

Introduction to Terminal

technical instructions for the course 76-271

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Goals

The goal of these instructions is to familiarize users with the terminal application on Mac operating systems, as well as the following terminal commands:

`ls, cd, mkdir, pwd`

These commands will not only help students later on in the course, but also in their future in working with computers.

Readers should be familiar with Finder, or Mac OS's folder navigation application.

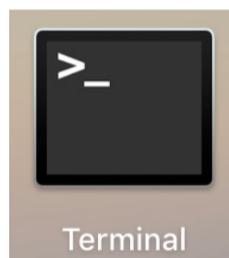
Background

These instructions are inspired by a version of the instructions formally distributed through the course 15110, and have been changed to better serve terminal beginners. The changes made are in response to my own experience of the course, and fellow classmate's feedback of this particular set of instructions. I improved the previous version through adding a narrative to the instructions, using screenshots to create a better mental model for the user, and leaving space for the user to try things out on their own.

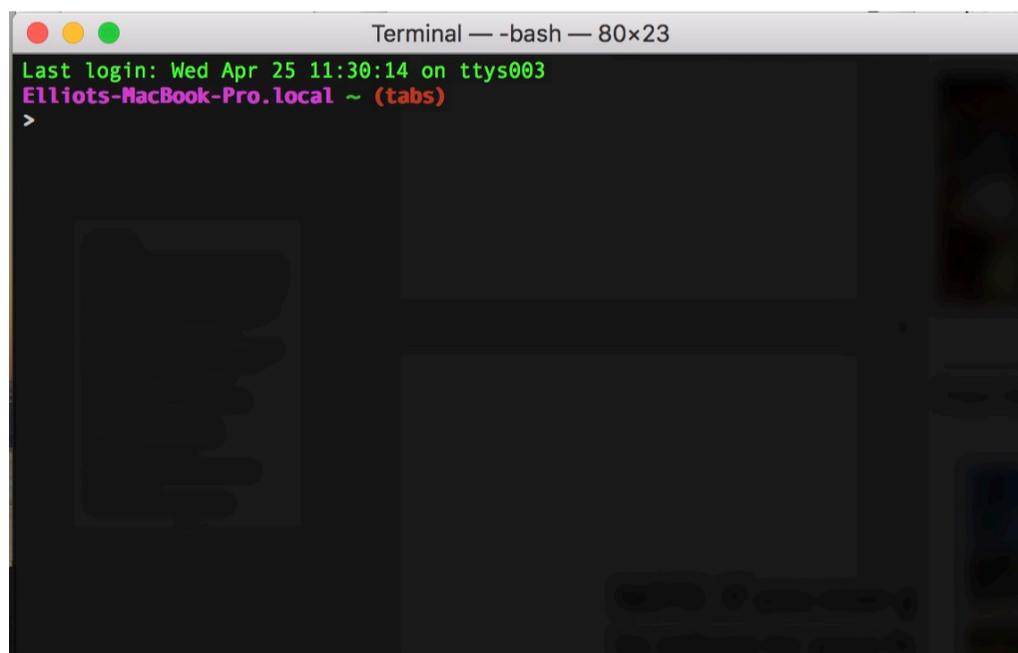
1. Getting started: opening terminal

A. To start, make sure you are at your desktop, or the first computer screen you see when you log in.

B. Next, look for the **Terminal** application on either your application page, or through Spotlight Search. It should look like this:

