#### Path and File questions

##### Answer the following: <br>

Assume you are in \*\*git bash\*\* on Windows / bash \*\*terminal\*\* on Mac OS):

0. Basics: <br>

1. What does `os.getcwd()` do in python code? e.g. <br>

`import os` <br>

`os.getcwd()`

It is a method that returns current working directory of a process.

2. If I want to `open()` a file in python code that is <br>

in the \*current working directory\*, what should I use as <br>

the first argument to the `open` function?

You should/use the file name typed out as a string. For example you would enter open(“some\_file.csv”)

3. If I want to `open()` a file in python code that is <br>

\*\*not\*\* in the \*current working directory\*, what would I need<br>

to do differently compared to the previous answer?

I would enter open(“../some\_file.csv”)

You need to type out the full path name by first typing os.chdir

1. Working directories practice <br>

The \*current working directory\* is:

`C:\Users\Bob\data\_science\1\Activities\01\Unsolved`

and file `data.csv` is located at:

`C:\Users\Bob\data\_science\1\Activities\01\Resources\data.csv`

Where is the file `data.csv` \*relative\* to the working directory?

It is located one folder up and then located in the Resource folder, which is the sibling folder of Unsolved.

1. Using the command `ls` with a \*relative path\* to the list the file ?

It list all of the folders and files located in the current working directory.

2. Using `os.path.join` from python code run from the working directory? <br>

(e.g.) you are in: <br>

`C:\Users\Bob\data\_science\1\Activities\01\Unsolved`

and have the file: <br>

`C:\Users\Bob\data\_science\1\Activities\01\Unsolved\foo.py`, <br>

and within the python file `foo.py`, you have the line of code: <br>

`csv\_path = os.path.join( FILL IN HERE )` <br>

and you will use `csv\_path` as an argument to `open()` or `pd.read\_csv()` <br>

and you run `python foo.py` from the aforementioned current working directory?

This command will link to the file foo and to open the file, you will use the command csv\_path = os.path.join(“foo.py”)

And to read the file, the command open(csv\_path).

3. How would you use `cd` to change the working directory

to the one containing `data.csv`?

I would type cd ../data.csv

2. More working directory practice <br>

If the working directory is:

`/home/jane/data\_science/1/Activities/01/Unsolved`

and file `data.csv` is located at:

`/home/jane/data\_science/1/Activities/01/Unsolved/data.csv`

Where is the file data.csv \*relative\* to the working directory

1. Using `ls` with a \*relative\* path to list the file

It is located in the Unsolved folder. Which is the child folder of 01.

2. Using `os.path.join`

I would use os.path.join(“Unsolved/data.csv”)

3. Even more working directory practice <br>

If the working directory is:

`/home/jane/data\_science/1/Activities/01/Unsolved`

and file `data.csv` is located at:

`/home/jane/data\_science/data.csv`

Where is the file `data.csv` \*relative\* to the working directory

1. Using `ls` ?

2. Using `os.path.join` ?

4. Even mooooore working directory practice <br>

If the working directory is:

`C:\Users\Bob\data\_science\1\Activities\01\Unsolved`

and the file `data.csv` is located at:

`C:\Users\Bob\Desktop\data.csv`

Where is the `data.csv` \*relative\* to the working directory

1. Using `ls` ?

2. Using `os.path.join` ?

3. How would you use cd to change the working directory

from `C:\Users\Bob\data\_science\1\Activities\01\Unsolved` to

`C:\Users\Bob\Desktop`

a. Using `cd` with \*relative\* notation?

Cd ../../../../../../Desktop

b. Using `cd` with \*absolute\* notation?

Cd C:\Users\Bob\Desktop

c. Using `cd` with `~`? (`~` is a shortcut for home directory)

cd ~ Users\Bob\Desktop

5. Windows related questions: when referencing file paths on Windows:

a. What is the difference between `/` and `\` ? The forward slash is the Unix root directory setting and backslash is the Windows root directory setting.

b. What is the difference between `\` and `\\` ? The single backslash is used to show the Windows directory settings and the double back slash is used to comment in programming languages such as C++, Java, etc.

6. Everyone:

What does `./` mean? It means it is the current directory.

What does `../` mean? It means it is one level up of the current directory.

What does `../../` mean? It means you are going up two levels from the current directory.

What does `.././` mean? It means you are going one level up the directory and going to drill down to another folder within that parent folder.

If I am in `C:\Users\Bob\Desktop`, where directory does `cd ../../`

take me to?

If I am in `C:\Users\Bob\data\_science\foo\bar`, <br>

how would I use `cd` to get to `C:\Users\Bob\Desktop` <br>

1. using \*relative\* path? cd ..\..\Desktop

2. using \*absolute\* path? cd C:\Users\Bob\Desktop

7. What is the concept of a workspace in Visual Studio Code? How does it relate to open folder?

8. What is the working directory from which python is executed when you run `jupyter notebook`?

9. What is a kernel in the context of `jupyter notebook`?

10. What is a conda environment? For example, `(base)` ?

11. \*\*BONUS\*\* - in git bash or mac terminal, how do I use the `find` command to find all python source files in my home folder and all descendents? That is, all files ending in `.py`