Codility_

CodeCheck Report: trainingXNZ4MJ-QFM

Test Name:

Check out Codility training tasks

Summary | Timeline

Tasks summary

Task	Time spent	Score
Triangle Python	4 min	100%

Total score

Tasks Details

Easy

1. Triangle

Determine whether a triangle can be built from a given set of edges.

Task Score	Correctness	Performance
100%	100%	100%

Task description

An array A consisting of N integers is given. A triplet (P, Q, R) is *triangular* if 0 ≤ P < Q < R < N and:

- A[P] + A[Q] > A[R],
- A[Q] + A[R] > A[P],
- A[R] + A[P] > A[Q].

For example, consider array A such that:

```
A[0] = 10    A[1] = 2    A[2] = 5
A[3] = 1     A[4] = 8    A[5] = 20
```

Triplet (0, 2, 4) is triangular.

Write a function:

```
def solution(A)
```

that, given an array A consisting of N integers, returns 1 if there exists a triangular triplet for this array and returns 0 otherwise.

For example, given array A such that:

```
A[0] = 10    A[1] = 2    A[2] = 5
A[3] = 1     A[4] = 8    A[5] = 20
```

the function should return 1, as explained above. Given array A such that:

```
A[0] = 10    A[1] = 50    A[2] = 5
A[3] = 1
```

the function should return 0.

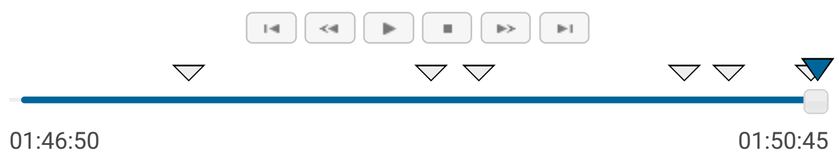
Write an **efficient** algorithm for the following assumptions:

- N is an integer within the range [0..100,000];
- each element of array A is an integer within the range [−2,147,483,648..2,147,483,647].

Solution

Programming language used:	Python
Total time used:	4 minutes
Effective time used:	4 minutes
Notes:	*not defined yet*

Task timeline



Code: 01:50:44 UTC, py, final, score: **100**

show code in pop-up

```python
# you can write to stdout for debugging purposes, e.g.
# print("this is a debug message")

def solution(A):
    # write your code in Python 3.6
    N = len(A)
    if N < 3:
        return 0
    if N == 3:
        if A[0]+A[1] > A[2] and A[1]+A[2] > A[0] and A[2]+A[0]
            return 1
        else:
            return 0

    A.sort()
    while True:
        if len(A) > 2:
            if A[-3]+A[-2] > A.pop():
                return 1
        if len(A) == 2:
            break

    return 0
```

Analysis summary

The solution obtained perfect score.

Analysis

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

expand all	Example tests	
▶	example example, positive answer, length=6	✔ OK
▶	example1 example, answer is zero, length=4	✔ OK
expand all	**Correctness tests**	
▶	extreme_empty empty sequence	✔ OK
▶	extreme_single 1-element sequence	✔ OK
▶	extreme_two_elems 2-element sequence	✔ OK
▶	extreme_negative1 three equal negative numbers	✔ OK
▶	extreme_arith_overflow1 overflow test, 3 MAXINTs	✔ OK
▶	extreme_arith_overflow2 overflow test, 10 and 2 MININTs	✔ OK
▶	extreme_arith_overflow3 overflow test, 0 and 2 MAXINTs	✔ OK
▶	medium1 chaotic sequence of values from [0..100K], length=30	✔ OK
▶	medium2 chaotic sequence of values from [0..1K], length=50	✔ OK
▶	medium3 chaotic sequence of values from [0..1K], length=100	✔ OK
expand all	**Performance tests**	
▶	large1 chaotic sequence with values from [0..100K], length=10K	✔ OK
▶	large2 1 followed by an ascending sequence of ~50K elements from [0..100K], length=~50K	✔ OK
▶	large_random chaotic sequence of values from [0..1M], length=100K	✔ OK
▶	large_negative chaotic sequence of negative values from [-1M..-1], length=100K	✔ OK
▶	large_negative2 chaotic sequence of negative values from [-10..-1], length=100K	✔ OK
▶	large_negative3 sequence of -1 value, length=100K	✔ OK