[CS 11 25.1] Lab 6d – String Sequence

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

Submit solution [CS 11 25.1] Lab Exercise 6

My submissions

Points: 50 (partial)
Time limit: 4.0s
Memory limit: 1G

Problem type

Allowed languages
py3

Problem Statement

You are given a bunch of strings S. What is the longest sequence of distinct strings in S such that each string is a substring of the next one?

Formally, what is the longest sequence of distinct strings $s_1, s_2, \ldots, s_k$ such that:

- s_1 is a substring of s_2;
- s_2 is a substring of s_3;
- ...
- s_{k-1} is a substring of s_k?

Task Details

Your task is to implement a function called `longest_string_seq`. It takes a single argument, a `tuple` or `list` of n `str`s representing the strings.

It must return an `int` denoting the *length* of the longest sequence satisfying the requirements mentioned in the problem statement.

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 names are allowed: `map`, `filter`.

The following imports are allowed:

- `count`, `islice`, `chain`, `takewhile`, `starmap` and `zip_longest` from `itertools`.
- `cache`, `lru_cache`, `total_ordering`, `partial`, `reduce` and `wraps` from `functools`.
- `randint`, `randrange` and `choice` from `random`.
- `Fraction` from `fractions`.
- `dataclass` from `dataclasses`.
- `contextmanager` from `contextlib`.
- `Enum`, `auto` from `enum`.

(Read the docs to learn what they do!)

Anonymous functions are allowed.

Inner functions are allowed.

Classes, dataclasses and enums are allowed.

For this problem in particular:

- The source code limit is 3000.

Example Calls

Example 1 Function Call

```
longest_string_seq(('a', 'banana', 'anna', 'ann', 'an', 'hannah', 'an'))
```

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Example 1 Return Value

```
5
```

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Example 1 Explanation

The longest sequnce is `a`, `an`, `ann`, `anna`, `hannah`.

Constraints

- The function `longest_string_seq` will be called at most 5 times.
- $0 \leq n \leq 50$
- Each string has length between 0 and 50, inclusive and consists of lowercase English letters.

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 50 points if you solve all test cases.

Clarifications

Report an issue

No clarifications have been made at this time.