

Trees

DSA Lab 5 Practice

February 16, 2018

Question

Given a binary search tree, print the difference between the sizes of the left and right subtrees for each node in *preorder* fashion. Insert the keys in the given order. All keys are *unique* in value.

Constraints

$1 \leq t \leq 10^2$
 $1 \leq n \leq 10^4$
 $1 \leq key \leq 10^4$

Input

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

Each testcase consists of two lines.

The first line contains one integer n , the number of keys in the binary search tree.

The second line contains n spaced *unique* integers, the *keys* of the binary search tree. Insert these keys in the given order.

Output

Print one line *per* testcase, the difference in sizes of left and right subtrees for every node in preorder fashion.

Sample Case

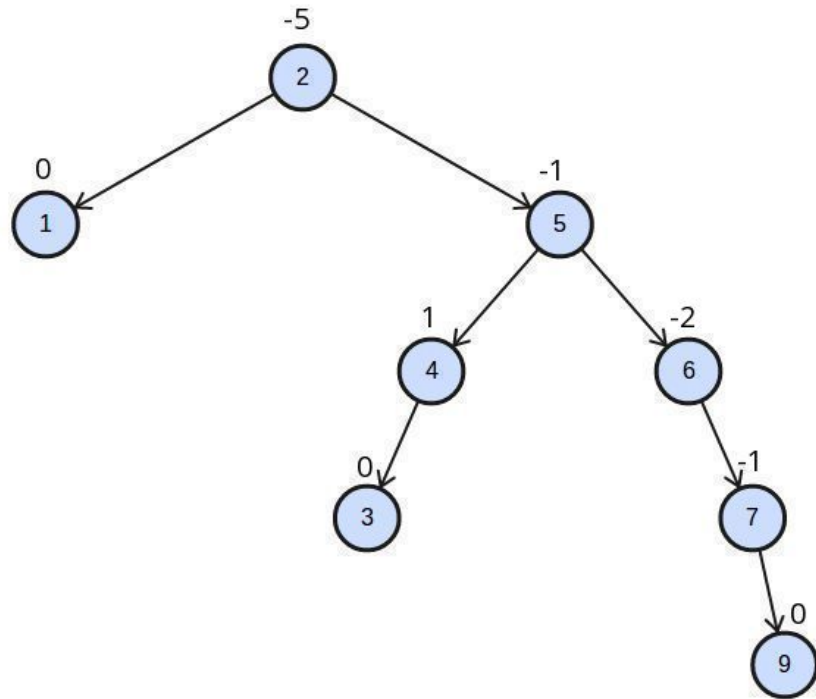
Input

1
8
2 5 4 3 1 6 7 9

Output

-5 0 -1 1 0 -2 -1 0

Illustration



Binary Search Tree in Sample Case

More Questions for Practice

- [Diagonal Traversal](#)
- [Boundary Traversal](#)
- [Lowest Common Ancestor \(LCA\)](#)
- [Inorder Traversal without recursion or stack \(Morris Traversal\)](#)
- [Construct unique Binary Tree given Inorder and Preorder traversals](#)