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

**Theory:**

* **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.

* **Why is it Important?**

Prompt engineering is important because it acts as the bridge between human intent and AI output. The way you design a prompt directly affects the accuracy, quality, and usefulness of what the model generates. Here’s why it matters based on your points:

* **Enhances productivity using AI tools** – A well-crafted prompt helps you get the right answer faster, reducing trial and error and saving time in tasks like writing, coding, research, or creative work.
* **Reduces misunderstanding or hallucination by the model** – Clear and precise prompts minimize the chances of AI generating irrelevant or incorrect information, making outputs more reliable.
* **Improves quality of image, video, and text generation** – In creative domains, detailed prompts provide AI with richer context, leading to higher fidelity, more accurate, and aesthetically

pleasing results.

* **Key skill in modern AI workflows** – As AI tools become integrated into workplaces, knowing how to structure prompts effectively is a critical skill for professionals, much like knowing how to search well on the internet or use productivity software.
* **Types of Prompts**

### **1. Instructional Prompts**

* **Purpose:** Give direct commands or tasks to the AI.
* **Example:** *“Summarize this article in 5 bullet points.”*
* **Use case:** Summaries, explanations, calculations, step-by-step instructions.

### **2. Conversational Prompts**

* **Purpose:** Frame the prompt like a natural question or dialogue.
* **Example:** *“Can you explain how solar panels convert sunlight into electricity?”*
* **Use case:** Learning, brainstorming, interactive Q&A, tutoring.

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### **3. Visual Prompts (for image/video models like DALL·E, SORA, Stable Diffusion)**

* **Purpose:** Describe visuals, styles, and moods to generate images/videos.
* **Example:** *“A medieval castle under the northern lights, cinematic lighting.”*
* **Use case:** Creative design, storytelling, concept art, marketing visuals.

### **4. Few-shot Prompts**

* **Purpose:** Provide a few examples to guide the AI before asking for the result.
* **Example:**Translate the following into French:

- Cat → Chat

- Dog → Chien

- Bird → ?

* Use case: Language translation, formatting, tone imitation, structured outputs.
* **Techniques in Prompt Engineering**

1. **Use clear and specific instructions**  
   * Avoid vague prompts. The more precise you are, the better the output.
   * *Example:* Instead of *“Explain AI,”* say *“Explain AI in simple terms for a 12-year-old.”*
2. **Define the tone, format, or audience**
   * Guide the model on *how* to respond.
   * *Example:* *“Write a professional LinkedIn post about renewable energy trends.”*
   * *Example:* *“Create a humorous tweet about studying late at night.”*
3. **Provide examples or constraints**
   * Few-shot learning helps the model understand your style or desired structure.
   * *Example****:***

*Write in bullet points:*

*- Short*

*- Actionable*

*- Beginner-friendly*

1. **Iterate and refine**
   * Don’t expect the first prompt to be perfect. Adjust wording, add details, or test different styles.
   * *Tip:* Treat prompting as a dialogue with the AI.
2. **Use role-based framing**
   * Assign the AI a role to shape context and expertise.
   * *Example:* *“You are a professor of physics. Explain Newton’s laws with real-life examples.”*

* **Assignment Tasks**

**Task 1: Prompt Categorization**

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

* Type: Visual Prompt (with Instructional element)
* Reasoning: The request is for creating a *visual output* (logo), not text. It also gives constraints (neon colors), which is common in instructional phrasing but the end goal is visual generation.

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

* Type: Instructional Prompt (Audience-defined)
* Reasoning: It’s a direct instruction (“Explain”) with a specified target audience (a child). The focus is on simplifying complex content, making it instructional with a tone/audience constraint.

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

* Type: Role-based Prompt (with Instructional element)
* Reasoning: The AI is assigned a role (“UX designer”) to influence perspective and expertise, followed by an instruction to generate suggestions. This falls under role-based framing.

**Task 2: Refinement Practice**

1. **Original: “Write a story.”**

* Refined: “Write a 500-word short story about a young astronaut who discovers a friendly alien on Mars, told in a lighthearted and humorous tone for children.”

**2.Original: “Make an image.”**

* Refined: “Generate an illustration of a futuristic city floating in the clouds, with glowing neon bridges and airships flying under a sunset sky, cinematic style.”

**3.Original: “Explain photosynthesis.”**

* Refined: “Explain photosynthesis in 3 simple steps for a 10-year-old, using an everyday analogy like cooking food.”

**4.Original: “Summarize this article.”**

* Refined: “Summarize this 1,200-word article on climate change in 5 bullet points, focusing on key causes, effects, and possible solutions.”

**5.Original: “Suggest improvements.”**

* Refined: “You are a UX designer. Suggest 5 improvements to a mobile banking app homepage, focusing on accessibility, navigation clarity, and visual hierarchy.”

**Task 3: Prompt Design Exercise**

Here’s a Prompt Design Exercise with 5 original prompts across different domains:

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

Prompt:  
 “You are a career coach. Write a 400-word LinkedIn post that motivates fresh graduates to embrace failure as a stepping stone to success. Use a friendly and inspiring tone, include 3 actionable tips, and end with a thought-provoking question.**”**

### **2. DALL·E (Image-based)**

Prompt:  
 “Create a digital illustration of a bustling cyberpunk street market at night, filled with neon signs, holographic advertisements, and diverse futuristic characters shopping under glowing lanterns.”

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

Prompt:  
 “Generate a 15-second cinematic video of a dragon flying over a snowy mountain range at sunrise, with dramatic camera movements and glowing fire breath lighting up the sky.”

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

Prompt:  
 “Write a Python program that reads a CSV file containing student grades, calculates the average score for each student, and outputs a ranked leaderboard in descending order of performance.”

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

Prompt:  
 “You are a physics professor. Design a 10-question multiple-choice quiz on Newton’s Laws of Motion for first-year engineering students, with correct answers and short explanations.”

* **Practice Activity (Live Testing)**

**- ChatGPT (for text or logic)**

To every fresh graduate stepping into the “real world” — let’s talk about something no one tells you often enough: Failure.

I know, the word itself can sound heavy. After years of hard work, sleepless nights, and endless exams, you might feel like failure is something you *must* avoid at all costs. But here’s the truth: failure isn’t the opposite of success — it’s part of the journey to success.

Think about it: some of the world’s greatest achievers failed, and failed often. They didn’t stop there. They used those stumbles as stepping stones, building the resilience, creativity, and courage needed to grow.

So, if you’ve just faced a rejection email, struggled in an interview, or feel lost about your career path — take a deep breath. You’re not falling behind. You’re simply being redirected.

* Here are 3 practical ways to embrace failure and turn it into fuel for success:

1️ Reframe the setback. Instead of asking “Why me?”, ask “What is this teaching me?” A failed interview may show you where to sharpen your communication. A missed opportunity might push you toward a better fit.

2️ Document your lessons. Keep a simple “failure journal.” Write down what didn’t go as planned, what you learned, and how you’ll try differently next time. Over time, you’ll see patterns — and growth you may have missed.

3️Keep moving forward. Don’t let fear of failing again paralyze you. Apply for that next role, pitch that new idea, or start that project. Momentum builds confidence — and confidence attracts opportunities.

Remember, the first chapter of your career doesn’t define the whole story. The setbacks you face now are shaping the skills and mindset you’ll thank yourself for later.

* Failure doesn’t close doors; it often points you toward the right ones.

So the next time things don’t go as planned, smile a little. You’re not failing — you’re leveling up.

Now here’s my question for you: What’s one “failure” in your life that, looking back, became a blessing in disguise?

**DALL·E (for image generation)**