مازن عبدالتواب سعد

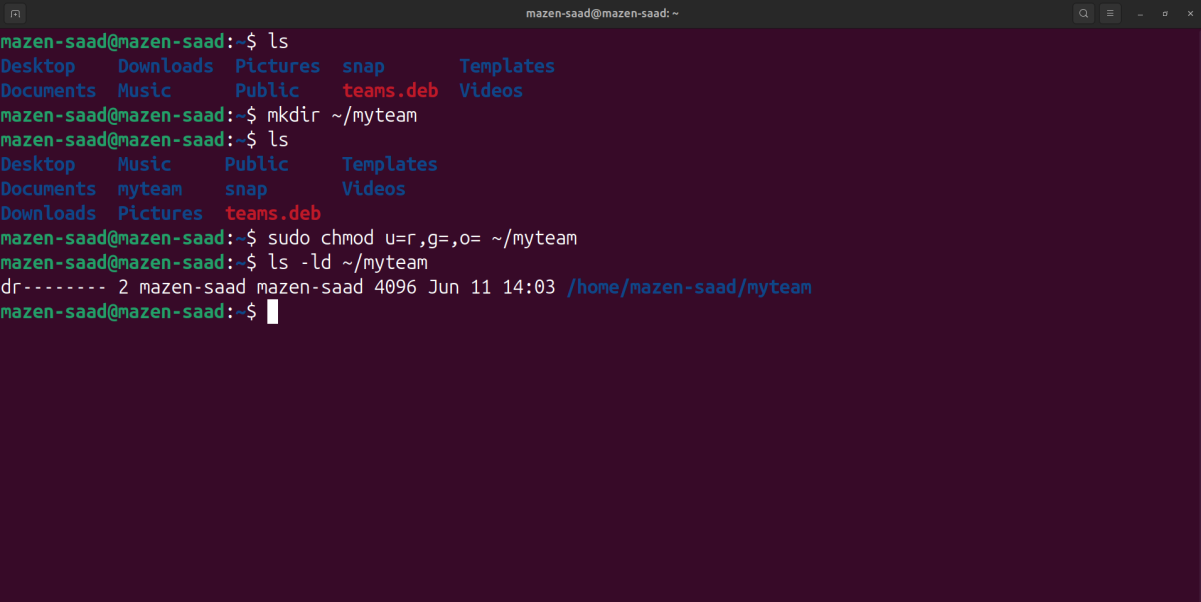# Lab 4

1. Create a folder called myteam in your home directory and change its permissions to read only for the owner.

mkdir ~/myteam

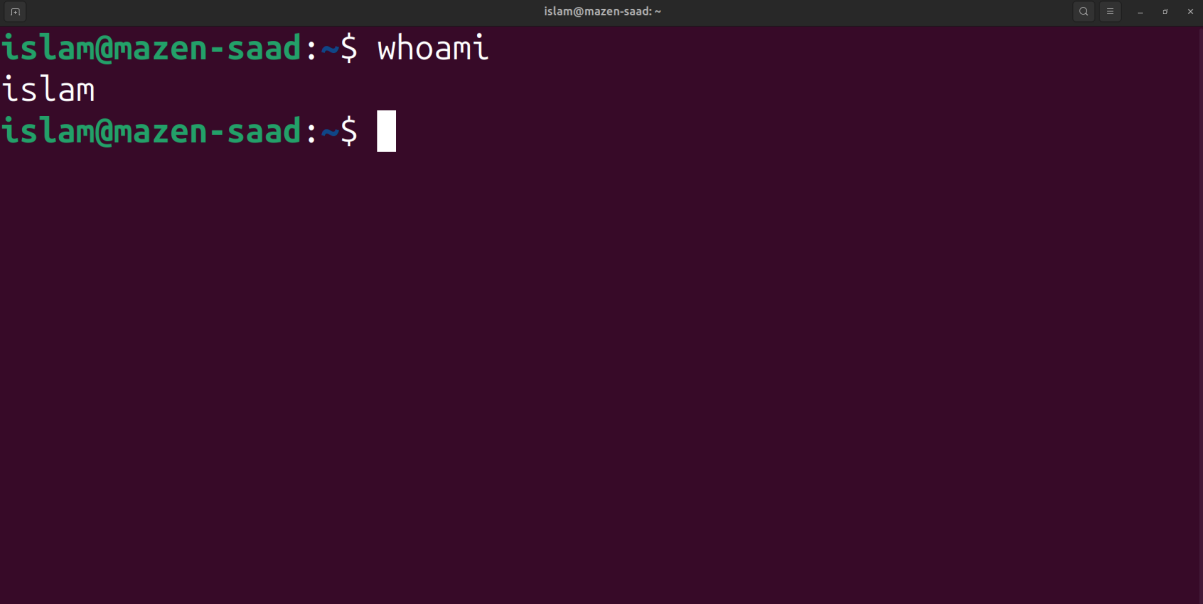chmod u=r,g=,o= ~/myteam

ls -ld ~/myteam

2. Log out and log in by another user


```
islam@mazen-saad:~$ whoami
