codility

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Training ticket

Session

ID: trainingUSGUHR-BZA
Time limit: 120 min.

Status: closed

Created on: 2016-09-12 20:49 UTC
Started on: 2016-09-12 20:49 UTC
Finished on: 2016-09-12 20:58 UTC

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

Test score

100%

100 out of 100 points

EASY

1. FrogJmp

Count minimal number of jumps from position X to Y.

score: 100 of 100

Task description

A small frog wants to get to the other side of the road. The frog is currently located at position X and wants to get to a position greater than or equal to Y. The small frog always jumps a fixed distance, D.

Count the minimal number of jumps that the small frog must perform to reach its target.

Write a function:

```
class Solution { public int solution(int X, int Y,
int D); }
```

that, given three integers X, Y and D, returns the minimal number of jumps from position X to a position equal to or greater than Y.

For example, given:

```
X = 10
Y = 85
D = 30
```

the function should return 3, because the frog will be positioned as follows:

- after the first jump, at position 10 + 30 = 40
- after the second jump, at position 10 + 30 + 30 = 70
- after the third jump, at position 10 + 30 + 30 + 30 = 100

Assume that:

- X, Y and D are integers within the range [1..1,000,000,000];
- X ≤ Y.

Solution

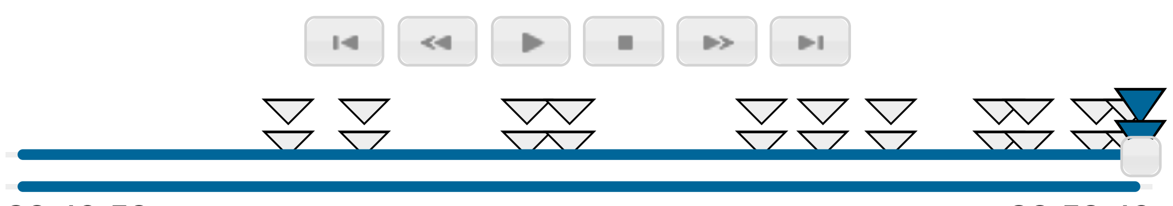
Programming language used: Java

Total time used: 9 minutes

Effective time used: 9 minutes

Notes: *not defined yet*

Task timeline



20:49:58 20:58:49

Code: 20:58:49 UTC, java, final, score: 100

show code in pop-up

```
// you can also use imports, for example:
// import java.util.*;

// you can write to stdout for debugging purposes, e.g
// System.out.println("this is a debug message");

class Solution {
    public int solution(int X, int Y, int D) {
        int distance = Y - X;
        double jumpsRough = distance / (double)D;

        int jumpsNeeded = (int)Math.ceil(jumpsRough);

```

Complexity:

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

```
            return jumpsNeeded;
        }
    }
```

Analysis summary

The solution obtained perfect score.

Analysis

Detected time complexity:
O(1)

expand all	Example tests	
▶	example example test	✔ OK
expand all	**Correctness tests**	
▶	simple1 simple test	✔ OK
▶	simple2	✔ OK
▶	extreme_position no jump needed	✔ OK
▶	small_extreme_jump one big jump	✔ OK
expand all	**Performance tests**	
▶	many_jump1 many jumps, D = 2	✔ OK
▶	many_jump2 many jumps, D = 99	✔ OK
▶	many_jump3 many jumps, D = 1283	✔ OK
▶	big_extreme_jump maximal number of jumps	✔ OK
▶	small_jumps many small jumps	✔ OK

Training center