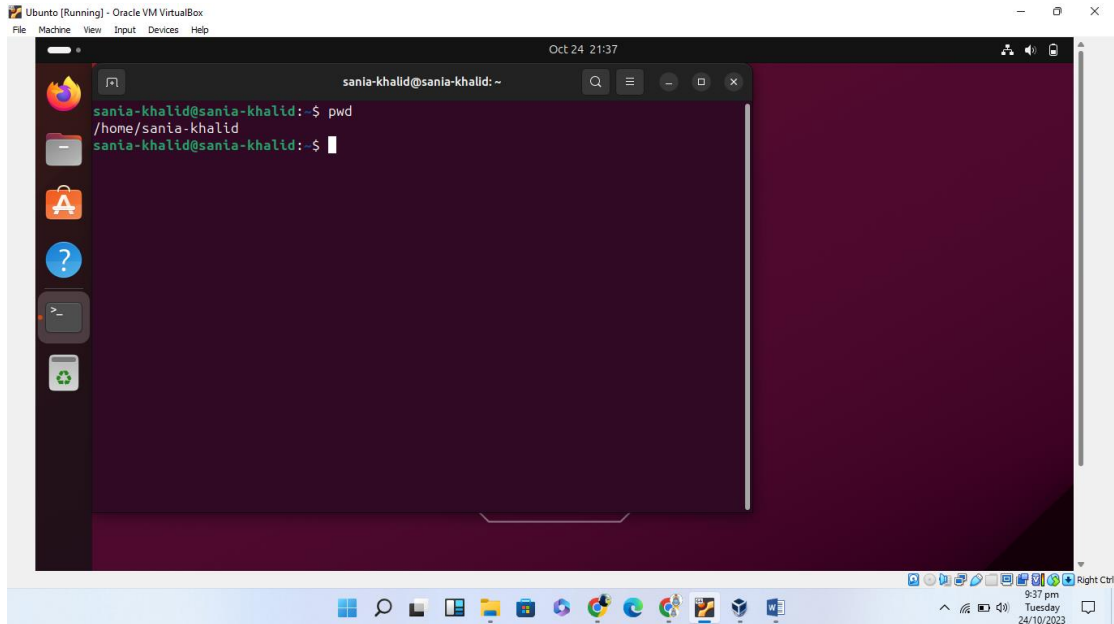


Sania Khalid

MSDSF23M016

## Exercise 01

### 1. Pwd

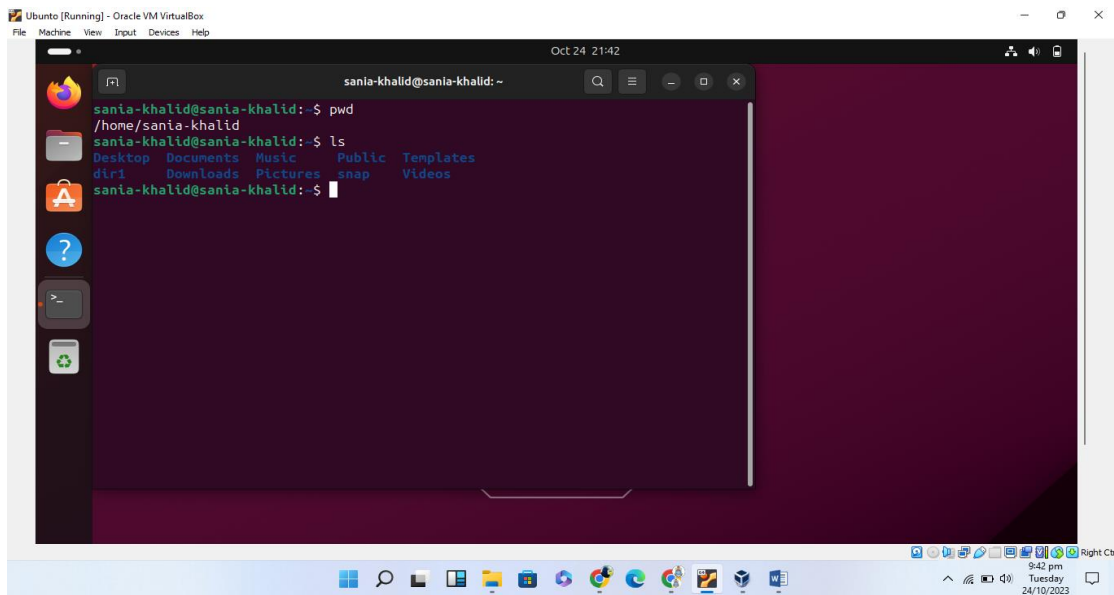


The screenshot shows a terminal window titled 'sania-khalid@sania-khalid: ~' within an Oracle VM VirtualBox environment. The terminal displays the following commands and output:

```
sania-khalid@sania-khalid:~$ pwd
/home/sania-khalid
sania-khalid@sania-khalid:~$
```

The terminal window is set against a dark purple background. The host operating system's taskbar is visible at the bottom, showing the time as 9:37 pm on Tuesday, 24/10/2023.