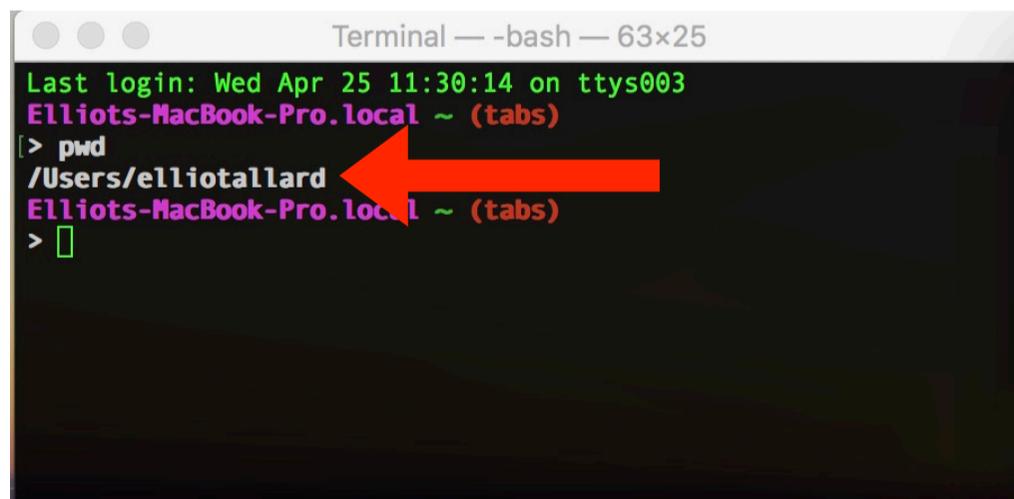


C. Open the **Terminal** application. It should look somewhat like this, with text in the left hand corner, and a > symbol.



2. Orienting yourself in the terminal

- A. Click in the **Terminal** application, and start typing words. You will see that they appear to the right of the > symbol.
- B. Delete whatever you may have wrote, as we will now start typing commands.
- C. Then, type **pwd** into the terminal, and press the *return* (or enter) key on your keyboard.
- D. Underneath from where you entered the command, there should be a line of text. This line of text is called your current **directory**, which is a fancy word for folder. At the end of the line of text (after the last /) is the current folder you are located in. This is what mine looks like:

A screenshot of a macOS Terminal window. The title bar reads "Terminal — -bash — 63x25". The terminal content shows a login message: "Last login: Wed Apr 25 11:30:14 on ttys003". Below that is the prompt "Elliot's-MacBook-Pro.local ~ (tabs)". The user has entered the command "> pwd" and the terminal has responded with the output "/Users/elliottallard". A red arrow points from the right towards the output text. The prompt "Elliot's-MacBook-Pro.local ~ (tabs)" is repeated below the output, followed by a new prompt ">".

```
Terminal — -bash — 63x25
Last login: Wed Apr 25 11:30:14 on ttys003
Elliot's-MacBook-Pro.local ~ (tabs)
> pwd
/Users/elliottallard
Elliot's-MacBook-Pro.local ~ (tabs)
> 
```

