



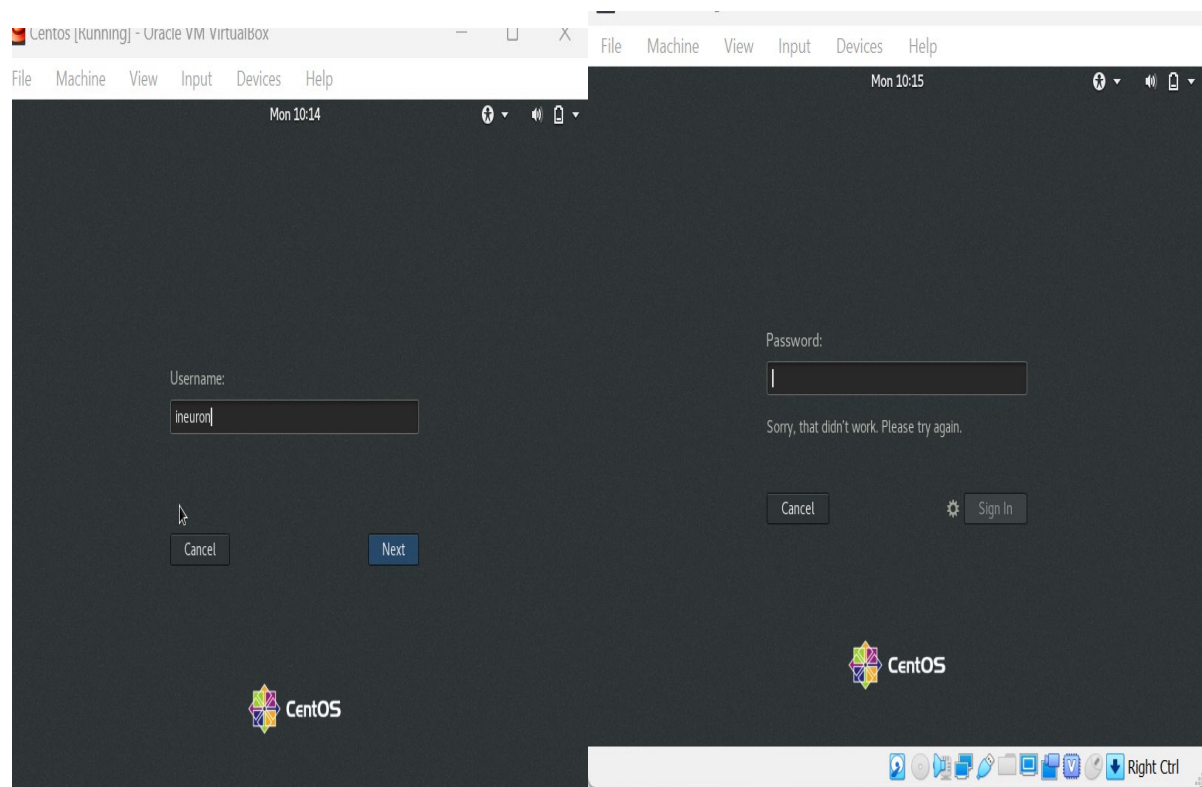
Basic Linux Commands Assignments

Assignment-1

Connect and disconnect with login Access

- What happens when you login a non-existent users or username?
 - Provide Screenshot and What you understand, explain in short brief?

Solution: As the user (Ineuron) is not created so we are not able to login in to the system. To login in to the system we need to have existing username and password.

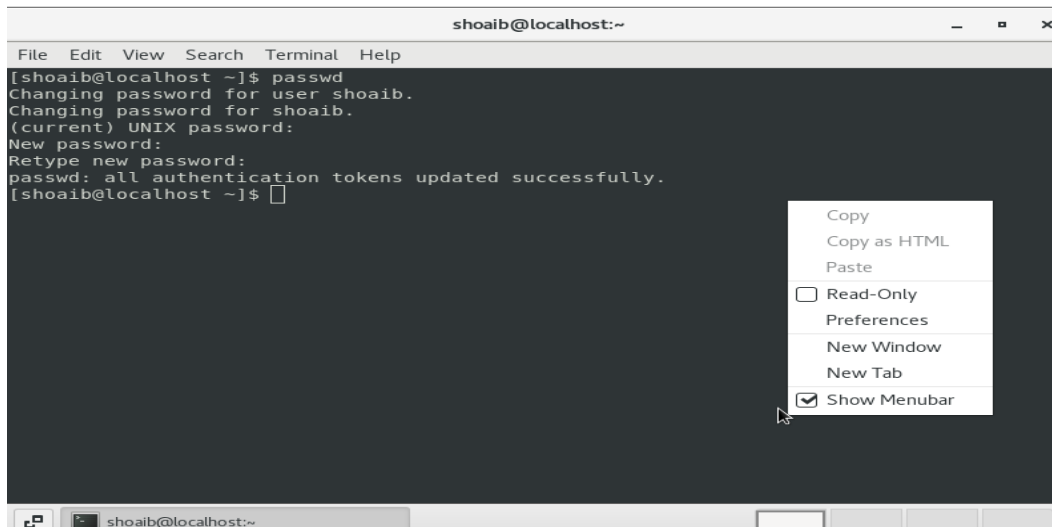


Assignment-2

Password changing

- Login into your account and then change password?
 - Change your password into **IneuR0n#42** and hit the **Enter** key
 - Explain what happen and give screenshot?

Solution: By using **passwd** command in the terminal we are able to change the password where we need to provide the existing password and new password.

