

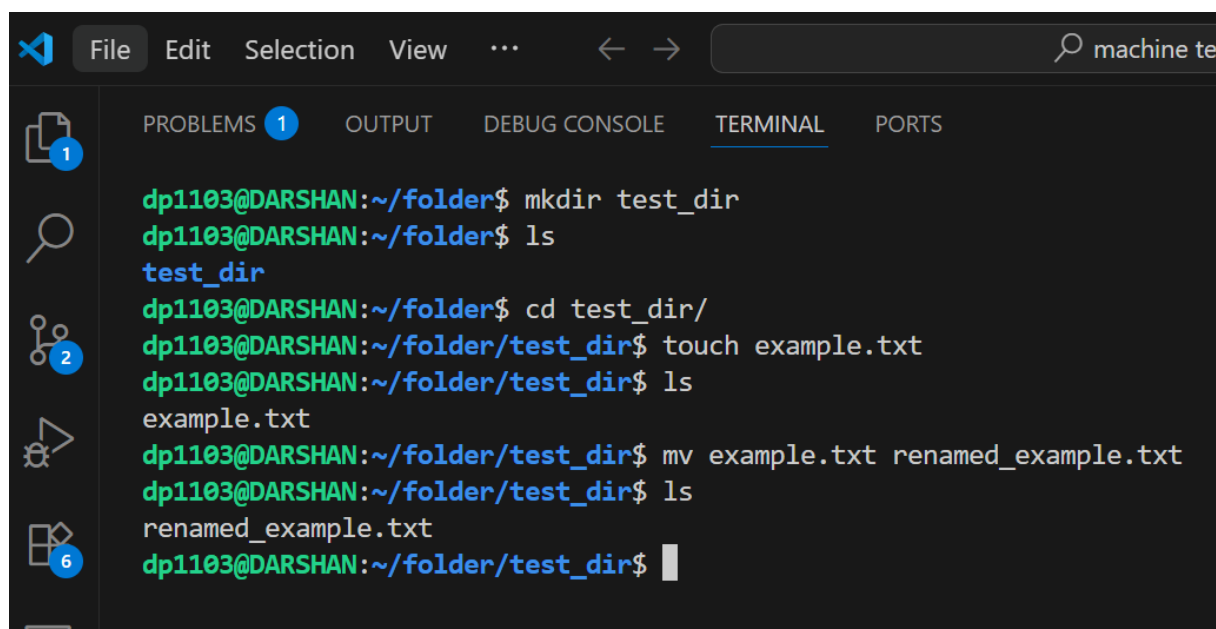
GitHub Repository Link: [https://github.com/dp1103/Tutedude\\_Linux-Basics-assignment.git](https://github.com/dp1103/Tutedude_Linux-Basics-assignment.git)

## 1. Creating and Renaming Files/Directories

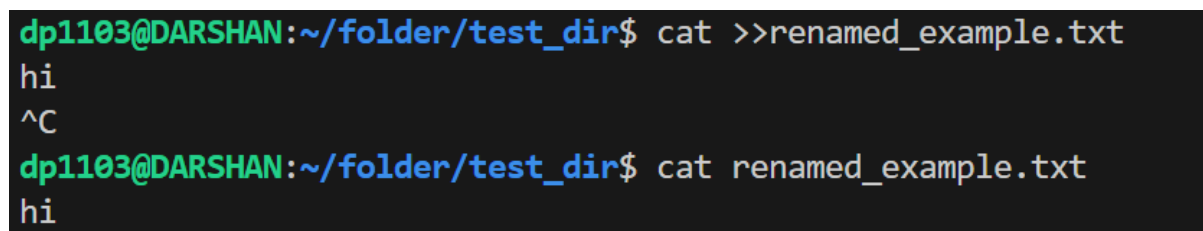
Create a directory named `test_dir` using `mkdir`.

Inside `test_dir`, create an empty file called `example.txt`.

