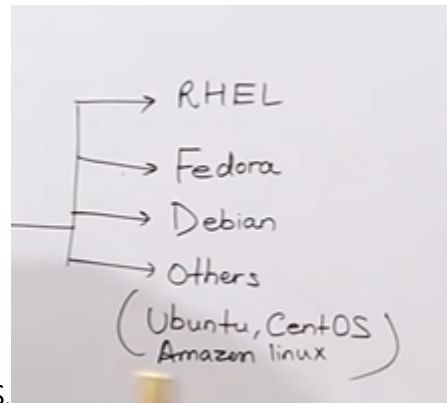


Leacture #1-About Linux

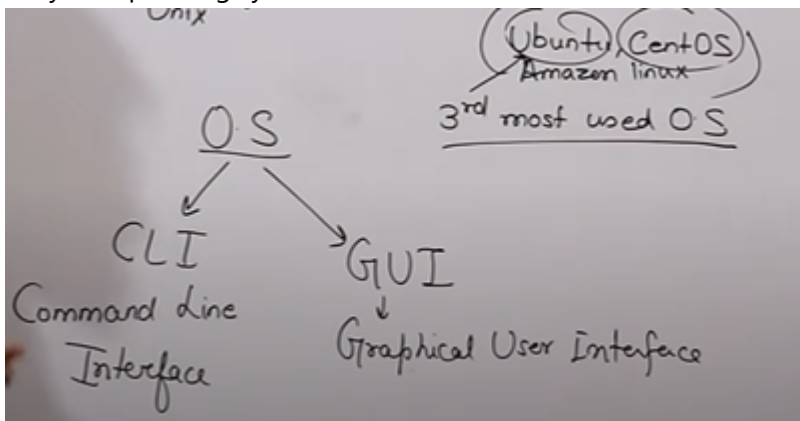
[Link is here](#)

- Linux "Linus Torvald" name k student ne MINIX or UNIX ko base bna kr 1991 me bnya tha .
- Linux ka code start se khud lika gya .
- Linux free of cost yani open source he.
- Linux is a kernal lekin aj k door me hum isy OS hi kehte he lekin asal me "GNU + Linux acyully ek OS hee. in short linux khud ek OS NI Hee.



- Linux se differnt OS bnaye gae heen See below SS.

