

Directory Structures and changing directories

We quickly learned that no one has done much command line programming. Back in the day..... (But that just dates me...)

But we need to understand some command line work and how a computer is set up to make our life easier. We don't need to know much yet. But we need to know how to move around directories. when programming I usually find it easier to program in the directory I have things saved and to use relative directories. This will make sense in a second. So here are a few lines of code in order to show a directory structure. Lets look and then practice.....

The easiest way to avoid directories is to go to the directory you are working in and open your iPython notebook from there. But sometimes you can't do that. But we can use some linux or dos commands to move around

If you want to know the path to your current directory type `pwd`

Your answers will look different than mine. So don't freak out. Take your time and this will make sense

Today's goals

- Become more comfortable with directories
- work in different directories
- know absolute and relative paths

Some common nomenclature

- `pwd` - tells you the path or directory you are in
- `ls` - lists everything in that folder or directory you are in
- `cd` - change directory. Lets you change a directory
 - `cd name` changes directory into that folder
 - `cd ..` moves you up a directory
 - `cd /` moves you to root or the top of all your folders

Now Typing `pwd` shows you the path of where you are working

```
In [1]: pwd
```

```
Out[1]: '/Users/bmaillou/Documents/work-teaching/python/spring 25/BigDataPython/02-Directories'
```

If you want to know what is in your directory type `ls` or `"ls"` on a mac or `"dir"` on a pc

In [2]: `ls`

```
directory-structure-mac-2025.ipynb
directory-structure.ipynb
directory-structure.pdf
intro-to-python-types-print-lists.ipynb
intro-to-python-types-print-lists.pdf
```

We can move up a directory using `cd ..`

In [3]: `cd ..`

```
/Users/bmaillou/Documents/work-teaching/python/spring 25/BigDataPython
```

In [13]: `# ls` *#delete the hashtag and run ls to see what is in the directory. Mine*

now you can move down a directory. Tab complete will help you.

In [5]: `cd 02-Directories/`

```
/Users/bmaillou/Documents/work-teaching/python/spring 25/BigDataPython/02-Directories
```

we can move to root (root is the main directory and I think it is called root after a tree..)

In [6]: `cd /`

```
/
```

now we can copy and paste and move all the way back. Having no spaces in you file and folder names makes life simpler

In [7]: `cd '/Users/bmaillou/Documents/work-teaching/python/spring 25/BigDataPython/02-Directories'`

```
/Users/bmaillou/Documents/work-teaching/python/spring 25/BigDataPython/02-Directories
```

In [8]: `pwd`

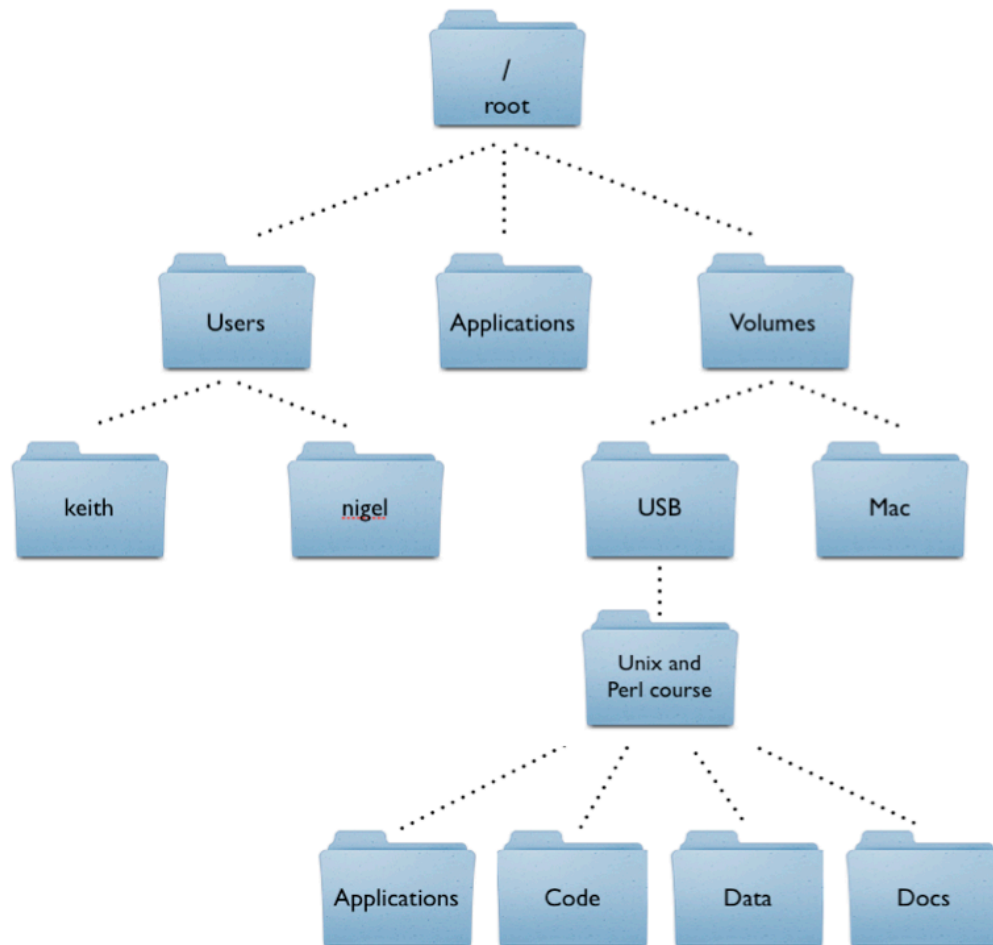
Out[8]: `'/Users/bmaillou/Documents/work-teaching/python/spring 25/BigDataPython/02-Directories'`

