



Simulation of a continuous uniform RV on [0,1)

"""

EE 381 spring 2020

Project 4

Ernie Argel

017984237

4/20/2020

"""

import math

import random

import matplotlib.pyplot as plt

n = 10000 # It serves our purposes to be a perfect square

x = []

y = []

Lambda = 0.5 # Parameter in the exponential distribution

```
for i in range(n):  
    r = random.uniform(0,1)  
    x.append(r) # List of uniform numbers on [0,1)  
    e = (-1 / Lambda) * math.log(1 - r, math.e) # The inverse of the CDF of exponential  
    y.append(e) # Exponentially distributed random numbers
```

```
b = max(x)  
a = min(x)  
R = b - a # Range in the sense of data
```

```
intervals = int(math.ceil(math.sqrt(n)))
```

```
width = (R / intervals) # Class width
```

```
plt.subplot(2, 1, 1)  
plt.hist(x, intervals, density = width)  
plt.subplot(2, 1, 2)
```