import random

# Sender side

n = int(input("Enter the number to encrypt:"))

n1 = random.randint(1, n - 1)

print("The random number is", n1)

if n1 >= n:

print("The value cannot be encrypted")

else:

ds = n - n1

print("The value after data split: ", ds)

K = random.randint(2\*\*2048,2\*\*4096)

print("The random key is: ", K)

CT1 = n1 ^ K

CT2 = ds ^ K

with open("cloudA.txt", "w") as file:

file.write(str(CT1))

with open("cloudB.txt", "w") as file:

file.write(str(CT2))

with open("key.txt", "w") as file:

file.write(str(K))

# Receiver side

with open("cloudA.txt", "r") as file:

CT1 = int(file.read())

with open("cloudB.txt", "r") as file:

CT2 = int(file.read())

with open("key.txt", "r") as file:

K = int(file.read())

CA1 = CT1 ^ K

print("The value of new cloud A ", CA1)

CA2 = CT2 ^ K

print("The value of new cloud B", CA2)

M1 = CA1 + CA2

print("The decrypted value is: ",M1)

# To check

if M1 == n:

print("correct")

else:

print("wrong")