**Student Result Processing System**

* **Introduction**

The Student Result Processing System is a database at MySQL server or database server in general of student information for components of result or how a student can perform well. It manages the data of students, the information of the courses a student can take, the details of each course, the marks or grades the student gets in each course, and the records of all students status for degree.

* **Abstract**

The purpose of this project work is to develop a system which can automate the creation and result process of student exams. It is all about creating a correct GPA and CGPA calculation, checking for passed and failed results and ranking of the students using SQL queries and functions. This is a perfect solution for schools that are looking for an effective result processing system.

* **Tools Used**

1. **Database**: MySQL
2. **Platform**: SQL Workbench / MySQL CLI
3. **Language**: SQL (DDL, DML, DCL, Triggers, Functions)

* **Steps Involved in Building the Project**

1. **Schema Design**

Four tables were initialized in the database for Students, Courses, Semester and Grades with respective primary and foreign keys.

1. **Data Insertion**

All student profile, course, semester, and exam results were implanted with actual values.

1. **Query Development**

* SQL queries were written to:
* Calculate GPA/CGPA
* Generate pass/fail statistics
* Generate semester-wise and grand rank(top) lists with window functions

1. **Trigger Implementation**

Spark was included to programmatically create the GPA value when new grade data is inserted.

1. **Result Exporting**

A report generation and export query was developed using semester-wise result summary.

* **Conclusion**

This has been well accomplished by the Student Result Processing System, which effectively explains to us how fast the processing and analyzing of students performance can be on SQL. Thanks to advanced SQL features such triggers and window functions, the solution implements exact, dynamic and real time answer processing as required for an academic environment.