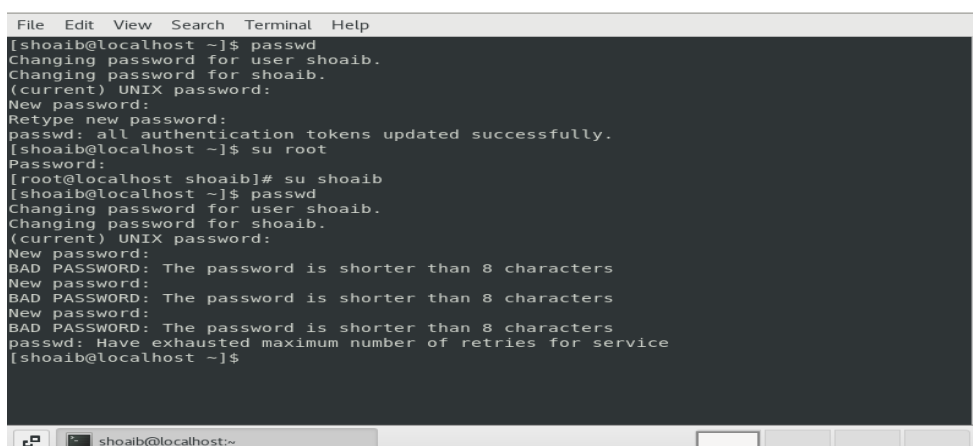


The screenshot shows a terminal window titled 'shoaib@localhost:~'. The user has entered the 'passwd' command. The terminal output shows the process of changing the password for the user 'shoaib', including prompts for the current password, a new password, and a confirmation. The output ends with 'passwd: all authentication tokens updated successfully.' and a prompt for the next command. A context menu is visible over the terminal, with options like 'Copy', 'Paste', and 'Show Menubar'.

```
shoaib@localhost:~  
File Edit View Search Terminal Help  
[shoaib@localhost ~]$ passwd  
Changing password for user shoaib.  
Changing password for shoaib.  
(current) UNIX password:  
New password:  
Retype new password:  
passwd: all authentication tokens updated successfully.  
[shoaib@localhost ~]$
```

- Try again to change password but use like password **1234** or **abcd**
 - Explain what happen and give screenshot?

Solution: Password was not able to change to **1234** or **abcd** as it less than 8 characters.

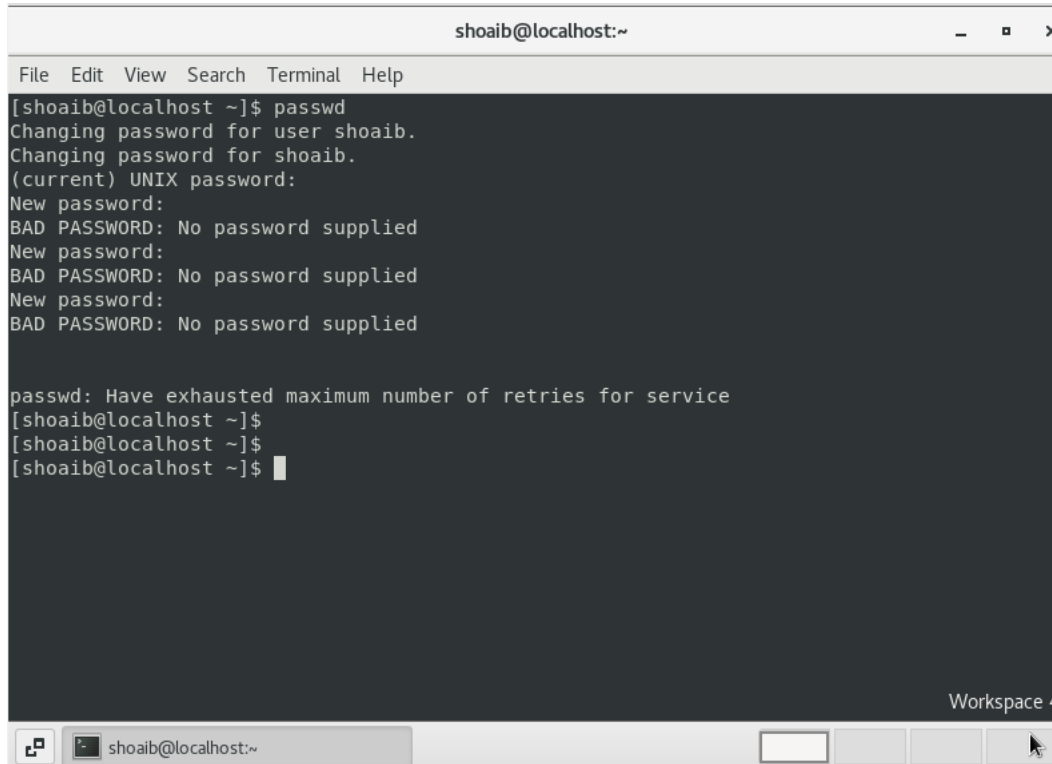


The screenshot shows a terminal window titled 'shoaib@localhost:~'. The user enters 'passwd' and successfully changes their password. Then, they enter 'su root' and become the root user. As root, they enter 'passwd' and attempt to change the password for 'shoaib' three times using '1234', 'abcd', and another short password. Each attempt fails with the message 'BAD PASSWORD: The password is shorter than 8 characters'. After the third failure, the terminal shows 'passwd: Have exhausted maximum number of retries for service'.

```
shoaib@localhost:~  
File Edit View Search Terminal Help  
[shoaib@localhost ~]$ passwd  
Changing password for user shoaib.  
Changing password for shoaib.  
(current) UNIX password:  
New password:  
Retype new password:  
passwd: all authentication tokens updated successfully.  
[shoaib@localhost ~]$ su root  
Password:  
[root@localhost shoaib]# su shoaib  
[shoaib@localhost ~]$ passwd  
Changing password for user shoaib.  
Changing password for shoaib.  
(current) UNIX password:  
New password:  
BAD PASSWORD: The password is shorter than 8 characters  
New password:  
BAD PASSWORD: The password is shorter than 8 characters  
New password:  
BAD PASSWORD: The password is shorter than 8 characters  
passwd: Have exhausted maximum number of retries for service  
[shoaib@localhost ~]$
```

- Try again to change password but now don't use any password just hit **Enter** key
 - Explain what happen and give screenshot?

