Intro to Computing 2020-21

All exercises should be attempted using any & all available resources (I.e. cheat sheets and the internet).

Command-line interface

- The Ubuntu terminal application provides a **bash shell** command line interface which provides powerful computing tools
- but can be challenging for new users to adopt.

Command-line interface vs graphical-user interface

Take home message: **The command line allows for fast and flexible processing, and is a powerful (often essential) tool for scientific computing**

Exercise 1 - using CLI make a folder and copy todays resources into it

Windows users

- in **anaconda prompt**

  conda install m2-base

Mac users

- Finder + “terminal”

ACTIVITY

- Navigate to your Documents directory using **cd**
- See where you are with **pwd**
- List the contents of your Documents directory using **ls**
- Create a new directory in Documents called Terminal_Exercises using **mkdir**
- Move Intro_computing_resources into Terminal_Exercises using **mv**

Exercise 2 - create, rename and delete files

Windows users

- in **anaconda prompt**

  conda install -c swc nano

ACTIVITY

- Navigate to your Terminal_Exercises directory using **cd**
- Create a new file in Terminal_Exercises called bash_intro.txt using **nano**
- Print the contents of bash_intro.txt using **cat**
- Create a new directory called Transfer
- Copy bash_intro.txt into Transfer using **cp**
- Rename bash_intro.txt to bash_expert.txt
- Delete the directory Transfer using **rm**

Exercise 3 - shell scripts and for loops

If time has run out, check out: https://swcarpentry.github.io/shell-novice/ (Loops and shell scripts) and https://swcarpentry.github.io/python-novice-inflammation-2.7/ (python command-line programs)

- Create a file called learning_shell.sh using **nano** (in a shell script we can reuse any CLI which we have learnt today)
- In learning_shell.sh write the for loop

```
for i in {1..5}
do
  echo "Welcome $i times"
done
```

- Run learning_shell.sh using **bash**
- Write a python file called evennumber.py using **nano** which imports **sys** and tests if a number is even
- Write a for loop in shell which loops through 5 numbers and prints if they are even or odd