Full Binary Tree

A full binary tree is defined as a binary tree in which all nodes have either zero or two child nodes. Given the elements of the tree from left to right and level by level, your mission is to build the tree and check whether the tree is full or not ("YES" or "NO").

Input Format

The first line contains N, the number of elements in the tree. Each of the next lines contains an integer represents an element in the level traversal.

Input nodes may have zero, one or two children. If the number is -1, then the node is null.

Constraints

- 1 <= N, nums[i] <= 10^4

Output Format

Print "YES" or "NO".

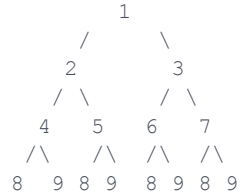
Sample Input 0

```
15
1
2
3
4
5
6
7
8
9
8
9
8
9
8
9
```

Sample Output 0

```
YES
```

Explanation 0



Sample Input 1

```
7
5
4
8
11
-1
17
-1
```

Sample Output 1

```
NO
```

Explanation 1