# Labs - First Course

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Getting started with the shell
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The mkdir command
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root disconnection
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User

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# Getting started with the shell



# The ls command

- Read the 'ls' manual to explain the result of the following command:

To find the information in the man, type "/" and a string you want to find. To quit man, type 'q'

```
isen@name_s_client ~ $ ls -a -l -r -t /home/isen
```

```
isen@name_s_client ~ $ ls -alrt /home/isen
```

```
isen@name_s_client ~ $ ls -tral /home/isen
```

```
isen@name_s_client ~ $ ls -1 /home/isen
isen@name_s_client ~ $ ls -1a /home/isen
```



ISEN

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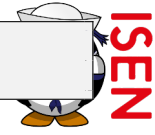
```
isen@name_s_client ~ $ ls -a -l -r -t /home/isen
```

- Some command allow you to 'concat' the arguement. You can do the same with :

```
isen@name_s_client ~ $ ls -alrt /home/isen
```

```
isen@name_s_client ~ $ ls -tral /home/isen
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isen@name_s_client ~ $ ls -1 /home/isen
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- The order is not important for THIS command :

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isen@name_s_client ~ $ ls -tral /home/isen
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isen@name_s_client ~ $ ls -1 /home/isen
isen@name_s_client ~ $ ls -1a /home/isen
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ISEN

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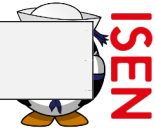
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isen@name_s_client ~ $ ls -alrt /home/isen
```

- The order is not important for THIS command :

```
isen@name_s_client ~ $ ls -tral /home/isen
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- Compare this 2 command and explain the difference :

```
isen@name_s_client ~ $ ls -1 /home/isen
isen@name_s_client ~ $ ls -1a /home/isen
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# The ls command

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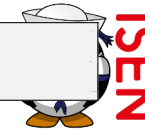
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- The order is not important for THIS command :

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- Compare this 2 command and explain the difference :

```
isen@name_s_client ~ $ ls -1 /home/isen
isen@name_s_client ~ $ ls -1a /home/isen
```




- Give the size of /bin/cat in a 'human' way (i.e. in KB, MB or GB depending on

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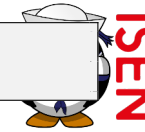
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- Compare this 2 command and explain the difference :

```
isen@name_s_client ~ $ ls -1 /home/isen
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```




- Give the size of /bin/cat in a 'human' way (i.e. in KB, MB or GB depending on

# The cd command



# The cd command

- Read the simple 'cd' manual to explain the result for each following commands :

```
isen@name_s_client ~ $ cd .
isen@name_s_client ~ $ cd ..
isen@name_s_client /home $ cd /home/isen
isen@name_s_client ~ $ cd ../..
isen@name_s_client / $ cd ./home/isen/
isen@name_s_client ~ $ cd ../../
isen@name_s_client / $ cd ../../var/log
isen@name_s_client /var/log $ cd ../../home/isen
isen@name_s_client ~ $ cd .././isen/
isen@name_s_client ~ $ cd ./../isen/
isen@name_s_client ~ $ cd ../../tmp/../etc/../var/log/../tmp/./../../home/isen
```



# The cd command

- Read the simple 'cd' manual to explain the result for each following commands :

```
isen@name_s_client ~ $ cd .
isen@name_s_client ~ $ cd ..
isen@name_s_client /home $ cd /home/isen
isen@name_s_client ~ $ cd ../..
isen@name_s_client / $ cd ./home/isen/
isen@name_s_client ~ $ cd ../../
isen@name_s_client / $ cd ../../var/log
isen@name_s_client /var/log $ cd ../../home/isen
isen@name_s_client ~ $ cd .././isen/
isen@name_s_client ~ $ cd ./../isen/
isen@name_s_client ~ $ cd ../../tmp/../etc/../var/log/../tmp/./../../home/isen
```

- In absolute path move into the /etc direcory



# The cd command

- Read the simple 'cd' manual to explain the result for each following commands :