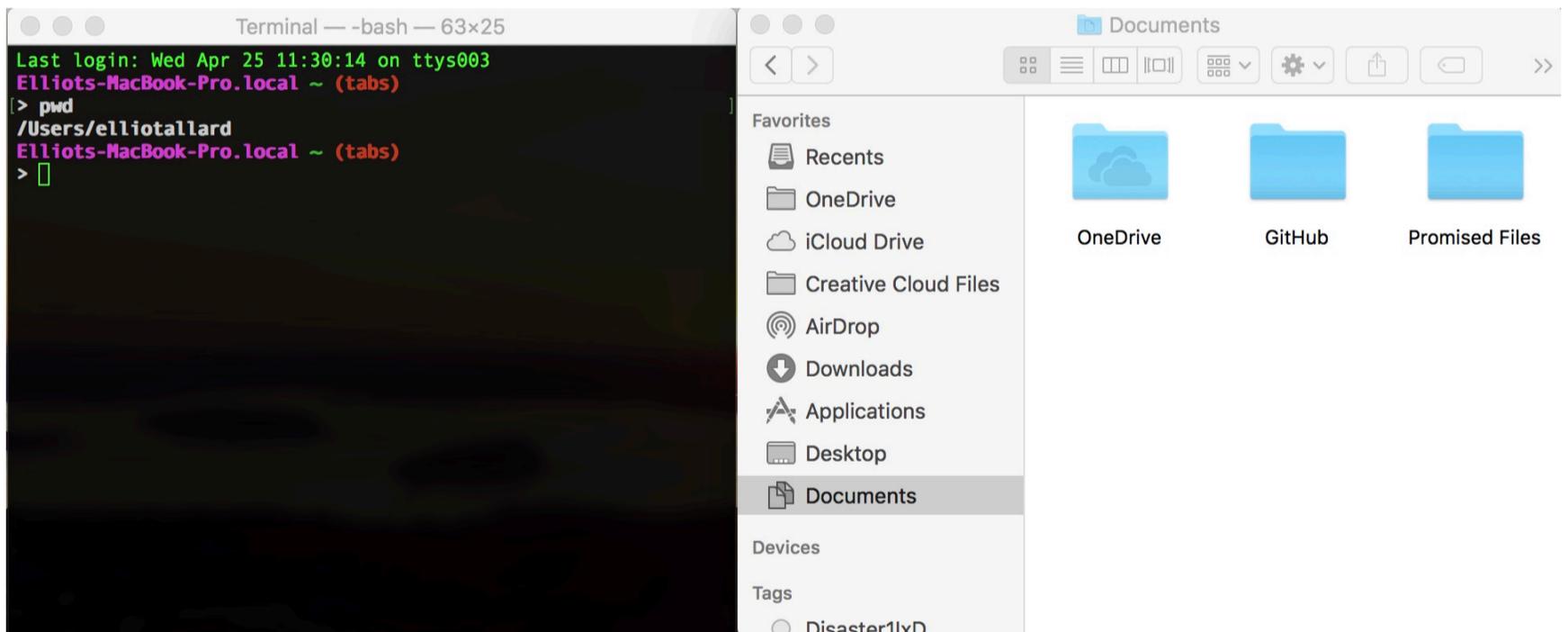
- The `pwd` command returns your location in your directory

3. Navigating through your directory

- A. Next, open the **Finder** application, which is located on the dock. It should look like this:

