Question 1

awk

- Description:
  - awk is a scripting language thats used for processing and displaying text
- Formula:
  - awk + options + {awk command} + file
- Examples:
  - How wto print the first field of a file:
    - awk -F : {print $1} /etc/passwd
  - How to start printing from a different line
    - awk NR > 3 {print} /etc/passwd
  - How to change a filed to upper case
    - awk -F : {print topper($1)}

cat

- Description:
  - Cat command is used for displaying the content of a file
- Formula:
  - cat + option + file(s) to display
- Examples:
  - Display the content of a file located in the pwd
    - cat todo.lst
  - Display content of a file using absolute path
    - cat ~/Documents/todo.lst
  - Display content of a file with line numbers
    - cat -n ~/Documents/todo.md

cp

- Description
  - copies files/directories from a source to a destination
- Formula
  - cp + files to copy + destination
- Examples
  - to copy directories using r function
    - cp -r + directory to copy +destination
  - to copy a file
    - cp Downloads/wallpapers.zip Pictures/
  - to copy a directory using absolute path
    - cp -r ~/Downloads/wallpapers ~/Pictures/

cut

- Description:
  - cut command is used to extract a specific section of each line of a file and display it to the screen.
- Formula
  - cut + option + file(s)
- Examples:
  - Display the list of all the users in your system
    - cut -d ':' -f1 /etc/passwd
  - Display a list of all the users in your system with their login shell
    - cut -d ':' -f1,7 /etc/passwd\
  - cut a file excluding a given field
    - cut -d ',' --complement -s -f3 users.txt

grep

- Description
  - Grep is used to search text in given file. Grep works line by line
- Formula:
  - grep + option + search criteria + file(s)
- Examples
  - search any line given that contains the word dracula in the file
    - grep 'dracula' ~/Documents/dracula.txt
  - grep -i
    - enables case sensitivity
  - grep -w
    - Matches only the given word (pattern) by itself.

head

- Description
  - Displays top number of lines given file
- Formula
  - head + option + file(s)
- Examples
  - Display the first ten lines of a file
    - head ~/Documents/book/dracula.txt
    - Display the first 5 lines of a file
      - head -5 ~/Documents/Book/dracula.txt
    - Display the first 20 lines of a file
      - head -20 ~/Documents/Book/dracula.txt

ls

- Description:
  - ls is used for listing the content of a given directory or the file/directory itself
- Formula:
  - ls + option + directory to list
- Example:

- List all files inside current working directory including hidden files
    - ls -a
- List all files inside given directory
    - ls -a ~/Pictures
- List all the options of the ls command
    - ls --help

man

- Description:
    - the bible! it describes the Linux shell commands
- Formula
    - man + command
- Examples:
    - Show all available pages of a command
        - man -a passwd
    - open man page of passwd command
        - man passwd
    - show the man page section of the passwd command
        - man -f passwd

mkdir

- Description:
    - is used for creating single directories or multiple
- Formula
    - mkdir + name of directory
- Examples
    - Creating a directory
        - mkdir wallpapers
    - Creating a directory using absoloute path
        - mkdir ~/wallpapers/forests
    - Creating a directory with a parent directory
        - mkdir -p wallpapers_other/movies

mv

- Description:
    - Moves and renames directories
- Formula
    - mv + source + destination
- Examples:
    - Renaming files or directories
        - mv + file/directory to rename + new name
    - To move a file from a directory to another using relative path
        - mv Downloads/homework.pdf Documents/
    - To move a file from one directory to another combining absolute path and relative path
        - mv Downloads /english_homework.docx /media/student/flashdrive/

tac

- Description:
    - Used for displaying the content of a file in reverse order
- Formula:
    - tac + option + file(s) to display
- Examples:
    - Displaying the content of a file located in pwd
        - tac todo.md
    - Displaying the content of a file using absolute path
        - tac ~/Documents/todo.md
    - Displaying the content using relative path
        - tac /home/downloads/todo.md

tail

- Description
    - tail commands displays last number of lines give by a file
- Formula
    - tail + option + file
- Examples
    - Displays the last 10 lines of a file
        - tail ~/Documents/book/dracula.txt
    - Display the last 5 lines of a file
        - tail -5 ~/Documents/Book/dracula.txt
    - Display the last 30 lines of a file
        - tail -30 ~/Documents/Book/Dracula.txt

touch

- Description
    - Used for creating files
- Formula:
    - touch +file name
- Examples
    - Create a file
        - touch list
    - Create a file using absolute path
        - touch ~/Downloads/games.txt
    - Create several files
        - touch list_of_cars.txt document.txt

tr

- Description
    - tr command is used for translating or deleting characters from standard output
- Formula
    - standard output | tr + option + set + set

- Examples
  - Translate one character to another
    - cat file.txt | tr '.' ','
  - Translate white space into tabs
    - cat program.py | tr "[:space:"] '\t'
  - Translate tabs into space
    - cat file.py | tr -s "[:space:]" ' '

tree

- Description
  - A recursive directory listing program that produces a depth-indented
- Formula
  - tree + directory
- Examples
  - Tree list current directory
    - tree
  - Tree list a directory
    - tree Downloads/
  - Tree list using absolute path
    - tree ~/Documents/

vim/nano

- Description
  - a text editor
- Formula:
  - nano + file name
  - vim + file name
- Examples:
  - Enter nano UI
    - nano
  - Enter Vim UI
    - vim

Question 2

- How to work with multiple terminals open?
  - Short cut is CTRL + Shift + N
- How to work with manual pages?
  - To open the man page you type man and the linux command that you would like to read the manual pages for
  - To navigate inside you use the arrow keys
  - to move through the man page one screen at a time use the space bar or pgup vice veresa
- How to parse (search) for specific words in the manual page
  - man -K keyword
- How to redirect output (> and |)

    - '>' command saves the output to a file name while the | applies the output to the next command
- How to append the output of a command to a file
    - '>' use command with file name
- How to use wildcards
    - Wildcards use letters and characters to specify a file name for searches
    - ls -A *.txt *.py
- For copying and moving multiple files at the same time
    - use the mv command
- How to use brace expansion
    - mkdir -r /challenge-lab6/{audio/docs/images}
- For creating entire directory structures in a single command
    - mkdir for making directories
    - mkdir -p for creating a parent directory