Module 4 Linux Essentials
TASK 4.3

After you have logged into the system, do the following.

1.Invoke **pwd** to see your current working directory (there should be your home directory).

```
vm1kern@vm1kern-VirtualBox:~$ pwd
/home/vm1kern
```

2. Collect output of these commands

ls -l / - shows the list of / directory using a long listing format

```
vm1kern@vm1kern-VirtualBox:~$ ls -l /
total 970072
drwxr-xr-x    2 root root      4096 квi 15 13:32 bin
drwxr-xr-x    3 root root      4096 квi 15 13:35 boot
drwxrwxr-x    2 root root      4096 бер 29 22:47 cdrom
drwxr-xr-x   18 root root      4240 квi 17 00:29 dev
drwxr-xr-x  123 root root     12288 квi 15 13:34 etc
drwxr-xr-x    3 root root      4096 бер 29 22:48 home
lrwxrwxrwx    1 root root        32 квi 15 13:35 initrd.img -> boot/initrd.img-5
.3.0-46-generic
lrwxrwxrwx    1 root root        32 квi 15 13:35 initrd.img.old -> boot/initrd.i
mg-5.3.0-42-generic
drwxr-xr-x   21 root root      4096 бер 29 22:51 lib
drwxr-xr-x    2 root root      4096 лют  3 20:22 lib64
drwx------    2 root root     16384 бер 29 22:41 lost+found
drwxr-xr-x    2 root root      4096 лют  3 20:22 media
drwxr-xr-x    2 root root      4096 лют  3 20:22 mnt
drwxr-xr-x    2 root root      4096 лют  3 20:22 opt
dr-xr-xr-x  219 root root         0 квi 17 00:28 proc
drwx------    3 root root      4096 лют  3 20:28 root
drwxr-xr-x   27 root root       780 квi 17 00:28 run
drwxr-xr-x    2 root root     12288 бер 30 03:11 sbin
drwxr-xr-x   11 root root      4096 бер 29 23:01 snap
drwxr-xr-x    2 root root      4096 лют  3 20:22 srv
-rw-------    1 root root 993244160 бер 29 22:42 swapfile
dr-xr-xr-x   13 root root         0 квi 17 00:28 sys
```

ls - shows the list of current directory

```
vm1kern@vm1kern-VirtualBox:~$ ls
Desktop    Downloads         Music     Public     Videos
Documents  examples.desktop  Pictures  Templates
```

ls ~ - shows the list of user's home directory

```
vm1kern@vm1kern-VirtualBox:/$ ls ~
Desktop    Downloads         Music     Public     Videos
Documents  examples.desktop  Pictures  Templates
```

ls -l shows the list of the current directory using a long listing format

```
vm1kern@vm1kern-VirtualBox:~$ ls -l
total 44
drwxr-xr-x 2 vm1kern vm1kern 4096 бер 29 23:19 Desktop
drwxr-xr-x 2 vm1kern vm1kern 4096 бер 29 23:19 Documents
drwxr-xr-x 2 vm1kern vm1kern 4096 бер 29 23:19 Downloads
-rw-r--r-- 1 vm1kern vm1kern 8980 бер 29 22:48 examples.desktop
drwxr-xr-x 2 vm1kern vm1kern 4096 бер 29 23:19 Music
drwxr-xr-x 2 vm1kern vm1kern 4096 бер 29 23:19 Pictures
drwxr-xr-x 2 vm1kern vm1kern 4096 бер 29 23:19 Public
drwxr-xr-x 2 vm1kern vm1kern 4096 бер 29 23:19 Templates
drwxr-xr-x 2 vm1kern vm1kern 4096 бер 29 23:19 Videos
```

ls -a shows the list of the current directory including hidden files or directories

```
vm1kern@vm1kern-VirtualBox:~$ ls -a
.                 .config           .ICEauthority   Public
..                Desktop           .local          .ssh
.bash_history     Documents         .mozilla        .sudo_as_admin_successful
.bash_logout      Downloads         Music           Templates
.bashrc           examples.desktop  Pictures        Videos
.cache            .gnupg            .profile
```

