Ex.No.2 Comparative Analysis of Naïve Prompting versus Basic Prompting Across Various Test Scenarios

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Aim:

To investigate how the structure of prompts—naïve versus basic—affects the response quality, accuracy, and depth generated by AI language models.

Introduction:

AI language models are sensitive to the structure of user prompts. Broad and unstructured prompts, referred to as "naïve prompts," often result in generic responses. In contrast, specific and well-structured "basic prompts" produce more detailed and relevant information. This experiment evaluates the differences in response quality, accuracy, and depth when these two prompting styles are used.

Materials Required:

1. Access to AI platforms capable of handling natural language prompts.
2. A set of predefined naïve and basic prompts across various test scenarios.
3. A framework for assessing responses based on quality, accuracy, and depth.

Procedure:

Step 1:

Define test scenarios across diverse topics:

- Historical events.
- Scientific concepts.
- Literature analysis.
- Environmental issues.
- Cultural aspects.

Step 2:

For each scenario, create one naïve prompt and one corresponding basic prompt.
Example:

Scenario: Scientific Concept

Naïve Prompt: "Explain gravity."

Basic Prompt: "How does gravity affect the orbits of planets?"

Step 3:

Input both prompts into an AI model and record the responses.

Step 4:

Evaluate the responses based on three criteria:

1. **Quality:** Coherence, focus, and logical structure.
2. **Accuracy:** Factual correctness and relevance.
3. **Depth:** Level of detail and ability to connect concepts.

Observations:

Scenario 1: Historical Events

- **Naïve Prompt:** "Tell me about World War II."
- *Observation:* Response is broad, mentioning several events without exploring their significance or connections.
- **Basic Prompt:** "What were the key causes of World War II?"
- *Observation:* