Creating an ASP.NET WEB API Application to Manage Student Marks

Introduction

Rainbow School aims to facilitate the process of updating and viewing student marks through a mobile application. To achieve this, we will create an ASP.NET WEB API application that allows teachers to add, update, delete subject marks for existing students, and view their marks. This guide outlines the step-by-step process for creating this application.

Create an ASP.NET WEB API Project

Launch Visual Studio Community Edition.

Go to "File" > "New" > "Project...".

Select "ASP.NET Web Application (.NET Framework)" under "Visual C#" and choose an appropriate project name.

Click "OK" and choose the "Web API" template. Click "Create" to generate the project.

Design the Schema

Review the schema designed for the school database in the Model Class.

Ensure that the necessary tables are defined in the database schema, such as "Students" and "Subjects."

Create Models

In the "Models" folder, add an ADO.NET Entity Data Model to connect the database from SQL Server to the WEB API Project.

Create Controllers

Right-click on the "Controllers" folder in your project.

Select "Add" > "Controller...".

Choose "API Controller with actions, using Entity Framework" and click "Add."

Select a model class (e.g., "Student") and configure the controller actions for CRUD (Create, Read, Update, Delete) operations.

Follow the same procedure to create controllers for other models (e.g., "Subject Marks").

Implement CRUD Operations

In the controller actions (e.g., Create, Edit, Delete), write code to interact with the database using Entity Framework. Implement the logic for adding, updating, and deleting subject marks for students.

Implement any necessary LINQ queries to fetch and view the subject marks for students.

Testing

Run the application to test CRUD operations and ensure that you can add, update, and delete subject marks for students.

Test the API endpoints to verify that they return the expected data when viewing student marks.

Push to GitHub

Track the changes using Git. Open a Git Bash or command prompt.

Navigate to the project directory.

Initialize a Git repository: git init

Add all files to the repository: git add .

Commit the changes: git commit -m "Creating an ASP.NET WEB API for Student Marks"

Create a new branch: git branch -M Section9_WebAPI

Add a remote repository (GitHub): git remote add origin

https://github.com/PrashastVats1/Practice-Projects.git

Push the changes to GitHub: git push -u origin Section9_WebAPI

GitHub Link: https://github.com/PrashastVats1/Practice-Projects/tree/Section9_WebAPI

Conclusion

You have successfully created an ASP.NET WEB API application that allows teachers to manage and view student marks. This application will enable Rainbow School to update student marks efficiently through a mobile app while maintaining data integrity and security.