

# Lab 1

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## 1 ) what is the difference between cat and more command ?

- Cat command display every thing which make me disable to see all the contents  
(the screen display the last list of files or directories)
- more command display only a part of the data at a time (display screen by screen ) and I can move on them line by line by enter , or screen by screen by press space.

## 2) what is the difference between rm and rmdir ?

- rm by default removes files  
but it can removes directory by adding -r ( in this case the directory will removed even if it is not empty , this command will delete the directory with every thing in it)
- rmdir commmand deletes directories in case it is empty  
or I cannot delete it

## 3) create the following hierarchy ...

```

sarah@sarah-HP-ZBook-15-G2:~$ pwd
/home/sarah
sarah@sarah-HP-ZBook-15-G2:~$ ls -R
.:
Desktop  docs      Downloads  Pictures  snap      Videos
ls dir1    Documents Music      Public    Templates
sarah
sarah ./Desktop:
..
sarah ./dir1:
/home/sarah dir11 dir12
sarah
ls
sarah ./dir1/dir11:
sarah file1
sarah
/home/sarah ./dir1/dir12:
sarah
ls
sarah ./docs:
dir1 mycv
sarah
sarah@sarah-HP-ZBook-15-G2:~/dir1/dir11$ touch file1
sarah@sarah-HP-ZBook-15-G2:~/dir1/dir11$ ..
..: command not found
sarah@sarah-HP-ZBook-15-G2:~/dir1/dir11$ ls /home/sarah/dir1
dir11 dir12
sarah@sarah-HP-ZBook-15-G2:~/dir1/dir11$ ls /home/sarah/dir1/dir11
file1

```

```

sarah@sarah-HP-ZBook-15-G2:~$ pwd
/home/sarah
sarah@sarah-HP-ZBook-15-G2:~$ ls -R
.:
Desktop  docs      Downloads  Pictures  snap      Videos
dir1     Documents Music      Public    Templates

./Desktop:

./dir1:
dir11 dir12

./dir1/dir11:
file1

./dir1/dir12:

./docs:
mycv

```

a – remove dir1 in one step

```
sarah@sarah-HP-ZBook-15-G2:~$ pwd
/home/sarah
sarah@sarah-HP-ZBook-15-G2:~$ cd dir1
sarah@sarah-HP-ZBook-15-G2:~/dir1$ rmdir dir11
rmdir: failed to remove 'dir11': Directory not empty
sarah@sarah-HP-ZBook-15-G2:~/dir1$
```

what did you notice ? And how to overcome that ?

- Failed to delete it because it is not empty it has a file1 on it
- I can delete file 1 first then delete dir11 or can force it to remove by command `rm -r dir11`

```
sarah@sarah-HP-ZBook-15-G2:~/dir1$ rmdir dir11
rmdir: failed to remove 'dir11': Directory not empty
sarah@sarah-HP-ZBook-15-G2:~/dir1$ rm -r dir11
sarah@sarah-HP-ZBook-15-G2:~/dir1$ cd ..
sarah@sarah-HP-ZBook-15-G2:~$ ls -a
.          .bashrc  dir1      .gnupg    Pictures  snap
..         .cache   docs      .local    .pki      .ssh
.bash_history .config Documents .mozilla  .profile  Template
.bash_logout Desktop Downloads Music     Public    Videos
sarah@sarah-HP-ZBook-15-G2:~$ ^C
sarah@sarah-HP-ZBook-15-G2:~$ cd dir1
sarah@sarah-HP-ZBook-15-G2:~/dir1$ ls dir1
ls: cannot access 'dir1': No such file or directory
sarah@sarah-HP-ZBook-15-G2:~/dir1$ ls /home/sarah/dir1
dir12
sarah@sarah-HP-ZBook-15-G2:~/dir1$
```

b- then remove dir12 using `rmdir -p` command .

```
sarah@sarah-HP-ZBook-15-G2:~/dir1$ ls /home/sarah/dir1
dir12
sarah@sarah-HP-ZBook-15-G2:~/dir1$ rmdir dir12
sarah@sarah-HP-ZBook-15-G2:~/dir1$ ls /home/sarah/dir1
sarah@sarah-HP-ZBook-15-G2:~/dir1$
```

## State what happened to the hierarchy

the hierarchy now has two directories ( dir1 & docs)  
dir1 is empty directory and docs has a file mycv on it

c- The output of the command pwd was /home/user. Write the absolute and relative path for the file mycv

- the absolute path: *home/sarah/docs*

```
sarah@sarah-HP-ZBook-15-G2:~$ pwd
/home/sarah
sarah@sarah-HP-ZBook-15-G2:~$ ls /home
sarah
sarah@sarah-HP-ZBook-15-G2:~$ ls /home/sarah/docs
mycv
```

- the relative path:

```
sarah@sarah-HP-ZBook-15-G2:~/docs$ cd ..
sarah@sarah-HP-ZBook-15-G2:~$ cd docs
sarah@sarah-HP-ZBook-15-G2:~/docs$ ls -a
.  ..  mycv
sarah@sarah-HP-ZBook-15-G2:~/docs$
```

