[CS 11] Prac 6e – I Love Shopping II

Problem Statement

(See 6d for context)

Your friend's recommendation sucked! It's time to look for a better one.

You only want to buy a pen within a certain interval of prices $[p_1, p_2]$ (that is, between p_1 and p_2, inclusive)—you have limited budget, but you don't want to cheap out either. Furthermore, you only want to look at pens whose ratings are within the interval $[r_1, r_2]$—you don't want a bad pen, but high-rating pens are suspicious.

Which pens in the catalog are you willing to buy?

Please list them in the order they appear in the catalog.

Task Details

Your task is to implement a function called `find_good_pen`. This function has five parameters. The first parameter is the pen catalog, which is a `tuple` of triples. Each triple describes a pen in the catalog consists of:

- a `str` denoting the name,
- an `int` denoting its price (in pesos), and
- an `int` denoting its rating.

The remaining four parameters are `p1`, `p2`, `r1`, and `r2`, all `int`s. Their meaning is explained in the problem statement.

The function must return a `list` of `str`s denoting the pen names that you are willing to buy, in the order they appear in the catalog.

Restrictions

(See 6a for more restrictions)

For this problem:

- Loops and lists are allowed.
- Up to 8 function definitions are allowed.
- Recursion is **disallowed**. (The recursion limit has been greatly reduced.)
- Sets and dictionaries are **disallowed**.
- Generators and comprehensions are **disallowed**.
- The source code limit is 600.

Example Calls

Example 1 Function Call

```
find_good_pen((
    ('Black Ballpen', 20, 8),
    ('Blue Ballpen', 20, 8),
    ('White Ballpen', 50, 1),
    ('Sign Pen', 100, 9),
    ('Pencil', 800, 7),
    ('Fountain Pen', 20, 2),
    ('Waifu Pen', 5000, 10),
), 20, 888, 6, 9)
```

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Example 1 Return Value

```
[
    'Black Ballpen',
    'Blue Ballpen',
    'Sign Pen',
    'Pencil',
]
```

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Constraints

When your program is run:

- The function `find_good_pen` will be called at most $1{,}000$ times.
- The total number of pens across all catalogs will be at most $20{,}000$.
- The number of pens in each catalog will be between 1 and $2{,}500$.
- Each pen name is a nonempty string of at most 15 English letters or spaces.
- Each price is an integer between 1 and $10{,}000$.
- Each rating is an integer between 0 and 10.
- $1 \le p_1 \le p_2 \le 10{,}000$
- $0 \le r_1 \le r_2 \le 10$

Scoring

- You get 125 ❤ points if you solve all test cases.

Submit solution [CS 11] Practice 6 ❤

My submissions ❤

Points: 125 (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.