

A List of Staffs

Given a list of staff in a company. Each staff has a unique identity, name, and the start year.

Output the list of staff in order of descending the number of working years, then by ascending name and id.

Input

- The first line contains one integer N - the number of staffs ($1 \leq N \leq 10^5$).
- Each line in the next N lines includes information about a staff:
 - Id: 6-digit integer
 - Name: a string contains lower alphanumeric characters only
 - Start year: an integer.

Output

The list is in the required order. Each line contains id, name, and the number of working years of corresponding staff. Note that the current year in the context is 2021

Sample

Input	Output
5	100002 nam 22
100004 tan 2000	100001 phuc 21
100001 phuc 2000	100003 phuc 21
100002 nam 1999	100004 tan 21
100003 phuc 2000	100005 an 15
100005 an 2006	