[CS 11 25.1] Lab 5a – Pelikulang Pinoy

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

Problem Statement

Have you seen the movie *Michael and Madonna*?

That movie has a runtime of exactly n minutes. Each minute of the movie has an *excitingness value*, which is a nonnegative integer.

Suppose you start watching the movie at the beginning of the sth minute, and stopped watching at the end of the eth minute, with $1 \leq s \leq e \leq n$. The **highlight** of your movie is the largest excitingness value among the minutes you watched.

For each distinct excitingness value v, how many pairs (s, e) of integers with $1 \leq s \leq e \leq n$ (note that there are $n(n + 1)/2$ such pairs all in all) are there such that the highlight of the movie is equal to v?

Task Details

Your task is to implement a function called `movie_highlights`. The function takes a `tuple` or `list` of n `int`s denoting the excitingness values of all n minutes of the movie, in chronological order.

The function must return a `dict` whose keys are all the excitingness values, and such that for each key v, the corresponding value is an `int` denoting the number of pairs (s, e) such that the highlight of the movie is v.

Restrictions

Note that some names are banned. Here are a few of them: `input`, `type`. This is not an exhaustive list. (If you accidentally use a variable name that turns out to be banned, please rename it.)

The following imports are now allowed:

- `count`, `islice`, and `chain` from `itertools`.

For this problem:

- The source code limit is 2000.

Example Calls

Example 1 Function Call

```
movie_highlights([1, 1, 7, 1, 7, 8, 2, 1])
```

Example 1 Return Value

```
{
    2: 2,
    7: 11,
    1: 5,
    8: 18,
}
```

Constraints

- The function `movie_highlights` will be called at most $60,000$ times.
- The sum of the ns will be at most $250,000$.
- $0 \leq n \leq 250,000$
- Each element of the argument is a nonnegative integer at most 10^{10}.

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 150 ❤️ points if you solve all test cases where:
  - $n \leq 50$
  - the sum of the ns is at most 500.
- You get 180 🔴 points if you solve all test cases where:
  - $n \leq 4,000$
  - the sum of the ns is at most $8,000$.
- You get 20 💜 points if you solve all test cases.

❓ Clarifications

Report an issue

No clarifications have been made at this time.

Submit solution

[CS 11 25.1] Lab Exercise 5

My submissions

✔ **Points:** 350 (partial)
🕐 **Time limit:** 4.0s
📊 **Memory limit:** 1G

❯ **Problem type**

⌄ **Allowed languages**
py3