Notebook

June 21, 2021

```python
[ ]: # Initialize Otter
     import otter
     grader = otter.Notebook("generate-gradescope.ipynb")
```

```python
[1]: import matplotlib.pyplot as plt
     import numpy as np
```
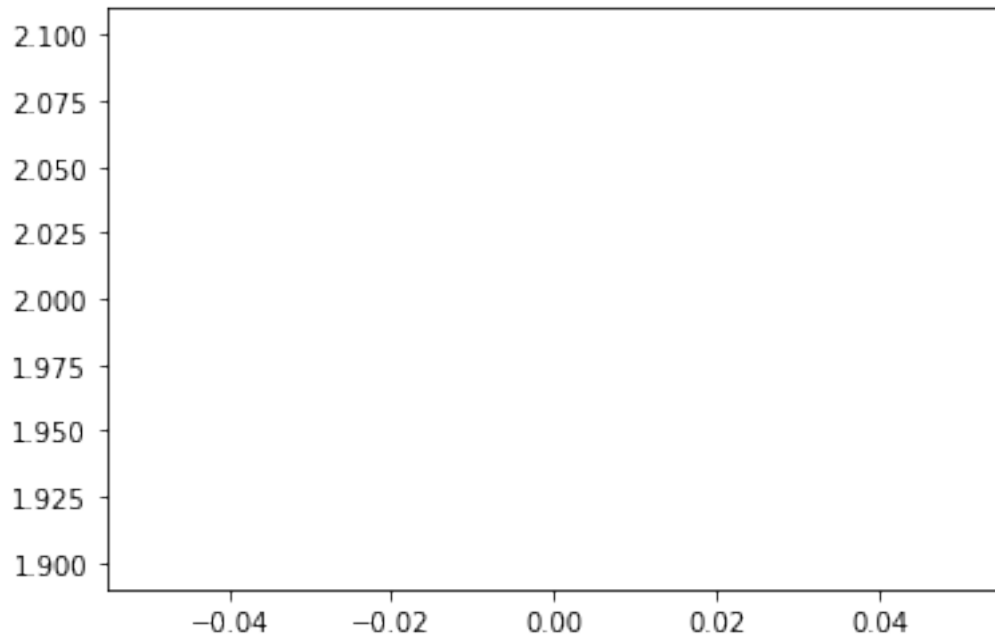
Question 1. Assign x to the smallest prime number.

```python
[22]: x = 2 # SOLUTION
```

```python
[ ]: grader.check("q1")
```

Question 2. Visualize the answer

```python
[28]: ## solution ##
      plt.plot(x); # SOLUTION NO PROMPT
      """ # BEGIN PROMPT
      plt.plot(...);
      """ # END PROMPT
```

```python
[28]: ' # BEGIN PROMPT\nplt.plot(…);\n'
```

This cell is not part of a question.

```
[29]: y = 3
```

Question 3. Define `square` and assign `nine` to 3 squared.

```
[30]: def square(x):
          y = x * x # SOLUTION
          return y # SOLUTION

      nine = square(3)
```

```
[ ]: grader.check("q3")
```

Question 4. What does equilateral mean?

Type your answer here, replacing this text.

SOLUTION: Having equal side lengths.

```
[14]: # this isn't part of a question
      # it's here to make sure that we get a MD cell above to close the export
      # of question 4
```

Question 5. Approximate the area and circumference of a circle with radius 3.

```
[15]: pi = 3.14
      if True:
          # BEGIN SOLUTION
```

2

```
    radius = 3
    area = radius * pi * pi
    # END SOLUTION
    print('A circle with radius', radius, 'has area', area)

def circumference(r):
    # BEGIN SOLUTION NO PROMPT
    return 2 * pi * r
    # END SOLUTION
    """ # BEGIN PROMPT
    # Next, define a circumference function.
    pass
    """; # END PROMPT
```

A circle with radius 3 has area 29.5788

```
[16]: # This question has no tests.
```

Question 6. Write something

This question has a custom prompt below, so that prompt should be in the output. It also has no solution!

Write your thing here.

SOLUTION: some thing

Question 7: What is the answer?

Type your answer here, replacing this text.

SOLUTION: 42

Question 8: Test intercell seeding by generating 10 random $N(4, 2)$ numbers.

```
[35]: np.random.seed(42) # SEED
      z = np.random.normal(4, 2, 10) # SOLUTION
      z
```

```
[35]: array([4.99342831, 3.7234714 , 5.29537708, 7.04605971, 3.53169325,
             3.53172609, 7.15842563, 5.53486946, 3.06105123, 5.08512009])
```

```
[ ]: grader.check("q8")
```

You're done!

The code below is an example of student-exposed plugins.

```
[ ]: grader.run_plugin("myotterpackage.MyOtterPlugin", pi, z, foo=circumference,␣
     ↪bar=None, something='else')
```

0.1 Submission

Make sure you have run all cells in your notebook in order before running the cell below, so that all images/graphs appear in the output. The cell below will generate a zip file for you to submit. **Please save before exporting!**

```python
# Save your notebook first, then run this cell to export your submission.
grader.export()
```