

Programming Challenge 2

This challenge, like many other challenges, will use the `random` module in python to generate pseudo random numbers. Remember to import the module, if needed.

```
import random
```

Write a method to generate a Bernoulli random variable with parameter $p = 0.75$. Then, create a sequence of random variables. Each random variable in the sequence should be the sum of 10 independent Bernoulli random variable. Note that the range $X(\Omega)$ for each random variable should be $\{0, 1, \dots, 10\}$. Using a `for` loop, look at the empirical distribution of the proportion of zeros, ones, ..., tens.

```
percent = []
for OutcomeIndex in range(0, SampleSpaceSize):
    percent.append(TrialSequence.count(OutcomeIndex) / float(NumberTrials))
print percent
```

Explore how the empirical distribution changes as N grows: 100.0, 1000.0, 10000.0, etc. Can you recognize the distribution that you are getting?

Use `matplotlib`, or another python 2D plotting library to display empirical distributions.