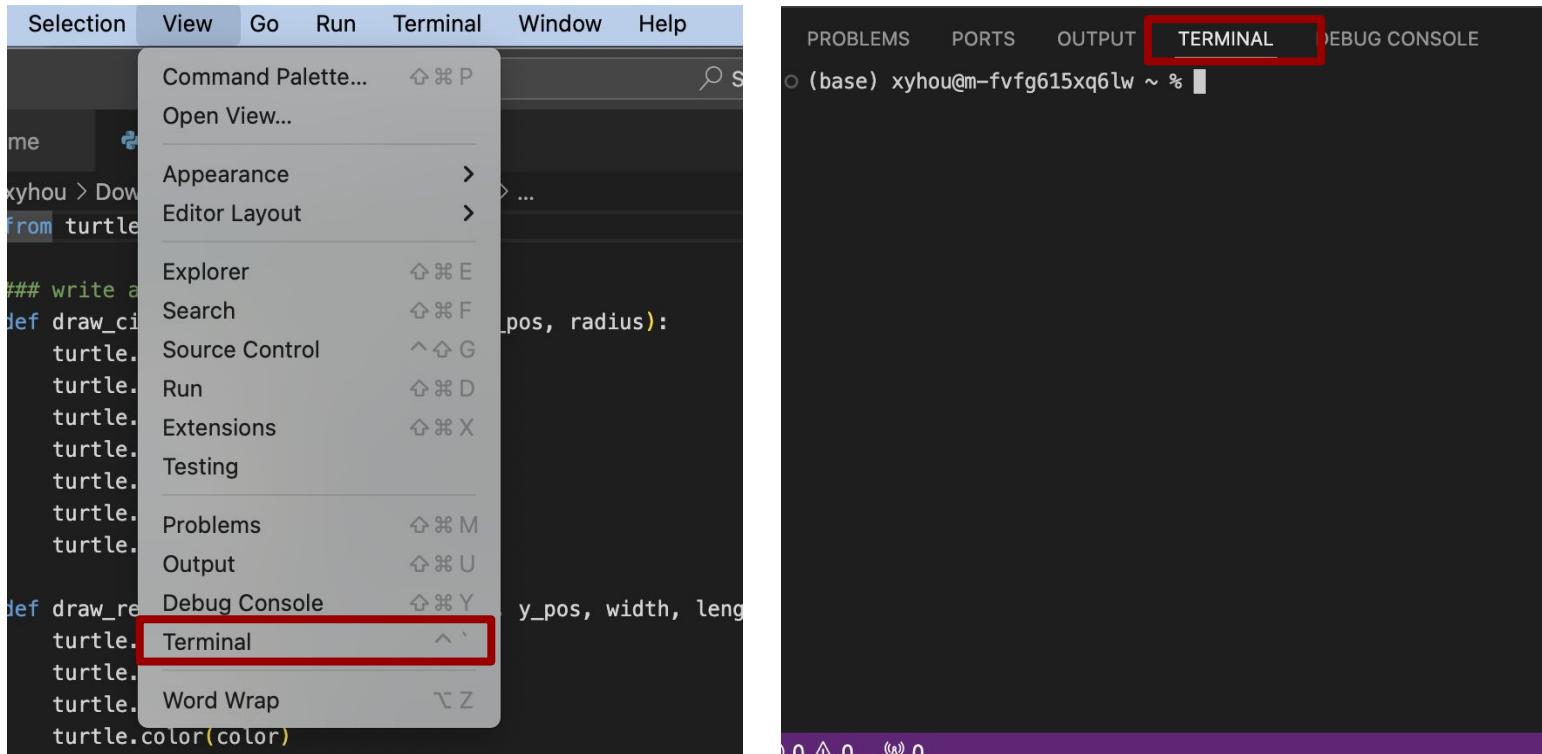


SI 201 Discussion 3:

The Terminal, Git, and Rectangles

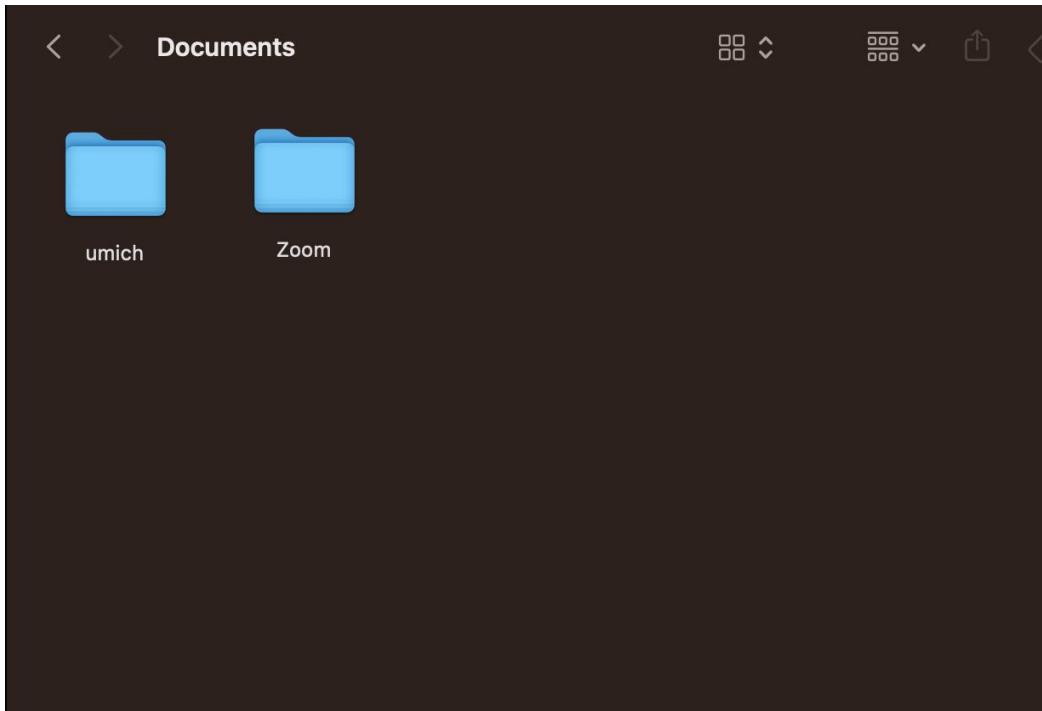
The Terminal

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

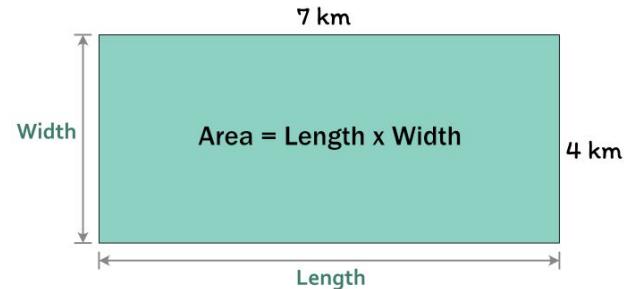
arguments: **self** and **other** (an object)

It returns a boolean

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

False otherwise

Area of a Rectangle



$$\begin{aligned}A &= LW \\A &= 7(4) \\A &= 28 \text{ km}^2\end{aligned}$$

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Sample output

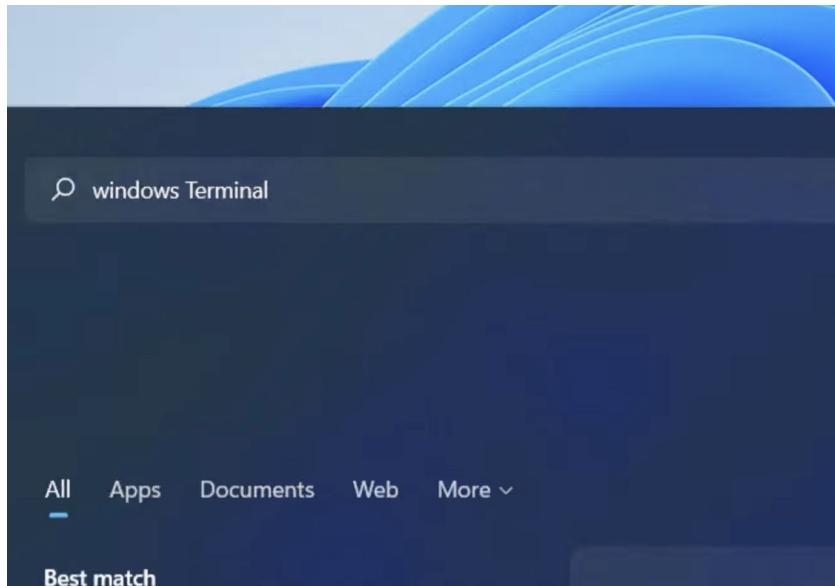
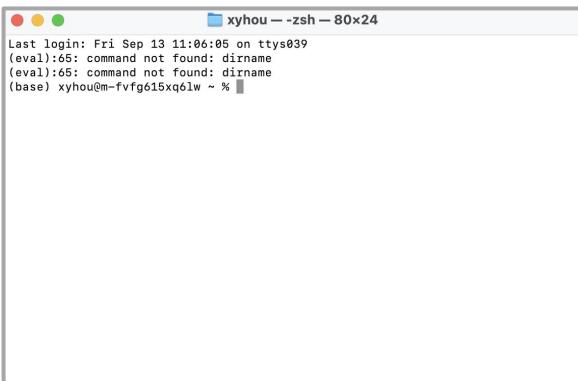
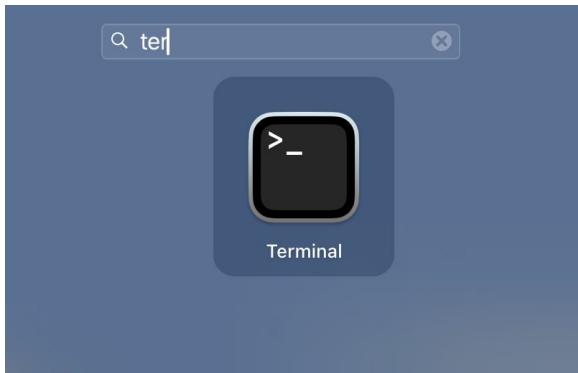
```
r1: A rectangle with width 10 and height 10  
Area: 100
```

```
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)



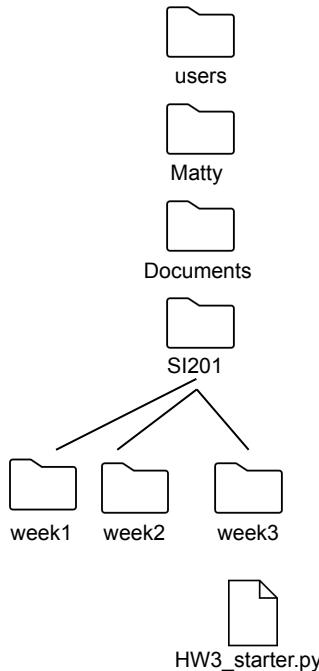
Laptop Terminal

Basic Commands - Try it on your terminal!

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

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

Absolute path

Path from root directory
cd /users/Matty/Documents/SI201/week3

Path from home directory
cd ~/Documents/SI201/week3

Special Characters:
current directory = .
parent directory = ..
home directory = ~
root directory = /

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

LOCAL

REMOTE

Working
Directory

Staging
Area

Repository

Repository

`git add`

`git commit`

`git push`

`git reset`

`git pull`

`git clone`

