

Lab Report: 02

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i) What is Linux command?

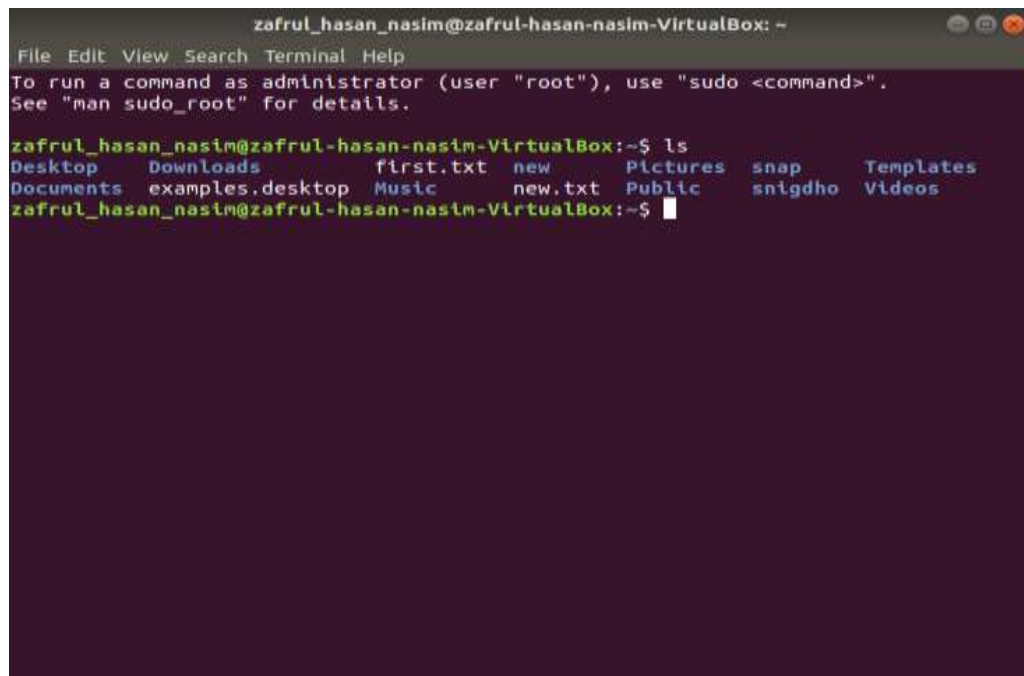
Ans: The Linux command line is a text interface to your computer. Often referred to as the shell, terminal, console, prompt or various other names, it can give the appearance of being complex and confusing to use.

ii) 15 commands in Linux operating system:

- 1.ls
- 2.ls -al
- 3.pwd
- 4.cd
- 5.mkdir
- 6.mv
- 7.rmdir
- 8.touch
- 9.echo
- 10.cat
- 11.cp
- 12.rm
- 13.df
- 14.du
15. head

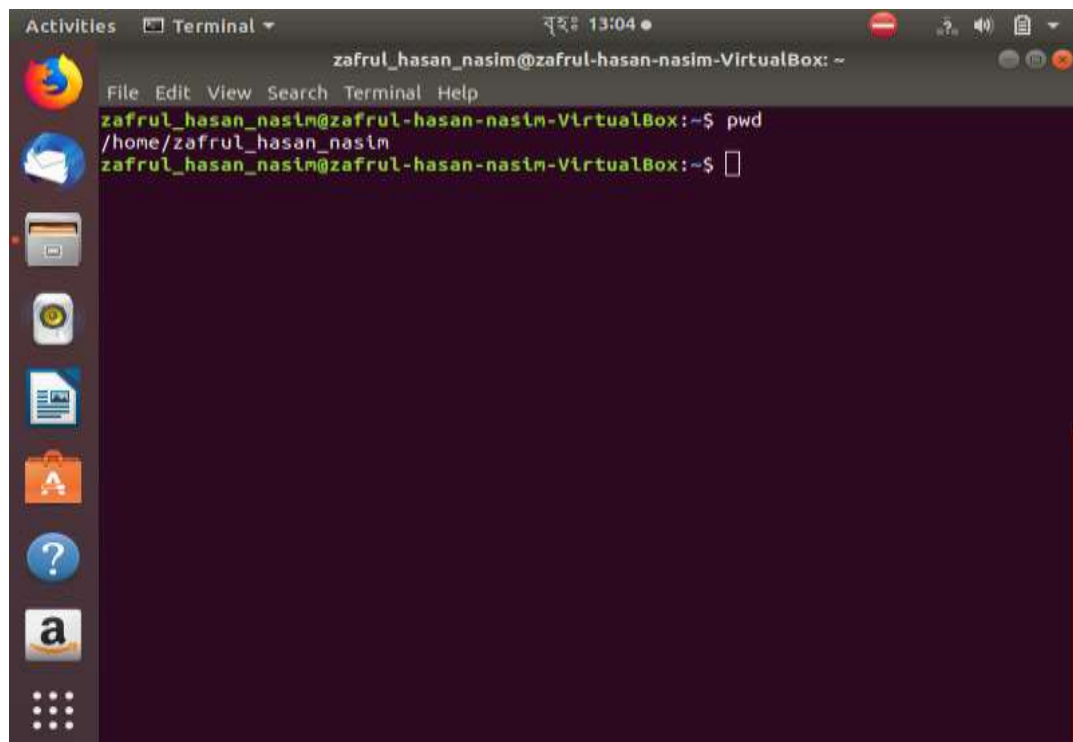
iii) Describe the operation of basic linux command :

1.ls command : ls command is used to list information about files and directories within the file system in the current directory.



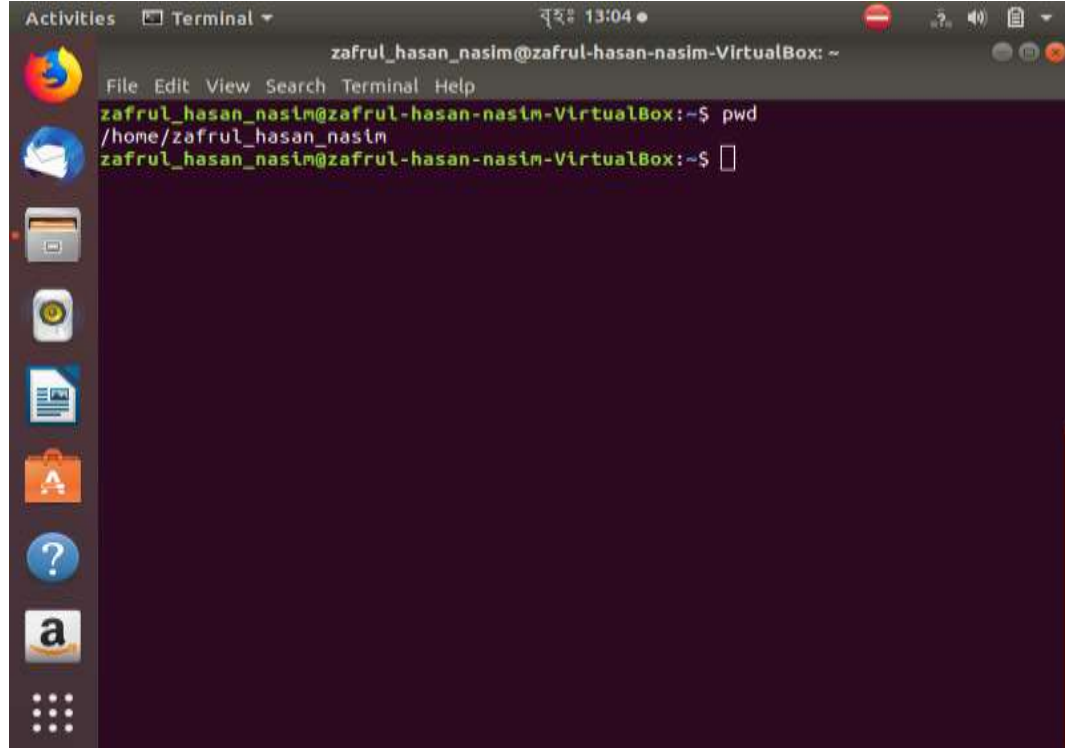
```
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~  
File Edit View Search Terminal Help  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~$ ls  
Desktop    Downloads  first.txt  new      Pictures  snap      Templates  
Documents  examples.desktop  Music      new.txt  Public    snigdho   Videos  
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~$
```

