```
'''
EE 381 Spring 2020 Project 1
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Start Date: 01-27-2020
End Date: 02-03-2020
Description: The code implements a linear congruential random number generator, RNG. It will output a uniform
distribution of numbers on the interval [0, 1).
'''
import math

def RNG():
    r= [] # list of random numbers
    #below are the constants used in the formula
    N = 10000 #The norm
    A = 4857 #The adder
    M = 8601 #The multiplier
    # ----------------------------------------

    import time
    S = time.perf_counter()
    #----------------------------------------

    for k in range(25):
        S = (M * S + A) % N #formula for the RNG
        v = S / N #r is a decimal number in [0, 1)
        r.append(v)
    return r

def die(r):
    print("Die Roll: ")
    for k in range(25):
        die = math.floor(6*r[k] + 1)
        print(die, end= ' ')

def coin(r):
    print("\nCoin Toss: ")
    for k in range(25):
        coin = math.floor(2*r[k])
        if coin == 0:
            print("Tails")
        else:
```

```
        print("Heads")


r = RNG()
die(r)
print()
coin(r)
```


Python 3.7.4 Shell
Python 3.7.4 (v3.7.4:e09359112e, Jul 8 2019, 14:54:52)
[Clang 6.0 (clang-600.0.57)] on darwin
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: /Users/joce/EE381/Project 1/project1.py ==========
Die Roll:
5 5 5 1 3 4 6 2 4 4 6 5 3 4 1 2 5 6 6 3 2 1 4 6 6
Coin Toss:
Heads
Heads
Heads
Tails
Tails
Heads
Heads
Tails
Heads
Heads
Heads
Heads
Tails
Heads
Tails
Tails
Heads
Heads
Heads
Tails
Tails
Tails
Heads
Heads
Heads
>>>
Ln: 35 Col: 4