OS yani Opreating system 2 terms me use hota he See below SS fyi



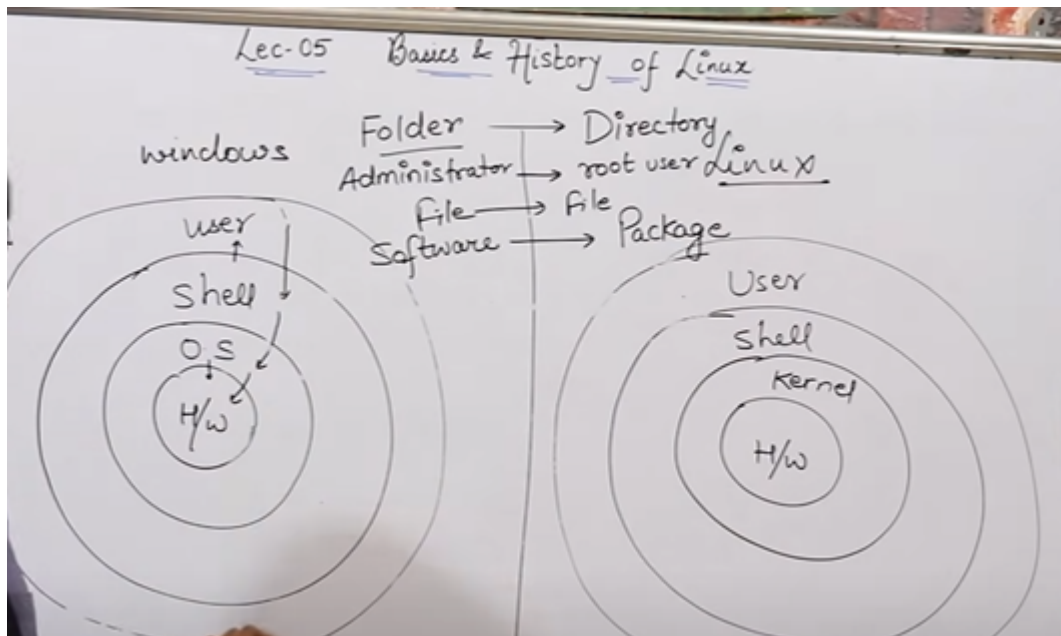
Ubntu 3rd most uaseable OS in world

Linux Features

- Linux open source kernal based opreating system.
- Linux free of cost hee.
- Linux secure hota he others OS se. Linux me jb virus attack hota he to same directory mee hi rehta he jb k windoe me virus saary folders mee pheel jata he is lye Linux secure he.
- Linux me softaware updating bohat assan he . updating k lye "YUM Update " ki command use hoti hee.
- Linux lightwieght hota he .
- Linux is MutiUser & MultiTask . Means k Linux k 1 CPU ko 2 ya 2 see zyada log bhi use ke skte he jin ka apan terminal ho ga is trha wo multitask bhi hova yani wo log alag alag kaam kr sktee hee
- Linux have multipule distributions jesa k (REHL,DEBION, Fedora etc.) window me 1 hi option hoti he or wo hi use hota he sirf.

Leacture#2- Diffrence between linux and Window

[Link is here](#)



Screen shoot k matbiq details

- 1. Windows (Left Side)
 - Hardware (H/W): Sabse neeche computer ka hardware hota hai (CPU, RAM, Disk).
 - OS (Operating System): Hardware ke upar OS hota hai (jaise Windows).
 - Shell: OS ke upar ek interface hota hai jahan se user system ko control karta hai (GUI ya Command Prompt).
 - User: Sabse upar user hota hai jo system ko use karta hai.
- 2. Linux (SS K mtabiq Right Side)
 - User: Sabse upar user hota hai jo system ko use karta hai.
 - Hardware (H/W): Sabse neeche wahi hardware hota hai.
 - Kernel: Linux OS ka dil (core) hai, jo directly hardware ke sath interact karta hai.
 - Shell: Kernel aur User ke darmiyan hota hai, jahan se commands di jati hain (jaise bash shell).

Concepts mapping:

| Deffirences | Linux | window |
|---------------------------------|-----------|---------------|
| Mee hota hee \ ya ise kehte hee | Directory | Folder |
| highest authority user | root user | Administrator |
| install hotee hee | Package | Software |
| Dono me same hai. | File | File |

File System Hierarchy

File System Hierarchy ek map ya structure hai jo batata hai ke OS me files aur folders kahan aur kis order me store hote hain.

Linux me mjoond File system Hierarchy kuch is trha ka hota he.

- /home (Directory for simple users)
- /root (Home Directory for administrator yani root user)
- /boot (is Directory me bootable files hoti hee)
- /etc (ye directory configuration files par mushtmil hoti he)
 - **Configuration** files wo files hoti hain jinme system, software, ya application ki settings store hoti hain.
- /usr (hum jo package download krte he wo by default is directory me install hotee hee)
- /bin (is directory me simple users k lye commands mjoond hoti heen)
- /sbin (is directory me root user k lye commands mjoond hoti heen)
- /opt (is directory me kuch select shuda yani optional pacakge install hotee hee)
- /dev (is directory me periferal devices ki details hoti hee yani aap nee koi mouse ya printer attach kia he to is k kam ki details is me store rehti hee)
 - Linux me devices ko bni files ki trha treat kia jata hee

Leacture # 3- Linux commands and its use cases

[Link is here](#)

Linux commands and its use cases

- Linux Mee 4 type ki commands hoti heen.
 - Cat Commands
 - Touch Commands
 - VI/Vim Commands
 - Nano Commands

1-Cat Commands

- File create kr skte he lekin edit ni kr skte
- 2 ya 2 zyada files k content ko 1 filemee jood sktee heen yani(concatenate krna)