2.ls -al command : This command shows the extended list of the current directory.

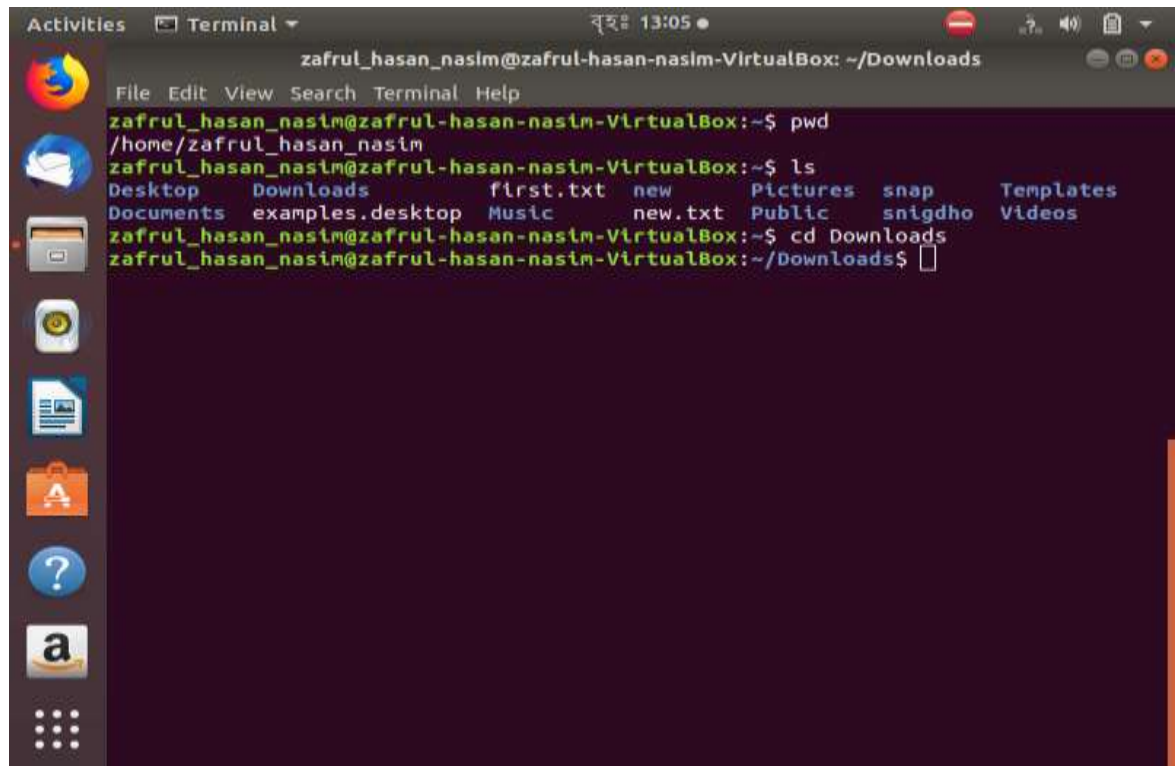


```
Activities Terminal 13:04  
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~  
File Edit View Search Terminal Help  
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~$ pwd  
/home/zafrul_hasan_nasim  
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~$
```

3. pwd command : pwd stands for Print Working Directory. It prints the path of the working directory, starting from the root.

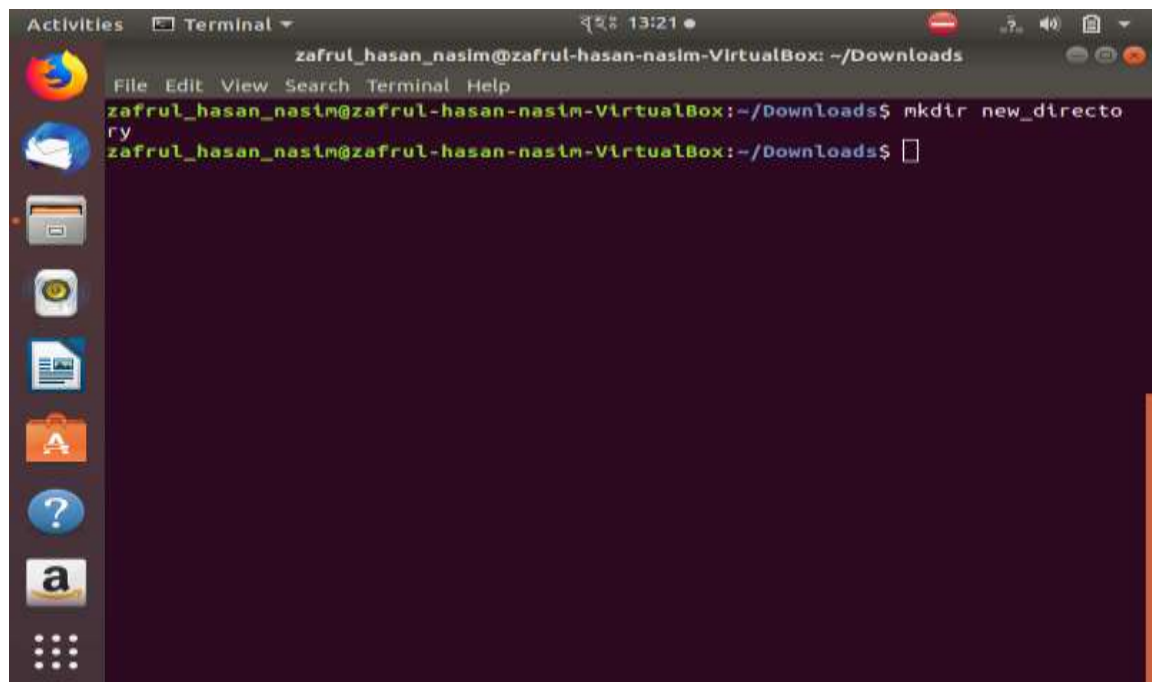
A screenshot of a Linux terminal window. The window title is "zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~". The terminal shows the command "pwd" being entered, followed by the output "/home/zafrul_hasan_nasim". The prompt "zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~\$" is visible. The terminal has a dark purple background. On the left side of the window, there is a vertical dock with several application icons: Firefox, a mail icon, a file manager icon, a clock icon, a document icon, a shopping bag icon, a question mark icon, and an Amazon logo icon. The top of the window shows a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The system status bar at the top right shows the time "13:04" and some system icons.

