

## Lab Report: 02

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**i) What is Linux command?**

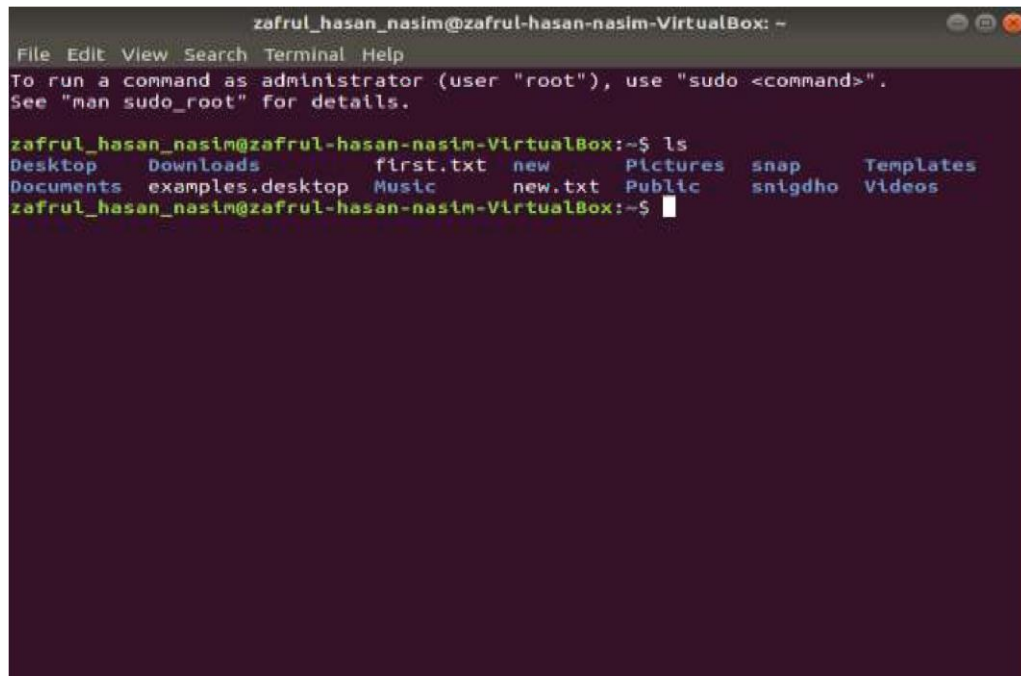
**Ans:** The Linux command line is a text interface to your computer. Often referred to as the shell, terminal, console, prompt or various other names, it can give the appearance of being complex and confusing to use.

**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

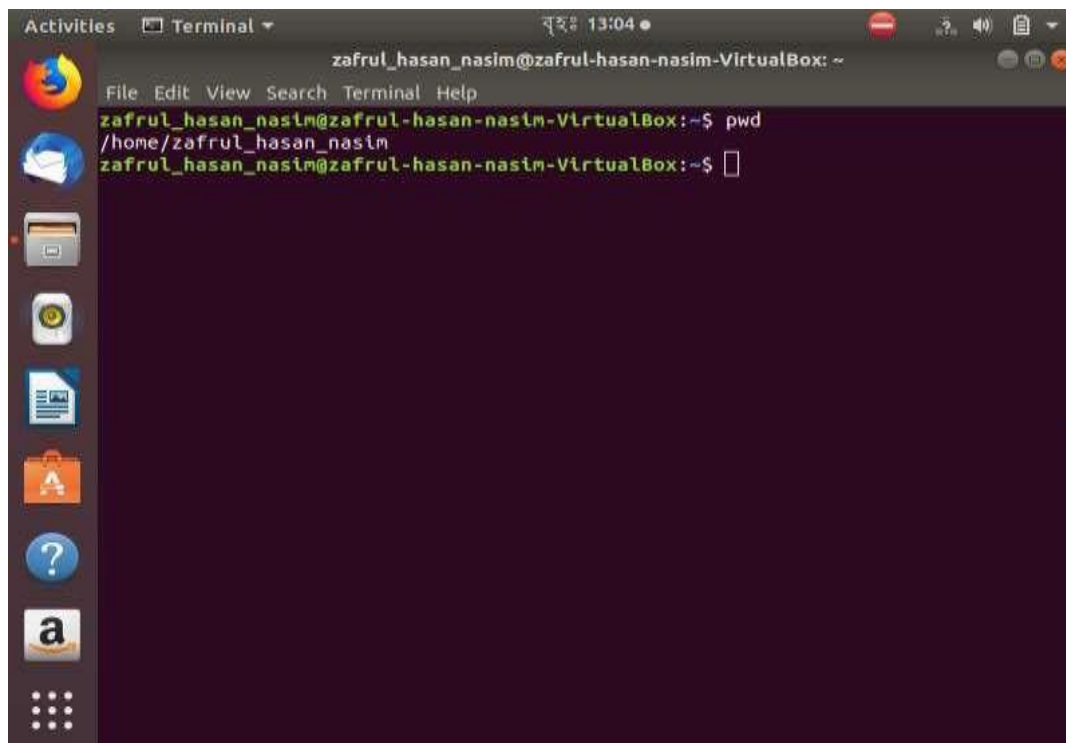
**iii) Describe the operation of basic linux command :**