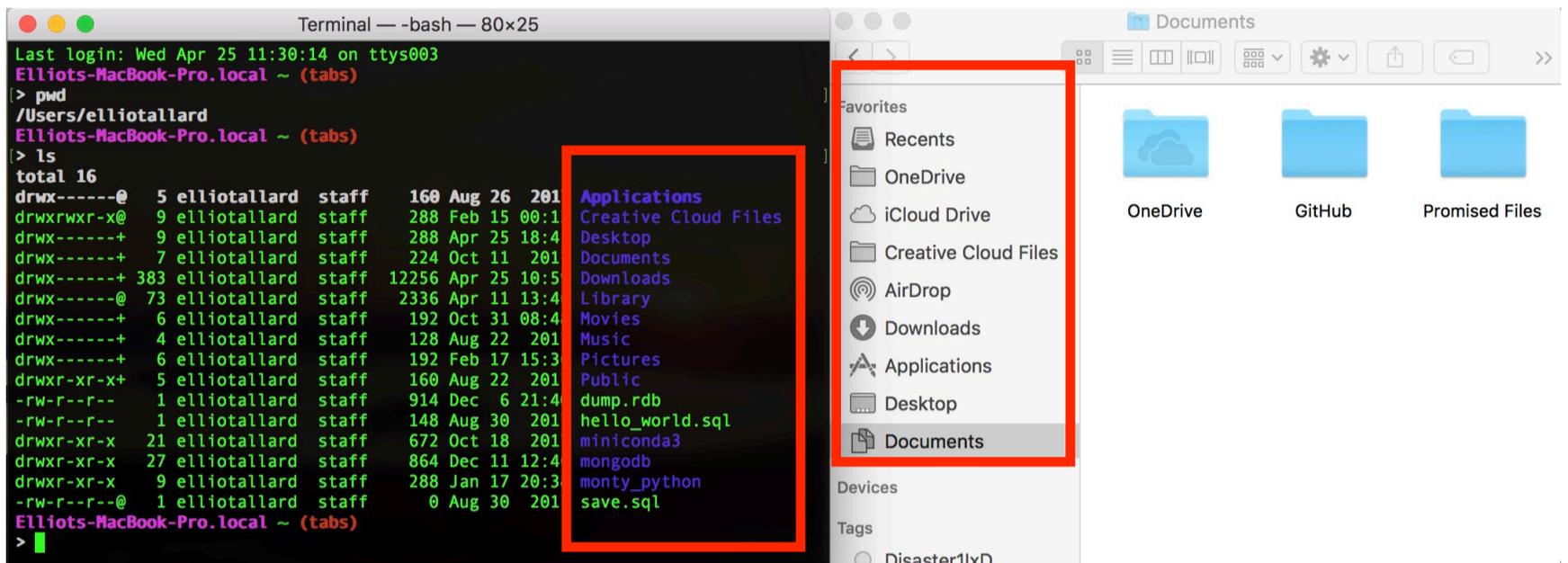


- B. Once the **Finder** window is open, place it's window adjacent to your **Terminal** window, as shown below:



- C. Then, type **ls** (in capital letters: LS) into the terminal, and press *return*.
- D. Take a look at what returns, and see if you can figure out what it is returning (*hint: look at what is displayed in the **Finder** window*)

D. It returns a list of folders that can be found on the left hand side of the **Finder** window. Similarities are shown in the red boxes below:



- The `ls` command returns a list of folders in which you can access

E. Congratulations! You've learned 2 out of 4 commands. Pat yourself on the back.

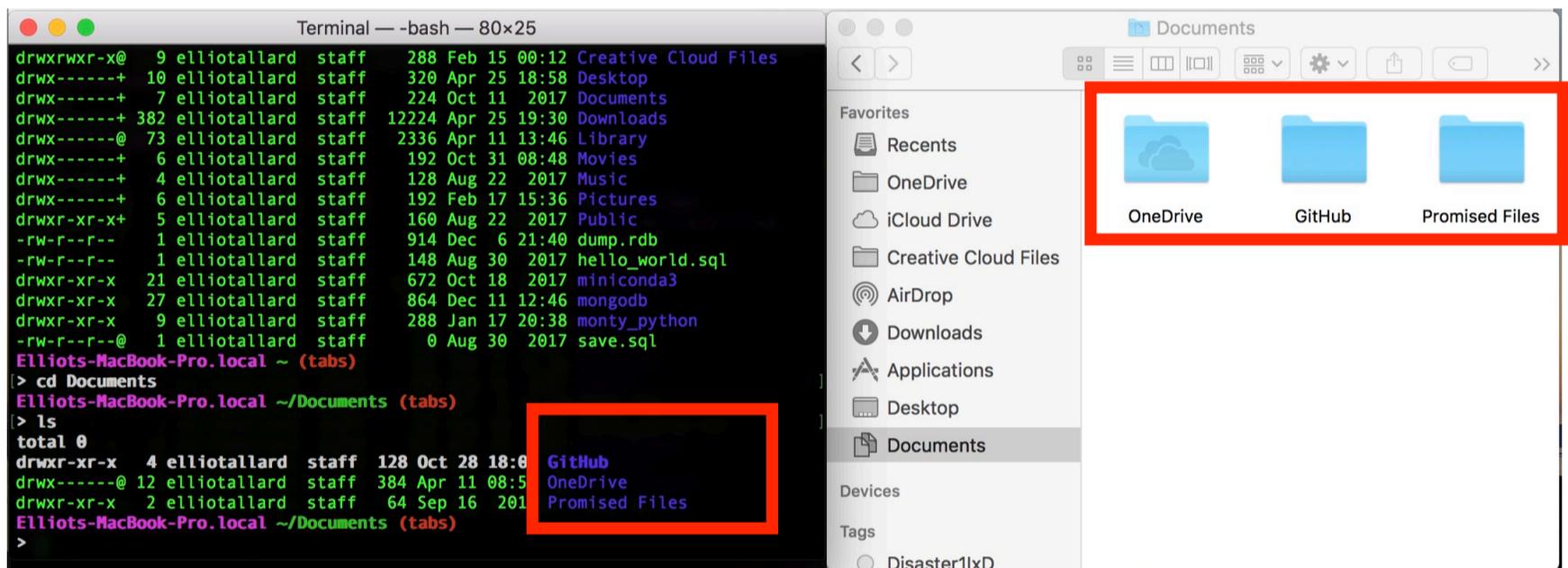
F. Next, we will switch into the Documents folder.

