35. Delete the group called badgroup:

```
fady@fady-virtual-machine:~$ sudo groupdel badgroup
fady@fady-virtual-machine:~$
```

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

```
fady@fady-virtual-machine:~$ sudo passwd root
New password:
Retype new password:
passwd: password updated successfully
fady@fady-virtual-machine:~$
```

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

```
fady@fady-virtual-machine:~$ sudo rm -r /tmp
fady@fady-virtual-machine:~$
```

38.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.

```
fady@fady-virtual-machine:~$ sudo rm -r /tmp
fady@fady-virtual-machine:~$ mkdir -p /tmp/myteam
mkdir: cannot create directory '/tmp': Permission denied
fady@fady-virtual-machine:~$ sudo mkdir -p /tmp/myteam
fady@fady-virtual-machine:~$ chmod 400  /tmp/myteam
chmod: changing permissions of '/tmp/myteam': Operation not permitted
fady@fady-virtual-machine:~$ sudo chmod 400  /tmp/myteam
fady@fady-virtual-machine:~$
```

39.Log out and log in by another user

```
root@fady-virtual-machine:~# useradd -c "first shark" shark1
root@fady-virtual-machine:~# passwd shark1
New password:
Retype new password:
passwd: password updated successfully
root@fady-virtual-machine:~# exit
logout
fady@fady-virtual-machine:~$ su - shark1
Password:
su: warning: cannot change directory to /home/shark1: No such file or directory
$ whoami
shark1
$ exit
fady@fady-virtual-machine:~$
```

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

```
fady@fady-virtual-machine:~$ sudo chmod 555 /tmp/myteam/
fady@fady-virtual-machine:~$ cd /tmp/myteam/
fady@fady-virtual-machine:/tmp/myteam$
```

41.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)

```
fady@fady-virtual-machine:~$ sudo chmod 631 /tmp/mycv.txt
fady@fady-virtual-machine:~$ sudo chmod u=rw,g=wx,o=x /tmp/mycv.txt
fady@fady-virtual-machine:~$ 
```

42.What are the minimum permission needed for :

a. Copy a file (permission for source file and and permission for target parent directory)

b. Delete a file

c. Change to a directory

d. List a directory content (ls command)

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

f. Modify a file content

a. Copy a file

- **Source file** → needs **read (r)** permission (to read its contents).
- **Target parent directory** → needs **write (w)** (to create the new file) **and execute (x)** (to access the directory).

Minimum: **file = r, dir = wx**

---

b. Delete a file

- **File itself** → permissions don't matter.
- **Parent directory** → needs **write (w)** (to remove entry) **and execute (x)** (to access directory).

Minimum: **dir = wx**

---

c. Change to a directory (cd)

- Need **execute (x)** on the directory.

Minimum: **dir = x**

---

d. List a directory content (ls)

- To see filenames → need **read (r)** on the directory.
- To actually use ls effectively (see inode info, access file metadata) → also need **execute (x)**.

Minimum: **dir = rx**

---

e. View a file content (more, cat)

- **File** → needs **read (r)** permission.
- **Parent directory** → needs **execute (x)** (to access the file by name).

Minimum: **file = r, dir = x**

---

f. Modify a file content

- **File** → needs **write (w)** permission (to edit).
- **Parent directory** → needs **execute (x)** (to access it).
- If you want to **truncate** or **overwrite** → may also need **write (w)** on the directory (to update metadata).

Minimum: **file = w, dir = x** (practically often wx on dir).

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

```
fady@fady-virtual-machine:~$ sudo touch /tmp/fourfor
[sudo] password for fady:
fady@fady-virtual-machine:~$ sudo chmod 444 /tmp/fourfor
fady@fady-virtual-machine:~$ vi /tmp/fourfor
fady@fady-virtual-machine:~$ ▌
```

WIO: Warning: Changing a readonly file

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

Permission x on file meaning this file can be excuted as a script while on a directory it means that u can access inside the directory (you can cd inside of it) and can access the files inside by names

45.List the All environment variables in your current shell.

```
fady@fady-virtual-machine:~$ printenv
SHELL=/bin/bash
SESSION_MANAGER=local/fady-virtual-machine:@/tmp/.ICE-unix/1442,unix/fady-virtual-machine:/tmp/.ICE-unix/1442
WINDOWID=54525955
QT_ACCESSIBILITY=1
COLORTERM=truecolor
XDG_CONFIG_DIRS=/etc/xdg/xdg-xfce:/etc/xdg
XDG_SESSION_PATH=/org/freedesktop/DisplayManager/Session0
XDG_MENU_PREFIX=xfce-
CLUTTER_BACKEND=x11
LANGUAGE=en_US
LC_ADDRESS=ar_EG.UTF-8
LC_NAME=ar_EG.UTF-8
SSH_AUTH_SOCK=/tmp/ssh-37ueaDG5gSIg/agent.1701
DESKTOP_SESSION=xfce
LC_MONETARY=ar_EG.UTF-8
SSH_AGENT_PID=1702
GTK_MODULES=gail:atk-bridge
XDG_SEAT=seat0
PWD=/home/fady
LOGNAME=fady
XDG_SESSION_DESKTOP=xfce
XDG_SESSION_TYPE=x11
PANEL_GDK_CORE_DEVICE_EVENTS=0
XAUTHORITY=/home/fady/.Xauthority
XDG_GREETER_DATA_DIR=/var/lib/lightdm-data/fady
GDM_LANG=en_US
HOME=/home/fady
LC_PAPER=ar_EG.UTF-8
LANG=en_US.UTF-8
LS_COLORS=rs=0:di=01;34:ln=01;36:mh=00:pi=40;33:so=01;35:do=01;35:bd=40;33;01:cd=40;33;01:or=40;31;01:mi=00:su=37;41:sg=30;43:ca=00:tw=30;42:ow=34;42:st=37;44:ex=01;32:*.tar=01;31:*.tgz=01;31:*.arc=01;31:*.arj=01
...
VTE_VERSION=7600
XDG_SEAT_PATH=/org/freedesktop/DisplayManager/Seat0
LESSCLOSE=/usr/bin/lesspipe %s %s
XDG_SESSION_CLASS=user
TERM=xterm-256color
LC_IDENTIFICATION=ar_EG.UTF-8
LESSOPEN=| /usr/bin/lesspipe %s
USER=fady
```

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

```
fady@fady-virtual-machine:~$ echo $PATH
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin
fady@fady-virtual-machine:~$ printenv $PATH
fady@fady-virtual-machine:~$ printenv PATH
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin
fady@fady-virtual-machine:~$ env | grep PATH
XDG_SESSION_PATH=/org/freedesktop/DisplayManager/Session0
XDG_SEAT_PATH=/org/freedesktop/DisplayManager/Seat0
PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin
fady@fady-virtual-machine:~$
```

47.Display your current User name using Environment Variables.

```
fady@fady-virtual-machine:~$ echo $USER
fady
fady@fady-virtual-machine:~$
```

48.Create a Bash shell alias named ls for the "ls –l" command, How to bypass this alias?

```
fady@fady-virtual-machine:~$ alias ls="ls -l"
fady@fady-virtual-machine:~$ alias
alias alert='notify-send --urgency=low -i "$([ $? = 0 ] && echo terminal || echo error)" "$(history|tail -n1|sed -e '\''s/^\s*[0-9]\+\s*//;s/[;&|]\s*alert$//'\'')"'
alias egrep='egrep --color=auto'
alias fgrep='fgrep --color=auto'
alias grep='grep --color=auto'
alias l='ls -CF'
alias la='ls -A'
alias ll='ls -alF'
alias ls='ls -l'
fady@fady-virtual-machine:~$ \ls
Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos
fady@fady-virtual-machine:~$ command ls
Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos
fady@fady-virtual-machine:~$
```

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

```
fady@fady-virtual-machine:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
       valid_lft forever preferred_lft forever
2: ens33: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 00:0c:29:64:7c:74 brd ff:ff:ff:ff:ff:ff
    altname enp2s1
    inet 192.168.230.129/24 brd 192.168.230.255 scope global dynamic noprefixroute ens33
       valid_lft 951sec preferred_lft 951sec
    inet6 fe80::30f0:e140:410f:2f8b/64 scope link noprefixroute
       valid_lft forever preferred_lft forever
fady@fady-virtual-machine:~$
```

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

```
fady@fady-virtual-machine:~$ sudo vi /etc/hosts
[sudo] password for fady:
fady@fady-virtual-machine:~$ sudo vi /etc/hosts
fady@fady-virtual-machine:~$ ping -c www.iti-project-dep.com
ping: invalid argument: 'www.iti-project-dep.com'
fady@fady-virtual-machine:~$ ping -c 4  www.iti-project-dep.com
PING www.iti-project-dep.com (192.10.10.2) 56(84) bytes of data.

--- www.iti-project-dep.com ping statistics ---
4 packets transmitted, 0 received, 100% packet loss, time 3097ms

fady@fady-virtual-machine:~$
```

```
127.0.0.1          localhost
127.0.1.1          fady-virtual-machine
192.10.10.2   www.iti-project-dep.com
# The following lines are desirable for IPv6 capable hosts
::1      ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes

ff02::2 ip6-allrouters
```

51.Count the number of users at your Machine

```
fady@fady-virtual-machine:~$ wc -l /etc/passwd
49 /etc/passwd
fady@fady-virtual-machine:~$
```

52.Search on user name "games" at your machine

```
fady@fady-virtual-machine:~$ grep '^games' /etc/passwd
games:x:5:60:games:/usr/games:/usr/sbin/nologin
fady@fady-virtual-machine:~$
```

53.Get the logins names of Users.

```
fady@fady-virtual-machine:~$ cut -d: -f1 /etc/passwd
root
daemon
bin
sys
sync
games
man
lp
mail
news
uucp
proxy
www-data
backup
list
irc
_apt
nobody
systemd-network
systemd-timesync
dhcpcd
messagebus
syslog
```

54.Get the full names (comment) of Users

```
fady@fady-virtual-machine:~$ cut -d: -f1,5 /etc/passwd
root:root
daemon:daemon
bin:bin
sys:sys
sync:sync
games:games
man:man
lp:lp
mail:mail
news:news
uucp:uucp
proxy:proxy
www-data:www-data
```