# Simulating Coin Flips

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

In [2]:
```python
# outcome of one coin flip
np.random.randint(2)
```

Out[2]:
```
0
```

In [3]:
```python
# outcomes of ten thousand coin flips
np.random.randint(2, size=10000)
```

Out[3]:
```
array([1, 0, 0, ..., 1, 0, 1])
```

In [4]:
```python
# mean outcome of ten thousand coin flips
np.random.randint(2, size=10000).mean()
```

Out[4]:
```
0.50429999999999997
```

In [5]:
```python
# outcome of one coin flip
np.random.choice([0, 1])
```

Out[5]:
```
0
```

In [6]:
```python
# outcome of ten thousand coin flips
np.random.choice([0, 1], size=10000)
```

Out[6]:
```
array([1, 0, 0, ..., 1, 0, 1])
```

In [7]:
```python
# mean outcome of ten thousand coin flips
np.random.choice([0, 1], size=10000).mean()
```

Out[7]:
```
0.49769999999999998
```

In [8]:
```python
# outcomes of ten thousand biased coin flips
np.random.choice([0, 1], size=10000, p=[0.8, 0.2])
```

Out[8]:
```
array([0, 0, 0, ..., 0, 0, 0])
```

In [9]:
```python
# mean outcome of ten thousand biased coin flips
np.random.choice([0, 1], size=10000, p=[0.8, 0.2]).mean()
```

Out[9]:
```
0.19500000000000001
```

In [ ]: