# Linux Assignment - 1

## 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**

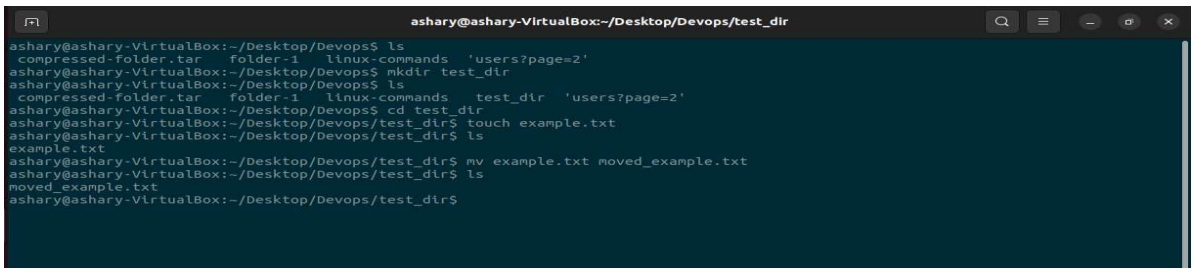
**Commands:**

```
mkdir test_dir
    cd test_dir
    touch example.txt
    mv example.txt renamed_example.txt
```

**Explanation:**

- `mkdir test_dir`: Makes a new folder called test_dir.
- `cd test_dir`: Goes into that folder.
- `touch example.txt`: Creates an empty file called example.txt.
- `mv example.txt renamed_example.txt`: Renames the file to renamed_example.txt.

**Screenshots:**



## 2. Viewing File Contents

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

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

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

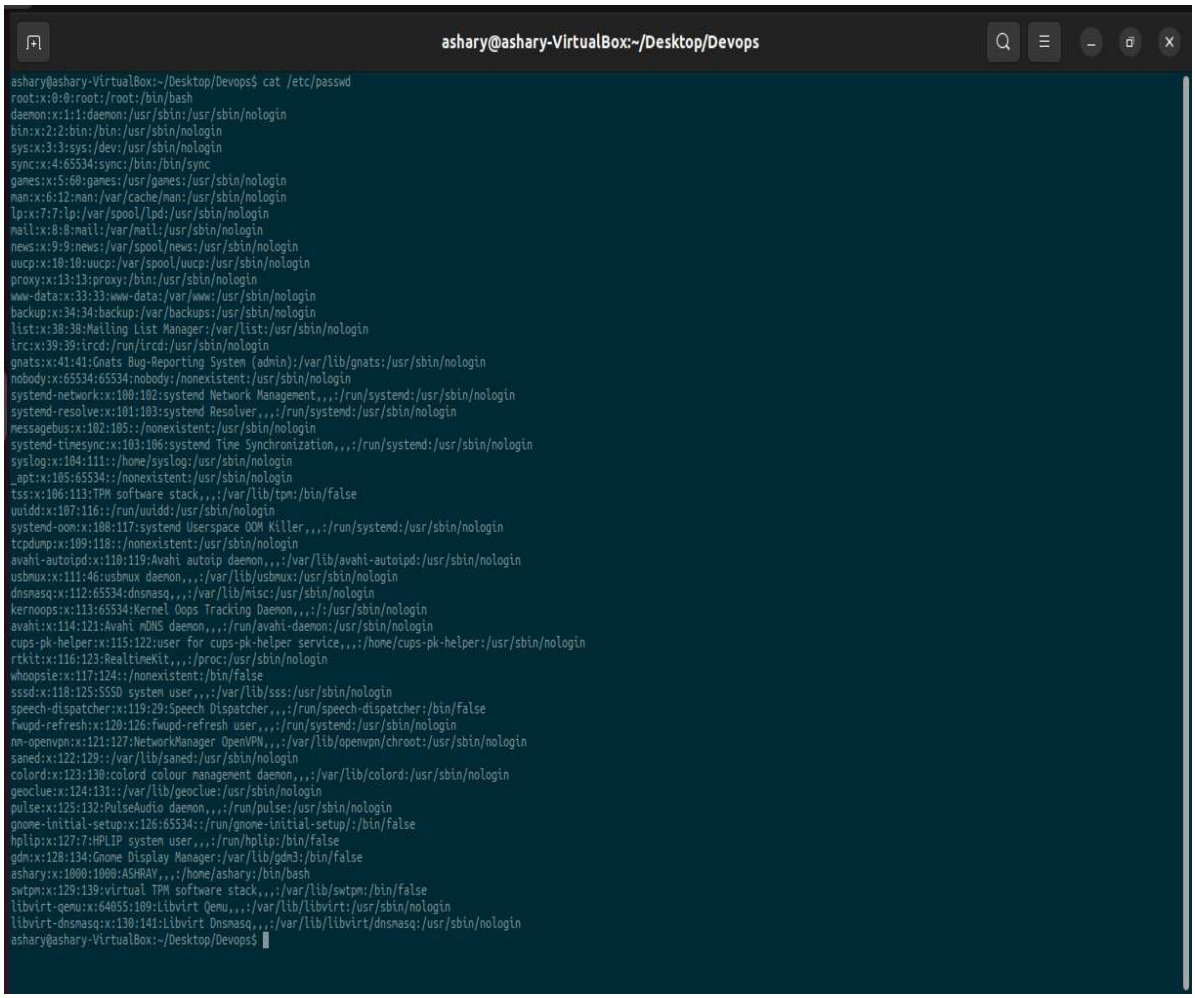
Commands:

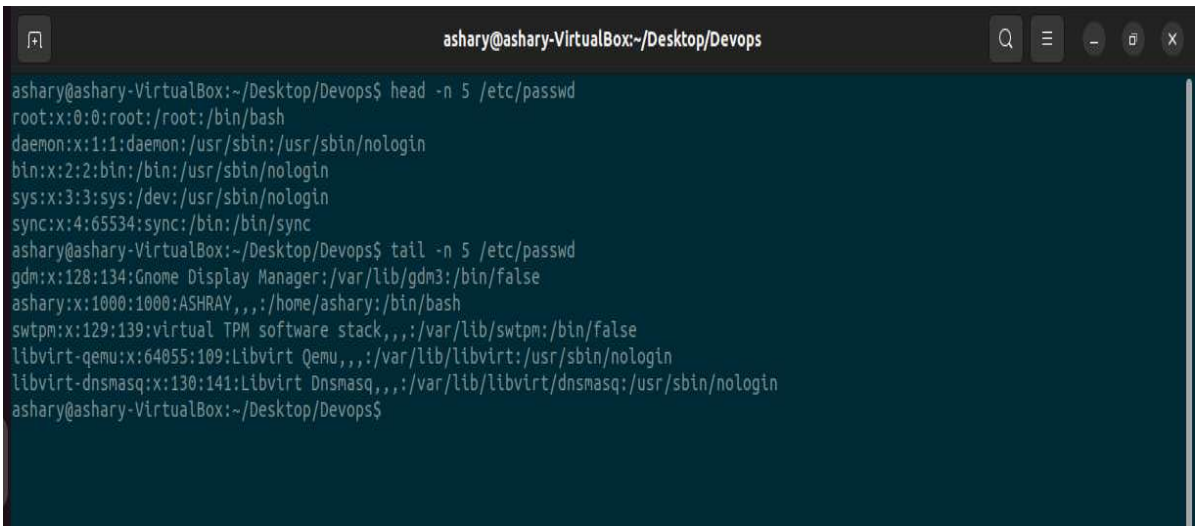
```
cat /etc/passwd

head -n 5 /etc/passwd

tail -n 5 /etc/passwd
```

Explanation:

- cat: Displays the whole file.
- head -n 5: Shows just the first 5 lines.
- tail -n 5: Shows just the last 5 lines.
  This is helpful when files are big and we only want to check the beginning or end.

