Notation

December 1, 2017

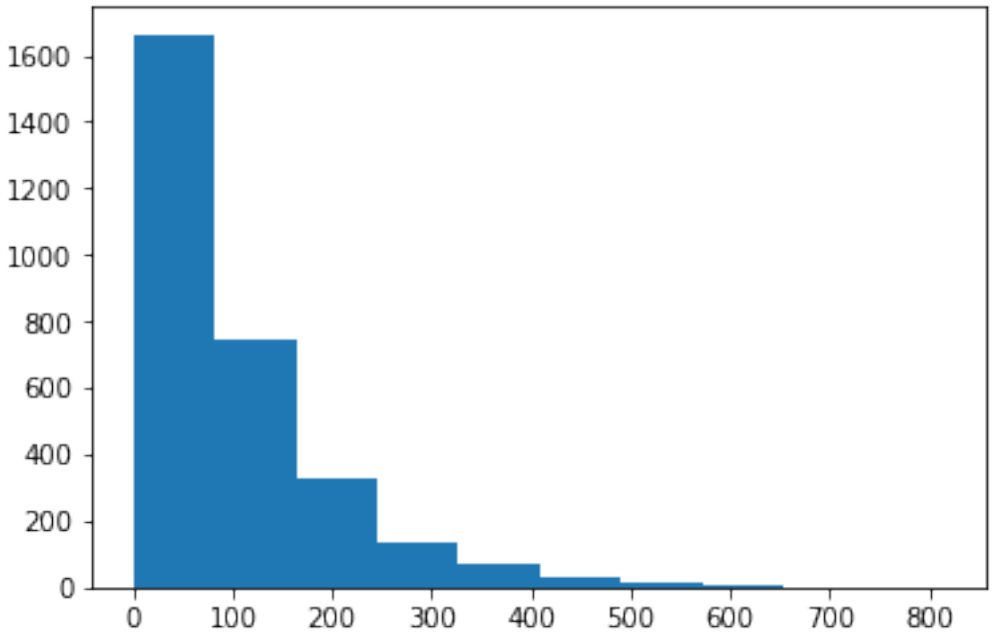
0.0.1 Notation Notebook

Use the information in this notebook to assist with answering the following quiz questions below the notebook. Let's begin by creating a **population dataset** stored in **pop_data** and importing some libraries.

```
In [1]: import numpy as np
        import matplotlib.pyplot as plt

        %matplotlib inline
        np.random.seed(42)

        pop_data = np.random.gamma(1,100, 3000)
        plt.hist(pop_data);
```



1. What is the population mean?

```
In [2]: mu = pop_data.mean()
        mu

Out[2]: 100.35978700795846
```

2. Randomly select 10 draws from the population using **numpy's random.choice**. What is the sample mean for these 10 values?

```
In [4]: sample10 = np.random.choice(pop_data, size=10)
        sample10.mean()

Out[4]: 176.81831522562538
```

3. What is the sample standard deviation of your 10 draws?

```
In [5]: np.std(sample10)

Out[5]: 138.37517587765291
```

4. What is the population standard deviation?

```
In [6]: np.std(pop_data)

Out[6]: 99.778601879689063
```

5. What is the population variance?

```
In [7]: np.var(pop_data)

Out[7]: 9955.7693930654896
```

6. What is the sample variance?

```
In [8]: np.var(sample10)

Out[8]: 19147.689299171376
```