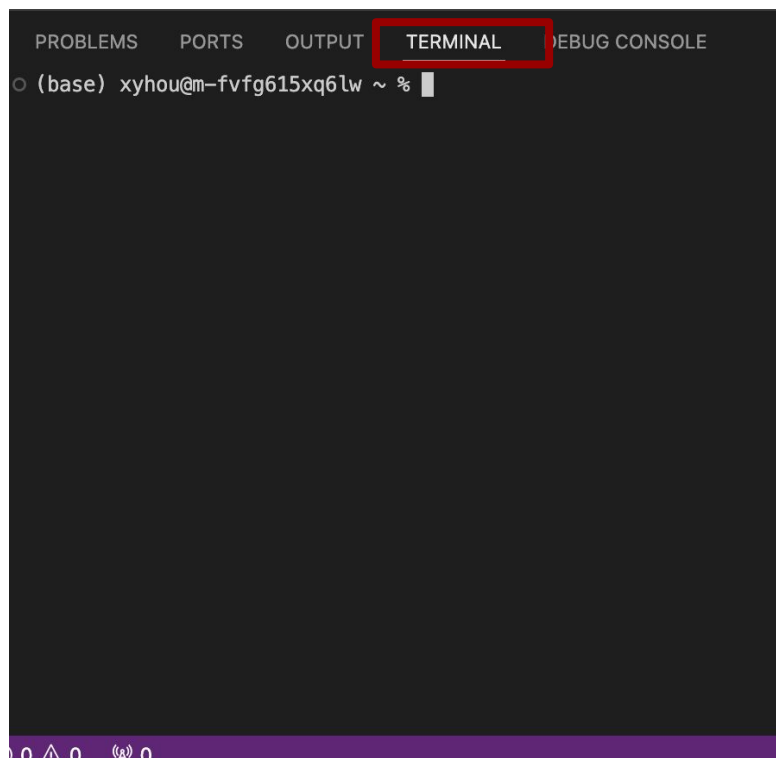
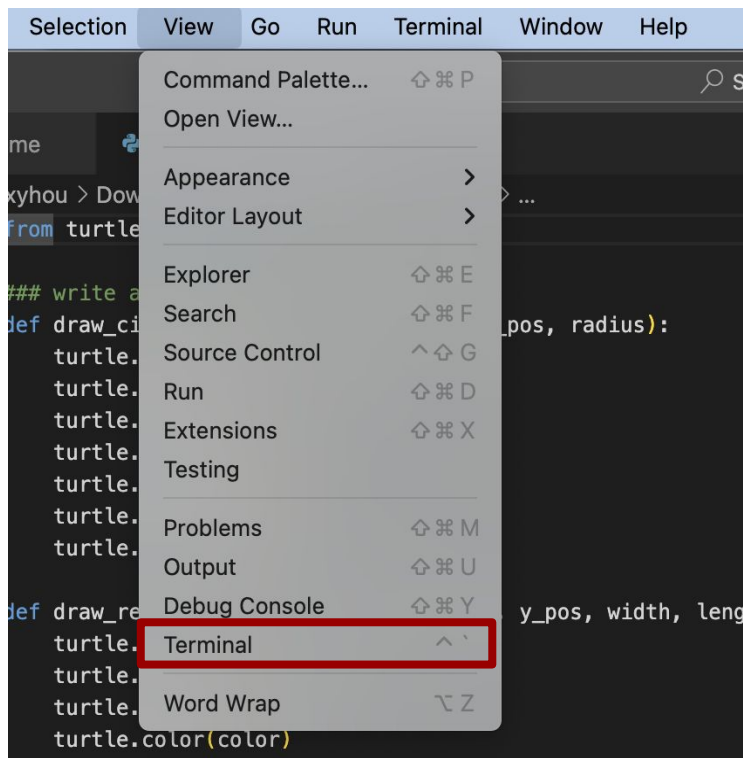


SI 201 Discussion 3:

The Terminal, Git, and Rectangles

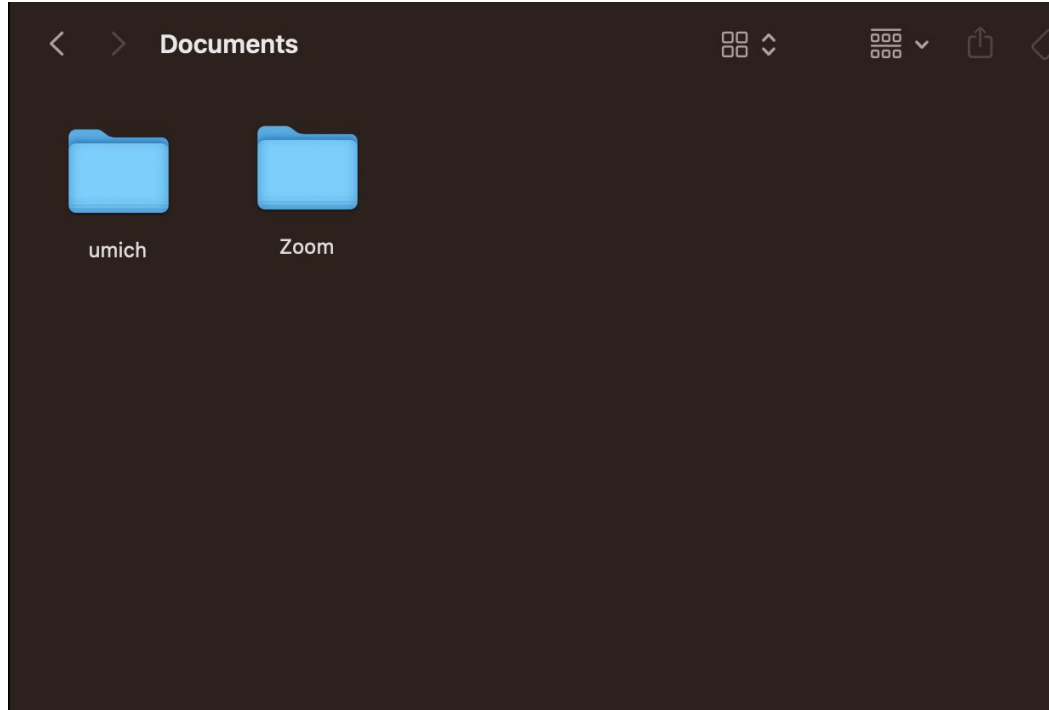
The Terminal

The Terminal - Command Line Interface (CLI)



VS Code Integrated Terminal

The Terminal - Graphical User interface (GUI)



Git & Github

Typical Git Flow - will need it for future assignments

1. `git clone <link>`
2. `git add <file(s) you are modifying>`
3. make your changes
4. `git commit -m "<message>"`
5. `git push`

use `git status` before, after, and throughout to keep track

Time to Practice!

Practice

1. Object oriented programming
 - a. Create a rectangle class and methods to calculate the area and compare two rectangles.
 - b. Create the rectangle instances, and call the methods
2. Git : Commit code after each method and push to GitHub in the end
 - c. Please commit at least 4 times while working on your project; you might commit each time you finish writing a new function or method.

Discussion 3 Assignment

Accept the github classroom assignment and clone the repo
<https://classroom.github.com/a/XsM1x4Qd>

If you are having issues:
Canvas Files -> Discussions ->
Discussion 3 -> Discussion3.py

Rectangle class

Problem 1. Create the constructor "`__init__`" method with arguments **width** (an integer), **height** (an integer)

- (1) It sets an instance variable, "**width**" to the passed argument, width
- (2) It sets an instance variable, "**height**" to the passed argument, height

Problem 2. Create the "`__str__`" method

It returns a string, "**A rectangle with width <width> and height <height>**"

for example, "**A rectangle with width 3 and height 6**"

Rectangle class

Problem 3. Create the "**area_calculator**" method

It returns the area of the rectangle (float)

Area of rectangle = length × width.

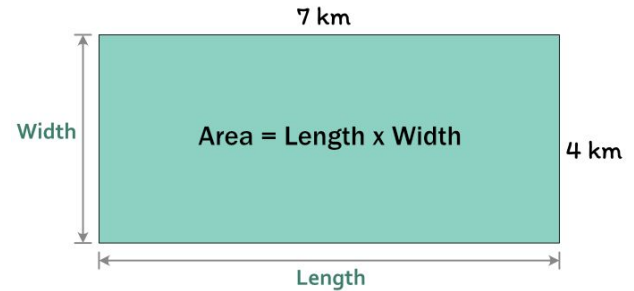
Problem 4. Create the "**__eq__**" method with two arguments: **self** and **other** (an object)

It returns a boolean

True if the two rectangles have the same width
and the same height

False otherwise

Area of a Rectangle



$$A = LW$$

$$A = 7 (4)$$

$$A = 28 \text{ km}^2$$

Sample output

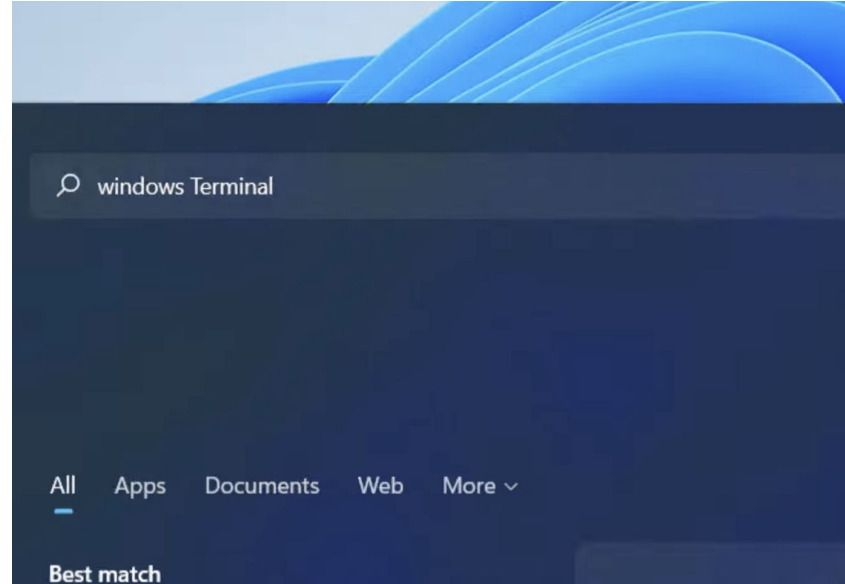
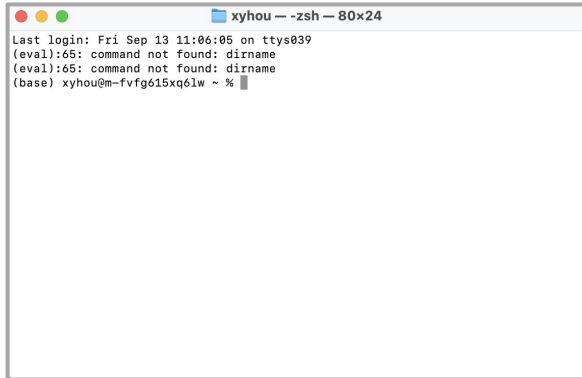
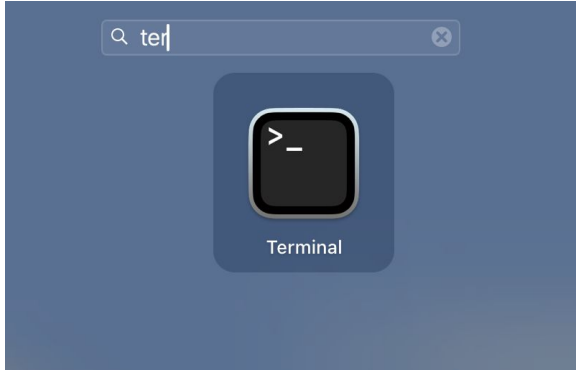
```
r1: A rectangle with width 10 and height 10  
Area: 100
```

```
r2: A rectangle with width 10 and height 15  
Area: 150  
Equal: r1 == r2? False
```

```
r3: A rectangle with width 10 and height 15  
Area: 150  
Equal: r2 == r3? True
```