Screenshots:


ashary@ashary-VirtualBox:~/Desktop/Devops
ashary@ashary-VirtualBox:~/Desktop/Devops$ 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
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
messagebus:x:102:105::/nonexistent:/usr/sbin/nologin
systemd-timesync:x:103:106:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
syslog:x:104:111::/home/syslog:/usr/sbin/nologin
_apt:x:105:65534::/nonexistent:/usr/sbin/nologin
tss:x:106:113:TPM software stack,,,:/var/lib/tpm:/bin/false
uuidd:x:107:116::/run/uuidd:/usr/sbin/nologin
systemd-oom:x:108:117:systemd Userspace OOM Killer,,,:/run/systemd:/usr/sbin/nologin
tcpdump:x:109:118::/nonexistent:/usr/sbin/nologin
avahi-autoipd:x:110:119:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
usbmux:x:111:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
dnsmasq:x:112:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
kernoops:x:113:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin
avahi:x:114:121:Avahi mDNS daemon,,,:/run/avahi-daemon:/usr/sbin/nologin
cups-pk-helper:x:115:122:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
rtkit:x:116:123:RealtimeKit,,,:/proc:/usr/sbin/nologin
whoopsie:x:117:124::/nonexistent:/bin/false
sssd:x:118:125:SSSD system user,,,:/var/lib/sss:/usr/sbin/nologin
speech-dispatcher:x:119:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/false
fwupd-refresh:x:120:126:fwupd-refresh user,,,:/run/systemd:/usr/sbin/nologin
nm-openvpn:x:121:127:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin
saned:x:122:129::/var/lib/saned:/usr/sbin/nologin
colord:x:123:130:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
geoclue:x:124:131::/var/lib/geoclue:/usr/sbin/nologin
pulse:x:125:132:PulseAudio daemon,,,:/run/pulse:/usr/sbin/nologin
gnome-initial-setup:x:126:65534::/run/gnome-initial-setup/:/bin/false
hplip:x:127:7:HPLIP system user,,,:/run/hplip:/bin/false
gdm:x:128:134:Gnome Display Manager:/var/lib/gdm3:/bin/false
ashary:x:1000:1000:ASHRAY,,,:/home/ashary:/bin/bash
swtpm:x:129:139:virtual TPM software stack,,,:/var/lib/swtpm:/bin/false
libvirt-qemu:x:64055:109:Libvirt Qemu,,,:/var/lib/libvirt:/usr/sbin/nologin
libvirt-dnsmasq:x:130:141:Libvirt Dnsmasq,,,:/var/lib/libvirt/dnsmasq:/usr/sbin/nologin
ashary@ashary-VirtualBox:~/Desktop/Devops$


ashary@ashary-VirtualBox:~/Desktop/Devops
ashary@ashary-VirtualBox:~/Desktop/Devops$ 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
ashary@ashary-VirtualBox:~/Desktop/Devops$ tail -n 5 /etc/passwd
gdm:x:128:134:Gnome Display Manager:/var/lib/gdm3:/bin/false
ashary:x:1000:1000:ASHRAY,,,:/home/ashary:/bin/bash
swtpm:x:129:139:virtual TPM software stack,,,:/var/lib/swtpm:/bin/false
libvirt-qemu:x:64055:109:Libvirt Qemu,,,:/var/lib/libvirt:/usr/sbin/nologin
libvirt-dnsmasq:x:130:141:Libvirt Dnsmasq,,,:/var/lib/libvirt/dnsmasq:/usr/sbin/nologin
ashary@ashary-VirtualBox:~/Desktop/Devops$

