Title: ASP.NET MVC Application for School Data Management

Introduction:

Rainbow School is in the process of developing a comprehensive school management software solution. To kickstart this project, we need a web-based application that allows administrators to perform CRUD (Create, Read, Update, Delete) operations on essential data such as Student, Subject, and Class. To achieve this, we will be using ASP.NET MVC (Model-View-Controller) framework.

Problem Statement:

The objective is to create a user-friendly and efficient web application that will facilitate the management of student records, subject information, and class details. The application should be able to perform the following functions:

- Create, Read, Update, and Delete student records.
- Create, Read, Update, and Delete subject details.
- Create, Read, Update, and Delete class information.
- Ensure data consistency and integrity within the database.

Solution Overview:

To address this problem, we will develop an ASP.NET MVC application that will interact with a database to perform CRUD operations on the Student, Subject, and Class tables. Here is a high-level overview of our proposed solution:

- **Database Design:** We will start by designing a database schema that includes tables for Student, Subject, and Class. These tables will have relationships to maintain data integrity.
- **Model Layer:** In the MVC architecture, the Model represents the data and business logic. We will create model classes for Student, Subject, and Class, and use Entity Framework or another ORM (Object-Relational Mapping) tool to map these classes to database tables.
- **Controller Layer:** Controllers will handle user interactions and coordinate with the Model and View. We will create controllers for Student, Subject, and Class to handle CRUD operations and manage data flow.
- **View Layer:** Views will display data to the user and capture user input. We will design user-friendly web pages for creating, updating, deleting, and viewing student, subject, and class data.
- **Authentication and Authorization:** Implement user authentication and authorization to restrict access to admin users only, ensuring data security.

- **Validation:** Implement validation rules to ensure data integrity and prevent invalid data from entering the database.
- **Testing:** Thoroughly test the application to ensure its functionality and reliability. This includes unit testing, integration testing, and user acceptance testing.
- **Deployment:** Deploy the application on a web server and configure it for production use.

Benefits:

- Efficiently manage student, subject, and class data in one centralized location.
- Streamlined CRUD operations for administrators.
- Improved data integrity and security through user authentication and authorization.
- Enhanced user experience with a user-friendly web interface.

Conclusion:

Developing an ASP.NET MVC application for managing school data is a crucial step in building Rainbow School's comprehensive school management software. This application will empower administrators to efficiently manage student, subject, and class information while ensuring data integrity and security. By following best practices in software development, we aim to create a robust and user-friendly solution that meets Rainbow School's requirements.

Step 11: Upload on Github

- Git Hub Repository Link: **https://github.com/rastogi102/Phase3_Practice-Projects.git**