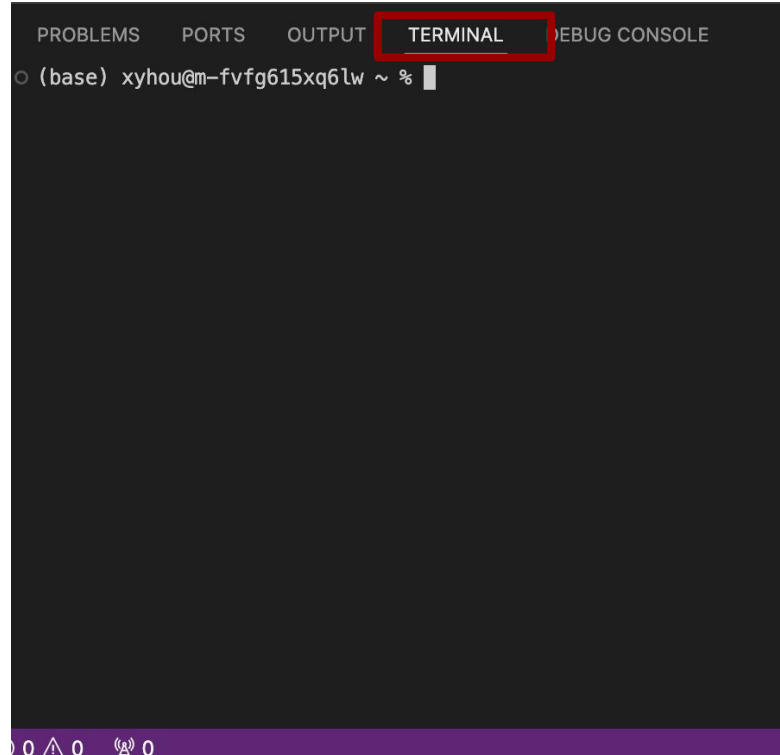
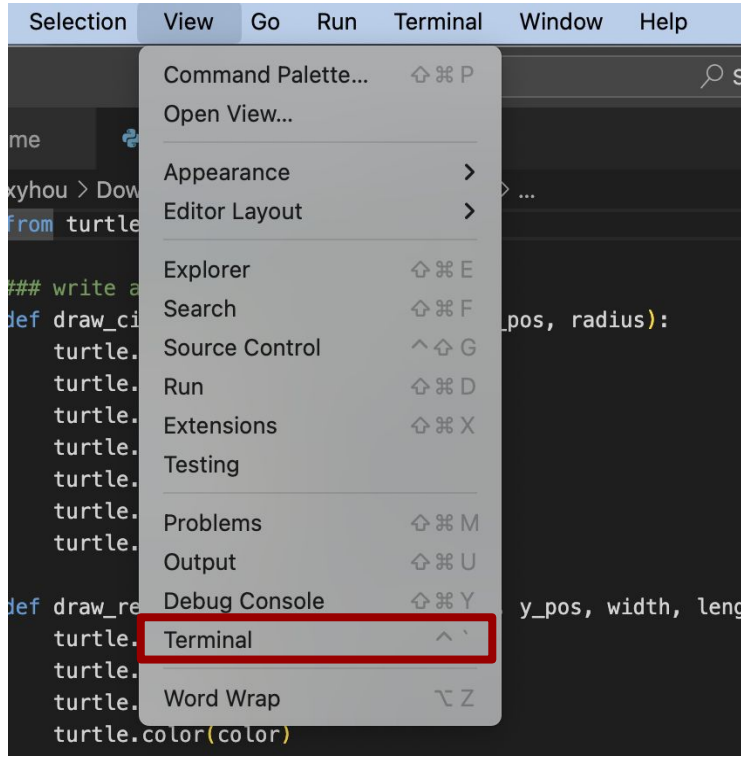


