[CS 11 25.1] Lab 4b – Burn Book

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

Submit solution [CS 11 25.1] Lab Exercise 4

My submissions

Points: 175 (partial)
Time limit: 4.0s
Memory limit: 1G

Problem type

Allowed languages
py3

Problem Statement

You have decided to make a brand new website that will compete with Facebook. Unlike Facebook where you can add people as "Friends", in your website you can add people as "Enemies" instead. In other words, your website will let you get in touch with your enemies and see what they're up to! You named your website Burn Book.

Being enemies is mutual—if person x is an enemy of person y, then person y is an enemy of person x. However, we don't assume that it's transitive—that is, even if person x is an enemy of person y, and person y is an enemy of person z, we don't necessarily assume that person x is an enemy of person z.

Each account in Burn Book is identified by a case-sensitive string of letters or digits.

Given all the pairs of enemies, please provide the list of enemies of each account in sorted order. Note that some pairs may be listed multiple times. However, no person is an enemy of themselves!

Task Details

Your task is to implement a function called `enemy_lists`. The function takes two arguments:

- a `set` of n `str`s denoting the account names.
- a `list` of m pairs of `str`s representing the account names of all the pairs of enemies.

The function must return a `dict` whose keys are `str`s and whose values are `list`s of `str`s. It denotes the list of enemies of each account. Each key is an account name, while the corresponding value is the sorted list of enemies of that account.

Restrictions

(See 4a for more restrictions)

For this problem:

- Loops and lists are allowed.
- Up to 6 function definitions are allowed.
- Recursion is **disallowed**. (The recursion limit has been greatly reduced.)
- Sets and dictionaries are allowed.
- Generators and comprehensions are allowed.
- The source code limit is $3{,}000$.

Example Calls

Example 1 Function Call

Copy

```
enemy_lists({
    'ange', 'battler', 'erika', 'eva', 'genji', 'george',
    'hideyoshi', 'jessica', 'kanon', 'krauss', 'kyrie',
    'maria', 'natsuhi', 'rosa', 'rudolf', 'shannon',
}, [
    ('jessica', 'krauss'),
    ('rudolf', 'kyrie'),
    ('ange', 'battler'),
    ('eva', 'george'),
    ('eva', 'hideyoshi'),
    ('krauss', 'natsuhi'),
    ('kyrie', 'ange'),
    ('george', 'eva'),
    ('rosa', 'maria'),
    ('jessica', 'natsuhi'),
    ('eva', 'george'),
])
```

Example 1 Return Value

Copy

```
{
    'ange': ['battler', 'kyrie'],
    'battler': ['ange'],
    'erika': [],
    'eva': ['george', 'hideyoshi'],
    'genji': [],
    'george': ['eva'],
    'hideyoshi': ['eva'],
    'jessica': ['krauss', 'natsuhi'],
    'kanon': [],
    'krauss': ['jessica', 'natsuhi'],
    'kyrie': ['ange', 'rudolf'],
    'maria': ['rosa'],
    'natsuhi': ['jessica', 'krauss'],
    'rosa': ['maria'],
    'rudolf': ['kyrie'],
    'shannon': [],
}
```

Constraints

- The function `enemy_lists` will be called at most $50{,}000$ times.
- The sum of n across all inputs will be will be at most $150{,}000$.
- The sum of m across all inputs will be will be at most $150{,}000$.
- $0 \le n \le 150{,}000$
- $0 \le m \le 150{,}000$
- Each account name is a nonempty string of between 1 and 9 lowercase letters.
- No account name appears as an enemy of themselves.

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 100 🔴 points if you solve all test cases where:
  - $n \le 50$
  - $m \le 50$
  - the sum of all n is ≤ 500.
  - the sum of all m is ≤ 500.
- You get 50 🔴 points if you solve all test cases where:
  - $n \le 4{,}000$
  - $m \le 4{,}000$
  - the sum of all n is $\le 8{,}000$.
  - the sum of all m is $\le 8{,}000$.
- You get 25 🔴 points if you solve all test cases.

Clarifications

Report an issue

No clarifications have been made at this time.