Recursion: Fibonacci Numbers

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Check out the resources on the page's right side to learn more about recursion. The video tutorial is by Gayle Laakmann McDowell, author of the best-selling interview book Cracking the Coding Interview.

The Fibonacci Sequence
The Fibonacci sequence begins with $fibonacci(0) = 0$ and $fibonacci(1) = 1$ as its respective first and second terms. After these first two elements, each subsequent element is equal to the sum of the previous two elements.

Here is the basic information you need to calculate $fibonacci(n)$:

- $fibonacci(0) = 0$
- $fibonacci(1) = 1$
- $fibonacci(n) = fibonacci(n-1) + fibonacci(n-2)$

Task
Given n, complete the *fibonacci* function so it returns $fibonacci(n)$.

Input Format

Locked stub code in the editor reads a single integer denoting the value of n and passes it to the *fibonacci* function.

Constraints

- $0 < n < 40$

Output Format

Locked stub code in the editor prints the value of $fibonacci(n)$ returned by the *fibonacci* function.

Sample Input

```
3
```

Sample Output

```
2
```

Explanation

Consider the Fibonacci sequence:

$fibonacci(0) = 0$
$fibonacci(1) = 1$
$fibonacci(2) = (0 + 1) = 1$
$fibonacci(3) = (1 + 1) = 2$
$fibonacci(4) = (1 + 2) = 3$
$fibonacci(5) = (2 + 3) = 5$
$fibonacci(6) = (3 + 5) = 8$
...

We want to know the value of $fibonacci(3)$. If we look at the sequence above, $fibonacci(3)$ evaluates to 2. Thus, we print 2 as our answer.

Submissions: 7255

Max Score: 15
Difficulty: Easy

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5:41

Recursion

More

Current Buffer (saved locally, editable) C#

```
using System;
using System.Collections.Generic;
using System.IO;

class Solution {

    public static int Fibonacci(int n) {

        // Write your code here.
        if (n <= 1)
                return n;
        return Fibonacci(n - 1) + Fibonacci(n - 2);
    }

    static void Main(String[] args) {
        int n = Convert.ToInt32(Console.ReadLine());
        Console.WriteLine(Fibonacci(n));
    }
}
```

Line: 19 Col: 9

Upload Code as File Test against custom input Run Code Submit Code

Congrats, you solved this challenge!

- ✔ Test Case #0
- ✔ Test Case #1
- ✔ Test Case #2
- ✔ Test Case #3

Next Challenge