

```
In [ ]: # Initialize Otter
import otter
grader = otter.Notebook("assignment1.ipynb")
```

## 1 Otter-Grader Tutorial

This notebook is part of the Otter-Grader tutorial. For more information about Otter, see our [documentation](#).

```
In [1]: import pandas as pd
import numpy as np
%matplotlib inline
import otter
grader = otter.Notebook()
```

**Question 1:** Write a function `square` that returns the square of its argument.

```
In [2]: def square(x):
        return x**2 # SOLUTION
```

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

**Question 2:** Write an infinite generator of the Fibonacci sequence `fiberator` that is *not* recursive.

```
In [6]: def fiberator():
        # BEGIN SOLUTION
        yield 0
        yield 1
        x, y = 0, 1
        while True:
            x, y = y, x + y
            yield y
        # END SOLUTION
```

```
In [ ]: grader.check("q2")
```

**Question 3:** Create a DataFrame mirroring the table below and assign this to `data`. Then group by the `flavor` column and find the mean price for each flavor; assign this `series` to `price_by_flavor`.

flavor	scoops	price
chocolate	1	2
vanilla	1	1.5
chocolate	2	3
strawberry	1	2
strawberry	3	4
vanilla	2	2
mint	1	4
mint	2	5
chocolate	3	5

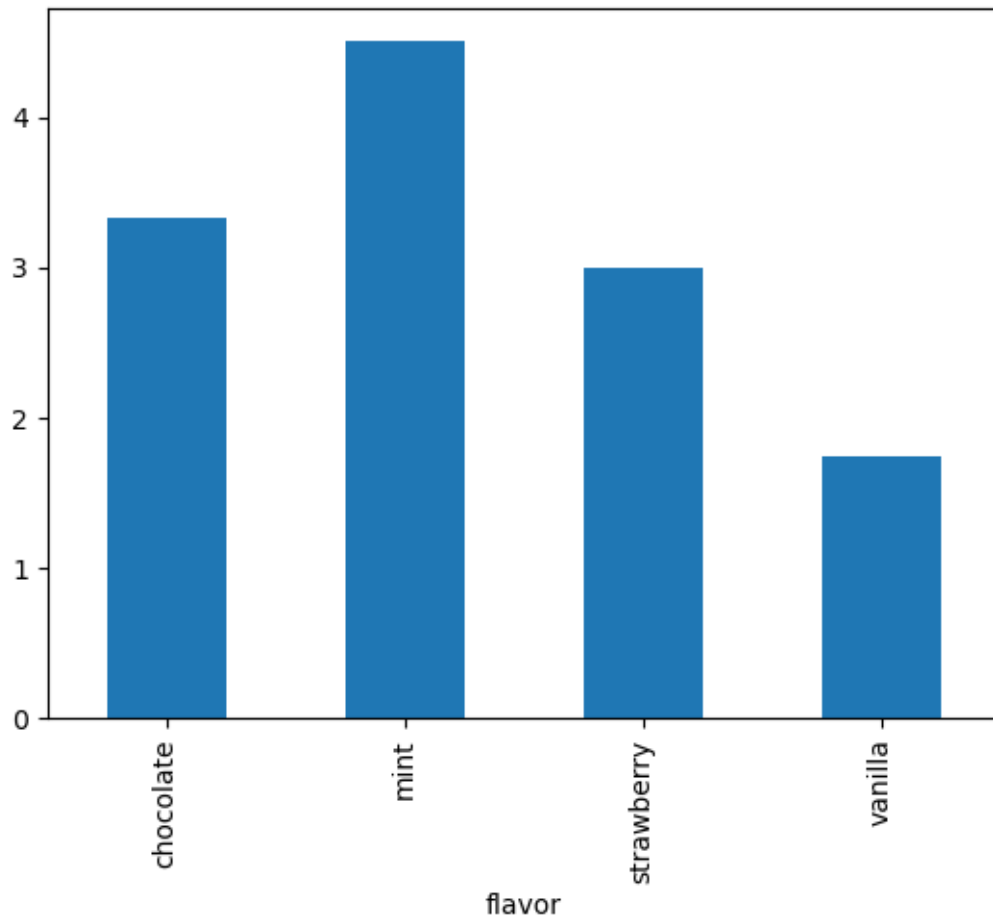
```
In [9]: # BEGIN SOLUTION NO PROMPT
data = pd.DataFrame({
    "flavor": ["chocolate", "vanilla", "chocolate", "strawberry", "strawberry", "vanilla", "mint", "mint", "chocolate"],
    "scoops": [1, 1, 2, 1, 3, 2, 1, 2, 3],
    "price": [2, 1.5, 3, 2, 4, 2, 4, 5, 5]
})
price_by_flavor = data.groupby("flavor").mean()["price"]
# END SOLUTION
""" # BEGIN PROMPT
data = ...
price_by_flavor = ...
""" # END PROMPT
price_by_flavor
```

```
Out[9]: flavor
chocolate    3.333333
mint          4.500000
strawberry    3.000000
vanilla       1.750000
Name: price, dtype: float64
```

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

**Question 4:** Create a barplot of price\_by\_flavor.

```
In [18]: price_by_flavor.plot.bar(); # SOLUTION
```



**Question 5:** What do you notice about the bar plot?

*Type your answer here, replacing this text.*

**SOLUTION:** mint is the highest...?

## 1.1 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!**

These are some submission instructions.

```
In [ ]: # Save your notebook first, then run this cell to export your submission.  
        grader.export(run_tests=True)
```