Additional Tips about Git & Terminal

The Terminal - Command Line Interface (CLI)



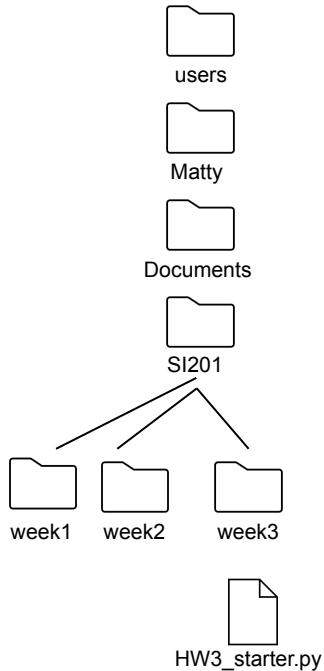
Laptop Terminal

Basic Commands - Try it on your terminal!

GUI	CLI Command	Example
* current folder	<code>pwd</code>	<code>pwd</code>
* display folder content	<code>ls</code>	<code>ls</code>
navigate/ change location	<code>cd</code>	<code>cd SI201</code>
make a new folder	<code>mkdir</code>	<code>mkdir my_new_folder</code>

Paths

`cd` takes a *path* as an argument of which there are two kinds:



Relative path

If you are in "SI201"

```
cd week3
```

If you are in "Matty"

```
cd Documents/SI201/week3
```

If you are in "week2"

```
cd ../week3
```

Special Characters:

current directory = `.`

parent directory = `..`

home directory = `~`

root directory = `/`

Absolute path

Path from root directory

```
cd /users/Matty/Documents/SI201/week3
```

Path from home directory

```
cd ~/Documents/SI201/week3
```

Command's Purpose	MS-DOS	Linux	Basic Linux Example
Copies files	copy	cp	<code>cp thisfile.txt /home/thisdirectory</code>
Moves files	move	mv	<code>mv thisfile.txt /home/thisdirectory</code>
Lists files	dir	ls	ls
Clears screen	cls	clear	clear
Closes shell prompt	exit	exit	exit
Displays or sets date	date	date	date
Deletes files	del	rm	<code>rm thisfile.txt</code>
"Echoes" output to the screen	echo	echo	<code>echo this message</code>
Edits text files	edit	gedit([a])	<code>gedit thisfile.txt</code>
Compares the contents of files	fc	diff	<code>diff file1 file2</code>
Finds a string of text in a file	find	grep	<code>grep word or phrase thisfile.txt</code>

Command's Purpose	MS-DOS	Linux	Basic Linux Example
Formats a diskette	<code>format a:</code> (if diskette is in A:)	<code>mke2fs</code>	<code>/sbin/mke2fs /dev/fd0</code> (/dev/fd0 is the Linux equivalent of A:)
Displays command help	<code>command /?</code>	<code>man</code> or <code>info</code>	<code>man command</code>
Creates a directory	<code>mkdir</code>	<code>mkdir</code>	<code>mkdir directory</code>
Views contents of a file	<code>more</code>	<code>less</code> ([b])	<code>less thisfile.txt</code>
Renames a file	<code>ren</code>	<code>mv</code> ([c])	<code>mv thisfile.txt thatfile.txt</code>
Displays your location in the file system	<code>chdir</code>	<code>pwd</code>	<code>pwd</code>
Changes directories with a specified path (<i>absolute path</i>)	<code>cd pathname</code>	<code>cd pathname</code>	<code>cd /directory/directory</code>
Changes directories with a <i>relative path</i>	<code>cd..</code>	<code>cd ..</code>	<code>cd ..</code>
Displays the time	<code>time</code>	<code>date</code>	<code>date</code>
Shows amount of RAM in use	<code>mem</code>	<code>free</code>	<code>free</code>

LOCAL

REMOTE

