Wagons

On the side track there is a set of wagons, which must be prepared for the journey. Preparation consists in arranging the wagons in an ascending order on the track leading to the platform. Each wagon has a number that is a physical number in the range 1 ... n, where n is the number of all wagons. We have one blind ending siding available. The complicated crossover system means that we can only make 3 moves:

- moving the wagon from the side track to the track leading to the platform
- moving the wagon from the side track to the siding
- moving the wagon from the siding to the track leading to the platform

Write a program to check whether for a given train string, you can arrange them in ascending order using one siding.

Input:

The first number entered is n - the number of wagons to be sorted out. Next, n numbers will be given - there are no numbers of subsequent wagons.

Out:

The program should write **YES** if it is possible to organize the wagons, otherwise it should write **NO**.

Example:

Input:
```
3
1 3 2
```

Out:
```
TAK
```

Input:
```
4
4 2 3 1
```

Out:
```
NIE
```