Coding For Other Coders

Commenting and Formatting your Code

Learning Goals

You will learn how to...

Write clear and maintainable code that is easy to read.

Write clear internal documentation (comments) that explain your code.

What does this program do?

```
a = input('Give me a word!')

b = ''.join(reversed(a))

print(b)
```

What does this program do?

```
'''
Reverse String
Takes a word as input
Outputs the string in reverse!

'''

word = input('Give me a word! ') # Get input from user

output = ''.join(reversed(word)) # Flips the string

print(output) # prints out the result
```

Conclusion: Commenting is Important!

Why Should We Care?

- Helps to make the steps in your program easier to follow
  - Helps others to understand your code.
  - Easier to share and collaborate with teammates.
  - Helps YOU to understand your code (if you return to a previous project)

- *Debugging*: Easier to find errors when the the code is more user-friendly

How can we make our code easier for other people to understand?

- **Commenting your code** to explain WHAT something is doing
- Commenting your code to explain WHY you did it this way
- Including a title section to explain THE PURPOSE of your program
- **Using meaningful names** to make the code easier to understand
- **Formatting the code** with intent to make it easier to follow

“Code can only tell you *how* the program works; comments can tell you *why* it works.”

https://blog.codinghorror.com/code-tells-you-how-comments-tell-you-why/

How to Write Comments in Python? Method 1

In Python we use the # (hashtag) to create a comment.

a hashtag tells Python to IGNORE anything on that line after the

Variables ::: You can create a comment on any line

myString = "the best" # a description This line of code will stop at the #

myInt = 5; This line of code will not execute at all. Great for testing!!

How to Write Comments in Python? Method 2

```
# You can also use: (Put this underneath your other code)

'''
(3 apostrophes)
Every line afterwards will be commented

This creates a COMMENT PARAGRAPH

End the comment paragraph by using 3 more apostrophes
'''

print(myString)  # This code will run as normal.
```

What does it mean to explain your code?

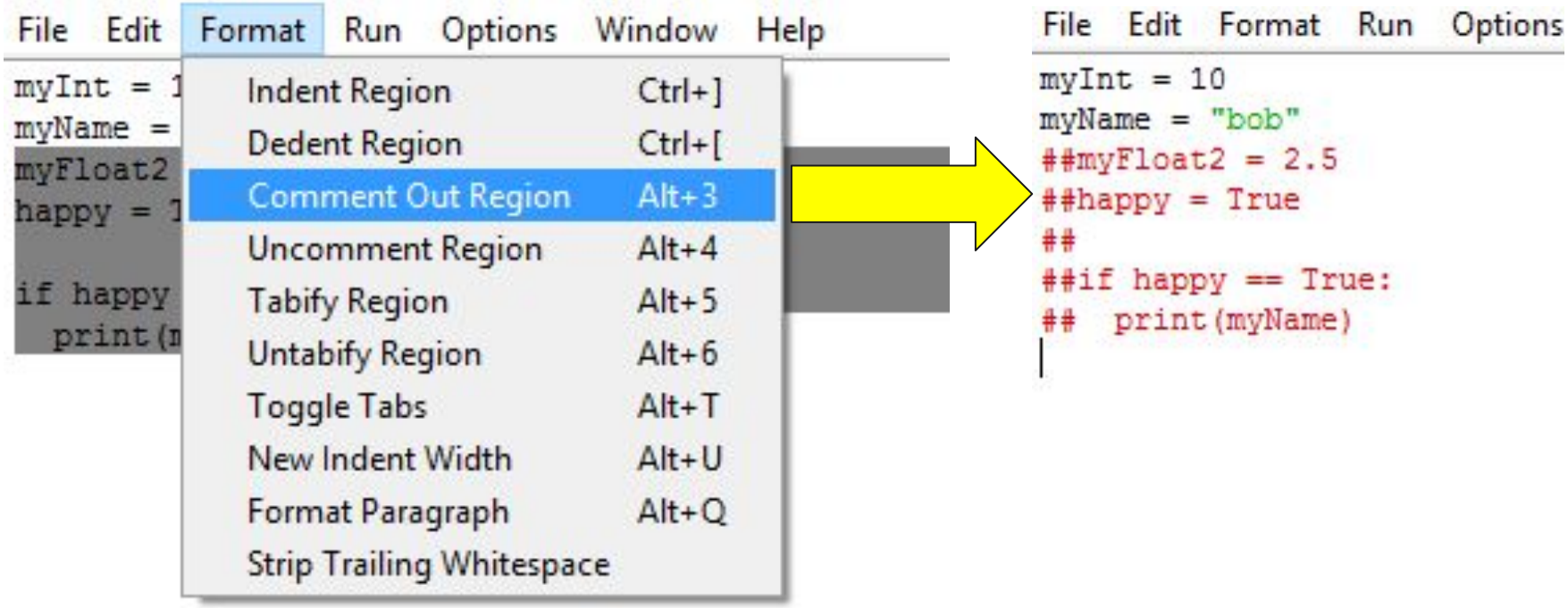
think of comments like you are explaining your code to someone who doesn't know code. What would you say to describe an important line?

Which of the following is more **helpful**?