### 2. ls

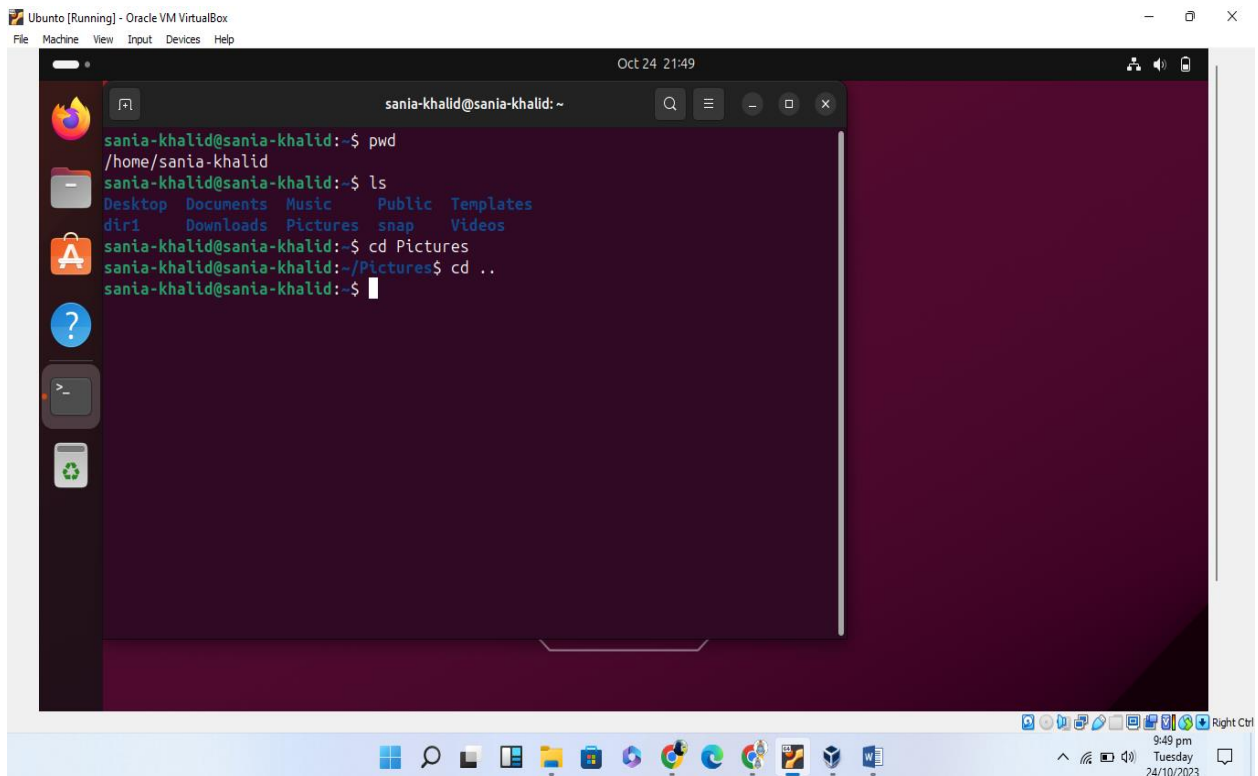
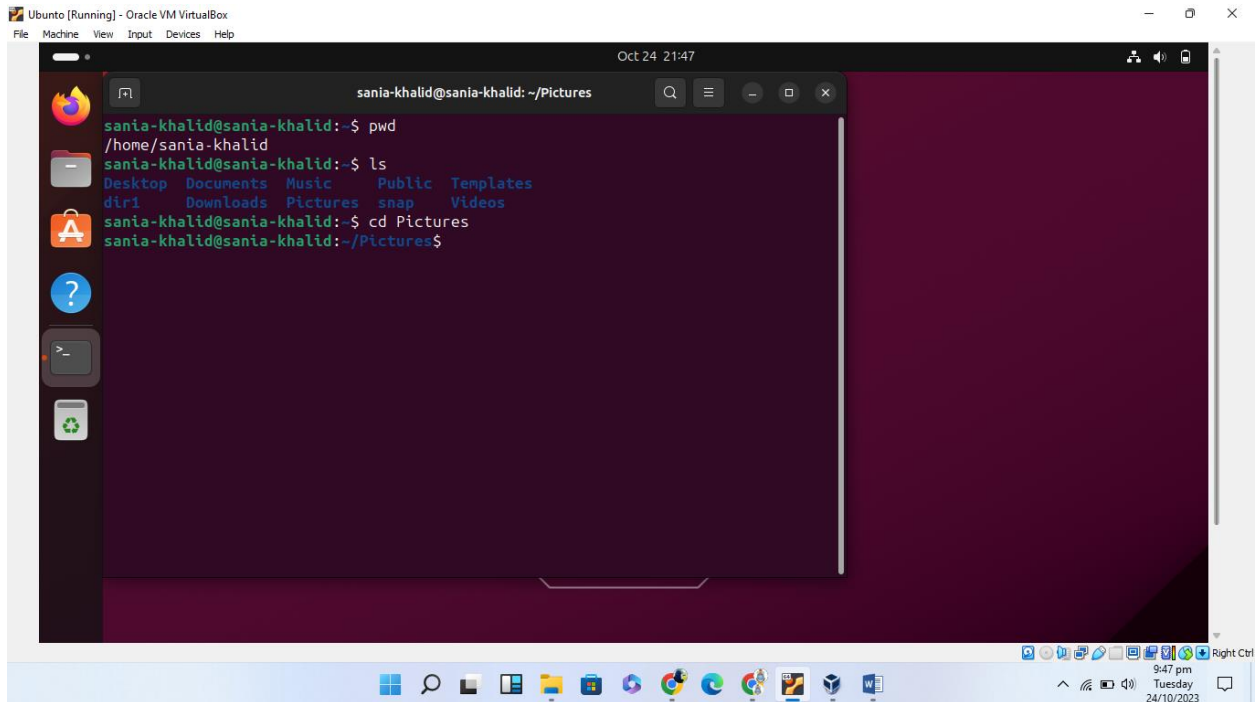


The screenshot shows the same terminal window as above, but now displaying the output of the 'ls' command:

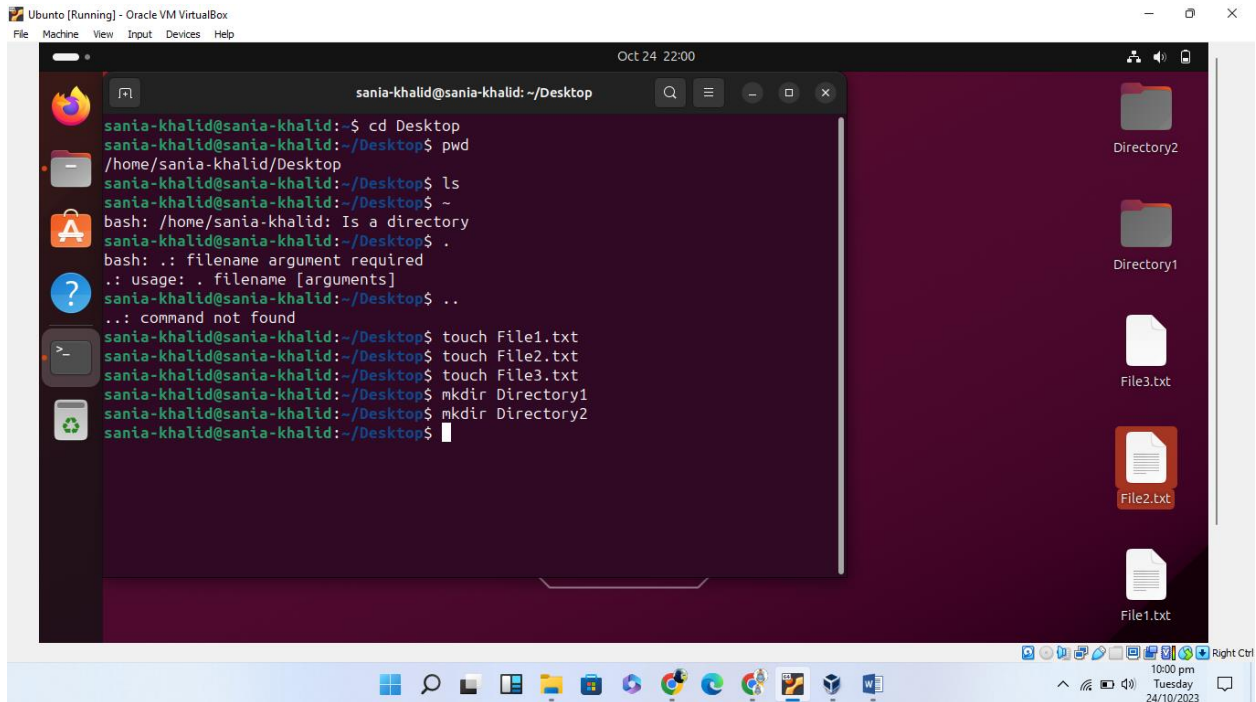
```
sania-khalid@sania-khalid:~$ pwd
/home/sania-khalid
sania-khalid@sania-khalid:~$ ls
Desktop  Documents  Music      Public  Templates
dir1     Downloads  Pictures   snap    Videos
sania-khalid@sania-khalid:~$
```

The terminal window remains in the same VirtualBox environment. The host taskbar at the bottom shows the time updated to 9:42 pm on Tuesday, 24/10/2023.