Now I am going to show a picture below to show you what the directory structure looks like on a mac and then on a pc. But also look at the code and this is how you add an image using ipython! I turned on or imported the display library and then we are using it. This won't work for you yet because you don't have that image. I will show you how to add images later

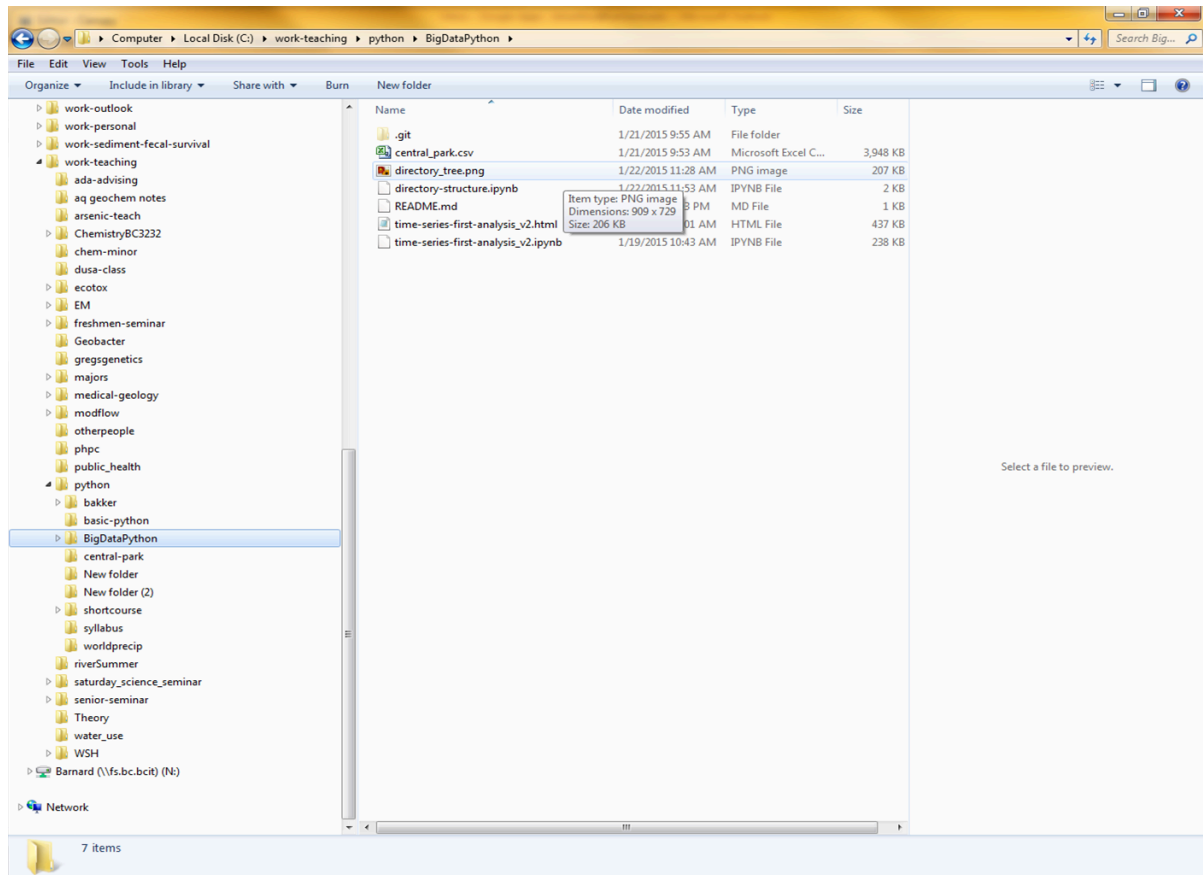
In [10]: `from IPython.display import Image`

