1. Add islam user to the pgroup group as a supplementary group

```
aya@aya-virtual-machine:~$ sudo usermod -aG pgroup islam
aya@aya-virtual-machine:~$ id islam
uid=1002(islam) gid=1002(islam) groups=1002(islam),30000(pgroup)
aya@aya-virtual-machine:~$
```
Ubuntu Software

2. Log out and log in by another user

```
aya@aya-virtual-machine:~$ exit
exit
$ su baduser
Password:
$ exit
$ su aya
Password:
aya@aya-virtual-machine:~$ tail -2 /etc//passwd
islam:x:1002:1002:Islam Askar:/home/islam:/bin/sh
baduser:x:1003:1003:Bad User:/home/baduser:/bin/sh
aya@aya-virtual-machine:~$
```

```
aya@aya-virtual-machine: ~

aya@aya-virtual-machine:~$ su - islam -c pwd
Password:
/home/islam
aya@aya-virtual-machine:~$ su -islam
su: invalid option -- 'i'
Try 'su --help' for more information.
aya@aya-virtual-machine:~$ su - islam
Password:
$ exit
aya@aya-virtual-machine:~$
```

```
cdrom  home  lib64  media       proc  sbin
aya@aya-virtual-machine:/$ ls home
aya  islam
aya@aya-virtual-machine:/$
```

3. Modify the password of islam's account to password

```
Activities    Terminal                                          20:18 16 ديس

aya@aya-virtual-machine: ~

aya@aya-virtual-machine:~$ sudo passwd islam
[sudo] password for aya:
New password:
BAD PASSWORD: The password fails the dictionary check - it is based on a diction
ary word
Retype new password:
Sorry, passwords do not match.
New password:
BAD PASSWORD: The password fails the dictionary check - it is based on a diction
ary word
Retype new password:
passwd: password updated successfully
aya@aya-virtual-machine:~$
```

4. Modify islam's account so the password expires after 30 days

```
aya@aya-virtual-machine:~$ sudo chag -M 30 islam
sudo: chag: command not found
aya@aya-virtual-machine:~$ sudo chage -M 30 islam
aya@aya-virtual-machine:~$ tail -2 /etc/passwd
islam:x:1002:1002:Islam Askar:/home/islam:/bin/sh
baduser:x:1003:1003:Bad User:/home/baduser:/bin/sh
aya@aya-virtual-machine:~$ tail -2 /etc/shadow
tail: cannot open '/etc/shadow' for reading: Permission denied
aya@aya-virtual-machine:~$ sudo tail -2 /etc/shadow
islam:$y$j9T$RqGa4tIojQrOaN5QzIM7H0$e4vCuxv3Zzmhg1pNFELl2AsFyL3QKAoCEo5nW7uRLH7:19707:0:30:7:::
baduser:$y$j9T$zt6LXSQco45aL7TdKpxTZ.$9Sbqn3w/ekbGV74Q.Y6Aeeot2TYR2TwbbJaQctxZXO8:19707:0:99999:7:::
aya@aya-virtual-machine:~$
```

5. Lock bad user account so he can't log in

```
aya@aya-virtual-machine:/$ cd home/aya
aya@aya-virtual-machine:~$ sudo usermod -L baduser
[sudo] password for aya:
aya@aya-virtual-machine:~$
```

6. Delete bad user account

```
[sudo] password for aya:
aya@aya-virtual-machine:~$ sudo userdel baduser
aya@aya-virtual-machine:~$
```

7. Delete the group called badgroup.

```
groupdel: Permission denied.
groupdel: cannot lock /etc/group; try again later.
aya@aya-virtual-machine:~$ sudo groupdel badgroup
aya@aya-virtual-machine:~$
```

8. As you Super user, Set or change the password of root

```
aya@aya-virtual-machine:~$ sudo groupdel badgroup
aya@aya-virtual-machine:~$ sudo passwd #
New password:
BAD PASSWORD: The password fails the dictionary check - it is too simplistic/sys
tematic
Retype new password:
passwd: password updated successfully
aya@aya-virtual-machine:~$ su #
Password:
root@aya-virtual-machine:/home/aya#
```

9. As you Super user, Try to remove all files in /tmp

```
rm: cannot remove 'vmware-root_657-4022112241'
root@aya-virtual-machine:/tmp#.rm -r  *
root@aya-virtual-machine:/tmp# █
```