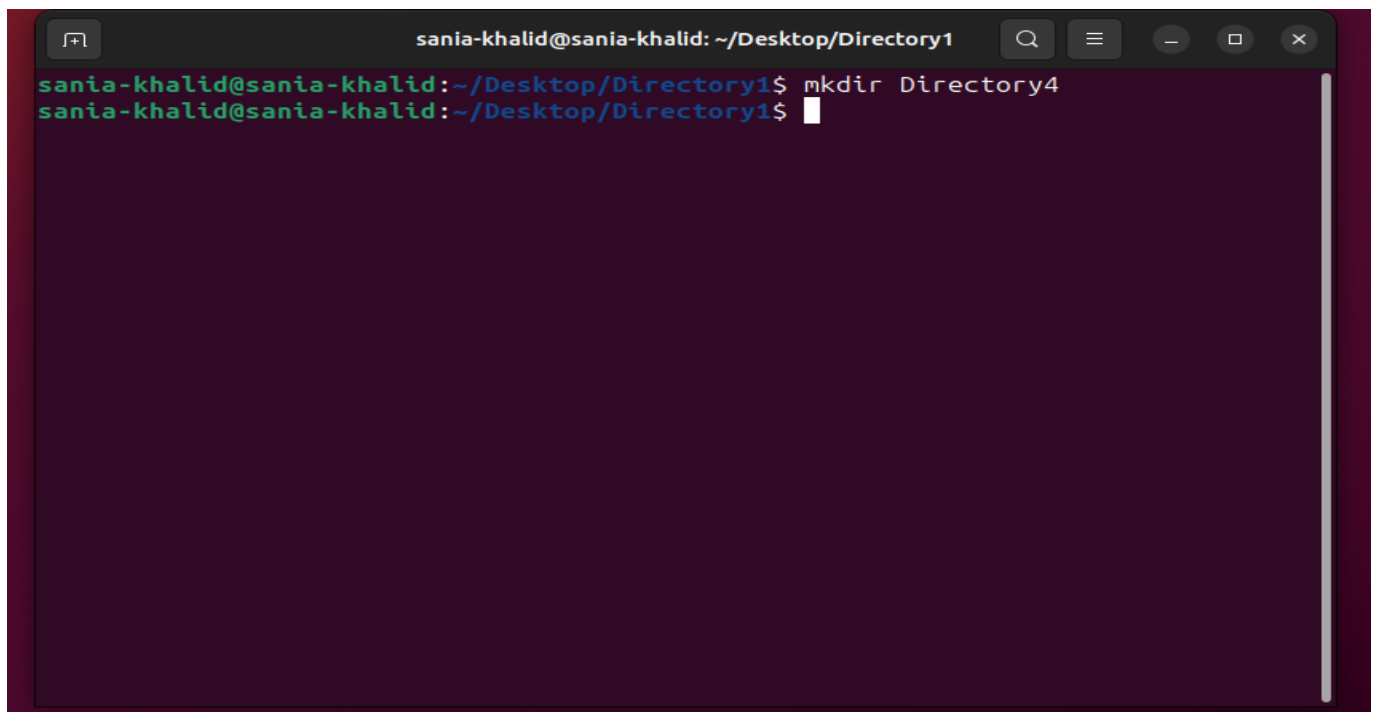
### 3. cd



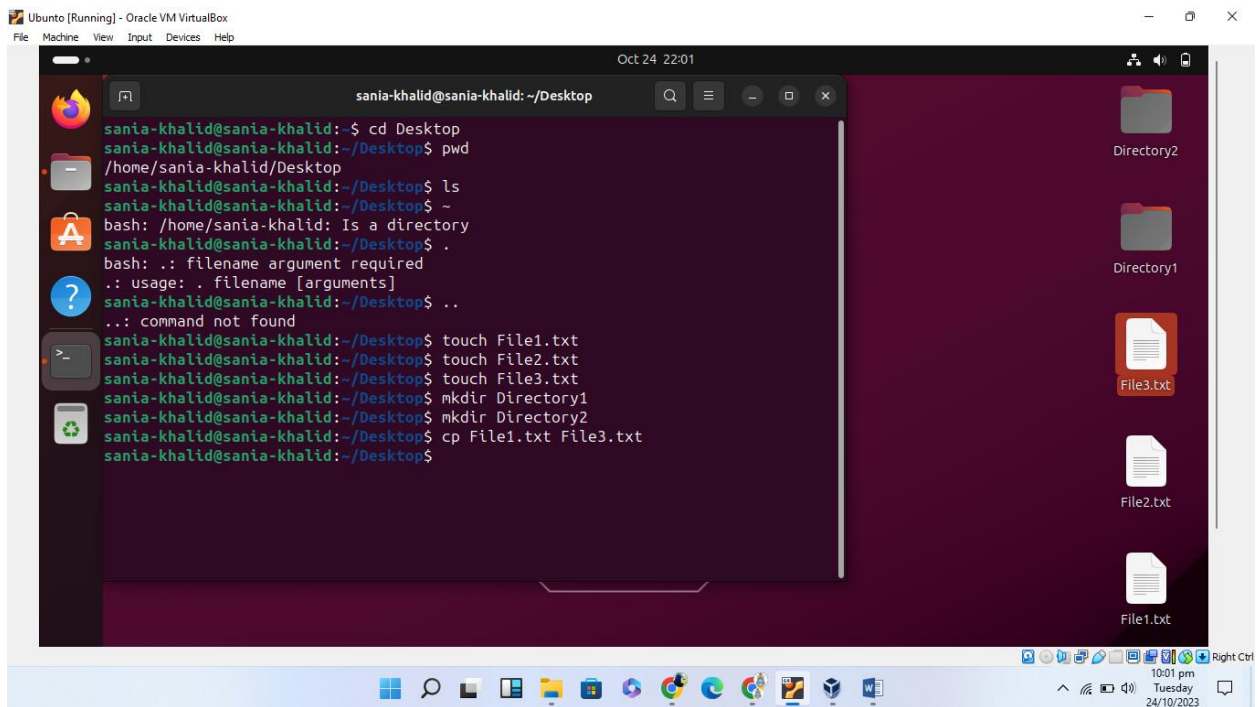
## 4. Touch



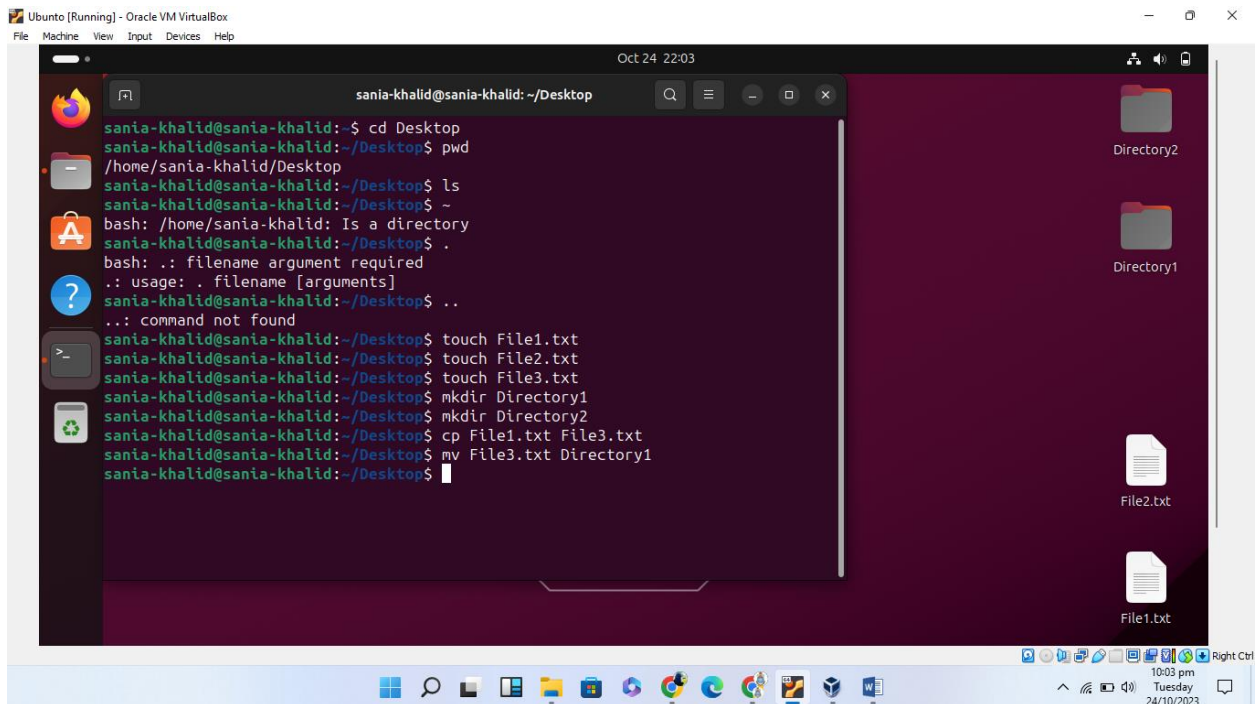
## 5. Mkdir



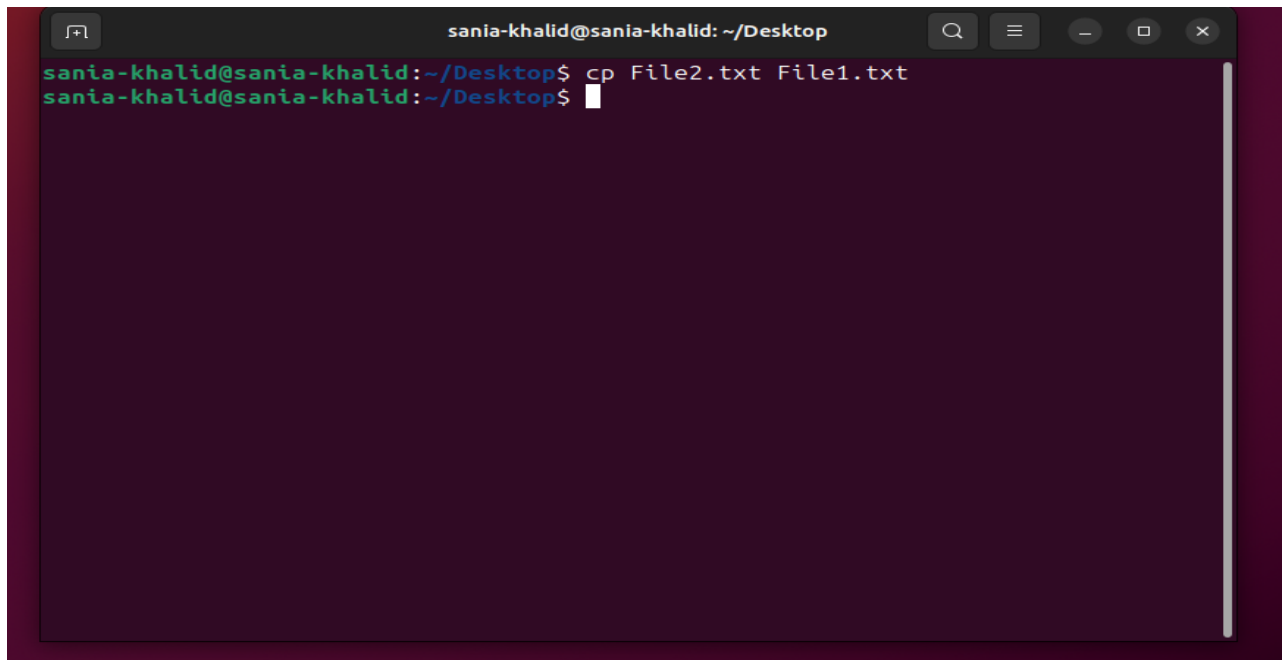
## 6. cp



## 7. mv



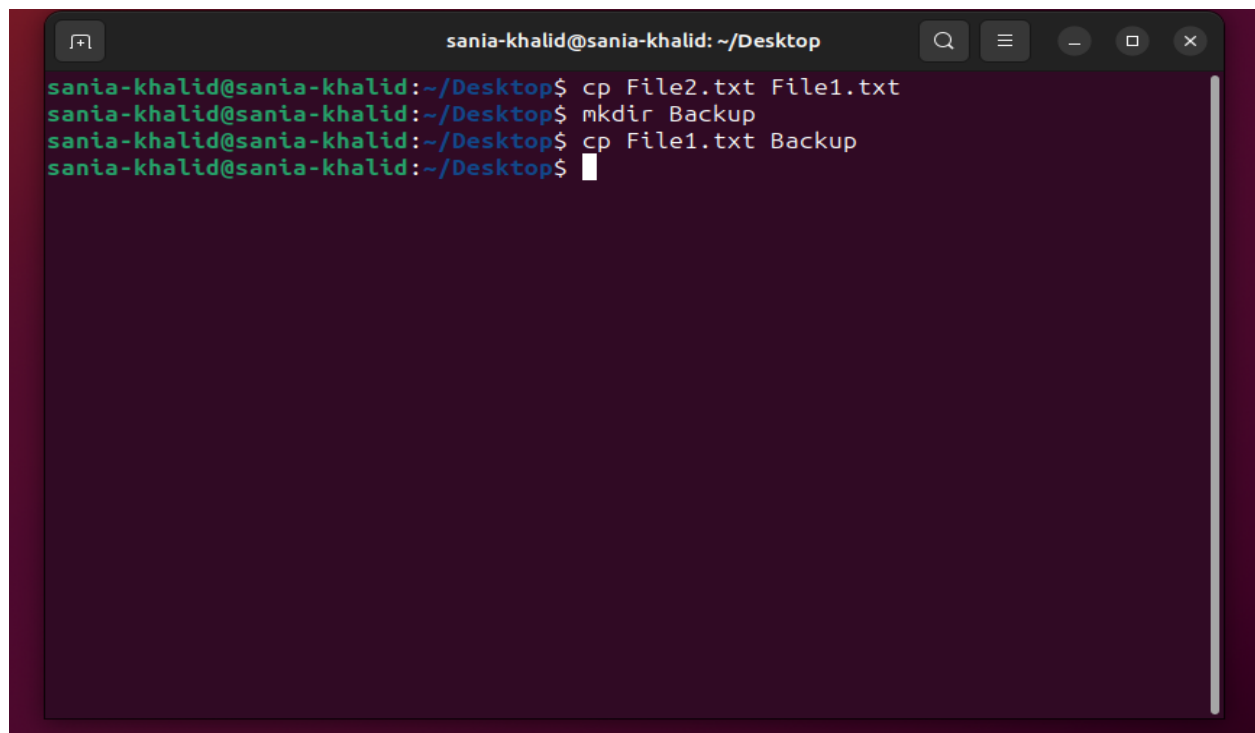
Move the file copy.txt to the name copy2.txt. Use ls to verify that this command worked.

A terminal window with a dark background and light green text. The window title is "sania-khalid@sania-khalid: ~/Desktop". The prompt is "sania-khalid@sania-khalid:~/Desktop\$". The command "cp File2.txt File1.txt" has been entered and executed. The prompt is now "sania-khalid@sania-khalid:~/Desktop\$" with a cursor at the end.

```
sania-khalid@sania-khalid: ~/Desktop
sania-khalid@sania-khalid:~/Desktop$ cp File2.txt File1.txt
sania-khalid@sania-khalid:~/Desktop$
```

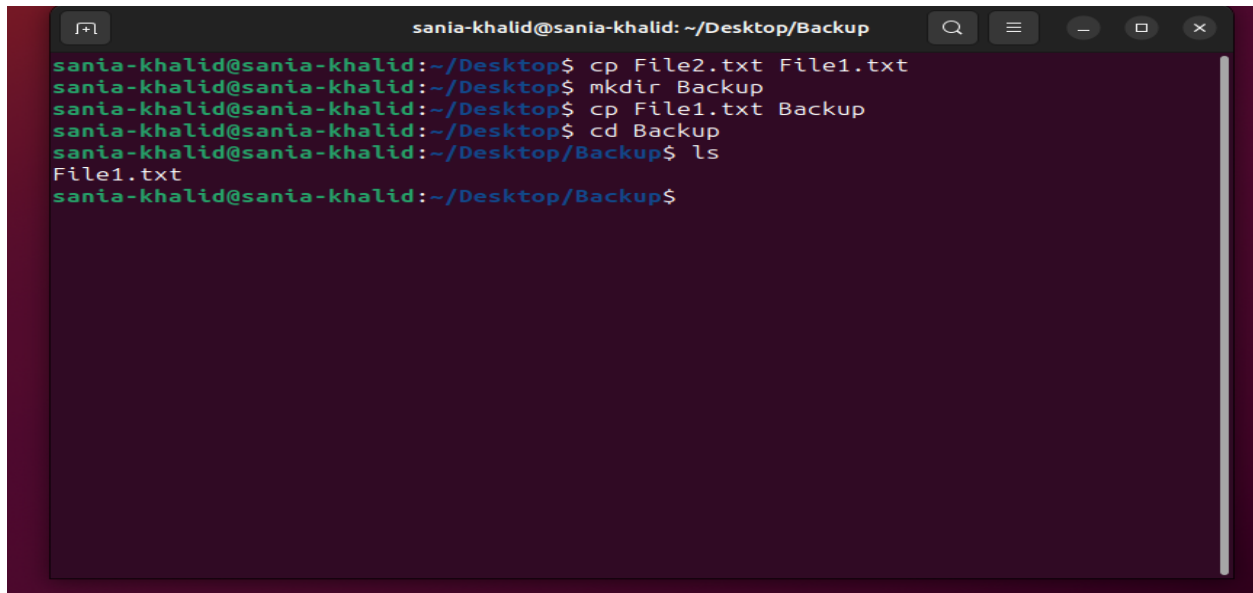
Make a new directory named backups using the mkdir command.

