

TASKS DETAILS

EASY

1. OddOccurrencesInArray

Find value that occurs in odd number of elements.

Task Score

55%

Correctness

80%

Performance

25%

Task description

A non-empty 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:

```
def solution(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
```

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 $O(1)$ (not counting the storage required for input arguments).

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<https://app.codility.com/demo/results/trainingMRE43P-MXV/>

Solution

Programming language used: Python

Total time used: 1 minutes

?

Effective time used: 1 minutes

?

Notes: *not defined yet*

Task timeline

?



02:09:08

02:09:36

Code: 02:09:36 UTC, py, final,
score: 55

[show code in pop-up](#)

```
1 def solution(A):
2     repeated = []
3     for value in A:
4         counter = A.count(value)
5         if counter > 1:
6             if value in repeated:
7                 continue
8             else:
9                 repeated.append(value)
10    else:
11        return value
```

Analysis summary

The following issues have been detected: runtime errors, timeout errors.

Analysis ?

Detected time complexity: **$O(N^2)$**

[expand all](#)
[Example tests](#)

▶ example1	✓ OK
example test	
expand all	Correctness tests
▶ simple1	✓ OK
simple test n=5	
▶ simple2	✓ OK
simple test n=11	
▶ extreme_single_item	✓ OK
[42]	
▶ small1	✗ RUNTIME ERROR
small random test n=201	tested program terminated with exit code 1
▶ small2	✓ OK
small random test n=601	
expand all	Performance tests
▶ medium1	✓ OK
medium random test n=2,001	
▶ medium2	✗ TIMEOUT ERROR
medium random test n=100,003	running time: >6.00 sec., time limit: 0.54 sec.
▶ big1	✗ TIMEOUT ERROR
big random test n=999,999, multiple repetitions	running time: >10.00 sec., time limit: 4.05 sec.
▶ big2	✗ TIMEOUT ERROR
big random test n=999,999	running time: >10.00 sec., time limit: 4.46 sec.