4.cd command: The cd command, also known as chdir (change directory), is a command-line shell command used to change the current working directory.

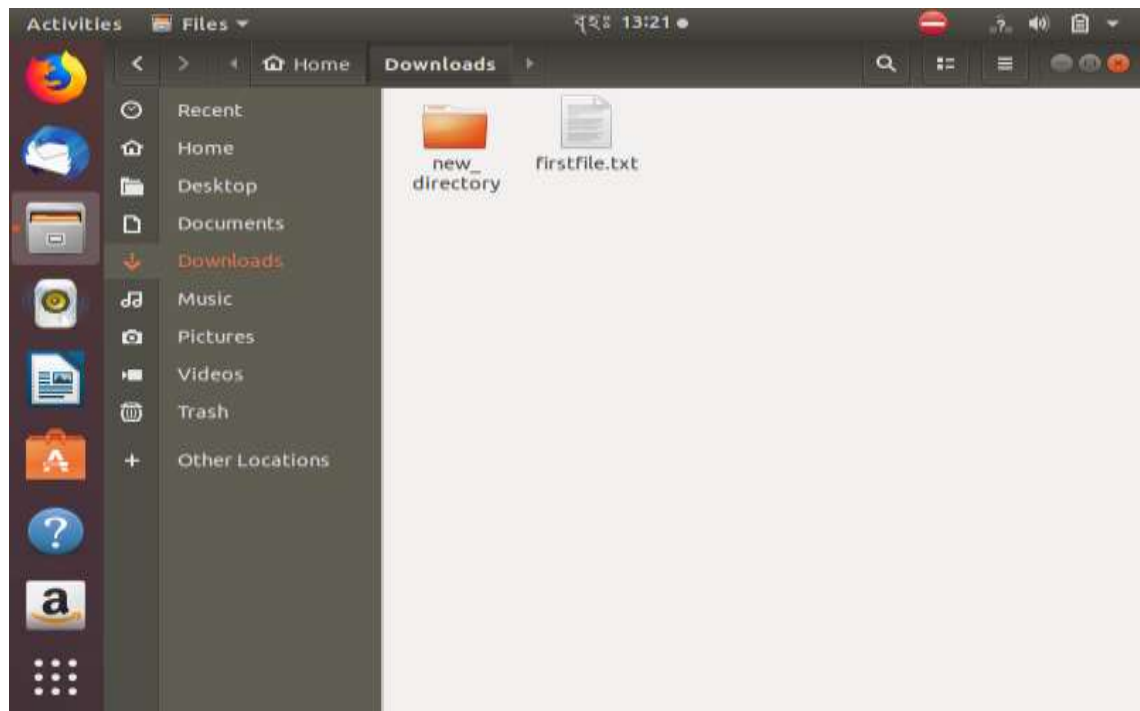


```
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Downloads
File Edit View Search Terminal Help
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~$ pwd
/home/zafrul_hasan_nasim
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~$ ls
Desktop  Downloads  first.txt  new      Pictures  snap      Templates
Documents examples.desktop Music      new.txt  Public    snigdho    Videos
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~$ cd Downloads
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$
```

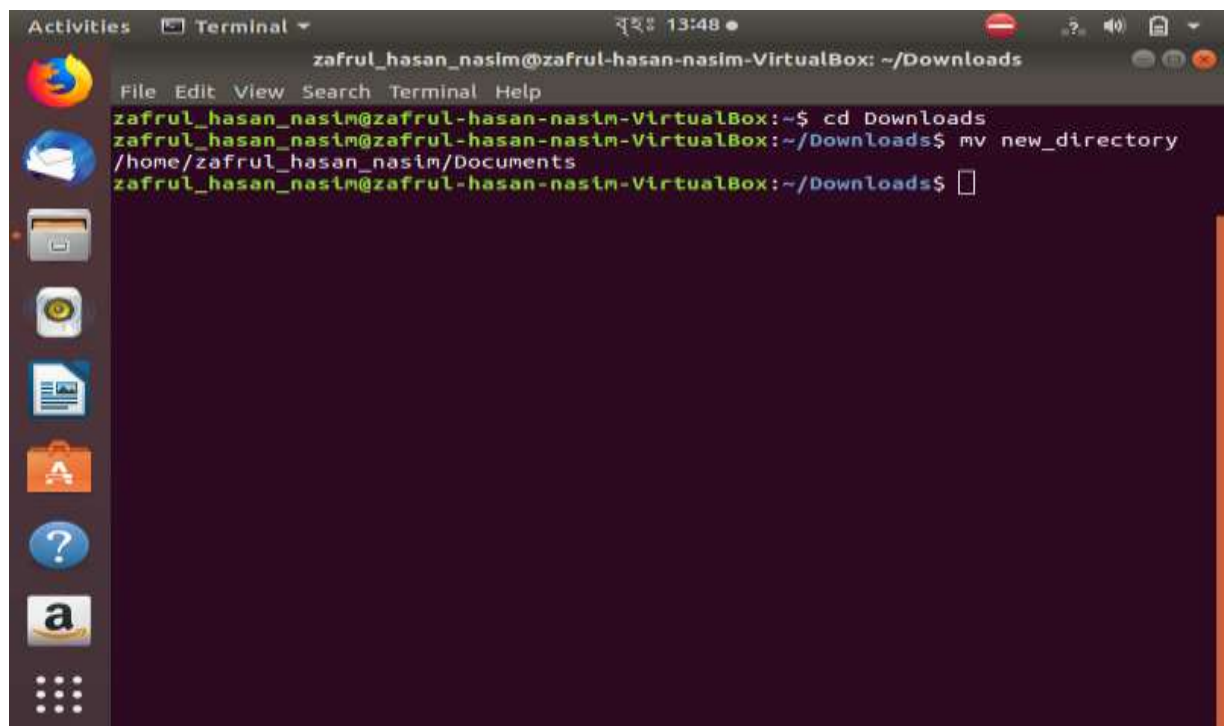
5.mkdir command: The mkdir command in Linux allows users to create or make new directories.

