# Student Result Processing System

**Introduction:**
The Student Result Processing System is a SQL-based database application designed to streamline the management of student academic performance, grades, and overall results. It aims to replace manual result computation with a structured, automated process that ensures accuracy and efficiency.

**Abstract:**
This project involves the design and implementation of a relational database system to record, manage, and analyze student performance data. It includes student enrollment, course registrations, grade recording, GPA calculations, and result summaries. The system supports semester-wise evaluations and provides valuable academic insights through SQL queries and triggers.

**Tools Used:**
MySQL for database management
SQL for data definition and manipulation
Triggers, Views, and Window Functions for automation and analytics

**Steps Involved in Building the Project:**

1. Created relational tables: Students, Courses, Grades, Semesters, and GPA_Calculation.
2. Inserted student records, course details, and marks for multiple semesters.
3. Implemented GPA calculations using both aggregate and window functions.
4. Created triggers to automate GPA calculation after grade insertions.
5. Developed SQL queries for semester-wise performance, failure tracking, pass percentage, and rank lists.
6. Designed views for analyzing top performers and subject-wise results

**Conclusion:**
The Student Result Processing System successfully automates academic performance tracking for educational institutions. It minimizes errors, increases transparency, and provides deep insights through SQL-based data analysis. This project showcases practical database design, data integrity enforcement, and real-time analytical reporting.