Copy the file copy2.txt to the backups directory.

A terminal window with a dark background and light green text. The window title is "sania-khalid@sania-khalid: ~/Desktop". The prompt is "sania-khalid@sania-khalid:~/Desktop\$". The command "cp File2.txt File1.txt" has been entered and executed. The prompt is now "sania-khalid@sania-khalid:~/Desktop\$". The command "mkdir Backup" has been entered and executed. The prompt is now "sania-khalid@sania-khalid:~/Desktop\$". The command "cp File1.txt Backup" has been entered and executed. The prompt is now "sania-khalid@sania-khalid:~/Desktop\$" with a cursor at the end.

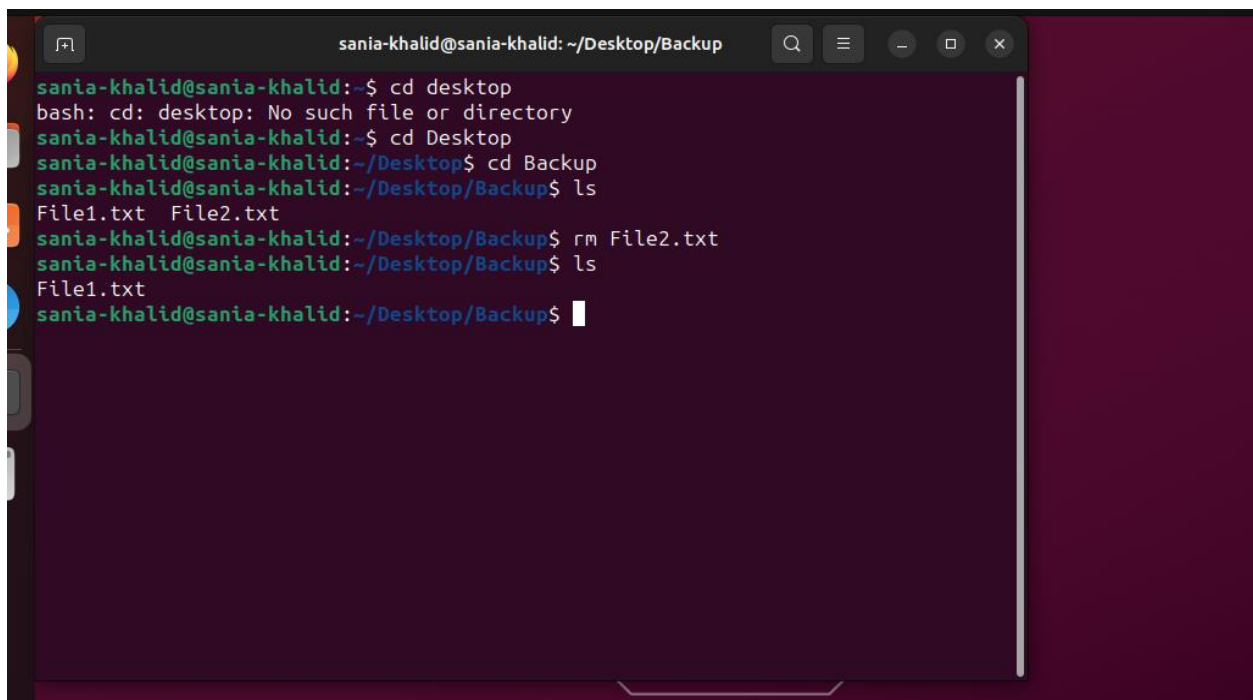
```
sania-khalid@sania-khalid:~/Desktop$ cp File2.txt File1.txt
sania-khalid@sania-khalid:~/Desktop$ mkdir Backup
sania-khalid@sania-khalid:~/Desktop$ cp File1.txt Backup
sania-khalid@sania-khalid:~/Desktop$
```

Verify that step (4) was successful by listing the files in the backups directory.

A terminal window titled 'sania-khalid@sania-khalid: ~/Desktop/Backup' with standard window controls. The terminal shows a series of commands: copying File2.txt to File1.txt, creating a Backup directory, copying File1.txt to the Backup directory, changing to the Backup directory, and listing its contents. The output shows 'File1.txt' as the only file in the directory.

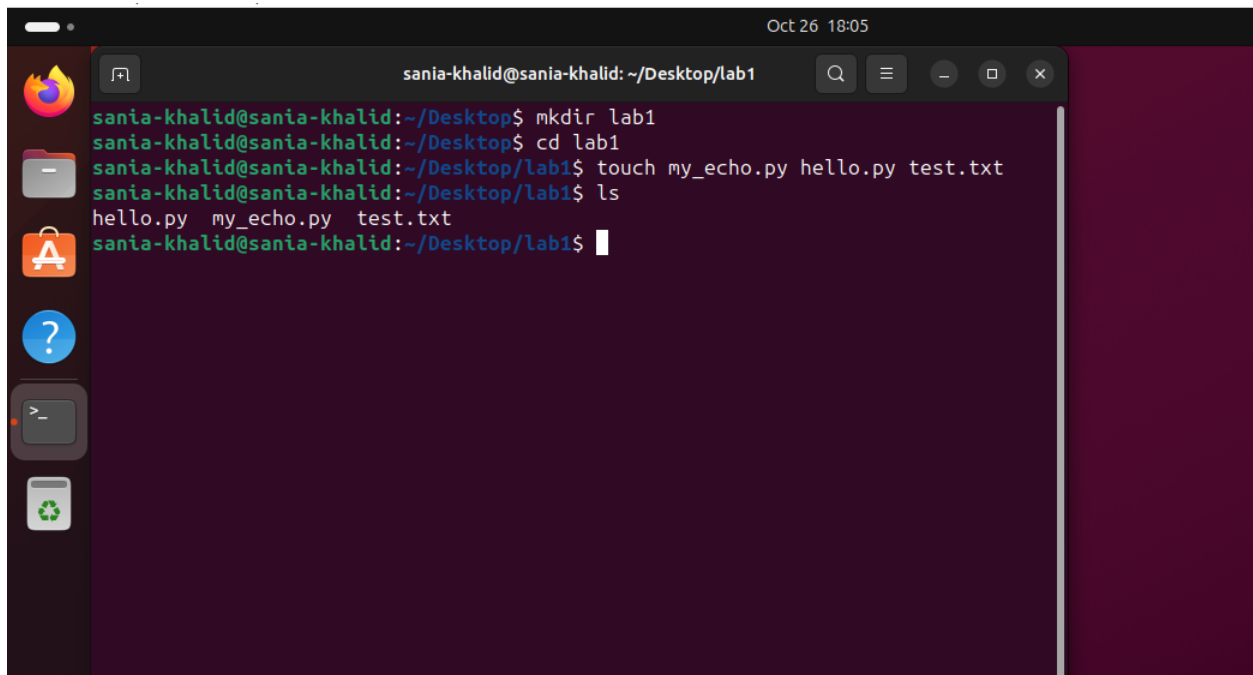
```
sania-khalid@sania-khalid:~/Desktop$ cp File2.txt File1.txt
sania-khalid@sania-khalid:~/Desktop$ mkdir Backup
sania-khalid@sania-khalid:~/Desktop$ cp File1.txt Backup
sania-khalid@sania-khalid:~/Desktop$ cd Backup
sania-khalid@sania-khalid:~/Desktop/Backup$ ls
File1.txt
sania-khalid@sania-khalid:~/Desktop/Backup$
```

Now that we have a copy of test.txt in the backups directory we no longer need copy2.txt. Remove the file copy2.txt in this directory.

A terminal window titled 'sania-khalid@sania-khalid: ~/Desktop/Backup' with standard window controls. The terminal shows commands to navigate to the Desktop, then to the Backup directory, list its contents (showing both File1.txt and File2.txt), and then remove File2.txt. A final 'ls' command confirms that only File1.txt remains.

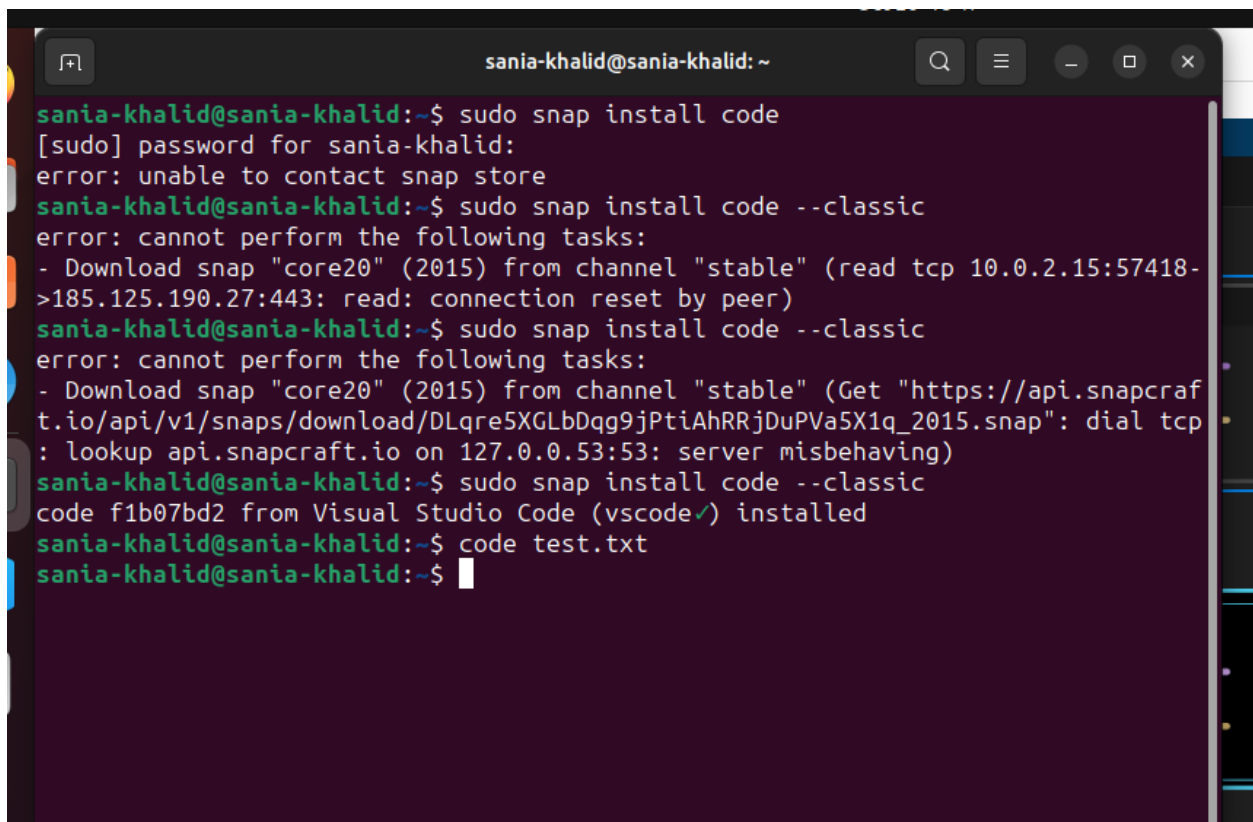
```
sania-khalid@sania-khalid:~$ cd desktop
bash: cd: desktop: No such file or directory
sania-khalid@sania-khalid:~$ cd Desktop
sania-khalid@sania-khalid:~/Desktop$ cd Backup
sania-khalid@sania-khalid:~/Desktop/Backup$ ls
File1.txt  File2.txt
sania-khalid@sania-khalid:~/Desktop/Backup$ rm File2.txt
sania-khalid@sania-khalid:~/Desktop/Backup$ ls
File1.txt
sania-khalid@sania-khalid:~/Desktop/Backup$
```

## Exercise 2



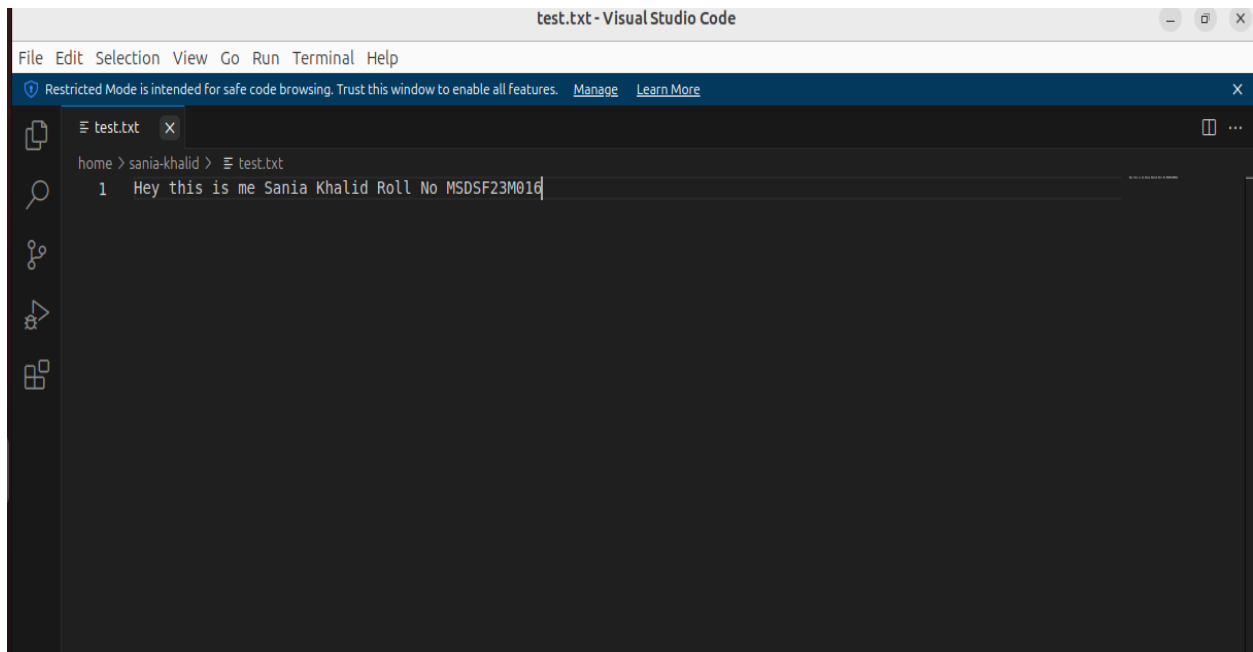
A terminal window titled 'sania-khalid@sania-khalid: ~/Desktop/lab1' with a search bar and window controls. The terminal shows the following commands and output:

```
sania-khalid@sania-khalid:~/Desktop$ mkdir lab1
sania-khalid@sania-khalid:~/Desktop$ cd lab1
sania-khalid@sania-khalid:~/Desktop/lab1$ touch my_echo.py hello.py test.txt
sania-khalid@sania-khalid:~/Desktop/lab1$ ls
hello.py  my_echo.py  test.txt
sania-khalid@sania-khalid:~/Desktop/lab1$
```

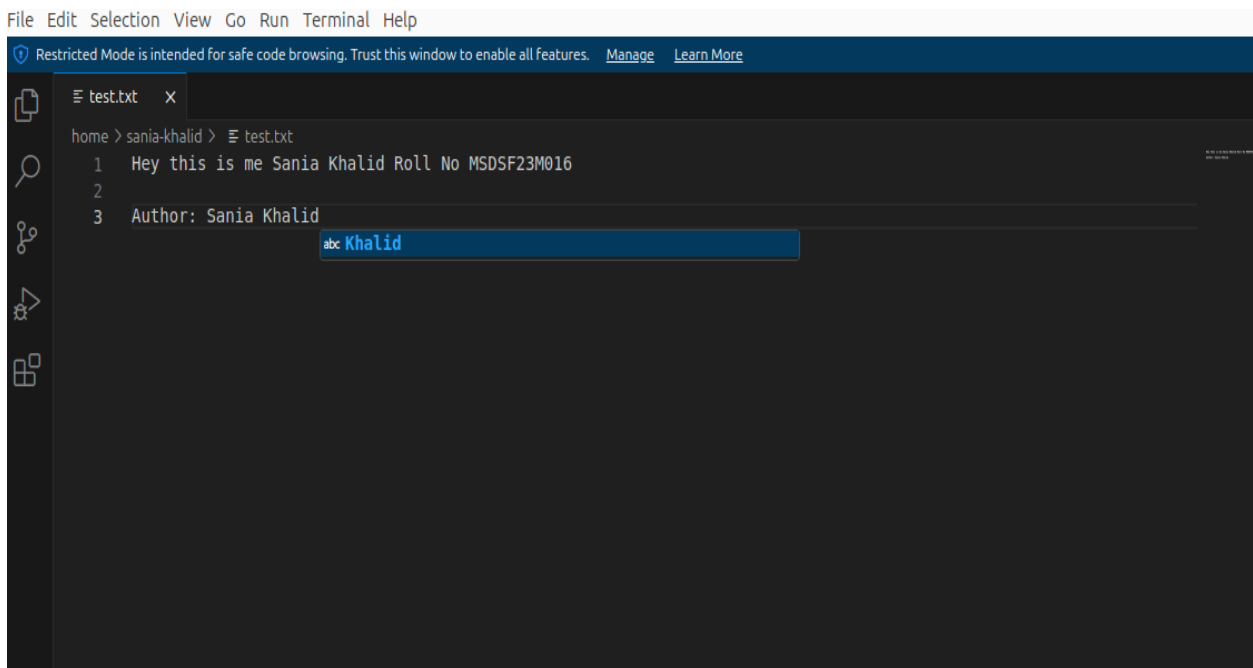


A terminal window titled 'sania-khalid@sania-khalid: ~' with a search bar and window controls. The terminal shows the following commands and output:

```
sania-khalid@sania-khalid:~$ sudo snap install code
[sudo] password for sania-khalid:
error: unable to contact snap store
sania-khalid@sania-khalid:~$ sudo snap install code --classic
error: cannot perform the following tasks:
- Download snap "core20" (2015) from channel "stable" (read tcp 10.0.2.15:57418->185.125.190.27:443: read: connection reset by peer)
sania-khalid@sania-khalid:~$ sudo snap install code --classic
error: cannot perform the following tasks:
- Download snap "core20" (2015) from channel "stable" (Get "https://api.snapcraft.io/api/v1/snaps/download/DLqre5XGLbDqg9jPtIAhRRjDuPVa5X1q_2015.snap": dial tcp : lookup api.snapcraft.io on 127.0.0.53:53: server misbehaving)
sania-khalid@sania-khalid:~$ sudo snap install code --classic
code f1b07bd2 from Visual Studio Code (vscode✓) installed
sania-khalid@sania-khalid:~$ code test.txt
sania-khalid@sania-khalid:~$
```

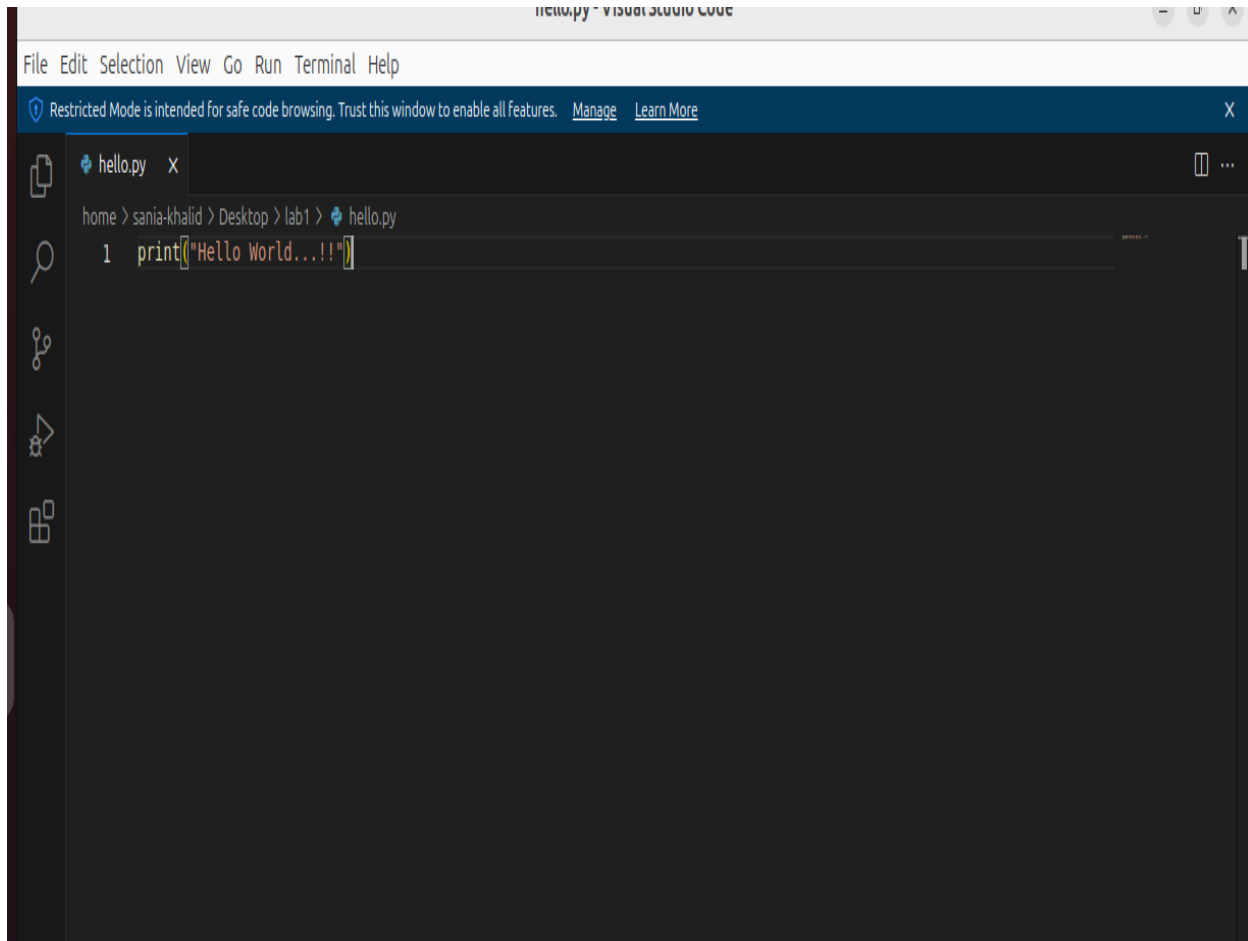


1. Add your name after Author: in this file
2. Save the file
3. Close and reopen the file in code and ensuring that your name is still there
4. Finally, close code.