ls -la shows the list of the current directory including hidden files or directories using a long listing format

```
vm1kern@vm1kern-VirtualBox:~$ ls -al
total 96
drwxr-xr-x 16 vm1kern vm1kern 4096 квi 17 00:29 .
drwxr-xr-x  3 root    root    4096 бер 29 22:48 ..
-rw-------  1 vm1kern vm1kern  650 квi 15 18:27 .bash_history
-rw-r--r--  1 vm1kern vm1kern  220 бер 29 22:48 .bash_logout
-rw-r--r--  1 vm1kern vm1kern 3771 бер 29 22:48 .bashrc
drwx------ 13 vm1kern vm1kern 4096 квi 15 13:29 .cache
drwx------ 11 vm1kern vm1kern 4096 бер 29 23:21 .config
drwxr-xr-x  2 vm1kern vm1kern 4096 бер 29 23:19 Desktop
drwxr-xr-x  2 vm1kern vm1kern 4096 бер 29 23:19 Documents
drwxr-xr-x  2 vm1kern vm1kern 4096 бер 29 23:19 Downloads
-rw-r--r--  1 vm1kern vm1kern 8980 бер 29 22:48 examples.desktop
drwx------  3 vm1kern vm1kern 4096 квi 15 13:28 .gnupg
-rw-------  1 vm1kern vm1kern 1830 квi 17 00:29 .ICEauthority
drwx------  3 vm1kern vm1kern 4096 бер 29 23:19 .local
drwx------  5 vm1kern vm1kern 4096 бер 29 23:38 .mozilla
drwxr-xr-x  2 vm1kern vm1kern 4096 бер 29 23:19 Music
drwxr-xr-x  2 vm1kern vm1kern 4096 бер 29 23:19 Pictures
-rw-r--r--  1 vm1kern vm1kern  807 бер 29 22:48 .profile
drwxr-xr-x  2 vm1kern vm1kern 4096 бер 29 23:19 Public
drwx------  2 vm1kern vm1kern 4096 квi 15 13:28 .ssh
-rw-r--r--  1 vm1kern vm1kern    0 бер 30 03:11 .sudo_as_admin_successful
drwxr-xr-x  2 vm1kern vm1kern 4096 бер 29 23:19 Templates
drwxr-xr-x  2 vm1kern vm1kern 4096 бер 29 23:19 Videos
```

ls -lda ~ shows the information about the directory(in this case home directory) using a long listing format, ignoring what the directory contains

```
vm1kern@vm1kern-VirtualBox:~$ ls -lda ~
drwxr-xr-x 16 vm1kern vm1kern 4096 квi 17 00:29 /home/vm1kern
```

Note differences between produced outputs. Describe (in few words) purposes of these commands.

3. Execute and describe the following commands (store the output, if any):
mkdir test - creating a directory in the current directory with the name test
cd test - navigate to the directory test in the current directory(home dir in my case)
pwd - shows the current directory

```
vm1kern@vm1kern-VirtualBox:~/test$ pwd
/home/vm1kern/test
```

touch test.txt - creates a file in the current directory with the name test.txt
ls -l test.txt - shows the information about test.txt using a long listing format

```
vm1kern@vm1kern-VirtualBox:~/test$ ls -l test.txt
-rw-r--r-- 1 vm1kern vm1kern 0 квi 17 01:11 test.txt
```

mkdir test2 - creating a directory in the current directory with the name test2
mv test.txt test2 - moving test.txt from the current directory to ./test2 directory
cd test2 - navigate to the directory test2 in the current directory
ls - shows the list of current directory

```
vm1kern@vm1kern-VirtualBox:~/test/test2$ ls
test.txt
```

mv test.txt test2.txt - rename test.txt file
ls

```
vm1kern@vm1kern-VirtualBox:~/test/test2$ ls
test2.txt
```

cp test2.txt .. - copy test2.txt file to the parent directory
cd .. - navigate to the parent directory
ls

```
vm1kern@vm1kern-VirtualBox:~/test/test2$ cd ..
vm1kern@vm1kern-VirtualBox:~/test$ ls
test2  test2.txt
```

rm test2.txt - remove test2.txt. in the current directory

rmdir test2 - remove directory test2 in the current directory

```
vm1kern@vm1kern-VirtualBox:~/test$ rmdir test2
rmdir: failed to remove 'test2': Directory not empty
```

4. Execute and describe the difference

cat /etc/fstab - prints fstab file on the standard out

less /etc/fstab - opens fstab file in the viewer (I should be able to change pages)

more /etc/fstab - opens the file in the viewer, if the file long enough, I am able only to go forward (pressing 'space'). After reaching the end of file, I am automatically sent back to the command line. I can see the file as an output above the command line.

