codility

Training center

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Training ticket

Session

ID: trainingZZ7PZK-2A2
Time limit: 120 min.

Status: closed

Created on: 2016-06-09 20:19 UTC
Started on: 2016-06-09 20:19 UTC
Finished on: 2016-06-09 20:19 UTC

Tasks in test	Correctness	Performance	Task score
1 CountDiv Submitted in: Java	100%	100%	100%

100%

100 out of 100 points

EASY

1. CountDiv

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

score: 100 of 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.

Assume that:

- 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.

Complexity:

- expected worst-case time complexity is O(1);
- expected worst-case space complexity is O(1).

Solution

Programming language used: Java

Total time used: 1 minutes

Effective time used: 1 minutes

Notes: *not defined yet*

Task timeline

20:19:13 20:19:54

Code: 20:19:54 UTC, java, final, score: **100**

show code in pop-up

```
1  // you can also use imports, for example:
2  // import java.util.*;
3
4  // you can write to stdout for debugging purposes, e.g
5  // System.out.println("this is a debug message");
6
```

```
7  class Solution {
8      public int solution(int A, int B, int K) {
9          if (A==B) return ((A % K) == 0?1:0);
10         long FR = B/K;
11         int SR = 0;
12         if (A>=K) {
13             SR = (A-1)/K;
14         }
15         return (int)(FR-SR)+(A==0?1:0);
16     }
17
18 }
```

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

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