

Student Gradebook Database Website Project Documentation

Introduction

The Student Gradebook Database Website is a web application developed as the final project for the "Programming for the Internet" class. It serves as a practical implementation to manage student grades and information using a SQL database. The website allows users to perform operations such as adding students, recording their grades, and generating grade reports.

Installation

To install the Student Gradebook Database Website, follow these steps:

1. Clone the repository from GitHub: [<https://github.com/nogueira-r/Student-Gradebook-Database-Website>]
2. Set up a local development environment with PHP and a SQL database (e.g., MySQL, SQLite).
3. Import the database schema provided in the project repository.
4. Configure the database connection settings in the website's configuration file.
5. Deploy the website on a web server (e.g., Apache, Nginx) with PHP support.

Features

The Student Gradebook Database Website includes the following features:

1. Student Management: Allows users to add new students, view their information, and edit or delete existing student records.
2. Grade Recording: Enables users to record grades for individual students, specifying the subject, date, and grade obtained.
3. Grade Report Generation: Generates reports summarizing the grades of all students, including their average grade and overall performance.

Architecture

The Student Gradebook Database Website follows the Model-View-Controller (MVC) architectural pattern. It adheres to the guidelines and best practices taught in the "Programming for the Internet" class. The website's structure consists of the following components:

1. **Model:** Represents the data model and includes classes such as Student and Grade, which define the student and grade information, respectively.
2. **View:** Handles the user interface and includes HTML templates and CSS stylesheets for rendering web pages.
3. **Controller:** Acts as an intermediary between the Model and the View. It processes user requests, retrieves data from the Model, and updates the View accordingly.

Database Schema

The Student Gradebook Database Website utilizes an SQL database to store student and grade information. The database schema includes the following tables:

1. **Students:** Stores student information, including their ID, name, and email.
2. **Grades:** Stores grade information, associating each grade with a student and providing details such as subject, date, and grade value.

Libraries and Dependencies

The Student Gradebook Database Website utilizes the following libraries and dependencies:

- **PHP:** A server-side scripting language used for dynamic web page generation and database interactions.
- **SQL Database:** A relational database management system (e.g., MySQL, SQLite) to store student and grade information.
- **HTML/CSS:** Markup and styling languages used for creating the website's user interface.
- **Bootstrap:** A popular CSS framework that provides pre-designed UI components and responsive layouts.

Usage

1. Access the Student Gradebook Database Website through a web browser.
2. To add a new student, navigate to the "Students" section and click on the "Add Student" button. Fill in the required information and submit the form.
3. To view student information, go to the "Students" section and select a student from the list. Their details will be displayed.
4. To record a grade for a student, navigate to the "Grades" section and choose the student from the dropdown menu. Enter the grade details and click on the "Record Grade" button.
5. To generate a grade report, go to the "Reports" section and select the desired report type (e.g., overall performance, average grades). The report will be generated and displayed.

Future Improvements

Possible enhancements for the Student Gradebook Database Website could include:

- User authentication and access control to ensure secure data management.
- Grade statistics and visualizations to provide a comprehensive overview of student performance.
- Integration with an email service to send grade notifications or reminders to students.
- Enhanced search and filtering options for easily finding specific students or grades.

Conclusion

The Student Gradebook Database Website is a practical implementation developed for the "Programming for the Internet" class. It provides essential features for managing student grades and information using a SQL database. By following the documentation and utilizing the provided features, users can effectively record grades, generate reports, and maintain student records. The project received a very good grade as part of the final assignment for the class.