In [33]: `Image(filename='directories/directory_tree.png')`

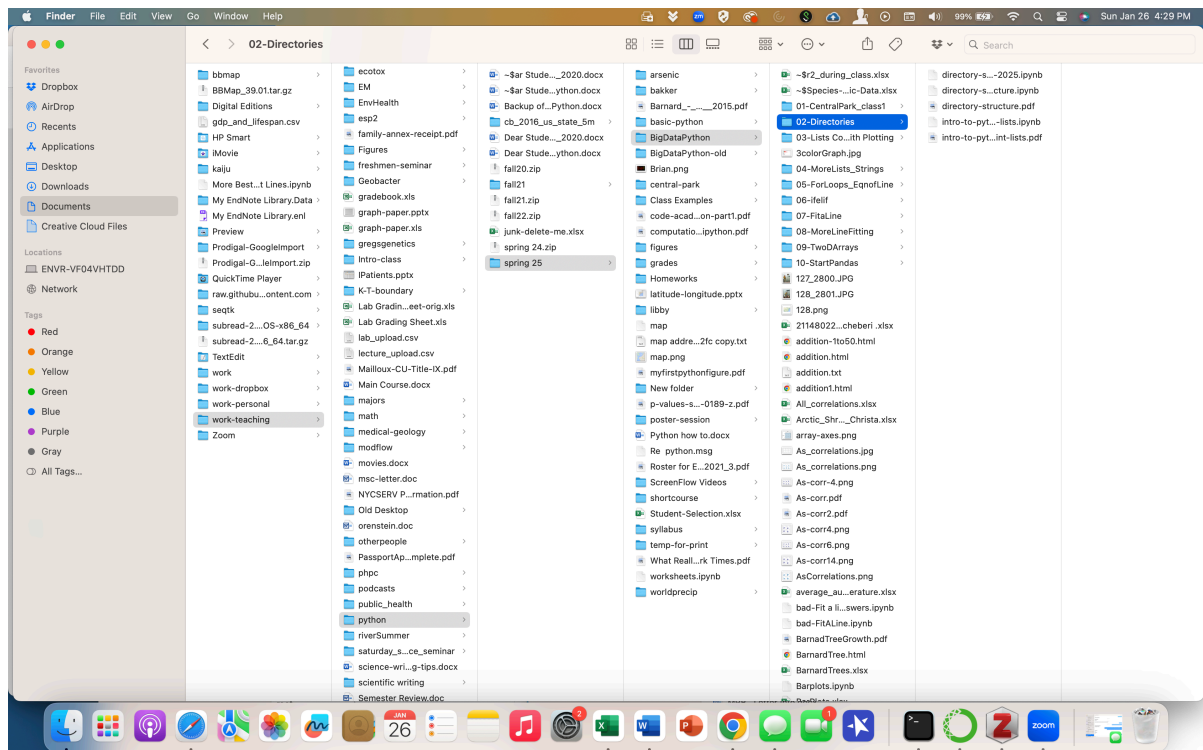
Out [33]:

In [34]: `Image(filename='directories/folder-structure-home-comp.png')`

Out [34]:

In [11]: `Image(filename='mac-files.png')`

Out [11]:



In []:

Let's see if this all makes sense...

Your goal should be able to:

- download a photo
- move to the correct directory
- open it.

You could also open them with an absolute path! As I did for the python image. Absolute paths can get you in trouble if you move folders around so i try to keep things with relative paths.

In []:

can you download an image from the web and show it? Here is a webpage that gives you a lot of information about making ipython notebooks look good!

<http://nbviewer.ipython.org/github/adrn/ipython/blob/1.x/examples/notebooks/Part%20%20%20Rich%20Display%20System.ipynb>

Add something about Directory and organizing a computer and delete the mkdir

You can also make a new directory if you need it with mkdir

In [45]: `mkdir "space space"`

I added the quotes because I had white space in the name. Now that you are coding I would remove white space from names. It keeps life simple. Make sure you are comfortable moving around and getting to the usb key. What images are you going to load?

Finally if you want to learn about

\ backslashes

and

/ forward slashes

go here https://pc.net/helpcenter/answers/backslash_vs_forward_slash

Some thoughts

- I never make a directory in Python

- I know where I am working
- I open my notebook from that directory
- I save files I need into that directory
- I use the Mac Finder or Windows Explorer to make new directories as needed.
- On a Mac I like to see my harddrive on the desktop. THIS REALLY HELPS! You can turn this option on by going to Finder->Preferences and then making sure the hard drive box is checked.

Before going forward!

- You need to turn to a neighbor
- Tell the neighbor what directory you are working in and where you will store files this semester

In []: