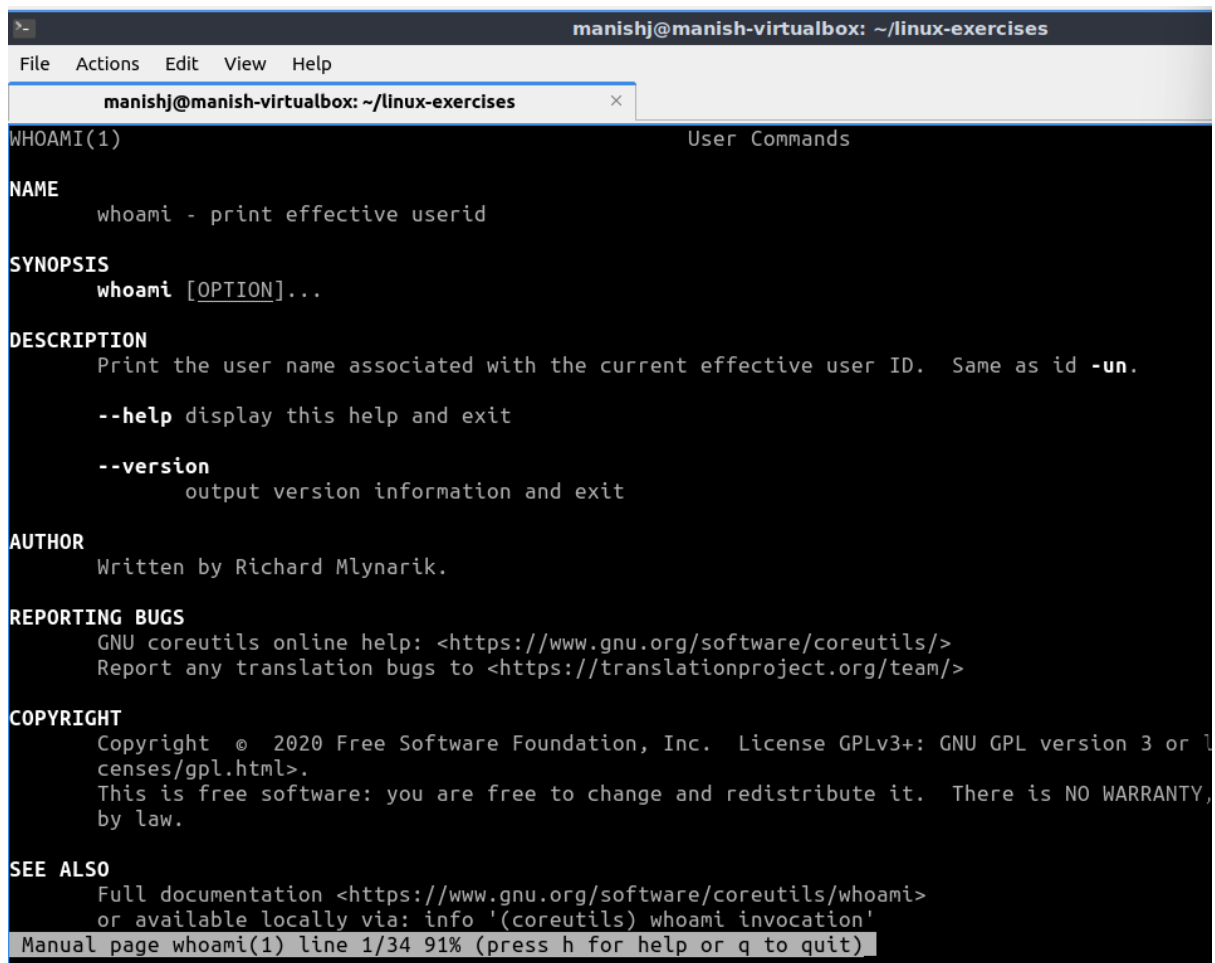
10. CP and MV command is used to copy and move the files to some new or existing directory. In the snapshot below we demonstrated the same to copy and move in the newly created directory called DESTINATION_DIRECTORY.


```
manishj@manish-virtualbox: ~/linux-exercises
File Actions Edit View Help
manishj@manish-virtualbox: ~/linux-exercises x
manishj@manish-virtualbox:~/linux-exercises$ cp file1.txt destination_directory
cp: cannot stat 'file1.txt': No such file or directory
manishj@manish-virtualbox:~/linux-exercises$ ls
file2.html file3 file.txt
manishj@manish-virtualbox:~/linux-exercises$ cp file.txt destination_directory
manishj@manish-virtualbox:~/linux-exercises$ ls
destination_directory file2.html file3 file.txt
manishj@manish-virtualbox:~/linux-exercises$ cat file.txt
This is file.txt
manishj@manish-virtualbox:~/linux-exercises$
::1          ip6-allnodes      ip6-loopback
ff02::1      ip6-allrouters   localhost
ff02::2      ip6-localhost     manish-virtualbox
manishj@manish-virtualbox:~/linux-exercises$ mv file2.html destination_directory
manishj@manish-virtualbox:~/linux-exercises$ ls
destination_directory file3 file.txt
manishj@manish-virtualbox:~/linux-exercises$
::1          ip6-allnodes      ip6-loopback
ff02::1      ip6-allrouters   localhost
ff02::2      ip6-localhost     manish-virtualbox
manishj@manish-virtualbox:~/linux-exercises$ sS
```