2-Touch Commands

- Empty Files create krny k lye istemal hoti hee
- Create multipule files

- we can Change all time stamps
 - Access Time (yani last time file kb open ki gai)
 - Modify Time (yani last time file me koi changing ki gai)
 - Change Time (Yani file ka meta data kb change kia gya Yani Proprtise)

we ca stamp check krnee k lyee n change time stamps by using these commands

```
[ ]# touch file2 ↵
[ ] touch -a file3
[ ] touch -m file4
```

-a for changing access time and -m for changing modify time

```
[ ]# touch file2 ↵
[ ] stat file2 ↵
```

Time stamp check krnee k lyee ye comand use hoti hee

3-vi/vim Commands

- File editors hote he jin ko use ke ke file me mjood content ko edit kr skte heen
- is command ko hr type k plain text ko edit krny k lye use krte he
- Basic commands file me mjood content ko save krne k lye or file leave yani Quit krne k lye

Note

```
:w → To Save
:wq or :x → To Save & quit
:q → quit
:q! → force Quit , no save
```

4-Nano Commands

- File editors hote he jin ko use ke ke file me mjood content ko edit kr skte heen
- Nano command se file open krne k lye commnand or jesy hi file open ho gi app edit kr skteh ee.

nano Command

```
[root@ip]# nano fileb ↵
```

=====

Ctrl+X → Y

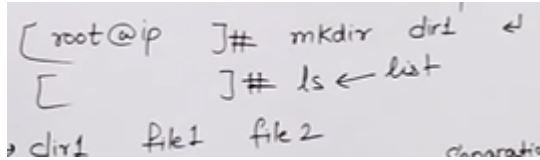
(Ctrl+X+Y)file me edit kyee content k save

krne k lye hee

Leacture#4- Linus commands and its use cases

[Link is here](#)

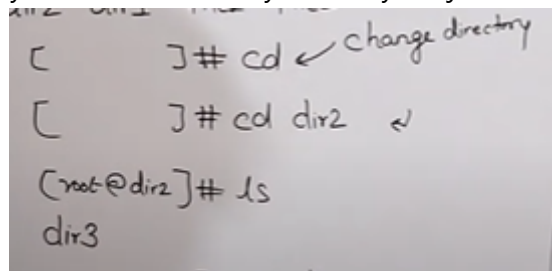
How create a directory?



```
[root@ip]# mkdir dir1
[ ]# ls ← list
dir1 file1 file2
```

[root@ip]# mkdir

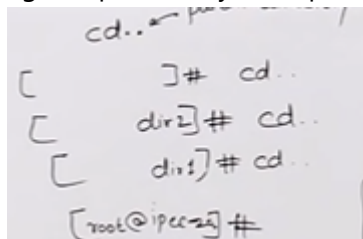
- agar check krna ho directory create hoi b hy k ni to us k lye command he [root@ip]# ls
- 1 directory se 2sry directory me jany k (yani app directory ko leave kr k doosry directory me jana



```
[ ]# cd ← change directory
[ ]# cd dir2
[root@dir2]# ls
dir3
```

chaahty hen) too ye command use ho gi. Below SS. fyi...

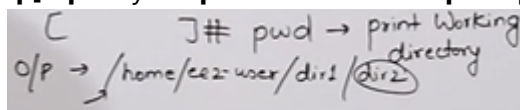
- agar aap directory se wapis ana chahtee hee to yani directory wapis ana hee to ye coomand use kreen



```
cd.. ← parent
[ ]# cd..
[ dir2]# cd..
[ dir1]# cd..
[root@ip]#
```

important step

- aap ko kesy pta chke ga k mee is time kis directory mee mjood ho too is k lye bhi commnd hee. **[root@ip]# pwd** yhan **pwd** kaa matlab he **print password directory**



```
[ ]# pwd → print Working directory
O/P → /home/ce2-user/dir1/dir2
```

