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Demo ticket

Session

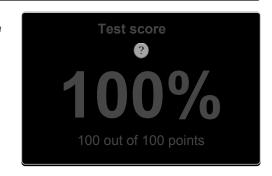
ID: demoTNKDGH-3UG Time limit: 120 min.

Status: closed

Created on: 2014-03-16 03:40 UTC Started on: 2014-03-16 03:40 UTC Finished on: 2014-03-16 03:41 UTC

Tasks in test

Task score



Y2 A

1. MinPerimeterRectangle

Find the minimal perimeter of any rectangle whose area equals N.

score: 100 of 100



Task description

An integer N is given, representing the area of some rectangle. The area of a rectangle whose sides are of length A and B is A * B, and the perimeter is 2 * (A + B).

The goal is to find the minimal perimeter of any rectangle whose area equals N. The sides of this rectangle should be only integers. For example, given integer N = 30, rectangles of area 30 are:

- (1, 30), with a perimeter of 62,
- (2, 15), with a perimeter of 34,
- (3, 10), with a perimeter of 26,
- (5, 6), with a perimeter of 22.

Write a function:

def solution(N)

that, given an integer N, returns the minimal perimeter of any rectangle whose area is exactly equal to N.

For example, given an integer N = 30, the function should return 22, as explained above.

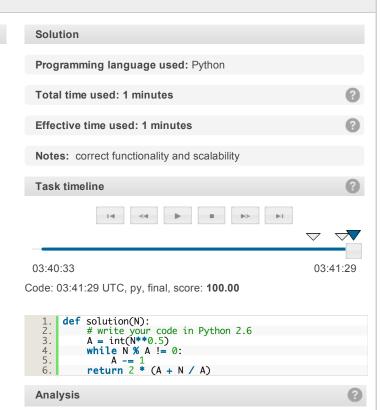
Assume that:

• N is an integer within the range [1..1,000,000,000].

Complexity:

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

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O(sqrt(N))

test	time	result
example example test	0.050 s.	ок
extreme_min N = 1 test	0.050 s.	ок

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	1	
simple1 N = 36 test	0.050 s.	ОК
simple2 N = 48 test	0.050 s.	ок
simple3 N = 101 test	0.050 s.	ок
small N = 1,234 test	0.050 s.	ОК
medium N = 4,564,320 test	0.050 s.	ок
prime1 N = 15,486,451 test	0.050 s.	ок
square N = 100,000,000 test	0.050 s.	ок
prime2 N = 982,451,653 test	0.050 s.	ОК
extreme_max N = 1,000,000,000 test	0.050 s.	ок

Training center

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