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



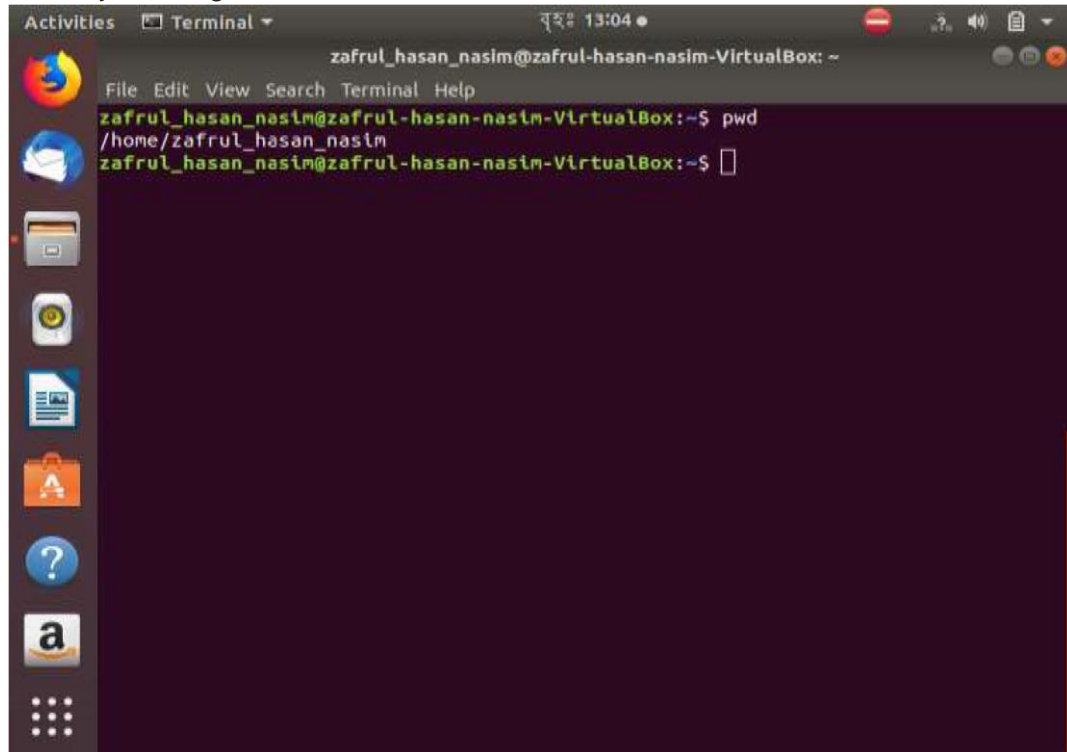
```
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~  
File Edit View Search Terminal Help  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~$ ls  
Desktop    Downloads      first.txt 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

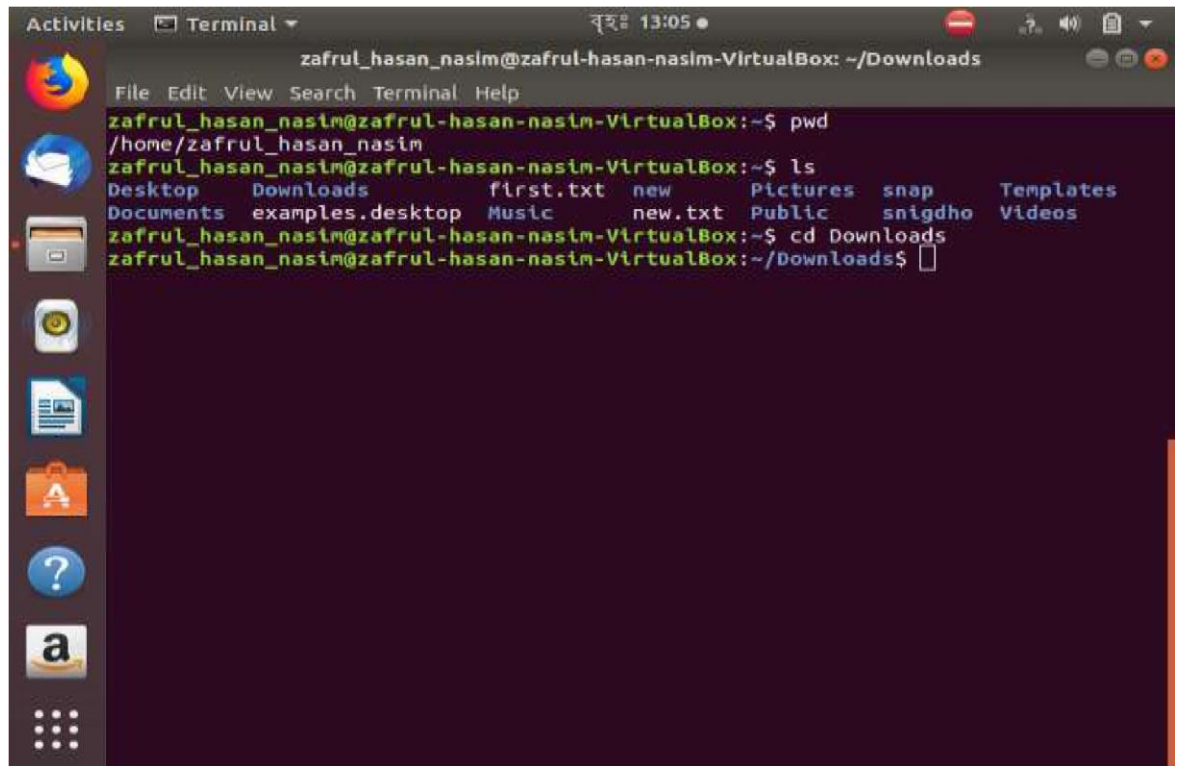