islam
islam@mazen-saad:~$
```
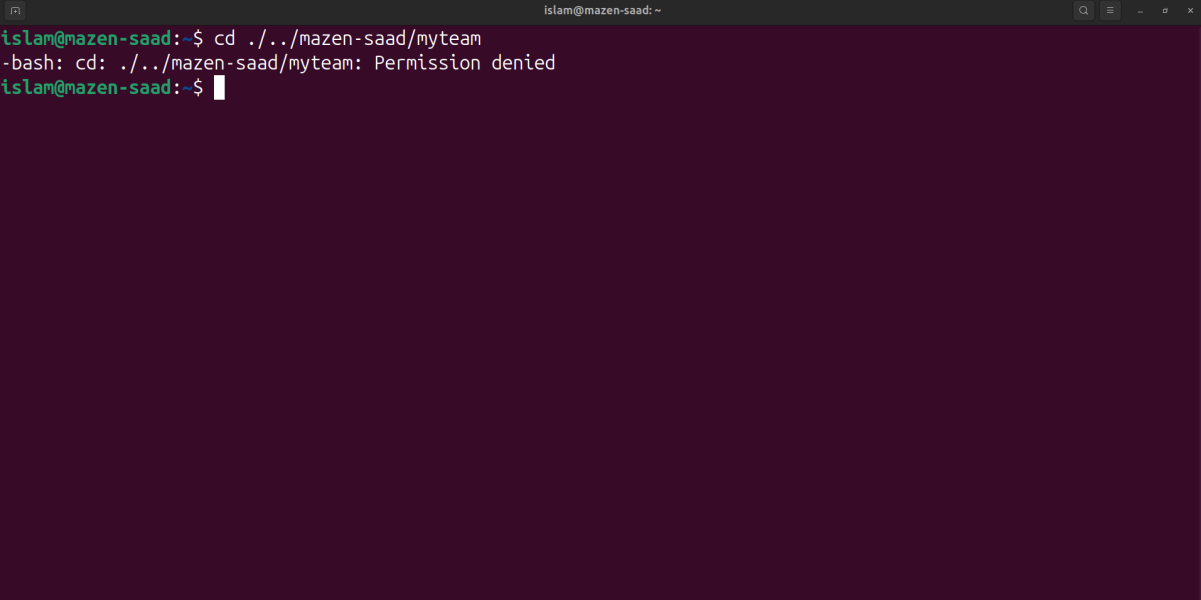
2. Log out and log in by another user

3. Try to access (by cd command) the folder (myteam).

cd ./../mazen-saad/myteam
or
cd /home/mazen-saad/myteam

```
islam@mazen-saad:~$ cd ./../mazen-saad/myteam
-bash: cd: ./../mazen-saad/myteam: Permission denied
islam@mazen-saad:~$
```

