Products Average Selling Price

You are given a list of transactions, each of them includes transaction code, product code, selling price, and quantity. Your task is to write a program to print the average selling price for each product.

Input

- The first line contains one integer N - the number of transactions ($1 \leq N \leq 10^5$).

- Each line in the next N lines contains four integers representing a transaction. All of them are not exceed 10^9

Output

For each product, print out the product code and the average selling price. The list of products should be sorted in descending order of the average selling price and ascending order of product code.

The average selling price should be rounded to the nearest unit in output.

Sample

https://drive.google.com/file/d/1FxLZ8UOSPIX9S0m2ixiRoFD35bOxvbVV/view?usp=sharing

Input	Output
5	1 583
1111 1 1000 2	3 100
1112 2 100 1	2 100
1113 1 500 10	
1114 2 99 1	
1115 3 100 2	