AlgoExpert

Quad Layout | Java | 12px | Sublime | Monok

Prompt | Scratchpad | Our Solution(s) | Video Explanation | Run Code

Solution 1 | Solution 2 | Solution 3

```java
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import java.util.*;

class Program {
  // O(nlog(n)) time | O(n) space - where n is the length of the array
  public static BST minHeightBst(List<Integer> array) {
    return constructMinHeightBst(array, null, 0, array.size() - 1);
  }

  public static BST constructMinHeightBst(List<Integer> array, BST bst, int startIdx, int endIdx) {
    if (endIdx < startIdx) return null;
    int midIdx = (startIdx + endIdx) / 2;
    int valueToAdd = array.get(midIdx);
    if (bst == null) {
      bst = new BST(valueToAdd);
    } else {
      bst.insert(valueToAdd);
    }
    constructMinHeightBst(array, bst, startIdx, midIdx - 1);
    constructMinHeightBst(array, bst, midIdx + 1, endIdx);
    return bst;
  }

  static class BST {
    public int value;
    public BST left;
    public BST right;

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

    public void insert(int value) {
      if (value < this.value) {
        if (left == null) {
          left = new BST(value);
        } else {
          left.insert(value);
        }
      } else {
        if (right == null) {
          right = new BST(value);
        } else {
          right.insert(value);
        }
      }
    }
  }
}
```