In the **Terminal**, type `cd Documents`, and press *return*.

G. Then, use the `ls` command in the terminal.

G. Take a look at what **ls** returns, and see if you can figure out what it is (*hint: open the Documents folder in the **Finder** window, look at the folder names and compare to the **Terminal** output*)

H. Everything in the Documents folder (in **Finder** window), is displayed in your terminal where you ran your **ls** command!



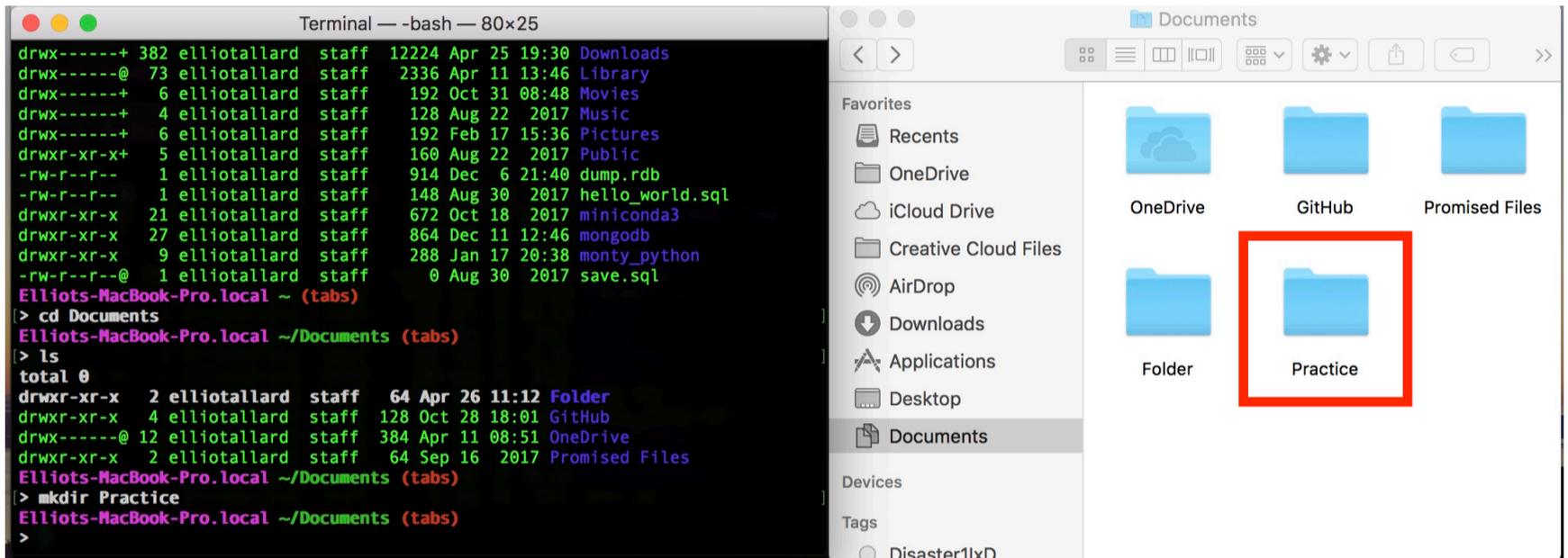
- The `cd <Folder Name>` command switches you into the folder, `<Folder Name>`. The `<Folder Name>` you switch into must be accessible, or shown when you enter the `ls` command.

