Student Management System - Project Documentation

# 1. Project Overview

The Student Management System is a GUI-based Java application developed using the Swing framework. It allows users to add student records consisting of names and roll numbers. The application focuses on key development aspects such as core feature implementation, event handling, robust data validation, and clear code structure to demonstrate technical proficiency.

# 2. Features Implemented

- Add student records (Name and Roll Number).

- Input validation for completeness and numeric constraints.

- Clear input fields functionality.

- Display all student records in a text area.

# 3. Technologies Used

- Java SE 8+

- Swing GUI Toolkit

# 4. How to Run

1. Open the source code in an IDE like IntelliJ IDEA or Eclipse.  
2. Compile and run the `StudentManagementSystem` class.  
3. Use the GUI to add and view student records.

# 5. Evaluation Criteria (Rubric Alignment)

- Core Feature Implementation: Functionality for adding and displaying students is fully implemented.

- Error Handling and Robustness: Validations and error dialogs ensure stability and usability.

- Integration of Components: UI components, event listeners, and logic are tightly integrated.

- Event Handling and Processing: Uses ActionListeners for button click events.

- Data Validation: Checks for empty fields and numeric roll number format.

- Code Quality and Innovation: Clean, readable code with scope for expansion (e.g., edit/delete features).

- Documentation: This document serves as the project’s technical documentation.

Prepared by: Aqdas  
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