Our Solution(s) Run Code

Solution 1 Solution 2

```swift
// Copyright © 2020 AlgoExpert, LLC. All rights reserved.

class Program {
    class BST {
        var value: Int
        var left: BST?
        var right: BST?

        init(value: Int) {
            self.value = value
            left = nil
            right = nil
        }
    }

    // Average: O(log(n)) time | O(log(n)) space
    // Worst: O(n) time | O(n) space
    func findClosestValueInBST(tree: BST?, target: Int) -> Int {
        var closest = Int(Int32.max)
        return findClosestValueInBSTHelper(tree: tree,
                                           target: target, closest: &closest)
    }

    func findClosestValueInBSTHelper(tree: BST?,
                                     target: Int, closest: inout Int) -> Int {
        if tree === nil {
            return closest
        }

        if let tree = tree {
            let closestDifference = target - closest
            let currentDifference = target - tree.value

            if closestDifference.magnitude > currentDifference.magnitude {
                closest = tree.value
            }
        }

        if let tree = tree, target < tree.value {
            if let left = tree.left {
                return findClosestValueInBSTHelper(
                    tree: left, target: target, closest: &closest
                )
            } else {
                return closest
            }
        } else if let tree = tree, target > tree.value {
            if let right = tree.right {
                return findClosestValueInBSTHelper(
                    tree: right, target: target, closest: &closest
                )
            } else {
                return closest
            }
        } else {
            return closest
        }
    }
}

```

Your Solutions Run Code

Solution 1 Solution 2 Solution 3

```swift
class Program {
    class BST {
        var value: Int
        var left: BST?
        var right: BST?

        init(value: Int) {
            self.value = value
            left = nil
            right = nil
        }
    }

    func findClosestValueInBST(tree: BST?, target: Int) -> Int {
        // Write your code here.
        return -1
    }
}

```

Custom Output Raw Output Submit Code

Run or submit code when you're ready.