[CS 11 25.1] Lab 1c – Refrigerator

Submit solution

My submissions

Points: 180 (partial)
Time limit: 8.0s
Memory limit: 1G

Problem type

Allowed languages
~~NONE~~, py3

Problem Statement

As you start preparing the ingredients for your next meal, you realize that the refrigerator is broken! You do not want to show Cooking Mama an empty plate, so you want to fix things ASAP.

You have to buy a new plug to use for the refrigerator; in particular, it has to *match* the socket you usually plug it to.

The socket has three prongs (holes) with depths s_1, s_2, and s_3 centimeters. In the shop, there are n plugs you can choose from.

We say that a plug whose prongs (the metal ends) have depths p_1, p_2, and p_3 centimeters *matches* the socket if $s_1 + p_1 = s_2 + p_2 = s_3 + p_3$.

Which plugs in the shop match the socket you usually plug your refrigerator to?

Task Details

Your task is to implement a function named `plugs_that_match`, which should have the following *signature*:

```
def plugs_that_match(socket, plugs):
```
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The above says that it has two arguments `socket` and `plugs`:

- `socket` is a triple (`tuple` of length 3) of integers corresponding to the prong depths of the socket.
- `plugs` is a length-n tuple of triples corresponding to the prong lengths of the n plugs.

The function must return a tuple of triples denoting the plugs that match the socket you plug the refrigerator into.

Restrictions

- assignment is allowed.
- recursion is allowed.
- comprehensions are *disallowed*.
- at most 6 functions can be defined.
- Your source code must have at most 800 bytes.

Examples

Example 1 Function Call

```
plugs_that_match((1, 1, 1), ((1, 1, 1), (1, 2, 1), (2, 1, 1)))
```
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Example 1 Return Value

```
((1, 1, 1),)
```
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Constraints

- The function `plugs_that_match` will be called at most 150 times.
- $0 \le n \le 80$
- $1 \le s_i, p_i \le 10^{20}$

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 120 ❤️ points if you solve all test cases where:
  - $n \ge 1$
- You get 60 🔴 points if you solve all test cases.

Clarifications

Report an issue

No clarifications have been made at this time.