import random,math

def gambleOnce():

    return random.randint(0,1)

def gambleDay(money):

    if money<1:

        return money

    wager=1

    money -= wager

    while not gambleOnce():

        wager \*=2

        money -= wager

        if money <=0:

            return money

    money = money + wager\*2

    return money

moneyHold = 1024

moneyHolds = []

dayNumber = 3650

for x in range(dayNumber):

    moneyHold=gambleDay(moneyHold)

    moneyHolds.append(moneyHold)

from matplotlib import pyplot as plt

plt.scatter(list(range(1,dayNumber+1)),moneyHolds,s=1)

plt.title(f'Every Day\'s money during {dayNumber} days')

plt.show()

