GVP AI Hackathon 2026

AI-ASSISTED SMART ATTENDANCE & PERFORMANCE TRACKER

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Problem Statement & Objective

Problem: Keeping student data manually in colleges is susceptible to errors, data duplication, and difficulties in achieving instant data analysis.

Objective: To create a modular, automated system for managing student attendance and performance, utilizing AI to speed up the validations and analysis process.

Modular System Architecture

Approach: The system is implemented with a Modular Design approach for separating concerns and achieving code scalability.

Architecture Components:

student_main.py: This script manages the User Interface (UI), menu navigation, and input collection.

logic.py: Contains the analytics engine (AI assisted calculation).

data_manager.py: This script is responsible for the interaction of the code with the storage file.

Data Persistence(JSON Storage)

Storage Engine: For storing data permanently, it uses JSON (JavaScript Object Notation).

Mechanism: * Load: Data is automatically fetched from students_data.json.

AI-Assisted Smart Features

Attendance Shortage Alert: It will automatically flag students who have less than 75% attendance with LOW status.

Performance Remarks: AI auto-generates instant feedback-good, average, needs improvement-based on student marks.

Validating Data: AI-powered code logic ensures that no repetition of roll numbers occurs and the entries are valid.

Auto-Sample Data: AI automatically creates sample test records to immediately demonstrate the system.

Technology Stack & AI Integration

- Programming Language: Python
- Data Format: JSON
- AI Tool Used: Gemini AI
- AI Impact: * Fast creation of intricate validation logic.
- Proper formatting of tabular console outputs for efficient readability.
- Drastic reduction of development time (within a limit of 2.5 hours).

Conclusion

Scalability: The system can be easily extended to accommodate additional subjects and/or a Graphical User Interface.

Accuracy: There are no chances of computation errors because of automation. Efficiency: Teachers are able to identify at-risk students or students with low attendance with just a single click.