Solution: As we didn't provide the new password it hasn't taken into consideration to change the new password. So after number of attempts it exists.



The screenshot shows a terminal window titled 'shoaib@localhost:~'. The user has entered the command 'passwd'. The terminal output shows the process of changing the password for the user 'shoaib'. It prompts for the current UNIX password, then for a new password. Three attempts to enter a new password result in 'BAD PASSWORD: No password supplied'. After the third failed attempt, the terminal displays the message 'passwd: Have exhausted maximum number of retries for service'. The prompt returns to the user's home directory '~'.

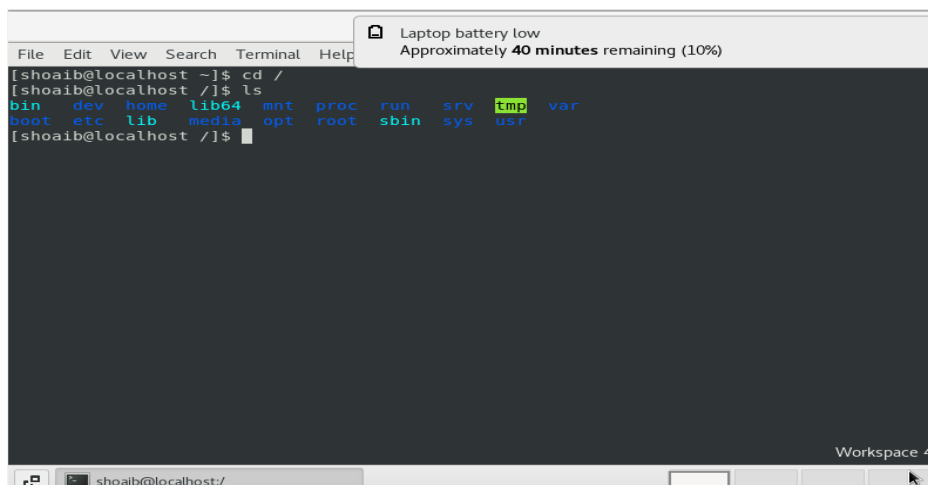
```
shoaib@localhost:~  
File Edit View Search Terminal Help  
[shoaib@localhost ~]$ passwd  
Changing password for user shoaib.  
Changing password for shoaib.  
(current) UNIX password:  
New password:  
BAD PASSWORD: No password supplied  
New password:  
BAD PASSWORD: No password supplied  
New password:  
BAD PASSWORD: No password supplied  
  
passwd: Have exhausted maximum number of retries for service  
[shoaib@localhost ~]$  
[shoaib@localhost ~]$  
[shoaib@localhost ~]$
```

Assignment-3

Working with Directories

- Enter the command **cd /** and then **ls** and then hit **Enter** key
 - Take screenshot and explain what output we got?

Solution: With this command we are at the top level of the folder. Everything is under the / folder. It is the first directory in the filesystem hierarchy.



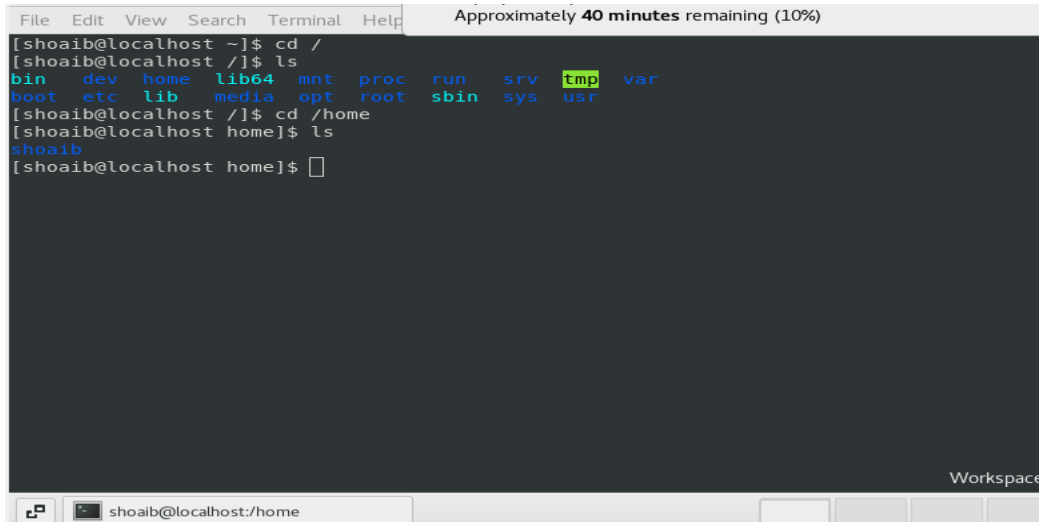
The screenshot shows a terminal window titled 'shoaib@localhost:~'. The user has entered the command 'cd /'. The terminal output shows the user's current directory is now '/'. The user then enters the command 'ls', and the terminal displays the contents of the root directory. The output is a list of directories: 'bin', 'dev', 'home', 'lib64', 'mnt', 'proc', 'run', 'srv', 'tmp', 'var', 'boot', 'etc', 'lib', 'media', 'opt', 'root', 'sbin', 'sys', and 'usr'. The prompt returns to the root directory '/'. A notification at the top of the terminal window indicates 'Laptop battery low Approximately 40 minutes remaining (10%)'.

```
shoaib@localhost:~  
File Edit View Search Terminal Help  
[shoaib@localhost ~]$ cd /  
[shoaib@localhost /]$ ls  
bin  dev  home  lib64  mnt  proc  run  srv  tmp  var  
boot  etc  lib   media  opt  root  sbin  sys  usr  
[shoaib@localhost /]$
```

- Enter the command now **cd /home** and then hit **Enter** key
 - Do **ls**, provide screenshot and explain what is **/home** directory used for?

