Lab 07- Soldier

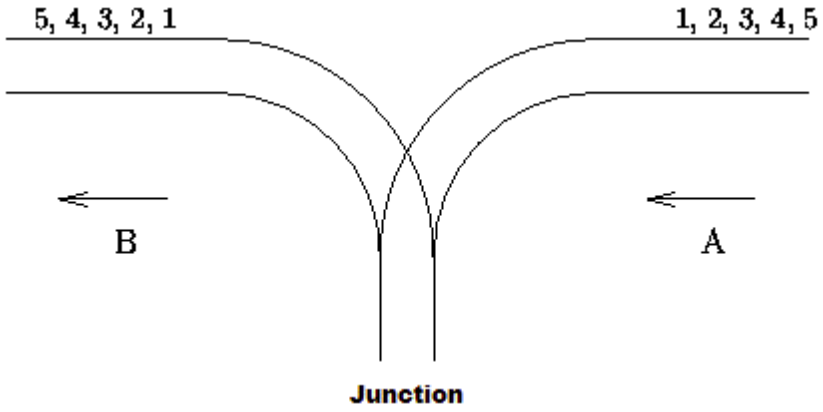
Objective

The objective of this problem is to test the students' understanding on **Stack**, and to practice using STL **stack.**

Problem Description

A group of soldiers is in the middle of an espionage mission. In order to infiltrate the enemy's building, they went through a secret sewer tunnel. All of a sudden, an enemy who was patrolling inside the sewer found them. A contact happened but the soldiers managed to shoot the enemy down. Unfortunately, some of them are injured and they need to rearrange their formation to protect their injured buddies.

The tunnel is so narrow that the soldiers can only move forward. Luckily they found a junction so that they can rearrange their formation (see map below).



The soldiers are moving from the direction A and continuing in the direction B. Assume that there are 1 <= **N** <= 10 soldiers in the sewer and they have soldier ID numbers from 1, 2, ..., **N** and they are in this formation until they reach the junction. Please help John, the commander of the soldiers, to decide whether it is possible to get the new formation with the use of the junction. Assume also that they cannot return back to A once they enter the junction.

Input

The first line contains an integer **N,** the number of soldiers. The subsequent lines describe the new formations that are to be formed, terminated by end-of-file.

Output

For each of the new formations, if the new formation can be formed, it prints "**YES**". Otherwise, it prints "**NO"**.

Sample Input

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

Sample Output

```
YES
YES
NO
```

Explanation

There are 5 soldiers involved and there are 3 new formations that John is toying with.

New formation 1:
Soldiers will enter the junction in the order of 1, 2, 3, 4, 5. Soldier 5 will come out first, followed by soldiers 4, 3, 2, 1.

New formation 2:
Soldier 1 will enter the junction, but exit immediately, and so will soldier 2. After soldiers 3, 4, and 5 enter the junction, then soldier 5 will exit from the junction first, followed by soldiers 4 and 3.

New formation 3:
Soldiers 1, 2, 3, 4 and 5 will enter the junction. Soldier 5 will exit from the junction first, followed by soldier 4. Next position in the new formation should be taken up by soldier 1, but this is not possible because soldiers 2 and 3 are in front of 1 and they have to go back to A which is where they come from.

Note

- You are required to use stack(s) to implement your solution.