Red Hat System Administration I

Day3

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Mansoura Open Source

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Lab 2 cont.

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

mkdir myteam → create directory

Chmod 400 →using Octal mode(read 4, write 2, execute 1)

Or

chmod u=r → using Symbolic mode

```
                                        nada_mohamed2243@localhost:~
[nada_mohamed2243@localhost ~]$ mkdir myteam
mkdir: cannot create directory 'myteam': File exists
[nada_mohamed2243@localhost ~]$ rm myteam
rm: cannot remove 'myteam': Is a directory
[nada_mohamed2243@localhost ~]$ rmdir myteam
[nada_mohamed2243@localhost ~]$ mkdir myteam
[nada_mohamed2243@localhost ~]$ ls
Desktop  Documents  Downloads  Music  myteam  Pictures  Public  Templates  Videos
[nada_mohamed2243@localhost ~]$ ls -l
total 0
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Desktop
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Documents
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Downloads
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Music
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:14 myteam
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Pictures
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Public
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Templates
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Videos
[nada_mohamed2243@localhost ~]$
```

```
[nada_mohamed2243@localhost ~]$ chmod u=r myteam
[nada_mohamed2243@localhost ~]$ ls -l
total 0
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Desktop
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Documents
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Downloads
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Music
dr--r-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:14 myteam
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Pictures
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Public
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Templates
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Videos
[nada_mohamed2243@localhost ~]$
```

14. Log out and log in by another user
exit

Su - nada

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

cd /home/nada/myteam

```
[ahmed@localhost ~]$ cd /home/nada_mohamed2243/myteam
-bash: cd: /home/nada_mohamed2243/myteam: Permission denied
```

16. Using the command Line

- **Change the permissions of oldpasswd 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)**
  touch oldpasswd
  chmod u=rw , g=wx,o=x oldpasswd
  chmod 631

```
[root@localhost ~]# touch oldpasswd
[root@localhost ~]# ls -l oldpasswd
-rw-r--r--. 1 root root 0 Dec 25 13:35 oldpasswd
[root@localhost ~]# chmod u=rw,g=wx,o=x oldpasswd
[root@localhost ~]# ls -l oldpasswd
-rw--wx--x. 1 root root 0 Dec 25 13:35 oldpasswd
[root@localhost ~]#
```

```
[nada_mohamed2243@localhost ~]$ touch oldpasswd
[nada_mohamed2243@localhost ~]$ ls -l oldpasswd
----------. 1 nada_mohamed2243 nada_mohamed2243 0 Dec 25 13:57 oldpasswd
[nada_mohamed2243@localhost ~]$ chmod 631
chmod: missing operand after '631'
Try 'chmod --help' for more information.
[nada_mohamed2243@localhost ~]$ chmod 631 oldpasswd
[nada_mohamed2243@localhost ~]$ ls -l
total 0
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Desktop
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Documents
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Downloads
----------. 1 nada_mohamed2243 nada_mohamed2243 0 Dec 25 13:53 file
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Music
dr--r-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:14 myteam
-rw--wx--x. 1 nada_mohamed2243 nada_mohamed2243 0 Dec 25 13:57 oldpasswd
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Pictures
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Public
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Templates
d---------. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:53 test
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Videos
[nada_mohamed2243@localhost ~]$
```

- **Change your default permissions to be as above.**

umask 146

```
[root@localhost ~]# umask 146
[root@localhost ~]# touch testperfile
[root@localhost ~]# ls -l testperfile
-rw--w----. 1 root root 0 Dec 25 13:39 testperfile
[root@localhost ~]#
```

We note that execute not exist because

For files, the default permissions are 666 (read and write for the owner, group, and others). When you apply the umask value of 046, it subtracts the 046 from 666, resulting in 620 (read and write for the owner, write for the group, and no permissions for others). Since files do not have execute permissions by default, the execute permission is not included.

