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

* Task 1: Prompt Categorization

Categorize the following prompts into types (Instructional, Conversational, Visual, etc.) and

explain your reasoning:

### **1. “Generate a logo for a tech startup using neon colors.”**

* **Category:** **Visual / Creative Generation**
* **Reasoning:** This prompt clearly instructs the AI to create something visual—a logo. The defining feature is the creative requirement (“tech startup” + “neon colors”), which guides the style and aesthetic of the output. Unlike instructional or conversational prompts, the user isn’t asking for knowledge, explanation, or dialogue but instead for **design output** that could be represented visually (through DALL·E, MidJourney, or other design tools).  
   Hence, it fits into the **Visual** category, more specifically **creative design generation**.

### **2. “Explain blockchain to a 5-year-old.”**

* **Category:** **Instructional / Educational (Simplified Explanation)**
* **Reasoning:** This prompt’s goal is to simplify a complex technical concept (blockchain) for a very young audience. It doesn’t ask for images or role-play but for **clear, instructional communication**. The challenge here is the **audience constraint** (a 5-year-old), which forces the explanation to use analogies, storytelling, and very simple terms. This makes it purely **educational and instructional**, since the output is an **explanation** designed for comprehension, not debate, visuals, or creativity.

### **3. “You are a UX designer. Suggest improvements to this app layout.”**

* **Category:** **Analytical / Consultative (Role-Play)**
* **Reasoning:** This prompt places the AI in the role of a **domain expert** (UX designer). The user expects actionable, **professional critique** of an app layout. The task is not about creating visuals directly but about **analyzing and improving** an existing design. It’s **consultative** because it mirrors how a human UX consultant would provide feedback. It also involves **role-play** since the AI is asked to “be” a UX designer. Therefore, this prompt belongs to the **analytical/consultative** category.

**Summary:**

* **Logo prompt → Visual / Creative Generation**
* **Blockchain prompt → Instructional / Educational**
* **UX prompt → Analytical / Consultative (Role-Play)**
* 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.'

### **1.**

**Original:** *“Draw a tree.”* **Refined:** *“Draw a large oak tree in autumn with orange and yellow leaves, a wooden swing hanging from one branch, and a clear blue sky in the background.”*

### **2.**

**Original:** *“Write a story.”* **Refined:** *“Write a 500-word short story about a young astronaut who gets lost on Mars and discovers a hidden underground city.”*

### **3.**

**Original:** *“Design a logo.”* **Refined:** *“Design a modern logo for a vegan restaurant called GreenBite, using a leaf symbol, earthy green tones, and clean minimalist typography.”*

### **4.**

**Original:** *“Explain AI.”* **Refined:** *“Explain artificial intelligence in simple terms, using a real-world analogy suitable for a 12-year-old student.”*

The key in refinement is:

* Add **context/purpose** (school fair, restaurant, story setting).
* Add **details** (colors, style, audience).
* Add **constraints** (length, tone, format).
* 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

### **1. ChatGPT (Text-Based)**

**Prompt:** *“Write a motivational speech for college students starting their first semester, using an inspiring but relatable tone. Include three practical tips on time management and self-confidence.”*

### - Motivational Speech for First-Year College Students

Good morning, everyone.

First, let me say congratulations—you’ve stepped into a brand-new chapter of your life. College isn’t just about classes and grades. It’s about discovering who you are, meeting people who will shape your journey, and building habits that will carry you for years to come.

Now, I know many of you might be feeling a mix of excitement and nervousness. That’s completely normal. You’re starting fresh, in a new place, with new responsibilities. But here’s the good news: you already have everything you need to succeed—you just need to channel it in the right direction.

Let me share three practical tips to help you with time management and self-confidence as you begin this adventure.

1. Treat your calendar like your best friend.  
 In college, freedom is exciting—but it can also be overwhelming. If you don’t plan your days, your days will plan you. Block out time for classes, assignments, and study, but also make space for rest and fun. A simple to-do list or calendar app can make the difference between feeling lost and feeling in control.

2. Start small, but be consistent.  
 Don’t pressure yourself to master everything at once. Whether it’s studying, joining clubs, or making friends—focus on taking one small, consistent step each day. Remember: success is rarely about giant leaps; it’s about steady progress. Even reading 10 pages a day or showing up to one study group can build powerful habits.

3. Believe in your voice.  
 One of the biggest challenges students face is self-doubt. You might look around and think, “Everyone else is smarter, more confident, or more talented than me.” That’s simply not true. Each of you is here because you belong here. Don’t be afraid to ask questions, to share your ideas, or to raise your hand in class. Confidence isn’t about being perfect—it’s about being willing to try.

