

Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	04 November 2023
Team ID	NM2023TMID06843
Project Name	Project - Unleashing The Potential Of Our Youth: A Student Performance Analysis

Functional Features:

S.NO	Functions	Features
1	Data Collection:	Student Information: Gather basic information about students, including demographics, academic history, and personal details.
2	Data Integration:	Combine data from different sources, such as academic records, standardized test results, and socio-economic data, to create a comprehensive dataset.
3	Data Cleaning and Preprocessing:	Clean and preprocess the data to handle missing values, outliers, and ensure data quality.
4	Data Visualization:	Generate various visualizations like charts, graphs, and dashboards to help users understand the student performance data.
5	Performance Metrics:	Calculate key performance metrics, such as GPA, standardized test scores, attendance rates, and graduation rates.
6	Predictive Analytics:	Build predictive models to forecast student performance or identify at-risk students.
7	Trend Analysis:	Analyze historical performance data to identify trends and patterns in student achievement.
8	Student Profiling:	Create student profiles based on their academic and non-academic attributes to gain a deeper understanding of their needs and challenges.
9	Comparative Analysis:	Compare the performance of different groups of students (e.g., by grade, gender, socioeconomic background) to identify disparities and trends.
10	Intervention Recommendations:	Generate recommendations for interventions and support services for students who may be at risk of underperforming.
11	Reporting and Dashboard:	Provide a user-friendly interface with customizable dashboards and reports for educators,

		administrators, and policymakers.
12	Alerting System:	Implement an alerting system to notify stakeholders when a student's performance is a cause for concern.
13	Longitudinal Analysis:	Track the progress of individual students over time to assess their growth and development.
14	Accessibility and Security:	Ensure that the solution is accessible to authorized users while maintaining data security and privacy.
15	Mobile Compatibility:	Make the solution accessible on mobile devices to facilitate on-the-go access for teachers and parents.
16	Data Export and Integration:	Allow the export of data for further analysis and integration with other educational systems.