10. Create a folder called /tmp/myteam and change its permissions to read only for the owner, and Group and Other didn't have permission on it.

```
-rw-rw-r-- 1 aya aya 26 19:28 16 سىں mycv
aya@aya-virtual-machine:~/Desktop$ ls -l /tmp/
total 0
aya@aya-virtual-machine:~/Desktop$ mkdir /tmp/myteam
aya@aya-virtual-machine:~/Desktop$ ls -l /tmp/
total 4
drwxrwxr-x 2 aya aya 4096 21:39 16 سى myteam
aya@aya-virtual-machine:~/Desktop$ chmod 440 /tmp/myteam
aya@aya-virtual-machine:~/Desktop$ ls -l /tmp/
total 4
dr--r----- 2 aya aya 4096 21:39 16 سى myteam
aya@aya-virtual-machine:~/Desktop$
```

11. Log out and log in by another user

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

```
aya@aya-virtual-machine:~/Desktop$ ls -l /tmp/
total 0
aya@aya-virtual-machine:~/Desktop$ mkdir /tmp/myteam
aya@aya-virtual-machine:~/Desktop$ ls -l /tmp/
total 4
drwxrwxr-x 2 aya aya 4096 21:39 16 سى myteam
aya@aya-virtual-machine:~/Desktop$ chmod 440 /tmp/myteam
aya@aya-virtual-machine:~/Desktop$ ls -l /tmp/
total 4
dr--r----- 2 aya aya 4096 21:39 16 سى myteam
aya@aya-virtual-machine:~/Desktop$ quit
Terminal quit' not found, but can be installed with:
sudo snap install quit
aya@aya-virtual-machine:~/Desktop$ exit
exit
root@aya-virtual-machine:/tmp# su islam
$ ch tmp/myteam
sh: 1: ch: not found
$ cd tmp/myteam
sh: 2: cd: can't cd to tmp/myteam
$ █
```

13. Change the permissions of /tmp/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)

```
aya@aya-virtual-machine:~/Desktop/tmp$ chmod u=rw,g=wx,o=x mycv
aya@aya-virtual-machine:~/Desktop/tmp$ chmod 631 mycv
aya@aya-virtual-machine:~/Desktop/tmp$
```

```
Try 'chmod --help' for more information.
aya@aya-virtual-machine:~/Desktop/tmp$ ls -l mycv
-rw-rw-r-- 1 aya aya 26 19:28 16 سى mycv
aya@aya-virtual-machine:~/Desktop/tmp$ chmod 631 mycv
aya@aya-virtual-machine:~/Desktop/tmp$ ls -l mycv
-rw--wx--x 1 aya aya 26 19:28 16 سى mycv
aya@aya-virtual-machine:~/Desktop/tmp$
```

```
aya@aya-virtual-machine:~/Desktop/tmp$ chmod u=rw mycv
aya@aya-virtual-machine:~/Desktop/tmp$ chmod g=wx mycv
aya@aya-virtual-machine:~/Desktop/tmp$ chmod o=x mycv
aya@aya-virtual-machine:~/Desktop/tmp$ █
```

14. What are the minimum permission needed for :

a. Copy a file (permission for source file and and

permission for target parent directory)

==for files (r) for dirs (w)==

b. Delete a file

==dir(w), no permissions needed for files==

c. Change to a directory

==dir(x)==

d. List a directory content (ls command)
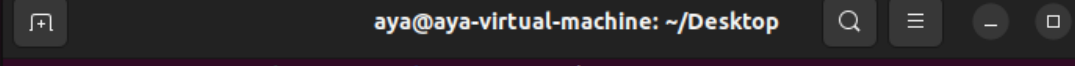
==dir(r)==

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

==files(r)==

f. Modify a file content

==files(w)==

	File	Directory
read	cat more head tail	ls
write	vi gedit	touch rm mkdir rmdir
execute	run applications /path/to/app	cd|

15. Create a file with permission 444 in /tmp directory. Try to edit in it and to remove it? Note what happened.

16. What is the difference between the "x" permission for a file and for a directory.

x for dirs: enter the dir
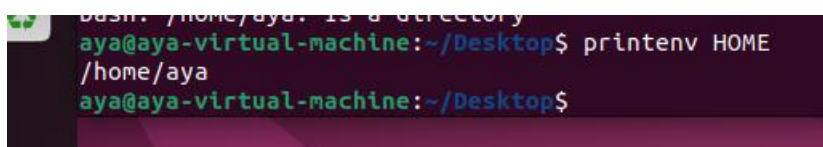
x for files: execute the executable files

