**Instruction**:

You have 48 hours to make the solution up to your own standards though I think this is a problem that can be solved in two to four hours. We will be verifying that your code properly solves the problem, and also examining the design decisions that you made when writing your code.

In some cases, I have asked candidates to submit an improved version after their first submission because the solution doesn't show any good design though their original solution works.

Feel free to ask me any questions for clarification of the problem. If you need to make your own assumptions, please make sure you include them in your submission.

Please submit your solution in PHP.

**Challenge**:

The mayor of the town of Invoiceville has decided to publish the prices of every item on every menu of every restaurant in town, all in a single CSV file (Invoiceville is not quite up to date with modern data serialization methods). In addition, the restaurants of Invoiceville also offer Value Meals, which are groups of several items, at a discounted price. The mayor has also included these Value Meals in the file. The file's format is:

**for lines that define a price for a single item:**

restaurant ID, price, item label

**for lines that define the price for a Value Meal** (there can be any number of items in a value meal)

restaurant ID, price, item 1 label, item 2 label, ...

All restaurant IDs are integers, all item labels are lower case letters and underscores, and the price is a decimal number.

Because you are an expert software engineer, you decide to write a program that allows the town to upload their price file and specify a list of item that someone wants to eat for dinner, and outputs the restaurant they should go to, and the total price it will cost them. It is okay to purchase extra items, as long as the total cost is minimized.

To clarify:

Your application should accept as input:

* The CSV file containing the list of restaurant item prices
* The items that they would like to eat for dinner

Your application should output:

* The identifier of the restaurant they should visit for dinner
* The total cost of their dinner

Here are some sample data sets, program inputs, and the expected result:

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**Data File** data.csv

1, 4.00, hot\_dog

1, 8.00, hamburger

2, 5.00, hot\_dog

2, 6.50, hamburger

**Program Input**

Data file: data.csv

Dinner items: hot\_dog, hamburger

**Expected Output**

Restaurant: 2

Total cost: 11.50

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**Data File** data.csv

3, 4.00, salad

3, 8.00, steak\_salad\_sandwich

4, 5.00, steak\_salad\_sandwich

4, 2.50, wine\_spritzer

**Program Input**

Data file: data.csv

Dinner items: salad, wine\_spritzer

**Expected Output**

Restaurant: none (or null or false or something to indicate that no matching restaurant could be found)

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**Data File** data.csv

5, 4.00, extreme\_fajita

5, 8.00, fancy\_european\_water

6, 5.00, fancy\_european\_water

6, 6.00, extreme\_fajita, jalapeno\_poppers, extra\_salsa

**Program Input**

Data file: data.csv

Dinner items: fancy\_european\_water, extreme\_fajita

**Expected Output**

Restaurant: 6

Total cost: 11.00

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I have included all these samples in a single data file, sample\_data.csv, which you can download [here](https://drive.google.com/file/d/0Bxoi8D0J7ucTZDdCb2s4bVRXT1k/view?usp=sharing).

Please include instructions for how to run your program with your submission.

I look forward to seeing your solution!