Our Solution(s) Run Code

Solution 1 Solution 2 Solution 3

```java
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import java.util.*;

class Program {
  // O(n^2) time | O(n) space
  public static int numberOfBinaryTreeTopologies(int n) {
    Map<Integer, Integer> cache = new HashMap<Integer, Integer>();
    cache.put(0, 1);
    return numberOfBinaryTreeTopologies(n, cache);
  }

  public static int numberOfBinaryTreeTopologies(int n, Map<Integer,
    if (cache.containsKey(n)) {
      return cache.get(n);
    }
    int numberOfTrees = 0;
    for (int leftTreeSize = 0; leftTreeSize < n; leftTreeSize++) {
      int rightTreeSize = n - 1 - leftTreeSize;
      int numberOfLeftTrees = numberOfBinaryTreeTopologies(leftTreeSiz
      int numberOfRightTrees = numberOfBinaryTreeTopologies(rightTreeS
      numberOfTrees += numberOfLeftTrees * numberOfRightTrees;
    }
    cache.put(n, numberOfTrees);
    return numberOfTrees;
  }
}
```

Your Solutions Run Code

Solution 1 Solution 2 Solution 3

```java
class Program {
  public static int numberOfBinaryTreeTopologies(int n) {
    // Write your code here.
    return -1;
  }
}
```

Our Tests

Custom Output Submit Code

Run or submit code when you're ready.