Codility_

CodeCheck Report: trainingEWQ3TW-376

Test Name:

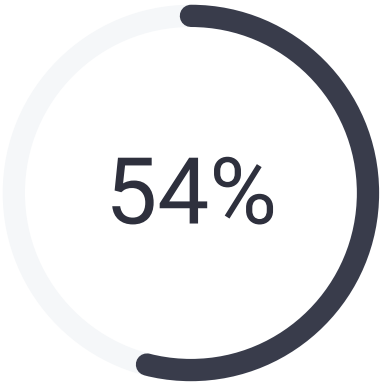
Check out Codility training tasks

Summary Timeline

Tasks summary

Task	Time spent	Score
MinAbsSum Python ⚠	8 min	54%

Total score



Tasks Details

1. **MinAbsSum**

Hard

Given array of integers, find the lowest absolute sum of elements.

Task Score	Correctness	Performance
54%	100%	0%

Task description

For a given array A of N integers and a sequence S of N integers from the set {−1, 1}, we define val(A, S) as follows:

val(A, S) = |**sum**{ A[i]*S[i] for i = 0..N−1 }|

(Assume that the sum of zero elements equals zero.)

For a given array A, we are looking for such a sequence S that minimizes val(A,S).

Write a function:

```
def solution(A)
```

that, given an array A of N integers, computes the

Solution

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

Task timeline

minimum value of val(A,S) from all possible values of val(A,S) for all possible sequences S of N integers from the set {−1, 1}.

For example, given array:

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

your function should return 0, since for S = [−1, 1, −1, 1], val(A, S) = 0, which is the minimum possible value.

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

- N is an integer within the range [0..20,000];
- each element of array A is an integer within the range [−100..100].

13:45:37 13:52:56

Code: 13:52:55 UTC, py, final, score: **54** show code in pop-up

```
1  # you can write to stdout for debugging
2  # print("this is a debug message")
3  import itertools
4
5  def solution(A):
6      # Implement your solution here
7      # pass
8      N = len(A)
9      min_val = float('inf')
10
11     for S in itertools.product([-1, 1],
12         val = sum(A[i] * S[i] for i in
13         min_val = min(min_val, abs(val)
14
15     return min_val
16
17
18
```

Analysis summary

The following issues have been detected: timeout errors.

Analysis

Detected time complexity: **O(N**2 * max(abs(A)))**

expand all	Example tests	
▶	example1 example test	✔ OK
expand all	**Correctness tests**	
▶	simple1 simple 1	✔ OK
▶	simple2 simple 2	✔ OK
▶	simple3 simple 3	✔ OK
▶	range range 2..20	✔ OK
▶	extreme empty and single element	✔ OK
▶	functional small functional test	✔ OK

expand all	Performance tests	
▶	medium1 medium random	✘ TIMEOUT ERROR Killed. Hard limit reached: 6.000 sec.
▶	medium2 multiples of 10 + 5	✘ TIMEOUT ERROR Killed. Hard limit reached: 6.000 sec.
▶	big1 multiples of 5 + 42	✘ TIMEOUT ERROR Killed. Hard limit reached: 9.000 sec.
▶	big3 all 4s and one 3	✘ TIMEOUT ERROR Killed. Hard limit reached: 6.000 sec.
▶	big4 multiples of 10	✘ TIMEOUT ERROR Killed. Hard limit reached: 11.000 sec.