## 3. Searching for Patterns

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

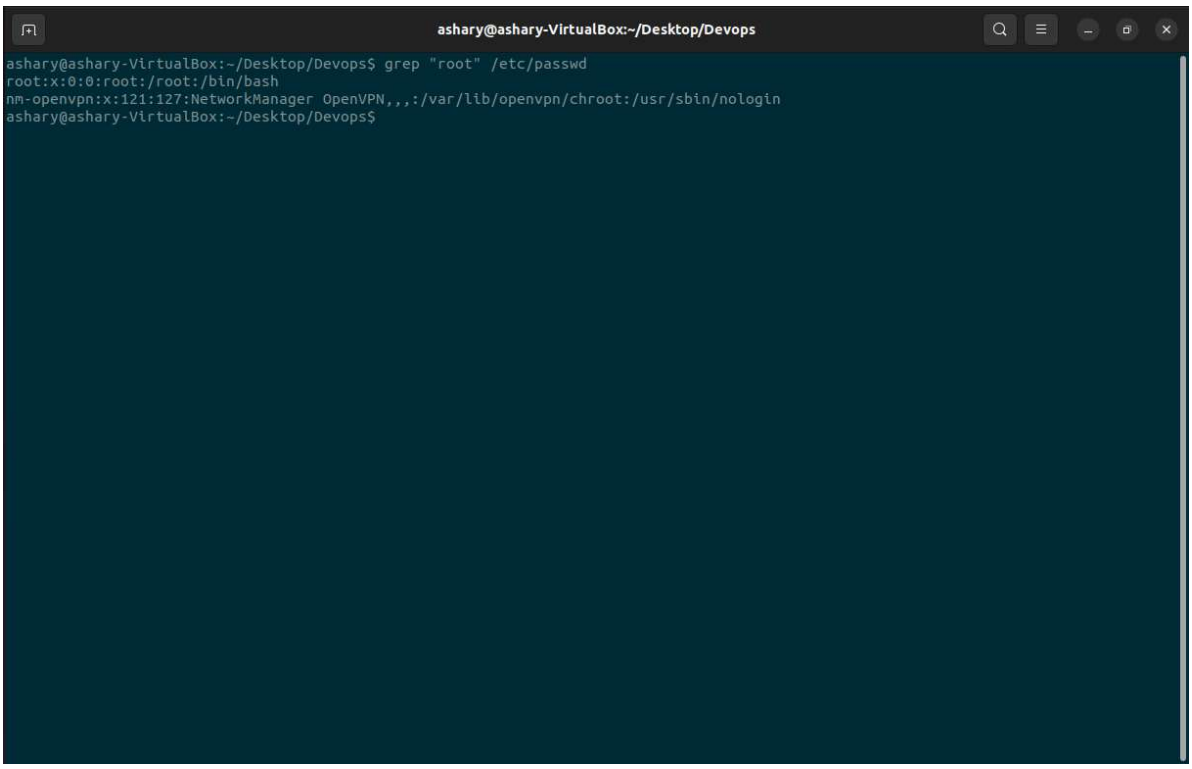
**Command:**

```
grep "root" /etc/passwd
```

**Explaination:**

- grep: Searches for a word or phrase in a file.
- Here, it finds lines that include the word "root" in /etc/passwd.