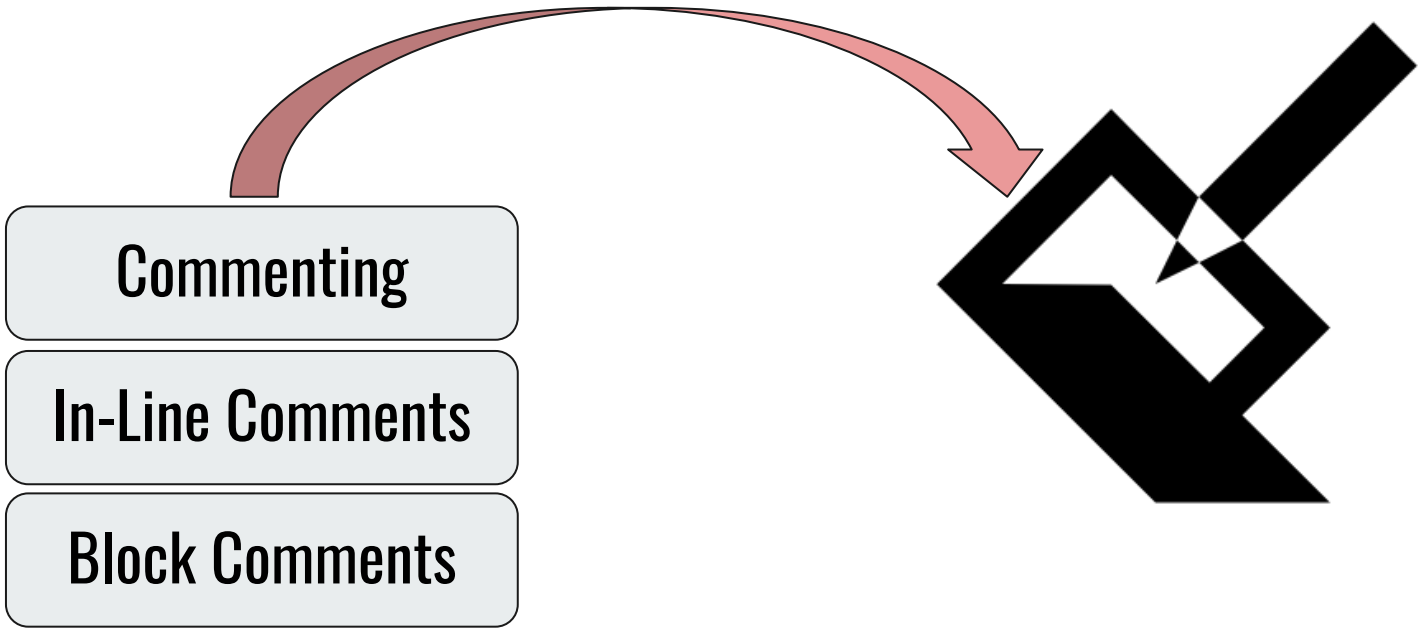
```
If answer == “yes” and age >= 12: #This is the if statement for true checking
     ...
elif answer != “yes” and age >= 12: #This is the if statement for false checking
     ...
```

```
If answer == “yes” and age >= 12: #Check if they chose ‘yes’ and their age is 12 or more
     ...
elif answer != “yes” and age >= 12: #Otherwise, if they chose ‘no’ but age is still 12
     ...
```

The Python Script Editor lets you comment / uncomment a whole region at once.



Let's add this to our notes...



variable naming: which one makes more sense?

```
n = “Ben”

a = input("How old are you?")

val = a + b + c

num = 20

thing = "apple"
```

```
name = "Ben"

age = input("How old are you?")

total = price1 + price2 + price3

hours = 20

favFruit = "apple"
```

variable name **goldenRules**

1. Always use names that tell us what the value of each variable should be.
2. For longer names, use lowercase for the first word and then Capitalize the rest of the words:

   favFruit = "apple" myName = "Bob" averageStudentHeight = 145

3. A slightly longer name is better than a name that gives no clue as to what the variable does.

FRESH

> *Variables are so important to the code that they deserve a good name that accurately describes their purpose. Sometimes a bad name can be the difference between a fellow developer understanding what everything does at first glance and not having any clue where to begin.*

Check out the full article here:

Rogers, S. (2016) DEV PRINCIPLE #1: CHOOSE APPROPRIATE VARIABLE NAMES. Fresh Consulting. Retrieved from https://www.freshconsulting.com/development-principle-1-choose-appropriate-variable-names/

New Assessment Criteria [COMM]

From now on, ALL code you submit must be properly commented and formatted for any other person to be able to read it and understand it.

To get a Level 3 - 4:

1. Important algorithms and functions should be explained clearly
2. Variables should have meaningful names
3. The program should have **a description of its purpose** at the top
4. The code should be properly formatted and indented so we can follow the flow.

Python Activity 4: Let's Practice!

Open up three of your previous activities / assignments:

1. Add a title and description at the top of your program using:

```
'''
<Title>
Author:
Date:
<Description of Program>
'''
```

1. Add comments to lines of code that you think are most important using #
2. Change variable names to be more clear.
3. Add block comments to explain sections of your code that are important.