F. Help Your Teacher

Time Limit: 3 seconds

Problem description

Your teacher has a list of student names and he want to sort this by alphabet in ascending order. Please help him.

Each student's name includes a **first name** (only one word), a **last name** (only one word) and may or may not has a **middle name**.

For example,

- With the name "Ngo Tung Son", the first name is "Ngo", the last name is "Son", and the middle name is "Tung"
- With the name "Ngo Hoang", the first name is "Ngo", the last name is "Hoang" and no middle name.
- With the name "Nguyen Ngoc Tung Chi", the first name is "Nguyen", the last name is "Chi", and the middle name is "Ngoc Tung".

When sorting, it is necessary to prioritize sorting by last name. If last names are the same, sort by first name. If both first name and last name are the same, sort by middle name.

User uses standard input stream (stdin) to enter the number of student (<= 1000) and list of student names, the system shows the list after sorted.

Input:

First Line contains an integer number N which indicates the number of student (N <= 1000)

N Lines of string which represents to the list of student names.

Output:

N Lines of string which represents to the list of student names which are sorted.

Example 1

Input	Output
3 Ngo Tung Son Ngo Hoang Ngo Van Binh	Ngo Van Binh Ngo Hoang Ngo Tung Son

Example 2

Input	Output
6 Ngo Tung Son Ngo Hoang Nguyen Quy Ban Bui Ngoc Anh Bui Thi Ngoc Anh Nguyen Van Son	Bui Ngoc Anh Bui Thi Ngoc Anh Nguyen Quy Ban Ngo Hoang Ngo Tung Son Nguyen Van Son