Solution: we used the command to change the directory from root directory to the home directory.

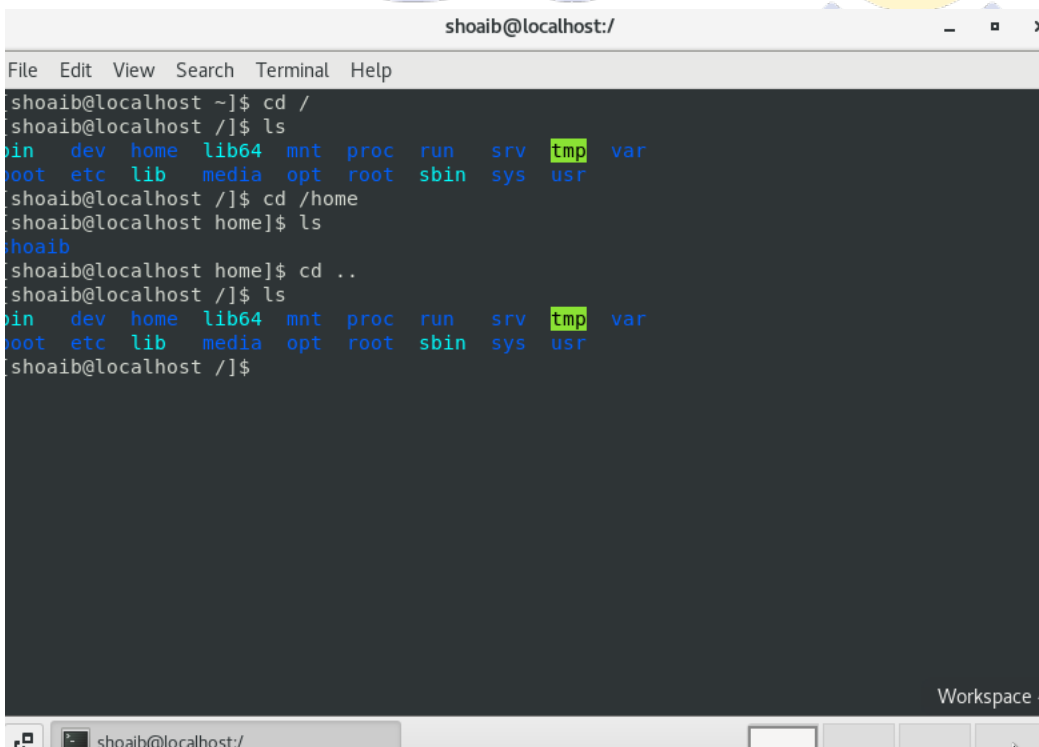
The home directory is used to store the user related data such as scripts, files, user information etc



```
File Edit View Search Terminal Help Approximately 40 minutes remaining (10%)
[shoaib@localhost ~]$ cd /
[shoaib@localhost /]$ ls
bin  dev  home  lib64  mnt  proc  run  srv  tmp  var
boot etc  lib   media  opt  root  sbin sys  usr
[shoaib@localhost /]$ cd /home
[shoaib@localhost home]$ ls
shoaib
[shoaib@localhost home]$
```

- Enter **cd ..** and hit **Enter** key [*Note: here we have space after cd then use double dot*]
 - Check what happen and give screenshot?

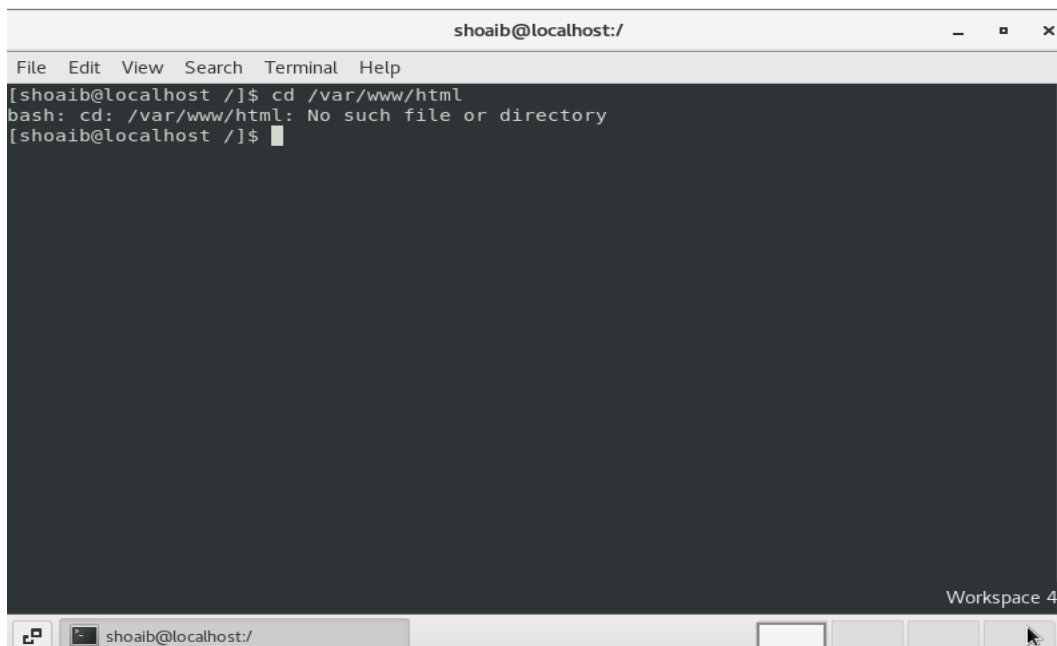
Solution: As we use this command it change the directory from home directory to the **/**(root Directory). Now we are at the top level or root directory



```
shoaib@localhost:/
File Edit View Search Terminal Help
shoaib@localhost ~]$ cd /
shoaib@localhost /]$ ls
bin  dev  home  lib64  mnt  proc  run  srv  tmp  var
boot etc  lib   media  opt  root  sbin sys  usr
shoaib@localhost /]$ cd /home
shoaib@localhost home]$ ls
shoaib
shoaib@localhost home]$ cd ..
shoaib@localhost /]$ ls
bin  dev  home  lib64  mnt  proc  run  srv  tmp  var
boot etc  lib   media  opt  root  sbin sys  usr
shoaib@localhost /]$
```

- Now enter **cd /var/www/html** and then type **cd** and hit **Enter** key
 - Explain what happen and give screenshot?

