	Marathwada Mitra Mandal's	
	Institute of Technology, Lohgaon Pune - 47	
	Department of Artificial Intelligence and Data Science	

Semester -I A.Y.2025-26 Sub.: - Artificial Intelligence Lab Class: SE

Assignment 06: Assignment and practice of Prompt Engineering to craft effective prompts. **Theory:**

1.1 What is Prompt Engineering?

Prompt engineering is the art and science of designing inputs (prompts) to get desired outputs from AI models. It involves using precise, structured, and contextually relevant instructions to achieve accurate, creative, or useful AI responses.

1.2 Why is it Important?

- Enhances productivity using AI tools

- Reduces misunderstanding or hallucination by the model

- Improves quality of image, video, and text generation

- Key skill in modern AI workflows

1.3 Types of Prompts

- Instructional Prompts: 'Summarize this article.'

- Conversational Prompts: 'Can you explain how solar panels work?'
- Visual Prompts (for DALL·E/SORA): 'A medieval castle under the northern lights, cinematic lighting.'

- Few-shot Prompts: Providing examples before asking for results

1.4 Techniques in Prompt Engineering

- Use clear and specific instructions

- Define the tone, format, or audience

- Provide examples or constraints

- Iterate and refine

- Use role-based framing (e.g., 'You are a professor...')

Assignment Tasks

Task 1: Prompt Categorization

Categorize the following prompts into types (Instructional, Conversational, Visual, etc.) and explain your reasoning:

- 'Generate a logo for a tech startup using neon colors.'

- 'Explain blockchain to a 5-year-old.'

- 'You are a UX designer. Suggest improvements to this app layout.'

Output :

Task 1: Prompt Categorization

1. 'Generate a logo for a tech startup using neon colors.'

● Category: Visual ● Reasoning: This prompt requests the generation of a visual design element—a logo. The focus is on creating a visual artifact rather than providing a textual explanation or having a conversation. The specific reference to colors and design elements further solidifies this as a visual task.

2. 'Explain blockchain to a 5-year-old.'

● Category: Instructional ● Reasoning: This is an educational prompt that asks for a simplified explanation of a complex topic, tailored to a young audience. The user seeks to learn or teach through a clear, accessible breakdown—hallmarks of an instructional prompt.

3. 'You are a UX designer. Suggest improvements to this app layout.'

● Category: Conversational / Instructional ● Reasoning: This prompt places the AI in a role-playing scenario ("You are a UX designer") and seeks advice or critique, which involves analysis and guidance. This overlaps instructional (providing suggestions) and conversational (due to the role-play and tone), but if the intent is actionable advice, instructional is the stronger fit—though some may see the role-playing element as pushing it toward conversation.

Task 2: Refinement Practice

Given vague prompts, refine them to be more effective. Example:

Original: 'Make a poster.' → Refined: 'Create a poster for a school science fair with a blue background, cartoon robots, and bold text saying SCIENCE EXPO 2025.'

Output :

Task 2: Refinement Practice

1. Original: "Write a story."

Refined: "Write a 500-word short story for middle school students about a lonely dragon who finds an unexpected friend in a forest. Include a moral about kindness."

2. Original: "Make a video."

Refined: "Create a 2-minute promotional video for a new eco-friendly water bottle brand. Include upbeat music, customer testimonials, and shots of people using the bottle outdoors."

3. Original: "Draw something." Refined: "Draw a black-and-white sketch of a futuristic cityscape with flying cars, tall glass buildings, and rooftop gardens." 4. Original: "Design a website."

Refined: "Design a homepage for a bakery that specializes in gluten-free desserts. Use pastel colors, include a menu section, and add a contact form at the bottom."

4. Original: "Do a presentation."

Refined: "Prepare a 5-slide presentation for 6th graders explaining how photosynthesis works. Use diagrams, animations, and simple language."

Task 3: Prompt Design Exercise

Design 5 original prompts for different domains:

- One for ChatGPT (text-based)

- One for DALL·E (image-based)

- One for SORA (video-based)

- One for coding or logic

- One for education or training

Output :

Task 3: Prompt Design Exercise

1. ChatGPT (Text-Based Prompt) Prompt: “Write a detailed narrative set in the year 2150, describing a typical day in the life of a citizen in a futuristic city. Include advancements in technology, changes in society, and how humans interact with the environment.”

- DALL·E (for image generation)

2. DALL·E (Image-Based Prompt) Prompt: "Create a digital illustration of a futuristic library in the year 2125, with holographic books, robot assistants, and a floating glass reading lounge under a starry sky."

- Canva AI or other visual tools

- Analyze the results and refine if necessary

3. SORA (Video-Based Prompt) Prompt: "Generate a 1-minute animated video explaining how solar panels convert sunlight into electricity. Include simple visuals, labeled diagrams, and a friendly voiceover suitable for grade 5 science students."

4. Coding or Logic Prompt Prompt: "Write a Python program that takes a list of student names and test scores, calculates the average, and outputs a message for each student: 'Pass' if the score is above average, 'Fail' otherwise."

5. Education or Training Prompt Prompt: "Design a 30-minute training module for new retail employees focused on effective customer communication. Include real-life scenarios, role-play exercises, and a short quiz at the end."

Practice Activity (Live Testing)

Test your prompts using tools like:

- ChatGPT (for text or logic)

- DALL·E (for image generation)

- Canva AI or other visual tools

- Analyze the results and refine if necessary

.