# **SI 206 Discussion 4:**

## **The Terminal, Git, and Rectangles**

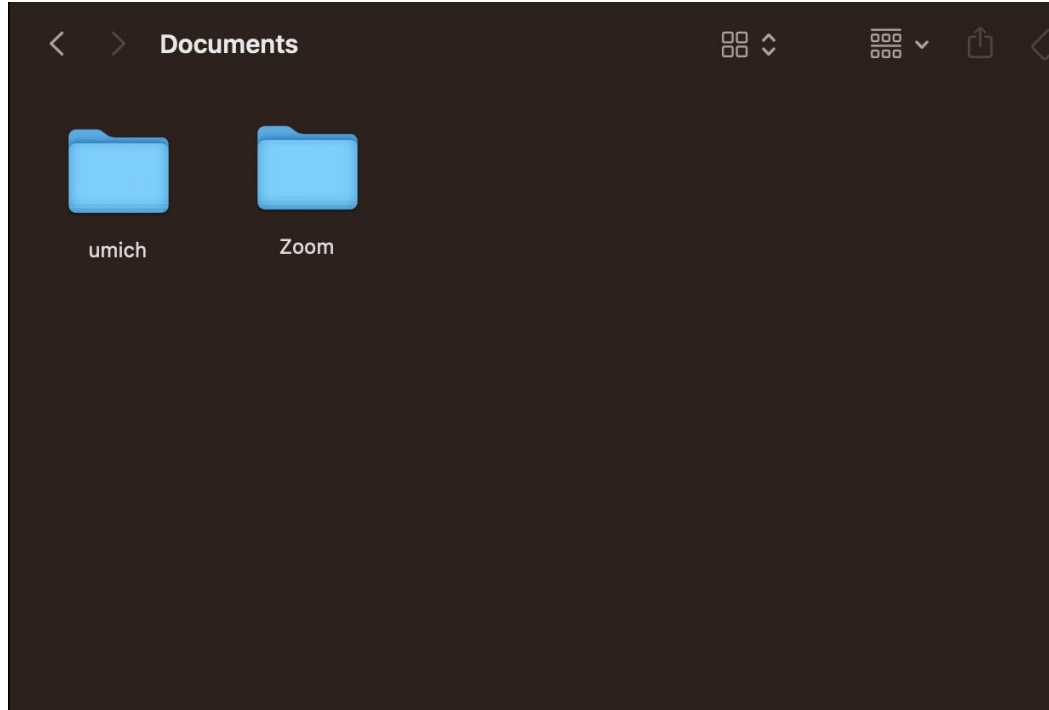
# The Terminal

# 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 perimeter.
  - 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 a function or method.



# 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.

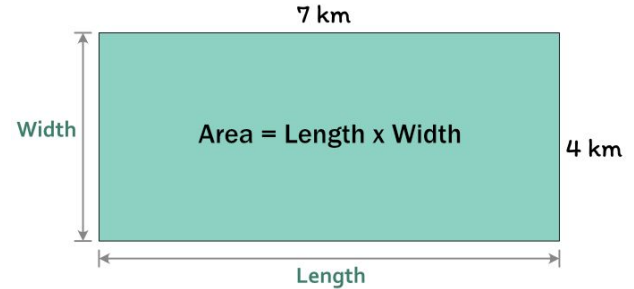
**Problem 4.** Create the "**\_\_eq\_\_**" method with two arguments: **self** and **other** (an object)

