



Operating System

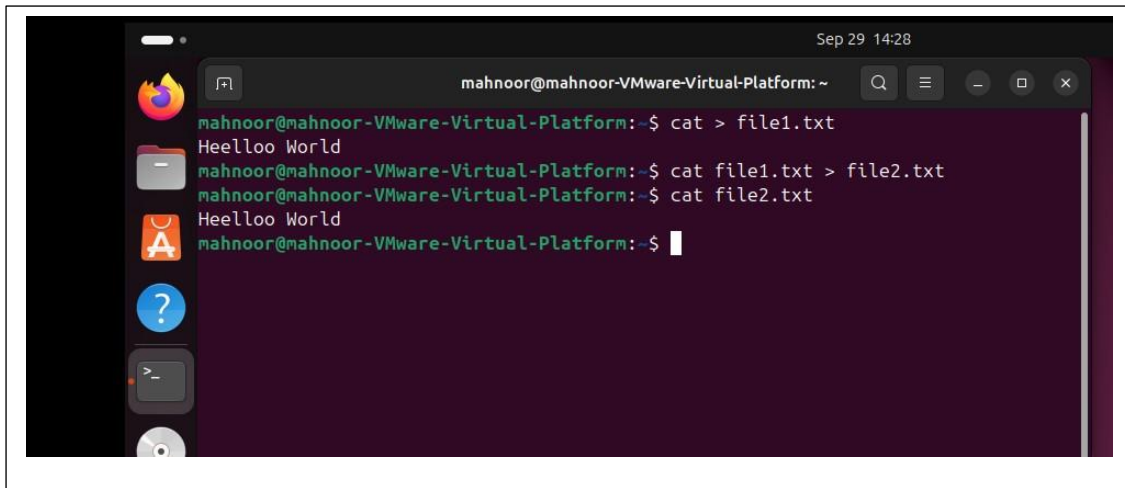
Lab #7

Submitted By:

Mahnoor Farrukh (52926)

BSCS-5

Task 1:



A terminal window titled 'mahnoor@mahnoor-VMware-Virtual-Platform: ~' with a search bar and window controls. The terminal shows the following commands and output:

```
mahnoor@mahnoor-VMware-Virtual-Platform:~$ cat > file1.txt
Heelloo World
mahnoor@mahnoor-VMware-Virtual-Platform:~$ cat file1.txt > file2.txt
mahnoor@mahnoor-VMware-Virtual-Platform:~$ cat file2.txt
Heelloo World
mahnoor@mahnoor-VMware-Virtual-Platform:~$
```

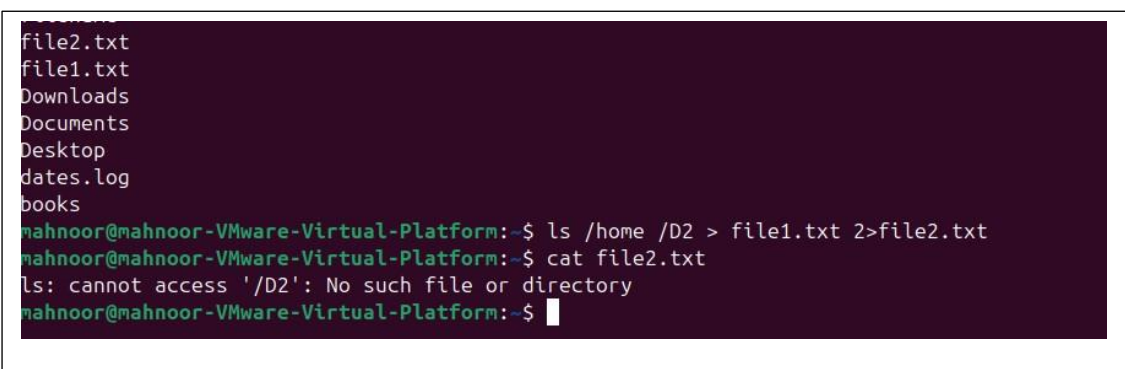
Task 2:



A terminal window showing the following commands and output:

```
Heelloo World
mahnoor@mahnoor-VMware-Virtual-Platform:~$ date >> dates.log
mahnoor@mahnoor-VMware-Virtual-Platform:~$ cat dates.log
Mon Sep 29 02:30:38 PM PKT 2025
mahnoor@mahnoor-VMware-Virtual-Platform:~$
```

Task 3:



