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Week1 Assignment
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Q1) Create a file, assign permissions (read, write, execute) to different user categories (owner, group, others), and practice changing permissions using chmod.

1. File Creation

- Opened Ubuntu terminal.
- Created a file named program.txt using the following command:
`touch celebel-intern/week1/program.txt`

2. Verifying File and Initial Permissions

- Listed the file using:
`ls -l celebel-intern/week1/program.txt`
- **Explanation:**
 - rw- for **owner**: read & write
 - rw- for **group**: read & write
 - r-- for **others**: read only

3. Modifying Permissions using chmod

- Used chmod to change permissions:
 - **Add permission**: use +
 - **Remove permission**: use -
 - **Example**:
`chmod u+x program.txt` → Add execute for user
`chmod g-w program.txt` → Remove write for group

4. Changing All (ugo) Together

- Used a flag to modify user (u), group (g), and others (o) at once:
`chmod a+x program.txt`

5. Modifying Multiple Files at Once

- Used space between file names:
`chmod g+w file1.txt file2.txt`

6. Recursively Changing Directory Permissions

- Used -R flag to apply permissions recursively (including subfolders and files):
`chmod -R o-rwx celebel-intern/`

7. Shell Access Restriction

- Used chmod to restrict shell access to specific users:
`chmod 700 script.sh`
 - Only the owner can read/write/execute; group/others have no access.

8. Understanding Numeric (Octal) Mode

Permission	Binary	Value
Read	r	4
Write	w	2
Execute	x	1

- Combine values:

- o 7 = rwx
- o 6 = rw-
- o 4 = r--
- o 0 = ---

`chmod 742 program.txt`

- Owner: 7 (rwx), Group: 4 (r--), Others: 2 (-w-)

9. Sticky bit, suid, sgid are special permission types

- `chmod +t test` # Sticky bit
- `chmod u+s ./test/script.sh` # SUID
- `chmod g+s test1/` # SGID

```
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ touch program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l program.txt
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun  6 11:15 program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod u+x,g+x,o+x program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l program.txt
-rwxrwxr-x 1 vboxuser vboxuser 0 Jun  6 11:15 program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod u-x,g-wx,o-x program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l program.txt
-rw-r--r-- 1 vboxuser vboxuser 0 Jun  6 11:15 program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod 742 program.txt
Command 'chmode' not found, did you mean:
  command 'chmod' from deb coreutils (9.4-2ubuntu2)
Try: sudo apt install <deb name>
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod 742 program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l program.txt
-rwxr---w- 1 vboxuser vboxuser 0 Jun  6 11:15 program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod 664 program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l program.txt
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun  6 11:15 program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$
```

ubuntu [Running] - Oracle VirtualBox : 1

File Machine View Input Devices Help

Jun 6 11:33

```
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ touch file1.txt file2.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls
file1.txt file2.txt program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l
total 0
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun  6 11:29 file1.txt
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun  6 11:29 file2.txt
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun  6 11:15 program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod a program.txt
chmod: invalid mode: 'a'
Try 'chmod --help' for more information.
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod -a program.txt
chmod: invalid mode: '-a'
Try 'chmod --help' for more information.
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod a-rwx program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l program.txt
----- 1 vboxuser vboxuser 0 Jun  6 11:15 program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod a+rwx program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l program.txt
-rwxrwxrwx 1 vboxuser vboxuser 0 Jun  6 11:15 program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod 664
chmod: missing operand after '664'
Try 'chmod --help' for more information.
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod 664 program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l
total 0
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun  6 11:29 file1.txt
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun  6 11:29 file2.txt
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun  6 11:15 program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$
```

celebal-intern

Home

Right Ctrl

Jun 6 11:44

```
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l
total 0
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun  6 11:29 file1.txt
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun  6 11:29 file2.txt
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun  6 11:15 program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod 777 program.txt file1.txt file2.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l
total 0
-rwxrwxrwx 1 vboxuser vboxuser 0 Jun  6 11:29 file1.txt
-rwxrwxrwx 1 vboxuser vboxuser 0 Jun  6 11:29 file2.txt
-rwxrwxrwx 1 vboxuser vboxuser 0 Jun  6 11:15 program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod 664 program.txt file1.txt file2.txt

vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l
total 0
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun  6 11:29 file1.txt
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun  6 11:29 file2.txt
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun  6 11:15 program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod uo+x program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l
total 0
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun  6 11:29 file1.txt
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun  6 11:29 file2.txt
-rwxr-wx 1 vboxuser vboxuser 0 Jun  6 11:15 program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ mkdir test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l
total 4
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun  6 11:29 file1.txt
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun  6 11:29 file2.txt
-rwxr-wx 1 vboxuser vboxuser 0 Jun  6 11:15 program.txt
drwxrwxr-x 2 vboxuser vboxuser 4096 Jun  6 11:40 test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$
```

```
vboxuser@ubuntu [Running] - Oracle VirtualBox : 1
File Machine View Input Devices Help
Jun 6 12:04
vboxuser@ubuntu: ~/Desktop/celebal-intern/week1
chmod: cannot access 'f*': No such file or directory
vboxuser@ubuntu:~/Desktop/celebal-intern$ chmod -R 777
chmod: missing operand after '777'
Try 'chmod --help' for more information.
vboxuser@ubuntu:~/Desktop/celebal-intern$ chmod -R 777 "f*"
chmod: cannot access 'f*': No such file or directory
vboxuser@ubuntu:~/Desktop/celebal-intern$ cd week1/
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l -a
total 12
drwxrwxr-x 3 vboxuser vboxuser 4096 Jun  6 11:40 .
drwxrwxr-x 3 vboxuser vboxuser 4096 Jun  6 10:34 ..
-rw-rw-r-- 1 vboxuser vboxuser    0 Jun  6 11:29 file1.txt
-rw-rw-r-- 1 vboxuser vboxuser    0 Jun  6 11:29 file2.txt
-rwxrwxr-x 1 vboxuser vboxuser    0 Jun  6 11:15 program.txt
drwxrwxr-x 2 vboxuser vboxuser 4096 Jun  6 11:40 test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ rm -r test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l -a
total 8
drwxrwxr-x 2 vboxuser vboxuser 4096 Jun  6 12:04 .
drwxrwxr-x 3 vboxuser vboxuser 4096 Jun  6 10:34 ..
-rw-rw-r-- 1 vboxuser vboxuser    0 Jun  6 11:29 file1.txt
-rw-rw-r-- 1 vboxuser vboxuser    0 Jun  6 11:29 file2.txt
-rwxrwxr-x 1 vboxuser vboxuser    0 Jun  6 11:15 program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod -R 777 f*
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l -a
total 8
drwxrwxr-x 2 vboxuser vboxuser 4096 Jun  6 12:04 .
drwxrwxr-x 3 vboxuser vboxuser 4096 Jun  6 10:34 ..
-rwxrwxrwx 1 vboxuser vboxuser    0 Jun  6 11:29 file1.txt
-rwxrwxrwx 1 vboxuser vboxuser    0 Jun  6 11:29 file2.txt
-rwxrwxr-x 1 vboxuser vboxuser    0 Jun  6 11:15 program.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$
```

```
vboxuser@ubuntu [Running] - Oracle VirtualBox : 1
File Machine View Input Devices Help
Jun 6 12:29
vboxuser@ubuntu: ~/Desktop/celebal-intern/week1
-rwxrwxrwx 1 vboxuser vboxuser    0 Jun  6 11:29 file1.txt
-rwxrwxrwx 1 vboxuser vboxuser    0 Jun  6 11:29 file2.txt
-rwxrw-r-x 1 vboxuser vboxuser    0 Jun  6 11:15 program.txt
drwxrwxr-x 2 vboxuser vboxuser 4096 Jun  6 12:24 test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmode -t test
Command 'chmode' not found, did you mean:
  command 'chmod' from deb coreutils (9.4-2ubuntu2)
Try: sudo apt install <deb name>
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod -t test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l -a
total 12
drwxrwxr-x 3 vboxuser vboxuser 4096 Jun  6 12:24 .
drwxrwxr-x 3 vboxuser vboxuser 4096 Jun  6 10:34 ..
-rwxrwxrwx 1 vboxuser vboxuser    0 Jun  6 11:29 file1.txt
-rwxrwxrwx 1 vboxuser vboxuser    0 Jun  6 11:29 file2.txt
-rwxrw-r-x 1 vboxuser vboxuser    0 Jun  6 11:15 program.txt
drwxrwxr-x 2 vboxuser vboxuser 4096 Jun  6 12:24 test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod +t test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l -a
total 12
drwxrwxr-x 3 vboxuser vboxuser 4096 Jun  6 12:24 .
drwxrwxr-x 3 vboxuser vboxuser 4096 Jun  6 10:34 ..
-rwxrwxrwx 1 vboxuser vboxuser    0 Jun  6 11:29 file1.txt
-rwxrwxrwx 1 vboxuser vboxuser    0 Jun  6 11:29 file2.txt
-rwxrw-r-x 1 vboxuser vboxuser    0 Jun  6 11:15 program.txt
drwxrwxr-t 2 vboxuser vboxuser 4096 Jun  6 12:24 test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod u+s script.sh
chmod: cannot access 'script.sh': No such file or directory
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod u+s ./test/script.sh
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l ./test/script.sh
-rwsrwxrwx 1 vboxuser vboxuser 0 Jun  6 12:24 ./test/script.sh
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$
```

Q2) Execute basic Linux commands (e.g., ls, cd, mkdir, rm, touch) to manipulate files and directories, with an emphasis on understanding their usage.

