Project Design Phase-II
TechnologyStack(Architecture&Stack)

Date	19 October 2023
Team ID	**E8137EA139C230CB7904BC78EB465F79**
ProjectName	Student Performance Analysis
MaximumMarks	4Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table2

Example:Order processing duringpandemicsforofflinemode

Reference: https://www.researchgate.net/figure/The-procedure-for-analysis-in-predicting-student-performance-in-mathematics_fig3_337052263

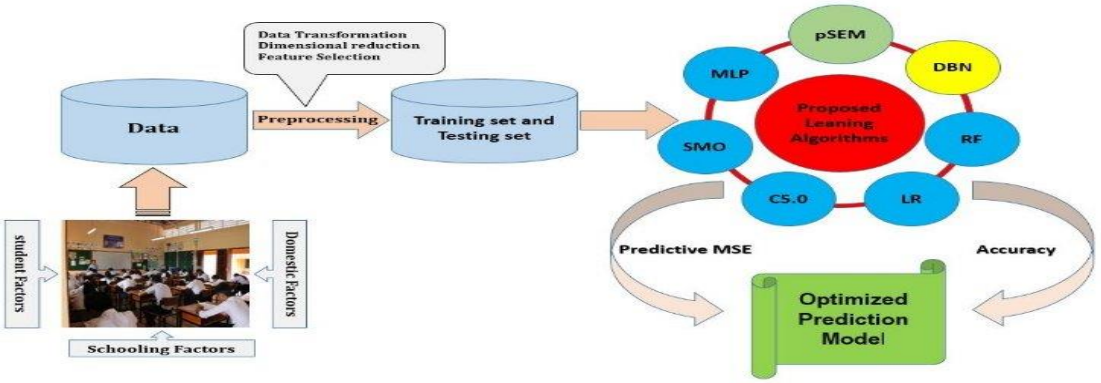

Table-1:Components& Technologies:

S.No	Component	Description	Technology
1.	Student Information System	software collects and stores student demographic data, attendance records, grades, and other administrative data.	Internet of Things (IoT) devices like smart boards and attendance tracking systems
2.	Data Storage	Data warehousing solutions like Amazon Redshift or Google BigQuery can be used to consolidate and store large volumes of data for analysis.	MySQL or PostgreSQL
3.	Data Analysis	Platforms like Google Analytics or IBM Watson Analytics provide advanced data analysis and machine learning capabilities.	Tableau, Power BI, or Qlik, Pandas, NumPy, and Scikit-Learn
4.	Machine Learning and Predictive Analytics	Machine learning models can be built to predict student performance, identify at-risk students, and recommend personalized interventions.	TensorFlow, scikit-learn, and Keras
5.	Cloud Computing	Serverless computing (e.g., AWS Lambda) can be used to automate data processing and analysis tasks.	AWS, Azure, and Google Cloud
6.	Cloud Database	Database Service on Cloud	IBMDB2,IBM Cloudant etc.

Table-2:Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Academic Assessment	Measures students' academic progress, identifies strengths and weaknesses, and assesses their readiness for the next level of education.	Technology of Academic Assessment
2.	Teacher Evaluation	Evaluates and supports teachers' effectiveness by analyzing student outcomes and providing insights into professional development needs.	_
3.	Program Evaluation	Analyzes the performance of specific educational programs, such as after-school programs, special education, or extracurricular activities, to determine their impact on student success.	Technology used
4.	Early Warning Systems	Identifies students at risk of academic failure, dropout, or other challenges, allowing timely interventions to support their success.	Technology used
5.	Resource Allocation:	Informs budget decisions by identifying areas where additional resources may be needed to improve student performance.	Technology used