

Our Solution(s)Run Code

Solution 1Solution 2

```
1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 #include <vector>
4 using namespace std;
5
6 class BST {
7 public:
8     int value;
9     BST *left;
10    BST *right;
11
12    BST(int val) {
13        value = val;
14        left = NULL;
15        right = NULL;
16    }
17
18    // Average: O(log(n)) time | O(1) space
19    // Worst: O(n) time | O(1) space
20    BST &insert(int val) {
21        BST *currentNode = this;
22        while (true) {
23            if (val < currentNode->value) {
24                if (currentNode->left == NULL) {
25                    BST *newNode = new BST(val);
26                    currentNode->left = newNode;
27                    break;
28                } else {
29                    currentNode = currentNode->left;
30                }
31            } else {
32                if (currentNode->right == NULL) {
33                    BST *newNode = new BST(val);
```

Your SolutionsRun Code

Solution 1Solution 2Solution 3

```
1 #include <vector>
2 using namespace std;
3
4 // Do not edit the class below except for
5 // the insert, contains, and remove methods.
6 // Feel free to add new properties and methods
7 // to the class.
8 class BST {
9 public:
10    int value;
11    BST *left;
12    BST *right;
13
14    BST(int val) {
15        value = val;
16        left = NULL;
17        right = NULL;
18    }
19
20    BST &insert(int val) {
21        // Write your code here.
22        // Do not edit the return statement of this method.
23        return *this;
24    }
25
26    bool contains(int val) {
27        // Write your code here.
28        return false;
29    }
30
31    BST &remove(int val) {
32        // Write your code here.
33        // Do not edit the return statement of this method.
```

```

17     array = concatenate(array, array)
18 }
19 array.push_back(1000000);
20 if (array.length() < 1000000)
21     array = concatenate(array, array);
22 }
23 return array;
24 }
25
26 class ProgramTest : public TestSuite {
27 public:
28     Test() {}
29
30     ProgramTest(int n, int m) {
31         int test = 1;
32         TestSuite::TestSuite(n, m, 1000000, 1000000, 1000000);
33         arrayTest.push_back(1000000);
34         arrayTest.push_back(1000000);
35     }
36 }

```

Run or submit code when you're ready.