And

Q3) Using the terminal, practice navigating through directories, listing file contents, and moving files to different locations.

1. File & Directory Management

Command	Description
ls	List directory contents
ls -l	Long listing (with permissions)
ls -a	Show hidden files
cd	Change directory
pwd	Print current directory
mkdir	Create new directory
rmdir	Remove empty directory
rm -r	Remove directory and contents
touch	Create empty file
cp	Copy file/directory
mv	Move/rename file/directory
rm	Remove file
find	Search for files

```
ubuntu [Running] - Oracle VirtualBox : 1
File Machine View Input Devices Help
Jun 6 12:29
vboxuser@ubuntu:~/Desktop/celebal-intern/week1
-rwxrwxrwx 1 vboxuser vboxuser 0 Jun 6 11:29 file1.txt
-rwxrwxrwx 1 vboxuser vboxuser 0 Jun 6 11:29 file2.txt
-rwxr-w-r-x 1 vboxuser vboxuser 0 Jun 6 11:15 program.txt
drwxrwxr-x 2 vboxuser vboxuser 4096 Jun 6 12:24 test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod -t test
Command 'chmod' not found, did you mean:
  command 'chmod' from deb coreutils (9.4-2ubuntu2)
Try: sudo apt install <deb name>
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod -t test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l -a
total 12
drwxrwxr-x 3 vboxuser vboxuser 4096 Jun 6 12:24 .
drwxrwxr-x 3 vboxuser vboxuser 4096 Jun 6 10:34 ..
-rwxrwxrwx 1 vboxuser vboxuser 0 Jun 6 11:29 file1.txt
-rwxrwxrwx 1 vboxuser vboxuser 0 Jun 6 11:29 file2.txt
-rwxr-w-r-x 1 vboxuser vboxuser 0 Jun 6 11:15 program.txt
drwxrwxr-x 2 vboxuser vboxuser 4096 Jun 6 12:24 test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod +t test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l -a
total 12
drwxrwxr-x 3 vboxuser vboxuser 4096 Jun 6 12:24 .
drwxrwxr-x 3 vboxuser vboxuser 4096 Jun 6 10:34 ..
-rwxrwxrwx 1 vboxuser vboxuser 0 Jun 6 11:29 file1.txt
-rwxrwxrwx 1 vboxuser vboxuser 0 Jun 6 11:29 file2.txt
-rwxr-w-r-x 1 vboxuser vboxuser 0 Jun 6 11:15 program.txt
drwxrwxr-t 2 vboxuser vboxuser 4096 Jun 6 12:24 test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod u+s script.sh
chmod: cannot access 'script.sh': No such file or directory
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod u+s ./test/script.sh
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l ./test/script.sh
-rwsrwxrwx 1 vboxuser vboxuser 0 Jun 6 12:24 ./test/script.sh
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$
```

```
File Machine View Input Devices Help
Jun 6 12:47
vboxuser@ubuntu:~/Desktop/celebal-intern/week1
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ mkdir temp1 temp2 temp3 temp4
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls
file1.txt file2.txt program.txt temp temp1 temp2 temp3 temp4 test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ mkdir -p dir1/dir2/dir3
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls
dir1 file1.txt file2.txt program.txt temp temp1 temp2 temp3 temp4 test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ cd dir1
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls
dir2
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ cd dir2
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls
dir3
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ cd dir3
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ cd ..
bash: cd: ..: No such file or directory
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ cd dir2
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ cd ../../..
vboxuser@ubuntu:~/Desktop/celebal-intern$ cd week1
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ mkdir "folder 1"
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls
dir1 file1.txt file2.txt 'folder 1' program.txt temp temp1 temp2 temp3 temp4 test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ mkdir folder\ 3
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls
dir1 file1.txt file2.txt 'folder 1' 'folder 3' program.txt temp temp1 temp2 temp3 temp4 test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ cat > file1.txt
hi i am kriti
how are you all?
how everyone fine and healthy.
^C
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ cat file1.txt
hi i am kriti
how everyone fine and healthy.
```

```
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls
combine.txt  file1.txt  file2.txt  'folder 3'    temp     temp2   temp4
dir1         file_2.txt 'folder 1'  program.txt  temp1   temp3   test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ rm file_2.txt combine.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls
dir1  file1.txt  file2.txt  'folder 1'  'folder 3'  program.txt  temp  temp1  temp2  temp3  temp4  test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ rm -r "folder 1" "folder 3" temp temp1 temp2 temp3 temp4
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls
dir1  file1.txt  file2.txt  program.txt  test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -a
.  ..  dir1  file1.txt  file2.txt  program.txt  test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ rmdir dir1
rmdir: failed to remove 'dir1': Directory not empty
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ echo "hello kriti" > ./dir1/file1.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -R
.:
dir1  file1.txt  file2.txt  program.txt  test

./dir1:
dir2  file1.txt

./dir1/dir2:
dir3

./dir1/dir2/dir3:

./test:
script.sh
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ rmdir dir1
rmdir: failed to remove 'dir1': Directory not empty
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ rm ./dir1/dir2/dir3
rm: cannot remove './dir1/dir2/dir3': Is a directory
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -R
.:

```

Sun Oct 14 20

```
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ script.sh
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ rm -r dir1
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls
file1.txt  file2.txt  program.txt  test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ touch file3.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ cp file2.txt ./test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -R
.:
file1.txt  file2.txt  file3.txt  program.txt  test

./test:
file2.txt  script.sh
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ mv file1.txt ./test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -R
.:
file2.txt  file3.txt  program.txt  test

./test:
file1.txt  file2.txt  script.sh
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ mv ./text/file1.txt .
mv: cannot stat './text/file1.txt': No such file or directory
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ mv ./test/file1.txt .
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -R
.:
file1.txt  file2.txt  file3.txt  program.txt  test

./test:
file2.txt  script.sh
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ mv file3.txt iamfile3.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls
file1.txt  file2.txt  iamfile3.txt  program.txt  test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$
```

2. File Viewing & Editing

Command	Description
cat	View file contents
tac	View file in reverse
less	View file (scrollable)
more	View file page-by-page
head	Show first lines
tail	Show last lines
nano	Command-line text editor
vim	Powerful terminal editor
echo	Print text or variables
wc	Word/line/character count

```

vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls
file1.txt file2.txt iamfile3.txt nandafile.txt program.txt test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ cat > file1.txt
hi i am a girl
i am a good girl
i go to school daily
^C
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ cat file1.txt
hi i am a girl
i am a good girl
i go to school daily
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ tac file1.txt
i go to school daily
i am a good girl
hi i am a girl
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ cat >> file1.txt
good 1
good 2
good 3^C
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ cat file1.txt | less
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ head -n 2 file1.txt
hi i am a girl
i am a good girl
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ tail -n 2 file1.txt
good 1
good 2
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ nano file1.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ cat file1.txt
hi i am a girl
i am a good girl
i go to school daily
good 1
good 2
good 3
good 4

vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ wc file1.txt
 8 23 82 file1.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ vim file1.txt
Command 'vim' not found, but can be installed with:
sudo apt install vim      # version 2:9.1.0016-1ubuntu7.6, or
sudo apt install vim-gtk3  # version 2:9.1.0016-1ubuntu7.6
sudo apt install vim-motif # version 2:9.1.0016-1ubuntu7.6
sudo apt install vim-nox   # version 2:9.1.0016-1ubuntu7.6
sudo apt install neovim    # version 0.7.2-8