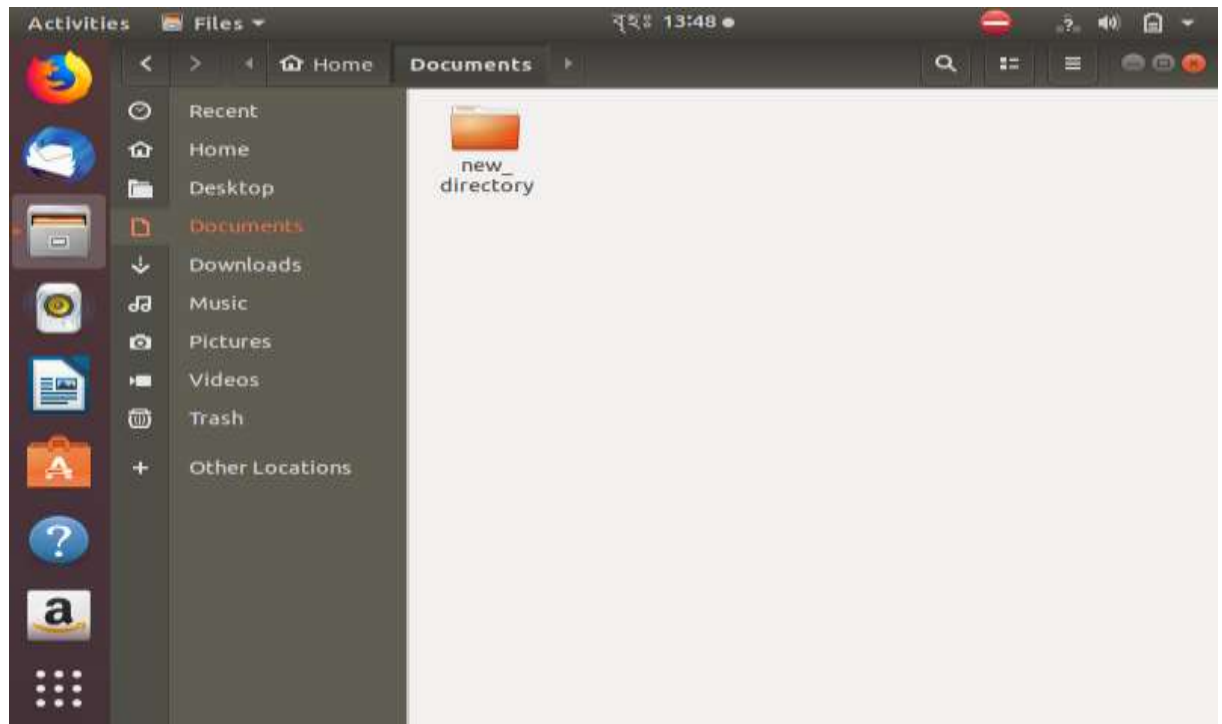


```
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Downloads
File Edit View Search Terminal Help
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$ mkdir new_directory
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$
```

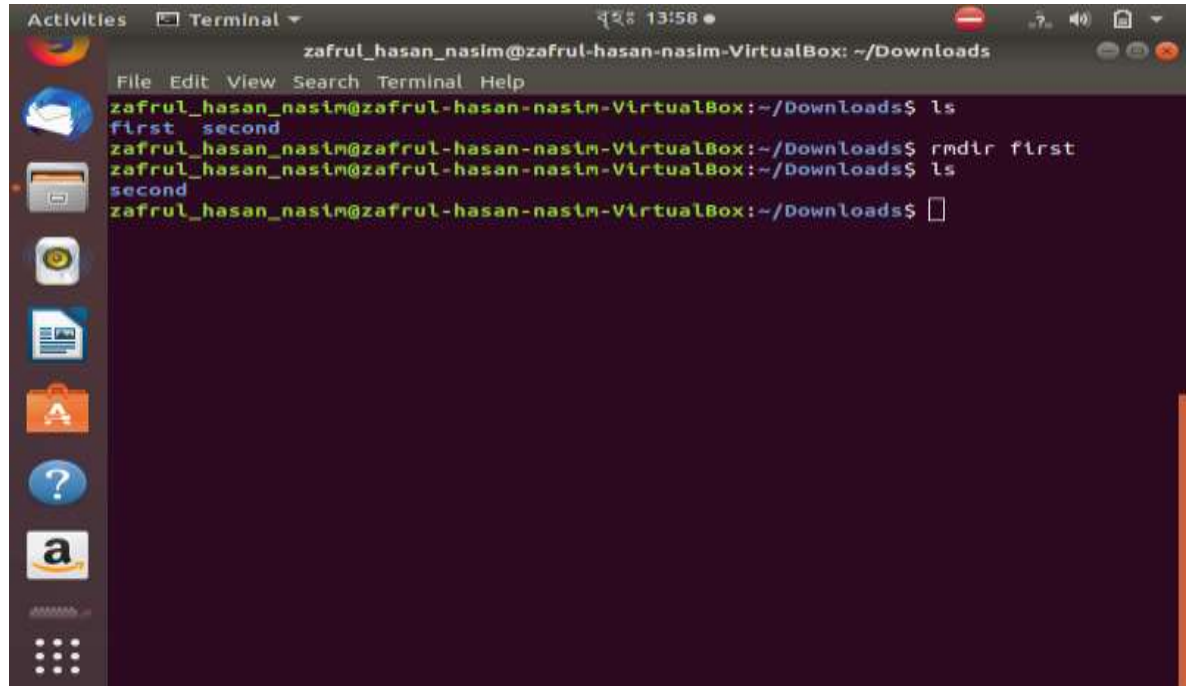


6.mv command: The mv command is a command line utility that moves files or directories from one place to another .