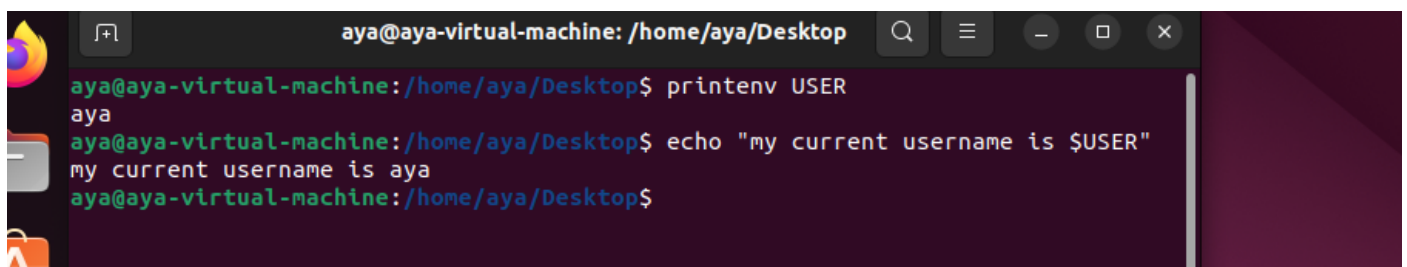## 17. List the All environment variables in your current shell.


```
aya@aya-virtual-machine:~/Desktop$ env
SHELL=/bin/bash
SESSION_MANAGER=local/aya-virtual-machine:@/tmp/.ICE-unix/1158,unix/aya-virtual-
machine:/tmp/.ICE-unix/1158
QT_ACCESSIBILITY=1
COLORTERM=truecolor
XDG_CONFIG_DIRS=/etc/xdg/xdg-ubuntu:/etc/xdg
SSH_AGENT_LAUNCHER=gnome-keyring
XDG_MENU_PREFIX=gnome-
GNOME_DESKTOP_SESSION_ID=this-is-deprecated
LC_ADDRESS=ar_EG.UTF-8
GNOME_SHELL_SESSION_MODE=ubuntu
LC_NAME=ar_EG.UTF-8
SSH_AUTH_SOCK=/run/user/1000/keyring/ssh
XMODIFIERS=@im=ibus
DESKTOP_SESSION=ubuntu
LC_MONETARY=ar_EG.UTF-8
GTK_MODULES=gail:atk-bridge
PWD=/home/aya/Desktop
LOGNAME=aya
XDG_SESSION_DESKTOP=ubuntu
XDG_SESSION_TYPE=wayland
SYSTEMD_EXEC_PID=1207
XAUTHORITY=/run/user/1000/.mutter-Xwaylandauth.FFYIF2
HOME=/home/aya
USERNAME=aya
```

18. What are the commands that list the value of a specific variable?


```
bash: /home/aya: is a directory
aya@aya-virtual-machine:~/Desktop$ printenv HOME
/home/aya
aya@aya-virtual-machine:~/Desktop$
```
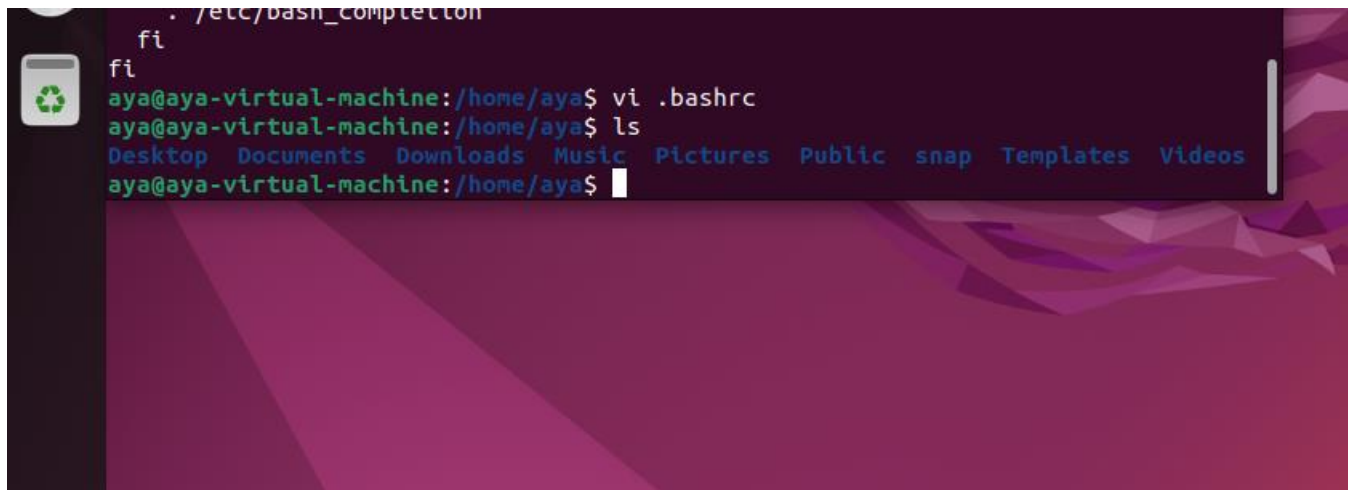
19. Display your current User name using Environment Variables.

