Codility_

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:

```
def solution(A, B, 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 ≤ i ≤ B, i **mod** 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:	Python
Total time used:	1 minutes
Effective time used:	1 minutes
Notes:	*not defined yet*

Task timeline

14:09:15   14:09:46
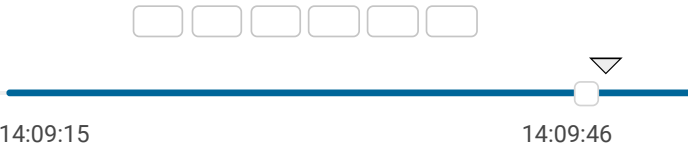
Code: 14:09:45 UTC, py, final, score: **100**

show code in pop-up

```
1   # you can write to stdout for debugging purposes, e.g.
2   # print("this is a debug message")
3
4   def solution(A, B, K):
5       if A % K == 0:
6           return (B - A) // K + 1
7       else:
8           return (B - (A - A % K )) // K
```

Analysis summary

The solution obtained perfect score.

Analysis

Detected time complexity:

O(1)

expand all   **Example tests**

▶ example　　　　　　　　　　　✓ OK
A = 6, B = 11, K = 2

expand all　　　　　　Correctness tests

▶ simple　　　　　　　　　　　　✓ OK
A = 11, B = 345, K = 17

▶ minimal　　　　　　　　　　　✓ OK
A = B in {0,1}, K = 11

▶ extreme_ifempty　　　　　　　✓ OK
A = 10, B = 10, K in {5,7,20}

▶ extreme_endpoints　　　　　　✓ OK
verify handling of range endpoints,
multiple runs

expand all　　　　　　Performance tests

▶ big_values　　　　　　　　　　✓ OK
A = 100, B=123M+, K=2

▶ big_values2　　　　　　　　　✓ OK
A = 101, B = 123M+, K = 10K

▶ big_values3　　　　　　　　　✓ OK
A = 0, B = MAXINT, K in {1,MAXINT}

▶ big_values4　　　　　　　　　✓ OK
A, B, K in {1,MAXINT}