11. WHOAMI – command is used to display the current user and our case it is - manishj
HISTORY – command is used to display a list of recently executed commands.

```
manishj@manish-virtualbox: ~/linux-exercises
File Actions Edit View Help
manishj@manish-virtualbox: ~/linux-exercises x
manishj@manish-virtualbox:~/linux-exercises$ whoami
manishj
manishj@manish-virtualbox:~/linux-exercises$ history
 1 sudo systemctl isolate graphical
 2 sudo systemctl system-default multi-user
 3 sudo systemctl set-default multi-user
 4 quit
 5 clear
 6 whoami
 7 sudo systemctl set-default graphical
 8 quit
 9 exit
10 ls
11 cd fullstack
12 cd ~
13 pwd
14 cd
15 cd ..
16 pwd
17 mkdir dev fullstack
18 ls
19 cd ~
20 dir
21 mkdir dev fullstack
22 ls
23 cleare
24 clear
25 ls
26 mkdir linux-exercises fullstack-exercices
27 ls
28 cd linux-exercises
29 touch file.txt file2.html file3
30 ls
```

MAN - command is used to display the manual page. In the snapshot below, we used MAN WHOAMI and it shows the complete use and manual of the whoami command.



```
manishj@manish-virtualbox: ~/linux-exercises
File Actions Edit View Help
manishj@manish-virtualbox: ~/linux-exercises x
WHOAMI(1) User Commands
NAME
  whoami - print effective userid
SYNOPSIS
  whoami [OPTION]...
DESCRIPTION
  Print the user name associated with the current effective user ID. Same as id -un.
  --help display this help and exit
  --version output version information and exit
AUTHOR
  Written by Richard Mlynarik.
REPORTING BUGS
  GNU coreutils online help: <https://www.gnu.org/software/coreutils/>
  Report any translation bugs to <https://translationproject.org/team/>
COPYRIGHT
  Copyright © 2020 Free Software Foundation, Inc. License GPLv3+: GNU GPL version 3 or later
  <https://www.gnu.org/licenses/gpl.html>.
  This is free software: you are free to change and redistribute it. There is NO WARRANTY,
  to the extent permitted by law.
SEE ALSO
  Full documentation <https://www.gnu.org/software/coreutils/whoami>
  or available locally via: info '(coreutils) whoami invocation'
Manual page whoami(1) line 1/34 91% (press h for help or q to quit)
```