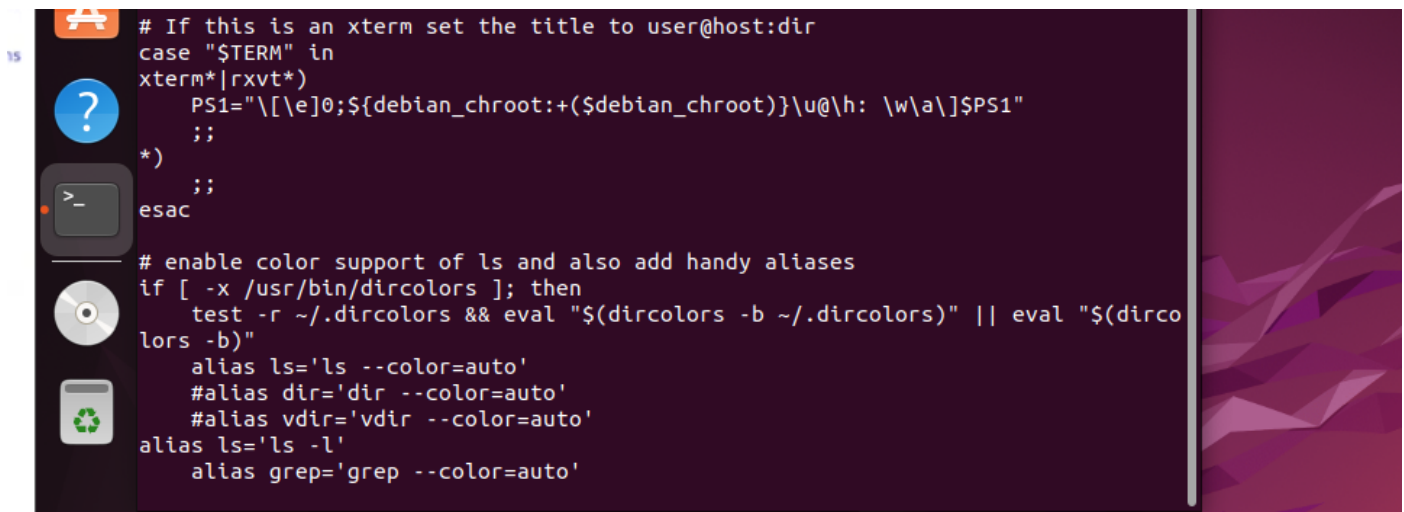```
aya@aya-virtual-machine:/home/aya/Desktop$ printenv USER
aya
aya@aya-virtual-machine:/home/aya/Desktop$ echo "my current username is $USER"
my current username is aya
aya@aya-virtual-machine:/home/aya/Desktop$
```

## 20. Create a Bash shell alias named ls for the "ls –l" command, How to bypass this alias?
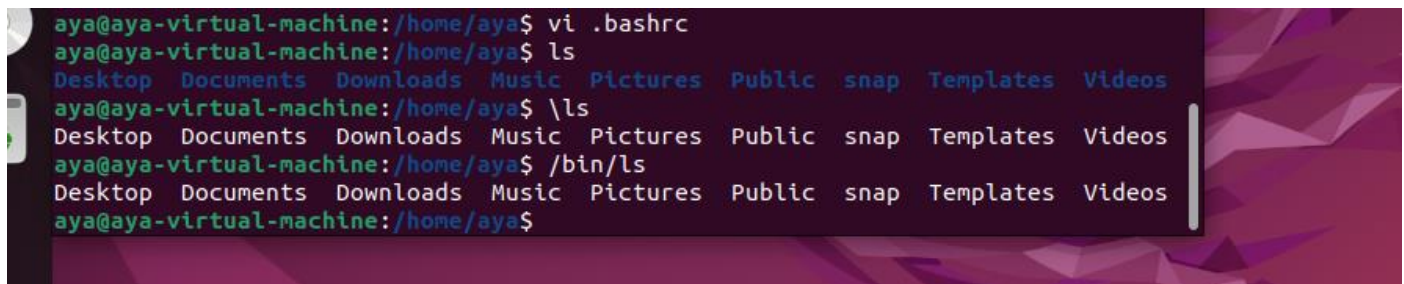
```
        . /etc/bash_completion
    fi
fi
aya@aya-virtual-machine:/home/aya$ vi .bashrc
aya@aya-virtual-machine:/home/aya$ ls
Desktop Documents Downloads Music Pictures Public snap Templates Videos
aya@aya-virtual-machine:/home/aya$
```