Rename `example.txt` to `renamed_example.txt` using `mv`



```
dp1103@DARSHAN:~/folder$ mkdir test_dir
dp1103@DARSHAN:~/folder$ ls
test_dir
dp1103@DARSHAN:~/folder$ cd test_dir/
dp1103@DARSHAN:~/folder/test_dir$ touch example.txt
dp1103@DARSHAN:~/folder/test_dir$ ls
example.txt
dp1103@DARSHAN:~/folder/test_dir$ mv example.txt renamed_example.txt
dp1103@DARSHAN:~/folder/test_dir$ ls
renamed_example.txt
dp1103@DARSHAN:~/folder/test_dir$
```



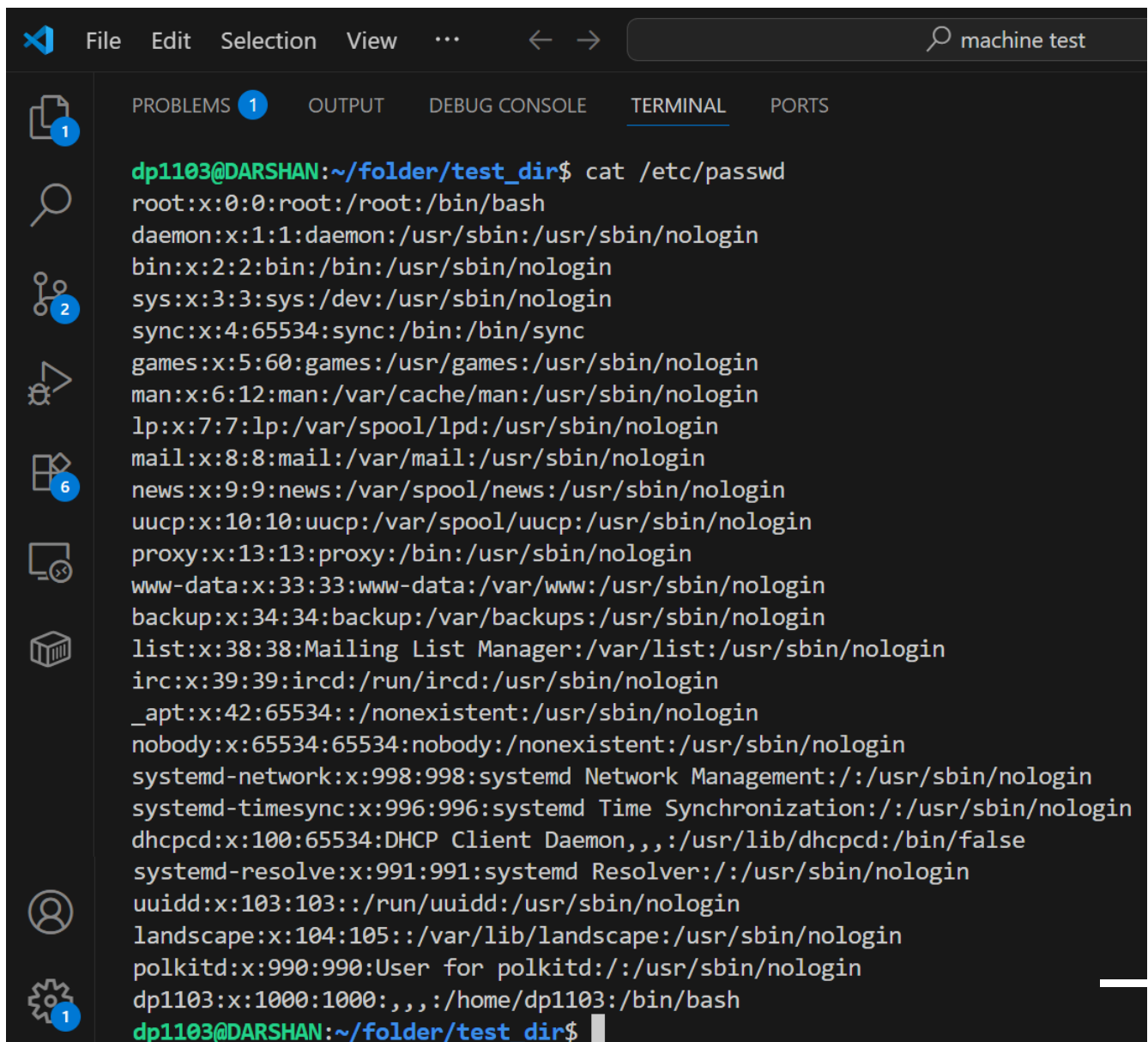
```
dp1103@DARSHAN:~/folder/test_dir$ cat >>renamed_example.txt
hi
^C
dp1103@DARSHAN:~/folder/test_dir$ cat renamed_example.txt
hi
```

