3/15/2014 Codility

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Training center

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Demo ticket

Session

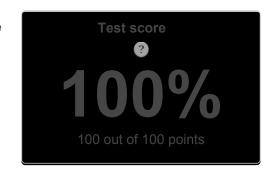
ID: demo7U3Q7E-XQM Time limit: 120 min.

Status: closed

Created on: 2014-03-16 02:56 UTC Started on: 2014-03-16 02:57 UTC Finished on: 2014-03-16 03:00 UTC

Tasks in test

Task score



1. MaxDoubleSliceSum

Find the maximal sum of any double slice.

score: 100 of 100 👢 🔔

Task description

A non-empty zero-indexed array A consisting of N integers is given. A triplet (X, Y, Z), such that $0 \le X < Y < Z < N$, is called a *double slice*. The sum of double slice (X, Y, Z) is the total of A[X + 1] + A[X + 2] + ...+ A[Y - 1] + A[Y + 1] + A[Y + 2] + ... + A[Z - 1].For example, array A such that:

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

contains the following example double slices:

- double slice (0, 3, 6), sum is 2 + 6 + 4 + 5 = 17,
- double slice (0, 3, 7), sum is 2 + 6 + 4 + 5 1 = 16,
- double slice (3, 4, 5), sum is 0.

The goal is to find the maximal sum of any double slice. Write a function:

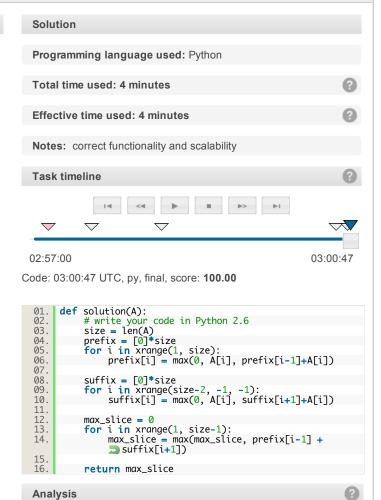
```
def solution(A)
```

that, given a non-empty zero-indexed array A consisting of N integers, returns the maximal sum of any double slice.

For example, given:

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

the function should return 17, because no double slice of array A has a sum of greater than 17.



Assume that:

- N is an integer within the range [3..100,000];
 each element of array A is an integer within the range [-10,000..10,000].

Complexity:

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

Elements of input arrays can be modified.

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Codility

Detected time complexity: O(N)

test	time	result
example example test	0.050 s.	ок
simple1 first simple test	0.050 s.	ок
simple2 second simple test	0.050 s.	ок
simple3 third simple test	0.050 s.	ок
negative all negative numbers	0.050 s.	ок
positive all positive numbers	0.050 s.	ок
extreme_triplet three elements	0.050 s.	ок
small_random1 random, numbers form -10**4 to 10**4, length = 70	0.050 s.	ок
small_random2 random, numbers from -30 to 30, length = 300	0.050 s.	ок
medium_range -1000,, 1000	0.050 s.	ок
large_ones random numbers from -1 to 1, length = ~100,000	0.350 s.	ок
large_random random, length = ~100,000	0.370 s.	ок
extreme_maximal all maximal values, length = ~100,000	0.360 s.	ок
large_sequence many the same small sequences, length = ~100,000	0.350 s.	ок

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