I. Nice! Now, for our next steps, we will make a new folder using terminal commands.

4. Making a directory

A. Now, we will make a new folder, named Practice, within our Documents folder.

Type **mkdir Practice** into the terminal, and press *return*.



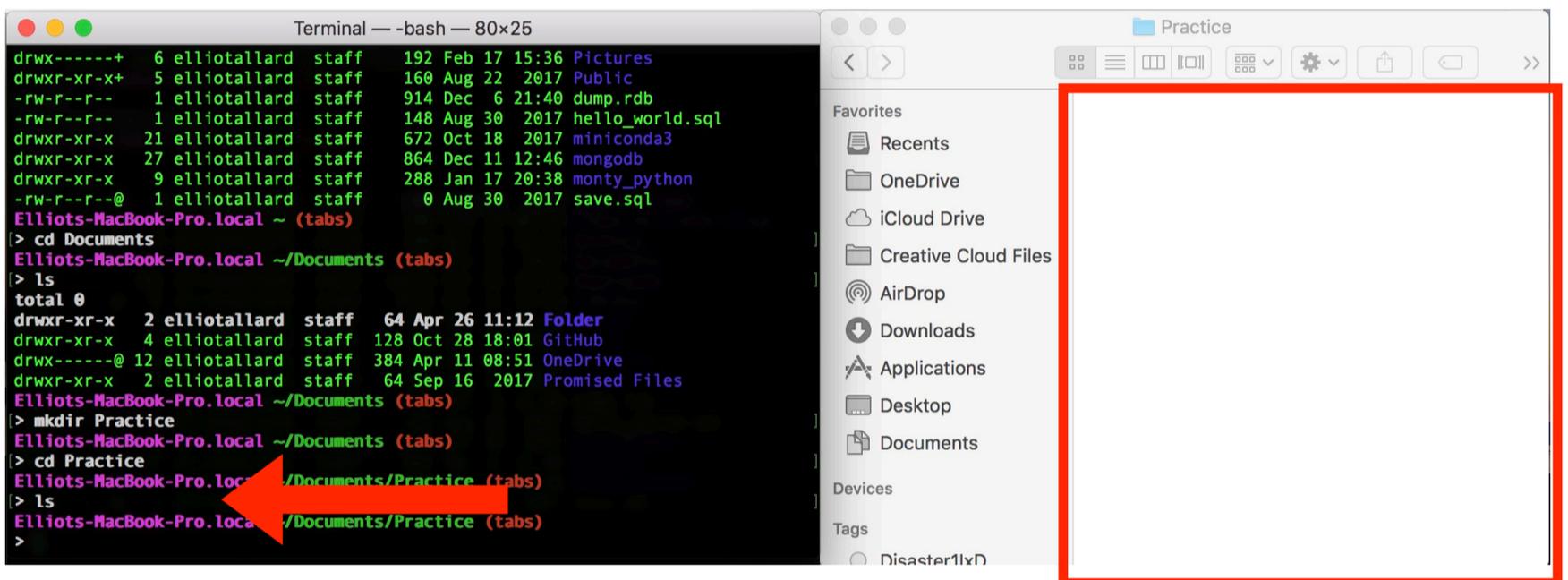
Woah! Look what popped up in our Documents folder! A brand new Practice folder!

- The `mkdir <Folder Name>` makes a new folder, named `<Folder Name>`, in your current location. Remember, you can find where you are in your computer with the `pwd` command.

B. Now, switch into this folder by typing **cd Practice**, and pressing *return*.

C. Then, perform the **ls** command. At the same time, in your **Finder** window, click into your Practice folder to see what's inside.

