Model Development Phase

Date	15 February 2026
Team ID	LTVIP2026TMIDS66291
Project Title	Civil Engineering Insight Studio
Maximum Marks	10 Marks

Initial Model Training Code, Model Validation and Evaluation Report

In this project, no custom model training is performed. Instead, a pre-trained generative AI model is integrated and used for material generation. The focus of this phase is on model selection, configuration, prompt design, and output evaluation, rather than training from scratch.

Initial Model Training Code:

Model Selection and Initialization

The **Gemini Flash Lite (models/gemini-flash-lite-latest)** model is selected due to its lightweight architecture, faster response time, and suitability for real-time Image generation tasks.

The model is initialized using the Google Generative AI API. Configuration parameters such as temperature, top-p, top-k, and maximum output tokens are defined to control creativity, response quality, and output length.

```
generation_config = {
    "temperature": 0.75,
    "top_p": 0.95,
    "top_k": 64,
    "max_output_tokens": 8192,
}

model = genai.GenerativeModel(
    model_name="models/gemini-flash-lite-latest",
    generation_config=generation_config
)

def get_joke():
    jokes = [
        "Why did the AI chef break up with the recipe? Too many mixed
        "Why don't programmers trust recipes generated by AI? They ke
        "Why did the chef bring a laptop into the kitchen? To run the
```

Model Validation and Evaluation Report:

Model	Summary	Training and Validation Performance Metrics
Gemini Flash Lite	Pre-trained Image model optimized for fast data generation	Relevance of generated content, coherence, clarity, and response time