So, as you begin your first semester, remember this: College is not just a test of your intelligence—it’s a test of your growth. Use your time wisely, take small but steady steps, and trust your own voice.

You are capable of more than you think. This is your moment to learn, to grow, and to shine.

Thank you—and best of luck on your journey!

### **2. DALL·E (Image-Based)**

**Prompt:** *“Create a futuristic cityscape at sunset with flying cars, neon lights, and holographic billboards. The style should be cyberpunk with vibrant colors and cinematic detail.”*



### **3. SORA (Video-Based)**

**Prompt:** *“Generate a 15-second video of a rainforest transitioning from day to night, showing animals becoming active at dusk—birds flying, monkeys climbing, and glowing fireflies appearing.”*

*https://pollo.ai/v/cmf1df8sh06y7b2nprfou2lrs?source=share*

### **4. Coding / Logic**

**Prompt:** *“Write a Python function that checks whether a given string is a palindrome. The function should ignore spaces, punctuation, and capitalization.”*

Here’s a clean Python implementation for that task:

import string

def is\_palindrome(text: str) -> bool:

# Normalize: remove spaces, punctuation, and make lowercase

normalized = ''.join(

char.lower() for char in text if char.isalnum()

)

# Check palindrome condition

return normalized == normalized[::-1]

# --- Example Tests ---

print(is\_palindrome("Racecar")) # True

print(is\_palindrome("A man, a plan, a canal: Panama")) # True

print(is\_palindrome("Hello, World!")) # False

print(is\_palindrome("No 'x' in Nixon")) # True

– Explanation:

* char.isalnum() keeps only letters and numbers (ignoring spaces + punctuation).
* .lower() ensures capitalization doesn’t affect comparison.
* Palindrome check is done by comparing the string to its reverse [::-1].

### **5. Education / Training**

**Prompt:** *“Design a 20-minute interactive lesson plan for high school students to understand photosynthesis. Include an analogy, a short activity, and three quiz questions.”*

## Lesson Plan: Understanding Photosynthesis (20 minutes)

### **Objective:**

Students will understand the process of photosynthesis—what it is, why it’s important, and how plants use it to make food.

### 1. Hook / Analogy (3 minutes)

* Teacher introduces photosynthesis using a **“solar-powered factory” analogy**:  
   *“Imagine every leaf of a plant as a little solar-powered kitchen. The sunlight is the electricity, water is the ingredient delivered by roots, and carbon dioxide from the air is another ingredient. With sunlight energy, the leaf ‘cooks’ these raw materials to make food (glucose), and oxygen is like the ‘smoke’ released from the factory.”*

### 2. Direct Teaching with Interaction (5 minutes)

* Show a **simple diagram** of a plant with arrows (sunlight, CO₂, water → glucose + O₂).
* Ask quick guiding questions:  
  + *“Where do plants get their water from?”*
  + *“What gas do plants take in from the air?”*
  + *“What gas do they release back to us?”*

Encourage short answers to keep it interactive.

### 3. Short Activity (7 minutes)

Role-play: “Acting Out Photosynthesis”

* Assign students roles:  
  + Sunlight ☀️
  + Water 💧
  + Carbon dioxide 💨
  + Plant leaf 🍃
  + Glucose (sugar cube prop or student with a sign)
  + Oxygen (student holding balloon or sign)
* Students with “ingredients” (water, CO₂, sunlight) walk toward the “leaf.”
* The “leaf” takes them in and then “creates” glucose and oxygen, handing them to the respective students.

This physical activity helps them **visualize the process** in a memorable way.

### 4. Quick Recap (2 minutes)

* Summarize the process on the board:  
   **CO₂ + H₂O + Sunlight → Glucose + O₂**
* Emphasize: This is how plants make their food and how humans/animals get oxygen.

### 5. Quiz Questions (3 minutes)

1. **Recall (easy):** What three things are needed for photosynthesis to happen?  
    *(Answer: Sunlight, water, carbon dioxide)*
2. **Understanding (medium):** Why is photosynthesis important for humans?  
    *(Answer: It produces oxygen and food, forming the base of the food chain)*
3. **Application (harder):** If a plant is kept in the dark for days, what would happen to its ability to make food, and why?  
    *(Answer: It can’t make food because sunlight is a key ingredient)*

–**Total Time: 20 minutes**

* Hook (3) + Teaching (5) + Activity (7) + Recap (2) + Quiz (3)