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Class: SE

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**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.'

##### ***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.'

##### ***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

### ***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