Problem Statement:

To conduct any examination, an eligible candidate list should be maintained by the organization. For example, consider the semester examination of an education institute. Let for the current semester, the examination will be conducted for 2_{nd}, 4_{th}, 6_{th} and 8_{th} semester students for all departments. There are five departments namely, Computer Sc. & Engg., Electronics & Comm., Electrical, Mechanical and Civil. The corresponding department codes are CS, EC, EE, ME and CV respectively. Also consider that every student has registered for 5 different courses belonging to his/her department.

Create a ***general student record list*** comprises of the following information:

- Name of student
- Department code
- Year/Sem
- Roll number (unique key across dept. and year)
- Number of classes conducted for each of the subjects registered.
- Number of classes attended by the student for each of the subjects registered.

To track the attendance eligibility, only one subject (for which maximum number of classes were conducted) is considered for every semester and every department, and is denoted as MCC. The percentage of attendance is computed as below-
The attendance of the student, who has maximum number of classes attended for MCC, is considered as 100%. With respect to this, % of attendance for other students as required is to be computed using his/her attendance for MCC.

Create four attendance record lists, each list corresponds to one semester, to maintain the attendance of all student in the particular semester irrespective of their departments. The following information are to be kept in the attendance list:

- Roll number
- Department
- Attendance : Number of class attended for MCC and % attendance

Create fee status list to maintain the record of the fee status for all students. The list contains the below information:

- Roll number
- Fee status (pending/clear)

Create an applicant list to track the record of the students who have applied for the examination. The list stores the following fields:

- Name of the student
- Roll number
- A/NA (A stands for applicant, NA stands for non-applicant)

Create the **general student record list** by reading the data (either from the users or through file reading operations).

Write efficient C code to accomplish the following operations.

1. Sort the **general student record list** based first on semester, and then followed by department-name, and then the roll number.

2. Display **year wise** and then the **department-wise** names of the students who did not apply for the examination.

3. A student is eligible to sit for the semester examination if his/her attendance is more than 75% for MCC, fees status is clear and he/she applied for the examination. Create a list of all eligible students for the semester examination. Sort the list based first on semester, and then followed by department-name, and then the roll number.

4. Create a list of students having attendance <=75%. based first on semester, and then followed by department-name, and then the roll number.

5. Print the name of the students whose attendance is >75% for the respective MCC but their fee status is pending.

6. Create a list of defaulter students. A student is called as defaulter either his/her attendance for MCC is <=75% or his/her fee status is pending. Find the name of the department in which maximum number of defaulters belong to.