**Assignment # 5**

**Course: Database Systems**

1. Consider the following relations in a university database:

Student (roll, name, dept, batch, email)

Course (courseno, cname, offering dept, semester no, course type, credit)

Prerequisite(courseno, prcourseno)

Registration (roll, courseno, semester no)

Grades (roll, courseno, grade)

Attendance (courseno, roll, date, status);

The course type can be core-theory, core-lab, elective. Semester no can be 1 to 8. Grade for any course can be 5 to 10. The status can be P for present and A for absent. Roll and courseno should be assigned through sequence.

Write efficient implementation for the following tasks:

1. Students register for different courses. A student is not allowed to register for more than 6 courses in a semester and/or with credit more than 24. A student is not allowed to register for a core course unless he/she scores at least 6 in all the pre-requisite courses for that course. For registering in elective courses, the student must have register in the pre-requisite courses.
2. Raise automatic warning for the students whose attendance falls below 80% at every five class interval against a course and store this data in a new table called attendance\_warning for each such student. In case, there is 2 such warning against a student, the student is de-registered from the course. The de-registration data with date to be automatically stored in a separate table and the related entry to be deleted from the Registration Table.
3. Display the total grade of a given student in a given semester considering all the subjects. The total grade will be computed as the credit-grade weighted average of the courses in a semester. [Use function]
4. Display the batch-wise toppers for each semester
5. Display the student-wise degree grade considering grades of all 8 semesters. The total grade will be computed as the average of the grades in all semester.
6. Display batch wise degree-toppers considering all 8 semester
7. Display the dept-wise student count with degree grade more than 9 for a batch.