**Project Description**

The Student Grading Database System is a Java-based application designed to efficiently manage and organize student grades and related data within educational institutions. The system provides functionalities for managing student information, course details, and grading, with a focus on simplicity and robustness.

**Features:**

1. **Student Management:** Add, update, and delete student records, including personal information and enrollment status.
2. **Course Management:** Maintain and update course details such as course IDs, titles, and descriptions.
3. **Grade Management:** Input, update, and calculate grades for students, covering various assessments like exams and projects.
4. **Report Generation:** Generate reports for student performance, including transcripts and grade summaries.
5. **User Authentication:** Implement user authentication for different roles (e.g., administrators, instructors) to ensure secure access.
6. **Data Integrity:** Ensure data consistency and integrity through transaction management and error handling.

**Technologies Used:**

* **Programming Language:** Java
* **Database:** JDBC (Java Database Connectivity) for database interactions
* **Database Management System:** MySQL, PostgreSQL, or any relational DBMS
* **Tools:** Eclipse/IntelliJ IDEA for development, MySQL Workbench or pgAdmin for database management

**Implementation Details:**

* **Java Classes:** Design Java classes for entities such as Student, Course, and Grade, and implement methods for CRUD (Create, Read, Update, Delete) operations.
* **Database Schema:** Create tables and define relationships (e.g., Student, Course, Enrollments) to store data.
* **User Interface:** Implement a command-line or simple GUI for user interactions, allowing for data entry and report viewing.

**Potential Extensions:**

* Integration with a graphical user interface (GUI) for a more user-friendly experience.
* Advanced features like automated notifications for grade changes or performance analytics.