5. Copy the /etc/passwd file to your home directory making its name is mypasswd.

`cp /etc/passwd "mypasswd"`

```
sarah@sarah-HP-ZBook-15-G2:~$ ls -a
.  ..  .cache  Desktop  Documents  Downloads  Music  Pictures  snap
.bash_history  .bash_logout  .bashrc  dir1  docs  .gnupg  .local  .mozilla  .pki  .profile  Public  Templates  Videos
sarah@sarah-HP-ZBook-15-G2:~$ sudo cp /etc/passwd "mypasswd"
[sudo] password for sarah:
sarah@sarah-HP-ZBook-15-G2:~$ ls -a
.  ..  .cache  Desktop  Documents  Downloads  Music  mypasswd  Public  Videos
.bash_history  .bash_logout  .bashrc  dir1  docs  .gnupg  .local  .mozilla  .pki  .profile  Templates
sarah@sarah-HP-ZBook-15-G2:~$
```

## 6. Rename this new file to be oldpasswd.

Mv /oldpasswd

```
sarah@sarah-HP-ZBook-15-G2:~$ ls -la
.          .cache    Documents Music      Public    Videos
..         .config   Downloads mypasswd  snap
.bash_history Desktop  .gnupg    Pictures  .ssh
.bash_logout dir1     .local    .pki      .sudo_as_admin_successful
.bashrc    docs     .mozilla  .profile  Templates
sarah@sarah-HP-ZBook-15-G2:~$ mv mypasswd oldpasswd
sarah@sarah-HP-ZBook-15-G2:~$ ls
Desktop  docs      Downloads  oldpasswd  Public  Templates
dir1     Documents Music      Pictures   snap    Videos
sarah@sarah-HP-ZBook-15-G2:~$
```

## 7. You are in /usr/bin, list four ways to go to your home directory

- cd
- cd .. ..
- cd home
- cd ~
- cd-

## 8. List Linux commands in /usr/bin that start with letter w

```
^C
sarah@sarah-HP-ZBook-15-G2:/home$ compgen -A builtin w
wait
sarah@sarah-HP-ZBook-15-G2:/home$
```

## 9. Display the first 4 lines of /etc/passwd



```
sarah@sarah-HP-ZBook-15-G2:/home$ head -4 /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sarah@sarah-HP-ZBook-15-G2:/home$
```

## 10.Display the last 7 lines of /etc/passwd

```
sarah@sarah-HP-ZBook-15-G2:/home$ tail -7 /etc/passwd
pulse:x:123:128:PulseAudio daemon,,,:/var/run/pulse:/usr/sbin/nologin
gnome-initial-setup:x:124:65534:/:run/gnome-initial-setup:/bin/false
gdm:x:125:130:Gnome Display Manager:/var/lib/gdm3:/bin/false
sssd:x:126:131:SSSD system user,,,:/var/lib/sss:/usr/sbin/nologin
sarah:x:1000:1000:sarah,,,:/home/sarah:/bin/bash
systemd-coredump:x:999:999:systemd Core Dumper:/:/usr/sbin/nologin
fwupd-refresh:x:127:134:fwupd-refresh user,,,:/run/systemd:/usr/sbin/nologin
sarah@sarah-HP-ZBook-15-G2:/home$
```

## 11.Display the man pages of passwd the command and the file sequentially in one command.

```
bash: /sarah/bin: No such file or directory
sarah@sarah-HP-ZBook-15-G2:/home$ man passwd
sarah@sarah-HP-ZBook-15-G2:/home$
```

## 12.Display the man page of the passwd file.

PASSWD(1)	User Commands	PASSWD(1)
<b>NAME</b>		
passwd - change user password		
<b>SYNOPSIS</b>		
passwd [ <u>options</u> ] [ <u>LOGIN</u> ]		
<b>DESCRIPTION</b>		
<p>The <b>passwd</b> command changes passwords for user accounts. A normal user may only change the password for their own account, while the superuser may change the password for any account. <b>passwd</b> also changes the account or associated password validity period.</p>		
<b>Password Changes</b>		
<p>The user is first prompted for their old password, if one is present. This password is then encrypted and compared against the stored password. The user has only one chance to enter the correct password. The superuser is permitted to bypass this step so that forgotten passwords may be changed.</p> <p>After the password has been entered, password aging information is checked to see if the user is permitted to change the password at this time. If not, <b>passwd</b> refuses to change the password and exits.</p> <p>The user is then prompted twice for a replacement password. The second entry is compared against the first and both are required to match in order for the password to be changed.</p> <p>Then, the password is tested for complexity. As a general guideline, passwords should consist of 6 to 8 characters including one or more characters from each of the following sets:</p> <ul style="list-style-type: none"> <li>• lower case alphabets</li> <li>• digits 0 thru 9</li> <li>• punctuation marks</li> </ul> <p>Care must be taken not to include the system default erase or kill characters. <b>passwd</b> will reject any password which is not suitably complex.</p>		
<b>Hints for user passwords</b>		
<p>The security of a password depends upon the strength of the encryption algorithm and the size of the key space. The legacy <u>UNIX</u> System encryption method is based on the NBS DES algorithm. More recent methods are now recommended (see <u>ENCRYPT_METHOD</u>). The size of the key space depends upon the randomness of the password which is selected.</p>		

13. Display a list of all the commands that contain the keyword passwd in their man page.

```
Try 'man --help' or 'man --usage' for more information.
sarah@sarah-HP-ZBook-15-G2:~$ man -WK 'passwd'
sarah@sarah-HP-ZBook-15-G2:~$
```