Codility_

Candidate Report: trainingWQWQZS-3N4

Check out Codility training tasks

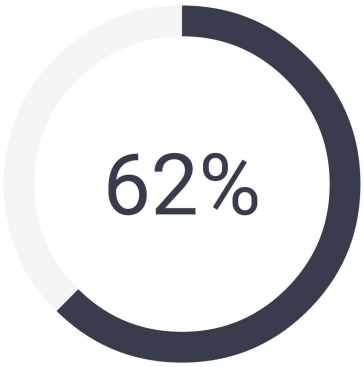
Test Name:

Summary Timeline Feedback

Tasks summary

Task	Time spent	Score
CountDiv C#	1 min	62%

Total score



Tasks Details

Medium

1. CountDiv

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

Task Score	Correctness	Performance
62%	100%	25%

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:	1 minutes
Effective time used:	1 minutes
Notes:	*not defined yet*

Task timeline

16:28:24 16:28:46

Code: 16:28:45 UTC, cs, final, score: **62** show code in pop-up

```
1  using System;
2  // you can also use other imports, for example:
3  // using System.Collections.Generic;
4
5  // you can write to stdout for debugging purposes, e.g.
6  // Console.WriteLine("this is a debug message");
7
8  class Solution {
9      public int solution(int A, int B, int K)
10        {
11            int retVal = 0;
12            for (int i=A; i <= B; i++ )
13            {
14                if (i % K == 0)
15                {
16                    ++retVal;
17                    i += K-1;
18                }
19
20            }
21            return retVal;
22        }
23 }
```

Analysis summary

The following issues have been detected: timeout errors.

For example, for the input `[0, 2000000000, 1]` the solution exceeded the time limit.

Analysis

Detected time complexity: **O((B-A)/K)**

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	✗ TIMEOUT ERROR running time: 0.220 sec., time limit: 0.100 sec.
▶	big_values2 A = 101, B = 123M+, K = 10K	✓ OK
▶	big_values3 A = 0, B = MAXINT, K in {1,MAXINT}	✗ TIMEOUT ERROR Killed. Hard limit reached: 6.000 sec.
▶		

big_values4 A, B, K in {1,MAXINT}	✗ TIMEOUT ERROR Killed. Hard limit reached: 6.000 sec.