**Screenshot:**



## 4. Zipping and Unzipping

## Compress the test_dir directory into a file named test_dir.zip using zip.

## Unzip test_dir.zip into a new directory named unzipped_dir.

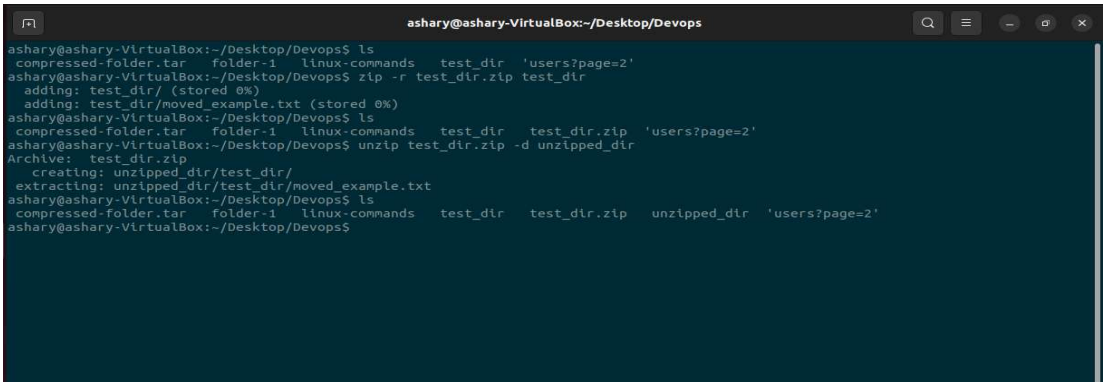
**Command:**

```
cd ..

    zip -r test_dir.zip test_dir

    unzip test_dir.zip -d unzipped_dir
```

**Explaination:**

- `zip -r`: Compresses folders/files recursively (including subfolders).
- `unzip`: Extracts the .zip file into the unzipped_dir folder.

**Screenshot:**



## 5. Downloading Files

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

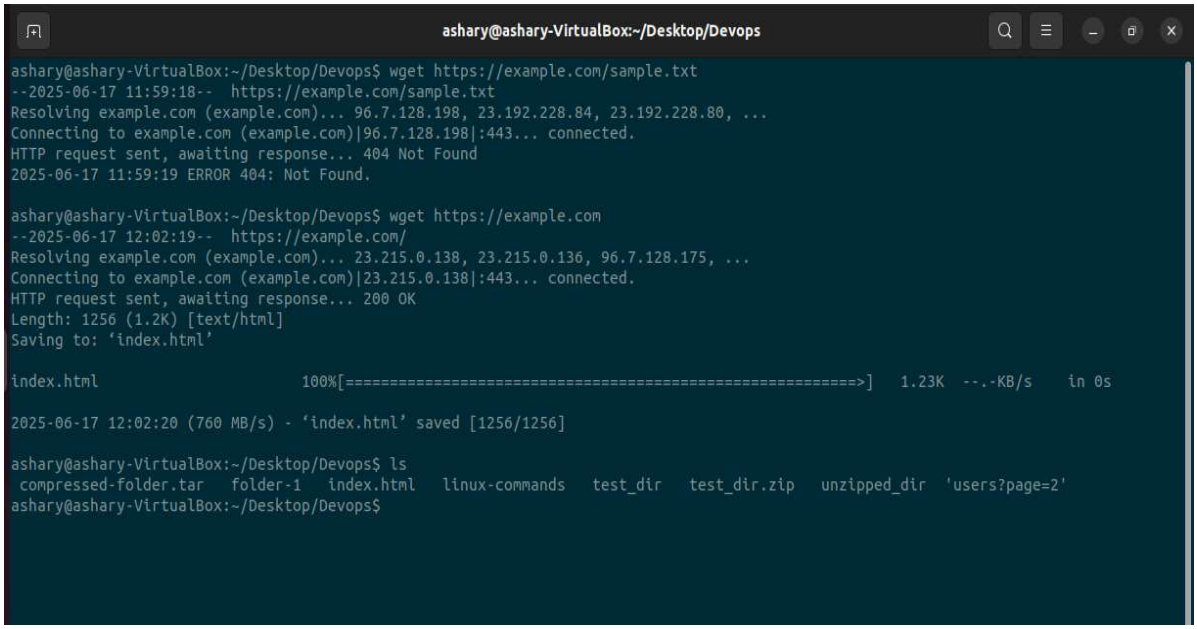
Command:

```
wget https://example.com
```

Explanation:

- wget: Downloads files from a link.
- You can use it to get files directly into your terminal.
- You may need to install it first: sudo apt install wget

Screenshots:



