Our Solution(s) Run Code

Solution 1 Solution 2

```java
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class Program {
  static class BST {
    public int value;
    public BST left;
    public BST right;

    public BST(int value) {
      this.value = value;
    }

    // Average: O(log(n)) time | O(1) space
    // Worst: O(n) time | O(1) space
    public BST insert(int value) {
      BST currentNode = this;
      while (true) {
        if (value < currentNode.value) {
          if (currentNode.left == null) {
            BST newNode = new BST(value);
            currentNode.left = newNode;
            break;
          } else {
            currentNode = currentNode.left;
          }
        } else {
          if (currentNode.right == null) {
            BST newNode = new BST(value);
            currentNode.right = newNode;
            break;
          } else {
            currentNode = currentNode.right;
          }
        }
      }
      return this;
    }

    // Average: O(log(n)) time | O(1) space
    // Worst: O(n) time | O(1) space
    public boolean contains(int value) {
      BST currentNode = this;
      while (currentNode != null) {
        if (value < currentNode.value) {
          currentNode = currentNode.left;
        } else if (value > currentNode.value) {
          currentNode = currentNode.right;
        } else {
          return true;
        }
      }
      return false;
    }

    // Average: O(log(n)) time | O(1) space
    // Worst: O(n) time | O(1) space
    public BST remove(int value) {
      remove(value, null);
      return this;
    }

    public void remove(int value, BST parentNode) {
      BST currentNode = this;
      while (currentNode != null) {
        if (value < currentNode.value) {
          parentNode = currentNode;
          currentNode = currentNode.left;
        } else if (value > currentNode.value) {
          parentNode = currentNode;
          currentNode = currentNode.right;
        } else {
          if (currentNode.left != null && currentNode.right != null) {
            currentNode.value = currentNode.right.getMinValue();
            currentNode.right.remove(currentNode.value, currentNode);
          } else if (parentNode == null) {
            if (currentNode.left != null) {
              currentNode.value = currentNode.left.value;
              currentNode.right = currentNode.left.right;
              currentNode.left = currentNode.left.left;
            } else if (currentNode.right != null) {
              currentNode.value = currentNode.right.value;
              currentNode.left = currentNode.right.left;
              currentNode.right = currentNode.right.right;
            } else {
              // This is a single-node tree; do nothing.
            }
          } else if (parentNode.left == currentNode) {
            parentNode.left = currentNode.left != null ? currentNode.left : curre
          } else if (parentNode.right == currentNode) {
            parentNode.right = currentNode.left != null ? currentNode.left : curr
```

Your Solutions Run Code

Solution 1 Solution 2 Solution 3

```java
class Program {
  static class BST {
    public int value;
    public BST left;
    public BST right;

    public BST(int value) {
      this.value = value;
    }

    public BST insert(int value) {
      // Write your code here.
      // Do not edit the return statement of this method.
      return this;
    }

    public boolean contains(int value) {
      // Write your code here.
      return false;
    }

    public BST remove(int value) {
      // Write your code here.
      // Do not edit the return statement of this method.
      return this;
    }
  }
}

```

Custom Output Raw Output Submit Code

```
91            }
92            break;
93          }
94        }
95      }
96
97      public int getMinValue() {
98        if (left == null) {
99          return value;
100       } else {
101         return left.getMinValue();
102       }
103     }
104   }
105 }
106
```

Run or submit code when you're ready.