Tutorial 1 Answer Sheet

CS3103 Operating Systems

Student Name: _____

Student No. : | | | | | | | | |

Day: ☐ Monday ☐ Thursday

Time: ☐ 10:00 - 10:50 ☐ 11:00 - 11:50 ☐ 12:00 - 12:50 ☐ 14:00 - 14:50 ☐ 18:00 - 18:50

Getting Started with Linux

Submission:

• Deadline: Wednesday, September 13, 2023, 8:00 pm HKT.

• Submit this answer sheet via Canvas->Assignments->Tutorials->Tutorial 1.

Questions

A sample Linux file system

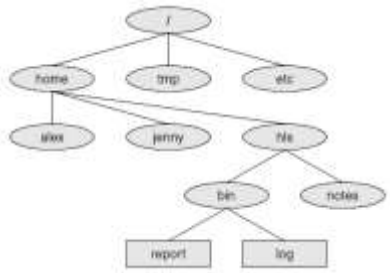
Paths:

- Root is /
- Paths separated by /

e.g.,

/home/hls/notes

/home/alex



The Linux directory structure is like a tree. The base of the Linux file system hierarchy begins at the **root**. Directories branch off the root, but everything starts at root.

More details here: https://bit.ly/2kcbpB5

In the example above, write the full path to the `report` directory: /home/his/bin/report

ls (list - directory listing)

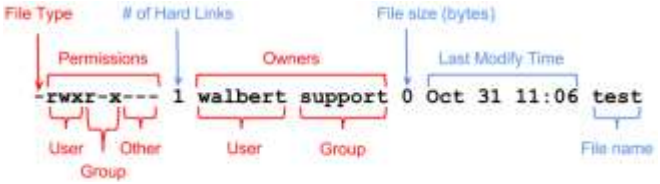
An option changes the behaviour of a command. The **ls** command can be used with several options. An example of an option that can be used with **ls** is **-l**.

Key in **`ls -l`**

Your screen should look similar to the screenshot below:

```
cctom2@ubt18a:~$ ls -l
total 8
drwx-----x 1 cctom2 grads 4096 Jan  9 13:34 Windows
drwx-----x 1 cctom2 grads 4096 Jan  9 13:40 www
```

Lower-case letter l.



What effect does this option have? What are **ls -l** output columns? What is the size of each file in bytes for your output? drwx---r-x 2 kamtoma2 elft23 4096 Aug 8 13:52 www

pwd (print working directory)

The **pwd** command will show you the path to your current working directory. Unlike our ssh gateway server, some other Linux prompts may not show your working directory. So you can use **pwd** to find out where you are in the directory tree.

Type **pwd** command to view the path of the directory you are currently in.

This is your **current directory**. What is it? /home/elft23/kamtoma2 ……

cd (change directory)

Exercise:

Change to the **root directory** using a single command. What command did you use?

cd /

……

Change back to your **home directory**. Where your **home directory** is, will depend on what account you are logged in as. What is the full path of your home directory?

/home/elft23/kamtoma2

……

Exercise:

1. Use **ls** to view all files in the **root** directory (/):

1. cd /
2. ls -a

……

2. Change to the */home* directory:

cd /home

……

3. Use **ls** to view all files in the */home* directory:

1. cd /home
2. ls -a

……

4. What command would you use to go **directly** to your home directory from any other directory?

cd ~

……

5. Change back to the root directory

cd /

……

man (reference manual for getting help)

To bring up help on a command, use the **man** command. For example to bring up help on the **ls** command you would key in the following:

```
cctom2@ubt18a:~$ man ls
```

Note: While you are in the help:

Pressing ***enter*** or down arrow key (↓) will allow you to scroll down through the text.

Pressing ***q*** will allow you to quit from the help.

What does the **-a** / **-l** (letter l) / **-1** (number 1) option do for the **ls** command?

-l: use a long listing format

-1: list one file per line. Avoid '\n' with -q or -b

What is the difference between the -g and -G options for the **ls** command?

-g: Do not list owner

-G: Do not print group names

Some commands also provide a long option like **`--help`** to display usage help, e.g.,

```
ls --help
```

Exercise:

1. View the man page for the **mv** command.

man mv

2. Display the usage help of the **mv** command.

mv --help

mkdir (make directory)

Exercise:

1. Create a new directory called reportFiles, in your home directory.

1. cd ~
2. mkdir reportFiles

2. Do a directory listing of your home directory.

ls

3. Create a file in the directory called reportFiles called operatingsystems.txt and write some texts to it.

1. cd reportFiles2. touch operatingsystem.txt

4. Do a directory listing of the reportFiles directory.

ls

5. Without changing to the **reportFiles** directory, create inside it a new directory called **backup**.

mkdir backup

6. Change into the **reportFiles** directory and check for yourself that the backup directory was created by your previous command.

```
ls
```

……

cp (copy)

Exercise: Try not to move from your home directory for each of the questions below.

Create a subdirectory in your home directory and call it **backup**.

```
mkdir backup
```

……

Copy **myfile.txt** into **backup**, keeping its original name.

```
1. touch myfile.txt
2. cp myfile.txt /home/elft23/kamtoma2/backup
```

……

Copy **new.txt** into **backup** and call the destination file **new.bak**

```
1. touch new.txt
2. cp new.txt /home/elft23/kamtoma2/backup/new.bak
```

……

Copy **new.bak** from the **backup** directory to your **current directory**.

```
cp /home/elft23/kamtoma2/backup/new.bak .
```

……

Create a directory called **letters** in your current working directory (home directory)

```
mkdir letters
```

……

Copy **new.bak** from the **backup** directory to **letters** directory and call the new file (the destination file) **new2.bak**

```
cp /home/elft23/kamtoma2/backup/new.bak /home/elft23/kamtoma2/letters/new2.bak
```

……

mv (move)

Exercise:

1. Move the file **new.txt** into your **backup** directory.

```
mv new.txt /home/elft23/kamtoma2/backup
```

……

2. Without changing to the **backup** directory, move the file **new.txt** from the **backup** directory into your current working directory.

```
mv /home/elft23/kamtoma2/backup/new.txt .
```

……

3. Rename the file **new.bak** to **new2.txt**, using the **mv** command.

```
mv new.bak new2.txt
```

……

rm (remove)

Exercise:

1. Delete the file new2.txt.

```
rm new2.txt
```

……

Verify that it has been removed by issuing the **ls** command.

2. Delete the file in your backup directory called myfile.txt.

```
rm /home/elft23/kamtoma2/backup/myfile.txt
```

……

3. Change directory to the backup directory and then delete the file myfile.txt in your home directory.

```
1. cd backup
2. rm /home/elft23/kamtoma2/myfile.txt
```

……

4**.** Write the Linux command to delete the folder **backup** and its contents.

```
rm -r backup
```

……