

Question 1

Awk

- Description: scripting language used for processing and displaying text.
- Formula/Syntax: `awk + options + {awk command} + file + file to save (optional)`
- 3 Examples:
 - `awk '{print $1}' ~/Documents/Csv/cars.csv`
 - `awk '{print $1,"=",$NF}' /etc/passwd`
 - `awk 'NR > 3 { print }' /etc/passwd`

Cat

- Description: used for seeing the content of a file. Also used for concatenating.
- Formula/Syntax: `cat + option + file(s) to display.`
- 3 Examples:
 - `cat ~/Documents/todo.lst`
 - `cat -n ~/Documents/todo.md`
 - `cat -s ~/Documents/todo.md`

Cp

- Description: copy files and directories (use `-r` to copy directories)
- Formula/Syntax: `cp + files to copy + destination`
- 3 Examples:
 - `cp Downloads/wallpapers.zip Pictures/`
 - `cp -r ~/Downloads/wallpapers ~/Pictures/`
 - `sudo cp -r script.sh program.py home.html assets/ /var/www/html/`

Cut

- Description: used to extract a specific section of each line of a file and display it to the screen.
- Formula/Syntax: `cut + option + file(s)`
- 3 Examples:
 - `cut -d ':' -f1 /etc/passwd`
 - `cut -d ':' -f1,6 /etc/passwd`
 - `cut -d ':' -f1,7 /etc/passwd`

Grep

- Description: used to search text in a given file. Works on a line by line basis.
- Formula/Syntax: `grep + option + search criteria + file(s)`
- 3 Examples:
 - `grep -v 'war' ~/Documents/Books/war-and-peace.txt`
 - `grep -o 'pride' ~/Documents/Books/war-and-peace.txt`
 - `grep -n '^[A-Z]' ~/Documents/Books/war-and-peace.txt`

Head

- Description: displays the top N number of lines of a given file.
- Formula/Syntax: head + option + file(s)
- 3 Examples:
 - head ~/Documents/Book/dracula.txt
 - head -5 ~/Documents/Book/dracula.txt
 - head -1 ~/Documents/Book/dracula.txt

Ls

- Description: used for displaying all the files inside a given directory.
- Formula/Syntax: ls + option + directory to list
- 3 Examples:
 - ls -t ~/Documents
 - ls -lR ~/Pictures
 - ls -x ~/Documents

Man

- Description: an interface to the system reference manuals.
- Formula/Syntax: man + command
- 3 Examples:
 - man + head
 - man + ls
 - man + rm

Mkdir

- Description: used for creating a single directory or multiple directories.
- Formula/Syntax: mkdir + the name of the directory.
- 3 Examples:
 - mkdir wallpapers/'cities usa'
 - mkdir wallpapers/cars wallpapers/cities wallpapers/forest
 - mkdir -p wallpapers_others/movies

Mv

- Description: moves and renames directories.
- Formula/Syntax: mv + source + destination or mv + file/directory to rename + new name
- 3 Examples:
 - mv Downloads/homework.pdf Documents/
 - mv Downloads/english_homework.docx /media/student/flashdrive/
 - mv games/ wallpapers/ rockmusic/ /media/student/flashdrive/

Tac

- Description: concatenate and print files in reverse.
- Formula/Syntax: tac + option + file

- 3 Examples:
 - `tac todo.md`
 - `tac ~/Documents/todo.md`
 - `tac ~/Downloads/shopping.md`

Tail

- Description: displays the last N number of lines of a given file.
- Formula/Syntax: `tail + option + file`
- 3 Examples:
 - `tail ~/Documents/Book/dracula.txt`
 - `tail -5 ~/Documents/Book/dracula.txt`
 - `tail -1 ~/Documents/Book/dracula.txt`

Touch

- Description: used to create files or update files.
- Formula/Syntax: `touch + name of file`
- 3 Examples:
 - `touch ~/Downloads/games.txt`
 - `touch list_of_cars.txt script.py names.csv`
 - `touch "list of foods.txt"`

Tr

- Description: used for translating or deleting characters from standard output.
- Formula/Syntax: `Standard output | tr + option + set + set`
- 3 Examples:
 - `cat file.txt | tr ' ',''`
 - `cat program.py | tr "[:space:]" '\t'`
 - `cat file.py | tr -s "[:space:]" ''`

Tree

- Description: list contents of directories in a tree-like format
- Formula/Syntax: `tree + option + name of directory`
- 3 Examples:
 - `tree ~/Downloads/`
 - `tree -p ~/Downloads/`
 - `tree -s ~/Downloads/`

Question 2

How to work with multiple terminals open?

- Using the command, screen: which is installed using `'sudo apt install screen'`
 - Split vertically: `ctrl + a` then `|`
 - Split horizontally: `ctrl + a` then 'uppercase `S`'

- Switch between terminals: ctrl + a then tab

How to work manual pages?

- man + command to see the man page you want to see. You can then navigate using the up and down key. Press Q to exit the man page.
 - Can use grep to look for certain keywords.

How to parse (search) for specific words in the manual page?

- After accessing the man page; you can use / followed by the word you are looking for.

How to redirect output (> and |)

- command output + > + file
 - Examples:
 - Save the output of a command to a file:
 - ls -lA ~ > all-files-in-home.txt
 - Save the error generated by a command to a file:
 - ls -lA downloads/ 2> error-of-ls.txt
 - Save the error and success to the same file.
 - ls -lA downloads/ Pictures &> alloutput.txt
- command_1 | command_2 | command_3 | | command_N
 - Examples:
 - man ls | grep "human-readable"
 - head -2 file.lst | tail -1

How to append the output of a command to a file

- Used to overwrite any data inside the file.
 - ls -la > allmyfiles.lst
- TO keep the old data inside the file use >>.
 - ls -la >> allmyfiles.lst

How to use wildcards

- For copying and moving multiple files at the same time.
 - mv *.txt ~/Downloads/

How to use brace expansion

- For creating entire directory structures in a single command
 - mkdir -p music/{jazz,rock}/{mp3files,videos,oggfiles}/new{1..3}