**SQL and ADO.NET Practical Assignment**

**Objective**

The goal of this assignment is to reinforce your understanding of SQL basics, data relationships, stored procedures, and ADO.NET. You will create a database, tables, establish relationships, and write stored procedures. You will also create a simple console application to interact with the database.

**Task 1: Create a Database**

1. Create a new database called **[Your EmployeeID]\_DB**. Sample DB name: **4875\_DB**

**Task 2: Create Tables**

1. Create a table called **Students** with the following columns:
   * StudentID (Primary Key, Auto-Increment)
   * FirstName
   * LastName
   * Age
   * CourseID (Foreign Key)
2. Create another table called **Courses** with the following columns:
   * CourseID (Primary Key, Auto-Increment)
   * CourseName

**Task 3: Insert Data**

1. Insert at least 5 records into the **Courses** table.
2. Insert at least 10 records into the **Students** table, making sure to associate students with courses.

**Task 4: Update and Delete Records**

1. Update the age of one of the students.
2. Delete a record from the **Students** table.

**Task 5: Queries and Filters**

1. Write a query to list all students older than 20.
2. Write a query to list all students enrolled in a specific course, along with the course name.

**Task 6: Aggregation Functions**

1. Use the **COUNT** function to find the total number of students.
2. Use the **AVG** function to find the average age of students.

**Task 7: Stored Procedures**

1. Create a stored procedure to add a new student.
2. Create a stored procedure to update a student's age.
3. Create a stored procedure to delete a student.
4. Create a stored procedure to list all students.

**Task 8: ADO.NET Console Application**

1. Create a new ASP.NET Core Console Application.
2. Install the **Microsoft.Data.SqlClient** NuGet package.
3. Write code to execute all the stored procedures created in Task 7 and display the results.

**Task 9: Advanced Reports in Console Application**

1. List the names of students who are not enrolled in any course.
2. Find the most popular course (the course with the most students enrolled).
3. List the students who are older than the average age of students.
4. Find the total number of students and average age for each course.
5. List the courses that have no students enrolled in them.
6. List students who share courses with a specific student (choose one from your records).
7. For each course, list the youngest and oldest student.