- **EASY**
- **Max Score: 30 Points**
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Toeplitz Matrix

Given an m x n matrix, return true if the matrix is Toeplitz. Otherwise, return false.

A matrix is Toeplitz if every diagonal from top-left to bottom-right has the same elements.
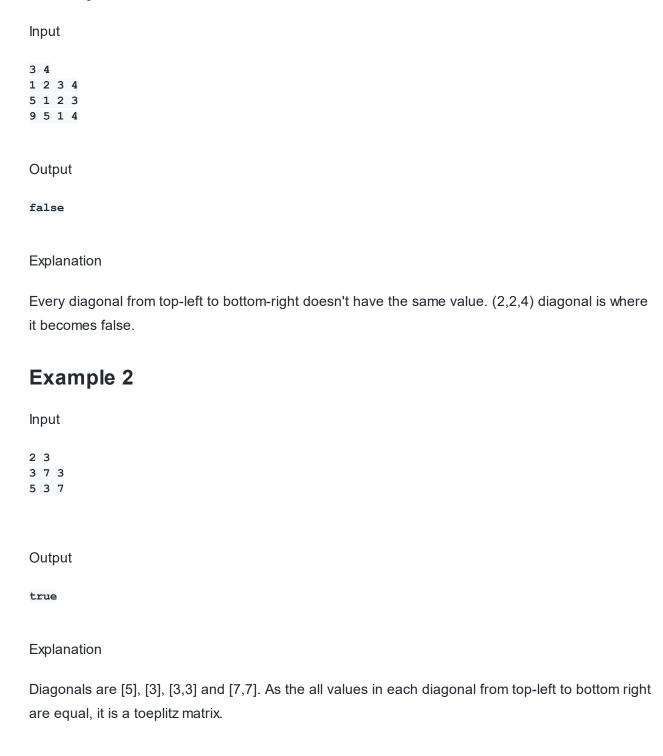
Input Format

First line contains two integers, m and n which define the row and column size of the matrix respectively.

Next each of 'm' lines contain 'n' space separated integers that denote the matrix elements.

Output Format

Return true if a matrix is Toeplitz Matrix, else return false.

Example 1

Input

```
3 4
1 2 3 4
5 1 2 3
9 5 1 4
```

Output

```
false
```

Explanation

Every diagonal from top-left to bottom-right doesn't have the same value. (2,2,4) diagonal is where it becomes false.

Example 2

Input

```
2 3
3 7 3
5 3 7
```

Output

```
true
```

Explanation

Diagonals are [5], [3], [3,3] and [7,7]. As the all values in each diagonal from top-left to bottom right are equal, it is a toeplitz matrix.

Constraints

```
m == matrix.length
```

```
n == matrix[i].length

1 <= m, n <= 20

0 <= matrix[i][j] <= 99
```

- **2D-Arrays**

My code

```java
// in java
import java.util.*;
import java.lang.*;
import java.io.*;

public class Main
{
    public static void main (String[] args) throws java.lang.Exception
    {
        //your code here
        Scanner s=new Scanner(System.in);
        int n=s.nextInt();
          int m=s.nextInt();
        int arr[][]=new int [n][m];
        for(int i=0;i<n;i++)
            for(int j=0;j<m;j++)
                arr[i][j]=s.nextInt();
        int flag=0;
         for(int i=0;i<m;i++)
             {
                 int lp=0;
```

```java
                int rp=i;
                int chech_var=arr[lp][rp];
                while(lp<n &&rp<m)
                    {
                       if(arr[lp++][rp++]!=chech_var)
                            flag=1;
                    }
            }
    for(int i=1;i<n;i++)
        {
                int lp=i;
                int rp=0;
                    int chech_var=arr[lp][rp];
                while(lp<n &&rp<m)
                    {
                           if(arr[lp++][rp++]!=chech_var)
                             flag=1;
                    }
            }
    if(flag==0)
          System.out.print("true");
    else System.out.print("false");
    }

}
```