1. **Square and Tower**

In a city, there are N mobile signal towers. Raj is creating an application to visualize the coverage area of the signal Towers. For simplicity, the following are assumed.

1) The shape of the city is Square.

2) the signal coverage is in the form of a square

3) the side length of the signal coverage is 3 meters

Given the side length of the city, number of towers and coordinates of towers, find whether whole city is under coverage, if the whole city is not under signal coverage, find how much area is not under coverage.

Assume that the two of the end points of the city are (0,0) and (n-1,n-1)

Input Format

First input corresponds to n length of the city

Second input corresponds to the number of towers

The next n lines of the input follow the following format, x and y coordinates of each tower respectively.

Consider that tower is always palced at valid position.

Output Format:

Print "Yes" if the whole city is under coverage else print "No" along with the left out area.

Sample Input1

5

3

2 2

0 1

4 1

Sample Output1

No

8

Sample Input2

3

1

1 1

Sample output2

Yes

1. **CheckisIdentifier**

Hari is new to programming. He wants to check whether the given string X is a valid variable name. Variable name consist only of letters, digits and underscores and they can’t start with a digit.

Write a program to help Hari, to print the Error number

Error1: Not Starting with an alphabet

Error2: Contains special Characters

Input Format

First Input is String that corresponds to the X value

Output Format:

Output is a String as follows

1. “No Error” – if it’s a valid variable name
2. “Error 1” – if the variable name is not starting with an alphabet
3. “Error 2” – if the variable contains special characters
4. “Error 1

Error 2” – if the variable name is not starting with an alphabet and contains special characters

Sample Input1:

Var\_1\_\_int

Sample output1

No Error

Sample Input2:

1qq-q

Sample output2

Error1

Error2

1. **IsChessboard**

Somu is preparing himself to build a Chess Game app. For that he needs to learn and workout a lot of problems on 2D Arrays, in the initial phase given a 2D array with 1’s and 0’s , where 1 represents black color and 0 represents white color of this chessboard. He wants to find whether it resembles

Write a program to help somu to determine whether the given 2D Array resembles a chessboard or not. If it does not resemble, calculate the minimum number of cells that need to be changed.

Assume that the board is of any dimension and need not be a square

[Note : The first cell in the chess board can either be black or white]

**Input format**

First line of the input is an integer that denotes the row size.

Second line of the input is an integer that denotes the column size.

Rest of the input are the colours of the board, represented in matrix format

Output format

Output is string “true” if the matrix resembles a chess board else print “False” along with number of cells to be changed.

Sample Input1:

3

4

1 0 1 0

0 1 0 1

1 0 1 0

Sample outut1

True

Sample Input2:

3

3

0 1 0

1 0 0

0 1 0

Sample outut1

False

1

1. **Run Length II**

Write a program to find the length of the longest running negative sequence in the given array. Also find the starting index of the longest running negative sequence .

Example

Consider the array - {-3,-5, 8, -4, -2,-6,-8,-9,2,-3,-4}

The three negative sequence in the array are {{-3,-5}, {-4, -2,-6,-8,-9}, {,-3,-4}

The longest running negative sequence is {-4, -2, -6,-8,-9}

The length of the longest running negative sequence Is 5 and the starting index is 3.

Input and Output Format

The first line of the input consists of number of elements in an array and the rest is elements of the array.

The first line of the out consists of length of the longest running negative sequence and the second line indicates the starting index number of the longest running negative sequence

Sample Input

11

-3

-5

8

-4

-2

-6

-8

-9

2

-3

-4

Sample Output1

5

3