Objects and classes tasks

1. Store locations

Write a program that reads **names** of places and their geographical **coordinates** in the format **name,latitude,longitude** (where latitude and longitude are floating-point numbers). No two locations will have the same **name**. Some locations may have the same **coordinates**.

After all locations are entered, a single line containing the **'.'** (dot) character will be entered.

After that, queries will be entered – the queries will either contain a **name** of a location, or **latitude** and **longitude** coordinates (entered as two floating point numbers separated by a single space). Print all locations that match the query in the same format that they were entered.

After all queries are entered, a single line containing the **'.'** (dot) character will be entered.

Input:

Sofia,42.70,23.33

New York,40.6976701,-74.2598732

Plovdiv,42.70,23.33

.

Sofia

40.6976701 -74.2598732

42.70 23.33

.

Output:

Sofia,42.70,23.33

New York,40.6976701,-74.2598732

Sofia,42.70,23.33

Plovdiv,42.70,23.33

1. Distances

Write a program to calculate the (Euclidean) distance between two points **p1** {**x1**, **y1**} and **p2** {**x2**, **y2**}.

|  |  |
| --- | --- |
| Input | Output |
| 3 4  6 8 | 5 |
| 3 4  5 4 | 2 |
| 8 -2  -1 5 | 11.402 |

1. Sales (\*)

Write a class **Sale** holding the following data: **town**, **product**, **price**, **quantity**. Read a **list of sales** and calculate and print the **total sales by town** as shown in the output. Order the towns **alphabetically** in the output.

Input:

5

Sofia beer 1.20 160

Varna chocolate 2.35 86

Sofia coffee 0.40 853

Varna apple 0.86 75.44

Plovdiv beer 1.10 88

Output:

Plovdiv -> 96.80

Sofia -> 533.20

Varna -> 266.98