3. Try to access (by cd command) the folder (myteam).

4. Change the permissions of mycv file to give owner read and write permissions and for group write and execute and execute only for the others (using chmod in 2 different ways)

vi mycv
ls -ld mycv
sudo chmod u=rw,g=wx,o=x mycv
chmod 631 mycv

```
mazen-saad@mazen-saad:~/Documents$ vi mycv
mazen-saad@mazen-saad:~/Documents$ ls -ld mycv
-rw-rw-r-- 1 mazen-saad mazen-saad 119 Jun 11 14:49 mycv
mazen-saad@mazen-saad:~/Documents$ sudo chmod u=rw,g=wx,o=x mycv
[sudo] password for mazen-saad:
mazen-saad@mazen-saad:~/Documents$ ls -ld mycv
-rw--wx--x 1 mazen-saad mazen-saad 119 Jun 11 14:49 mycv
mazen-saad@mazen-saad:~/Documents$
```

```
mazen-saad@mazen-saad:~$ vi mycv
mazen-saad@mazen-saad:~$ ls -l mycv
-rw-rw-r-- 1 mazen-saad mazen-saad 121 Jun 11 22:53 mycv
mazen-saad@mazen-saad:~$ sudo chmod u=rw,g=wx,o=x mycv
mazen-saad@mazen-saad:~$ ls -l mycv
-rw--wx--x 1 mazen-saad mazen-saad 121 Jun 11 22:53 mycv
mazen-saad@mazen-saad:~$ chmod 631 mycv
mazen-saad@mazen-saad:~$ ls -l mycv
-rw--wx--x 1 mazen-saad mazen-saad 121 Jun 11 22:53 mycv
mazen-saad@mazen-saad:~$
```

5. Change your default permissions to be as above (Q.4).

ls -ld mycv
-rw-rw-r-- 1 mazen-saad mazen-saad 119 Jun 11 14:49 mycv

sudo chmod u=rw,g=rw,o=r mycv

```
mazen-saad@mazen-saad:~/Documents$ ls -ld mycv
-rwx-w---x 1 mazen-saad mazen-saad 119 Jun 11 14:49 mycv
mazen-saad@mazen-saad:~/Documents$ sudo chmod u=rw,g=rw,o=r mycv
mazen-saad@mazen-saad:~/Documents$ ls -ld mycv
-rw-rw-r-- 1 mazen-saad mazen-saad 119 Jun 11 14:49 mycv
mazen-saad@mazen-saad:~/Documents$
```
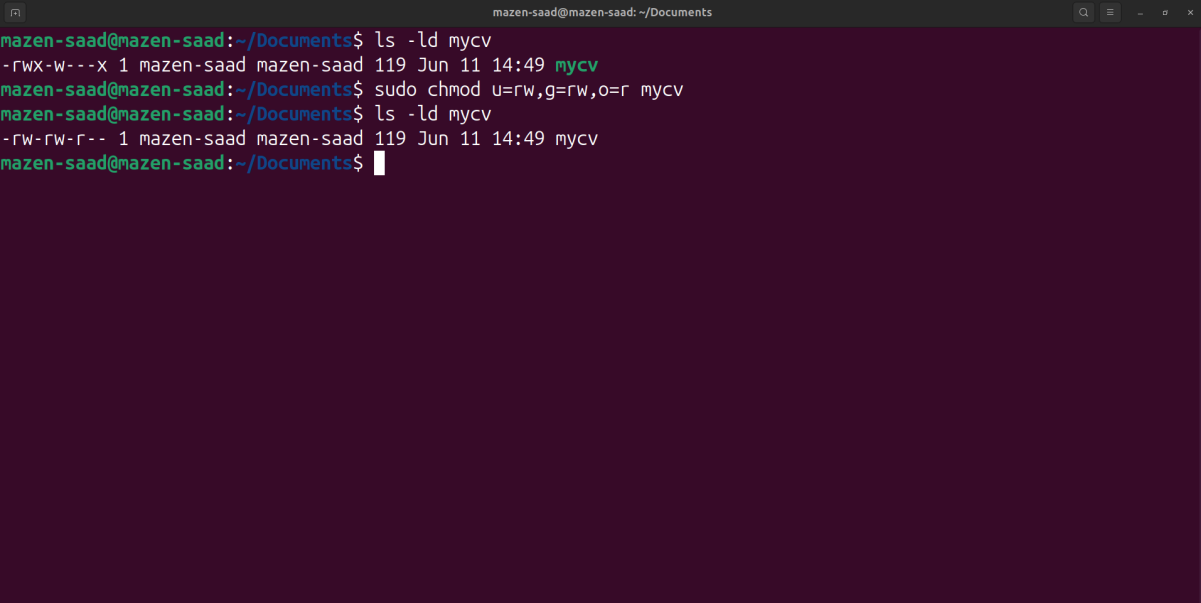
6. What is the maximum permission a file can have, by default when it is just created? And what is that for directory.