## Exercise 03



Navigate to your `linux_lab_remote` directory. What do you see when you run `ls pa*?`  
What about `ls pa*/*?`

```
sania-khalid@sania-khalid:~$ cd Desktop
sania-khalid@sania-khalid:~/Desktop$ cd lab1
sania-khalid@sania-khalid:~/Desktop/lab1$ ls
hello.py  my_echo.py  test.txt
sania-khalid@sania-khalid:~/Desktop/lab1$ python3 hello.py
sania-khalid@sania-khalid:~/Desktop/lab1$ code hello.py
sania-khalid@sania-khalid:~/Desktop/lab1$ python3 hello.py
Hello World...!!
sania-khalid@sania-khalid:~/Desktop/lab1$
```

```
sania-khalid@sania-khalid:~/Desktop$ ls * .txt
ls: cannot access '.txt': No such file or directory
File1.txt  File2.txt

Backup:
File1.txt

Directory1:
Directory4  File3.txt

Directory2:

lab1:
hello.py  my_echo.py  test.txt
sania-khalid@sania-khalid:~/Desktop$
```

What do you expect to see when you run the command `ls ../pa*` from within your `linux_lab_remote/lab1` directory?

```
sania-khalid@sania-khalid:~/Desktop$ ls pa/*
ls: cannot access 'pa/*': No such file or directory
sania-khalid@sania-khalid:~/Desktop$
```

```
sania-khalid@sania-khalid:~/Desktop$ ls ../pa*
ls: cannot access '../pa*': No such file or directory
sania-khalid@sania-khalid:~/Desktop$
```

---

## Exercise 04

Use piping to chain together the `printenv` and `tail` commands to display the last 10 lines of output from `printenv`.

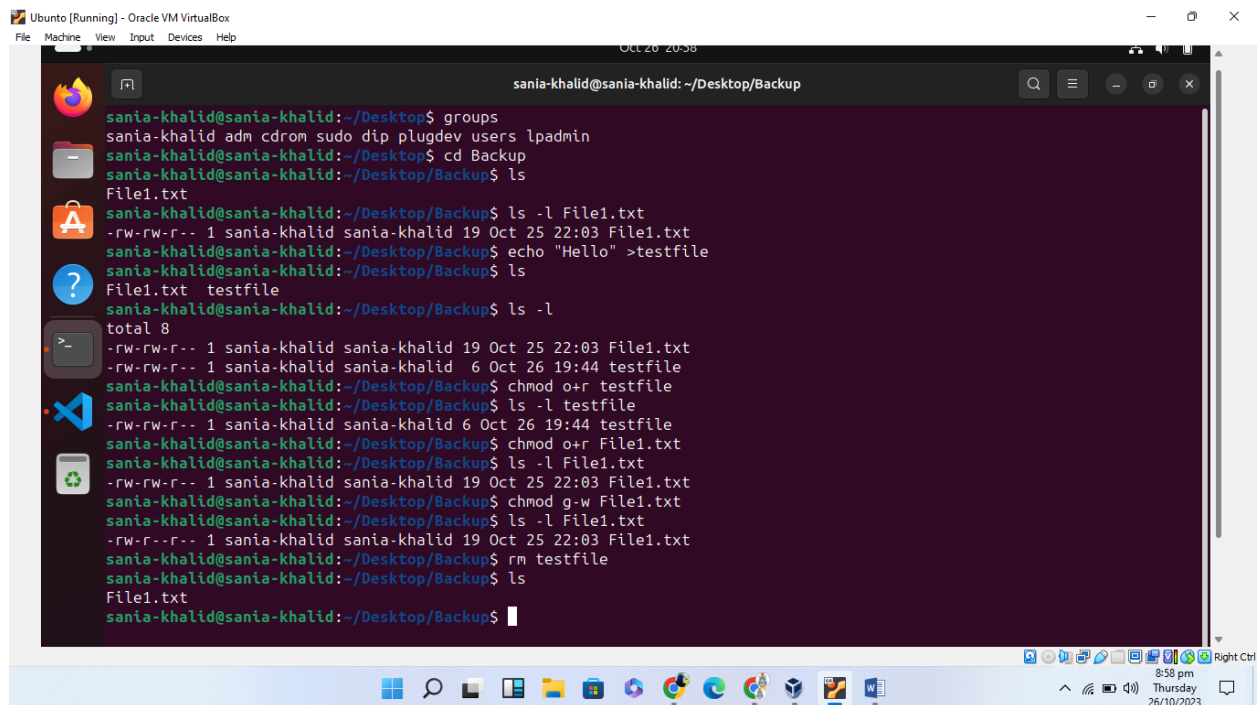
```
sania-khalid@sania-khalid:~/Desktop$ printenv | tail -n 10
SHLVL=1
QT_IM_MODULE=ibus
XDG_RUNTIME_DIR=/run/user/1000
DEBUGINFOD_URLS=https://debuginfod.ubuntu.com
XDG_DATA_DIRS=/usr/share/ubuntu:/usr/share/gnome:/usr/local/share:/usr/share:/var/lib/snapd/desktop
PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:/snap/bin
GDMSESSION=ubuntu
DBUS_SESSION_BUS_ADDRESS=unix:path=/run/user/1000/bus
_=/usr/bin/printenv
OLDPWD=/home/sania-khalid/Desktop/lab1
sania-khalid@sania-khalid:~/Desktop$
```

Replicate the above functionality without using the | operator. (hint: Use a temporary file.)

```
sania-khalid@sania-khalid:~/Desktop$ printenv > temp_file
sania-khalid@sania-khalid:~/Desktop$ tail -n 10 temp_file
SHLVL=1
QT_IM_MODULE=ibus
XDG_RUNTIME_DIR=/run/user/1000
DEBUGINFOD_URLS=https://debuginfod.ubuntu.com
XDG_DATA_DIRS=/usr/share/ubuntu:/usr/share/gnome:/usr/local/share:/usr/share:/var/lib/snapd/desktop
PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:/snap/bin
GDMSESSION=ubuntu
DBUS_SESSION_BUS_ADDRESS=unix:path=/run/user/1000/bus
_=usr/bin/printenv
OLDPWD=/home/sania-khalid/Desktop/lab1
sania-khalid@sania-khalid:~/Desktop$ rm temp_file
sania-khalid@sania-khalid:~/Desktop$
```

## Exercise 05

1. Run `echo "Hello!" > testfile` to construct testfile. Look at the permissions using `ls -l`.
2. Change the permissions on testfile to allow and read access for others. Run `ls -l testfile` to check the new permissions.
3. Remove group write access from testfile. Check the corrected permissions.
4. Remove testfile using `rm`.



```
sania-khalid@sania-khalid: ~/Desktop/Backup
sania-khalid@sania-khalid:~/Desktop$ groups
sania-khalid adm cdrom sudo dip plugdev users lpadmin
sania-khalid@sania-khalid:~/Desktop$ cd Backup
sania-khalid@sania-khalid:~/Desktop/Backup$ ls
File1.txt
sania-khalid@sania-khalid:~/Desktop/Backup$ ls -l File1.txt
-rw-rw-r-- 1 sania-khalid sania-khalid 19 Oct 25 22:03 File1.txt
sania-khalid@sania-khalid:~/Desktop/Backup$ echo "Hello" >testfile
sania-khalid@sania-khalid:~/Desktop/Backup$ ls
File1.txt testfile
sania-khalid@sania-khalid:~/Desktop/Backup$ ls -l
total 8
-rw-rw-r-- 1 sania-khalid sania-khalid 19 Oct 25 22:03 File1.txt
-rw-rw-r-- 1 sania-khalid sania-khalid 6 Oct 26 19:44 testfile
sania-khalid@sania-khalid:~/Desktop/Backup$ chmod o+r testfile
sania-khalid@sania-khalid:~/Desktop/Backup$ ls -l testfile
-rw-rw-r-- 1 sania-khalid sania-khalid 6 Oct 26 19:44 testfile
sania-khalid@sania-khalid:~/Desktop/Backup$ chmod o+r File1.txt
sania-khalid@sania-khalid:~/Desktop/Backup$ ls -l File1.txt
-rw-rw-r-- 1 sania-khalid sania-khalid 19 Oct 25 22:03 File1.txt
sania-khalid@sania-khalid:~/Desktop/Backup$ chmod g-w File1.txt
sania-khalid@sania-khalid:~/Desktop/Backup$ ls -l File1.txt
-rw-r--r-- 1 sania-khalid sania-khalid 19 Oct 25 22:03 File1.txt
sania-khalid@sania-khalid:~/Desktop/Backup$ rm testfile
sania-khalid@sania-khalid:~/Desktop/Backup$ ls
File1.txt
sania-khalid@sania-khalid:~/Desktop/Backup$
```