

Sort an array of student records by reg numbers

Sort an array of student records by their register numbers using Quick Sort algorithm.

Input

Input begins with n ($1 \leq n \leq 2^{20}$) of number student records. The following n lines has a student record per line. A student record of a student has a unique register number (one alphanumeric word and $3 \leq \text{length of the word} \leq 10$), his/her name (one alphabetic word without any spaces and $1 \leq \text{length of the name} \leq 20$) and his/her CGPA with the precision up to two digits after decimal point ($00.00 \leq \text{CGPA} \leq 10.00$). The three fields of a record are separated by a spaces.

Output

Print the sorted array with one student record in each new line in ascending order of student's register number.

Example

Input:

```
10
CS003 Vinay 10.00
CS005 Mouli 9.94
CS010 Gautham 9.94
CS020 Sneha 9.94
CS200 Mohit 9.93
CS012 Aarti 9.90
CS006 Darshan 9.88
CS002 Adithya 9.78
CS050 Karthik 9.71
CS001 Adithya 9.58
```

Output:

```
CS001 Adithya 9.58
CS002 Adithya 9.78
CS003 Vinay 10.00
CS005 Mouli 9.94
CS006 Darshan 9.88
CS010 Gautham 9.94
CS012 Aarti 9.90
CS020 Sneha 9.94
CS050 Karthik 9.71
CS200 Mohit 9.93
```