🎓 Student Result Processing System – Project Report

1. Introduction

The Student Result Processing System is developed using MySQL to manage student grades, GPA, pass/fail status, and rank lists. It helps automate result calculations and reduce manual work in academic institutions.

2. Objective

- Design structured schema for students, courses, grades.

- Calculate GPA/CGPA based on credit weight.

- Show pass/fail statistics per student.

- Generate rank lists using window functions.

- Auto-calculate GPA using triggers.

- Export semester-wise result summary.

3. System Architecture

Table Name | Description

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Students | Student ID, name, department

Courses | Course ID, name, credit weight

Semesters | Semester ID, name

Grades | Marks, grade, student-course-semester info

GPA\_Log | GPA auto-calculated using a trigger

4. Features Implemented

- GPA and CGPA logic using CASE + credit-weighted points

- Rank List using SQL RANK() function

- Pass/Fail count per student

- Triggers to calculate GPA after data insert

- Export to CSV supported

5. Grade Mapping

A - 10

B - 8

C - 6

D - 4

F - 0

GPA Formula:

GPA = Σ (Grade Points × Credits) / Σ Credits

6. Sample Queries

- GPA per student

- Pass/Fail count

- Rank list

- Export result summary

7. Tools Used

- MySQL 8.0+

- MySQL Workbench

- SQL

- OS: Windows/Linux

8. Testing

Tested with multiple students and courses. GPA & ranks are calculated correctly. Triggers executed successfully on data insert.

9. Deliverables

- SQL Schema

- Queries and triggers

- README file

- Report (this)

10. Conclusion

This project reduces manual result processing and makes performance tracking easier. It can be extended to include CGPA, frontend dashboard, and student logins.

11. Future Enhancements

- Web UI using JSP or PHP

- Student logins

- CGPA calculation

- Admin dashboard

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