```

3. File Permissions & Ownership

Command	Description
Chmod (done)	Change file permissions
Chown (done)	Change file owner
Chgrp (done)	Change group ownership
umask	Default permission mask

Default: 777

umask: 022

Result: 755 → rwxr-xr-x

```
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ touch new-file.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ ls -a new-file.txt
new-file.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ ls -l new-file.txt
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun  7 22:43 new-file.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ chmod a=rwx new-file.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ ls -l new-file.txt
-rwxrwxrwx 1 vboxuser vboxuser 0 Jun  7 22:43 new-file.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ umask 001 new-file.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ ls -l new-file.txt
-rwxrwxrwx 1 vboxuser vboxuser 0 Jun  7 22:43 new-file.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ umask 022 new-file.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ ls -l new-file.txt
-rw-r--r-- 1 vboxuser vboxuser 0 Jun  7 22:49 new-file2.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$
```

4. User & Group Management (already used in previous screenshot)

Command	Description
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whoami	Show current user
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id	Show user & group info
----	------------------------

useradd	Add new user
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usermod	Modify user
---------	-------------

userdel	Delete user
---------	-------------

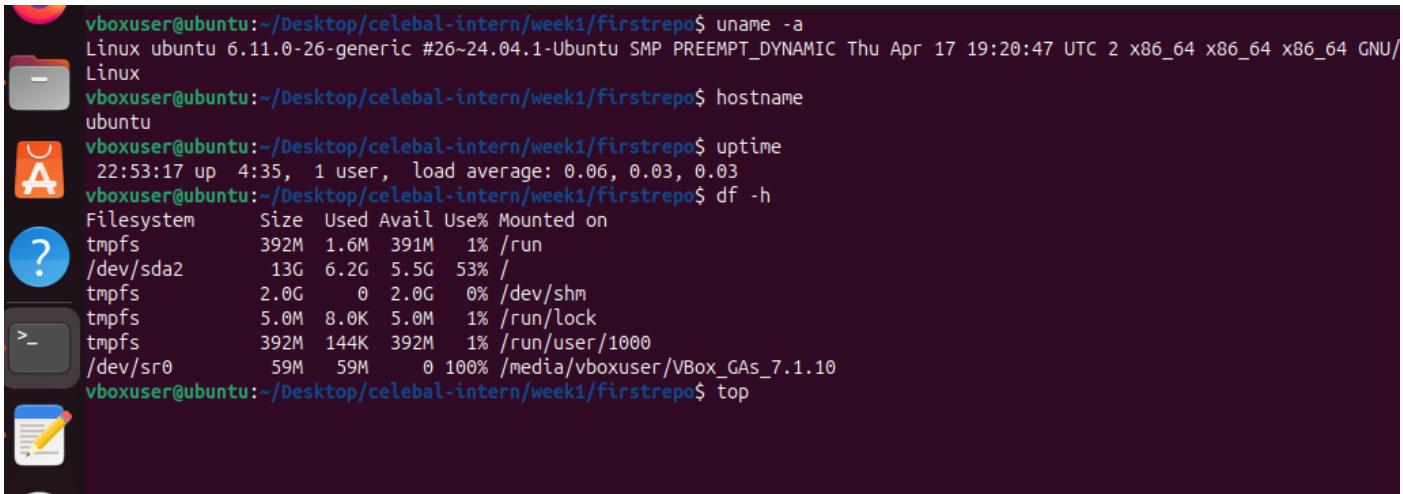
groupadd	Add group
----------	-----------

passwd	Change password
--------	-----------------

su	Switch user
----	-------------

sudo	Run as superuser
------	------------------

5. System Information



```
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ uname -a
Linux ubuntu 6.11.0-26-generic #26~24.04.1-Ubuntu SMP PREEMPT_DYNAMIC Thu Apr 17 19:20:47 UTC 2 x86_64 x86_64 x86_64 GNU/
Linux
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ hostname
ubuntu
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ uptime
22:53:17 up 4:35, 1 user, load average: 0.06, 0.03, 0.03
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ df -h
Filesystem      Size  Used Avail Use% Mounted on
tmpfs          392M   1.6M  391M  1% /run
/dev/sda2       13G   6.2G  5.5G  53% /
tmpfs          2.0G     0  2.0G  0% /dev/shm
tmpfs          5.0M   8.0K  5.0M  1% /run/lock
tmpfs          392M  144K  392M  1% /run/user/1000
/dev/sr0        59M    59M     0 100% /media/vboxuser/VBox_GAs_7.1.10
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ top
```

Command	Description
uname -a	Kernel/system info
hostname	Show/set system name
uptime	System uptime
df -h	Disk usage
du -sh	Folder size
top	Live system resource monitor
htop	(if installed) Interactive process viewer
free -h	RAM usage
ps aux	List running processes
kill	Terminate process by PID
killall	Kill by process name

6. Networking

Command	Description
ping	Check connection to host
ifconfig	Show network interfaces (old)
ip a	Show IP address (new)
wget	Download files from web

```

vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ ping google.com
PING google.com (142.250.76.78) 56(84) bytes of data.
64 bytes from tzdela-aq-in-f14.1e100.net (142.250.76.78): icmp_seq=1 ttl=255 time=66.1 ms
64 bytes from tzdela-aq-in-f14.1e100.net (142.250.76.78): icmp_seq=2 ttl=255 time=67.0 ms
64 bytes from tzdela-aq-in-f14.1e100.net (142.250.76.78): icmp_seq=3 ttl=255 time=64.5 ms
64 bytes from tzdela-aq-in-f14.1e100.net (142.250.76.78): icmp_seq=4 ttl=255 time=63.3 ms
64 bytes from tzdela-aq-in-f14.1e100.net (142.250.76.78): icmp_seq=5 ttl=255 time=80.3 ms
^C
--- google.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4015ms
rtt min/avg/max/mdev = 63.269/68.223/80.314/6.176 ms
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ ifconfig
Command 'ifconfig' not found, but can be installed with:
sudo apt install net-tools
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ sudo apt install net-tools
[sudo] password for vboxuser:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  net-tools
0 upgraded, 1 newly installed, 0 to remove and 2 not upgraded.
Need to get 204 kB of archives.
After this operation, 811 kB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu noble-updates/main amd64 net-tools amd64 2.10-0.1ubuntu4.4 [204 kB]
Fetched 204 kB in 3s (71.2 kB/s)
Selecting previously unselected package net-tools.
(Reading database ... 152629 files and directories currently installed.)
Preparing to unpack .../net-tools_2.10-0.1ubuntu4.4_amd64.deb ...
Unpacking net-tools (2.10-0.1ubuntu4.4) ...
Setting up net-tools (2.10-0.1ubuntu4.4) ...
Processing triggers for man-db (2.12.0-4build2) ...
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
      inet 10.0.2.15  netmask 255.255.255.0  broadcast 10.0.2.255
      inet6 fe80::a00:27ff:fe79:d81c  prefixlen 64  scopeid 0x20<link>
      inet6 fd17:625c:f037:2:28fc:6465:46d5:c1cb  prefixlen 64  scopeid 0x0<global>
      inet6 fd17:625c:f037:2:a00:27ff:fe79:d81c  prefixlen 64  scopeid 0x0<global>
        ether 08:00:27:79:d8:1c  txqueuelen 1000  (Ethernet)
          RX packets 27218  bytes 28670652 (28.6 MB)
          RX errors 0  dropped 0  overruns 0  frame 0

```

7. Package Management (Ubuntu/Debian)(already done above)

Command Description

apt update Refresh package list

apt upgrade Upgrade packages

apt install Install a package

apt remove Remove a package

Q4) Create a new user and group, set their permissions, and explore user management commands like useradd, usermod, and userdel.

1. created a new user using **sudo useradd -m -s /bin/bash king queen** and verified its addition with **tail -n 1 /etc/passwd**.
2. set a password for the user using **sudo passwd king**.

3. modified the user details: changed the username with `sudo usermod -l newname testuser` and changed the home directory with `sudo usermod -d /home/newdir -m newname`.
4. deleted a user and removed its home directory using `sudo userdel -r newname`.
5. managed groups: created a group with `sudo groupadd devgroup`, added a user with `sudo usermod -aG devgroup yourusername`, and listed user groups with `groups yourusername`.
6. changed file ownership, permissions, and group ownership using `touch myfile.txt`, `sudo chown yourusername:devgroup myfile.txt`, `chmod 754 myfile.txt`, and `sudo chgrp devgroup myfile.txt`.
7. viewed system files storing user and group information using `cat /etc/passwd`, `cat /etc/group`, and `cat /etc/shadow`.
8. monitored logged-in users and tracked login history using `who`, `w`, and `last`.