```
Activities Terminal 13:04  
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~  
File Edit View Search Terminal Help  
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~$ pwd  
/home/zafrul_hasan_nasim  
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~$
```

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

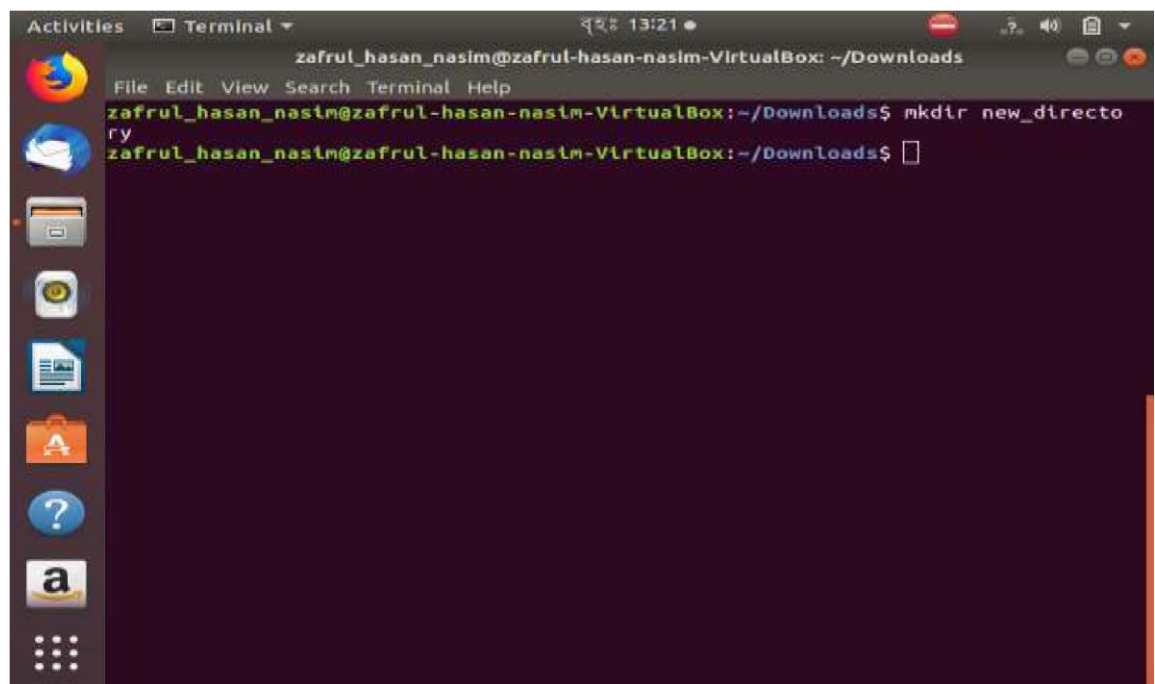
A screenshot of a Linux terminal window. The window title is "zafrul\_hasan\_nasim@zafrul-hasan-nasim-VirtualBox: ~". The terminal shows the command "pwd" being entered and executed. The output is "/home/zafrul\_hasan\_nasim". The prompt "zafrul\_hasan\_nasim@zafrul-hasan-nasim-VirtualBox:~\$" is visible before and after the command. The terminal has a dark background with light-colored text. On the left side of the terminal window, there is a vertical dock with several application icons: a web browser, a mail client, a file manager, a terminal, a calendar, a document viewer, a shopping bag, a question mark, and a logo with the letter 'a'. The top of the window shows a menu bar with "Activities" and "Terminal" options, and a status bar with the time "13:04" and 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.

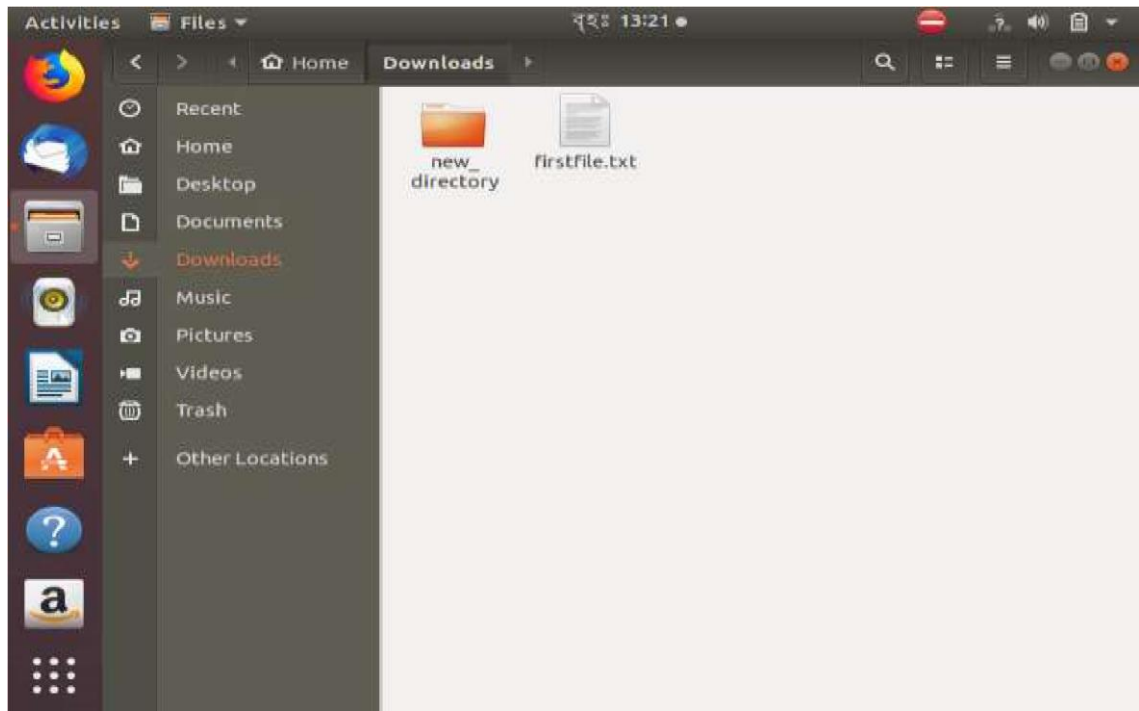


```
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Downloads
File Edit View Search Terminal Help
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~$ pwd
/home/zafrul_hasan_nasim
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~$ ls
Desktop  Downloads  first.txt  new      Pictures  snap      Templates
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$
```

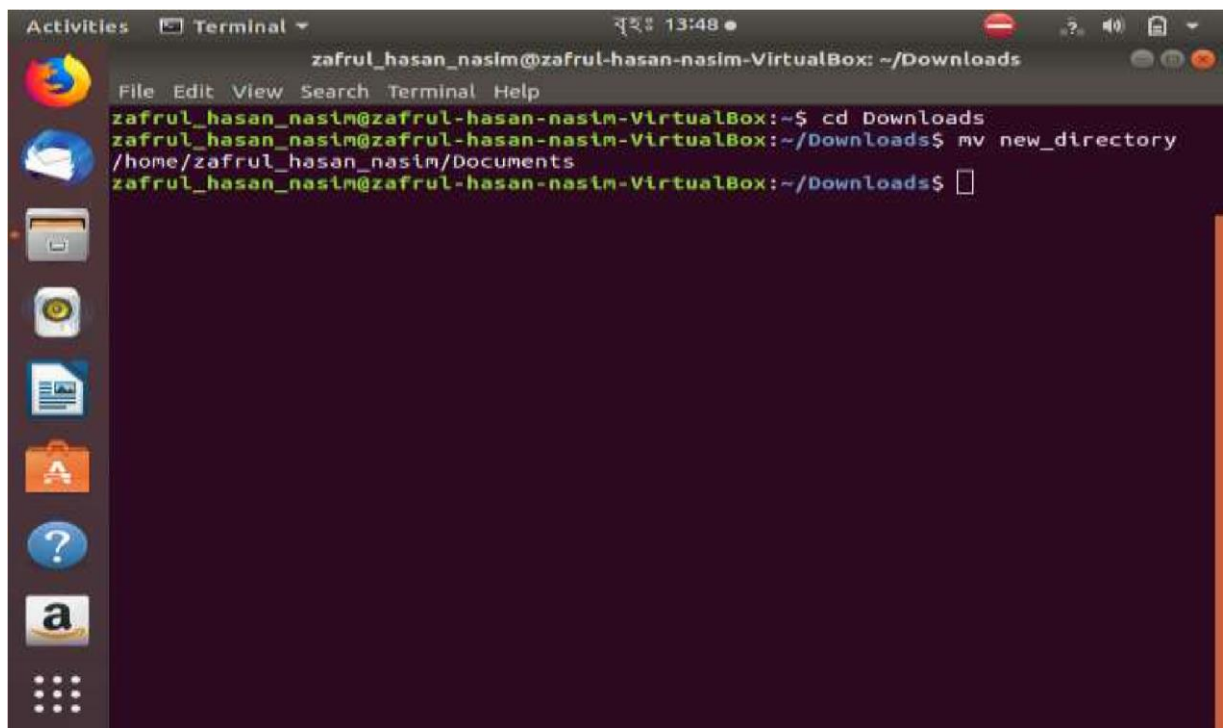
**5.mkdir command:** The mkdir command in Linux allows users to create or make new directories.



```
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$
```

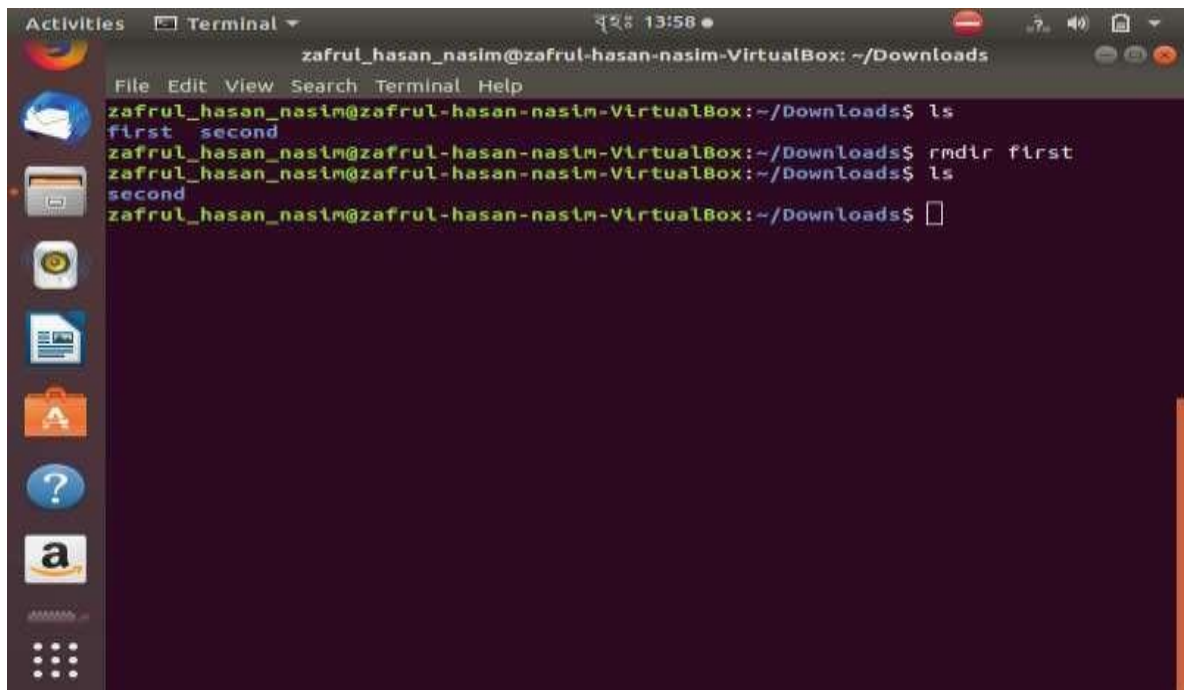


**6.mv command:** The mv command is a command line utility that moves files or directories from one place to another .

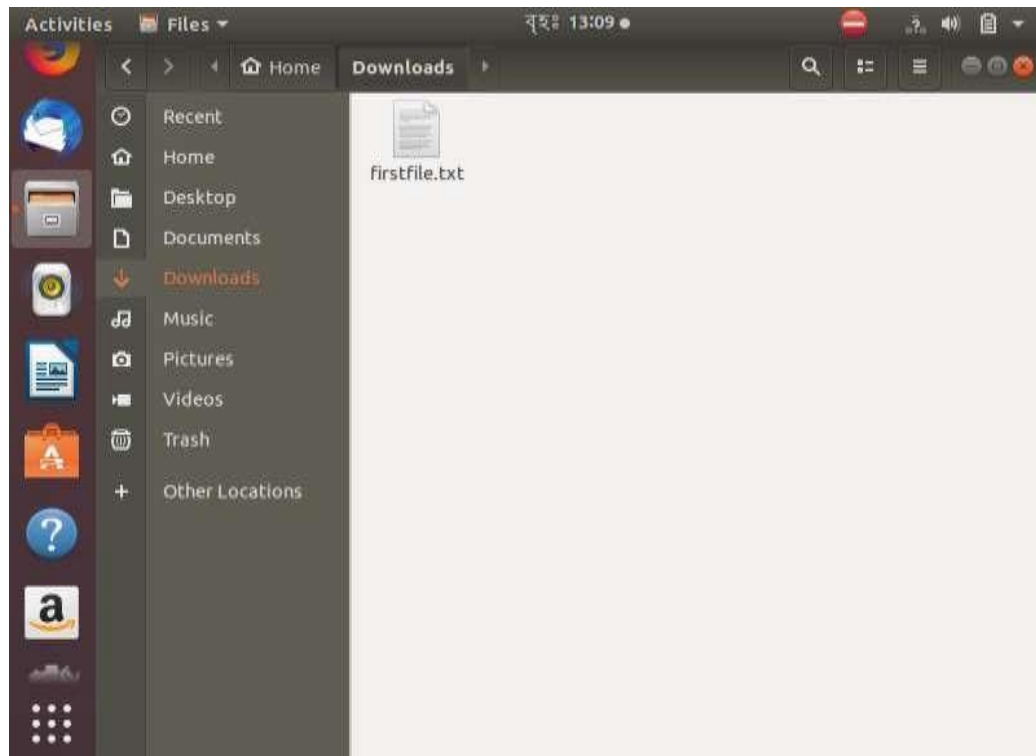
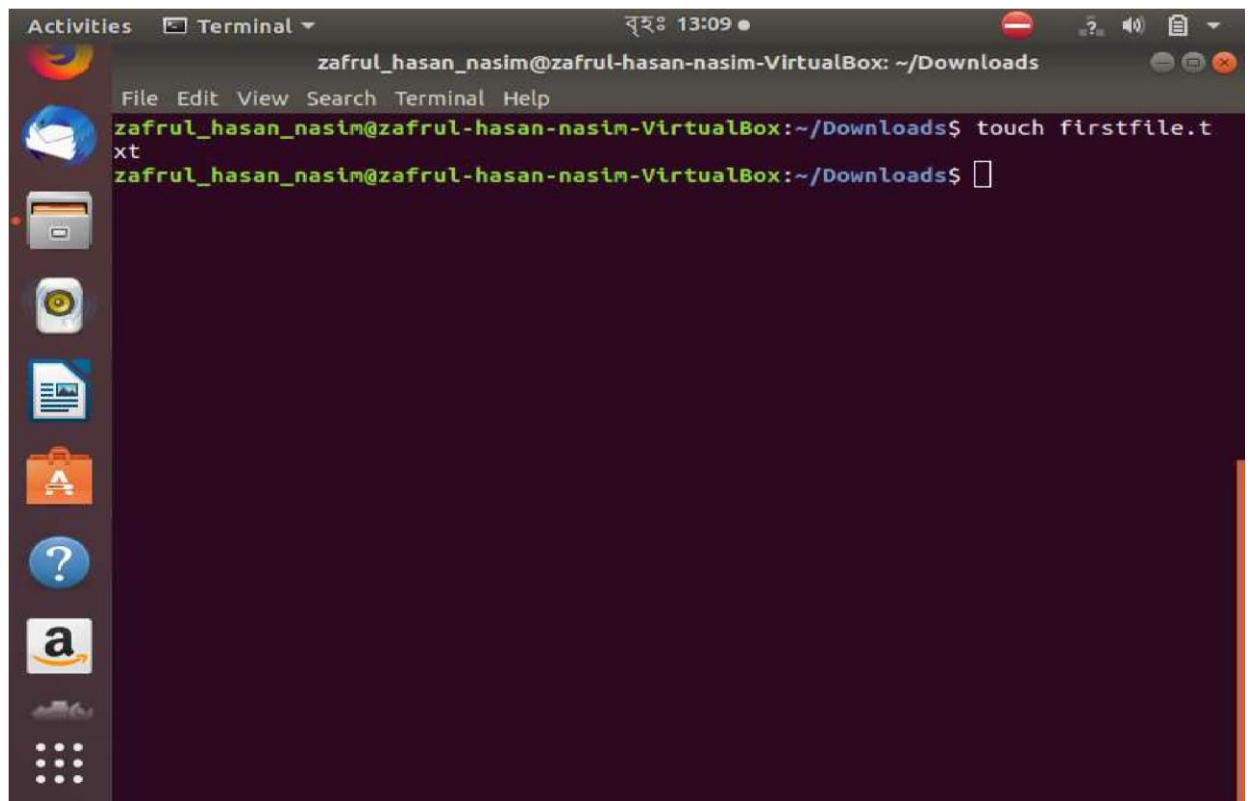




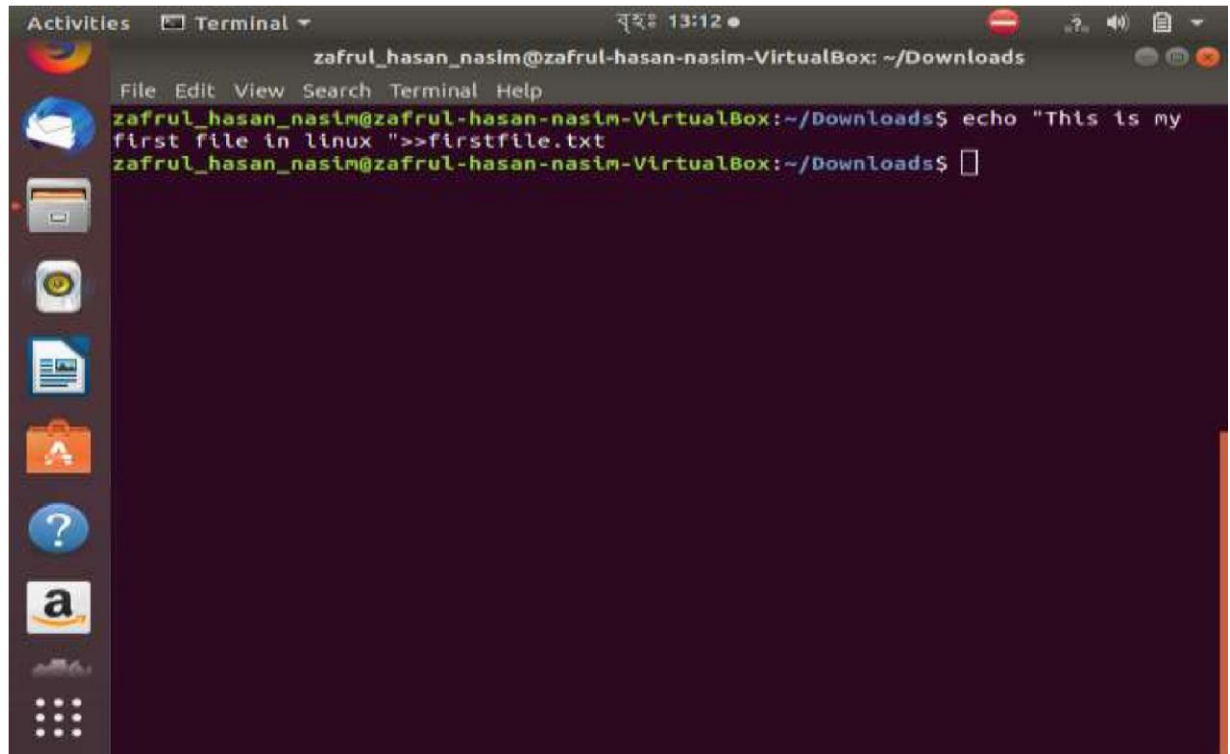
**7.rmdir command:** rmdir command removes each and every directory specified in the command line only if these directories are empty



**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.

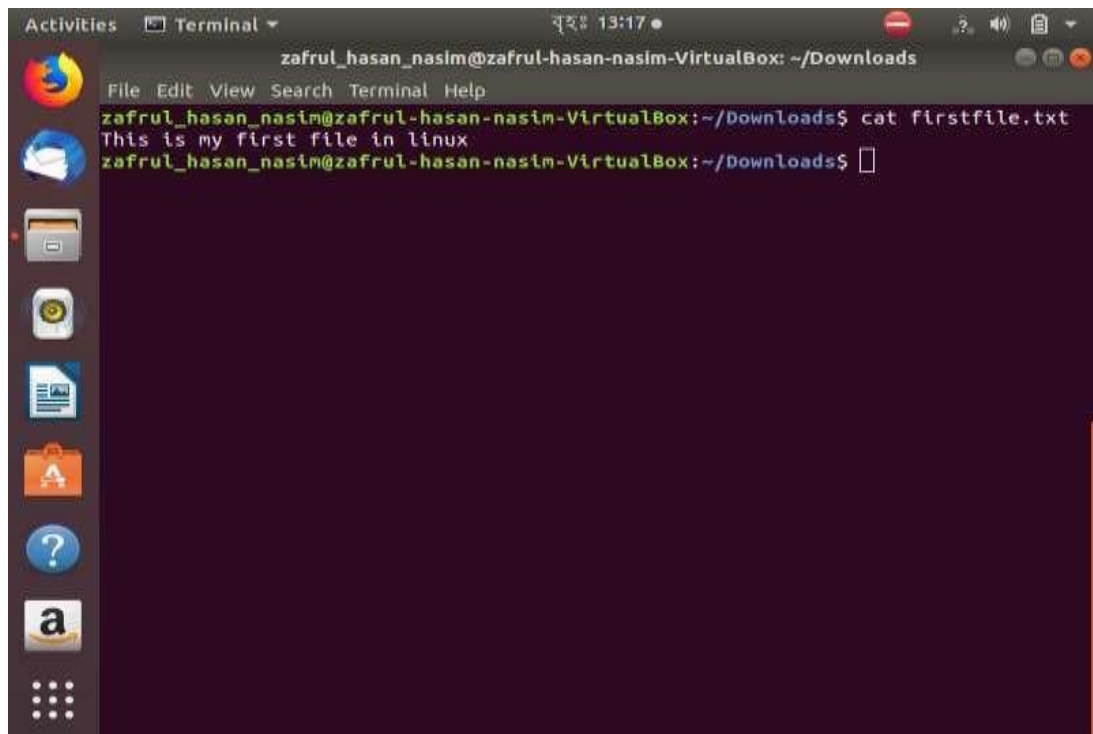
A screenshot of a Linux terminal window. The window title is "zafrul\_hasan\_nasim@zafrul-hasan-nasim-VirtualBox: ~/Downloads". The terminal shows the following commands and output:

```
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$
```

The terminal 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 a file manager, a terminal, a web browser, and a search icon. The background of the terminal is dark purple.

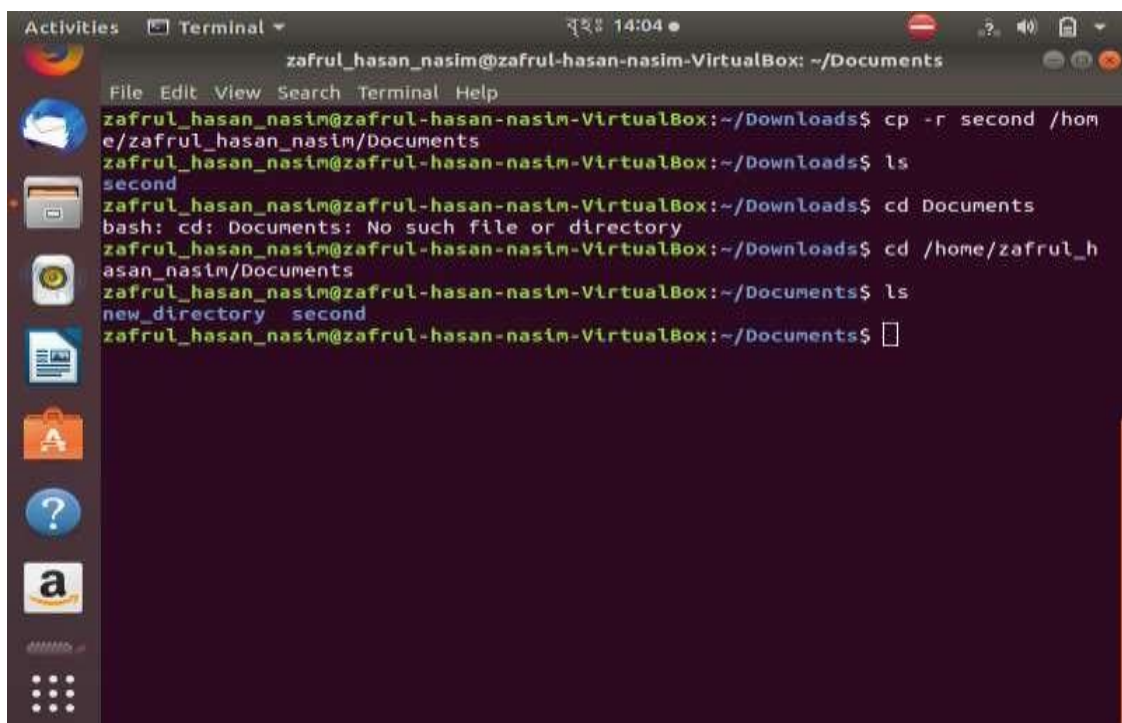
**10.cat command :** cat is a standard Unix utility that reads files sequentially, writing them to standard output.



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

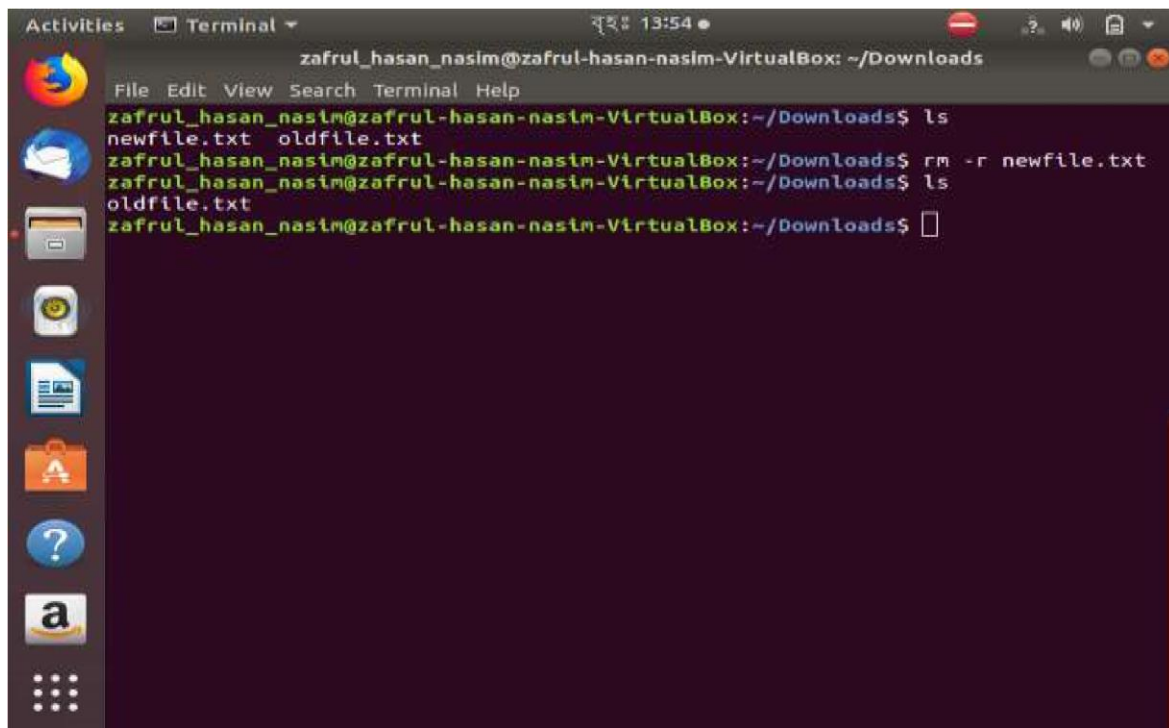
```
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Downloads
File Edit View Search Terminal Help
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$ cat firstfile.txt
This is my first file in linux
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$
```

**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 terminal shows the command 'cp -r second /home/zafrul\_hasan\_nasim/Documents' being executed. The prompt is 'zafrul\_hasan\_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads\$'. The next prompt is 'zafrul\_hasan\_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads\$ ls', which outputs 'second'. The next prompt is 'zafrul\_hasan\_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads\$ cd Documents', which outputs 'bash: cd: Documents: No such file or directory'. The next prompt is 'zafrul\_hasan\_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads\$ cd /home/zafrul\_hasan\_nasim/Documents', which outputs 'zafrul\_hasan\_nasim@zafrul-hasan-nasim-VirtualBox:~/Documents\$ ls', which outputs 'new\_directory second'. The final prompt is 'zafrul\_hasan\_nasim@zafrul-hasan-nasim-VirtualBox:~/Documents\$'.

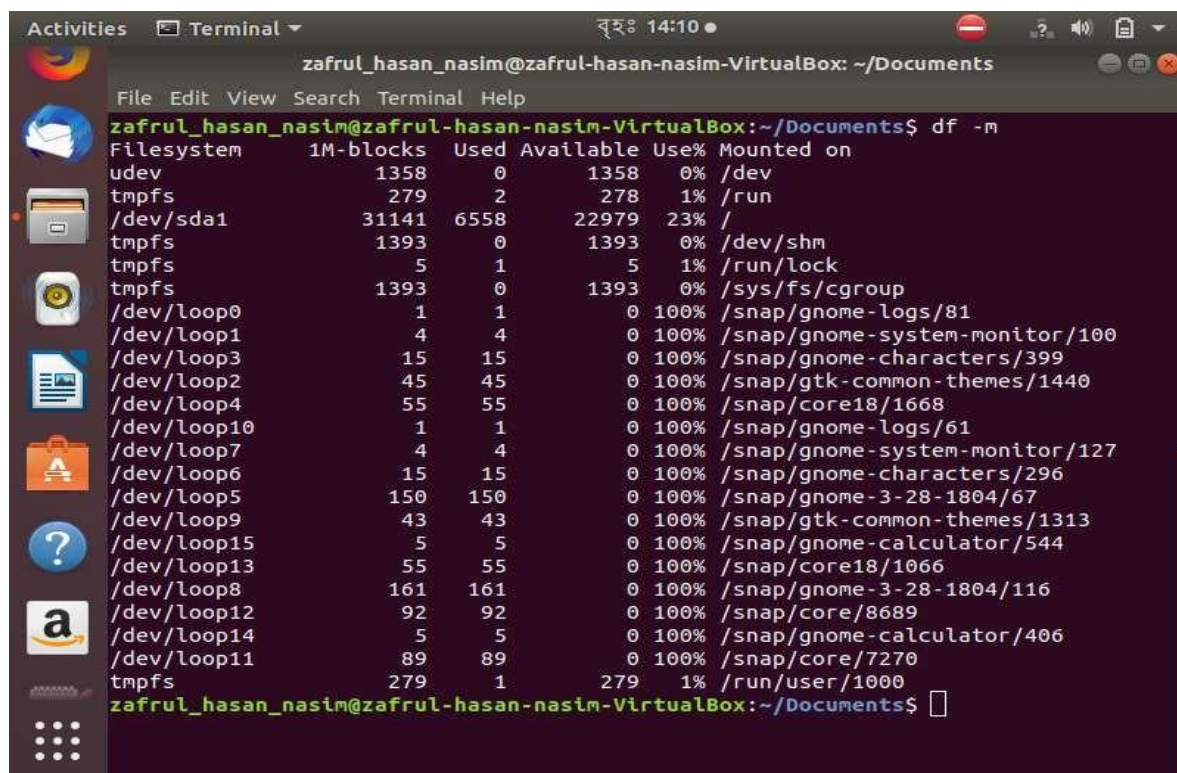
```
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Documents
File Edit View Search Terminal Help
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$ cp -r second /home/zafrul_hasan_nasim/Documents
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$ ls
second
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$ cd Documents
bash: cd: Documents: No such file or directory
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$ cd /home/zafrul_hasan_nasim/Documents
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 terminal window titled 'zafrul\_hasan\_nasim@zafrul-hasan-nasim-VirtualBox: ~/Downloads'. The terminal shows the user listing files with 'ls', which returns 'newfile.txt' and 'oldfile.txt'. Then, the user runs 'rm -r newfile.txt', and a second 'ls' command confirms that only 'oldfile.txt' remains.