-> By Default Max Permission File 666
-> By Default Max Permission Folder or Directory 777

7. Change your default permissions to be no permission to everyone then create a directory and a file to verify.

umask -S u=,g=,o=

umask -S a=

mkdir ~/testdir

ls -ld testdir

touch ~/testfile

ls -ld testfile

sudo chmod u=rw,g=rw,o=r testdir

sudo chmod u=rw,g=rw,o=r testfile

```
mazen-saad@mazen-saad:~$ umask -S u=,g=,o=
u=,g=,o=
mazen-saad@mazen-saad:~$ mkdir ~/testdir
mazen-saad@mazen-saad:~$ ls -ld testdir
d--------- 2 mazen-saad mazen-saad 4096 Jun 11 16:26 testdir
mazen-saad@mazen-saad:~$ touch ~/testfile
mazen-saad@mazen-saad:~$ ls -ld testfile
---------- 1 mazen-saad mazen-saad 0 Jun 11 16:27 testfile
mazen-saad@mazen-saad:~$ sudo chmod u=rw,g=rw,o=r testdir
[sudo] password for mazen-saad:
Sorry, try again.
[sudo] password for mazen-saad:
Sorry, try again.
[sudo] password for mazen-saad:
mazen-saad@mazen-saad:~$ sudo chmod u=rw,g=rw,o=r testfile
mazen-saad@mazen-saad:~$ 
```

```
mazen-saad@mazen-saad:~$ umask -S
u=rwx,g=rwx,o=rx
mazen-saad@mazen-saad:~$ mkdir testdir
mazen-saad@mazen-saad:~$ ls -ld testdir
drwxrwxr-x 2 mazen-saad mazen-saad 4096 Jun 11 21:55 testdir
mazen-saad@mazen-saad:~$ touch testfile
mazen-saad@mazen-saad:~$ ls -l testfile
-rw-rw-r-- 1 mazen-saad mazen-saad 0 Jun 11 21:56 testfile
mazen-saad@mazen-saad:~$ 
```

8. What are the minimum permission needed for :
    a. Copy a file (permission for source file and and permission for target parent directory)
    -> file (r--)
    -> Source Folder(--x)
    -> Target Folder(-wx)

    b. Delete a file
    -> (---)

    c. Change to a directory
    -> (--x)

    d. List a directory content (ls command)
    -> (r-x)

    e. View a file content (more/cat command)
    -> (r--)

    f. Modify a file content
    -> (-w-)

