Project Report: Student Management System

Project Title

Student Management System using Streamlit and CSV

Objective

To develop a simple and interactive Student Management System that allows users to:

- Add, view, update, and delete student records

- Display student details including course, grade, and attendance

- Highlight failing students and format data for better readability

Technologies Used

- Programming Language: Python

- Framework: Streamlit (for UI)

- Data Storage: CSV File (students.csv)

- Libraries Used:

  - pandas (for data handling)

  - os (for file checks)

  - streamlit (for building the UI)

Project Structure

student_management_system/

student_app.py   # Main Streamlit app

student_operations.py   # Contains backend logic (CRUD)

students.csv   # CSV file to store student data

__pycache__/   # Python bytecode cache (auto-generated)

Functionalities Implemented

1. Add Student:

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- Inputs: Name, Course, Grade, and Attendance

- Grades: A+, A, B+, B, C, D, E, F

- Attendance formatted with %

2. View Students:

- Table view

- Auto-formats attendance (e.g., 87.00%)

- Grade F students highlighted in light red

3. Update Student:

- Edit student details

- Saves changes to CSV

4. Delete Student:

- Removes selected student from list

Special Features

- Auto-formatting of Attendance: e.g., 87 -> 87.00%

- Fail Highlighting: Grade 'F' shown with light red background (#ffcccc)

- Grade Constraints: Only A+, A, B+, B, C, D, E, F allowed

Sample Data Format (CSV)

Name,Course,Grade,Attendance

John Doe,Math,A,89.00%

Jane Smith,Science,F,60.00%

Alice Brown,English,B+,77.50%

Conclusion

This Student Management System serves as a robust and user-friendly tool for managing academic records.

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By integrating CSV with a Streamlit front-end, the project ensures simplicity and accessibility. Key enhancements like grade formatting, fail highlighting, and user validations make it internship-ready and highly practical.