- **mkdir**: This command is used to create a new directory. For example, `mkdir projects` will make a folder named "projects".
- **touch**: It creates an empty file. If you run `touch notes.txt`, it will generate a blank file called "notes.txt".

- **mv**: You can use this to move or rename files. For instance, `mv old.txt new.txt` renames "old.txt" to "new.txt".
- **ls**: This lists all files and folders in the current directory. Typing `ls` will show you what's inside.
- **cd**: It lets you change your current directory. So, `cd documents` will take you into the "documents" folder.

## 2. Viewing File Contents

Use `cat` to display the contents of `/etc/passwd`.



```
dp1103@DARSHAN:~/folder/test_dir$ 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:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
_apt:x:42:65534:./nonexistent:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:998:998:systemd Network Management:./usr/sbin/nologin
systemd-timesync:x:996:996:systemd Time Synchronization:./usr/sbin/nologin
dhcpcd:x:100:65534:DHCP Client Daemon,,./usr/lib/dhcpcd:/bin/false
systemd-resolve:x:991:991:systemd Resolver:./usr/sbin/nologin
uidd:x:103:103:./run/uidd:/usr/sbin/nologin
landscape:x:104:105:./var/lib/landscape:/usr/sbin/nologin
polkitd:x:990:990:User for polkitd:./usr/sbin/nologin
dp1103:x:1000:1000:,,./home/dp1103:/bin/bash
dp1103@DARSHAN:~/folder/test_dir$
```

Display only the first 5 lines of /etc/passwd using head.

```
dp1103@DARSHAN:~/folder/test_dir$ head -n 5 /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:/bin/sync
dp1103@DARSHAN:~/folder/test_dir$
```

Display only the last 5 lines of /etc/passwd using tail.

```
dp1103@DARSHAN:~/folder/test_dir$ tail -n 5 /etc/passwd
systemd-resolve:x:991:991:systemd Resolver:/:usr/sbin/nologin
uidd:x:103:103:/:run/uidd:usr/sbin/nologin
landscape:x:104:105:/:var/lib/landscape:usr/sbin/nologin
polkitd:x:990:990:User for polkitd:/:usr/sbin/nologin
dp1103:x:1000:1000:,,,:/home/dp1103:/bin/bash
dp1103@DARSHAN:~/folder/test_dir$
```

- **cat:** This command displays the entire content of a file. For example, cat file.txt will print everything inside file.txt to the terminal. It's also used to combine files or redirect content into new ones.
- **head:** It shows the first few lines of a file. If you run head file.txt, you'll see the beginning of the file. You can customize it with head -n 5 file.txt to show just the first 5 lines.
- **tail:** This command displays the last few lines of a file—again. For example, tail file.txt shows the end of the file. You can use tail -f file.txt to follow live updates, which is great for monitoring logs.