9. Create a file with permission 444. Try to edit in it and to remove it?
Note what happened.
touch ~/myfile
ls
chmod 444 myfile
vi myfile
rm myfile
enter y

```
name: mazen saad
age: 23

~
~
~
~
~
~
~
~
~
~
~
~
~
~
E45: 'readonly' option is set (add ! to override)                    2,8          All
```

```
mazen-saad@mazen-saad:~$ touch ~/myfile
mazen-saad@mazen-saad:~$ ls
Desktop    Downloads  myfile  Pictures  snap       Templates
Documents  Music      myteam  Public    teams.deb  Videos
mazen-saad@mazen-saad:~$ chmod 444 myfile
mazen-saad@mazen-saad:~$ ls -ld myfile
-r--r--r-- 1 mazen-saad mazen-saad 0 Jun 11 16:10 myfile
mazen-saad@mazen-saad:~$ vi myfile
mazen-saad@mazen-saad:~$ rm myfile
rm: remove write-protected regular empty file 'myfile'? y
mazen-saad@mazen-saad:~$
```
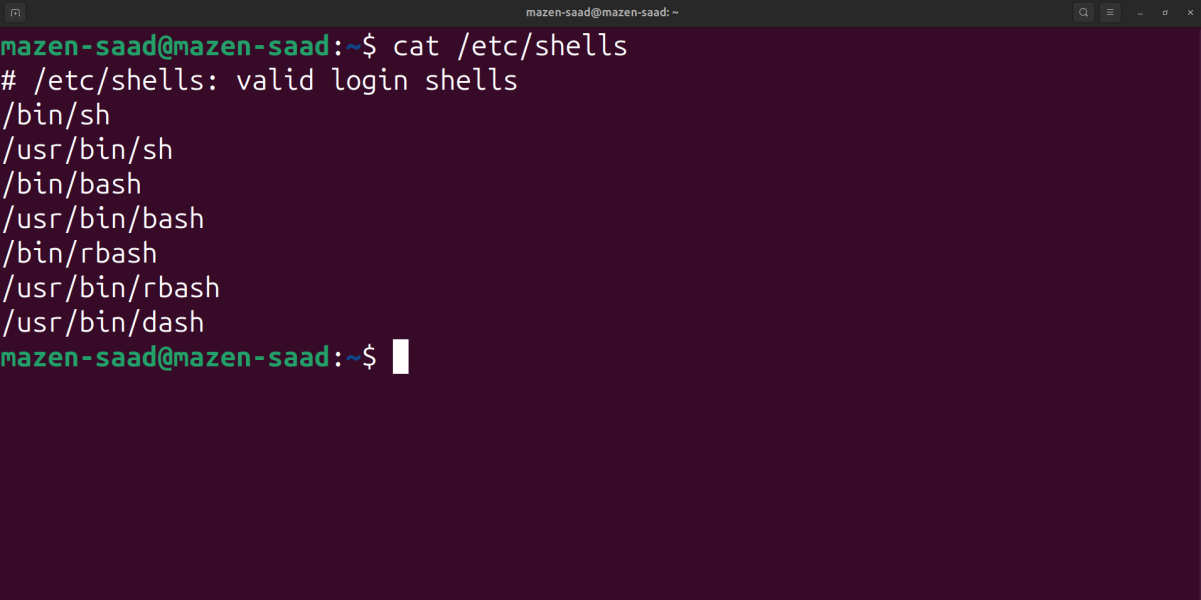
10. What is the difference between the "x" permission for a file and for a directory.

For a file: The (x) permission allows the file to be executed as a program.

For a directory: The (x) permission allows you to enter the directory and access its contents (using cd).

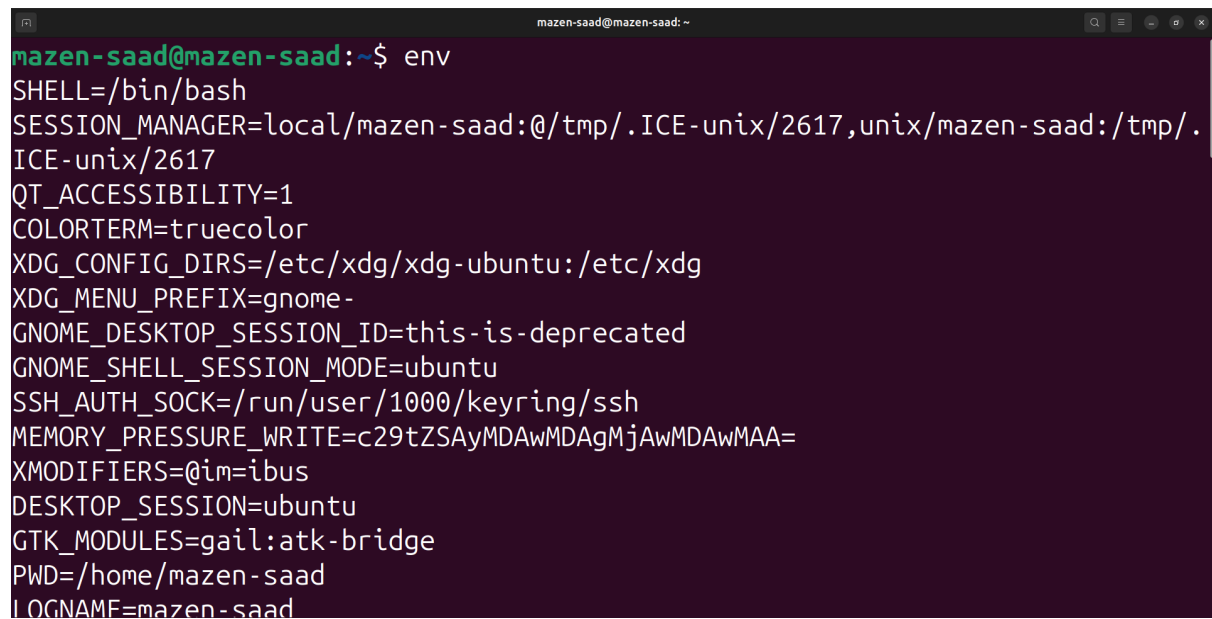11. List the available shells in your system.

