Lab 2: Statements and Variables

This Python Notebook is a chance for you to try out the programming concepts we have covered thus far.

In Jupyter Lab you can double click any section to edit it, and you can press the triangle "run" button to run the code (or display the text).

a screenshot of this page viewed in jupyter_lab,with the triangle "run" button circled. Next to it are a square "interrupt the kernal" button and other options

When the code runs, the little number to the left of the code block should change. There might also be some output from your action displyed below the code block.

So now you can go through the rest of this page and try out the practice exercises for yourself!

Variables

You will first practice saving values into variables. Remember, the way we save a value into a variable is like this:

```
variable_name = value
```

First, save the piece of text "I am writing a computer program!" into a variable called `my_progress`

```
In [5]:   my_progress = "I am writing a computer program!"
          display(my_progress)
```

```
'I am writing a computer program!'
```

Viewing variables in the debugger

Before we continue, we are going to show you how to open the debugger so you can see what is being saved in your variables.

On the tp right of this tab, press the small bug icon to "enable debugging":

screenshot of this tab in jupyterhub, with the "enable debugging" icon circled at the top right (after the "git" option and before the "Python 3 (ipykernel)" option)

Then, if you did the step above correctly, you should see the variable `my_progress` with the value "I am writing a computer program!" next to it:

screenshot of this tab in jupyterhub, with the debugger tab opened on the right. The top section of that tab is variables, which has "special variables" then "function variables" then "my_progress:I am writing a computer program"

Practice number variables

First, write and run a line of code to save the value 5 into a variable named `number_of_pies`

In [6]:
```
number_of_pies = 5
```

Now, save the value 12.5 into a variable named `cost_per_pie`

In [7]:
```
cost_per_pie = 12.5
```

Now make a new variable called `total_pie_cost` and save into the value of the number_of_pies multiplied by the cost_per_pie.

Note: In python (and many programming languages), the symbol for multiply is $*$

In [8]:
```
total_pie_cost = number_of_pies*cost_per_pie
```

Now use the `display` function to display what is saved in total_pie_cost

In [9]:
```
display(total_pie_cost)
```

```
62.5
```

More variable practice

Now, make a new variable called `first_name` and assign your first name to it

In [18]:
```
first_name = "Yolanda"
```

Now, make a variable calles `last_name` and save your last name to it

In [19]:
```
last_name = "Meng"
```

Create a variable called `age` and assign your age to it.

In [20]:
```
age = 20
```

~ A year goes by ~

Increase the `age` variable by 1.

In [21]:
```
new_age = age+1
```

Now write three lines of code, with each line using `display` to show what is saved in `first_name`, `last_name`, and `age

In [22]:
```
display(first_name)
display(last_name)
display(new_age)
```

```
'Yolanda'
'Meng'
 21
```

Sleep

In order to use sleep, we must first import it from the time library

In [23]:
```python
from time import sleep
```

Now try displaying 5 messages of your choosing, with some pauses between each one:

In [24]:
```python
display("Hello World!")
sleep(1)
display("My name is")
sleep(2)
display("Yolanda Meng")
sleep(2)
display("I am 20 years old")
sleep(2)
display("How are you?")
```

```
'Hello World!'
'My name is'
'Yolanda Meng'
'I am 20 years old'
'How are you?'
```

Reddit Bot Practice

Now lets try a Reddit bot with variables and sleep!

Note: Given the strict rate-limiting for reddit, you might want to mostly test using fake_praw and pretending to post to reddit.

Load Praw Library

First, we need to load the praw library

In [42]:
```python
# Load some code called "praw" that will help us work with reddit
import praw
```

(Optional) Step 1b: Make a fake praw connection with the fake_praw library

For testing purposes, we've added this line of code, which loads a fake version of praw, so it wont actually connect to reddit. **If you want to try to actually connect to reddit, don't run this line of code.**

In [39]:
```python
%run fake_apis/fake_praw.ipynb
```

Fake praw is replacing the praw library. Fake praw doesn't need real passwords, and prevents you from accessing real reddit

Step 2: Load your developer access passwords

To use this on your real Reddit account, copy your developer access passwords into the reddit_keys.py file.

In [43]:
```
%run reddit_keys.py
```

Step 4: Give praw (or fake_praw) your developer access passwords

In [44]:
```python
# Give the praw code your reddit account info so
# it can perform reddit actions
reddit = praw.Reddit(
    username=username, password=password,
    client_id=client_id, client_secret=client_secret,
    user_agent="a custom python script for user /" + str(username)
)
```

Step 5: Submit a post to Reddit

Post something you learned in the class so far:

Remember, the code to post a tweet looks like this:

```
reddit.subreddit(
    "soc_media_ethics_auto"
).submit(
    "This is the title of the post",
    selftext = "This is the content of the post"
)
```

In [46]:
```python
reddit.subreddit(
    "info_103_sp23"
).submit(
    "This is the title of the post",
    selftext = "This is the content of the post"
)
```

Out[46]: Submission(id='1996h9p')

Post from a variable

Now try saving a piece of text in a variable for the title, and another for the content of a post, and then submitting a post of whatever you saved in the variables.

To do this, where the code has `submit( ... )`, you'll replace the quoted text with the variable name, so it will look like:

```
reddit.subreddit(
    "soc_media_ethics_auto"
).submit(
    title_variable,
```

```
        selftext = content_variable
    )
```

(with whatever your variable name was instead of "title_variable" and "content_variable")

In [47]:
```python
title = "Hello"
content = "My name is Yolanda"
reddit.subreddit(
    "info_103_sp23"
).submit(
    title,
    selftext = content
)
```

Out[47]: Submission(id='1996irw')

Submit multiple posts

Next try submitting 3 posts, but use `sleep` to add pauses between each one (note that reddit might not want you to make more than 1 post every 15 minutes, so you can sleep for 15*60 seconds or more before posting again).

In [49]:
```python
title = "Hi"
content = "I like cat"
reddit.subreddit(
    "info_103_sp23"
).submit(
    title,
    selftext = content
)
sleep(60)
title = "Hello there"
content = "I am 20 years old"
reddit.subreddit(
    "info_103_sp23"
).submit(
    title,
    selftext = content
)
sleep(60)
title = "Hi everyone"
content = "Glad to see you"
reddit.subreddit(
    "info_103_sp23"
).submit(
    title,
    selftext = content
)
```

Out[49]: Submission(id='1996ort')

In [ ]: