**SQL Project for Students**

**Objective:**

The goal of this project is for students to design a database, create tables with appropriate data types and constraints, and perform various SQL operations based on provided questions.

**1. Database Setup**

* **Database Name:** StudentManagement

**2. Table Creation**

Students need to create the following tables with the specified columns, data types, and constraints:

**A. Students Table**

* **Table Name:** Students
* **Columns:**
  + student\_id INT PRIMARY KEY AUTO\_INCREMENT
  + first\_name VARCHAR(50) NOT NULL
  + last\_name VARCHAR(50) NOT NULL
  + date\_of\_birth DATE NOT NULL
  + gender 'Male', 'Female', 'Other' NOT NULL
  + email VARCHAR(100) UNIQUE NOT NULL
  + phone\_number VARCHAR(15) UNIQUE
  + address TEXT

**B. Courses Table**

* **Table Name:** Courses
* **Columns:**
  + course\_id INT PRIMARY KEY AUTO\_INCREMENT
  + course\_name VARCHAR(100) NOT NULL
  + course\_description TEXT
  + credit\_hours INT NOT NULL

**C. Enrollment Table**

* **Table Name:** Enrollment
* **Columns:**
  + enrollment\_id INT PRIMARY KEY AUTO\_INCREMENT
  + student\_id INT NOT NULL
  + course\_id INT NOT NULL
  + enrollment\_date DATE NOT NULL
  + **Constraints:**
    - FOREIGN KEY (student\_id) REFERENCES Students(student\_id)
    - FOREIGN KEY (course\_id) REFERENCES Courses(course\_id)

**D. Instructors Table**

* **Table Name:** Instructors
* **Columns:**
  + instructor\_id INT PRIMARY KEY AUTO\_INCREMENT
  + first\_name VARCHAR(50) NOT NULL
  + last\_name VARCHAR(50) NOT NULL
  + email VARCHAR(100) UNIQUE NOT NULL
  + phone\_number VARCHAR(15) UNIQUE

**E. CourseAssignments Table**

* **Table Name:** CourseAssignments
* **Columns:**
  + assignment\_id INT PRIMARY KEY AUTO\_INCREMENT
  + course\_id INT NOT NULL
  + instructor\_id INT NOT NULL
  + **Constraints:**
    - FOREIGN KEY (course\_id) REFERENCES Courses(course\_id)
    - FOREIGN KEY (instructor\_id) REFERENCES Instructors(instructor\_id)

**3. SQL Queries**

After creating the tables, students should answer the following questions using SQL queries:

1. Retrieve the full names and email addresses of all students enrolled in the Computer Science course.
2. List all courses along with the number of students enrolled in each course.
3. Find the instructors who are teaching more than 2 courses.
4. Retrieve the details of students (name, email) who are enrolled in a course taught by Instructor Name.
5. List all students who have not enrolled in any course.
6. Get the list of courses with no assigned instructor.
7. Retrieve the full details of the Students table, sorted by last name in alphabetical order.
8. Find the total number of credit hours for a student enrolled in the Database Systems and Web Development courses.
9. Identify the student with the maximum number of enrollments.
10. Get the details of students whose phone numbers are missing.