**Project Title:**
 **Student Management System**

**Author:**
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**Tested On:**
 Kali Linux
 Java Version: OpenJDK 24

**System Specifications:**

- **RAM:** 24 GB

- **Storage:** 512 GB SSD

- **Processor:** AMD Ryzen 5 Series

**Date:** July 29, 2025

# 🧾 Project Overview

The **Student Management System** is a comprehensive Java-based desktop application developed using **Swing** for GUI and **File I/O** for persistent data storage. The project simulates an all-in-one platform for student and academic data management. It's modular, scalable, and designed for future extension with ease.

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# 🧰 Key Features (30 Classes Total)

Each feature is built as a dedicated class under the package: `studentmanagementsystem.ui`

### ✅ Implemented Core Functionalities (Fully Functional)

1. **HomeDashboard**:

   - Main landing screen with navigation buttons to all 30 features.

   - Clickable buttons to open each feature page.

2. **AddStudentPage**:

   - Allows adding student details (Name, ID, Dept).

   - Stores data in a file using File I/O.

3. **StudentListPage**:

   - Shows list of all registered students.

   - Reads from saved data file.

4. **DeleteStudentPage**:

   - Enables deleting a student by ID.

   - Confirms deletion and updates data file.

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# 🧮 Planned Features (UI Classes Created, Code to be Developed)

These features are structurally ready for future implementation:

| No. | Feature Name |
|-----|--------------|
| 1. | AttendanceGraphPage |
| 2. | AttendancePage |
| 3. | AttendanceTrackingPage |
| 4. | BillsFeesHistoryPage |
| 5. | CertificateRequestPage |
| 6. | CourseDropPage |
| 7. | CourseEnrollmentPage |
| 8. | CourseSelectionPage |
| 9. | EventManagementPage |
| 10. | EventRegistrationPage |
| 11. | ExamSchedulePage |
| 12. | FeeStatusPage |
| 13. | HomePage |
| 14. | HomePagePage (modular UI) |
| 15. | HostelPage |
| 16. | LibraryBorrowPage |
| 17. | LibraryManagementPage |
| 18. | NotificationPage |
| 19. | PasswordChangePage |
| 20. | ProfilePage |
| 21. | ResultsHistoryPage |
| 22. | ScholarshipPage |

23. SpecialExamApplicationPage

24. StudentForumPage

25. StudentIDPage

26. StudentLeaderboardPage

27. TeacherContactPage

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# 🛠️ Tested Environment

- **Operating System**: Kali Linux

- **Java Version**: OpenJDK 24

- **IDE Used**: IntelliJ IDEA

- **Project Structure**:

  - Organized under `studentmanagementsystem.ui`

  - All UI features created using `javax.swing`

  - Data stored using plain text `.txt` files

## 🔧 System Specifications:

- **RAM**: 24 GB

- **Storage**: 512 GB SSD

- **Processor**: AMD Ryzen 5 Series

All GUI windows and I/O operations tested and verified to work on this system.

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# 🔒 Known Limitations and To-Do

- Admin and student account creation/login system is not yet implemented.

- No database connection; file storage used.

- Only 3 out of 30 feature pages are currently functional.

- Needs form validation and input sanitization.

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# 🚀 Future Development Plan

1. Add **Admin Login** and **Student Signup** page.

2. Implement feature-wise development one by one (remaining 27 classes).

3. Optional: Integrate database using SQLite or MySQL.

4. Add user profile image and login session.

5. Refactor code with MVC pattern for scalability.

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# 👤 Author

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