

Project 2: Binary Search Tree

<http://pta.patest.cn/>

A binary search tree is uniquely determined by a given ordered insertions of a sequence of positive integers. On the other hand, a given binary search tree may correspond to several different insertion sequences. Now given several insertion sequences, it is your job to determine if they can generate the same binary search tree.

Input Specification:

Input consists of several test cases. For each test case, the first line contains two positive integers N (≤ 10) and L , which are the total number of integers in an insertion sequence and the number of sequences to be tested, respectively. The second line contains N positive integers, separated by a space, which are the initially inserted numbers. Then L lines follow, each contains a sequence of N integers to be checked.

For convenience, it is guaranteed that each insertion sequence is a permutation of integers 1 to N – that is, all the N numbers are distinct and no greater than N . The input ends with N being 0. That case must NOT be processed.

Output Specification:

For each test case, output to the standard output. Print in L lines the checking results: if the sequence given in the i -th line corresponds to the same binary search tree as the initial sequence, output to the i -th line “Yes”; else output “No”.

Sample Input:

```
4 2
3 1 4 2
3 4 1 2
3 2 4 1
2 1
2 1
1 2
0
```

Sample Output:

```
Yes
No
No
```

Grading Policy:

This assignment is due **Monday, October 26th, 2015** at 10:00pm.

- **Programmer:** Write the program (**50 pts.**) **with sufficient comments.**
- **Tester:** Provide a set of test cases to fill in a test report (**20 pts.**). Note that the tester is responsible, as well as the programmer is, for any bug later found by Judge. Write analysis and comments (**10 pts.**).
- **Report Writer:** Write Chapter 1 (**6 pts.**), Chapter 2 (**12 pts.**), and finally a complete report (**2 pts. for overall style of documentation**).