## 6. Changing Permissions

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

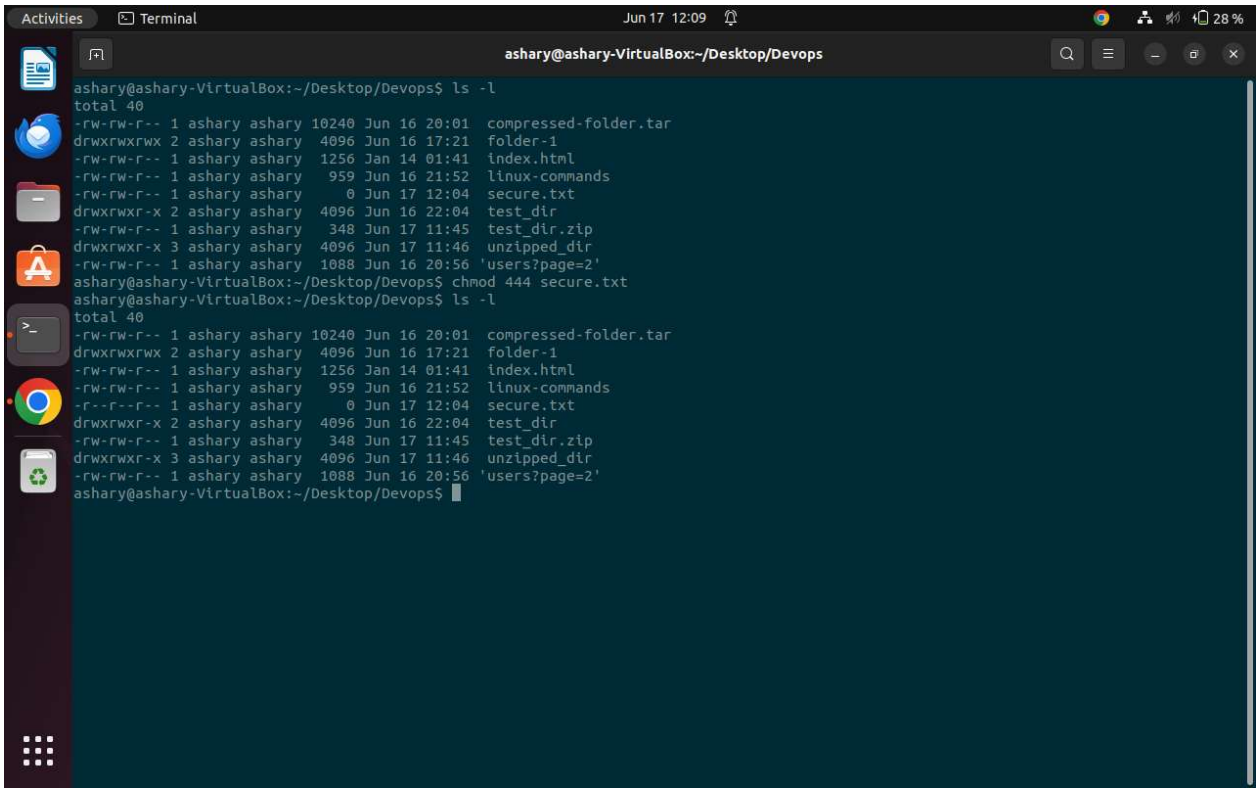
Commands:

```
touch secure.txt

    chmod 444 secure.txt
```

Explanation:

- **touch secure.txt:** Creates a new file named **secure.txt.**
- **chmod 444:** Makes the file **read-only** for everyone — you, your group, and others.

Screenshot:



## 7. Working with Environment Variables

## Use export to set a new environment variable called MY_VAR with the value "Hello, Linux!".

**Commands:**

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

**Explaination**

- `export`: Creates a temporary variable in your current session.
- `echo $MY_VAR`: Displays the value stored in the variable.

**Screenshot:**