Summer Training TR-103

Prompt Engineering

Day-4 Report

On 4th day ChatGPT Playground was introduced. Playground is a feature of ChatGPT that is in pro version of ChatGPT.

Playground:

The **ChatGPT Playground** is a **web-based interactive tool** provided by **OpenAI** that lets you experiment with and fine-tune prompts to see how the model responds.Playground is a feature of ChatGPT. It can be only used in pro version of ChatGPT. It gives better results as comparison to free version of ChatGPT.

Key Features of the Playground:

1. **Prompt Box:** The **Prompt Box** is the main area where you type instructions, questions, or any text you want the AI to respond to. This is the core of the Playground because everything you experiment with starts here. It works as:

    - Type any prompt (instruction, question, or message).
    - The model responds instantly.
    - You can use **multi-turn conversations** (like a chatbot).

2. **Model Selection:** The Model Selection feature lets you choose which OpenAI model you want to use. Different models have different capabilities and response qualities.

3. **Temperature:** The Temperature parameter controls the creativity and randomness of the model's response. A low temperature (like 0.0) makes the model very strict and deterministic, meaning it will give factual or predictable answers without much variation. A high temperature (like 0.8 or 1.0) makes the model more creative, which is great for story writing, brainstorming, or generating multiple ideas.
4. **Max Tokens:** The Max Tokens setting controls how long the model's output can be. Tokens are chunks of text (a word or part of a word), and this limit prevents the model from generating endlessly long outputs.
5. **System Prompt Box:** System Prompt Box is also a prompt given to model as a prompt. The model works based on the system prompt while giving output. System Prompt is like base prompt according to that model will give output of the user prompt.

Google AI Studio:

Google AI Studio is a web-based platform provided by Google to build, test, and deploy AI applications using Google's Generative AI models, including Gemini.

Key Features of Google AI Studio:

1. **Prompt Creation and Testing:** In AI Studio, the main interface allows you to create prompts and immediately see the model's response. You can type a single instruction, ask a question, or even provide a conversation**.**
2. **Model Selection:** Google AI Studio allows you to choose from multiple Gemini models:

    - **Gemini 1.5 Pro / Flash** – Optimized for speed and efficiency.
    - **Gemini Pro Vision** – Supports multi-modal input (text + images).

- **Gemini Nano** (for on-device use) – For lightweight AI applications.

Selecting the right model helps you balance performance, cost, and capabilities.

3. **Parameter Controls:** AI Studio provides control parameters to fine-tune the output:

- **Temperature** – Controls creativity. Lower values = factual, higher = imaginative.
- **Max Output Tokens** – Limits the length of the AI's response.
- **Top-K and Top-P (Nucleus Sampling)** – Controls diversity and randomness in generation.

These settings are critical for prompt engineers to balance accuracy and creativity.

4. **Multi-Modal Support:** With Gemini Pro Vision, AI Studio allows you to upload images along with text prompts. This makes it powerful for visual question answering, image captioning, or product analysis.