

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

```
"""
```

EE 381 spring 2020

Project 3

Ernie Argel

017984237

2/10/2020

End Date

Simulating a Bernoulli RV and using it

to make a simple Markov chain

```
"""
```

```
import random
```

```
p = float(input('Enter the probability of success. '))
```

```
T = int(input('How many trials are wanted. '))
```

```
for j in range(T):
```

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

```
    if r < p:
```

```
        print('1', end=' ') # Success
```

```
    else:
```

```
        print('0', end=' ') # Failure
```

```
import random # Importing Pythons RNG
```

```
Location = [] # Where the particle is located.
```

```
p_A = float(input('Enter the probability of leaving node zero. '))

p_B = float(input('Enter the probability of leaving node one. '))

S = int(input("Enter either a '0' or a '1' to start. ")) # Temporary starting place.

Location.append(S)

for i in range(25):
    r = random.uniform(0, 1) # Generating a uniform random number

    if r < p_A and S == 0: # At zero and success
        S = 1 # Reassign to one
    elif r < p_B and S == 1: # At one and success
        S = 0 # Reassign to zero
    Location.append(S)

for i in Location:
    print(i, end= ' ')
```

```
Enter the probability of success. .7
```

```
How many trials are wanted. 12
```

```
1 1 1 0 1 1 0 1 1 1 0 0
```

```
In [4]: |
```

```
Enter the probability of leaving node zero. .9
```

```
Enter the probability of leaving node one. .5
```

```
Enter either a '0' or a '1' to start. 1
```

```
1 0 1 0 1 0 1 1 1 0 1 1 1 0 0 1 1 1 0 1 0 1 0 0 0 0
```

```
In [5]: |
```