Practice Problem Set 6

1. Write a C program that finds the indexes of two consecutive elements of a given array such that the difference between them is largest.

   Examples

Input
Array Size: 9 Input Array: 1 2 0 4 5 7 1 3 5
Output
5, 6

2. Write a C program that checks if a given array is palindrome or not.

   Examples

Input
Array Size: 8 Input Array: 0 2 0 2 2 0 2 0
Output
Yes

3. Write a C program that checks if the two arrays are equal or not.

   Examples

Input	Input
Input Array1 Size: 4 Input Array1: 0 2 0 2 Input Array2 Size: 3 Input Array2: 0 2 0	Input Array1 Size: 4 Input Array1: 0 2 0 2 Input Array2 Size: 4 Input Array2: 0 2 1 3
Output	Output
Not Equal	Not Equal

   Examples

Input
Input Array1 Size: 4 Input Array1: 0 2 0 2 Input Array2 Size: 4 Input Array2: 0 2 0 2
Output
Equal

4. Write a C program that copies only the even elements to a new array.

   Examples

Input
Array Size: 8 Input Array: 0 2 3 4 1 2 -9 0
Output
New Array Size: 5 New Array: 0 2 4 2 0

5. Write a program that takes an array as input and copies the non-zero elements to a new array followed by the zeros at the end of the new array.

   Examples

Input
Array Size: 8 Input Array: 0 2 3 4 1 2 -9 0
Output
New Array: 2 3 4 1 2 -9 0 0

6. Write a C program that checks if the input matrix is an identity matrix or not.

Examples

Input	Output
3 3 1 0 0 0 1 0 0 0 1	Yes

Input	Output
3 3 1 0 1 0 1 0 1 0 1	No

7. Write a C program that stacks the 2 input arrays horizontally and prints the output array.
   Hints: The number of rows of the input arrays must be equal to horizontally stack them.
   Examples

Input	Output
4 5 1 2 3 4 5 4 5 6 7 8 5 6 7 8 9 1 2 4 5 7 4 3 1 2 3 5 6 7 1 3 6 2 4 7	4 8 1 2 3 4 5 1 2 3 4 5 6 7 8 5 6 7 5 6 7 8 9 1 3 6 1 2 4 5 7 2 4 7

   Examples

Input	Output
4 5 1 2 3 4 5 4 5 6 7 8 5 6 7 8 9 1 2 4 5 7 3 4 1 2 3 5 6 7 1 3 6 2 4 7	Not possible to horizontally stack the two arrays

8. Write a C program that flips a binary matrix horizontally, then inverts it, and returns the resulting matrix.
   Hints: To flip a matrix horizontally means that each row of the matrix is reversed.
   For example, flipping [1, 1, 0] horizontally results in [0, 1, 1].
   To invert a matrix means that each 0 is replaced by 1, and each 1 is replaced by 0.
   For example, inverting [0, 1, 1] results in [1, 0, 0]
   Examples

Input	Output
3 4 1 0 0 1 0 0 0 1 1 1 0 0	After flipping: 1 0 0 1 1 0 0 0 0 0 1 1 After inverting: 0 1 1 0 0 1 1 1 1 1 0 0

9. Write a C program that asks the user to enter `r` and `c` and reshapes the input matrix to a `rxc` matrix if possible. Hints: Create a 1d array with `mxn` elements and populate the 1d array with the elements of input 2d array. Then populate the `rxc` matrix from the 1d array.

Examples

Input	Output
4 4 1 2 3 4 5 1 2 3 9 5 1 2 2 6	2 6 1 2 3 4 5 1 2 3 9 5 1 2

Input	Output
4 4 1 2 3 4 5 1 2 3 9 5 1 2 2 3	Not possible