COMP3161

LAB2

Submission Deadline:
Feb 29, 2023 11:59

Student(StudentID, FirstName, LastName, LecId, LecName, CourseId, CourseName, CourseCode, Grade)

Teaches(LecId, CourseID)

The following tables above has the following functional dependencies

CourseId -> CourseName, CourseCode
LecId -> LecName, Department
StudentID -> FirstName, LastName
Grade -> CourseId,StudentId

1. Split the relation into as many BCNF relations as are necessary
2. Use SQL to create schemas for the new tables.
3. Using your programming language of choice, generate fake data (consider the **faker** library in python) to insert into your table. This code should generate an sql file with the insert queries. The data must follow the following constraints.
    a. Ensure there at least 10 lecturers
    b. Ensure there at least 50 courses
    c. Ensure there at least 200 students
    d. Each course much have one and only one lecturer
    e. Every lecturer must teach at least one course.
4. Write queries for the following.
    a. Show the name of the lecturer that teaches the most courses
    b. Show the name of the lecture that teaches the least courses
    c. Show the total number of students for each course.
    d. Show the average grade per course.
    e. What student has the highest average.
    f. Show the top ten smartest (average) students in ascending order.

Submission Instructions

Submit the sql file that includes the creation of the schema along with the queries as well as a separate sql file with the insert statements. Submit along with that the code you used to generate the sql file.