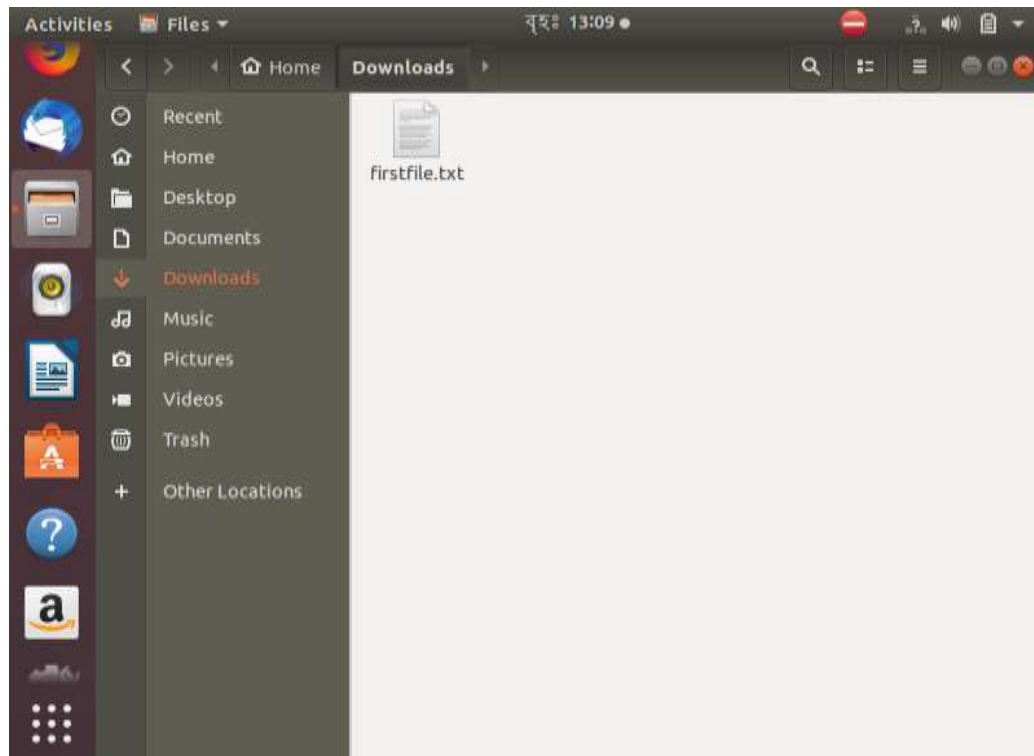
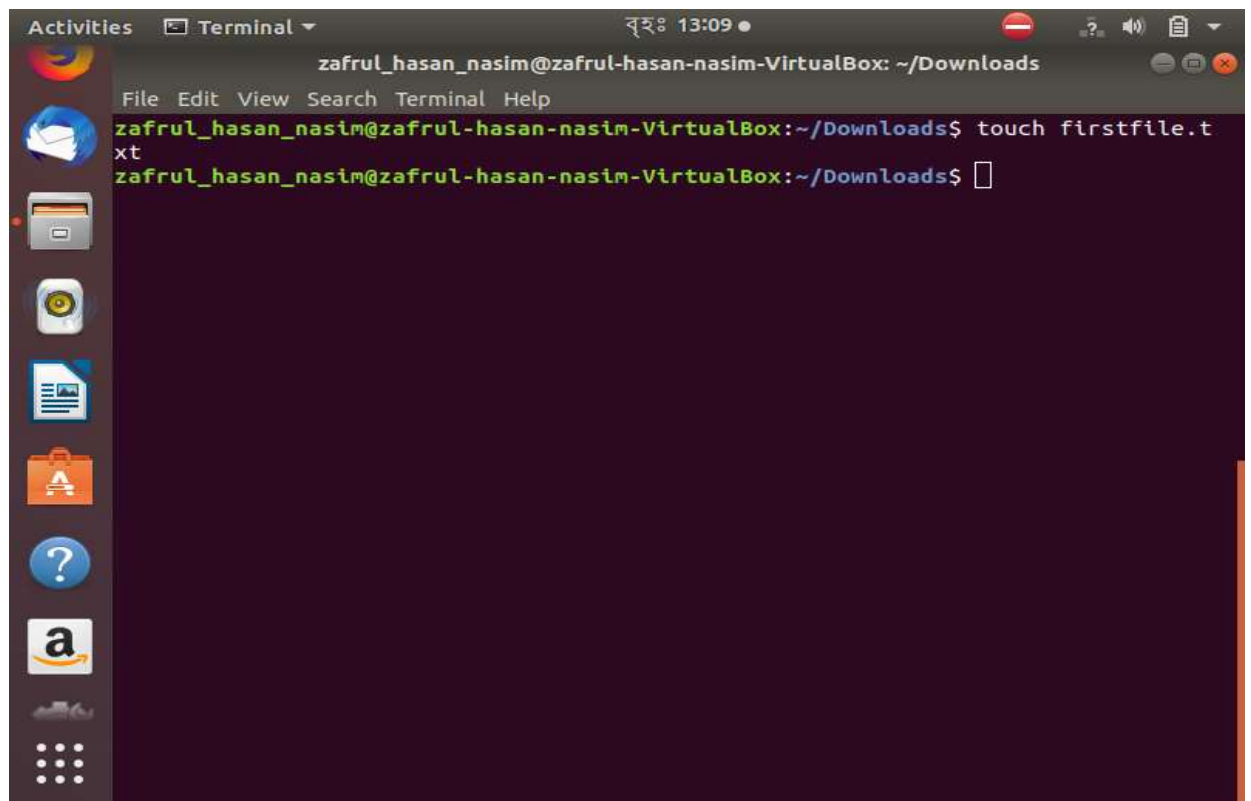




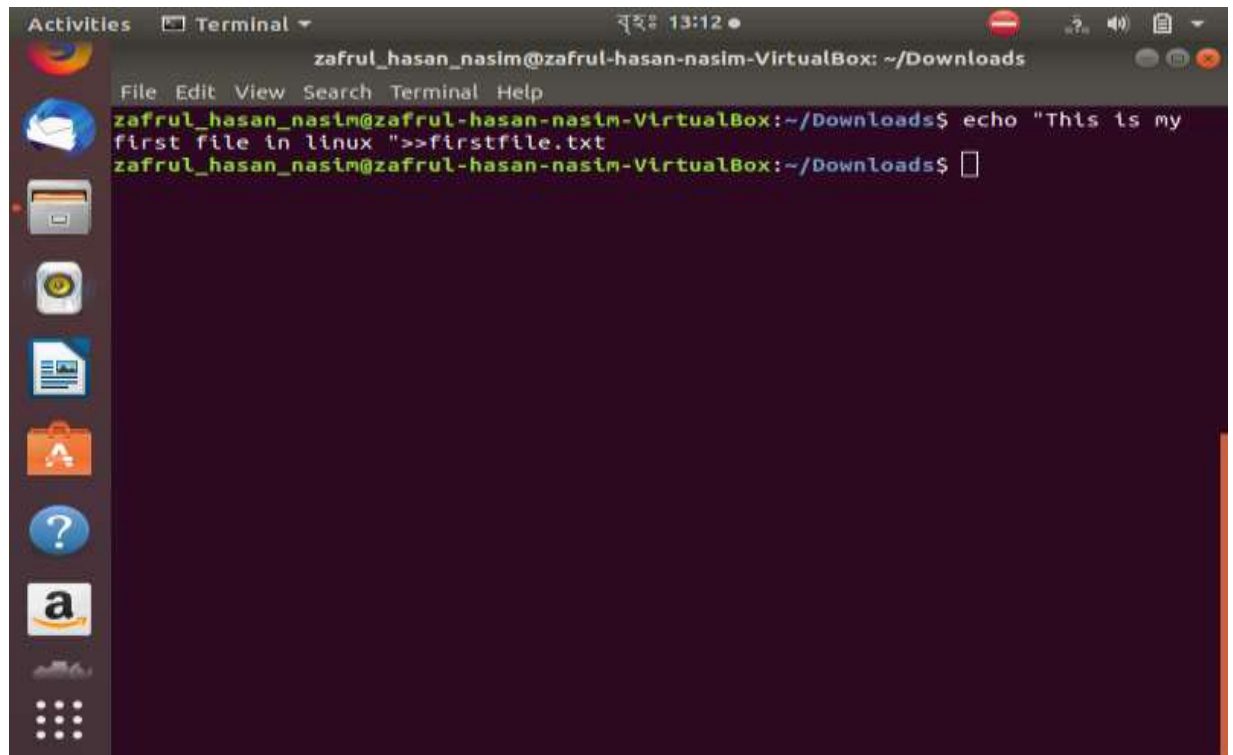
7. rmdir command: rmdir command removes each and every directory specified in the command line only if these directories are empty



8. touch command : The touch command is a standard command used in UNIX/Linux operating system which is used to create, change and modify timestamps of a file.

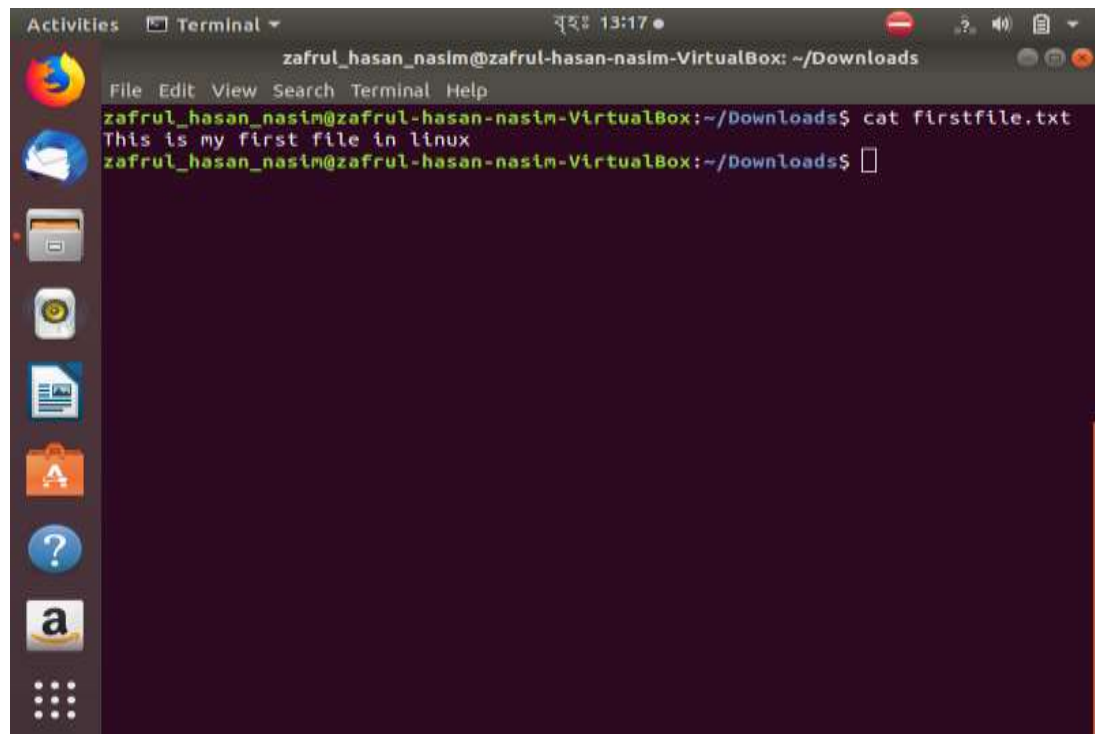


9.echo command : echo is a command that outputs the strings it is being passed as arguments.it also uses write in the files.

A screenshot of a Linux terminal window. The window title is "zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Downloads". The terminal shows the command `echo "This is my first file in linux ">>firstfile.txt` being entered and executed. The prompt `zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$` is visible on the line below. The terminal has a dark background and a light-colored cursor. On the left side of the terminal window, there is a vertical sidebar with various application icons, including a file manager, a web browser, and a terminal icon. The top of the window shows a menu bar with "Activities", "Terminal", and a search icon. The system clock in the top right corner shows "13:12".

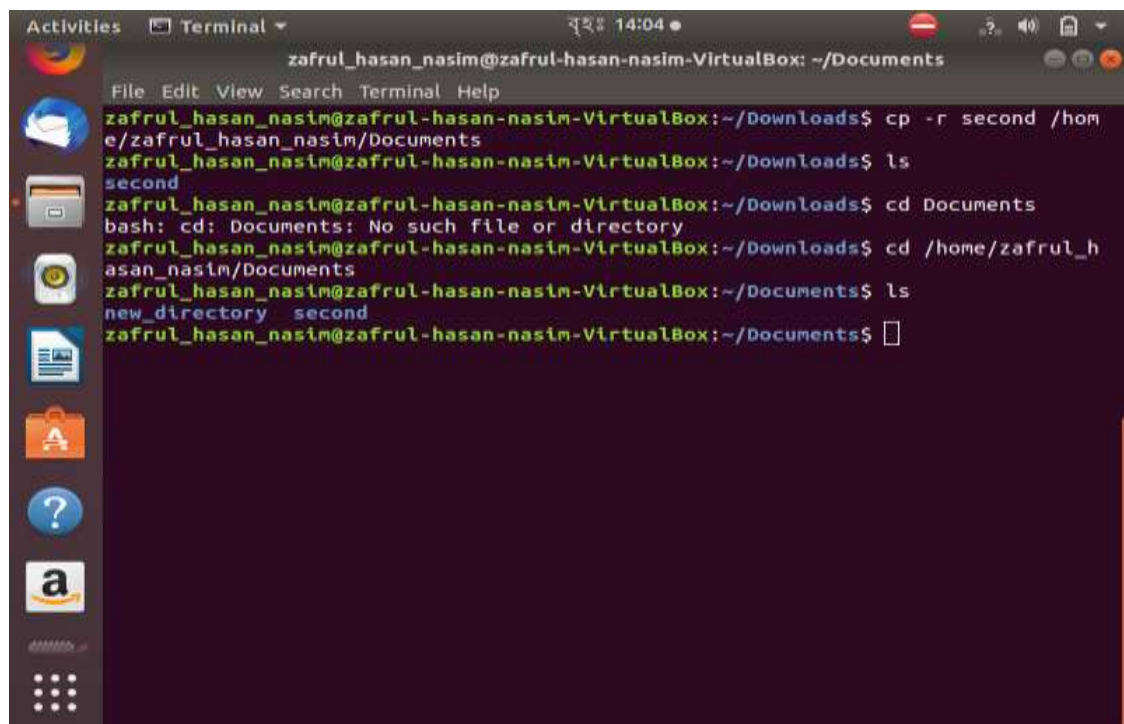
```
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Downloads
File Edit View Search Terminal Help
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$ echo "This is my
first file in linux ">>firstfile.txt
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$
```

10.cat command : cat is a standard Unix utility that reads files sequentially, writing them to standard output.

A terminal window titled 'zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Downloads'. The window shows the command 'cat firstfile.txt' being executed, which outputs 'This is my first file in linux'. The prompt is now 'zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Downloads\$'.

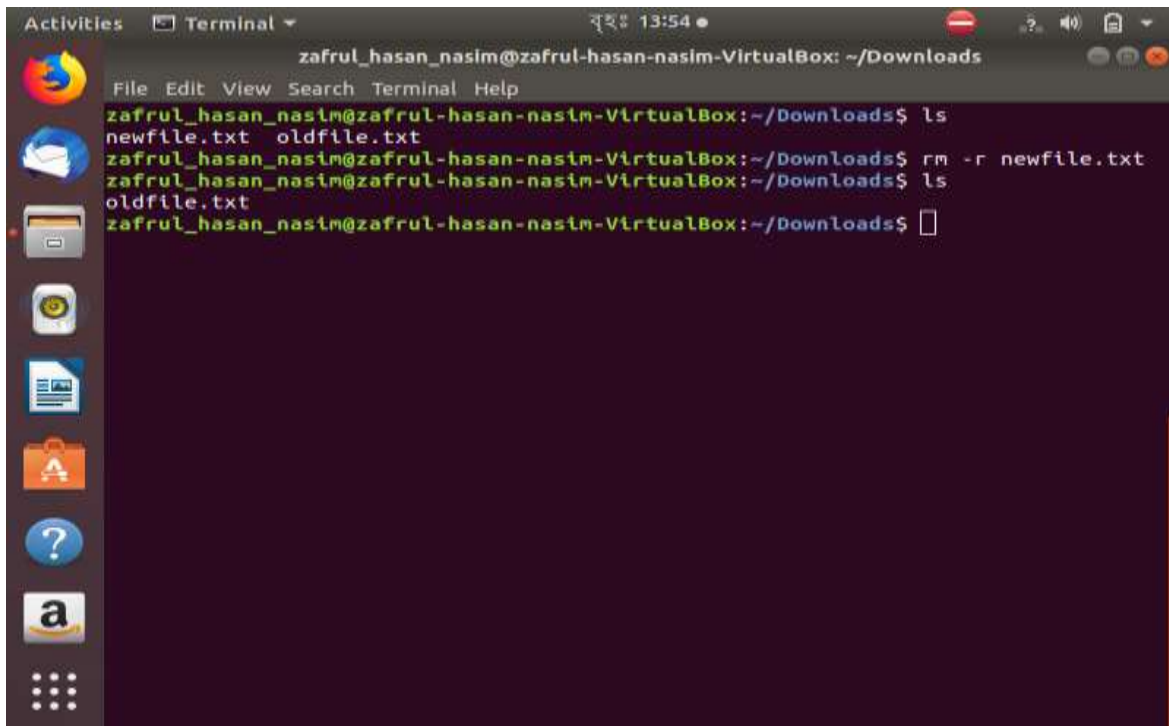
```
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Downloads$ cat firstfile.txt
This is my first file in linux
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Downloads$
```

11.cp command : The cp command is a command-line utility for copying files and directories.

