#include <iostream>

#include <string>

using namespace std;

struct Name {

    string first;

    string last;

};

bool compareNames(Name name1, Name name2) {

    if (name1.last != name2.last) {

        return name1.last < name2.last;

    } else {

        return name1.first < name2.first;

    }

}

int main() {

    const int MAX\_NAMES = 100;

    Name names[MAX\_NAMES];

    int numNames; // number of names to input

    Name temp; // temporary variable used in swapping names

    cout << "How many names do you want to input? ";

    cin >> numNames;

    for (int i = 0; i < numNames; i++) {

        cout << "Enter first name #" << i+1 << ": ";

        cin >> names[i].first;

        cout << "Enter last name #" << i+1 << ": ";

        cin >> names[i].last;

    }

    for (int i = 0; i < numNames-1; i++) {

        for (int j = 0; j < numNames-i-1; j++) {

            if (compareNames(names[j+1], names[j])) {

                temp = names[j];

                names[j] = names[j+1];

                names[j+1] = temp;

            }

        }

    }

    cout << "Sorted names:" << endl;

    for (int i = 0; i < numNames; i++) {

        cout << names[i].last << ", " << names[i].first << endl;

    }

    return 0;

}