

Gopu and Validity of Arrangement

N persons are standing in a line. Height of each person is between 1 and N and height of each person is distinct.

You are given an array A where $A[i]$ denotes how many persons are there before the i -th person having heights greater than the height of the i -th person. For a person i , all the persons from 1 to $i - 1$ are considered to be before him. eg, For person 2, person 1 is considered before him.

You have to find out whether this array can be valid for some arrangement of persons. If you can uniquely do so then output "YES" Otherwise output "NO".

Input

First line contains T : number of test cases. ($1 \leq T \leq 20$).

For each test First line contains an integer n. ($1 \leq N \leq 10^5$)

Next line contains n space separated integers denoting $A[i]$. ($0 \leq A[i] \leq N$)

Output

For each test case, output "YES" or "NO" according to answer.

Example

Input:

```
2
2
2
0 1
2
1 1
```

Output:

```
YES
NO
```

Explanation

For the first test case, [2, 1] is a valid case, First person has height 2, second person has height 1.

For the second test case, no valid test case exists.