Codility_

Candidate Report: trainingBJM49D-H4Y

Test Name:

Summary   Timeline

Tasks summary

Task		Time spent	Score
CountDiv ⚠ Python		2 min	50%

Total score

50%

Tasks Details

Medium

1. CountDiv

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

Task Score
50%

Correctness
100%

Performance
0%

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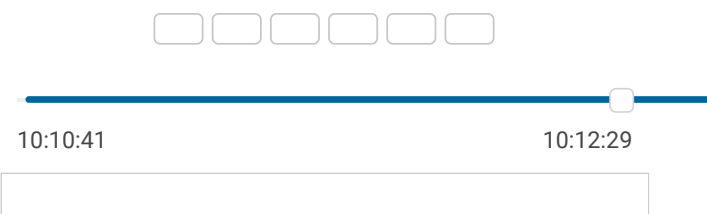
Write an **efficient** algorithm for the following assumptions:

- 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:	2 minutes ❓
Effective time used:	2 minutes ❓
Notes:	*not defined yet*

Task timeline ❓

10:10:41   10:12:29

Code: 10:12:28 UTC, py, final,   show code in pop-up
score: **50**

```
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        # write your code in Python 3.6
6        num = 0
7        i = A
8        while i<=B:
9            if i%K==0:
10               num = num+1
11           i = i + 1
12       return num
```

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:　　$O(B-A)$

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 Killed. Hard limit reached: 6.000 sec.
▶ big_values2 A = 101, B = 123M+, K = 10K		✗ TIMEOUT ERROR Killed. Hard limit reached: 6.000 sec.
▶ 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.

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