cat /etc/shells

```
mazen-saad@mazen-saad:~$ cat /etc/shells
# /etc/shells: valid login shells
/bin/sh
/usr/bin/sh
/bin/bash
/usr/bin/bash
/bin/rbash
/usr/bin/rbash
/usr/bin/dash
mazen-saad@mazen-saad:~$
```

12. List the environment variables in your current shell.

env

13. List all of the environment variables for the bash shell.

man bash

```
                              mazen-saad@mazen-saad: ~

BASH(1)                     General Commands Manual                     BASH(1)

NAME
       bash - GNU Bourne-Again SHell

SYNOPSIS
       bash [options] [command_string | file]

COPYRIGHT
       Bash  is  Copyright  (C) 1989-2022 by the Free Software Foundation,
       Inc.

DESCRIPTION
       Bash is an sh-compatible command language interpreter that executes
       commands read from the standard input or from a  file.   Bash  also
 Manual page bash(1) line 1 (press h for help or q to quit)
```

14. What are the commands that list the values of all the variables?

env

printenv

15. What are the commands that list the value of a specific variable?
echo $varName

```
mazen-saad@mazen-saad:~$ x=5
mazen-saad@mazen-saad:~$ echo $x
5
mazen-saad@mazen-saad:~$
```

16. Display your current shell.

echo $SHELL

17. State the initialization files of: sh, ksh, csh, bash.

sudo apt-get install ksh

sudo apt-get install csh

sudo apt-get install sh

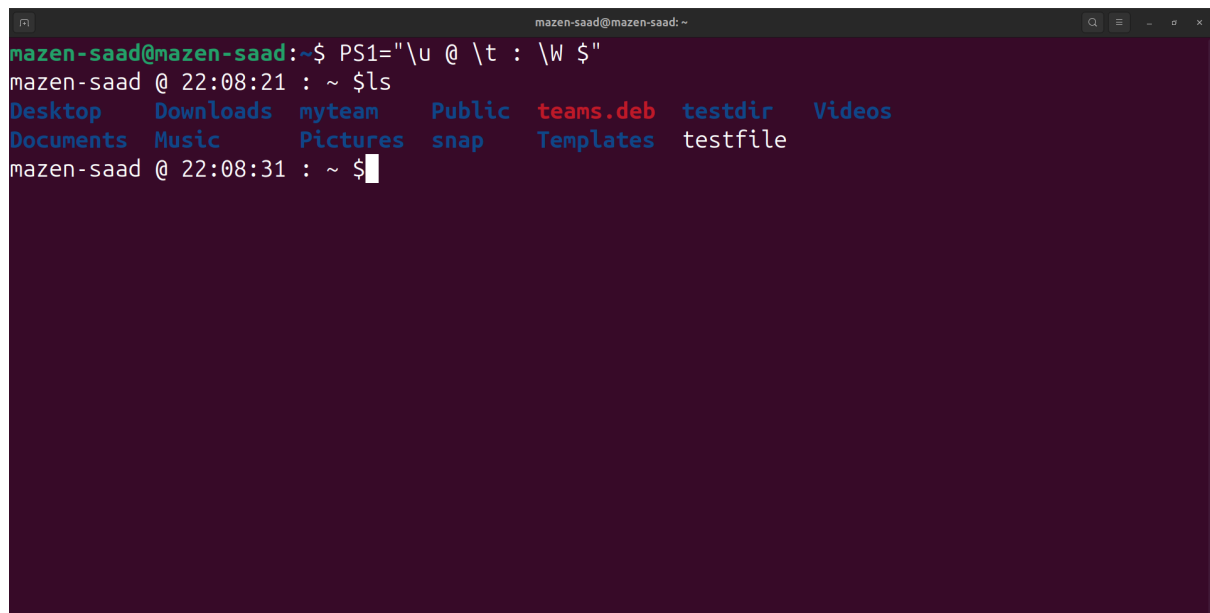man bash

man csh

man ksh

man sh

```
                                    mazen-saad@mazen-saad: ~                              Q  ≡  _  □  ×
FILES
        /etc/profile
                The system wide initialization file, executed for login shells.

        $HOME/.profile
                The  personal  initialization  file,  executed  for  login  shells  after
