import numpy  
import random  
import csv  
import sys  
  
  
  
firstMatrix = []  
csvfile1 = open("C:\\Users\\zhang\\Desktop\\matrix1.csv","r",encoding='utf-8-sig')  
reader1 = csv.reader(csvfile1)  
for line in reader1:  
 eachline = []  
 for i in line:  
 eachline.append(int(i))  
 firstMatrix.append(eachline)  
  
secondMatrix = []  
csvfile2 = open("C:\\Users\\zhang\\Desktop\\matrix2.csv","r",encoding='utf-8-sig')  
reader2 = csv.reader(csvfile2)  
for line in reader2:  
 eachline = []  
 for i in line:  
 eachline.append(int(i))  
 secondMatrix.append(eachline)  
  
x = numpy.array(firstMatrix, dtype='int64')  
y = numpy.array(secondMatrix, dtype='int64')  
  
  
  
m = x.shape[0] #image row size  
n = x.shape[1] #image column size  
  
p = 4 #block row size  
q = 4 #block column size  
  
block\_array = []  
previous\_row = 0  
for row\_block in range(256):  
 previous\_row = row\_block \* p  
 previous\_column = 0  
 for column\_block in range(256):  
 previous\_column = column\_block \* q  
 block = x[previous\_row:previous\_row+p,previous\_column:previous\_column+q]  
 block\_array.append(block)  
  
block\_array = numpy.array(block\_array)  
  
#print(block\_array)  
  
  
block\_array2 = []  
previous\_row = 0  
for row\_block in range(256):  
 previous\_row = row\_block \* p  
 previous\_column = 0  
 for column\_block in range(256):  
 previous\_column = column\_block \* q  
 block = y[previous\_row:previous\_row+p,previous\_column:previous\_column+q]  
 block\_array2.append(block)  
  
block\_array2 = numpy.array(block\_array2)  
  
#print(block\_array2)  
  
fullMultiplication = []  
for i in range(len(block\_array)):  
 fullMultiplication.append(numpy.dot(block\_array[i], block\_array2[i]))  
  
  
print(fullMultiplication)  
  
  
faultRow = random.randint(0,1023)  
faultColumn = random.randint(0,1023)  
  
firstMatrix[faultRow][faultColumn] += 5  
x = numpy.array(firstMatrix, dtype='int64')  
y = numpy.array(secondMatrix, dtype='int64')  
fullMultiplication2 = numpy.dot(x,y)  
  
block\_array = []  
previous\_row = 0  
for row\_block in range(256):  
 previous\_row = row\_block \* p  
 previous\_column = 0  
 for column\_block in range(256):  
 previous\_column = column\_block \* q  
 block = x[previous\_row:previous\_row+p,previous\_column:previous\_column+q]  
 block\_array.append(block)  
  
block\_array = numpy.array(block\_array)  
  
#print(block\_array)  
  
  
block\_array2 = []  
previous\_row = 0  
for row\_block in range(256):  
 previous\_row = row\_block \* p  
 previous\_column = 0  
 for column\_block in range(256):  
 previous\_column = column\_block \* q  
 block = y[previous\_row:previous\_row+p,previous\_column:previous\_column+q]  
 block\_array2.append(block)  
  
block\_array2 = numpy.array(block\_array2)  
  
#print(block\_array2)  
  
fullMultiplication2 = []  
for i in range(len(block\_array)):  
 fullMultiplication2.append(numpy.dot(block\_array[i], block\_array2[i]))  
  
for i in range(len(fullMultiplication)):  
 if ((fullMultiplication == fullMultiplication2).all()):  
 print("There is an ERROR!!!! in " + i + "th block")  
 break