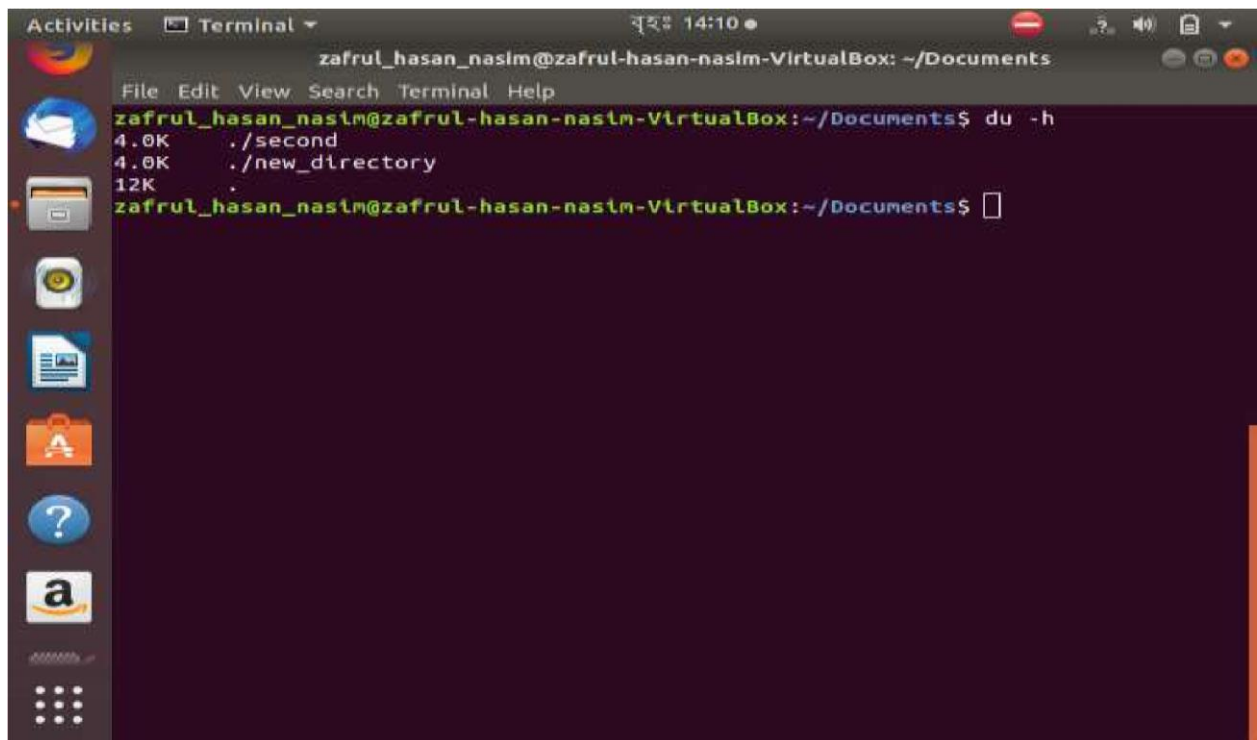
```
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Downloads
File Edit View Search Terminal Help
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$ ls
newfile.txt  oldfile.txt
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$ rm -r newfile.txt
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$ ls
oldfile.txt
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Downloads$
```

