

# Linux Basics Assignment 1

## 1. Creating and Renaming Files/Directories

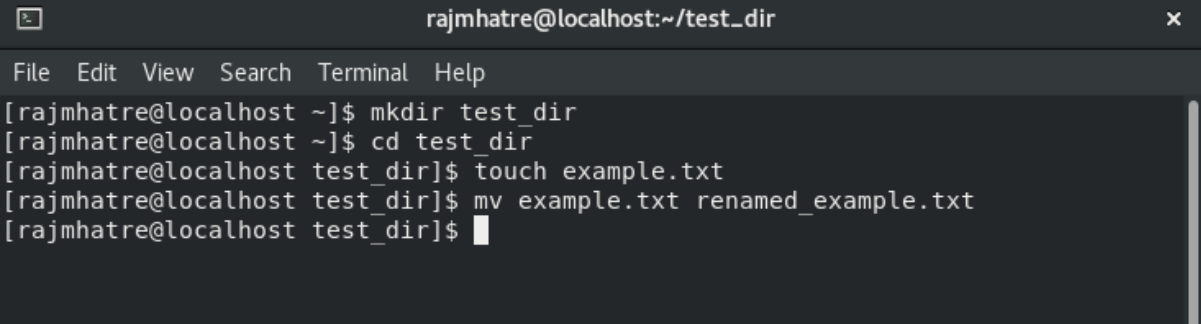
### Commands:

`mkdir test_dir`

`cd test_dir`

`touch example.txt`

`mv example.txt renamed_example.txt`



```
rajmhatre@localhost:~/test_dir
File Edit View Search Terminal Help
[rajmhatre@localhost ~]$ mkdir test_dir
[rajmhatre@localhost ~]$ cd test_dir
[rajmhatre@localhost test_dir]$ touch example.txt
[rajmhatre@localhost test_dir]$ mv example.txt renamed_example.txt
[rajmhatre@localhost test_dir]$
```

### Explanation:

- `mkdir test_dir` – Creates a directory named `test_dir`.
- `cd test_dir` – Navigates into the `test_dir` directory.
- `touch example.txt` – Creates an empty file named `example.txt`.
- `mv example.txt renamed_example.txt` – Renames the file to `renamed_example.txt`.

## 2. Viewing File Contents

### Commands:

cat /etc/passwd

head -n 5 /etc/passwd

tail -n 5 /etc/passwd

```
[rajmhatre@localhost test_dir]$ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/sbin/nologin
daemon:x:2:2:daemon:/sbin:/sbin/nologin
adm:x:3:4:adm:/var/adm:/sbin/nologin
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin
sync:x:5:0:sync:/sbin:/bin/sync
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown
halt:x:7:0:halt:/sbin:/sbin/halt
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin
operator:x:11:0:operator:/root:/sbin/nologin
games:x:12:100:games:/usr/games:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin
dbus:x:81:81:System message bus:/:/sbin/nologin
systemd-coredump:x:999:997:systemd Core Dumper:/:/sbin/nologin
systemd-resolve:x:193:193:systemd Resolver:/:/sbin/nologin
```

```
[rajmhatre@localhost test_dir]$ head -n 5 /etc/passwd
root:x:0:0:root:/root:/bin/bash
bin:x:1:1:bin:/bin:/sbin/nologin
daemon:x:2:2:daemon:/sbin:/sbin/nologin
adm:x:3:4:adm:/var/adm:/sbin/nologin
lp:x:4:7:lp:/var/spool/lpd:/sbin/nologin
[rajmhatre@localhost test_dir]$
```

```
[rajmhatre@localhost test_dir]$ tail -n 5 /etc/passwd
avahi:x:70:70:Avahi mDNS/DNS-SD Stack:/var/run/avahi-daemon:/sbin/nologin
dovecot:x:97:97:Dovecot IMAP server:/usr/libexec/dovecot:/sbin/nologin
dovnull:x:971:971:Dovecot's unauthorized user:/usr/libexec/dovecot:/sbin/nolog
n
tcpdump:x:72:72:/:/sbin/nologin
rajmhatre:x:1000:1000:rajmhatre:/home/rajmhatre:/bin/bash
[rajmhatre@localhost test_dir]$
```

### Explanation:

- cat – Displays entire file content.
- head -n 5 – Shows the first 5 lines.
- tail -n 5 – Shows the last 5 lines.

### 3.Searching for Patterns

#### Commands:

grep "root" /etc/passwd

```
[rajmhatre@localhost test_dir]$ grep "root" /etc/passwd
root:x:0:0:root:/root:/bin/bash
operator:x:11:0:operator:/root:/sbin/nologin
[rajmhatre@localhost test_dir]$
```

#### Explanations:

- grep "root" – Searches for lines containing the word "root" in /etc/passwd.

### 4. Zipping and Unzipping

#### Commands:

cd ..

zip -r test\_dir.zip test\_dir

unzip test\_dir.zip -d unzipped\_dir

```
[rajmhatre@localhost test_dir]$ cd ..
[rajmhatre@localhost ~]$
```

```
[rajmhatre@localhost ~]$ zip -r test_dir.zip test_dir
  adding: test_dir/ (stored 0%)
  adding: test_dir/renamed_example.txt (stored 0%)
[rajmhatre@localhost ~]$
```

```
[rajmhatre@localhost ~]$ unzip test_dir.zip -d unzipped_dir
Archive:  test_dir.zip
  creating: unzipped_dir/test_dir/
  extracting: unzipped_dir/test_dir/renamed_example.txt
[rajmhatre@localhost ~]$
```

### Explanations:

- `zip -r` – Recursively compresses `test_dir` into `test_dir.zip`.
- `unzip -d` – Extracts into the directory `unzipped_dir`.

## 5. Downloading Files

### Commands:

`wget` <https://example.com/sample.txt>

```
[rajmhatre@localhost ~]$ wget https://sp.yimg.com/1b/th?&id=0DL.c92d8eb0575f1d563f0a411e60fbb0d1&w=116&h=146&c=4&dpr=2&rs=1/sample.txt
[1] 11372
[2] 11373
[3] 11374
[4] 11375
[5] 11376
[6] 11377

Redirecting output to 'wget-log'.
[2] Done id=0DL.c92d8eb0575f1d563f0a411e60fbb0d1
[3] Done w=116
[4] Done h=146
[5]- Done c=4
[6]+ Done dpr=2
```

### Explanations:

- `wget` – Downloads the file from the specified URL.

## 6. Changing Permissions

### Commands:

```
touch secure.txt  
chmod 444 secure.txt
```

```
[rajmhatre@localhost ~]$ touch secure.txt  
[rajmhatre@localhost ~]$ chmod 444 secure.txt  
[rajmhatre@localhost ~]$
```

### Explanations:

- `chmod 444` – Sets file to read-only for all users (owner, group, others).

## 7. Working with Environment Variables

### Commands:

```
export MY_VAR="Hello, Linux!"
```

```
[rajmhatre@localhost ~]$ export MY_VAR="Hello, Linux!"  
[rajmhatre@localhost ~]$
```

### Explanations:

- `export` – Temporarily sets an environment variable `MY_VAR` with the value "Hello, Linux!" in the current session.