[CS 11] Prac 10j – Competitive Catherine Full Body

Problem Statement

EVO has decided to hold the competitive tournament for the game "Catherine Full Body" this year as a round robin tournament.

There are n players, each with a given skill level, and each unique pair of players will have exactly one match. For example, for $n = 5$ players, there will be exactly 10 matches.

EVO knows their audience, and knows exactly how much excitement each match-up will generate! For a match between two players with skill levels s_1 and s_2, they have come up with the following formula for the amount of **excitement** that the match will generate: $\min(s_1, s_2)$.

Given the skill levels of the n players, what is the total amount of excitement across all matches?

Task Details

Your task is to implement a function called `total_excitement`. This function has a single argument, a `tuple` / `list` of n `int`s representing the skill levels of the players.

The function must return an `int` denoting the total amount of excitement.

Restrictions

(See 10a for more restrictions)

For this problem in particular:

- The following symbols are allowed: `map`, `filter`.
- The following import is allowed: `cache` and `lru_cache` from `functools`.
- The source code limit is 1000.

Example Calls

Example 1 Function Call

```
total_excitement((3, 1, 4, 1))
```

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Example 1 Return Value

```
8
```

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Constraints

- The function `total_excitement` will be called at most $60{,}000$ times.
- The sum of ns across all calls will be $\leq 250{,}000$.
- $0 \leq n \leq 250{,}000$
- Each skill level is an integer between 0 and 10^{10}.

Scoring

- You get 55 ❤ points if you solve all test cases where:
  - $n \leq 50$
  - The sum of the ns across all calls is 500.
- You get 50 ❤ points if you solve all test cases where:
  - $n \leq 4{,}000$
  - The sum of the ns across all calls is $8{,}000$.
- You get 65 ❤ points if you solve all test cases.

Submit solution [CS 11] Practice 10

Points: 170 (partial)

Time limit: 6.0s

Memory limit: 1G

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Problem type

Allowed languages ~~NONE~~, py3

Clarifications

Report an issue

No clarifications have been made at this time.