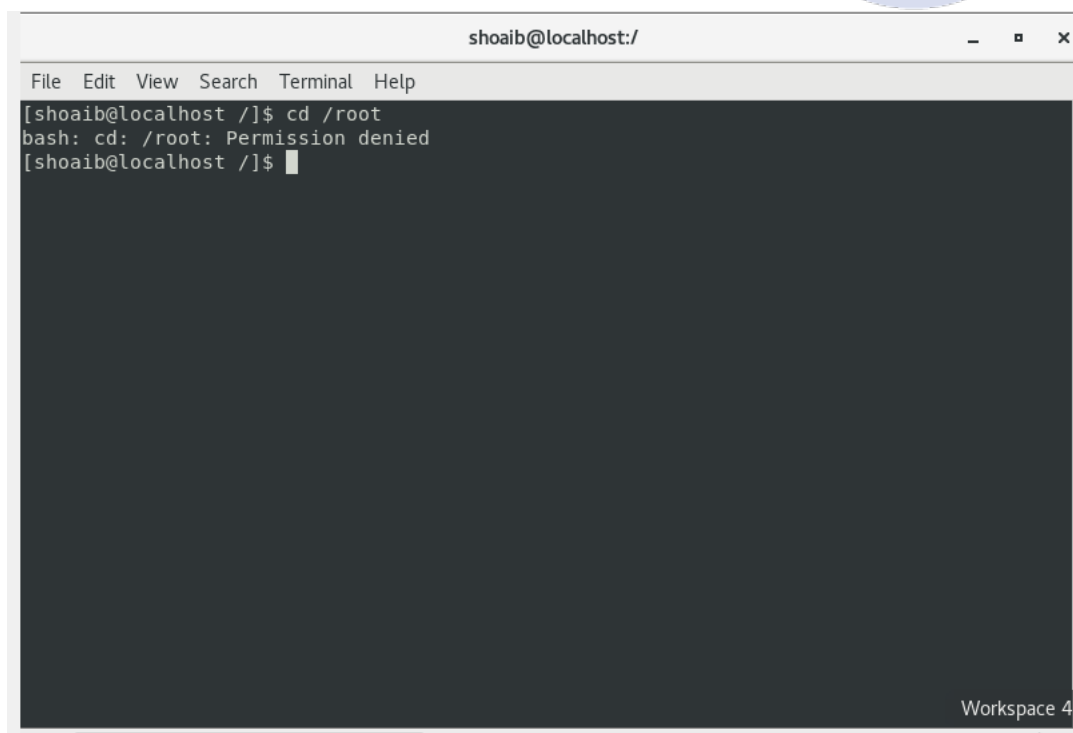
Solution: There is no such directory in my system as I haven't installed Apache server.



```
shoaib@localhost: /  
File Edit View Search Terminal Help  
[shoaib@localhost ~]$ cd /var/www/html  
bash: cd: /var/www/html: No such file or directory  
[shoaib@localhost ~]$
```

- Now type **cd /root** and then hit **Enter** key
 - Do **ls**, check any output we have on screen if yes then take screenshot?

Solution: As I was not login as root user or I don't have the required permission to access this root folder.



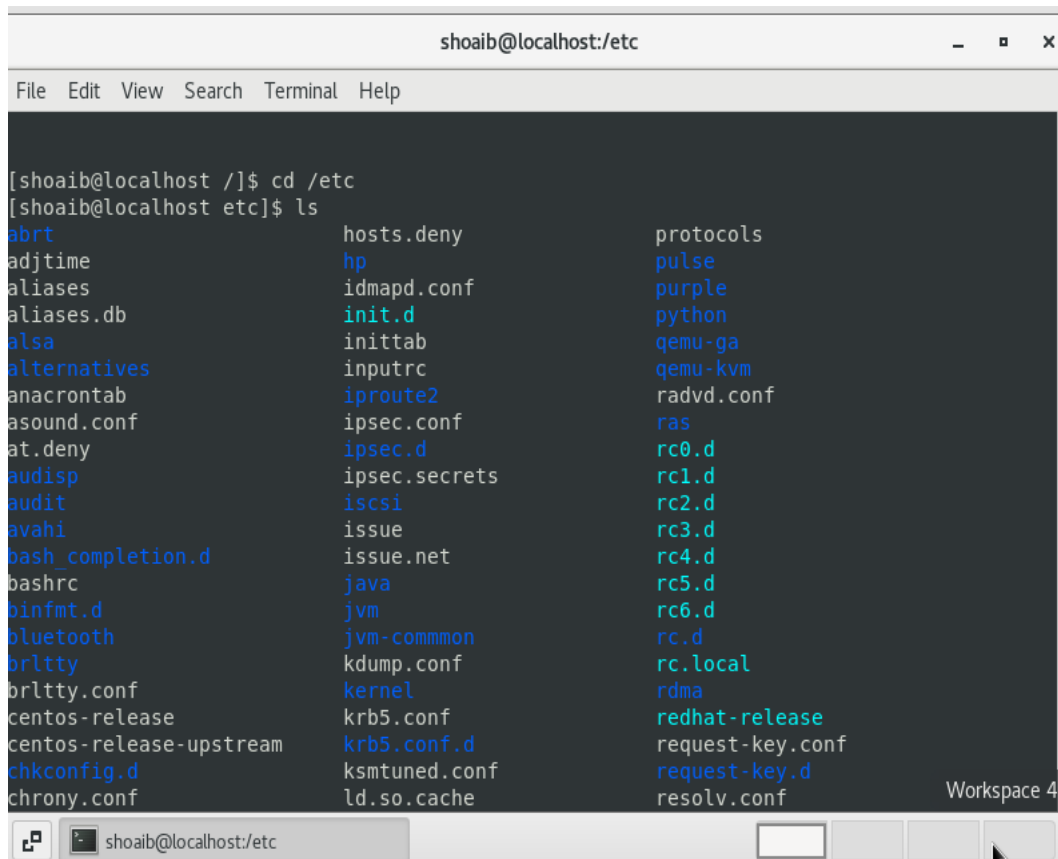
```
shoaib@localhost: /  
File Edit View Search Terminal Help  
[shoaib@localhost ~]$ cd /root  
bash: cd: /root: Permission denied  
[shoaib@localhost ~]$
```

