

Tasks Details

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Medium	1. CountDiv	Task Score	Correctness	Performance	
	Compute number of integers divisible by k in range [a..b].				
		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.:

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

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];
- $A \leq B$.

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Solution

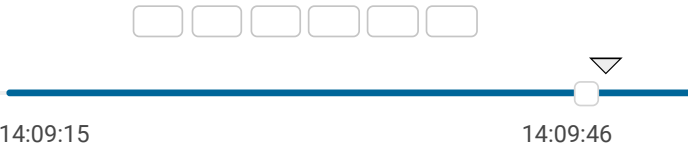
Programming language used: Python

Total time used: 1 minutes ?

Effective time used: 1 minutes ?

Notes: *not defined yet*

Task timeline ?



Code: 14:09:45 UTC, py, [show code in pop-up](#)
final, score: 100

```
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
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▶ 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}	

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