Model Optimization and Tuning Phase

Date	18 February 2026
Team ID	LTVIP2026TMIDS66196
Project Title	Explore With Ai: Custom Itineraries For Your Next Journey
Maximum Marks	10 Marks

Model Optimization and Tuning Phase

Since this project uses a pre-trained generative AI model, traditional model retraining and fine-tuning are not performed. Instead, optimization is achieved by tuning generation parameters and improving prompt structure to enhance the quality, relevance, and consistency of the generated travel itineraries.

Hyperparameter Tuning Documentation (8 Marks):

Model	Tuned Parameters	Description
Gemini Flash (Pre-trained LLM)	Temperature	Controls creativity of responses. A moderate value was chosen to balance creativity and relevance.
	Top-p	Ensures coherent and focused output by limiting token probability range.
	Top-k	Restricts token selection to the most relevant options for better response quality.

	Max Output Tokens	Limits response length to generate detailed but concise itineraries.

Optimization Approach

- Initial responses were tested with default settings
- Generation parameters were adjusted iteratively
- Outputs were evaluated based on clarity, structure, and relevance
- The configuration producing the most consistent itineraries was selected

Final Model Selection Justification (2 Marks):

Final Model	**Reasoning**
Gemini Flash Lite (models/gemini-flash-lite-latest)	The final configuration provided the best balance between detailed itinerary generation, response consistency, and fast execution. The tuned parameters improved output quality without increasing computational complexity, making it suitable for real-time user interaction.