```
# If this is an xterm set the title to user@host:dir
case "$TERM" in
xterm*|rxvt*)
    PS1="\[\e]0;${debian_chroot:+($debian_chroot)}\u@\h: \w\a\]$PS1"
    ;;
*)
    ;;
esac

# enable color support of ls and also add handy aliases
if [ -x /usr/bin/dircolors ]; then
    test -r ~/.dircolors && eval "$(dircolors -b ~/.dircolors)" || eval "$(dirco
lors -b)"
    alias ls='ls --color=auto'
    #alias dir='dir --color=auto'
    #alias vdir='vdir --color=auto'
alias ls='ls -l'
    alias grep='grep --color=auto'
```

```
aya@aya-virtual-machine:/home/aya$ vi .bashrc
aya@aya-virtual-machine:/home/aya$ ls
Desktop  Documents  Downloads  Music  Pictures  Public  snap  Templates  Videos
aya@aya-virtual-machine:/home/aya$ \ls
Desktop  Documents  Downloads  Music  Pictures  Public  snap  Templates  Videos
aya@aya-virtual-machine:/home/aya$ /bin/ls
Desktop  Documents  Downloads  Music  Pictures  Public  snap  Templates  Videos
aya@aya-virtual-machine:/home/aya$
```

21. How to check if your internet connection is work?

```
aya@aya-virtual-machine:/home/aya$ ping www.google.com
PING www.google.com (142.250.203.228) 56(84) bytes of data.
64 bytes from mrs08s21-in-f4.1e100.net (142.250.203.228): icmp_seq=1 ttl=128 time=70.5 ms
64 bytes from mrs08s21-in-f4.1e100.net (142.250.203.228): icmp_seq=2 ttl=128 time=69.7 ms
64 bytes from mrs08s21-in-f4.1e100.net (142.250.203.228): icmp_seq=3 ttl=128 time=69.4 ms
64 bytes from mrs08s21-in-f4.1e100.net (142.250.203.228): icmp_seq=4 ttl=128 time=71.1 ms
64 bytes from mrs08s21-in-f4.1e100.net (142.250.203.228): icmp_seq=5 ttl=128 time=69.5 ms
64 bytes from mrs08s21-in-f4.1e100.net (142.250.203.228): icmp_seq=6 ttl=128 time=68.5 ms
^@^C
--- www.google.com ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 5068ms
rtt min/avg/max/mdev = 68.504/69.761/71.068/0.817 ms
aya@aya-virtual-machine:/home/aya$
```

22. By editing /etc/hosts, make the URL www.iti-project-dep.com forward you to 195.10.10.2

```
aya@aya-virtual-machine:/home/aya$ sudo vi /etc/hosts
[sudo] password for aya:

::1       ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
195.10.10.2 www.iti-project-dip.com
~
~
~
~
~
~
~
~
~
~
~
~
~
"/etc/hosts" 9 lines, 234 bytes
```