```
isen@name_s_client ~ $ cd .
isen@name_s_client ~ $ cd ..
isen@name_s_client /home $ cd /home/isen
isen@name_s_client ~ $ cd ../..
isen@name_s_client / $ cd ./home/isen/
isen@name_s_client ~ $ cd ../../
isen@name_s_client / $ cd ../../var/log
isen@name_s_client /var/log $ cd ../../home/isen
isen@name_s_client ~ $ cd .././isen/
isen@name_s_client ~ $ cd ./../isen/
isen@name_s_client ~ $ cd ../../tmp/../etc/../var/log/../tmp/./../../home/isen
```

- In absolute path move into the /etc direcory
- In relative path go back in your home directory



# The pwd command



# The pwd command

- Type **pwd** and observed that the Prompt say '~' and the output of the command is /home/isen



# The pwd command

- Type **pwd** and observed that the Prompt say '~' and the output of the command is /home/isen
- With **cd** change your directory to /tmp in absolute way



# The pwd command

- Type **pwd** and observed that the Prompt say '~' and the output of the command is /home/isen
- With **cd** change your directory to /tmp in absolute way
- Type **pwd** what did you observed in the prompt ?



# The pwd command

- Type **pwd** and observed that the Prompt say '~' and the output of the command is /home/isen
- With **cd** change your directory to /tmp in absolute way
- Type **pwd** what did you observed in the prompt ?
- Type **cd** with no argument. What happened ?



# The pwd command

- Type **pwd** and observed that the Prompt say '~' and the output of the command is /home/isen
- With **cd** change your directory to /tmp in absolute way
- Type **pwd** what did you observed in the prompt ?
- Type **cd** with no argument. What happened ?
- With **cd** change your directory to /tmp and type **cd ~isen** . . What happened ?



# The touch command



# The touch command

- change your direcory to /home/isen/Notes/C01



# The touch command

- change your direcory to /home/isen/Notes/C01
- With **pwd**, check you are in the good directory



# The touch command

- change your direcory to /home/isen/Notes/C01
- With **pwd**, check you are in the good directory
- With **touch** create the files MyFirstFile in /home/isen/Notes/C01 with the abolute way



# The touch command

- change your direcory to /home/isen/Notes/C01
- With **pwd**, check you are in the good directory
- With **touch** create the files MyFirstFile in /home/isen/Notes/C01 with the abolute way
- With **touch** create the files MySecondFile in /home/isen/Notes/C01 with the relative way



# The touch command

- change your direcory to /home/isen/Notes/C01
- With **pwd**, check you are in the good directory
- With **touch** create the files MyFirstFile in /home/isen/Notes/C01 with the abolute way
- With **touch** create the files MySecondFile in /home/isen/Notes/C01 with the relative way
- With **stat** check the file MyFirstFile



# The touch command

- change your direcory to /home/isen/Notes/C01
- With **pwd**, check you are in the good directory
- With **touch** create the files MyFirstFile in /home/isen/Notes/C01 with the abolute way
- With **touch** create the files MySecondFile in /home/isen/Notes/C01 with the relative way
- With **stat** check the file MyFirstFile
- Read the 'touch' manual to change the modification time of MyFirstFile and check with **stat** to compare



# The mkdir command



# The mkdir command

- Create with **mkdir** the directory /tmp/C01



# The mkdir command

- Create with **mkdir** the directory /tmp/C01
- Try to create the directory '/tmp/TP01/sample', what is the message



# The mkdir command

- Create with **mkdir** the directory /tmp/C01
- Try to create the directory '/tmp/TP01/sample', what is the message
- Find in the man of **mkdir** the way to create this directory in one command and create the directory '/tmp/TP01/sample'



# The cp command



# The cp command

- Go back in your home directory with **cd**



# The cp command

- Go back in your home directory with **cd**
- With the **cp** command, copy the file /home/isen/Notes/C01/MyFirstFile into /tmp/TP01/sample/ with the abolute way



# The cp command

- Go back in your home directory with **cd**
- With the **cp** command, copy the file /home/isen/Notes/C01/MyFirstFile into /tmp/TP01/sample/ with the abolute way
- With the **cp** command, copy the file /home/isen/Notes/C01/MySecondFile into /tmp/TP01/sample/ with the relative way



# The cp command

- Go back in your home directory with **cd**
- With the **cp** command, copy the file /home/isen/Notes/C01/MyFirstFile into /tmp/TP01/sample/ with the abolute way
- With the **cp** command, copy the file /home/isen/Notes/C01/MySecondFile into /tmp/TP01/sample/ with the relative way
