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# start date 9-5-18
# Finish date
#--------------------------------------------------------------------------------
# In this project we'll make our own random number generator, (rng).
# We'll solve a probability problem with our rng and simulation.
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# Declaring Constants
N = 10000 # The norm.
A = 4857 # The adder.
M = 8601 # The multiplier.

# A seed is required.
S = 0
Counter = 0 # Accumulator Initial Value

#for n in range(99):
#       S = (S * M + A) % N
#       r = S/N
#       print("%.4f"%r)

import math # for floor function
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# Below is the simulation of the probabilty problem.
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Ball = [0, 0, 0] # The balls are not in the cans.
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E = int(input('How many experiments are to be performed? '))

for j in range(E):

    # This inner loop is the experiment

    for i in range(3): # 0 to 2
        S = (S * M + A) % N # our rng
        r = S/N            # Numbwers on interval [0,1)

        Can_Number = math.floor(r * 5 + 1)
        Ball[i] = Can_Number
    if((Ball[0] != Ball[1] ) and (Ball[1] != Ball[2]) and (Ball[2] != Ball[0])):
        Counter = Counter + 1 # Count the number of the desired outcomes

p = Counter / E

print(" The probability that three balls landing in different can is ", p,".")
```