9. completed a practice challenge where I created users and groups, managed permissions, and tested access using su - username.

File Machine View Input Devices Help

Jun 7 05



File



vboxuser@ubuntu:~\$ sudo useradd -m -s /bin/bash queen



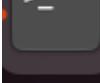
vboxuser@ubuntu:~\$ tail -n 1 /etc/passwd
queen:x:1001:1001::/home/queen:/bin/bash



vboxuser@ubuntu:~\$ sudo usedadd -m -s .bin.bash king
sudo: usedadd: command not found



vboxuser@ubuntu:~\$ sudo useradd -m -s .bin.bash king
useradd: invalid shell '.bin.bash'



vboxuser@ubuntu:~\$ sudo useradd -m -s /bin/bash king
vboxuser@ubuntu:~\$ tail -n 1 /etc/passwd



king:x:1002:1002::/home/king:/bin/bash



vboxuser@ubuntu:~\$

vboxuser@ubuntu:~\$ tail -n 2 /etc/passwd

queen:x:1001:1001::/home/queen:/bin/bash

king:x:1002:1002::/home/king:/bin/bash



vboxuser@ubuntu:~\$ sudo passwd queen

New password:

BAD PASSWORD: The password is shorter than 8 characters

Retype new password:

passwd: password updated successfully

vboxuser@ubuntu:~\$ sudo passwd king

New password:

BAD PASSWORD: The password is shorter than 8 characters

Retype new password:

passwd: password updated successfully

vboxuser@ubuntu:~\$ tail -n 2 /etc/passwd

queen:x:1001:1001::/home/queen:/bin/bash

king:x:1002:1002::/home/king:/bin/bash



vboxuser@ubuntu:~\$ sudo usermod -l newqueen queen

vboxuser@ubuntu:~\$ tail -n 2 /etc/passwd

king:x:1002:1002::/home/king:/bin/bash

newqueen:x:1001:1001::/home/queen:/bin/bash

vboxuser@ubuntu:~\$ sudo usermod -d /home/newqueen -m newqueen

vboxuser@ubuntu:~\$ tail -n 2 /etc/passwd

Jun 7 05:53

vboxuser@ubuntu: ~/Desktop/celebal-intern/week1

```
vboxuser@ubuntu:~$ tail -n 2 /etc/passwd
king:x:1002:1002::/home/king:/bin/bash
newqueen:x:1001:1001::/home/newqueen:/bin/bash
vboxuser@ubuntu:~$ sudo userdel -r newqueen
userdel: newqueen mail spool (/var/mail/newqueen) not found
vboxuser@ubuntu:~$ sudo userdel newqueen
userdel: user 'newqueen' does not exist
vboxuser@ubuntu:~$ tail -n 2 /etc/passwd
vboxuser:x:1000:1000:vboxuser:/home/vboxuser:/bin/bash
king:x:1002:1002::/home/king:/bin/bash
vboxuser@ubuntu:~$ sudo groupadd dynasty
vboxuser@ubuntu:~$ sudo usermod -aG dynasty king
vboxuser@ubuntu:~$ groups king
king : king dynasty
vboxuser@ubuntu:~$ sudo groupadd patliputra-dynasty
vboxuser@ubuntu:~$ sudo usermod -aG patliputra-dynasty king
vboxuser@ubuntu:~$ groups king
king : king dynasty patliputra-dynasty
vboxuser@ubuntu:~$ groups -a king
groups: invalid option -- 'a'
Try 'groups --help' for more information.
vboxuser@ubuntu:~$ touch nandafile.txt
vboxuser@ubuntu:~$ rm nandafile.txt
vboxuser@ubuntu:~$ cd desktop
bash: cd: desktop: No such file or directory
vboxuser@ubuntu:~$ cd home/vboxuser
bash: cd: home/vboxuser: No such file or directory
vboxuser@ubuntu:~$ ls
Desktop Documents Downloads Music Pictures Public snap Templates Videos
vboxuser@ubuntu:~$ cd Desktop
vboxuser@ubuntu:~/Desktop$ ls
celebal-intern
```

```
vboxuser@ubuntu:~$ cd Desktop
vboxuser@ubuntu:~/Desktop$ ls
celebal-intern
vboxuser@ubuntu:~/Desktop$ cd celebal-intern/week1
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ touch nandafile.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls
file1.txt file2.txt iamfile3.txt nandafile.txt program.txt test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ sudo chown :king nandafile.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ chmod 754 nandafile.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -R
.:
file1.txt file2.txt iamfile3.txt nandafile.txt program.txt test

./test:
file2.txt script.sh
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l
total 8
-rwxrwxrwx 1 vboxuser vboxuser 14 Jun 6 12:49 file1.txt
-rwxrwxrwx 1 vboxuser vboxuser 0 Jun 6 11:29 file2.txt
-rw-rw-r-- 1 vboxuser vboxuser 0 Jun 6 14:03 iamfile3.txt
-rwxr-xr-- 1 vboxuser king 0 Jun 7 05:48 nandafile.txt
-rwxrw-r-x 1 vboxuser vboxuser 0 Jun 6 11:15 program.txt
drwxrwxr-t 2 vboxuser vboxuser 4096 Jun 6 14:05 test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ sudo chgrp patliputra-dynasty nandafile.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -l nandafile.txt
-rwxr-xr-- 1 vboxuser patliputra-dynasty 0 Jun 7 05:48 nandafile.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
```

```
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ cat /etc/group
saned:x:113:116::/var/lib/saned:/usr/sbin/nologin
geoclue:x:114:117::/var/lib/geoclue:/usr/sbin/nologin
cups-browsed:x:115:114::/nonexistent:/usr/sbin/nologin
hplip:x:116:7:HPLIP system user,,,:/run/hplip:/bin/false
gnome-remote-desktop:x:988:988:GNOME Remote Desktop:/var/lib/gnome-remote-desktop:/usr/sbin/nologin
polkitd:x:987:987:User for polkitd:/:/usr/sbin/nologin
rtkit:x:117:119:RealtimeKit,,,:/proc:/usr/sbin/nologin
colord:x:118:120:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
gnome-initial-setup:x:119:65534::/run/gnome-initial-setup/:/bin/false
gdm:x:120:121:Gnome Display Manager:/var/lib/gdm3:/bin/false
nm-openvpn:x:121:122:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin
vboxuser:x:1000:1000:vboxuser:/home/vboxuser:/bin/bash
king:x:1002:1002::/home/king:/bin/bash
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ cat /etc/group
root:x:0:
daemon:x:1:
bin:x:2:
sys:x:3:
adm:x:4:syslog
tty:x:5:
disk:x:6:
lp:x:7:
mail:x:8:
news:x:9:
uucp:x:10:
man:x:12:
proxy:x:13:
kmem:x:15:
dialout:x:20:
fax:x:21:
voice:x:22:
cdrom:x:24:
flonvv:x:25:
```

```
sssd:x:113:  
lpadmin:x:114:  
fwupd-refresh:x:989:  
scanner:x:115:saned  
saned:x:116:  
geoclue:x:117:  
pipewire:x:118:  
gnome-remote-desktop:x:988:  
polkitd:x:987:  
rtkit:x:119:  
colord:x:120:  
gdm:x:121:  
nm-openvpn:x:122:  
lxd:x:123:  
gamemode:x:986:  
gnome-initial-setup:x:985:  
vboxuser:x:1000:  
queen:x:1001:  
king:x:1002:  
dynasty:x:1003:king  
patliputra-dynasty:x:1004:king  
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$
```

```
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ id king  
uid=1002(king) gid=1002(king) groups=1002(king),1003(dynasty),1004(patliputra-dynasty)  
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ who  
vboxuser seat0 2025-06-07 04:51 (login screen)  
vboxuser tty2 2025-06-07 04:51 (tty2)  
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ w  
05:59:58 up 1:08, 1 user, load average: 0.00, 0.01, 0.02  
USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT  
vboxuser tty2 - 04:51 1:02m 0.06s 0.06s /usr/libexec/gnome-session-binary --session=ubuntu  
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ last  
vboxuser tty2 tty2 Sat Jun 7 04:51 still logged in  
vboxuser seat0 login screen Sat Jun 7 04:51 still logged in  
reboot system boot 6.11.0-26-generi Sat Jun 7 04:51 still running  
vboxuser tty2 tty2 Fri Jun 6 10:17 - crash (18:33)  
vboxuser seat0 login screen Fri Jun 6 10:17 - crash (18:33)  
reboot system boot 6.11.0-26-generi Fri Jun 6 10:16 still running  
vboxuser tty2 tty2 Fri Jun 6 10:03 - crash (00:13)  
vboxuser seat0 login screen Fri Jun 6 10:03 - crash (00:13)  
reboot system boot 6.11.0-26-generi Fri Jun 6 10:01 still running  
  
wtmp begins Fri Jun 6 10:01:56 2025  
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ sudo groupdel dynast  
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ groups -n 5 /etc/group  
groups: invalid option -- 'n'  
Try 'groups --help' for more information.  
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ tails -n 5 /etc/group  
Command 'tails' not found, did you mean:  
 command 'tail' from deb coreutils (9.4-2ubuntu2)  
 command 'rails' from deb ruby-railties (2:6.1.7.3+dfsg-2build1)  
 Try: sudo apt install <deb name>  
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ tail -n 5 /etc/group  
gnome-initial-setup:x:985:  
vboxuser:x:1000:
```

Q) Introduction to version control and Git basics, Git installation and configuration, Basic Git commands (init, add, commit, push, pull)

Version Control System (VCS) is a tool that helps track changes in source code over time. It allows multiple developers to work on a project simultaneously without overwriting each other's work.

Git is the most widely used modern VCS. It's a **distributed** system, which means each developer has a complete copy of the repository on their local machine. This ensures faster operations and independence from the central server.

Why Git?

- Tracks history of changes
- Helps in collaboration across teams
- Allows reverting to previous versions
- Enables branching and merging
- Popular platforms like GitHub, GitLab, Bitbucket use Git

1. Installed Git from the official website using the system's package manager.

```
sudo apt install git for Linux.
```

2. Configured my Git identity with my name and email.

```
git config --global user.name "Your Name"
```

```
git config --global user.email your.email@example.com
```

3. Initialized a Git repository in the project folder.

```
git init
```

4. Added the project files to the staging area.

```
git add .
```

5. Committed the changes with a meaningful message.

```
git commit -m "Initial commit with project files"
```

6. Connected the local repository to a remote GitHub repository.

```
git remote add origin https://github.com/username/repo.git
```

7. **Generate a Personal Access Token:**

- Go to <https://github.com/settings/tokens>
- Click "**Generate new token (classic)**"
- Select scopes like repo, workflow, read:org, etc.
- Copy the token (you'll only see it once!)

8. Pushed the code to the remote repository.

```
git push -u origin master
```

9. Pulled the latest updates from the remote repository when needed.

```
git pull origin master
```

```
vboxuser@ubuntu:~/Desktop/celebal-intern$ git config --global user.name HeerItsOnlyU
vboxuser@ubuntu:~/Desktop/celebal-intern$ git config --global user.email heerdiranjha143@gmail.com
vboxuser@ubuntu:~/Desktop/celebal-intern$ git init
Reinitialized existing Git repository in /home/vboxuser/Desktop/celebal-intern/.git/
vboxuser@ubuntu:~/Desktop/celebal-intern$ git add .
error: 'week1/' does not have a commit checked out
fatal: adding files failed
vboxuser@ubuntu:~/Desktop/celebal-intern$ cd week1/
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls
file1.txt file2.txt iamfile3.txt nandofile.txt program.txt test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -a
. .. file1.txt file2.txt .git iamfile3.txt nandofile.txt program.txt test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ rm .git
rm: cannot remove '.git': Is a directory
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ rm -r .git
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ ls -a
. .. file1.txt file2.txt iamfile3.txt nandofile.txt program.txt test
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ cd ..
vboxuser@ubuntu:~/Desktop/celebal-intern$ git add .
vboxuser@ubuntu:~/Desktop/celebal-intern$ git commit -m "initial commit with this project"
[master (root-commit) 22dbd73] initial commit with this project
 7 files changed, 9 insertions(+)
 create mode 100755 week1/file1.txt
 create mode 100755 week1/file2.txt
 create mode 100644 week1/iamfile3.txt
 create mode 100755 week1/nandofile.txt
 create mode 100755 week1/program.txt
 create mode 100755 week1/test/file2.txt
 create mode 100755 week1/test/script.sh
vboxuser@ubuntu:~/Desktop/celebal-intern$ git push origin main
error: src refspec main does not match any
error: failed to push some refs to 'origin'
vboxuser@ubuntu:~/Desktop/celebal-intern$ git push origin master
fatal: 'origin' does not appear to be a git repository
fatal: Could not read from remote repository.
```

Please make sure you have the correct access rights
and the repository exists.

```
vboxuser@ubuntu:~/Desktop/celebal-intern$ git push origin main
error: src refspec main does not match any
error: failed to push some refs to 'origin'
vboxuser@ubuntu:~/Desktop/celebal-intern$ git push origin master
fatal: 'origin' does not appear to be a git repository
fatal: Could not read from remote repository.

Please make sure you have the correct access rights
and the repository exists.
vboxuser@ubuntu:~/Desktop/celebal-intern$ git remote add origin https://github.com/HeerItsOnlyU/celebal-W1.git
vboxuser@ubuntu:~/Desktop/celebal-intern$ git add .
vboxuser@ubuntu:~/Desktop/celebal-intern$ git commit -m "initial commit with this project"

On branch master
nothing to commit, working tree clean
vboxuser@ubuntu:~/Desktop/celebal-intern$ git push origin master
Username for 'https://github.com': HeerItsonlyU
Password for 'https://HeerItsonlyU@github.com':
remote: Support for password authentication was removed on August 13, 2021.
remote: Please see https://docs.github.com/get-started/getting-started-with-git/about-remote-repositories#cloning-with-https-urls for information
on currently recommended modes of authentication.
fatal: Authentication failed for 'https://github.com/HeerItsOnlyU/celebal-W1.git'
vboxuser@ubuntu:~/Desktop/celebal-intern$ git push origin main^C
vboxuser@ubuntu:~/Desktop/celebal-intern$ ^C
vboxuser@ubuntu:~/Desktop/celebal-intern$ git push origin master

Username for 'https://github.com': HeerItsOnlyU
Password for 'https://HeerItsOnlyU@github.com':
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Compressing objects: 100% (4/4), done.
Writing objects: 100% (7/7), 555 bytes | 555.00 KiB/s, done.
Total 7 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/HeerItsOnlyU/celebal-W1.git
 * [new branch]    master -> master
vboxuser@ubuntu:~/Desktop/celebal-intern$ git push origin main
error: src refspec main does not match any
error: failed to push some refs to 'https://github.com/HeerItsOnlyU/celebal-W1.git'
```

Q) Setup a remote repository in Local , Add a file and commit or save the changes and push to master branch

1. I cloned the remote repository to my local machine.

```
git clone https://github.com/username/repo.git
```

2. navigated to the cloned repository folder.

```
cd repo
```

3. created a new file in the repository.

```
touch sample.txt (or manually created and edited a file)
```

4. added the new file to the staging area.

