
10. Star Distances: Computer ... Find the Most Distant Pair ...

Program Name: Stars.java

Input File: stars.dat

On board the spaceship USS Kelvin a research team is planning on traveling between the two most distant known stars to perform scientific experiments. Write a program that finds the two stars in the ship's database that are the farthest apart.

Input

- The first line will contain a single integer n that indicates the number of stars in the data file.
- The next n lines will be the data on stars.
- Each line will consist of the name of a star followed by a colon followed by a space followed by three integers separated by spaces.
- Star names will not have colons in them.
- The three integers are the (x, y, z) coordinates for the associated star in a three dimensional coordinate system.
- The distance of each star from the origin $(0, 0, 0)$ and the distance between two stars can be determined by using the following general formula for the distance between two points in a three dimensional coordinate system:

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2}$$

- All coordinates will be greater than -100,000 and less than 100,000.

Output

Print the names of the two stars in the data file that are the farthest apart and the distance between them rounded to the nearest tenth. When printing the names of the two stars print the name of the one closest to the origin $(0, 0, 0)$ followed by a comma followed by the name of the second star followed by a colon followed by the distance between them rounded to the nearest tenth. If both stars are the same distance from the origin print the names of the stars in alphabetical order.

Example Input File

4

Sol: 1 2 3

Far Far Away: 100 200 -200

Sterupe II: 10 -20 15

Tejat Prior: -10 -5 0

Example Output to Screen

Sterupe II, Far Far Away: 320.5