ULAB Physics & Astronomy
Python Module 1

due: TBD

1. (10 points) Bash commands follow the syntax
`[command] [flags/options] [other arguments]`
Some commands have fixed behavior and do not require any additional parameters.

   However, you will often need to specify arguments. For example, `cd ~/Desktop` runs the command `cd` (change directory) and indicates that we would like to navigate to the desktop.

   Flags are dashes followed by flag name. We use flags to indicate that a program should behave differently. Each command has it's own set of flags and options. For example, `ls` with no flags lists the files in your current directory. When we include the list-all flag `ls -a` the program will list all files, including those that are normally hidden.

   For this exercise, describe the function of each of the following Bash commands. Explain what arguments you need to provide (if any). Hint: https://ss64.com/bash/

   (a) `pwd`

   (b) `cd`

   (c) `ls -l`

   (d) `mkdir`

   (e) `rm` and `rm -r`

   (f) `mv`

   (g) `cat`

   Test out of these commands on the terminal! (Be careful with `rm`, there is no recycle bin in Bash)

2. (10 points) In Bash, we call folders "directories." Directories can contain other directories or files. The root directory is the directory on your computer that contains all other directories and files. Often times, we will find the Applications, Users, etc. folders in the root directory.

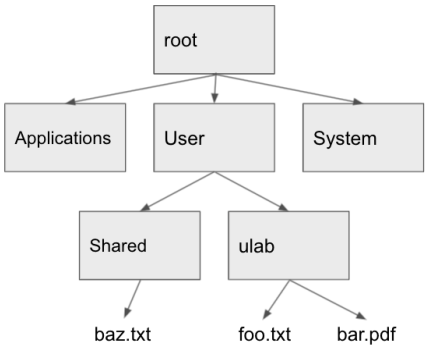
   We can specify the path (location) of a file as an absolute path or a relative path. The absolute path is the location of a file from the root directory. The relative path is the location of a file from the current working directory (`pwd`).

   Special symbols for directories:

   "`/`" root directory

   "`.`" current working directory

   "`..`" one directory above



   For example, `foo.txt` has absolute path `/User/ulab/foo.txt`. If our current directory is `/User/Shared`, then the relative path is `../ulab/foo.txt` (make sure you understand why this is the case!)

   For the following exercises, the current directory is `/User/Shared`.

   (a) What is the absolute path to the directory `baz.txt`?

   (b) What is the absolute and relative path to `bar.pdf`?

   (c) What is the relative path to `/User/System`?

   (d) The `cd` command accepts both absolute and relative paths. What is the command to navigate to the ulab folder?

3. (0 points) In lecture, we demonstrated that it is possible to create a `.py` file in any text editor and run our code on the command line. This is not the recommended workflow, but is good enough for us at the moment.

   (a) Open a text editor (e.g. Text Edit or Notepad) and type a print statement: `print('text here')`

   (b) Save the file as `'python_module_1.py'`

   (c) On the terminal, run the Python file with the command `python python_module_1.py`. If you encounter any errors, check to make sure that you're in the correct directory. You may have to use the command `python3 python_module_1.py`

   This question will not be graded, but we will assume you know how to do this moving forward.