1. How to Copy a file?

```
cp source destination
cp file1 to file2
```

2. How to Cut & Paste file?

```
mv file1 to dir1
```

3. How to rename file or directory?

```
mv file1 new name (myfile)
```

4. How to Create Hidden file or directory?

- **[root@ ip]# touch .file1**
- ☐ **.file1** file ka naam hai, aur kyunki ye dot (.) se start ho rahi hai, isliye ye hidden file banegi.
 - ab ap ko ye check krna he file create hoi hee to is k **[root@ ip]# ls** ki command ni use ho gi Q k ye hidden file he .
 - is k lye

```
ls -a
```

ye command use h gi

5. How to remove file or directory (delete)?

```
rmdir dir1 (ye empty directory ko hi delete kre gi)  
rm -rf (Delete all content frocly)
```

6. Try Some Command like less, more, head and tail?

Leacture #5-Linux Commands and its use cases

[Link is here](#)

1. Hostname

is Command ko run kr k hum apni machine ki details nikaal sktee hee

```
hostname
```

2. Ifconfig , Cat /etc/os-release

agar hum apni machine ka ip check krna he to ye command use krty he

```
hostname -i
```

agar linux ka version maloom krna hoo yani hum linux ka konsa version use kr rhe he to is k lye ye command use hoti hee

```
cat/etc/osrelief    ye ablute path hee
cat/et/osrel*      ye kuch kuch maloom ho ho to use krte hee
```

3. Yum install Package

ye commands package ko install krne k lye use hoti he

```
yum install chrome
```

4. Yum remove Package

```
yum remove chrome
```

5. Yum update Package

```
yum remove chrome
```

6. Service httpd start

is command ko use kr k hum koi bhi package run kr skte he yani chlaa skte hee

7. Service httpd status

is command ko ko use kr k package ka staus nikaal skte hee aya k package ka staus kiahe run ho rha k ni agar runing stage me he to kia kr rha he

8. Chkconfig httpd on

ye autmation command he (Yani)httpd service ko enable karna taki wo system boot hote hi automatically start ho jaye. is command me service ka name dena zroori hoga ni to yee kaam ni kre gi.

9. Chkconfig httpd off

is command ko kisi bhi service ko unable krne k lye use kia jata he yani **Chkconfig httpd off** to httpd sevice unable ho jaye gi. or isy har baar ye command **service httpd start** run kr k start krna ho ga

10. Which

ye command package ki insallation maloom krny k lye itemal hoti yani agar maloom krna hee k chrome intall he k ni to **Which chrome** run kree gee.

11. Whoami

ye command hmee btaati hee k aap kosy user name see login ho jb aap **whoami** command run kree ge to agar aap root user he output rootuser aye ga agar sipmle user he simple output aye gi.

12. Echo

ye command is lye use hoti hee k 2 ya 2 se zyada users 1machine use krhe hee to echo ki command use krte hoye jo bhi aap likee gee wo saary users ko show hoga. yani ye message command hee.

- For example

```
echo "welcome yasir"  
is k lye qutation marks zroori hee
```

is command se hum file bhi create kr sktee heen

13. **Grep Command** kisi file ya directory me mojud kisi name ko term ko find krny k lye ye command use hoti hee.

```
grep root/etc/file/dir(name)
```

output me us file jhaa jhaa root likha ho ga wo highlight ho jaye ga. is command se error find kye jaty heen.

14. **Yum list installation** ye command use kr k hum jo package hmaary system me install hee un ki list bna skte heen.

15. **sort command** kisi file me mojud listed content ko alphbatic method see arrange krny k lye ye command use hoti hee .

```
sort file/dir(NAME)jisee sort krna hee
```

For example ik jis ka name **myfile** me ye content hee

```
sajjad is my friend.  
abdulrehamn is my friend.  
yasir is my name.  
devops is cuture.
```

to isy sort krny ke lye ye command use ho gi.

```
sort myfile  
output:  
abdulrehamn is my friend.  
devops is cuture.  
sajjad is my friend.  
yasir is my name.
```

Leacture #6

[Link is here](#)

1. **useradd**

agr linux me koi naya user add krna hoo to is command ko use krte he


```
for example  
useradd yasir
```

2. **groupadd**

agr linux me koi naya group add krna hoo to is command ko use krte he

```
for example  
groupadd data
```

3. **gpasswd**

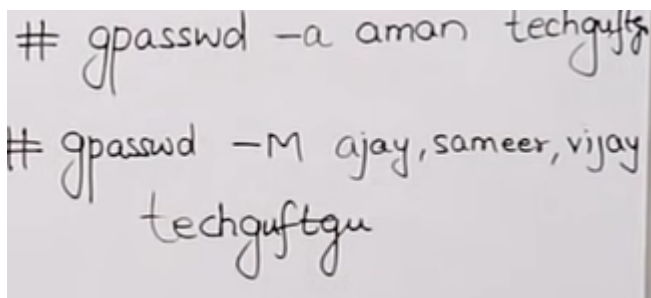
agar kisi group me 1 ya zyada user add krnee hoo to ye commands use krty heen. user pelhy create hoye hoo.

ye command 1 user add krny k lye use hooti hee

```
gpasswd -a agy group ka name likh dee
```

ye command multiple user add krny k lye use hooti hee

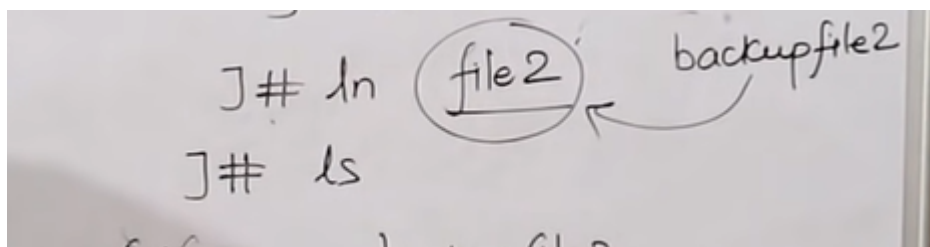
```
gpasswd -M agy group ka name likh dee
```



```
# gpasswd -a aman techguftg  
# gpasswd -M ajay,sameer,vijay  
techguftgu
```

4. **ln(hardlink)**

agar kisi file ki backup file create krni ho to ye command use hoti hee



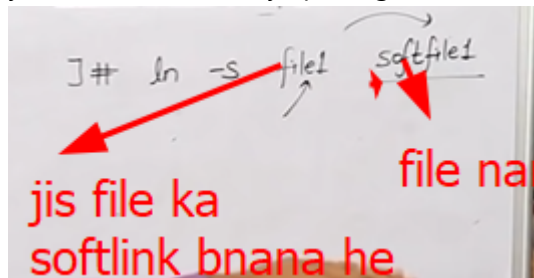
```
]# ln (file2) backupfile2  
]# ls
```

The image shows a handwritten diagram where 'file2' is circled, and an arrow points from the text 'backupfile2' to the circle, illustrating the creation of a hard link.

```
ln file1(jis file ka backup lena)backupfile1
```

1. ln -s(softlink)

ye command kisi file ya package ka shortcut create krny k lye use hoti hee.