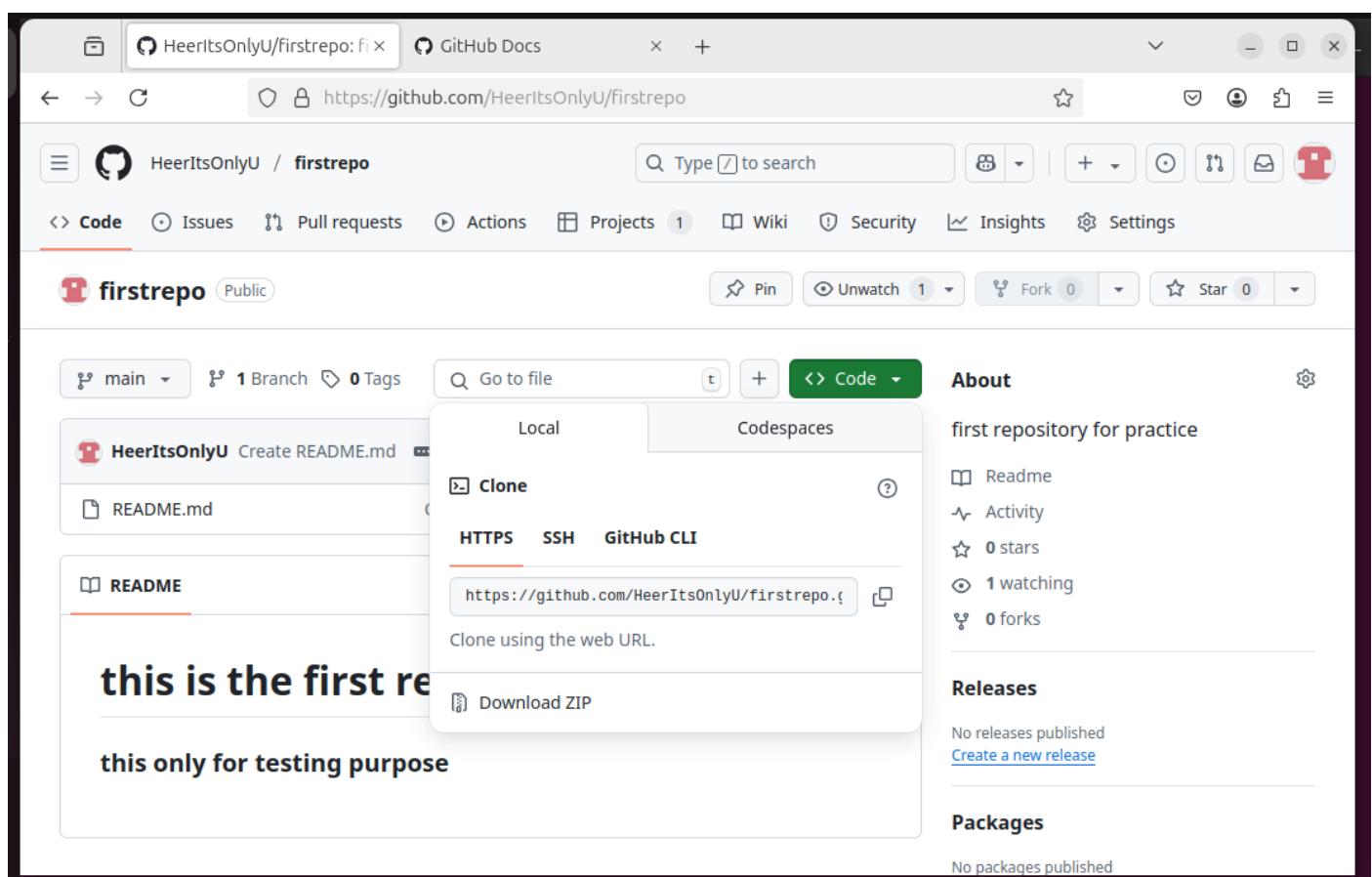
```
git add sample.txt
```

5. committed the changes with a descriptive message.

```
git commit -m "Added sample.txt file"
```

6. pushed the commit to the remote master branch.

```
git push origin master
```



The screenshot shows a terminal window titled "vboxuser@ubuntu: ~/Desktop/celebal-intern/week1/firstrepo". The terminal output is as follows:

```
vboxuser@ubuntu:~/Desktop/celebal-intern$ git clone https://github.com/HeerItsOnlyU/firstrepo.git
Command 'giit' not found, did you mean:
  command 'git' from deb git (0.15.1.1+dfsg-1build2)
  command 'git' from deb git (1:2.43.0-1ubuntu7.2)
  command 'gist' from deb yorick (2.2.04+dfsg1-12)
Try: sudo apt install <deb name>
vboxuser@ubuntu:~/Desktop/celebal-intern$ cd week1
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ git clone https://github.com/HeerItsOnlyU/firstrepo.git
Cloning into 'firstrepo'...
remote: Enumerating objects: 8, done.
remote: Counting objects: 100% (8/8), done.
remote: Compressing objects: 100% (4/4), done.
remote: Total 8 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (8/8), done.
vboxuser@ubuntu:~/Desktop/celebal-intern/week1$ cd firstrepo
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ touch sample.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git add sample.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git commit -m "Added sample task"
[main fd10279] Added sample task
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 sample.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git push origin main
Username for 'https://github.com': HeerItsOnlyU
Password for 'https://HeerItsOnlyU@github.com':
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 293 bytes | 293.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/HeerItsOnlyU/firstrepo.git
 a73b14f..fd10279 main -> main
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$
```

Q) Merge types, Create a new branch then commit and push the changes to new branch and merge it with the master branch using pull request.

1. Created and Pushed to a New Branch

- I created a new branch from the master branch.
`git checkout -b feature-branch`
- made some changes and then added the updated files.
`git add .`
- committed the changes to the new branch.
`git commit -m "Added new feature in feature-branch"`
- pushed the new branch to the remote repository.
`git push origin feature-branch`

```
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git clone https://github.com/HeerItsOnlyU/firstrepo.git
Cloning into 'firstrepo'...
remote: Enumerating objects: 8, done.
remote: Counting objects: 100% (8/8), done.
remote: Compressing objects: 100% (4/4), done.
remote: Total 8 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (8/8), done.
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ cd firstrepo
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ touch sample.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git add sample.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git commit -m "Added sample task"
[main fd10279] Added sample task
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 sample.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git push origin main
Username for 'https://github.com': HeerItsOnlyU
Password for 'https://HeerItsOnlyU@github.com':
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 293 bytes | 293.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/HeerItsOnlyU/firstrepo.git
 a73b14f..fd10279  main -> main
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git config --global credential.helper store
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git checkout -b branch1
Switched to a new branch 'branch1'
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git branch1
git: 'branch1' is not a git command. See 'git --help'.

The most similar command is
  branch
* branch1
  main
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ cat >> sample.txt
hi this the update for sample.txt into new branch
have a nice day kriti
^C
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git add .
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git commit -m "inital commit to new branch"
[branch1 5072b9c] inital commit to new branch
 1 file changed, 2 insertions(+)
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git push origin branch1
Username for 'https://github.com': HeerItsOnlyU
Password for 'https://HeerItsOnlyU@github.com':
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 363 bytes | 363.00 KiB/s, done.
```

2. Created a Pull Request to Merge with Master

- I went to GitHub and created a pull request to merge feature-branch into master.
- Then reviewed the changes, resolved any conflicts if required, and performed the merge.

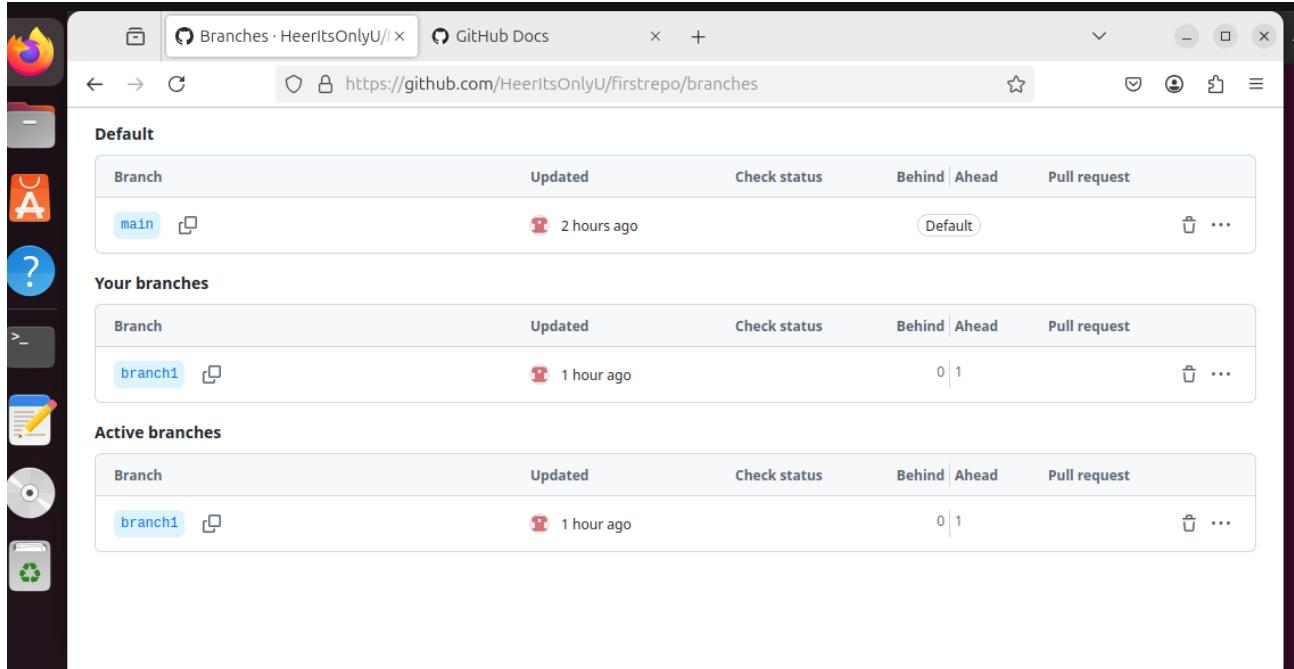
The screenshot shows a Firefox browser window with the address bar pointing to <https://github.com/HeerItsOnlyU/firstrepo/pull/1>. The GitHub interface is visible, showing a pull request titled "initial commit to new branch #1". The pull request details indicate it's from the "branch1" branch into the "main" branch. A comment from "HeerItsOnlyU" is present, stating "No description provided." and linking to the commit "initial commit to new branch". A green box highlights the merge status: "No conflicts with base branch" and "Merging can be performed automatically." A green button at the bottom says "Merge pull request".