Assignment-4

Working with File Listing

- Go to **cd /etc** and type **ls**
 - Take screenshot and explain what files you have seeing?
 - Take screenshot and explain what different output you found compare to previous command you used?

Solution: It is a directory where all the Linux configuration file is present.



The screenshot shows a terminal window titled "shoaib@localhost:/etc". The terminal displays the command `cd /etc` and `ls`, followed by a list of files and directories in the `/etc` directory. The files are listed in three columns. The first column contains files like `abrt`, `adjtime`, `aliases`, `aliases.db`, `alsa`, `alternatives`, `anacrontab`, `asound.conf`, `at.deny`, `audisp`, `audit`, `avahi`, `bash_completion.d`, `bashrc`, `binfmt.d`, `bluetooth`, `brltty`, `brltty.conf`, `centos-release`, `centos-release-upstream`, `chkconfig.d`, and `chrony.conf`. The second column contains files like `hosts.deny`, `hp`, `idmapd.conf`, `init.d`, `inittab`, `inputrc`, `iproute2`, `ipsec.conf`, `ipsec.d`, `ipsec.secrets`, `iscsi`, `issue`, `issue.net`, `java`, `jvm`, `jvm-common`, `kdump.conf`, `kernel`, `krb5.conf`, `krb5.conf.d`, `ksmtuned.conf`, and `ld.so.cache`. The third column contains files like `protocols`, `pulse`, `purple`, `python`, `qemu-ga`, `qemu-kvm`, `radvd.conf`, `ras`, `rc0.d`, `rc1.d`, `rc2.d`, `rc3.d`, `rc4.d`, `rc5.d`, `rc6.d`, `rc.d`, `rc.local`, `rdma`, `redhat-release`, `request-key.conf`, `request-key.d`, and `resolv.conf`. The terminal window has a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The status bar at the bottom shows "shoaib@localhost:/etc" and "Workspace 4".

```
shoaib@localhost:/etc

[shoaib@localhost /]$ cd /etc
[shoaib@localhost etc]$ ls
abrt                  hosts.deny            protocols
adjtime              hp                    pulse
aliases              idmapd.conf           purple
aliases.db           init.d                python
alsa                 inittab               qemu-ga
alternatives         inputrc               qemu-kvm
anacrontab           iproute2              radvd.conf
asound.conf          ipsec.conf            ras
at.deny              ipsec.d               rc0.d
audisp               ipsec.secrets         rc1.d
audit                iscsi                 rc2.d
avahi                 issue                 rc3.d
bash_completion.d    issue.net             rc4.d
bashrc               java                  rc5.d
binfmt.d             jvm                   rc6.d
bluetooth            jvm-common            rc.d
brltty               kdump.conf            rc.local
brltty.conf          kernel                rdma
centos-release        krb5.conf             redhat-release
centos-release-upstream krb5.conf.d           request-key.conf
chkconfig.d          ksmtuned.conf         request-key.d
chrony.conf          ld.so.cache           resolv.conf
```

- Then type **ls -al** and hit **Enter** key
 - Take screenshot and explain what new file or directory you found?

Solution: This command provides the details of the file such as the permissions, modification date, size of the file, group, etc.

```

shoaib@localhost:/etc
File Edit View Search Terminal Help
hosts profile
hosts.allow profile.d
[shoaib@localhost etc]$ clear

[shoaib@localhost etc]$ ls -al
total 1372
drwxr-xr-x. 139 root root    8192 Oct 17 10:44 .
dr-xr-xr-x.  17 root root    224 Oct 16 15:28 ..
drwxr-xr-x.   3 root root    101 Oct 16 15:10 abrt
-rw-r--r--.   1 root root     16 Oct 16 15:28 adjtime
-rw-r--r--.   1 root root   1529 Apr  1 2020 aliases
-rw-r--r--.   1 root root  12288 Oct 16 15:12 aliases.db
drwxr-xr-x.   3 root root     65 Oct 16 15:12 alsa
drwxr-xr-x.   2 root root   4096 Oct 16 22:16 alternatives
-rw-r--r--.   1 root root    541 Jan 13 2022 anacrontab
-rw-r--r--.   1 root root     55 Aug  8 2019 asound.conf
-rw-r--r--.   1 root root      1 May 18 21:24 at.deny
drwxr-xr-x.   3 root root     43 Oct 16 15:10 audisp
drwxr-xr-x.   3 root root     83 Oct 16 15:12 audit
drwxr-xr-x.   4 root root     71 Oct 16 15:12 avahi
drwxr-xr-x.   2 root root   4096 Oct 16 22:14 bash_completion.d
-rw-r--r--.   1 root root   2853 Apr  1 2020 bashrc
drwxr-xr-x.   2 root root      6 Sep  1 20:27 binfmt.d
drwxr-xr-x.   2 root root     23 Oct 16 15:10 bluetooth
drwxr-xr-x.   2 root root  12288 Oct 16 15:11 brltty
-rw-r--r--.   1 root root   21929 Apr 11 2018 brltty.conf

```

- Then use **ls -li** and hit **Enter** key
 - Now see what different output its shows and take screenshot?