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

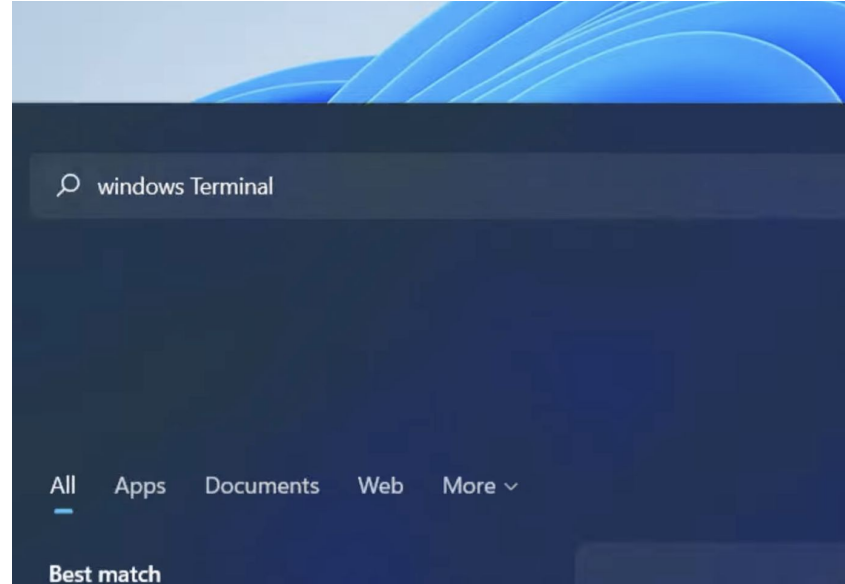
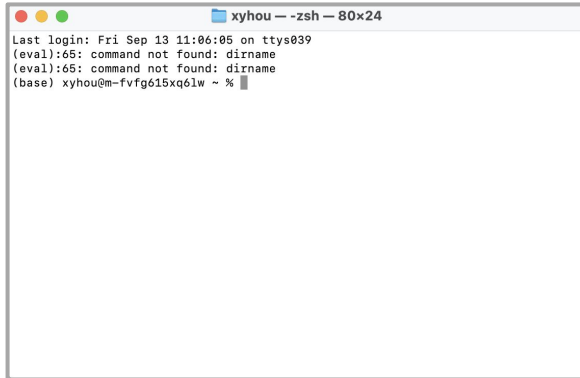
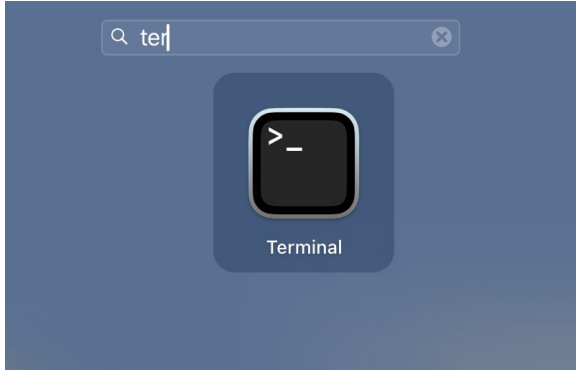
```
r1: A rectangle with width 10 and height 10  
Area: 100
```

```
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

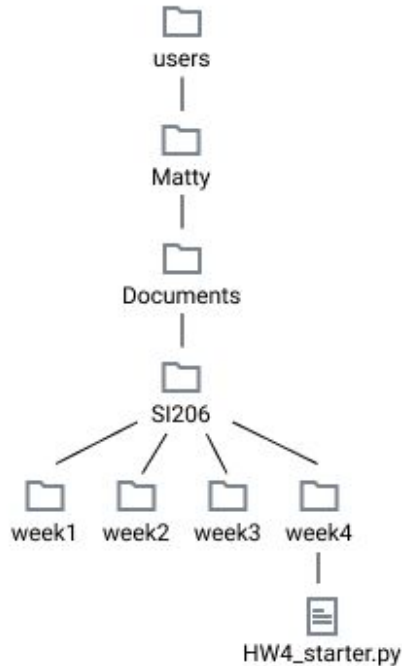
# Basic Commands - Try it on your terminal!

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 SI206</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:

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



## Relative path

If you are in "SI206"

`cd week4`

If you are in "Matty"

`cd Documents/SI206/week4`

If you are in "week3"

`cd ../week4`

## Absolute path

Path from root directory

`cd /users/Matty/Documents/SI206/week4`

Path from home directory

`cd ~/Documents/SI206/week4`

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

