Programming Challenge 1

In python, the `random` module can generate pseudo random numbers. For the purpose of this course, such numbers can be considered random. In particular, `random.randrange(2)` produces random bits. To use the `random` module, it is necessary to `import random`. Using a loop, store `N` random bits in a `list` object.

```
import random

SampleSpaceSize = 10
NumberTrials = 10

TrialSequence = []
for TrialIndex in range(0, NumberTrials):
    TrialSequence.append(random.randrange(SampleSpaceSize))
```

Then, look at the empirical distribution of the ratios of zeros and ones.

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

Explore how the empirical distribution changes as `N` increases 10.0, 100.0, 1000.0, 10000.0.