

High School Result Management System

1. Introduction

The High School Students' Result Management System is a software application designed to efficiently store, manage, and track student academic records. The system aims to streamline the process of managing student results, ensuring accuracy, easy retrieval, and better organization of data.

2. Objectives

The primary objectives of the system are:

- To store and manage student academic records in a structured format.
- To allow easy modification and retrieval of student results.
- To categorize student records by grade level (Grades 9–12) for better organization.
- To provide functionalities such as adding, updating, searching, deleting, and exporting student transcripts.
- To improve the efficiency of academic record-keeping in high schools.

3. Key Features

A. Grade-Level Categorization

The system will maintain separate files for each grade level (Grades 9–12), ensuring better organization and easier management.

B. Student Record Management

The system provides functionalities to:

- **Add a Student:** Input and store student details such as name, gender, age, grade, section, and subject scores.
- **Update Student Records:** Modify student information or grades when necessary.
- **Search for a Student:** Quickly retrieve a student's details based on their name.
- **Delete Student Records:** Remove outdated or incorrect student records.

C. Display and Report Generation

- **View All Student Records:** Display all student records from the selected grade level.
- **Generate Student Transcripts:** Export a student's academic transcript to a text file for easy printing and sharing.

D. User-Friendly Menu System

The system will introduce a structured menu that prompts the user to select a grade level before performing any actions. This ensures that operations are carried out within the correct category of student records.

4. Implementation Details

- **Programming Language:** Java
- **Data Storage:** CSV files for each grade level (e.g., grade9.csv, grade10.csv, etc.)
- **User Input Handling:** Scanner class for command-line interactions
- **File Operations:** Reading and writing student records from separate files per grade
- **Error Handling:** Ensuring data integrity by checking for invalid inputs and handling file-related exceptions

5. Expected Menu

1. Select Grade Level
2. Add Student
3. Display All Students
4. Display All Students' Transcripts
5. Search for a Student
6. Update Student Grades
7. Delete Student Record
8. Generate Transcript for Student
9. Exit