- **What is the maximum permission a file can have, by default when it is just created? And what is that for directory?**
  By default, when a file is created, the maximum permissions it can have are **666 (read and write for the owner, group, and others without execute)**.
  For a directory, the maximum permissions are **777 (read, write, and execute for the owner, group, and others with execute)**.

```
[nada_mohamed2243@localhost ~]$ mkdir test
[nada_mohamed2243@localhost ~]$ touch testfile
[nada_mohamed2243@localhost ~]$ ls -l
total 0
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Desktop
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Documents
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Downloads
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Music
dr--r-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:14 myteam
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Pictures
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Public
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Templates
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:51 test
-rw-r--r--. 1 nada_mohamed2243 nada_mohamed2243 0 Dec 25 13:51 testfile
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Videos
[nada_mohamed2243@localhost ~]$
```

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

```
[nada_mohamed2243@localhost ~]$ umask 777
[nada_mohamed2243@localhost ~]$ mkdir test
[nada_mohamed2243@localhost ~]$ touch file
[nada_mohamed2243@localhost ~]$ ls -l
total 0
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Desktop
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Documents
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Downloads
----------. 1 nada_mohamed2243 nada_mohamed2243 0 Dec 25 13:53 file
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Music
dr--r-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:14 myteam
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Pictures
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Public
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Templates
d---------. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:53 test
drwxr-xr-x. 2 nada_mohamed2243 nada_mohamed2243 6 Dec 25 13:10 Videos
[nada_mohamed2243@localhost ~]$
```

17. What are the minimum permission needed for:

- **Copy a directory (permission for source directory and permissions for target parent directory)**
  Source Directory: Read and execute permissions.
  Target Parent Directory: Write and execute permissions.

- **Copy a file (permission for source file and and permission for target parent directory)**
  Source File: Read permission.
  Target Parent Directory: Write and execute permissions.

- **Delete a file**
  File: Write permission on the file's parent directory.

- **Change to a directory**
  Directory: Execute permission is essential with write .

- **List a directory content (ls command)**
  Directory: Read only (list without any options).
  Read and execute permissions (list with options) .

- **View a file content (more/cat command)**
  File: Read permission.

- **Modify a file content .**
  File: Write permission.

18. Create a file with permission 444. Try to edit in it and to remove it? Note what happened.

chmod 444 → read – – , read – – , read – –

Read → see the file content , copy the file

File is read only → so if i try to edit ,i will receive an error message indicating that the file is read-only and cannot be modified.

(Edit require a write permission)

```
[nada_mohamed2243@localhost ~]$ touch testFile
[nada_mohamed2243@localhost ~]$ ls -l testFile
-rw-r--r--. 1 nada_mohamed2243 nada_mohamed2243 0 Dec 27 23:12 testFile
[nada_mohamed2243@localhost ~]$ chmod 444 testFile
[nada_mohamed2243@localhost ~]$ ls -l testFile
-r--r--r--. 1 nada_mohamed2243 nada_mohamed2243 0 Dec 27 23:12 testFile
[nada_mohamed2243@localhost ~]$ vi testFile
```

```
my name is nada
~
~
~
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~
E45: 'readonly' option is set (add ! to override)
```

Remove will be allowed (Deletion is controlled by the directory's permissions, not the file's).

```
[nada_mohamed2243@localhost ~]$ rm testFile
rm: remove write-protected regular empty file 'testFile'? y
[nada_mohamed2243@localhost ~]$ ls
Desktop  Documents  Downloads  file  Music  myteam  oldpasswd  Pictures  Public  Templates  test  Videos
```

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

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

Without this permission with read , you cannot run the file.

Run = execute + read

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

Without execute you can only list the content of the directory without any options.

Read only → ls without any options.

Write only → nothing

So execute in a directory is very essential .

Lab 3

1- Using vi write your CV in the file mycv. Your CV should include your name, age, school, college, experience,...

vi mycv → create and open the (mycv) file.
i→ enter insert mode to start writing.
Esc → to exit insert mode
:wq → save nd quit.

[nada_mohamed2243@localhost ~]$ vi mycv

```
my name is nada
and my age is 23
I am graduated from computer and control systems engieering department mansoura university
and ranked 7 on my class
I join ITI on open source track
I take courses like c ,c++ ,HTML ,CSS ,javascript ,data structure ,data base ,operating systems ,network ,software engineering
and now red hat
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~
~
:wq
```

```
[nada_mohamed2243@localhost ~]$ cat mycv
my name is nada
and my age is 23
I am graduated from computer and control systems engieering department mansoura university
and ranked 7 on my class
I join ITI on open source track
I take courses like c ,c++ ,HTML ,CSS ,javascript ,data structure ,data base ,operating syste
and now red hat
[nada_mohamed2243@localhost ~]$
```

2. Open mycv file using vi command then:

vi mycv

Without using arrows state how to:-

In command mode
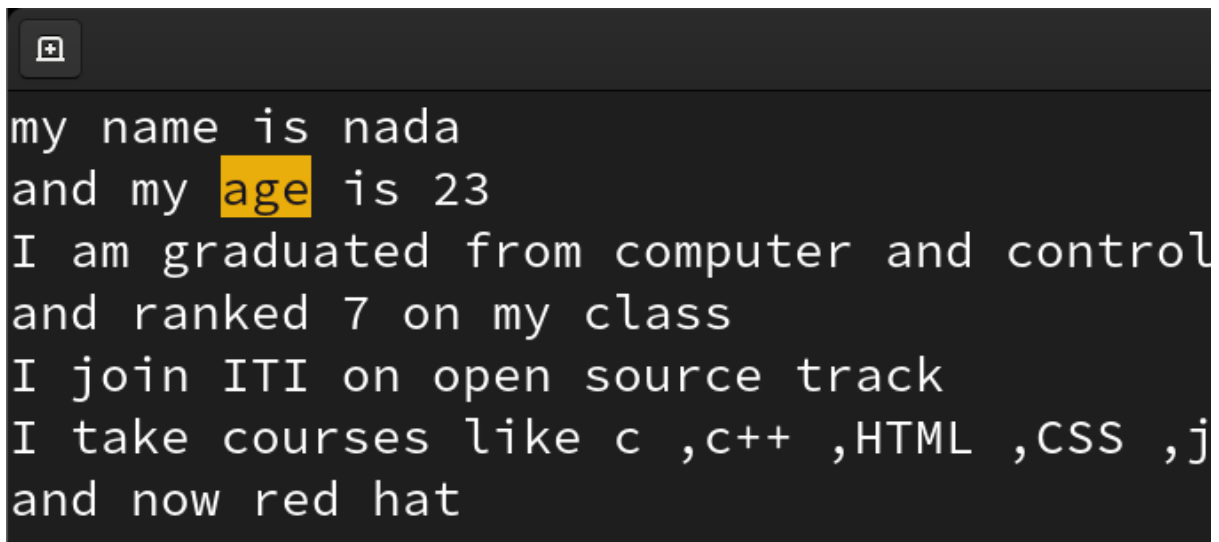
a. Move the cursor down one line at time.

Using j

b. Move the cursor up one line at time.

Using k

c. Search for word age.

Using :/age

```
my name is nada
and my age is 23
I am graduated from computer and control
and ranked 7 on my class
I join ITI on open source track
I take courses like c ,c++ ,HTML ,CSS ,j
and now red hat
```

d. Step to line 5 (assuming that you are in line 1 and file is more than 5 lines).

:5

```
my name is nada
and my age is 23
I am graduated from computer and control systems engiee
and ranked 7 on my class
I join ITI on open source track
I take courses like c ,c++ ,HTML ,CSS ,javascript ,data
and now red hat
~
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~
~
:5
```

e. Delete the line you are on and line 5.

I am in line 2

dd → **delete the current line,**

5G (or :5)→ **go to line 5 and dd.**

```
my name is nada
I am graduated from computer and control systems
and ranked 7 on my class
I join ITI on open source track
I take courses like c ,c++ ,HTML ,CSS ,javascrip
and now red hat
~

~
```

```
my name is nada
I am graduated from computer and
and ranked 7 on my class
I join ITI on open source track
I take courses like c ,c++ ,HTML
and now red hat
~
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~
~
:5
```

```
my name is nada
I am graduated from computer and control
and ranked 7 on my class
I join ITI on open source track
and now red hat
~
```

f. How to step to the end of line and change to writing mode in one-step.

Using A

```
my name is nada
I am graduated from computer and control systems engieering department mansoura university
and ranked 7 on my class
I join ITI on open source tracK------------------HI using -->reach the end of the line ,be in insert mode
and now red hat
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
-- INSERT --
```