

# **(TR-103) PROMPT ENGINEERING –**

## **Training Day 4 Report:**

### **Introduction to Google AI Studio:**

- Google AI Studio is a web-based platform developed by Google for interacting with its generative AI model, Gemini.
- It provides a clean and intuitive interface for prompt-based experimentation and output generation.
- Users can input structured prompts and fine-tune model responses using configurable parameters.
- The platform is particularly useful for learners and developers to understand AI behavior without writing code.
- It allows real-time testing and adjustment of prompts, enhancing understanding of how AI models process instructions.

### **Session Overview:**

- The session began with an introduction to the **OpenAI Playground**, a platform for working with large language models.
- However, due to its usage limitations (such as subscription or credit-based access), learners were directed toward **Google AI Studio** as a free and feature-rich alternative.
- Participants explored the Gemini model using Google AI Studio's user interface, configuring parameters and crafting prompts to control the style and output of the AI.

### **Key Parameters in Prompt Configuration:**

#### **1. Temperature:**

- Controls the level of randomness or creativity in the AI's response.
- A lower value (e.g., 0.2) produces more focused and predictable outputs.
- A higher value (e.g., 0.8–1.0) generates more creative and diverse responses.

## **2. Max Tokens:**

- Sets the maximum length of the output generated by the model.
- A lower value results in shorter responses, while a higher value allows for more detailed output.

## **3. Top\_p:**

- Regulates the diversity of word selection by the AI model.
- With a lower top\_p (e.g., 0.5), the model selects from only the most probable words.
- A higher top\_p (e.g., 0.9) allows greater variety in the output, increasing creativity.

These parameters work together to help users customize how deterministic or imaginative the model's responses should be.

## **Prompt Design and Structure:**

A key part of interacting with AI models is crafting effective prompts. During the session, prompt design was introduced with two main types:

### **➤ System Prompt:**

- Sets the role or behavior of the AI.
- Example:  
"You are a helpful assistant that explains complex concepts in simple terms."

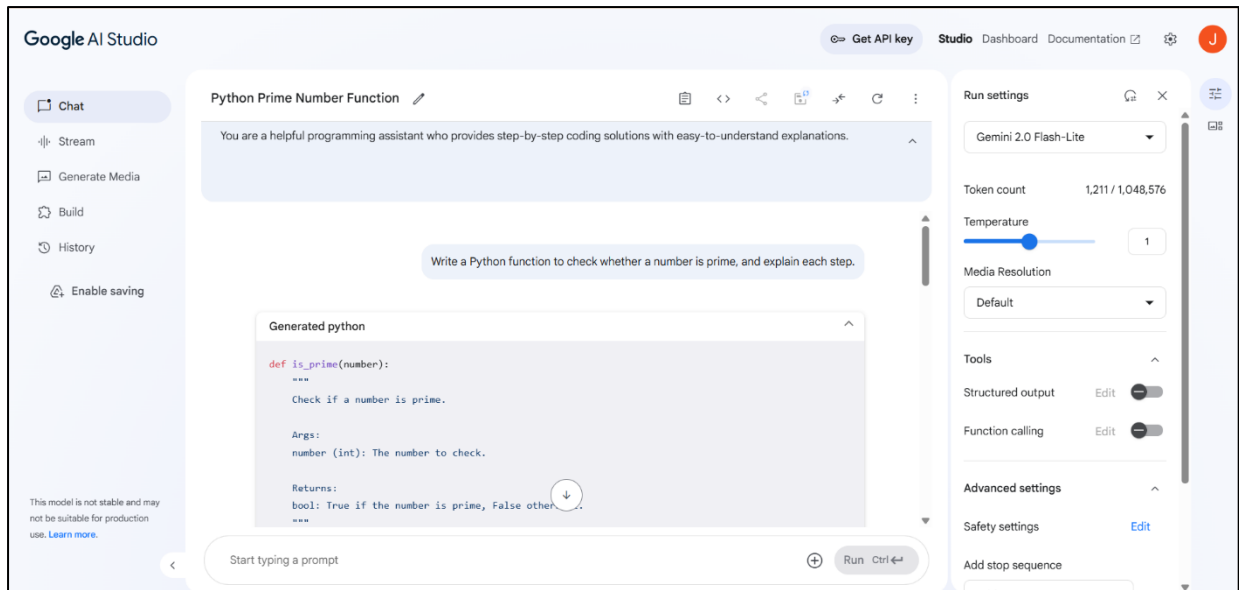
### **➤ User Prompt:**

- The actual instruction or query given by the user.
- Example:  
"Explain the difference between Artificial Intelligence and Machine Learning."

Understanding how to design prompts properly is essential for generating meaningful and accurate responses.

## **Screenshot of Google AI Studio Interface:**

This screenshot illustrates the interface used for prompt-based experimentation with the Gemini model.



## API Key Generation:

An API key was successfully generated from the Google AI Studio platform. This key is essential for:

- Accessing the Gemini model programmatically
- Integrating AI capabilities into custom applications
- Enabling backend communication with the AI through HTTP requests.

This step marks an important milestone in bridging user interaction with real-world application development.