Codility_

CodeCheck Report: trainingFB8FTR-FM8

Test Name:

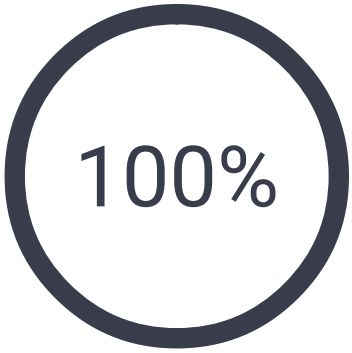
Check out Codility training tasks

Summary Timeline AI Assistant Transcript

Tasks summary

Task	Time spent	Score
PermMissingElem C++	12 min	100%

Total score



Tasks Details

Easy

1. PermMissingElem
Find the missing element in a given permutation.

Task Score	Correctness	Performance
100%	100%	100%

Task description

An array A consisting of N different integers is given. The array contains integers in the range [1..(N + 1)], which means that exactly one element is missing.

Your goal is to find that missing element.

Write a function:

```
int solution(vector<int> &A);
```

that, given an array A, returns the value of the missing element.

For example, given array A such that:

```
A[0] = 2
A[1] = 3
A[2] = 1
A[3] = 5
```

the function should return 4, as it is the missing element.

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

- N is an integer within the range [0..100,000];
- the elements of A are all distinct;
- each element of array A is an integer within the range [1..(N + 1)].

Solution

Programming language used:	C++
Total time used:	12 minutes
Effective time used:	12 minutes
Notes:	*not defined yet*

Task timeline

09:44:45 09:56:46

Code: 09:56:46 UTC, cpp, final, score: **100** show code in pop-up

```
1  // you can use includes, for example:
2  // #include <algorithm>
3
4  // you can write to stdout for debugging purposes,
```

```cpp
// cout << "this is a debug message" << endl;

int solution(vector<int> &A) {
    // Implement your solution here
    long len=A.size()+1;
    long lensum;
    if(len%2==0)
    {
        lensum=(len/2)*(len+1);
    }
    else{
        lensum=(len)*((len+1)/2);
    }
    long long givensum=0;
    for(int i=0;i<len-1;i++)
    {
        givensum=givensum+(long long )A[i];
    }
    return lensum-givensum;

}
```

Analysis summary

The solution obtained perfect score.

Analysis

Detected time complexity: **O(N) or O(N * log(N))**

expand all	Example tests	
▶	example example test	✓ OK
expand all	Correctness tests	
▶	empty_and_single empty list and single element	✓ OK
▶	missing_first_or_last the first or the last element is missing	✓ OK
▶	single single element	✓ OK
▶	double two elements	✓ OK
▶	simple simple test	✓ OK
expand all	Performance tests	
▶	medium1 medium test, length = ~10,000	✓ OK
▶	medium2 medium test, length = ~10,000	✓ OK
▶	large_range range sequence, length = ~100,000	✓ OK
▶	large1 large test, length = ~100,000	✓ OK
▶	large2 large test, length = ~100,000	✓ OK