

程序代码代做 CS编程辅导

Introduction to Linux

Command Line Practical

If you can answer questions on the DLE using the command line, then you have completed the module



Practical 1

A shell is a command-line interface between the user and the low-level operating system. Mostly it invokes small utility programmes.

Shells are the user interface, usually always running. Takes your commands, passes them to the kernel as needed, and calls which then carry out your job. Shells keep you a layer away from physical memory, providing a safer system.

Open a terminal/shell. You will automatically be placed into your home directory.

Commands we could be using include:

- cd (change directory)
- ls (list directory contents)
- mv (move or rename)
- rm (remove)
- cp (copy)
- ln (link)
- cat (view file)
- more (view file one page at a time)
- chmod (change permissions)
- pwd (present working directory)
- mkdir (make new directory)
- rmdir (remove directory)
- man (read the manual page documentation for a command)
- apropos (list commands that have a particular keyword in their description)
- find (search for files or directories)
- locate (faster than find)
- date (display the system date and time)
- who (who is on the system)
- whoami (who are you logged in as)

(not all of the above are in the practicals below)

If you have questions about the syntax of any command, try typing:
'man <command_name>'.

To find out which version of Linux you are using type:

```
> uname -r (shorter description)
> uname -a
```

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At the Prompt type:

> *pwd*

This tells you where you are. Type:

> *ls*

This gives you the directory

Look up *ls* in the manual

> *man ls*

Move around the manual using up/down. Exit the manual (type q).

List files using *ls* with different options

e.g.

> *ls -alg*

Examine the permissions for various files.

You can move around the file system using *cd* and *pwd* (to find out where you are) & *ls* (to list contents). Type

> *cd ..*

This takes you up one level.

> *cd /home*

Takes you to the home directory (not sec204)

Typing *cd* on its own takes you to sec204

Move from here to the booksrc directory

> *cd /sec204/Desktop/booksrc*

List the files in this directory

Let us look at some files using *cat*, *less* and *more*

> *cat helloworld.c*

> *cat fmt_vuln.c*

> *less fmt_vuln.c*

> *more fmt_vuln.c*

> *tail fmt_vuln.c*

Move back to the home directory (see above), then to the sec204 directory.

Type the following command to open the nano editor

> *nano*

Type something in here, then hit CtrlX & save it as 'myfile.txt'. This file will be added to the directory contents.

Use *cat* to show the contents of the file.

List the permissions for the file (e.g. *ls -g m**)

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Use *chmod* to change permissions for the file for you, group members & others - check the permissions after each command

```
> chmod 700 myfile.txt
```

```
> chmod go+rw myfile.txt
```

```
> chmod 774 myfile.txt
```

Copy the file in the *docs* directory to another name: *myfile1.txt*. If you have a file of the same name there, delete it.

```
> cp myfile.txt myfile1.txt
```

See if there are any differences between the two files

```
> diff myfile.txt myfile1.txt
```

Create a new directory *docs*

```
> mkdir docs
```

Copy the new file to the *docs* directory. Move to the *docs* directory and copy the original there.

```
> cp ../myfile.txt .
```

Rename *myfile1.txt* using the *mv* command to *myfile2.txt*. Then copy it back to the *sec204* directory. Move back to this directory.

List the files in the directory

```
ls myfile?.txt
```

```
ls myfile*.txt
```

Delete *myfile2.txt* (but not *myfile.txt*) using the following wildcard.

```
rm my*2.txt
```

Try to delete the *docs* directory.

```
> rmdir docs
```

Make a new directory *documents*. Move all the contents of the *docs* directory using the following:

```
mv ./docs/* ./documents
```

Now try and delete the *docs* directory.

Rename the *documents* directory *docs*.

In an editor (e.g. *nano*) create a list of random numbers (each on a new line) save it as *numlist* and check the result.

```
sort -n numlist > sorted
```

Look at the results in *sorted*.

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then type the following command. **程序代写代做 CS编程辅导**

```
sort -n numlist > sorted ; cat sorted ; rm sorted
```

Type

```
> nano &
```

Notice the PID at the end of the command line. This command creates a job running in the background, allowing you to continue working with the command line.

```
> jobs
```

To see what jobs are running

```
> ps -ef
```

This displays all the processes, the user name, PPID (parent process id), start time and full command line.

Stop the process you've just created. The 'kill' command is used to stop a process. This sends the process a 'SIGTERM' signal, meaning terminate. This can be carried out using the job number

```
> kill %1 (or whatever job number it is)
```

or using the PID

```
> kill 1502
```

meaning terminate pid 1502

Some processes will not respond (if they are in an error condition, or are programmed to ignore SIGTERM) or close down slowly. Use -9 option to kill the process immediately

```
> kill -9 1502
```

Then use

```
> history
```

```
> !115 (or a recent command line number)
```

```
> !! (repeats last command)
```

```
> clear
```



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