D. As you can see in both **Terminal** and **Finder**, there is nothing in this new folder, Practice.



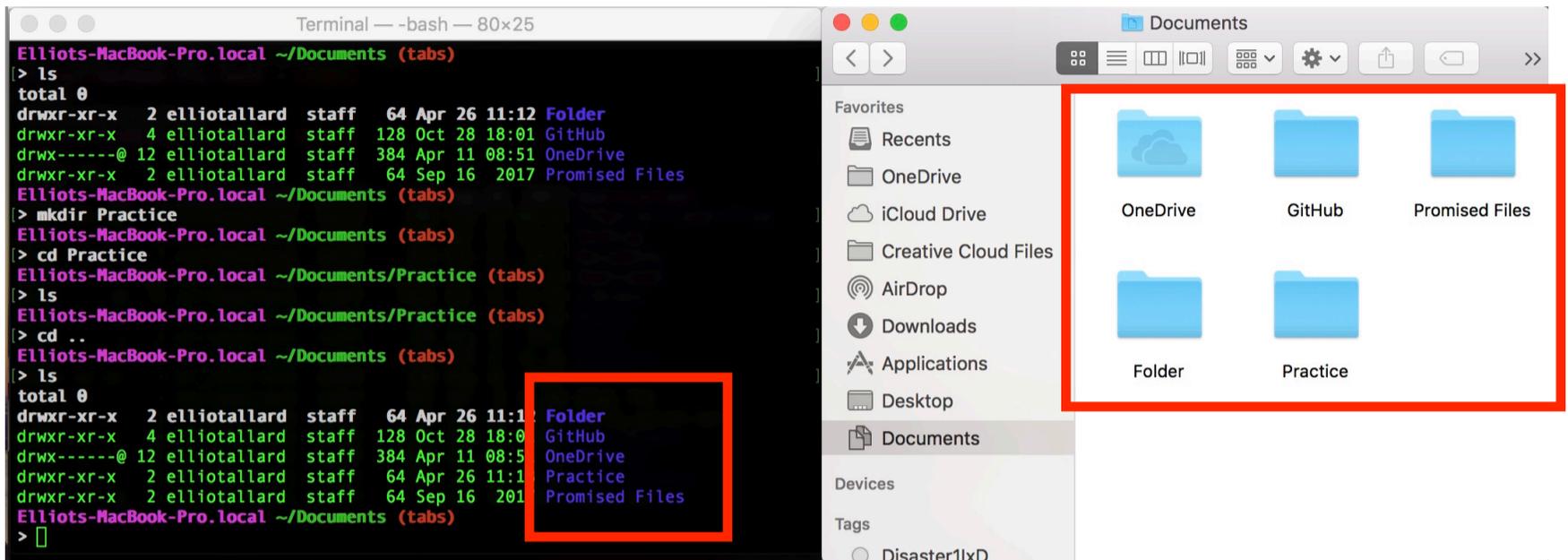
E. Now, for our last step, we are going to switch up to our Documents folder.

In your terminal, please type **cd ..** (cd, followed by two periods), and press *return*.

F. Then, press **ls**, followed by another *return*.

G. In your **Finder** window, hit the back button to go back up to the Documents folder.

H. As you can see, you are back up to your Documents folder!



- *The `cd ..` command will switch you up one folder level.*
- I. Also, you can delete the Practice folder in your **Finder** now, unless you like it.
- J. Look at that! You've learned how to move up a directory, officially using all 4 commands we set out to learn!

5. In conclusion

Congratulations! You are now a terminal professional! ... okay maybe not. But, you definitely know more now! You have learned the following commands:

pwd : displays your current working directory (where you are located in your files)

ls : list all files or directories in the current folder

cd <directory> : change into the specified <directory> from your current directory

cd .. : change to parent directory (move up a directory)

mkdir <directory> : make a new folder, named <directory>, in the present working directory

Hopefully you have a better idea of what the word *directory* means (it is a folder, or where your files are stored), and also the terminal in general. The terminal can be much faster for performing certain tasks (once you get used to it, of course), and some computer programs require its use. With that being said, you can repeat this tutorial for more practice, and start fiddling around with it on your own. Again, congratulations. You're well on your way to becoming fluent in terminal! Good luck in 15-110 :)