codility

Check out Codility training tasks

Candidate Report: Anonymous

Test Name:

Summary Timeline

Test Score

44 out of 100 points

44%

Tasks in Test

	Time Spent	Task Score
MaxProductOfThree Submitted in: Java 8	15 min	44%

TASKS DETAILS

EASY

1. MaxProductOfThree
Maximize A[P] * A[Q] * A[R] for any triplet (P, Q, R).

Task Score	Correctness	Performance
44%	50%	40%

Task description

A non-empty array A consisting of N integers is given. The *product* of triplet (P, Q, R) equates to A[P] * A[Q] * A[R] (0 ≤ P < Q < R < N).

For example, array A such that:

```
A[0] = -3
A[1] = 1
A[2] = 2
A[3] = -2
A[4] = 5
A[5] = 6
```

contains the following example triplets:

- (0, 1, 2), product is −3 * 1 * 2 = −6
- (1, 2, 4), product is 1 * 2 * 5 = 10
- (2, 4, 5), product is 2 * 5 * 6 = 60

Your goal is to find the maximal product of any triplet.

Write a function:

```
class Solution { public int solution(int[] A); }
```

that, given a non-empty array A, returns the value of the maximal product of any triplet.

For example, given array A such that:

```
A[0] = -3
A[1] = 1
A[2] = 2
A[3] = -2
A[4] = 5
A[5] = 6
```

Solution

Programming language used:	Java 8
Total time used:	15 minutes
Effective time used:	15 minutes
Notes:	*not defined yet*

Task timeline

10:56:32 11:10:58

Code: 11:10:57 UTC, java, final, score: **44** 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  import java.util.Arrays;
8
9  public class Solution {
```

the function should return 60, as the product of triplet (2, 4, 5) is maximal.

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

- N is an integer within the range [3..100,000];
- each element of array A is an integer within the range [−1,000..1,000].


```
10
11          public static int solution(int[] a) {
12
13                  Arrays.sort(a);
14
15                  int r = 1;
16                  for (int i = a.length - 1; i > a.length -
17                          r = r * a[i];
18
19                  return r;
20          }
21
22  }
```

Analysis summary

The following issues have been detected: wrong answers.

For example, for the input `[-5, 5, -5, 4]` the solution returned a wrong answer (got -100 expected 125).

Analysis

expand all	Example tests	
▶	example example test	✓ OK
expand all	Correctness tests	
▶	one_triple three elements	✓ OK
▶	simple1 simple tests	✗ WRONG ANSWER got 84 expected 105
▶	simple2 simple tests	✗ WRONG ANSWER got -100 expected 125
▶	small_random random small, length = 100	✓ OK
expand all	Performance tests	
▶	medium_range -1000, -999, ... 1000, length = ~1,000	✗ WRONG ANSWER got 997002000 expected 999000000
▶	medium_random random medium, length = ~10,000	✓ OK
▶	large_random random large, length = ~100,000	✓ OK
▶	large_range 2000 * (-10..10) + [-1000, 500, -1]	✗ WRONG ANSWER got 50000 expected 5000000
▶	extreme_large (-2, .., -2, 1, .., 1) and (MAX_INT)..(MAX_INT), length = ~100,000	✗ WRONG ANSWER got 1 expected 4