

Linux tutorial

ASP 2024 Pr. M. JEDRA

Practical work1 solution

1- open a session

```
Login:user_login
```

```
Password:xxxxxxxxxx
```

2- show the system date

```
$date
```

3- display users logged into the system

```
$who
```

4- find the day you were born

```
$cal 2 1999 (for example)
```

5- display all information about the `echo` command

```
$man echo
```

6- run the following command-lines:

```
$echo Hello World
```

```
$echo "Hello World"
```

```
$echo Hello; echo World
```

7- clear the screen

```
$clear
```

8- logout

```
$exit
```

N.B: If one command is not installed you can install it with this command line if you are a super user:

```
$sudo apt install command
```

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Practical work2 solution

1- display the content of your directory

```
$ls
```

2- display the detailed content of your directory

```
$ls -ail
```

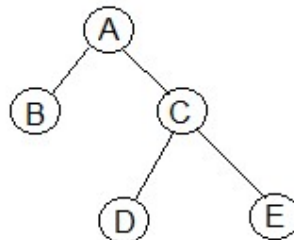
3- show the content of /home

```
$ls /home
```

4- show the contents of /etc, /bin, /lib and /dev

```
$ls /etc      $ls /bin      $ls /lib      $ls /dev
```

5- create the following directory tree



```
$mkdir A A/B A/C A/C/E A/C/E
```

```
$tree -d A
```

6- change current directory with C directory

```
$cd A/C
```

7- show the content of E directory

```
$ls A/C/E or $ls E
```

8- print working directory

```
$pwd
```

9- return to your home directory

```
$cd ..
```

```
$cd ..
```

10- display the directory tree

```
$tree -d .
```

11- remove the directory tree

```
$rm -r A
```

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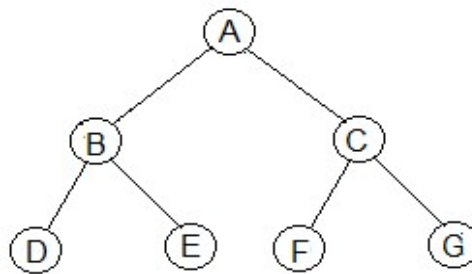
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Practical work3 solution

1- create three empty files F1, F2 and F3 in your directory

```
$touch F1 F2 F3
```

2- create the following directory tree



```
$mkdir A A/B A/C A/B/D A/B/E A/C/F A/C/G
```

3- copy F1 in the A and give it the name Fa3

```
$cp F1 A/Fa3
```

4- enter in the A and rename Fa3 with the new name Fa4

```
$cd A
```

```
$mv Fa3 Fa4 or $rename 'y/3/4/' Fa3
```

5- give Fa4 a link with the name Fa5 in the C directory

```
$ln Fa4 C/Fa5
```

6- show inodes of the Fa4 and Fa5 files

```
$ls -li Fa4
```

```
$ls -li C/Fa5 (Fa4 and Fa5 have the same i-node)
```

7- copy the Fa4 file in your home directory using its link in the C directory

```
$cd ..
```

```
$cp A/C/Fa5 Fa4
```

8- remove Fa4 from the A directory

```
$rm A/Fa4
```

9- delete C root directory tree

```
$rm -r A/C
```

10- find and remove all empty files from A root directory tree

```
$find A -size 0 -exec rm '{}' \;
```

11- destroy with one command-line D and E directories

```
$rmdir A/B/D A/B/E
```

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Practical work4 solution

1- create empty files F1, F2,F3, F21, F22, F30, F31, F40 and Fend in your directory

```
$touch F1 F2 F3 F21 F22 F30 F31 F40 Fend
```

2- create a directory named Catalog

```
$mkdir Catalog
```

3- move those files to Catalog with one command-line

```
$mv F* Catalog
```

4- enter in Catalog

```
$cd Catalog
```

5- using the ls command what do the following patterns show?

F3*, F[0-9], F[0-9]*, F[^0-9]*, F2[0-9], F??

<pre>\$ls F3*</pre>	F3 F30 F31
<pre>\$ls F[0-9]</pre>	F1 F2 F3
<pre>\$ls F[0-9]*</pre>	F1 F2 F3 F21 F22 F30 F32 F40
<pre>\$ls F[^0-9]*</pre>	Fend
<pre>\$ls F2[0-9]</pre>	F21 F22
<pre>\$ls F??</pre>	F21 F22 F30 F31 F40

6- remove all files whose number is greater than 20

```
$rm F[2-4][0-2]
```

7- destroy the Catalog directory

```
$rm -r Catalog
```

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Practical work5 solution

1- create with echo a file named Fruits with ten lines. Each line contains the name of a fruit.

```
$echo "banana  
>avocado  
>lemon  
>orange  
>cherry  
>kiwi  
>apple  
>pear  
>peach  
>strawberry " > Fruits
```

2- display the first 3 lines of Fruits

```
$head -n 3 Fruits
```

3- display the last 5 lines of Fruits

```
$tail -n 5 Fruits
```

4- display all lines of Fruits

```
$cat Fruits
```

5- add the phrase « fruits available today » to Fruits

```
$echo "fruits available today" >> Fruits
```

6- store the date in another D file

```
$date > D
```

7- join Fruits and D in one G file

```
$cat Fruits D > G
```

8- display the content of G file

```
$cat G
```

9- store the number of lines of G in another file H

```
$wc -l G > H
```

10- display all lines of G in alphabetical order

```
$sort G
```

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Practical work6 solution

1- show the sentence " What a wonderful world " without spaces

```
$echo "What a wonderful world" | tr -d ' '
```

2- display the first 3 columns the output of the `ls -l` command

```
$ls -l | cut -d ' ' -f 1-3
```

3- display the contents of the Fruits file in capital letters

```
$cat Fruits | tr '[a-z]' '[A-Z]'
```

4- display files in your directory whose name ends with `.c`

```
$ls | grep "\.c$"
```

5- store all home directories sorted alphabetically in new H

```
$ls -d */ | sort > H
```

6- from the file H create a file K containing the directories whose name begins with the character a

```
$cat H | grep "^a" > K
```

7- find the files in your home directory modified 20 days ago

```
$find . -mtime +20 -print
```

8- count files in your home directory

```
$ls -l | grep '^-' | wc -l
```

9- count directories in your home directory

```
$ls -l | grep '^d' | wc -l
```

10- count hidden files in your home directory

```
$ls -l | grep '^\. ' | wc -l
```

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Practical work7 solution

1- launch a new shell

```
$sh
```

2- check if it is running

```
$ps
```

3- kill this shell

```
$kill -9 210558 (PID_sh=210558 for example)
```

4- display the name files in your directory whose name ends with .c

```
$ls |grep "\.c$"
```

5- launch a new shell in background

```
$sh &
```

6- kill this shell

```
$kill -9 PID_sh
```

7- store the result of the `ls -l` command in an F file after one minute and check if this file exists before one minute passes

```
$(sleep 60; ls -l > F)&
```

8- display the date and launch the following batch after 3 mn:

```
who >G
```

```
echo "users connected" >>G
```

```
date >>G
```

Check if the G file exists before 3 minutes pass

```
$at 15:22 (for example )
```

```
>who > G
```

```
>echo "users connected" >> G
```

```
>date >> G
```

```
Ctrl+D
```

9- eliminate the G file read permission for all and try to display its content.

```
$chmod -r G
```

```
$cat G (permission not granted)
```

10- eliminate the G file write permission for all and try to add "Hello World" to G file

```
$chmod -w G
```

```
$echo "Hello world" > G (permission not granted)
```