Model Selection Report

Date	12 February 2026
Team ID	LTVIP2026TMIDS66183
Project Title	Civil Engineering Insight Studio
Maximum Marks	5 Marks

Model Selection Report

In this project, the focus is simple analytical models are chosen due to their transparency, ease of interpretation, and suitability for structured civil engineering project data. These models ensure reliable insights and efficient system performance. The modular design of the platform also allows future integration of advanced machine learning models, such as predictive models for delay and cost estimation.

Model Selection Report:

Model	Description
Analytical Processing Model (Rule-Based & Statistical Models)	A lightweight and efficient analytical approach used to compute civil engineering project metrics such as construction progress, cost variance, schedule variance, and resource utilization. This model is well-suited for real-time project monitoring and provides transparent, easy-to-interpret insights.
Other Models (Considered)	Advanced machine learning and predictive models were conceptually reviewed, but rule-based and statistical models were selected due to their simplicity, reliability, faster processing time, and suitability for structured civil engineering project data. These models also allow easy future integration of AI-based prediction techniques if required.

Justification for Model Selection

The analytical processing model based on rule-based and statistical techniques is selected for the **Civil Engineering Insight Studio** project due to its suitability for structured civil

engineering project data. These models provide clear, transparent, and easily interpretable results, which are essential for engineers and project managers to understand project performance metrics such as progress, cost variance, and resource utilization. They require minimal computational resources, ensure fast response times, and reduce system complexity. Additionally, this model supports reliable real-time monitoring and allows seamless future integration of advanced machine learning or predictive models if needed.