Assignment 06

Assignment and practice of Prompt Engineering to craft effective prompts.

TASK 1:

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

- Categorization: Visual Generation
- Reasoning: This prompt explicitly requests the creation of a visual asset (a logo). The core task is generative and artistic, requiring the AI to interpret design principles (e.g., symbolism for a tech startup, aesthetics of neon colors) and produce an image, not just text. Specifications like "tech startup" and "neon colors" are constraints guiding the visual output.

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

- Categorization: Instructional (with a specific style constraint)
- Reasoning: The primary goal here is to receive information and an explanation—a core function of an instructional prompt. The key differentiator is the specific audience: "to a 5-year-old." This requires the AI to not just provide facts but to adapt its instructional method by using simple analogies, relatable concepts, and age-appropriate language, moving it from a generic explanation to a tailored, pedagogical one.

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

- Categorization: Role-Play + Analytical
- Reasoning: This prompt has two distinct parts:
    1. Role-Play: It begins by instructing the AI to adopt a specific persona ("You are a UX designer"). This sets the context and dictates the style, expertise, and perspective from which the answer should be given.

2. Analytical: The core task is analysis and critique. The AI is not being asked to generate something new from scratch (like a visual) or simply explain a concept. Instead, it must evaluate a provided input (the app layout) against the principles of UX design (usability, accessibility, aesthetics) and provide reasoned suggestions for improvement. This makes it primarily analytical.

TASK 2:

1. Original: 'Write about AI.'

Refined: "Write a 500-word blog post for a small business owner audience explaining how generative AI tools like ChatGPT can improve productivity. Focus on practical use cases in marketing, customer service, and internal documentation. Use a clear, persuasive, and slightly optimistic tone."

- Why it's better:
    - Defines Format & Length: A 500-word blog post.
    - Specifies Audience: Small business owners (not academics or developers).
    - Narrows the Topic: From the vast field of "AI" to "productivity uses of generative AI."
    - Outlines Key Content: Requests specific examples in marketing, customer service, and documentation.
    - Sets the Tone: Clear, persuasive, and optimistic.

2. Original: 'Plan a trip.'

Refined: "Create a 4-day weekend itinerary for a budget-conscious couple traveling to Paris in the spring. The focus should be on free walking tours, affordable classic French cuisine, and major art museums. Include estimated costs for meals and attractions in Euros."

- Why it's better:
    - Sets a Timeframe: 4-day weekend.
    - Identifies Audience/Travelers: A budget-conscious couple.
    - Specifies Location and Season: Paris in the spring.

    - Defines Priorities: Free activities, affordable food, and art.
    - Adds a Practical Request: Include estimated costs.

3. Original: 'Give me recipe ideas.'

Refined: "Suggest three dinner recipes that are high in protein, gluten-free, and can be prepared in under 30 minutes. For each recipe, provide a brief list of core ingredients and a single sentence on the primary cooking method (e.g., stir-fry, bake, sauté)."

- Why it's better:
    - Quantifies the Request: Three recipes.
    - Adds Specific Constraints: High protein, gluten-free, <30 min prep time.
    - Defines Meal Type: Dinner.
    - Specifies Output Format: A list of core ingredients and a cooking method for each, preventing an overly detailed response unless needed.

4. Original: 'Summarize this article.' [Assume an article is provided]

Refined: "Summarize the provided article on quantum computing into three key bullet points. Then, write one paragraph explaining the potential implications of this technology for the field of cybersecurity. Write for an audience that is tech-savvy but not experts in physics."

- Why it's better:
    - Defines Output Structure: Three bullet points and one paragraph.
    - Goes Beyond Summary: Adds a requirement for analysis (implications for cybersecurity).
    - Specifies Audience: Tech-savvy non-experts, which guides the language and explanation depth.
    - Makes the "why" clear: The summary has a specific purpose (to understand implications).

5. Original: 'Create a workout plan.'

Refined: "Design a 3-day per week bodyweight workout plan for a beginner at home with no equipment. The goal is general fitness and strength building. Each workout should

be under 45 minutes and include a warm-up, a main circuit of 4-5 exercises, and a cool-down stretch. List the exercises, sets, and reps for each day."

- Why it's better:
    - Sets Frequency and Duration: 3 days/week, <45 minutes.
    - Defines Context: Beginner, at home, no equipment.
    - States the Goal: General fitness and strength.
    - Specifies Structure: Must include warm-up, main circuit, cool-down.
    - Requests Specifics: Exercises, sets, and reps.

TASK 3:

Domain: Image-Based (for DALL·E)

Prompt: A single, massive ancient robot lying half-submerged in a desert, overgrown with vibrant orange moss and small desert flowers. Its chest plate is cracked open, revealing a glowing crystal heart. The style is epic fantasy realism at sunset.

Domain: Video-Based (for SORA)

Prompt: A 5-second continuous shot of a watercolor painting of a koi fish coming to life. The fish swims off the paper, leaving a trail of wet, pigmented water behind it as it moves through the air before diving into a nearby teacup, causing the tea to change color.

Domain: Coding or Logic

Prompt: Write a Python function called **`is_power_of_two(n)`** **that returns `True` if the integer `n` is a power of two (e.g., 1, 2, 4, 8, 16) without using logarithm functions. Use bitwise operations.**

Domain: Education or Training

Prompt: Act as a biology tutor. Create a concise lesson plan to teach 8th graders the difference between mitosis and meiosis. Include one simple analogy comparing the

processes to making a photocopy (mitosis) versus shuffling two decks of cards together and then splitting them into four new unique decks (meiosis).