- With the **cp** command, copy the file /etc/hostname into /tmp/TP01/sample/ with the abolute way and rename the target file to MyHostName



# The cp command

- Go back in your home directory with **cd**
- With the **cp** command, copy the file /home/isen/Notes/C01/MyFirstFile into /tmp/TP01/sample/ with the abolute way
- With the **cp** command, copy the file /home/isen/Notes/C01/MySecondFile into /tmp/TP01/sample/ with the relative way
- With the **cp** command, copy the file /etc/hostname into /tmp/TP01/sample/ with the abolute way and rename the target file to MyHostName
- Try to copy with the **cp** command the direcrtory /tmp/TP01/sample/ into your /home/isen/Notes/C01/ directory. What is the message



# The cp command

- Go back in your home directory with **cd**
- With the **cp** command, copy the file /home/isen/Notes/C01/MyFirstFile into /tmp/TP01/sample/ with the abolute way
- With the **cp** command, copy the file /home/isen/Notes/C01/MySecondFile into /tmp/TP01/sample/ with the relative way
- With the **cp** command, copy the file /etc/hostname into /tmp/TP01/sample/ with the abolute way and rename the target file to MyHostName
- Try to copy with the **cp** command the direcrtory /tmp/TP01/sample/ into your /home/isen/Notes/C01/ directory. What is the message
- Find in the man of **cp** the way to copy directory and the verbose option and test



# The rm / rmdir commands



# The rm / rmdir commands

- With the **rm** command, delete the file /tmp/TP01/sample/MyFirstFile



# The rm / rmdir commands

- With the **rm** command, delete the file /tmp/TP01/sample/MyFirstFile
- With the **rm** command, try to delete the directory /tmp/TP01/sample/



# The rm / rmdir commands

- With the **rm** command, delete the file /tmp/TP01/sample/MyFirstFile
- With the **rm** command, try to delete the directory /tmp/TP01/sample/
- Find in the man of **rm** the way to delete directories and files recursively.



# The mv command



# The mv command

- With the **mv** command, move the file /home/isen/Notes/C01/sample/MyHostName into /home/isen/Notes/C01/ with the abolute way



# The mv command

- With the **mv** command, move the file /home/isen/Notes/C01/sample/MyHostName into /home/isen/Notes/C01/ with the abolute way
- With the **mv** command, move the file /home/isen/Notes/C01/MyHostName into /home/isen/Notes/C01/sample/ with the abolute way and rename the target file to HostName



# The file command



# The file command

Wwith the **file** command check the file type of :

- /



# The file command

Wwith the **file** command check the file type of :

- /
- /home/isen



# The file command

Wwith the **file** command check the file type of :

- /
- /home/isen
- /home/isen/Notes/C01/MyFirstFile



# The file command

Wwith the **file** command check the file type of :

- /
- /home/isen
- /home/isen/Notes/C01/MyFirstFile
- /usr/bin/uptime



# The file command

Wwith the **file** command check the file type of :

- /
- /home/isen
- /home/isen/Notes/C01/MyFirstFile
- /usr/bin/uptime
- /etc/init.d/ssh



# File Permission



# Files Rights

with the **ls** command and the option **-l -d** print the right of /home/isen/Notes/C01

- find in the man what is the **-d** option

with the **ls** command and the option **-l** print the right of /home/isen/Notes/C01/MyFirstFile



# Files Rights

with the **ls** command and the option **-l -d** print the right of /home/isen/Notes/C01

- find in the man what is the **-d** option
- who is the owner ?

with the **ls** command and the option **-l** print the right of /home/isen/Notes/C01/MyFirstFile



# Files Rights

with the **ls** command and the option **-l -d** print the right of /home/isen/Notes/C01

- find in the man what is the **-d** option
- who is the owner ?
- what is the group ?

with the **ls** command and the option **-l** print the right of /home/isen/Notes/C01/MyFirstFile



# Files Rights

with the **ls** command and the option **-l -d** print the right of /home/isen/Notes/C01

- find in the man what is the **-d** option
- who is the owner ?
- what is the group ?
- Explain what is the read access for a directory

with the **ls** command and the option **-l** print the right of /home/isen/Notes/C01/MyFirstFile



# Files Rights

with the **ls** command and the option **-l -d** print the right of /home/isen/Notes/C01

- find in the man what is the **-d** option
- who is the owner ?
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- Explain what is the read access for a directory
- Explain what is the write access for a directory

