

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

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"""
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EE 381 spring 2020
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Project 3
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2/10/2020
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End Date
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```
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 Python's 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]: |