**6 kyu**

**Collatz**

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C#

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Preface

A collatz sequence, starting with a positive integer*n*, is found by repeatedly applying the following function to *n* until *n*== 1 :

*n* = { *n* / 2 for even *n* ;

3*n* + 1 for odd *n* }

A more detailed description of the collatz conjecture may be found [on Wikipedia](http://en.wikipedia.org/wiki/Collatz_conjecture" \t "_blank).

The Problem

Create a function collatz that returns a collatz sequence string starting with the positive integer argument passed into the function, in the following form:

"X0->X1->...->XN"

Where Xi is each iteration of the sequence and N is the length of the sequence.

Sample Input

Kata.Collatz(4); // should return "4->2->1"

Kata.Collatz(3); // should return "3->10->5->16->8->4->2->1"

Don't worry about invalid input. Arguments passed into the function are guaranteed to be valid integers >= 1.

<https://www.codewars.com/kata/collatz/csharp>

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace ConsoleApp1

{

class Program

{

public static string Collatz(int n)

{

StringBuilder sb = new StringBuilder();

sb.Append(n + "->");

while (n > 1)

{

if(n % 2 ==0)

{

n /= 2;

}

else

{

n = 3 \* n + 1;

}

sb.Append(n + "->");

}

return sb.ToString().TrimEnd('>').TrimEnd('-') ;

}

static void Main(string[] args)

{

Console.WriteLine(Collatz(3));

Console.ReadLine();

}

}

}