Solution: Displays file serial numbers along with file names.

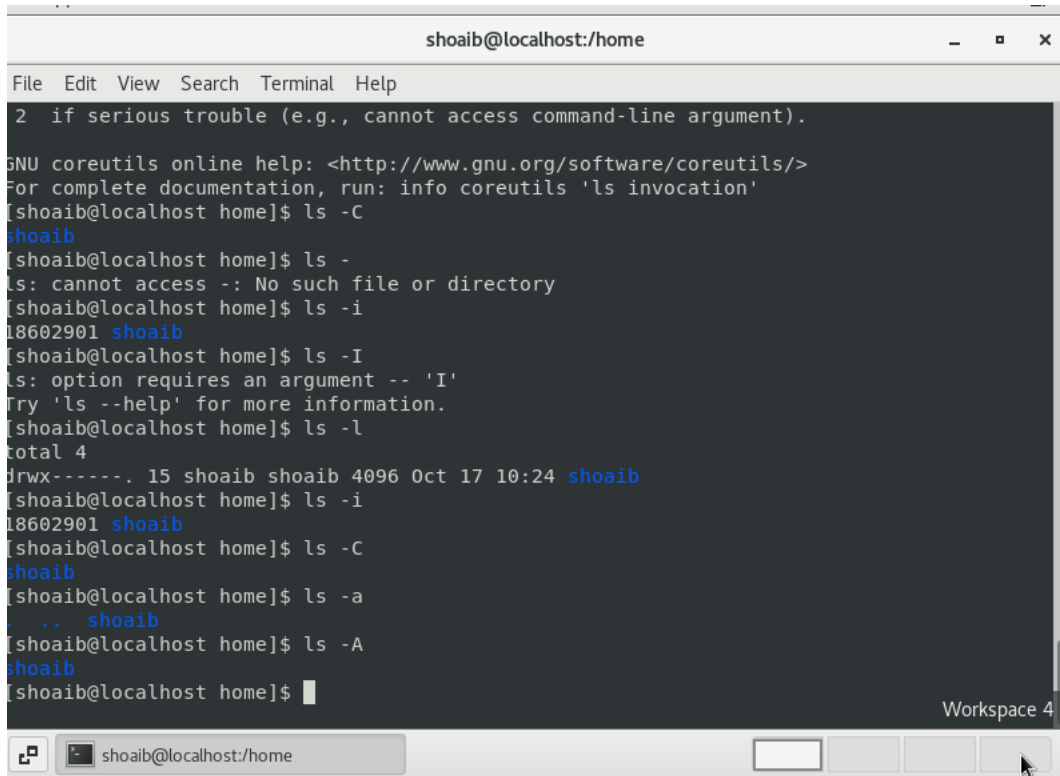
```

shoaib@localhost:/etc
File Edit View Search Terminal Help
[shoaib@localhost etc]$ ls -li
17903320 abrt
8995046 adjtime
8388778 aliases
9452634 aliases.db
1682706 alsa
17150770 alternatives
9046282 anacrontab
8762671 asound.conf
8708704 at.deny
25993142 audisp
9073493 audit
18559291 avahi
74276 bash_completion.d
8388779 bashrc
25807658 binfmt.d
25902049 bluetooth
9166205 brltty
9166206 brltty.conf
8388777 centos-release
8388712 centos-release-upstream
25206743 chkconfig.d
9091926 chrony.conf
9091928 chrony.keys
26735165 cifs-utils
17759372 cron.d
2907046 mcelog
8807305 mke2fs.conf
8951633 modprobe.d
1168808 modules-load.d
8388792 motd
8388676 mtab
8646425 mtools.conf
9166641 multipath
8919024 my.cnf
8919025 my.cnf.d
9545536 nanorc
17824004 ndctl
8807326 netconfig
17759378 NetworkManager
8995047 networks
9190289 nfs.conf
9190290 nfsmount.conf
8957564 nsswitch.conf
8499631 nsswitch.conf.bak
26710845 ntp
9046266 numad.conf
25993130 oddjob
9073473 oddjobd.conf
1598176 oddjobd.conf.d
8918590 openldap

```

- Then use **ls --help** and see other options about **ls** command
 - Explore it and try with other attribute we can use with **ls** command