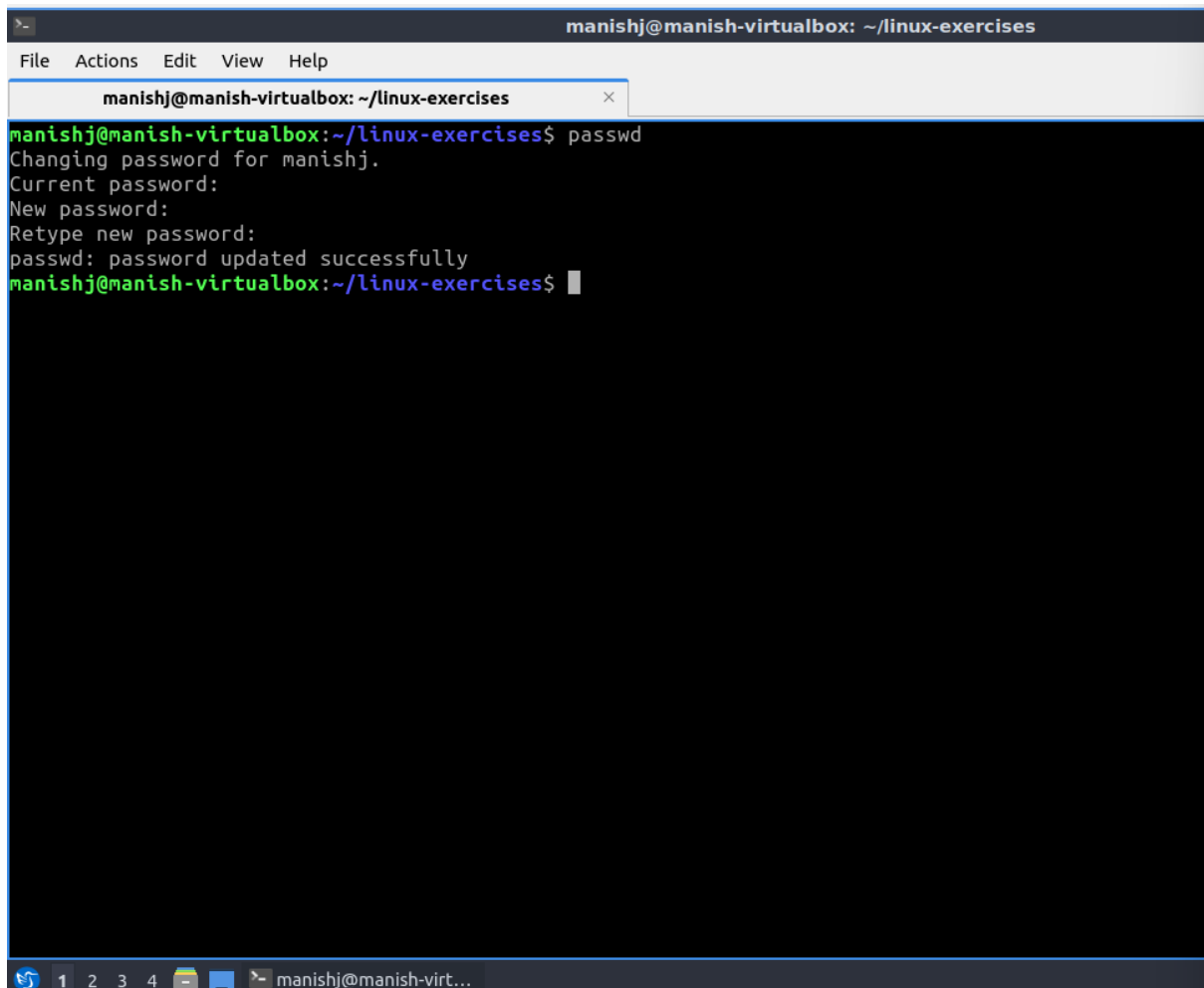
12. SUDO APT UPDATE and SUDO APT UPGRADE command is used to update the package lists for upgrades and upgrade command is used to install the available upgrades.

```
manishj@manish-virtualbox: ~/linux-exercises
File Actions Edit View Help
manishj@manish-virtualbox: ~/linux-exercises x
manishj@manish-virtualbox:~/linux-exercises$ sudo apt update && sudo apt upgrade
[sudo] password for manishj:
it:1 http://archive.ubuntu.com/ubuntu jammy InRelease
et:2 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
et:3 http://archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
it:4 http://archive.ubuntu.com/ubuntu jammy-backports InRelease
et:5 http://archive.ubuntu.com/ubuntu jammy-updates/main i386 Packages [570 kB]
et:6 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1 377 kB]
et:7 http://archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [273 kB]
et:8 http://archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [1 431 kB]
et:9 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [1 161 kB]
et:10 http://archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [235 kB]
et:11 http://archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1 049 kB]
et:12 http://security.ubuntu.com/ubuntu jammy-security/main i386 Packages [404 kB]
et:13 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [213 kB]
et:14 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [1 401 kB]
et:15 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [231 kB]
et:16 http://security.ubuntu.com/ubuntu jammy-security/universe i386 Packages [592 kB]
et:17 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [842 kB]
et:18 http://archive.ubuntu.com/ubuntu jammy-updates/universe i386 Packages [689 kB]
et:19 http://archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [42,1 kB]
et:20 http://archive.ubuntu.com/ubuntu jammy-updates/multiverse i386 Packages [4 184 B]
9% [16 Packages store 0 B]
```

13. SUDO APT INSTALL <PACKAGE_NAME> command is used to install the named binary package.

```
manishj@manish-virtualbox: ~/linux-exercises
File Actions Edit View Help
manishj@manish-virtualbox: ~/linux-exercises x
manishj@manish-virtualbox:~/linux-exercises$ sudo apt install wget
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
wget is already the newest version (1.21.2-2ubuntu1).
wget set to manually installed.
The following packages were automatically installed and are no longer required:
  linux-headers-6.2.0-26-generic linux-hwe-6.2-headers-6.2.0-26 linux-image-6.2.0-26-generic lin
  linux-modules-extra-6.2.0-26-generic
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 2 not upgraded.
manishj@manish-virtualbox:~/linux-exercises$ sudo apt install tree
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
tree is already the newest version (2.0.2-1).
tree set to manually installed.
The following packages were automatically installed and are no longer required:
  linux-headers-6.2.0-26-generic linux-hwe-6.2-headers-6.2.0-26 linux-image-6.2.0-26-generic lin
  linux-modules-extra-6.2.0-26-generic
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 2 not upgraded.
manishj@manish-virtualbox:~/linux-exercises$
```

14. PASSWD command is used to change the existing password of the current user.



The image shows a terminal window titled "manishj@manish-virtualbox: ~/linux-exercises". The window has a menu bar with "File", "Actions", "Edit", "View", and "Help". Below the menu bar is a tab labeled "manishj@manish-virtualbox: ~/linux-exercises". The terminal content shows the user running the command "passwd". The output is as follows:

```
manishj@manish-virtualbox:~/linux-exercises$ passwd
Changing password for manishj.
Current password:
New password:
Retype new password:
passwd: password updated successfully
manishj@manish-virtualbox:~/linux-exercises$
```

The terminal window has a dark background with light-colored text. The prompt "manishj@manish-virtualbox:~/linux-exercises\$" is shown in green. The output text is in white. The window's title bar and menu bar are in a dark blue color. The bottom of the window shows a taskbar with icons for a terminal, a file manager, and a web browser, along with the text "manishj@manish-virt...".