Model Development Phase

Date	19 February 2026
Team ID	LTVIP2026TMIDS39529
Project Title	Advancing Nutrition Science through GeminiAI – NutriGen

Initial Model Training Code, Model Validation and Evaluation Report

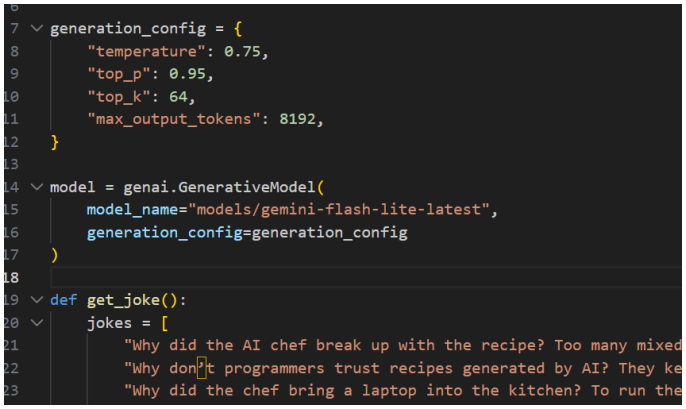
In the **NutriGen** project, no custom model training is performed. Instead, a pre-trained Gemini AI model is integrated to generate personalized nutrition plans and health guidance.

Initial Model Training Code:

Model Selection and Initialization

The **Gemini Flash Lite (models/gemini-flash-latest)** model is selected because:

- It is lightweight and optimized for fast inference
- Suitable for real-time personalized nutrition generation
- Efficient in handling structured health prompts
- Cost-effective for scalable deployment



```
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 generative language model optimized for fast text generation	Nutritional relevance, medical appropriateness, personalization accuracy, adherence to calorie targets, coherence, clarity, response time