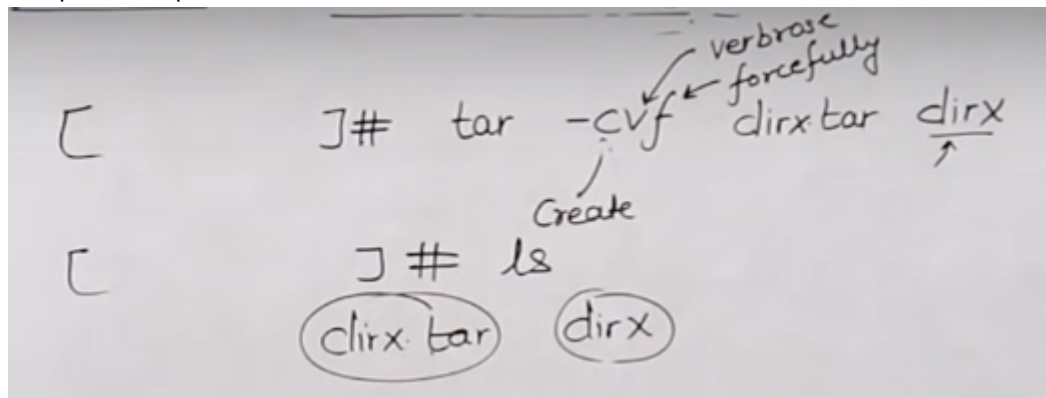


soft link bna k ni check krny k lye ye command he

```
ls -l
```

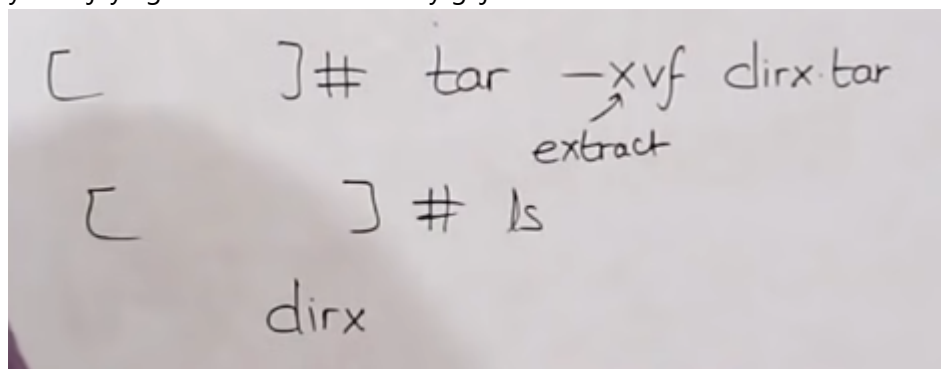
6. tar

agar 3,4files ki ek file create krni ho to ye command use hoti yani saari file ek packet ki trha ho jaye gi or open krne pr wo 4 hi hoon.



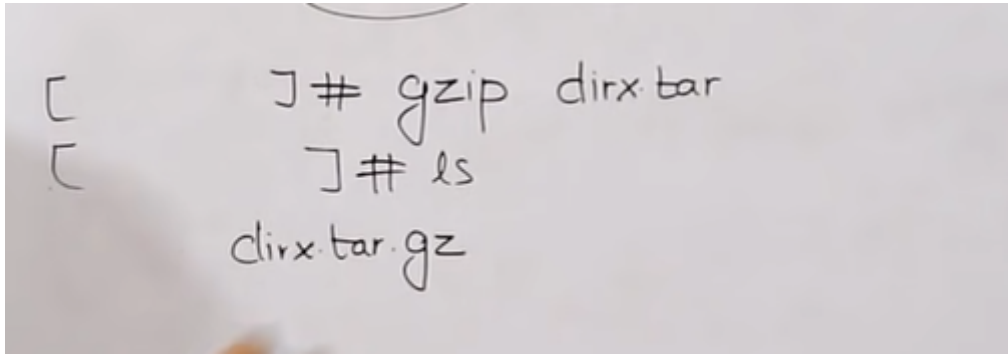
jb reciver side pe

ye file jaye gi ti is command se khly gi jo SS. me likhi hoi hee



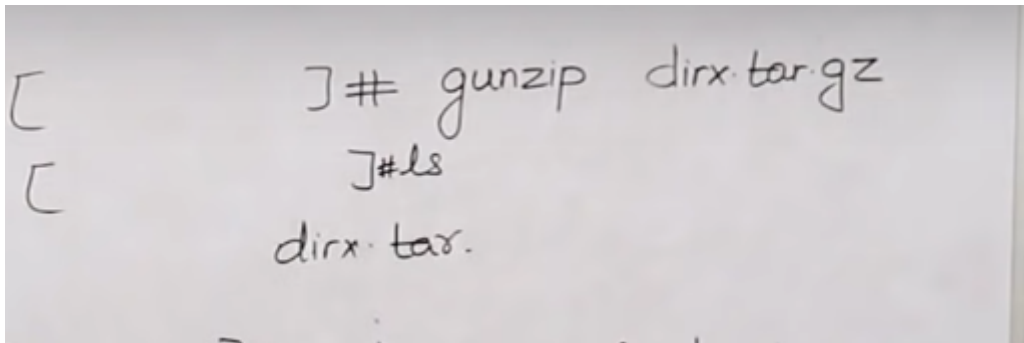
7. gzip

agar tar ki hoi file ko compress kr k us file ki zip file create krni hoo to **gzip** command use hoti .