with the **ls** command and the option **-l** print the right of /home/isen/Notes/C01/MyFirstFile



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- find in the man what is the **-d** option
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- Explain what is the read access for a directory
- Explain what is the write access for a directory
- Explain what is the execute access for a directory

with the **ls** command and the option **-l** print the right of /home/isen/Notes/C01/MyFirstFile



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- who is the owner ?
- what is the group ?
- Explain what is the read access for a directory
- Explain what is the write access for a directory
- Explain what is the execute access for a directory
- Is anybody can read the contain of the directory ? (other)

with the **ls** command and the option **-l** print the right of /home/isen/Notes/C01/MyFirstFile



# Files Rights

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with the **ls** command and the option **-l** print the right of /home/isen/Notes/C01/MyFirstFile

- who is the owner ?



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with the **ls** command and the option **-l** print the right of /home/isen/Notes/C01/MyFirstFile

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- who is the owner ?
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- Is anybody can read the contain of the directory ? (other)

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- find in the man what is the **-d** option
- who is the owner ?
- what is the group ?
- Explain what is the read access for a directory
- Explain what is the write access for a directory
- Explain what is the execute access for a directory
- Is anybody can read the contain of the directory ? (other)

with the **ls** command and the option **-l** print the right of /home/isen/Notes/C01/MyFirstFile

- who is the owner ?



# The grep command

The **grep** command searches for PATTERNS in each FILE.

With the command **grep** find the string DEFAULT_HOME in the file /etc/login.defs



# UMASK

The UMASK determines the settings of a mask that controls how file permissions are set for newly created files.

- to get current UMASk : umask



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The UMASK determines the settings of a mask that controls how file permissions are set for newly created files.

- to get current UMASk : umask
- convert the right of /home/isen/Notes/C01/MyFirstFile in octal mode



# UMASK

The UMASK determines the settings of a mask that controls how file permissions are set for newly created files.

- to get current UMASk : umask
- convert the right of /home/isen/Notes/C01/MyFirstFile in octal mode
- Analyse the octal mode and the UMASK we find.



# The chmod command



# octal chmod

- With **ls -l** print the right of /home/isen/Notes/C01/MyFirstFile

Change with the **chmod** command in **octal** mode the right of /home/isen/Notes/C01/MyFirstFile to :



# octal chmod

- With **ls -l** print the right of /home/isen/Notes/C01/MyFirstFile

Change with the **chmod** command in **octal** mode the right of /home/isen/Notes/C01/MyFirstFile to :

- owner : all right



# octal chmod

- With **ls -l** print the right of /home/isen/Notes/C01/MyFirstFile

Change with the **chmod** command in **octal** mode the right of /home/isen/Notes/C01/MyFirstFile to :

- owner : all right
- group : nothing



# octal chmod

- With **ls -l** print the right of /home/isen/Notes/C01/MyFirstFile

Change with the **chmod** command in **octal** mode the right of /home/isen/Notes/C01/MyFirstFile to :

- owner : all right
- group : nothing
- other : nothing



# letter chmod

- With **ls -l** print the right of /home/isen/Notes/C01/MyFirstFile

Change with the **chmod** command in **letter** mode the right of /home/isen/Notes/C01/MyFirstFile to :

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# letter chmod

- With **ls -l** print the right of /home/isen/Notes/C01/MyFirstFile

Change with the **chmod** command in **letter** mode the right of /home/isen/Notes/C01/MyFirstFile to :

- owner : delete the execution right

Change with the **chmod** command in **letter** mode the right of /home/isen/Notes/C01/MyFirstFile to :



# letter chmod

- With **ls -l** print the right of /home/isen/Notes/C01/MyFirstFile

Change with the **chmod** command in **letter** mode the right of /home/isen/Notes/C01/MyFirstFile to :

- owner : delete the execution right
- group : no change

Change with the **chmod** command in **letter** mode the right of /home/isen/Notes/C01/MyFirstFile to :



## letter chmod

- With **ls -l** print the right of /home/isen/Notes/C01/MyFirstFile

Change with the **chmod** command in **letter** mode the right of /home/isen/Notes/C01/MyFirstFile to :

- owner : delete the execution right
- group : no change
- other : no change

Change with the **chmod** command in **letter** mode the right of /home/isen/Notes/C01/MyFirstFile to :



## letter chmod

- With **ls -l** print the right of /home/isen/Notes/C01/MyFirstFile

Change with the **chmod** command in **letter** mode the right of /home/isen/Notes/C01/MyFirstFile to :

- owner : delete the execution right
- group : no change
- other : no change
- With **ls -l** print the right of /home/isen/Notes/C01/MyFirstFile

Change with the **chmod** command in **letter** mode the right of /home/isen/Notes/C01/MyFirstFile to :



## letter chmod

- With **ls -l** print the right of /home/isen/Notes/C01/MyFirstFile

Change with the **chmod** command in **letter** mode the right of /home/isen/Notes/C01/MyFirstFile to :

- owner : delete the execution right
- group : no change
- other : no change
- With **ls -l** print the right of /home/isen/Notes/C01/MyFirstFile

Change with the **chmod** command in **letter** mode the right of /home/isen/Notes/C01/MyFirstFile to :

- owner : add execution right



## letter chmod

- With **ls -l** print the right of /home/isen/Notes/C01/MyFirstFile

Change with the **chmod** command in **letter** mode the right of /home/isen/Notes/C01/MyFirstFile to :

- owner : delete the execution right
- group : no change
- other : no change
- With **ls -l** print the right of /home/isen/Notes/C01/MyFirstFile

Change with the **chmod** command in **letter** mode the right of /home/isen/Notes/C01/MyFirstFile to :

- owner : add execution right
- group : add read and write right



## letter chmod

- With **ls -l** print the right of /home/isen/Notes/C01/MyFirstFile

Change with the **chmod** command in **letter** mode the right of /home/isen/Notes/C01/MyFirstFile to :

- owner : delete the execution right
- group : no change
- other : no change
- With **ls -l** print the right of /home/isen/Notes/C01/MyFirstFile

Change with the **chmod** command in **letter** mode the right of /home/isen/Notes/C01/MyFirstFile to :

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root



# sudo

Some commands can only be used by the root user

Usually the root access is secured. Here, we have voluntarily facilitated access to this account for the purposes of practical work.

The user isen is allowed to used sudo like root without passwd

BE CAREFUL !!! BE CAREFUL !!! BE CAREFUL !!!

the **sudo** command allow you to do command in substituion of another user (Swith User DO)

- type and explain the command **whoami**



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- type and explain the command **whoami**
- with the command **sudo**, execute the command **whoami** from isen



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- with the command **sudo**, execute the command **touch /tmp/TestFile** from isen



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- with the command **ls -l** what are the rights of the file /tmp/TestFile



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- with the command **ls -l** what are the rights of the file /tmp/TestFile



root disconnection



# root disconnection

You can disconnect from the root account with the **exit** command or with the key combination : “CTRL+D”



passwd



# passwd

- with the command **passwd** change the password of isen with the isen account



# passwd

- with the command **passwd** change the password of isen with the isen account
- with the command **passwd** change the password of isen with the root account



# passwd

- with the command **passwd** change the password of isen with the isen account
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su



## su

- with the **su** command without sudo, connect to the root account from isen



## su

- with the **su** command without sudo, connect to the root account from isen
- Once logged in, what directory are you in? Why ?



## su

- with the **su** command without sudo, connect to the root account from isen
- Once logged in, what directory are you in? Why ?
- with the **su - root** command without sudo, connect to the root account from isen



# su

- with the **su** command without sudo, connect to the root account from isen
- Once logged in, what directory are you in? Why ?
- with the **su - root** command without sudo, connect to the root account from isen
- Once logged in, what directory are you in? Why ?



root connection environement



# root connection environement

