eyouth X DEPI Project

Proposal

Project Title: Student Performance Dashboard

Submitted by: Data Visionaries

Member Name	Role
Mostafa Mahmoud	Team Leader & Data Engineer (ETL & SQL Integration)
Abdelhamid Oraby	Data Engineer (Data Cleaning & SQL Queries)
Ehab Tamer	Data Analyst (Visualization & Reporting)

Project Description:
The Student Performance Dashboard project aims to develop a complete data pipeline to analyze academic performance data of students. The system will collect data (such as student scores, attendance, and subjects), preprocess it using Python, store it in a relational database (SQL), and visualize key trends using Python visualization tools or a dashboard framework like Streamlit or Plotly Dash. This dashboard will help teachers and school administrators make data-driven decisions to improve student outcomes and attendance rates.

Objectives: Build a Python-based data preprocessing pipeline to clean and transform student data. Design and implement a normalized SQL database schema. Execute SQL queries to generate insights on performance and attendance trends. Create a visualization dashboard to display KPIs such as top performers, average monthly scores, and attendance heatmaps. Deliver a final presentation summarizing findings and recommendations.

Tools & Technologies: Python (Pandas, NumPy) SQLite / PostgreSQL Matplotlib, Seaborn, Plotly, Streamlit PowerPoint, Word/PDF GitHub

Milestones & Deadlines:

Milestone	Description	Deadline
1	Data Collection & Preprocessing (CSV + Python Script)	18/10/2025
2	SQL Integration (Database schema, queries, and ERD)	25/10/2025
3	Visualization & Dashboard Creation	01/11/2025
4	Final Documentation & Presentation	07/11/2025

KPIs (Key Performance Indicators):

Category	KPI	Target

Data Preprocessing	% of missing/duplicate data handled correctly	100%
	Script execution efficiency (runtime ≤ expected threshold)	■
SQL Integration	Query accuracy (expected results)	≥ 95%
	Query performance (execution time ≤ 2 sec)	■
Visualization	Dashboard load time	< 3 sec
	% of required metrics visualized	≥ 90%
Presentation	Report completeness	100%
	Stakeholder clarity/feedback score	≥ 4/5

Submission Deadline: 12/10/2025