3. Types of Merges Used in Pull Requests

Merge Commit (Default Merge)

- Selected "Create a merge commit", which preserved the commit history of both branches.
Used when we want a clear record of merges.

- Firstly go to main branch then run git merge command to merge main branch with newbranch



```

Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 363 bytes | 363.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
remote:
remote: Create a pull request for 'branch1' on GitHub by visiting:
remote:   https://github.com/HeerItsOnlyU/firstrepo/pull/new/branch1
remote:
To https://github.com/HeerItsOnlyU/firstrepo.git
 * [new branch]      branch1 -> branch1
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git merge branch1
Updating fd10279..5072b9c
Fast-forward
 sample.txt | 2 ++
 1 file changed, 2 insertions(+)
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ []

```

Squash Merge

- I selected "Squash and merge", which combined all commits from the feature branch into a single commit.

Used for keeping the master branch clean and concise.

Jun 7 10:27 PM

vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo

```
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git branch
  branch1
* main
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git checkout branch1
Switched to branch 'branch1'
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ ls
README.md sample.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ cat >> sample.txt
changing file due to show squash merge which combines the commit of feature branch and main branch in one commit
^C
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git add sample.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git commit -m "initial commit for squash and merge"
[branch1 96f148c] initial commit for squash and merge
  1 file changed, 1 insertion(+)
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git push origin branch1
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 427 bytes | 427.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/HeerItsOnlyU/firstrepo.git
  5072b9c..96f148c branch1 -> branch1
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git status
On branch branch1
nothing to commit, working tree clean
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git log
commit 96f148c73f6d8eafac118bd84d4d5cec4e8855c (HEAD -> branch1, origin/branch1)
Author: HeerItsOnlyU <heerdiranjha143@gmail.com>
Date:   Sat Jun 7 22:22:53 2025 +0530

    initial commit for squash and merge

commit 5072b9c0206f0ee2f96d453f96ac541e16164239 (main)
Author: HeerItsOnlyU <heerdiranjha143@gmail.com>
Date:   Sat Jun 7 19:39:42 2025 +0530

    initial commit to new branch

commit fd102796ad222ace3c77346d6dfef03f1cf57e12 (origin/main, origin/HEAD)
Author: HeerItsOnlyU <heerdiranjha143@gmail.com>
Date:   Sat Jun 7 19:30:40 2025 +0530

    Added sample task

commit a73b14f65303d32b5bb59fd3f6e4bd39d55faac7
Author: HeerItsOnlyU <heerdiranjha143@gmail.com>
Date:   Fri Oct 4 05:28:13 2024 +0000

Create README.md
make a README
```

```
commit b7ad2263a301a9b54b8d28cb1e8cc11363a43ee4
Author: HeerItsOnlyU <heerdiranjha143@gmail.com>
Date: Mon Sep 2 22:42:05 2024 +0530

Delete README.md

commit e3d2a9aa6692f421bdfda22fa8b3bfdb3845ec3b
Author: HeerItsOnlyU <heerdiranjha143@gmail.com>
Date: Mon Sep 2 21:21:03 2024 +0530

Initial commit
>_ vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git checkout main
Switched to branch 'main'
Your branch is ahead of 'origin/main' by 1 commit.
  (use "git push" to publish your local commits)
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git merge --squash branch1
Updating 5072b9c..96f148c
Fast-forward
Squash commit -- not updating HEAD
sample.txt | 1 +
 1 file changed, 1 insertion(+)
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git commit -m "using squash and merge"
[main 831ee93] using squash and merge
 1 file changed, 1 insertion(+)
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git log
commit 831ee93b5b3b743cd80949499231810ee38f4c85 (HEAD -> main)
Author: HeerItsOnlyU <heerdiranjha143@gmail.com>
Date: Sat Jun 7 22:25:22 2025 +0530

  using squash and merge

commit 5072b9c0206f0ee2f96d453f96ac541e16164239
Author: HeerItsOnlyU <heerdiranjha143@gmail.com>
Date: Sat Jun 7 19:39:42 2025 +0530

  initial commit to new branch

commit fd102796ad222ace3c77346d6dfe03f1cf57e12 (origin/main, origin/HEAD)
Author: HeerItsOnlyU <heerdiranjha143@gmail.com>
Date: Sat Jun 7 19:30:40 2025 +0530

  Added sample task

commit a73b14f65303d32b5bb59fd3f6e4bd39d55faac7
Author: HeerItsOnlyU <heerdiranjha143@gmail.com>
Date: Fri Oct 4 05:28:13 2024 +0000
```

Rebase and Merge

- I selected "Rebase and merge", which replayed the feature branch commits on top of the master branch.

Used to maintain a linear commit history without merge commits.

```

vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git checkout branch1
Switched to branch 'branch1'
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ cat >> sample.txt
this for rebase and merge which replay the branch1 commit at the top of main branch commit
used to maintain a linear commit history without merge commit
^C
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ 
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git add sample.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git commit -m "commit for rebase and merge from branch1"
[branch1 ad6cbda] commit for rebase and merge from branch1
 1 file changed, 2 insertions(+)
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git push origin main
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 419 bytes | 419.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/HeerItsOnlyU/firstrepo.git
  fd10279..831ee93 main -> main
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git push origin branch1
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 488 bytes | 488.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/HeerItsOnlyU/firstrepo.git
  96f148c..ad6cbda branch1 -> branch1
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git checkout branch1
Switched to branch 'branch1'
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git rebase main
warning: skipped previously applied commit 96f148c
hint: use --reapply-cherry-picks to include skipped commits
hint: Disable this message with "git config advice.skippedCherryPicks false"
Successfully rebased and updated refs/heads/branch1.
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git checkout main
Switched to branch 'main'
Your branch is up to date with 'origin/main'.
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git merge branch1
Updating 831ee93..716a4de
Fast-forward
 sample.txt | 2 ++
 1 file changed, 2 insertions(+)
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git log
commit 716a4debc1a97d9da24fb9f04028401dc9eb23d (HEAD -> main, branch1)
Author: HeerItsOnlyU <heerdiranjha143@gmail.com>
Date:   Sat Jun 7 22:32:48 2025 +0530

```

**Q) Undo the last commit or remove the last created file from remote repo using CLI
using git reset –soft HEAD~1 I remove the last commit without changing the file.**

Using git rest –hard HEAD~1 I remove the last commit with undo last change in the file

