B.TECH. COMPUTER SCIENCE AND ENGINEERING – July - Dec, 2024

CSLR51 – Database Management Systems Laboratory || #Session: 2

File Processing

1. Develop an implementation package using 'C' program to process a FILE containing student details for the given queries.

   A student record has the following format:
   Std_rollno, Std_name, Dept, C1, C1_c, C1_g, C2, C2_c, C2_g, C3, C3_c, C3_g

   Note: C1 refers to Course1, C1_c refers to credit of the course, C1_g refers to the grade in that course and so on.
   Every student should have a unique rollno.
   A student should have at least 3 courses and maximum four.
   A grade point is in integer: S - 10; A - 9; B - 8; C - 7; D - 6; E - 5; F – 0.

   Create a file and develop a menu driven system for the following queries.

   a. Insert at least 5 student records.
   b. Create a column 'GPA' for all the students.
   c. For a student with four courses, delete(deregister) a course name.
   d. For the same student you deleted in 'c', insert a new course name.
   e. Update the name of a course for two different students.
   f. Calculate GPA of all students using the GPA formula. Refer the following: https://www.nitt.edu/home/academics/rules/BTech_Regulations_2019.pdf
   g. Upgrade the grade point of a student who has secured '7' in a course.
   h. Calculate the updated GPA of the student in 'g'.
   i. Generate a Grade report of a student given the roll no. or name.

Structured Query Language (SQL)

1. Create a Student schema using the student details given in Q.No.1 and execute the following basic queries.

   Note: When defining the schema, exclude the following columns: Course_credit and Course_grade for all the courses.
   Make sure you have the following constraints: Course is declared in char datatype.
   DoB should be in date (dd/mm/yyyy) format. Provide a not-null constraint for dob.
   Email should have the following format: xxx@nitt.edu

   a. Insert at least 5 student records into the Student table.
   b. Delete Course2 and Course3 attributes from the Student table.
   c. Insert two new columns DoB and email into the Student table.
   d. Change Course1 datatype to varchar2.
   e. Update the column name 'Std_rollno' to 'Std_rno'.
   f. Update all student records who pursue a course named "DBMS" to "OS".
   g. Delete a student record with student name starting with letter 'S'.
   h. Display all records in which a student has born after the year 2005.
   i. Simulate DROP and TRUNATE commands with the database you created.

---THE END---