                /etc/profile.

        $HOME/.kshrc
                Default personal initialization file,  executed  for  interactive  shells
                when ENV is not set.

        /etc/suid_profile
                Alternative  initialization  file,  executed instead of the personal ini-
                tialization file when the real and effective user  or  group  ID  do  not
                match.

        /dev/null
                The null device.
 Manual page ksh(1) line 3646/3702 99% (press h for help or q to quit)
```

```
                                    mazen-saad@mazen-saad: ~                              Q  ≡  _  □  ×
FILES
        $HOME/.profile

        /etc/profile

SEE ALSO
        csh(1),  echo(1),  getopt(1),  ksh(1),  login(1), printf(1), test(1), getopt(3),
        passwd(5), environ(7), sysctl(8)

HISTORY
        dash is a POSIX-compliant implementation of /bin/sh that aims to be as small  as
        possible.   dash  is  a  direct  descendant  of  the  NetBSD version of ash (the
        Almquist SHell), ported to Linux in early 1997.  It was renamed to dash in 2002.

BUGS
        Setuid shell scripts should be avoided at all costs, as they are  a  significant
        security risk.

        PS1,  PS2,  and  PS4  should be subject to parameter expansion before being dis-
 Manual page sh(1) line 1526/1547 100% (press h for help or q to quit)
```
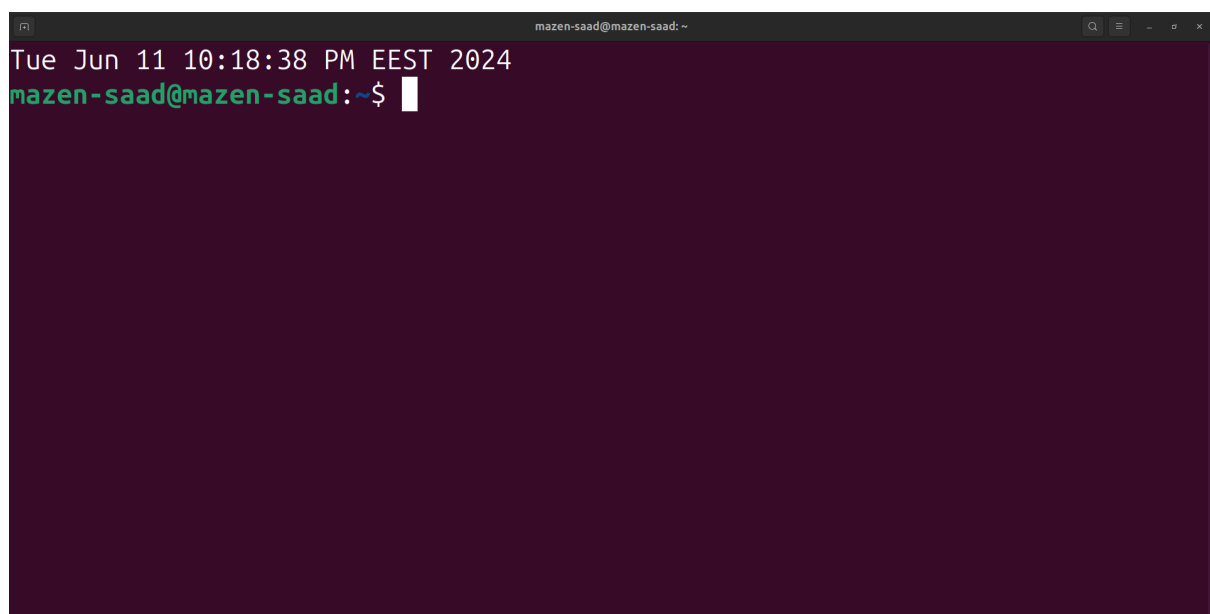
FILES
~/.cshrc   read at beginning of execution by each shell
~/.login   read by login shell, after .cshrc at login
~/.logout   read by login shell, at logout
/bin/sh   standard shell, for shell scripts not starting with a '#'
/tmp/sh.*   temporary file for '<<'
/etc/passwd source of home directories for "~name"

