https://course.acciojob.com/idle?question=fe065bd6-a563-426e-a681-57ffae0de561

MEDIUM

Max Score: 40 Points

Count Of Valleys And Mountains

You are given a number n, representing the number of upstrokes / and number of downstrokes. You are required to find the number of valleys and mountains you can create using strokes. For eg:

```
1 - /\

2 - /\    or    /\/\
   /  \
                                          /\
3- /\/\   or    /\    or    /\    or    /\/  \    or    /\/\/\
  /    \       /  \        /  \/\
              /    \
```

Note At no point should we go below the sea-level. (number of downstrokes should never be more than number of upstrokes).

Input Format

Input consists of an integer `n`

Output Format

Print a number representing the number of valleys and mountains you can create using strokes.

Example 1

Input

```
4
```

Output

```
14
```

Explanation

Draw it yourself

Example 2

Input

```
3
```

Output

```
5
```

Explanation

Refer above figures

Constraints

```
1 <= n <= 15
```

Topic Tags

Recursion

DP

My code

```
// in java
import java.util.*;
```

```
class Solution {
public static int numTrees(int n) {
  int [] G = new int[n+1];
  G[0] = G[1] = 1;

  for(int i=2; i<=n; ++i) {
    for(int j=1; j<=i; ++j) {
      G[i] += G[j-1] * G[i-j];
    }
  }
  return G[n];
}
      public static int uniqueBST(int n) {
       // Write your code here
                //  return fun(2*n,n)/fun(n+1,0);
                  return numTrees(n);
    }
}

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int N= sc.nextInt();
        Solution Obj = new Solution();
        System.out.println(Obj.uniqueBST(N));

    }
}
```