Codility_

CodeCheck Report: training9R7DDX-AHK

Test Name:

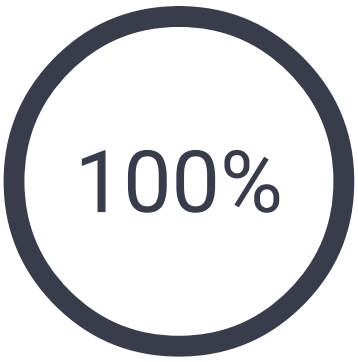
Check out Codility training tasks

Summary | Timeline

Tasks summary

Task	Time spent	Score
CountDiv C#	2 min	100%

Total score



Tasks Details

Medium

1. CountDiv

Compute number of integers divisible by k in range [a..b].

Task Score	Correctness	Performance
100%	100%	100%

Task description

Write a function:

```
class Solution { public int solution(int A, int B,
int K); }
```

that, given three integers A, B and K, returns the number of integers within the range [A..B] that are divisible by K, i.e.:

$$\{ i : A \leq i \leq B, i \bmod K = 0 \}$$

For example, for A = 6, B = 11 and K = 2, your function should return 3, because there are three numbers divisible by 2 within the range [6..11], namely 6, 8 and 10.

Write an **efficient** algorithm for the following assumptions:

- A and B are integers within the range [0..2,000,000,000];
- K is an integer within the range [1..2,000,000,000];
- A ≤ B.

Solution

Programming language used:	C#
Total time used:	2 minutes
Effective time used:	2 minutes
Notes:	*not defined yet*

Task timeline

11:01:25 11:02:33

Code: 11:02:33 UTC, cs, final, score: 100 show code in pop-up

```
using System;

/* Lesson 5.2 - Count Div
 * Paulo Santos
 * 30.Nov.2022
 */
class Solution {
    public int solution(int A, int B, int K) {

        /*
         * Check the inputs
         */
        if ((A < 0 || A > 2000000000) ||
            (B < 0 || B > 2000000000) ||
            (K < 0 || K > 2000000000))
            throw new ArgumentOutOfRangeException()

        var C = (B - A);
        var res = (int)Math.Floor((decimal)C / K);
        if (((A % K) == 0) || ((B % K) == 0))
            return (res + 1);

        if ((K > A) && (K < B)) {
            C = (B - K);
            return (int)Math.Floor((decimal)C / K)
        }

        return res;
    }
}
```

Analysis summary

The solution obtained perfect score.

Analysis

Detected time complexity: **O(1)**

expand all	Example tests	
▶	example A = 6, B = 11, K = 2	✓ OK
expand all	**Correctness tests**	
▶	simple A = 11, B = 345, K = 17	✓ OK
▶	minimal A = B in {0,1}, K = 11	✓ OK
▶	extreme_ifempty A = 10, B = 10, K in {5,7,20}	✓ OK
▶	extreme_endpoints verify handling of range endpoints, multiple runs	✓ OK
expand all	**Performance tests**	
▶		

big_values A = 100, B=123M+, K=2	✓ OK
▶ big_values2 A = 101, B = 123M+, K = 10K	✓ OK
▶ big_values3 A = 0, B = MAXINT, K in {1,MAXINT}	✓ OK
▶ big_values4 A, B, K in {1,MAXINT}	✓ OK