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"""
EE 381 Spring 2020 Project| 1
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End Date: 01-29-2020
Description: This is the code for a pseudorandom number generator, RNG.
It will output a uniform distribution of numbers in the set [0,1).
"""

def main():

    def RNG():

        r = [] #List of random numbers.
        # -----
        # Constants
        N = 10000 #The norm.
        A = 4857 #The adder.
        M = 8601 #The multiplier.
        # -----
        #Get seed from clock.
        import time
        S = time.time() - time.process_time()
        #-----

        for i in range(25):
            S = (M * S + A) % N #RNG Formula
            v = S / N #Numbers in [0,1)
            r.append(v)
        return r

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

    def coin(c):
        import math
        print("\n")
        print("Coin Toss")
        for k in range(25):
            coin = math.floor(2 * c[k])
            if coin == 0:
                print("T", end = " ")
            else:
                print("H", end = " ")

    r = RNG()
    die(r)
    coin(r)

main()

```

Die Roll

4 3 4 1 1 3 2 2 6 5 1 6 6 3 3 5 3 4 6 6 1 6 6 3 2

Coin Toss

H T H T T T T T H H T H H T T H T H H H T H H T T

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