A terminal window showing the following commands and output:

```
file2.txt
file1.txt
Downloads
Documents
Desktop
dates.log
books
mahnoor@mahnoor-VMware-Virtual-Platform:~$ ls /home /D2 > file1.txt 2>file2.txt
mahnoor@mahnoor-VMware-Virtual-Platform:~$ cat file2.txt
ls: cannot access '/D2': No such file or directory
mahnoor@mahnoor-VMware-Virtual-Platform:~$
```

Task 4:

```
hciattach          rename.ul          zstdgrep
hcidconfig          rendercheck        zstdless
hcitool            renice              zstdmt
hd                  reset
head                resizecons
mahnoor@mahnoor-VMware-Virtual-Platform:~$ ls /bin /no_such_dir > all.log 2 >&1
ls: cannot access '/no_such_dir': No such file or directory
ls: cannot access '2': No such file or directory
mahnoor@mahnoor-VMware-Virtual-Platform:~$ ls /bin /no_such_dir >all.log 2>&1
mahnoor@mahnoor-VMware-Virtual-Platform:~$ ls /bin /no_such_dir > all.log 2>&1
mahnoor@mahnoor-VMware-Virtual-Platform:~$ cat all.log
ls: cannot access '/no_such_dir': No such file or directory
/bin:
[
aa-enabled
aa-exec
aa-features-abi
aconnect
acpidbg
add-apt-repository
addpart
addr2line
airscan-discover
alsabat
alsaloop
alsamixer
alsatplg
alsaucm
...
```

Task 5:

```
Sep 29 14:41
mahnoor@mahnoor-VMware-Virtual-Platform:~$ cat > input.txt
cat
dog
Hello
Black
```

```
mahnoor@mahnoor-VMware-Virtual-Platform:~$ cat input.txt | sort
Black
cat
dog
Hello
```

Task 6:

a) cat filename > new

```
mahnoor@mahnoor-VMware-Virtual-Platform:~$ cat > filename
Mahnoor Farrukh
mahnoor@mahnoor-VMware-Virtual-Platform:~$ cat filename > new
mahnoor@mahnoor-VMware-Virtual-Platform:~$ cat new
Mahnoor Farrukh
mahnoor@mahnoor-VMware-Virtual-Platform:~$
```

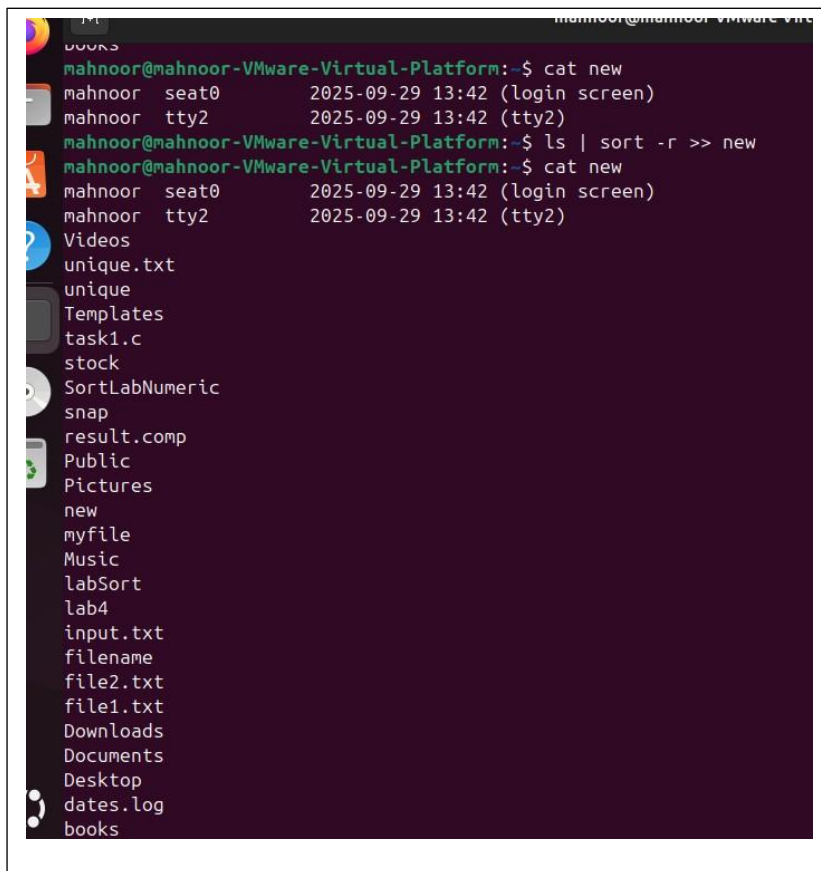
b) who > new

```
mahnoor@mahnoor-VMware-Virtual-Platform:~$ who > new
mahnoor@mahnoor-VMware-Virtual-Platform:~$ cat new
mahnoor  seat0          2025-09-29 13:42 (login screen)
mahnoor  tty2           2025-09-29 13:42 (tty2)
mahnoor@mahnoor-VMware-Virtual-Platform:~$
```

