

```
# -*- coding: utf-8 -*-
```

```
"""
```

Spyder Editor

This is a temporary script file.

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"""
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'''
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EE 381 spring 2020

Project 4

Simulation using inverse transform method

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Start Date:

End Date: 04-20-2020

```
'''
```

```
import math
```

```
import random
```

```
import matplotlib.pyplot as quarantine
```

```
n = 1000000
```

```
x = [] # list for random numbers
```

```
y = []
```

```
Lambda = 0.5
```

```
for i in range(n):
```

```
    r = random.uniform(0,1)
```

```
    x.append(r) # List of unifomly distributed random numbers
```

```
    e = (-1 / Lambda) * math.log(1 - r, math.e) #Inverse CDF
```

```
    y.append(e)
```

```
b = max(x)
```

```
a = min(x)
```

```
R = b - a # Range
```

```
intervals = int(math.ceil(math.sqrt(n))) # The number of bins
```

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

```
quarantine.subplot(2, 1, 1)
```

```
quarantine.hist(x, intervals, density = width)
```

```
quarantine.subplot(2, 1, 2)
```

```
quarantine.hist(y, intervals, density = width)
```