jb reciver side pe ye

file jaye gi ti is command se khly gi jo SS. me likhi hoi hee



8. wget

agar kisi browser se koi video download krni ho te command uze hoti he . bs video ya jo b download krna he us ka URL maloom hona chaye or command k saath paste kr k aap wo download kr sktee hee

```
wget <URL>
```

Lecture # 7

[Link is here](#)

```
-rwxr-xr-- 1 root root 120 Jul 01 04:00 file1
```

r = read

w = write

x = execute

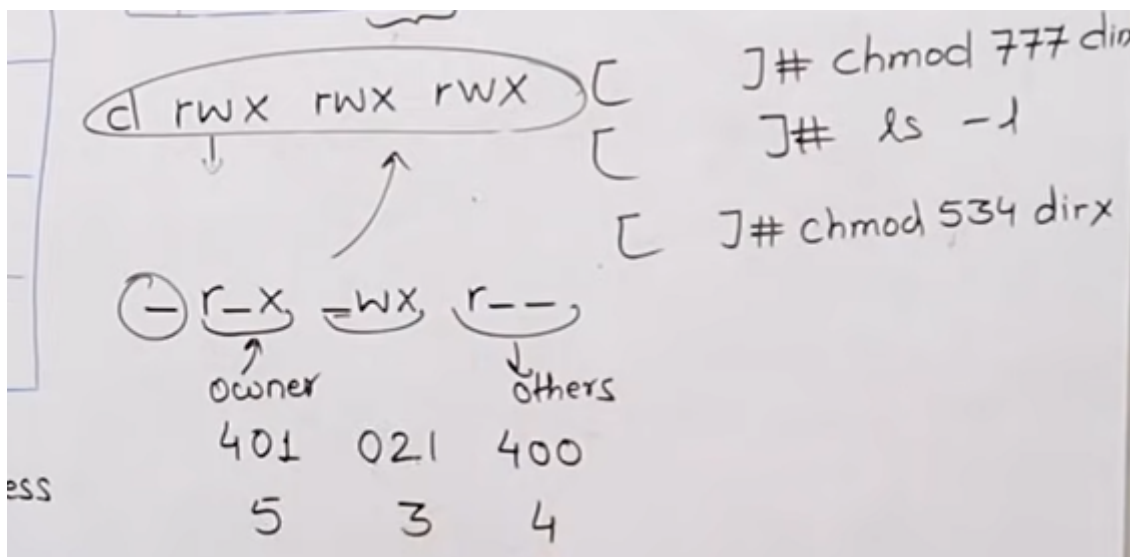
| Part | Example | Meaning (Roman English) |
|--------------------|---------|---------------------------------------|
| File Type | - | - = file, d = directory, l = link |
| Owner Perms | rwx | Owner can read, write, execute |
| Group Perms | r-x | Group can read, execute |

| Part | Example | Meaning (Roman English) |
|------------------------|-------------------|-----------------------------|
| Others Perms | <code>r--</code> | Others can only read |
| Links | <code>1</code> | Number of links |
| Owner | <code>root</code> | File owner (user) |
| Group | <code>root</code> | File group |
| File Size | <code>120</code> | Size in bytes |
| Date & Time | Jul 01 04:00 | Last modified date/time |
| File Name | file1 | Name of the file |

1-chmod

agar kisi file ya directory ki permissions change krni hoon to ye command use hoti hee.

| Access Mode | Number | File | Directory |
|-------------|--------|-----------------------------|-----------------------------|
| r | 4 | To display/read the content | To list the content |
| w | 2 | To modify the file | To create or remove files |
| x | 1 | To execute/run the file | To enter into the directory |



2-chown

agar kisi file ka owner change krna hoo to ye command use hooti hee

```
chown yasir file1
```

matlab k pehle file1 ka owner sajjad tha ab yasir hogya hee

3-chgrp

agar file1 linux group me rhi hoi he ab ye file me devops group me rhna he to ye command use ho gi

```
chgrp devops file1
```

ab ye file devops me shift ho gai hee