SEE ALSO
ksh(1), sh(1), tty(4), environ(7), script(7)

W. Joy, An Introduction to the C shell.

HISTORY
csh first appeared in 2BSD. It was a first implementation of a command language
interpreter incorporating a history mechanism (see "History substitutions"), job
control facilities (see "Jobs"), interactive file name and user name completion
(see "File name completion"), and a C-like syntax. There are now many shells
that also have these mechanisms, plus a few more (and maybe some bugs too),
Manual page csh(1) line 1337/1393 97% (press h for help or q to quit)

FILES
/bin/bash
      The **bash** executable
/etc/profile
      The systemwide initialization file, executed for login shells
/etc/bash.bashrc
      The systemwide per-interactive-shell startup file
/etc/bash.bash.logout
      The systemwide login shell cleanup file, executed when a login shell ex-
      its
~/.bash_profile
      The personal initialization file, executed for login shells
~/.bashrc
      The individual per-interactive-shell startup file
~/.bash_logout
      The individual login shell cleanup file, executed when a login shell ex-
      its
~/.bash_history
      The default value of **HISTFILE,** the file in which bash saves the command
Manual page bash(1) line 6030/6105 99% (press h for help or q to quit)

19

18. Edit in your profile to display date at login and change your prompt permanently.

19. Execute the following command :
echo \ then press enter
Notice the prompt what is that and how can you change it.

20. Create a Bash shell alias named ls for the "ls –l" command
alias ls='ls -l'

```
mazen-saad@mazen-saad:~$ ls
Desktop     Downloads   myteam     Public    teams.deb   testdir     Videos
Documents   Music       Pictures   snap      Templates   testfile
mazen-saad@mazen-saad:~$ alias ls='ls -l'
mazen-saad@mazen-saad:~$ ls
total 44
drwxr-xr-x 2 mazen-saad mazen-saad 4096 Jun 10 09:04 Desktop
drwxr-xr-x 2 mazen-saad mazen-saad 4096 Jun 11 14:49 Documents
drwxr-xr-x 2 mazen-saad mazen-saad 4096 Jun 11 13:46 Downloads
drwxr-xr-x 2 mazen-saad mazen-saad 4096 May 25 23:46 Music
dr-------- 2 mazen-saad mazen-saad 4096 Jun 11 14:03 myteam
drwxr-xr-x 3 mazen-saad mazen-saad 4096 May 26 00:20 Pictures
drwxr-xr-x 2 mazen-saad mazen-saad 4096 May 25 23:46 Public
drwx------ 9 mazen-saad mazen-saad 4096 Jun  9 18:28 snap
-rw-rw-r-- 1 mazen-saad mazen-saad    0 Jun  8 23:19 teams.deb
drwxr-xr-x 2 mazen-saad mazen-saad 4096 May 25 23:46 Templates
drw-rw-r-- 2 mazen-saad mazen-saad 4096 Jun 11 16:26 testdir
-rw-rw-r-- 1 mazen-saad mazen-saad    0 Jun 11 16:27 testfile
drwxr-xr-x 2 mazen-saad mazen-saad 4096 May 25 23:46 Videos
mazen-saad@mazen-saad:~$
```