import random

input1 = int(input("输入矩阵数："))

matrix = [[0] \* 2 for i in range(input1)]

for i in range(input1):

if i == 0:

matrix[i][0] = random.randrange(100)

matrix[i][1] = random.randrange(100)

else:

matrix[i][0] = matrix[i-1][1]

matrix[i][1] = random.randrange(100)

m = [[0] \* input1 for i in range(input1)]

s = [[0] \* input1 for j in range(input1)]

def MatrixMul(inp):

for i in range(inp):

m[i][i] = 0

for r in range(1, inp):

for i in range(inp-r):

j = i + r

m[i][j] = m[i+1][j] + matrix[i][0] \* matrix[i][1] \* matrix[j][1]

s[i][j] = i+1

for k in range(i+1, j):

judge = m[i][k] + m[k+1][j] + matrix[i][0] \* matrix[k][1] \* matrix[j][1]

if judge < m[i][j]:

m[i][j] = judge

s[i][j] = k+1

def printmatrix(left, right):

if left == right:

print("A"+str(left+1), end='')

else:

print("(", end='')

printmatrix(left, s[left][right]-1)

printmatrix(s[left][right], right)

print(")", end='')

MatrixMul(input1)

print(matrix)

print("最终结果：")

printmatrix(0, input1-1)