A terminal window titled 'zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Documents'. The window shows the command 'cp -r second /home/zafrul_hasan_nasim/Documents' being executed. The prompt then changes to 'zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Downloads\$'. The user then runs 'ls', showing 'second'. The user then runs 'cd Documents', which results in an error 'bash: cd: Documents: No such file or directory'. The user then runs 'cd /home/zafrul_hasan_nasim/Documents', which results in an error 'bash: cd: /home/zafrul_hasan_nasim/Documents: No such file or directory'. The user then runs 'ls', showing 'new_directory second'. The prompt is now 'zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Documents\$'.

```
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Downloads$ cp -r second /home/zafrul_hasan_nasim/Documents
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Downloads$ ls
second
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Downloads$ cd Documents
bash: cd: Documents: No such file or directory
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Downloads$ cd /home/zafrul_hasan_nasim/Documents
bash: cd: /home/zafrul_hasan_nasim/Documents: No such file or directory
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Documents$ ls
new_directory second
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Documents$
```

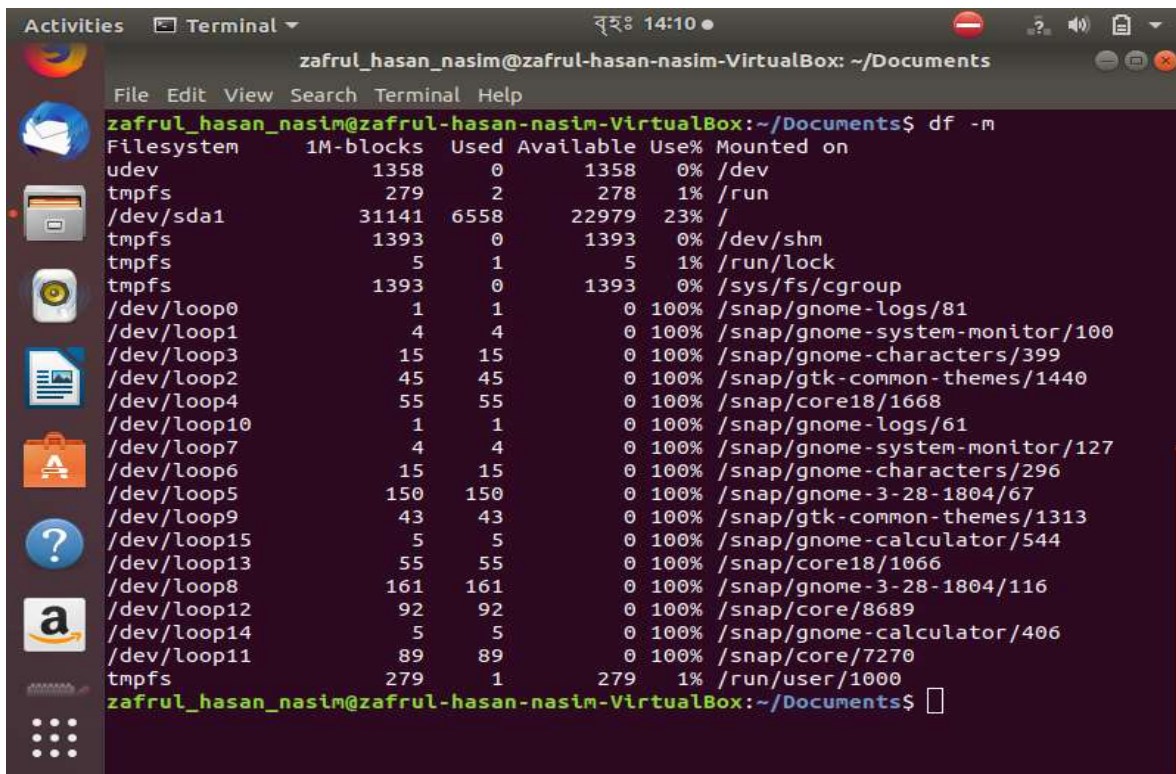
12. rm -r command : **rm -r** will recursively delete a directory and all its contents. Normally **rm** will not delete directories, while **rmdir** will only delete empty directories.

A screenshot of a Linux terminal window titled 'zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Downloads'. The terminal shows the following commands and output:

```
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$ ls
newfile.txt  oldfile.txt
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$ rm -r newfile.txt
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$ ls
oldfile.txt
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$
```

The terminal window has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. On the left side, there is a vertical dock with various application icons including Firefox, a mail client, a file manager, and others. The terminal text is displayed in a monospaced font on a dark background.

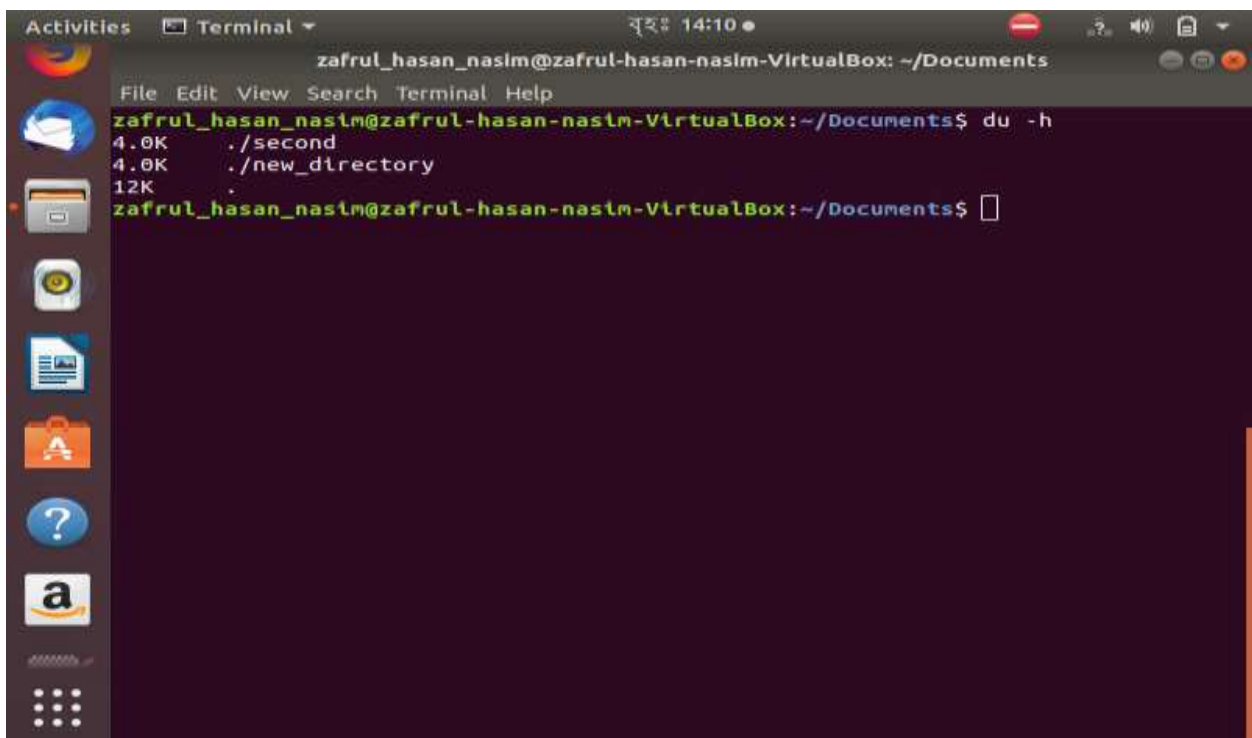
13. df command : **df** (abbreviation for disk free) is a standard Unix command used to display the amount of available disk space for file systems on which the invoking user has appropriate read access.