5. Add to archive all 'test' directories.

    a. to the pure 'tar';

```
vm1kern@vm1kern-VirtualBox:~$ tar -cf test.tar test*
vm1kern@vm1kern-VirtualBox:~$ ls
Desktop     Downloads        Music      Public     test      Videos
Documents   examples.desktop  Pictures   Templates  test.tar
```

    b. to the zipped 'tar' with only tar command;

```
vm1kern@vm1kern-VirtualBox:~$ tar -czf test2.tar test*
vm1kern@vm1kern-VirtualBox:~$ ls -l
total 64
drwxr-xr-x 2 vm1kern vm1kern  4096 бер 29 23:19 Desktop
drwxr-xr-x 2 vm1kern vm1kern  4096 бер 29 23:19 Documents
drwxr-xr-x 2 vm1kern vm1kern  4096 бер 29 23:19 Downloads
-rw-r--r-- 1 vm1kern vm1kern  8980 бер 29 22:48 examples.desktop
drwxr-xr-x 2 vm1kern vm1kern  4096 бер 29 23:19 Music
drwxr-xr-x 2 vm1kern vm1kern  4096 бер 29 23:19 Pictures
drwxr-xr-x 2 vm1kern vm1kern  4096 бер 29 23:19 Public
drwxr-xr-x 2 vm1kern vm1kern  4096 бер 29 23:19 Templates
drwxr-xr-x 2 vm1kern vm1kern  4096 кві 17 01:27 test
-rw-r--r-- 1 vm1kern vm1kern   165 кві 17 02:34 test2.tar
-rw-r--r-- 1 vm1kern vm1kern 10240 кві 17 02:31 test.tar
drwxr-xr-x 2 vm1kern vm1kern  4096 бер 29 23:19 Videos
vm1kern@vm1kern-VirtualBox:~$
```

c. to the zipped 'tar' with gzip command;

```
vm1kern@vm1kern-VirtualBox:~$ gzip test*
gzip: test is a directory -- ignored
vm1kern@vm1kern-VirtualBox:~$ gzip test
gzip: test is a directory -- ignored
vm1kern@vm1kern-VirtualBox:~$ gzip test.tar
gzip: test.tar: No such file or directory
vm1kern@vm1kern-VirtualBox:~$ ls
Desktop      Downloads          Music      Public      test         test.tar.gz
Documents    examples.desktop   Pictures   Templates   test2.tar.gz Videos
vm1kern@vm1kern-VirtualBox:~$ ls -l
total 56
drwxr-xr-x 2 vm1kern vm1kern 4096 бер 29 23:19 Desktop
drwxr-xr-x 2 vm1kern vm1kern 4096 бер 29 23:19 Documents
drwxr-xr-x 2 vm1kern vm1kern 4096 бер 29 23:19 Downloads
-rw-r--r-- 1 vm1kern vm1kern 8980 бер 29 22:48 examples.desktop
drwxr-xr-x 2 vm1kern vm1kern 4096 бер 29 23:19 Music
drwxr-xr-x 2 vm1kern vm1kern 4096 бер 29 23:19 Pictures
drwxr-xr-x 2 vm1kern vm1kern 4096 бер 29 23:19 Public
drwxr-xr-x 2 vm1kern vm1kern 4096 бер 29 23:19 Templates
drwxr-xr-x 2 vm1kern vm1kern 4096 кві 17 01:27 test
-rw-r--r-- 1 vm1kern vm1kern  189 кві 17 02:34 test2.tar.gz
-rw-r--r-- 1 vm1kern vm1kern  123 кві 17 02:31 test.tar.gz
drwxr-xr-x 2 vm1kern vm1kern 4096 бер 29 23:19 Videos
vm1kern@vm1kern-VirtualBox:~$
```

extract from archives all above.

```
vm1kern@vm1kern-VirtualBox:~$ gunzip test2.tar.gz test.tar.gz
vm1kern@vm1kern-VirtualBox:~$ ls -l
total 60
drwxr-xr-x 2 vm1kern vm1kern  4096 бер 29 23:19 Desktop
drwxr-xr-x 2 vm1kern vm1kern  4096 бер 29 23:19 Documents
drwxr-xr-x 2 vm1kern vm1kern  4096 бер 29 23:19 Downloads
-rw-r--r-- 1 vm1kern vm1kern  8980 бер 29 22:48 examples.desktop
drwxr-xr-x 2 vm1kern vm1kern  4096 бер 29 23:19 Music
drwxr-xr-x 2 vm1kern vm1kern  4096 бер 29 23:19 Pictures
drwxr-xr-x 2 vm1kern vm1kern  4096 бер 29 23:19 Public
drwxr-xr-x 2 vm1kern vm1kern  4096 бер 29 23:19 Templates
-rw-r--r-- 1 vm1kern vm1kern   165 кві 17 02:34 test2.tar
-rw-r--r-- 1 vm1kern vm1kern 10240 кві 17 02:31 test.tar
drwxr-xr-x 2 vm1kern vm1kern  4096 бер 29 23:19 Videos
vm1kern@vm1kern-VirtualBox:~$ tar -xvf test.tar
test/
vm1kern@vm1kern-VirtualBox:~$ tar -xvf test2.tar
test/
test.tar
```

5. Look through man pages of the listed above commands.