```
isen@name_s_client ~ $ sudo su
```

- Once logged in, what directory are you in? Why ?

```
isen@name_s_client ~ $ sudo su root
```

```
root@name_s_client ~ # su isen
```

```
root@name_s_client ~ # su - isen
```



# root connection environement

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root@name_s_client ~ # su isen
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isen@name_s_client ~ $ sudo su
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User



# cat command

The **cat** command concatenate files and print on the standard output

- With the **cat** command and the /etc/passwd file, are there other accounts on this machine?



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# cat command

The **cat** command concatenate files and print on the standard output

- With the **cat** command and the /etc/passwd file, are there other accounts on this machine?
- Withe the **grep** command and the /etc/passwd file How to list all the accounts who can connect ?
- With the **cat** command and the file /etc/shadow, how many users can login using a password?



# useradd command

The **useradd** command can create user with CLI.

- Create an **eleve1** account with the command and define a password for it.



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- In **root**, create the home directory of **eleve1** with the commands **mkdir** and **chown**



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- Connect with this user, what do you notice?
- In **root**, create the home directory of **eleve1** with the commands **mkdir** and **chown**
- Create a new **eleve2** account in order to automatically create your **home directory**.



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- In **root**, create the home directory of **eleve1** with the commands **mkdir** and **chown**
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- Compare the contents of the **eleve1** and **eleve2** user directories. (don't forget to print the hiddens files)



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- Now compare with the contents of the /etc/skel directory.



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- Compare the contents of the **eleve1** and **eleve2** user directories. (don't forget to print the hiddens files)
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# Group management



# Group management

- To which groups do the “eleve1” and “eleve2” accounts belong?

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# Group management

- To which groups do the “eleve1” and “eleve2” accounts belong?
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micro is a simple terminal text editor
to have some help type : micro --help
to save and quit a file you are editing use the key combination :

[ALT+s]
```

- Using the “usermod” command, do the same for the “eleve2” user.
- With the command **groupdel**, delete the groups “eleve1” and “eleve2”.
- Create an account “prof1” having as primary group “teachers” and as secondary



ISEN

# Group management

- To which groups do the “eleve1” and “eleve2” accounts belong?
- With the **groupadd** command, create an “eleves” group with a GID equal to 600.
- Create a group “teachers” with a GID of 700.
- By modifying the appropriate file, put the group “eleves” in the primary group of the user “eleve1”. You have to use the command **micro**

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