c) ls | sort -r

```
mahnoor@mahnoor-VMware-Virtual-Platform:~$ ls
books      Documents  file2.txt  lab4      myfile    Public    SortLabNumeric  Templates  Videos
dates.log  Downloads  filename   labSort   new        result.comp stock           unique
Desktop    file1.txt  input.txt  Music     Pictures   snap      task1.c         unique.txt
mahnoor@mahnoor-VMware-Virtual-Platform:~$ ls | sort -r
Videos
unique.txt
unique
Templates
task1.c
stock
SortLabNumeric
snap
result.comp
Public
Pictures
new
myfile
Music
labSort
lab4
input.txt
filename
file2.txt
file1.txt
Downloads
Documents
Desktop
dates.log
books
mahnoor@mahnoor-VMware-Virtual-Platform:~$
```

d) `ls | sort -r >> new`

A terminal window with a dark purple background. The prompt is 'mahnoor@mahnoor-VMware-Virtual-Platform:~'. The user enters 'cat new', which displays the contents of a file named 'new'. The file contains two lines of text: 'mahnoor seat0 2025-09-29 13:42 (login screen)' and 'mahnoor tty2 2025-09-29 13:42 (tty2)'. The user then enters 'ls | sort -r >> new', which appends the output of the 'ls' command to the 'new' file. Finally, the user enters 'cat new', which displays the contents of the 'new' file again, now including the directory listing. The directory listing shows various files and directories in reverse alphabetical order: 'Videos', 'unique.txt', 'unique', 'Templates', 'task1.c', 'stock', 'SortLabNumeric', 'snap', 'result.comp', 'Public', 'Pictures', 'new', 'myfile', 'Music', 'labSort', 'lab4', 'input.txt', 'filename', 'file2.txt', 'file1.txt', 'Downloads', 'Documents', 'Desktop', 'dates.log', and 'books'.

```
mahnoor@mahnoor-VMware-Virtual-Platform:~$ cat new
mahnoor seat0      2025-09-29 13:42 (login screen)
mahnoor tty2       2025-09-29 13:42 (tty2)
mahnoor@mahnoor-VMware-Virtual-Platform:~$ ls | sort -r >> new
mahnoor@mahnoor-VMware-Virtual-Platform:~$ cat new
mahnoor seat0      2025-09-29 13:42 (login screen)
mahnoor tty2       2025-09-29 13:42 (tty2)
Videos
unique.txt
unique
Templates
task1.c
stock
SortLabNumeric
snap
result.comp
Public
Pictures
new
myfile
Music
labSort
lab4
input.txt
filename
file2.txt
file1.txt
Downloads
Documents
Desktop
dates.log
books
```

Task 7:

A terminal window with a dark purple background. The prompt is 'mahnoor@mahnoor-VMware-Virtual-Platform:~'. The user enters 'cat > fruits.txt', which creates a new file named 'fruits.txt'. The user then enters 'sort fruits.txt | grep "ap"', which sorts the contents of 'fruits.txt' and filters for lines containing the pattern 'ap'. The output shows 'grape' and 'pineapple'. The user then enters 'cat > fruits.txt' again, which overwrites the file with the output of the previous command. Finally, the user enters 'cat fruits.txt', which displays the contents of the 'fruits.txt' file, which now only contains 'grape' and 'pineapple'.

```
mahnoor@mahnoor-VMware-Virtual-Platform:~$ cat > fruits.txt
Mango
Apple
Kiwi
grape
pineapple
mahnoor@mahnoor-VMware-Virtual-Platform:~$ sort fruits.txt | grep "ap"
grape
pineapple
mahnoor@mahnoor-VMware-Virtual-Platform:~$ cat > fruits.txt
mahnoor@mahnoor-VMware-Virtual-Platform:~$ cat fruits.txt
grape
pineapple
```

grep command: The grep command searches for a text pattern in the file. It only gives those line that we need to filter.