Algorithms → Intro to algorithms → Recursion basics

Recursion basics → Let's count

5041 users solved this problem. Latest completion was about 7 hours ago.

Take a look at the draft of the function that counts dolls.

count(X):

- If X = 1, count(X) = 1
- If X > 1, count(X) = count(X-1) + 1.

Why is it a bad idea to count dolls recursively here?

Report a typo

- () there is a risk of counting infinitely
- () the function cannot backtrack
- () the results are not accurate
- () we are doing extra calculations that are easily avoided
- ✓ Correct.

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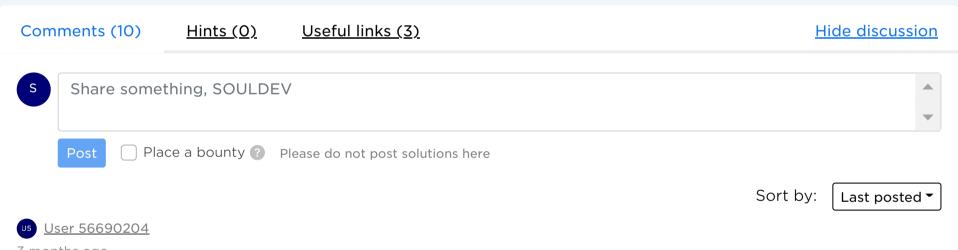








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What extra "calculations"? The number of additions is equal to one less than the number of dolls. This is the same number as for an iterative implementation. Perhaps you meant extra operations? (stack manipulations and method invocations are operations, but I'm not sure that "calculations" is the best word to describe them)





1 © Reply Report



Carlton Noronha

about 2 months ago

No. In this case no extra operations are perform but for problems like Fibonacci series extra operations will take place if you use recursion without memoization. Check out a video on Fibonacci Series using recursion.



© Reply Report



3 months ago

I'd like to know what would be the optimal solution.





1 © Reply Report



SiryWeb

4 months ago

"we are doing extra calculations that are easily avoided"

This is draft of the function for fox sake, you not optimise on draft stage!!





5 months ago

There actually is *also* a risk of "counting infinitely" (i.e. non-termination), if you start with a non-positive number.











<u>sense</u>

4 months ago

If you start with a non-positive number, then the function will only run once and will not return anything because no condition will be met.





9 & Reply Report



Edward M

4 months ago

You could say that their is no negative number of dolls, so only natural numbers can be used.

© Reply Report



A2 Anonymous 249531386

3 months ago

Function does nothing for non-positive numbers, it would just return None, why would it count infinitely?

© Reply Report



🧥 <u>Agata Murawska</u>

3 months ago

In the current version of course it wouldn't, but when I made the comment, there was a mistake.







Anonymous 249531386

3 months ago

I see, it doesn't show if the problem was fixed after the comment or not.



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