**Usin git rm file name to remove the file from the local repository then git add and commit
that the file is removed and push it but push will not work because the commit at both is local
and remote is different so we have to use git push origin -f to push the file and commit which
overwrite the previous commit.**

```
vboxuser@ubuntu: ~/Desktop/celebal-intern/week1/firstrepo
i am adding a new line
^C
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git add sample2.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git commit -m "commit2"
[main f222fab] commit2
 1 file changed, 3 insertions(+)
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git push origin main
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 356 bytes | 356.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/HeerItsOnlyU/firstrepo.git
  129b95d..f222fab  main -> main
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git reset --soft HEAD~1
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git status
On branch main
Your branch is behind 'origin/main' by 1 commit, and can be fast-forwarded.
  (use "git pull" to update your local branch)

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    modified:   sample2.txt

vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git status
On branch main
Your branch is behind 'origin/main' by 1 commit, and can be fast-forwarded.
  (use "git pull" to update your local branch)

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    modified:   sample2.txt

vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git log
commit 129b95d02adeb1eace23ffb25f218ec49e272b2d (HEAD -> main)
Author: HeerItsOnlyU <heerdiranjha143@gmail.com>
Date:   Sun Jun 8 07:51:05 2025 +0530

    committing sample2.txt
```

```
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git add sample2.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git commit -m "committing sample2.txt"
[main 129b95d] committing sample2.txt
 1 file changed, 10 insertions(+)
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git push origin main
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 325 bytes | 325.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/HeerItsOnlyU/firstrepo.git
  2a76a2d..129b95d  main -> main
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ cat >> sample2.txt
hi now new intern is comming to help me
welcome her
i am adding a new line
^C
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git add sample2.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git commit -m "commit2"
[main f222fab] commit2
 1 file changed, 3 insertions(+)
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git push origin main
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 356 bytes | 356.00 KiB/s, done.
Total 3 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/HeerItsOnlyU/firstrepo.git
  129b95d..f222fab  main -> main
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git reset --soft HEAD~1
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git status
On branch main
Your branch is behind 'origin/main' by 1 commit, and can be fast-forwarded.
  (use "git pull" to update your local branch)

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    modified:   sample2.txt

vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git status
On branch main
Your branch is behind 'origin/main' by 1 commit, and can be fast-forwarded.
  (use "git pull" to update your local branch)

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    modified:   sample2.txt
```

```
Welcome here
I am adding a new line
Adding a line which is going to removed as I am going to use reset hard
boxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git commit -m "commit 3"
[master 171a95b] commit 3
 1 file changed, 3 insertions(+)
boxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git status
On branch master
Your branch and 'origin/master' have diverged,
and have 1 and 1 different commits each, respectively.
(use "git pull" if you want to integrate the remote branch with yours)

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
    modified:   sample2.txt

0 changes added to commit (use "git add" and/or "git commit -a")
boxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git add sample.txt
boxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git add sample2.txt
boxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git commit -m "commit 3"
[master 7c52acf] commit 3
 1 file changed, 1 insertion(+)
boxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git status
On branch master
Your branch and 'origin/master' have diverged,
and have 2 and 1 different commits each, respectively.
(use "git pull" if you want to integrate the remote branch with yours)

Nothing to commit, working tree clean
boxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git reset --hard HEAD~1
HEAD is now at 171a95b commit 3
boxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git rm sample2.txt
rm 'sample2.txt'
boxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git commit -m "commit4"
[master 9157738] commit 4
 1 file changed, 13 deletions(-)
 delete mode 100644 sample2.txt
boxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git push origin master
fatal: unable to access 'https://github.com/HeerItsOnlyU/firstrepo.git/': Could not resolve host: github.com
boxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git push origin master
To https://github.com/HeerItsOnlyU/firstrepo.git
! [rejected]      master -> master (non-fast-forward)
error: failed to push some refs to 'https://github.com/HeerItsOnlyU/firstrepo.git'
hint: Updates were rejected because the tip of your current branch is behind
hint: its remote counterpart. If you want to integrate the remote changes,
hint: use 'git pull' before pushing again.
hint: See the 'Note about fast-forwards' in 'git push --help' for details.
boxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git pull
hint: Diverging branches can't be fast-forwarded... you need to either:
```

```

vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git reset --hard HEAD~1
HEAD is now at 171a95b commit 3
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git rm sample2.txt
rm 'sample2.txt'
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git commit -m "commit4"
[main 9157738] commit4
 1 file changed, 13 deletions(-)
 delete mode 100644 sample2.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git push origin main
fatal: unable to access 'https://github.com/HeerItsOnlyU/firstrepo.git/': Could not resolve host: github.com
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git push origin main
To https://github.com/HeerItsOnlyU/firstrepo.git
 ! [rejected]      main -> main (non-fast-forward)
error: failed to push some refs to 'https://github.com/HeerItsOnlyU/firstrepo.git'
hint: Updates were rejected because the tip of your current branch is behind
hint: its remote counterpart. If you want to integrate the remote changes,
hint: use 'git pull' before pushing again.
hint: See the 'Note about fast-forwards' in 'git push --help' for details.
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git pull
hint: Diverging branches can't be fast-forwarded, you need to either:
hint:
hint:   git merge --no-ff
hint:
hint: or:
hint:
hint:   git rebase
hint:
hint: Disable this message with "git config advice.diverging false"
fatal: Not possible to fast-forward, aborting.
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git rebase^C
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git rebase
warning: skipped previously applied commit 171a95b
hint: use --reapply-cherry-picks to include skipped commits
hint: Disable this message with "git config advice.skippedCherryPicks false"
Successfully rebased and updated refs/heads/main.
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git push --force
Enumerating objects: 3, done.
Counting objects: 100% (3/3), done.
Compressing objects: 100% (2/2), done.
Writing objects: 100% (2/2), 227 bytes | 227.00 KiB/s, done.
Total 2 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), completed with 1 local object.
To https://github.com/HeerItsOnlyU/firstrepo.git
  f222fab..a2893fe main -> main
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ █

```

More Advanced git commands are for practice are :-

1. **git stash**

Temporarily saved my uncommitted changes to clean my working directory without committing.

```

git stash
git stash apply # to re-apply later

```

```
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git stash
No local changes to save
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ ls
new-file2.txt new-file.txt README.md sample.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ cat new-file.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ cat >new-file.txt
hello everyone
i am kriti
i am you devops teacher.
i am going to teach you the advance concepts of git
i will start with stashing
^C
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git stash
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git stash
No local changes to save
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git add new-file.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git stash
Saved working directory and index state WIP on main: 716a4de commit for rebase and merge from branch1
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git branch
  branch1
* main
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ cat >> file1.txt
append to check stash
^C
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git add file1.txt
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git stash
Saved working directory and index state WIP on main: 716a4de commit for rebase and merge from branch1
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git commit -m "commit to remove stash"
On branch main
Your branch is ahead of 'origin/main' by 1 commit.
  (use "git push" to publish your local commits)

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    new-file2.txt

nothing added to commit but untracked files present (use "git add" to track)
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git push origin main
Enumerating objects: 5, done.
Counting objects: 100% (5/5), done.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 494 bytes | 494.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/HeerItsOnlyU/firstrepo.git
  831ee93..716a4de main -> main
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$ git stash
No local changes to save
vboxuser@ubuntu:~/Desktop/celebal-intern/week1/firstrepo$
```

2. **git cherry-pick <commit-hash>**

Applied a specific commit from another branch into my current branch without merging everything.

```
git cherry-pick a1b2c3d4
```

3. **git revert <commit-hash>**

Created a new commit that undid the changes of a previous commit — safe way to undo pushed commits.

```
git revert a1b2c3d4
```

4. **git reflog**

Viewed the history of all actions (including resets, rebases) to recover lost commits or branches.

```
git reflog
```

5. **git reset --hard <commit-hash>**

Reset my branch to a specific commit and discarded all changes after that commit (dangerous if not careful).

```
git reset --hard a1b2c3d4
```

6. **git rebase <branch>**

Reapplied my branch commits on top of another branch, keeping a linear history.

```
git checkout feature-branch
```

```
git rebase master
```

7. **git clean -fd**

Removed all untracked files and directories (useful to clean workspace).

```
git clean -fd
```

8. **git log --graph --oneline --all**

Displayed a visual, simplified commit history graph showing all branches and merges.

```
git log --graph --oneline --all
```

9. **git blame <file>**

Found out who last modified each line in a file, useful for tracking changes.

```
git blame filename.txt
```

10. **git submodule**

Managed repositories inside other repositories (for including libraries or dependencies).

```
git submodule add https://github.com/example/lib.git
```

```
git submodule update --init --recursive
```

11. **git bisect**

Used binary search to find the commit that introduced a bug by marking commits as good or bad.

```
git bisect start
```

```
git bisect bad      # current commit has the bug
```

```
git bisect good <hash> # known good commit
```

```
# Git will checkout intermediate commits for testing
```

12. **git tag**

Created lightweight or annotated tags to mark release points or important commits.

```
git tag v1.0.0      # lightweight tag
```

```
git tag -a v1.0.0 -m "Release 1.0" # annotated tag
```

```
git push origin v1.0.0    # push tags to remote
```

13. **git archive**

Created a ZIP or TAR archive of files from a specific commit or branch.

```
git archive --format=zip -o latest.zip HEAD
```

14. **git shortlog**

Summarized commit history grouped by author — great for release notes.

```
git shortlog -sn
```

15. **git diff**

Compared changes between commits, branches, or working directory and index.

```
git diff HEAD~1 HEAD    # diff between last two commits
```

```
git diff master feature-branch
```

16. **git remote prune origin**

Cleaned up stale remote-tracking branches that no longer exist on the remote.

```
git remote prune origin
```

17. **git config --list**

Listed all Git configurations, useful for troubleshooting.

```
git config --list
```

18. **git submodule foreach**

Ran commands in all submodules recursively, useful for bulk updates.

```
git submodule foreach git pull origin master
```

19. **git show <commit>**

Displayed details about a specific commit including changes and metadata.

```
git show a1b2c3d4
```

20. **git stash pop**

Applied the last stash and removed it from the stash list (vs git stash apply which keeps it).

```
git stash pop
```