

[CS 11 25.1] Lab 5f – Zero-Sum Game

Cheatsheet is available here: <https://oj.dcs.upd.edu.ph/cs11cheatsheet/>

Problem Statement

X and Zero are playing a game. Starting with an empty list, X is going to add a new integer at the end of the list one by one.

After each number is added to the list, Zero now needs to answer the following question:

How many *subarrays* (a.k.a. contiguous subsequences) currently have a sum of zero?

Please help him!

Task Details

Your task is to implement a function called `zero_sum_counts`. It has a single argument, an *iterable* of n `int`s representing the elements that X is adding to the list, one by one.

It must return a *generator* that generates `int`s denoting the answers.

Note that your generator must be **as lazy as possible**. It should yield each resulting next element as soon as it has enough information, and it should produce these results while advancing the input generators for as little as possible.

Restrictions

Note that some names are banned.

For this problem:

- Loops and lists are allowed.
- Sets and dictionaries are allowed.
- Generators and comprehensions are allowed.
- Recursion is **disallowed**. (The recursion limit has been greatly reduced.)
- Up to 16 function definitions are allowed.
- The source code limit is 2000.

Example Calls

Example 1 Function Call

```
[*zero_sum_counts(iter((2, 4, -5, 2, -1, 1, 0, -3)))]
```

Example 1 Return Value




```
[0, 0, 0, 0, 1, 2, 4, 5]
```

Constraints

- The function `zero_sum_counts` will be called at most 10 times.
- The total number of elements consumed across all calls will be $\leq 100,000$.
- Each value is an integer with absolute value at most 10^{20} .

Scoring

Note: New tests may be added and all submissions may be rejudged at a later time. (All future tests will satisfy the constraints.)

- You get 40  points if you solve all test cases where:
 - The total number of elements consumed across all calls will be 100.
- You get 30  points if you solve all test cases where:
 - The total number of elements consumed across all calls will be 4,000.
- You get 50  points if you solve all test cases.

Clarifications

No clarifications have been made at this time.

Report an issue

Submit solution

[CS 11 25.1]

Lab Exercise 5

My submissions

✔ **Points:** 120 (partial)
⌚ **Time limit:** 12.0s
📜 **Memory limit:** 1G

➤ **Problem type**
▼ **Allowed languages**
py3