A terminal window titled 'zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Documents' showing the output of the 'df -m' command. The output is a table with columns: Filesystem, 1M-blocks, Used, Available, Use%, and Mounted on. The table lists various filesystems including udev, tmpfs, /dev/sda1, and several loop devices, along with their respective sizes, usage, and mount points.

Filesystem	1M-blocks	Used	Available	Use%	Mounted on
udev	1358	0	1358	0%	/dev
tmpfs	279	2	278	1%	/run
/dev/sda1	31141	6558	22979	23%	/
tmpfs	1393	0	1393	0%	/dev/shm
tmpfs	5	1	5	1%	/run/lock
tmpfs	1393	0	1393	0%	/sys/fs/cgroup
/dev/loop0	1	1	0	100%	/snap/gnome-logs/81
/dev/loop1	4	4	0	100%	/snap/gnome-system-monitor/100
/dev/loop3	15	15	0	100%	/snap/gnome-characters/399
/dev/loop2	45	45	0	100%	/snap/gtk-common-themes/1440
/dev/loop4	55	55	0	100%	/snap/core18/1668
/dev/loop10	1	1	0	100%	/snap/gnome-logs/61
/dev/loop7	4	4	0	100%	/snap/gnome-system-monitor/127
/dev/loop6	15	15	0	100%	/snap/gnome-characters/296
/dev/loop5	150	150	0	100%	/snap/gnome-3-28-1804/67
/dev/loop9	43	43	0	100%	/snap/gtk-common-themes/1313
/dev/loop15	5	5	0	100%	/snap/gnome-calculator/544
/dev/loop13	55	55	0	100%	/snap/core18/1066
/dev/loop8	161	161	0	100%	/snap/gnome-3-28-1804/116
/dev/loop12	92	92	0	100%	/snap/core/8689
/dev/loop14	5	5	0	100%	/snap/gnome-calculator/406
/dev/loop11	89	89	0	100%	/snap/core/7270
tmpfs	279	1	279	1%	/run/user/1000

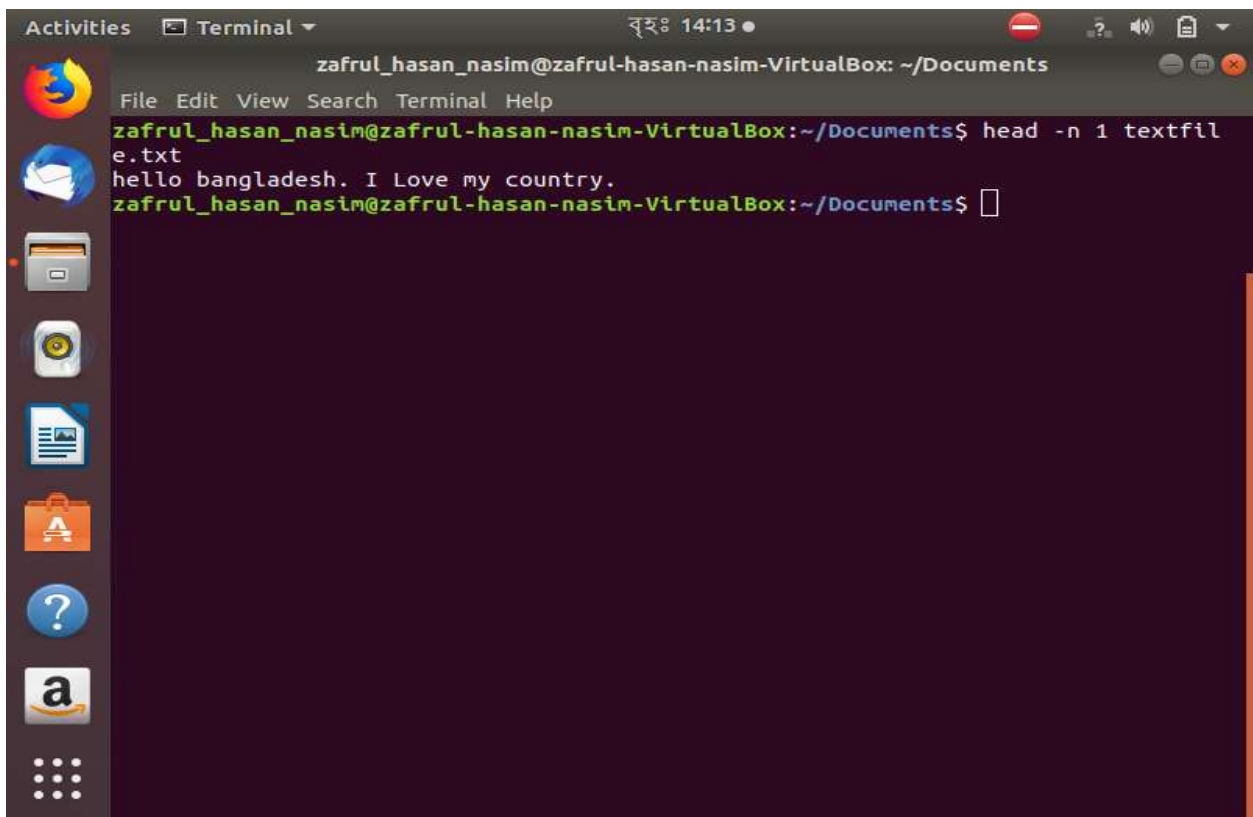
14. du command : The du command can be used to track the files and directories which are consuming excessive amount of space on hard disk drive



A terminal window titled 'zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Documents' showing the output of the 'du -h' command. The output shows the disk usage in human-readable format for the current directory and its subdirectories: ./second (4.0K), ./new_directory (4.0K), and a subdirectory (12K).

```
4.0K  ./second
4.0K  ./new_directory
12K   .
```

15. head command : The head command is a command-line utility for outputting the first part of files given to it via standard input.



The screenshot shows a terminal window titled "zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Documents". The terminal displays the command `head -n 1 textfile.txt` and its output, which is the first line of the file: `hello bangladesh. I Love my country.`. The terminal window has a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". On the left side, there is a vertical dock with icons for Firefox, a file manager, a terminal, a document, a folder, a question mark, and an Amazon logo. The top of the window shows the system clock as 14:13 and some system status icons.

```
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Documents
File Edit View Search Terminal Help
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Documents$ head -n 1 textfile.txt
hello bangladesh. I Love my country.
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Documents$
```