

Binary Search Trees

DSA Lab 6 Practice

February 22, 2018

Question

Given a BST, check if it is *height balanced*. A *height balanced* tree is one in which every node satisfies the condition that the absolute difference in heights of left and right subtrees for that node is ***atmost one***.

Constraints

$$1 \leq t \leq 10^2$$

$$1 \leq n \leq 10^4$$

$$1 \leq key \leq 10^9$$

Input

The first line of input contains one integer t , the number of testcases.

Each testcase consists of *two* lines.

The first of these lines is a single integer n , the number of *keys* in the BST.

The next line contains n spaced integers, the *keys* of the BST. INSERT THE KEYS IN THE BST IN THE GIVEN ORDER.

Output

For each testcase, print **1** if the BST is balanced, else print **0**, on ***newline*** each.

Sample Case

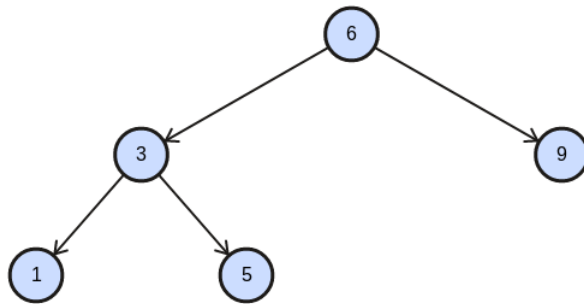
Input

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

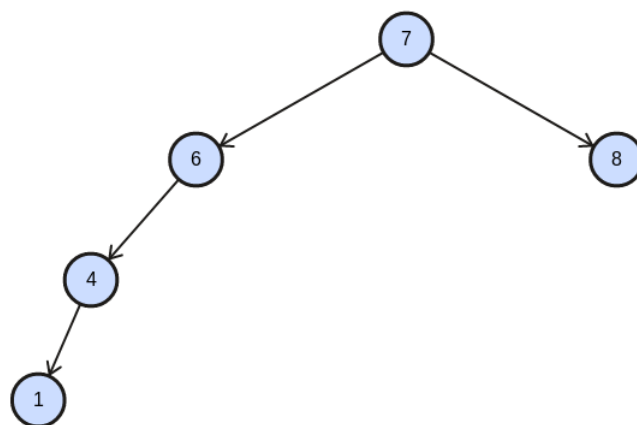
Output

1
0

Illustration



Sample Case 1



Sample Case 2