Student average grades X48135_en

Write a program that reads a list of students and information related to their studies, and prints it sorted according to certain criteria.
The information for each student contains: The student id number (e.g. DNI), the university he/she attended, and the list of subjects coursed, each with the obtained grade.
The output list must contain the same information, plus the average grade for each student.
Moreover, the output list must be sorted according to the following criteria:

- Students are grouped by university, which are sorted alphabetically.
- If two students belong to the same university, they are sorted by ascending average grade
- If two students went to the same university and got the same average, they are sorted by their id numbers.

Use the following code to build your program. Your solution will be INVALID if you alter the code outside indicated spaces, does not implement and use the requested functions, or does not use the provided structs.

```
#include <iostream>
#include <vector>
#include <algorithm>
using namespace std;

// 'Subject' stores information about a subject taken by a student:
// name of the subject and obtained grade
struct Subject {
  string name;
  int grade;
};

// 'Student' stores information about a student: id number, university name,
// average grade and list of taken subjects with obtained grades.
struct Student {
  string dni;
  string school;
  float average;
  vector<Subject> subjects;
};

/// YOU CAN ADD EXTRA FUNCTIONS HERE IF YOU NEED TO

// Reads input data and stores info for each student in a struct 'Student'.
// It also computes and stores the average mark for each student.
// Returns a vector with all students.
// Each 'Student' struct should be added to the vector using "push_back".
```

```
vector<Student> read_students() {
  /// ADD CODE HERE
}

// Compare two students and return true if s1 goes before s2 in
// the required ordering (sorted by school name, average if same
// school, dni if same school and average)
bool compare_students(const Student &s1, const Student &s2) {
  /// ADD CODE HERE
}

// Print sorted student information
// For each student, print school name, average grade, dni, list of subjects an
void print_students(const vector<Student> &stds) {
  /// ADD CODE HERE
}

int main() {
  vector<Student> stds = read_students();
  sort(stds.begin(), stds.end(), compare_students);
  print_students(stds);
}
```

Exam score: 2.500000 **Automatic part:** 0.000000%

Input

The input consists of one line per student. Each line contains the id number of the student, the name of the university, and a list of subjects, each followed by the obtained grade. Each student coursed at least one subject. Each line ends in a dot "."

Output

The output contains one line per student, each line with the following information, in this order: University name, student average grade, student id number, list of subjects and grades. The list is sorted by the criteria described above.

Sample input

```
12345A MIT mathematics 50 philosophy 50 chemistry
33215B MIT mathematics 60 physics 60.
22211E Columbia mathematics 60 physics 50 chemistry
11104X MIT anthropology 50 physics 50 chemistry 50.
12300F SaintJones mathematics 10.
98076A Columbia mathematics 10 physics 20 chemistry
98185A Columbia mathematics 10 physics 20 chemistry
22022M MIT mathematics 0  anthropology 0 chemistry 0.
98816A SaintJones mathematics 50 physics 50 chemistry
90912G WestPoint philosophy 50 physics 50 chemistry.
21776D MIT mathematics 50 physics 50 chemistry 50.
45326W SaintAndrew mathematics 50 history 50 chemistry
22314K WestPoint history 50 philosophy 50.
```

Sample output

```
Columbia 36.6667 98076A mathematics 10 physics 20 chemi
Columbia 36.6667 98185A mathematics 10 physics 20 chemi
Columbia 45 22211E mathematics 60 physics 50 chemistry
MIT 0 22022M mathematics 0 anthropology 0 chemistry 0 p
MIT 50 11104X anthropology 50 physics 50 chemistry 50
MIT 50 12345A mathematics 50 philosophy 50 chemistry 50
MIT 50 21776D mathematics 50 physics 50 chemistry 50
MIT 60 33215B mathematics 60 physics 60
SaintAndrew 50 45326W mathematics 50 history 50 chemist
SaintJones 10 12300F mathematics 10
SaintJones 50 98816A mathematics 50 physics 50 chemistr
WestPoint 50 22314K history 50 philosophy 50
WestPoint 50 90912G philosophy 50 physics 50 chemistry
```

Problem information

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