Solution: Some of the command used are **ls -a**, **ls -A**, **ls -l**, **ls -C**



```

shoaib@localhost:/home
File Edit View Search Terminal Help
2 if serious trouble (e.g., cannot access command-line argument).
GNU coreutils online help: <http://www.gnu.org/software/coreutils/>
For complete documentation, run: info coreutils 'ls invocation'
[shoaib@localhost home]$ ls -C
shoaib
[shoaib@localhost home]$ ls -
ls: cannot access -: No such file or directory
[shoaib@localhost home]$ ls -i
18602901 shoaib
[shoaib@localhost home]$ ls -I
ls: option requires an argument -- 'I'
Try 'ls --help' for more information.
[shoaib@localhost home]$ ls -l
total 4
drwx----- 15 shoaib shoaib 4096 Oct 17 10:24 shoaib
[shoaib@localhost home]$ ls -i
18602901 shoaib
[shoaib@localhost home]$ ls -C
shoaib
[shoaib@localhost home]$ ls -a
. .. shoaib
[shoaib@localhost home]$ ls -A
shoaib
[shoaib@localhost home]$
Workspace 4

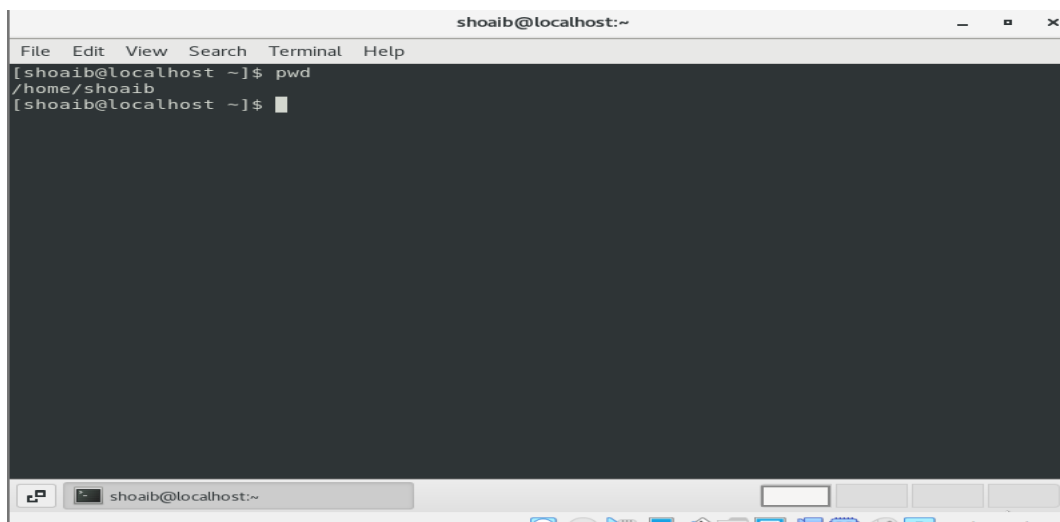
```

Assignment-5

Know where you are and where you working

Here we use **pwd**, **cd** and **ls** as combine task to understand where you working on terminal and how you can switch from one directory to another one.

- Open terminal after restart the linux
 - Check which location you working, type **pwd** and take screenshot

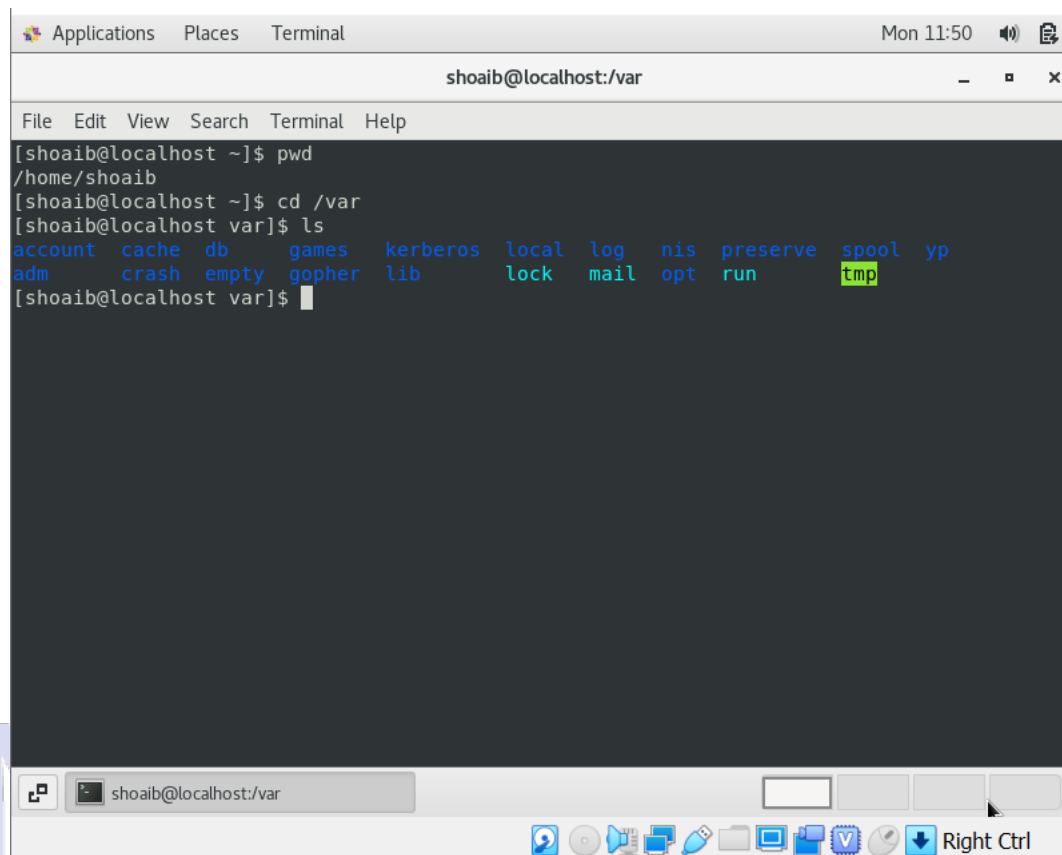


```

shoaib@localhost:~
File Edit View Search Terminal Help
[shoaib@localhost ~]$ pwd
/home/shoaib
[shoaib@localhost ~]$

```


- Now use **cd /var** and hit **Enter** key
 - Do **ls**, and see what output comes, give screenshot?



The screenshot shows a terminal window titled 'shoaib@localhost:/var'. The terminal displays the following commands and output:

```
[shoaib@localhost ~]$ pwd
/home/shoaib
[shoaib@localhost ~]$ cd /var
[shoaib@localhost var]$ ls
account  cache  db      games  kerberos  local  log  nis  preserve  spool  yp
adm      crash  empty  gopher  lib       lock  mail opt  run      tmp
```

The terminal window has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The status bar at the bottom shows 'shoaib@localhost:/var' and a 'Right Ctrl' button.

- Do explore other help options of each command to learn more other things we can do with these commands