```java
private TreeNode buildTree(int[] input, int start, int end) {

    /* Return null when the indices cross, preventing duplicates/infinite
loops */

    if (start > end) {

        return null;

    }

    /* Find the middle index of the array/subarray being input */

    int middleIndex = ((start + end) / 2);

    /* Create a new node with the value from the middle of the array/subarray
*/

    TreeNode nd = new TreeNode(input[middleIndex]);

    /* Create a new subtree to the left using the lower half of the array */

    nd.left = buildTree(input, start, middleIndex - 1);

    /* Create a new subtree to the right using the upper half of the array */

    nd.right = buildTree(input, middleIndex + 1, end);

    /* Return the root of the entire tree */

    return nd;

}
```

```
C:\Users\Mewk\Downloads\openjdk-11.0.2_windows-x64_bin\jdk-11.0.2\bin\java.exe "-
4
9
15
20
22
24
35
87


Process finished with exit code 0
```