

# Nth catalan number

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Given a number **N**. The task is to find the  $N^{\text{th}}$  catalan number.

The first few Catalan numbers for **N = 0, 1, 2, 3, ...** are **1, 1, 2, 5, 14, 42, 132, 429, 1430, 4862, ...**

**Note:** Positions start from 0 as shown above.

## Example 1:

Input: N = 5

Output: 42

## Example 2:

Input: N = 4

Output: 14

## Your Task:

Complete **findCatalan()** function that takes n as an argument and returns the  $N^{\text{th}}$  Catalan number. The output is printed by the driver code.

**Expected Time Complexity:**  $O(N)$ .

**Expected Auxiliary Space:**  $O(N)$ .

```
def findCatalan(self,n):  
    #return the nth Catalan number.  
    dp = [0]*(n+1)  
    dp[0]=1  
    dp[1]=1  
    for i in range(2,n+1):  
        temp = 0  
        for j in range(i):  
            temp = temp+dp[j]*dp[i-1-j]  
        dp[i] = temp  
    return dp[-1]
```