Student Management System Project

A Java application for managing student data

Team Members:

- Prudhvi – Core Data Model
- Abhishek – Business Logic
- Vishal – User Interface
- Puneeth – Main System Execution

Objectives & Features

- Objectives:
- To create a simple, user-friendly system for student data management.
- To demonstrate OOP principles like Encapsulation, Abstraction, and Modularity.
- To integrate multiple classes and packages into one working project.

- Key Features:
- Add, Search, Update, Delete student records.
- Display all students with details.
- Calculate and display average GPA.
- Menu-driven interface with clear options
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System Architecture Overview

Architecture:

The project is divided into 4 packages for modular design:

a. Prudhvi (Student.java): Data Model class holding student details.

b. Abhishek (StudentManager.java): Handles all core logic — add, delete, search, averageGPA.

c. Vishal (StudentConsoleUI.java): Manages user input and interaction using Scanner.

d. Puneeth (StudentManagementSystem.java): Main control loop and menu system.

Working Flow:

1. User selects an operation from the main menu.
2. Input is taken through console (handled by Vishal's UI).
3. Manager (Abhishek's code) performs operations on student list.
4. Results are displayed on screen.

Technologies & Concepts

Programming Language: Java

Core Concepts Applied:.

1. Classes and Objects
2. Constructors and Methods
3. Packages and Imports
4. ArrayList (for storing student records)
5. Encapsulation (Getters and Setters)
6. Exception Handling (InputMismatch handling)

Tools Used:

IDE: VS Code
Java Runtime Environment (JDK)

Output & Conclusion of the Java Project

Showcasing the successful execution of student management features

Conclusion:

- Successfully implemented a modular Student Management System.
- Demonstrates teamwork, modular coding, and Java OOP fundamentals.
- Can be further enhanced with GUI or Database integration in future.