LAB TASK 10

Objective:
To practice creating tables, defining primary and foreign keys, deleting data, handling foreign key constraints, updating data, and modifying table structures in a database.

Instructions:

1. **Creating Tables:**
    - Create a database named **University**.
    - Create the following tables with the specified attributes:
        - **Students** table with columns for **StudentID** (Primary Key), **FirstName**, **LastName**, **DOB**, and **DepartmentID**.
        - **Departments** table with columns for **DepartmentID** (Primary Key) and **DepartmentName**.
        - Add **a NOT NULL** constraint to the FirstName and LastName columns in the Students table.
        - Add a **UNIQUE** constraint to the Email column in the Students table.
        - Create an **index** on the DepartmentName column in the Departments table.
        - Create a **composite index** on the StudentID and CourseID columns in the StudentCourses table.
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2. **Defining Keys:**
    - Add a primary key constraint to the **StudentID** column in the **Students** table.
    - Add a foreign key constraint to the **DepartmentID** column in the **Students** table referencing the **DepartmentID** column in the **Departments** table.
3. **Deleting Data:**
    - Insert at least 5 records into the **Departments** table.
    - Insert at least 10 records into the **Students** table.
    - Delete a record from the **Departments** table using the **DepartmentID**.
    - Delete a record from the **Students** table using the **StudentID**.

4. **Handling Foreign Key Constraints:**
    - Attempt to delete a department from the **Departments** table that still has students associated with it. Handle the foreign key constraint violation appropriately.
5. **Updating Data:**
    - Update the **DOB** of a student in the **Students** table.
    - Update the **DepartmentID** of a student in the **Students** table.
6. **Modifying Table Structures:**
    - Add a new column named **Email** to the **Students** table.
    - Remove the **DOB** column from the **Students** table.
7. **Deleting Data from Multiple Tables:**
    - Insert at least 5 records into a new table named **Courses** with columns for **CourseID** (Primary Key) and **CourseName**.
    - Insert at least 20 records into a new table named **StudentCourses** with columns for **StudentID** and **CourseID**.
    - Delete all records from the **StudentCourses** table for a specific **StudentID**.

Submission Requirements:
Submit the SQL script containing all the queries used to perform the above tasks, along with screenshots showing the execution results for each query.