### 3.Searching for Patterns

Use grep to find all lines containing the word "root" in /etc/passwd.

```
dp1103@DARSHAN:~/folder/test_dir$ grep root /etc/passwd
root:x:0:0:root:/root:/bin/bash
```

- **grep:** searches for specific patterns or words in a file and prints the lines that contain them. For example, grep "error" log.txt will show all lines in log.txt that contain the word "error".

## 4. Zipping and Unzipping

Compress the test\_dir directory into a file named test\_dir.zip using zip.

```
dp1103@DARSHAN:~/folder$ zip test_dir.zip test_dir
adding: test_dir/ (stored 0%)
dp1103@DARSHAN:~/folder$ ls
test_dir  test_dir.zip
```

Unzip test\_dir.zip into a new directory named unzipped\_dir.

```
dp1103@DARSHAN:~/folder$ unzip test_dir.zip -d unzipped_dir
Archive:  test_dir.zip
creating: unzipped_dir/test_dir/
extracting: unzipped_dir/test_dir/renamed_example.txt
dp1103@DARSHAN:~/folder$ ls
test_dir  test_dir.zip  unzipped_dir
```

- **zip:** zip command compresses one or more files or directories into a .zip archive to save space or make sharing easier. For example, zip archive.zip file1.txt file2.txt creates a compressed file named archive.zip containing file1.txt and file2.txt.
- **unzip:** The unzip command extracts files from a .zip archive back into their original form. For instance, unzip archive.zip will unpack all files inside archive.zip into the current directory.

## 5. Downloading Files

Use wget to download a file from a URL (e.g., <https://example.com/sample.txt>).

```
dp1103@DARSHAN:~/folder$ wget https://en.wikipedia.org/wiki/Main_Page
--2025-09-16 12:10:15-- https://en.wikipedia.org/wiki/Main_Page
Resolving en.wikipedia.org (en.wikipedia.org)... 103.102.166.224, 2001:df2:e500:ed1a::1
Connecting to en.wikipedia.org (en.wikipedia.org)|103.102.166.224|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 232392 (227K) [text/html]
Saving to: 'Main_Page'

Main_Page                               100%[=====>] 226.95K   861KB/s   in 0.3s

2025-09-16 12:10:17 (861 KB/s) - 'Main_Page' saved [232392/232392]
```

```
dp1103@DARSHAN:~/folder$ ls
Main_Page latest.zip test_dir test_dir.zip unzipped_dir
```

- **wget**: wget fetches files from web servers and saves them locally. For example, wget https://example.com/file.zip will download file.zip from that URL into your current directory.

## 6. Changing Permissions

Create a file named secure.txt and change its permissions to read-only for everyone using chmod.

```
dp1103@DARSHAN:~/folder$ touch secure.txt
dp1103@DARSHAN:~/folder$ cat >>secure.txt
This is a text file.
dp1103@DARSHAN:~/folder$ ls -l | grep secure.txt
-rw-r--r-- 1 dp1103 dp1103      21 Sep 16 12:21 secure.txt
dp1103@DARSHAN:~/folder$ chmod 444 secure.txt
dp1103@DARSHAN:~/folder$ ls -l | grep secure.txt
-r--r--r-- 1 dp1103 dp1103      21 Sep 16 12:21 secure.txt
```

- **chmod** : chmod command in Linux is used to **change the permissions** of files and directories. It stands for "**change mode**", and it lets you control who can **read**, **write**, or **execute** a file.
- **grep**: grep scans files line by line and prints only those lines that match the pattern you specify.

Digit	Permission	Meaning
7	rwX	Read, write, execute
6	rw-	Read, write
5	r-X	Read, execute
4	r--	Read only
0	---	No permission

**444** sets read-only access for: **User (owner)**, **Group**, **Others**

## 7. Working with Environment Variables

Use export to set a new environment variable called MY\_VAR with the value "Hello, Linux!".

```
dp1103@DARSHAN:~/folder$ export MY_VAR="Hello, Linux!"  
dp1103@DARSHAN:~/folder$ echo $MY_VAR  
Hello, Linux!
```