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Session

ID: trainingJTWAWG-VX4
 Time limit: 120 min.

Status: closed

Created on: 2016-06-19 15:39 UTC
 Started on: 2016-06-19 15:39 UTC
 Finished on: 2016-06-19 15:40 UTC

Tasks in test

1 | **OddOccurrencesInArray**
 Submitted in: Java

Correctness

100%

Performance

100%

Task score

100%

Test score ?

100%

100 out of 100 points

EASY

1. OddOccurrencesInArray

Find value that occurs in odd number of elements.

score: 100 of 100



Task description

A non-empty zero-indexed array A consisting of N integers is given. The array contains an odd number of elements, and each element of the array can be paired with another element that has the same value, except for one element that is left unpaired.

For example, in array A such that:

```
A[0] = 9   A[1] = 3   A[2] = 9
A[3] = 3   A[4] = 9   A[5] = 7
A[6] = 9
```

- the elements at indexes 0 and 2 have value 9,
- the elements at indexes 1 and 3 have value 3,
- the elements at indexes 4 and 6 have value 9,
- the element at index 5 has value 7 and is unpaired.

Write a function:

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

that, given an array A consisting of N integers fulfilling the above conditions, returns the value of the unpaired element.

For example, given array A such that:

```
A[0] = 9   A[1] = 3   A[2] = 9
A[3] = 3   A[4] = 9   A[5] = 7
A[6] = 9
```

Solution

Programming language used: Java

Total time used: 2 minutes

?

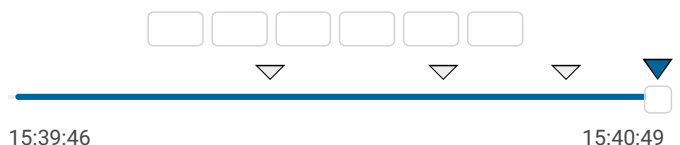
Effective time used: 2 minutes

?

Notes: *not defined yet*

Task timeline

?



Code: 15:40:49 UTC, java, final,
 score: 100

[show code in pop-up](#)

```
1 import java.util.Map;
2 import java.util.Optional;
3 import java.util.function.Function;
4 import java.util.stream.Collectors;
5 import java.util.stream.IntStream;
6
```

the function should return 7, as explained in the example above.

Assume that:

- N is an odd integer within the range [1..1,000,000];
- each element of array A is an integer within the range [1..1,000,000,000];
- all but one of the values in A occur an even number of times.

Complexity:

- expected worst-case time complexity is O(N);
- expected worst-case space complexity is O(1), beyond input storage (not counting the storage required for input arguments).

Elements of input arrays can be modified.

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```
7 public class Solution {
8
9     public int solution(int[] A) {
10         Optional<Integer> unmatched = IntStream.of(A)
11             .boxed()
12             .collect(Collectors.groupingBy(Function.identity(),
13                 Collectors.toCollection(HashMap::new)))
14             .stream()
15             .filter(value -> value.getValue() % 2 != 0)
16             .map(Map.Entry::getKey)
17             .findFirst();
18
19         return unmatched.get();
20     }
21 }
```

Analysis summary

The solution obtained perfect score.

Analysis



Detected time complexity:
O(N)

expand all	Example tests
▶ example1 example test	✓ OK
expand all	Correctness tests
▶ simple1 simple test n=5	✓ OK
▶ simple2 simple test n=11	✓ OK
▶ extreme_single_item [42]	✓ OK
▶ small1 small random test n=201	✓ OK
▶ small2 small random test n=601	✓ OK
expand all	Performance tests
▶ medium1 medium random test n=2,001	✓ OK
▶ medium2 medium random test n=100,003	✓ OK
▶ big1 big random test n=999,999, multiple repetitions	✓ OK
▶ big2 big random test n=999,999	✓ OK

