Data Structures

Quiz - 4 (Update)

Solution:

Using the HINT:

```
public boolean isBalanced(){
    return (boolean)helper(root)[0];
}

public Object[] helper(Position<E> pos){
    if (pos == null){
        return new Object[] {true, -1};
    } else{
        Object[] left_data = helper(tree.left(pos));
        boolean left_balanced = (boolean)left_data[0];
        int left_height = (int)left_data[1];

        Object[] right_data = helper(tree.right(pos));
        boolean right_balanced = (boolean)right_data[0];
        int right_height = (int)right_data[1];

        int height = Math.max(left_height, right_height) + 1;
        boolean node_balanced = Math.abs(left_height - right_height) <= 1;
        boolean balanced = left_balanced && right_balanced &&
           node_balanced;

        return new Object[] {balanced, height};
    }
}
```