**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'. The user runs 'df -m', which displays a table of disk space usage for various file systems.

```
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox: ~/Documents
File Edit View Search Terminal Help
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Documents$ df -m
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
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Documents$
```

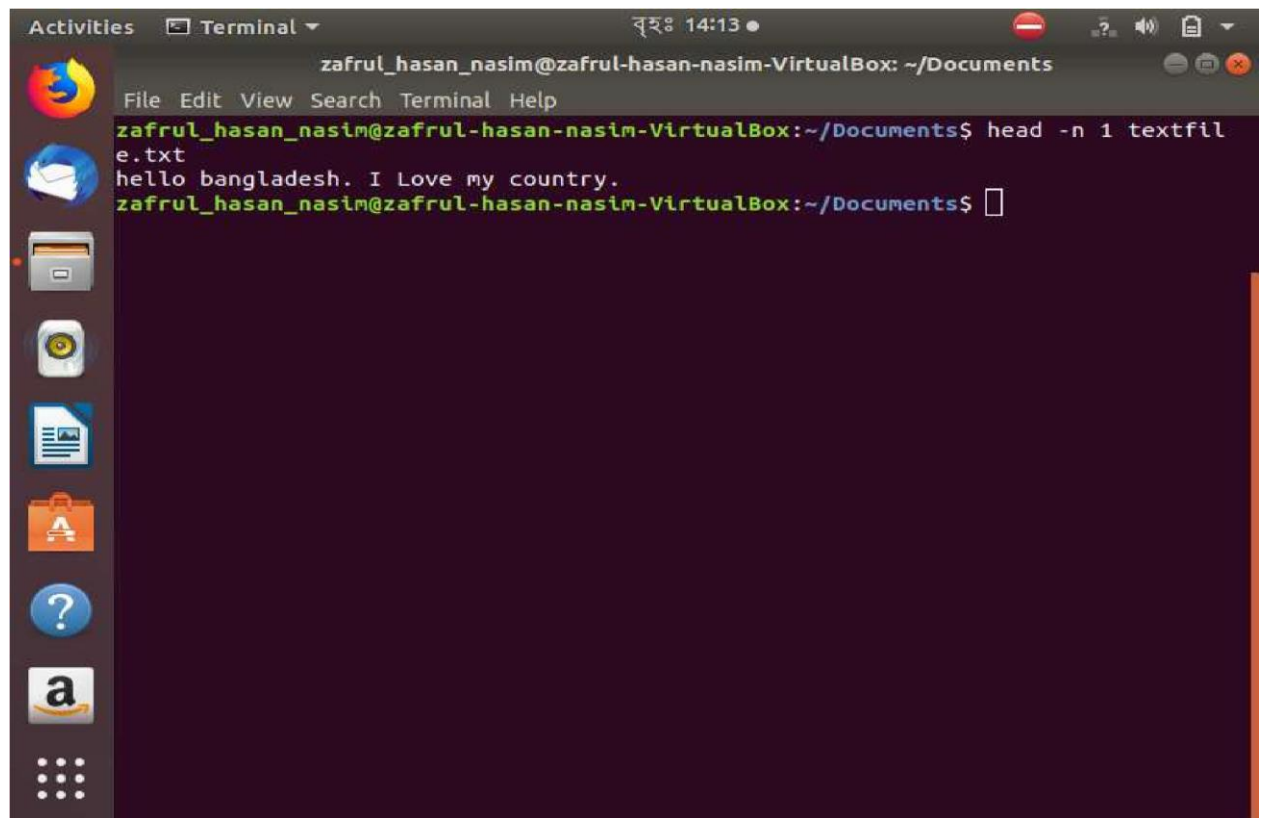
**14. du command :** The du command can be used to track the files and directories which are consuming excessive amount of space on hard disk drive



The screenshot shows a terminal window titled "zafrul\_hasan\_nasim@zafrul-hasan-nasim-VirtualBox: ~/Documents". The terminal displays the output of the command `du -h`, which lists the disk usage for the current directory and its subdirectories. The output is as follows:

```
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Documents$ du -h
4.0K    ./second
4.0K    ./new_directory
12K     .
zafrul_hasan_nasim@zafrul-hasan-nasim-VirtualBox:~/Documents$
```

**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 image shows a Linux desktop environment with a terminal window open. The terminal title bar reads "zafrul\_hasan\_nasim@zafrul-hasan-nasim-VirtualBox: ~/Documents". The terminal content shows the execution of the command `head -n 1 textfile.txt`, which outputs the text "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 of the desktop, there is a vertical dock with icons for Firefox, a mail client, a file manager, a clock, a document viewer, a shopping bag, a help icon, and the Amazon logo. The system status bar at the top shows the time as 14:13 and includes icons for network, volume, and power.

```
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$
```