**ASP.NET Core API Assignment**

**Objective**

The goal of this assignment is to reinforce your understanding of SQL, stored procedures, and API development using ASP.NET Core. You will create an API that performs CRUD operations on a database.

Task 1: Create an ASP.NET Core API Project

1. Create a new ASP.NET Core API project in Visual Studio.

Task 2: Install Required Packages

1. Install the **Microsoft.Data.SqlClient** NuGet package.

Task 3: Create Models

1. Create a **Student** model with properties that match the **Students** table in your database.
2. Create a **Course** model with properties that match the **Courses** table in your database.

Task 4: Create a Database Context

1. Create a **DbContext** class and configure it to use SQL Server.

Task 5: Create Stored Procedures in SQL

1. Create stored procedures for adding, updating, deleting, and retrieving students and courses.

Task 6: Create API Controllers

1. Create an API controller for **Students**.
2. Create an API controller for **Courses**.

Task 7: Implement CRUD Operations

1. Implement methods in the controllers to perform CRUD operations using stored procedures.

Task 8: Test API using Postman

1. Use Postman to test all the CRUD operations.
2. Demonstrate how to pass parameters and how to get JSON responses.

Task 9: Advanced API Calls

1. Create an API method to list all students older than 20.
2. Create an API method to list all students enrolled in a specific course.
3. Create an API method to find the most popular course.

Task 10: Document the API

1. Document the API endpoints, request methods, and sample payloads.

**Deliverables**

Objective

The objective of this weekend project is to consolidate your learning from the week into a comprehensive SQL and ASP.NET Core project. You will be required to submit SQL files, a console application, and an API project.

Deliverable 1: SQL Files

1. **Database Creation Script**: A SQL file that includes queries for database creation.
2. **Table Creation Script**: SQL files for creating the **Students** and **Courses** tables.
3. **Data Insertion Script**: SQL queries for inserting sample data into the tables.
4. **Stored Procedures**: SQL file containing all the stored procedures used in the project.

Deliverable 2: Console Application

1. **Source Code**: The complete source code of the console application that uses ADO.NET to interact with the database.

Deliverable 3: ASP.NET Core API Project

1. **API Source Code**: The complete source code of the API project.
2. **Postman Collection**: Exported Postman collection that includes all the API calls you've tested.

Submission Guidelines

1. **Folder Structure**: Organize your deliverables into folders. For example, one for SQL files, one for the console application, and one for the API project.
2. **Code Comments**: Comment your code to explain critical or complex parts.
3. **Documentation**: Include any additional documentation you feel is necessary to understand your project.
4. **Zip File**: Compress all folders into a single zip file named **[Your EmployeeID]\_Weekend\_Project.zip**.

Evaluation Criteria

1. **Functionality**: Does the code work as expected?
2. **Code Quality**: Is the code well-organized and commented?
3. **Completeness**: Are all deliverables submitted?
4. **Documentation**: Is the project well-documented?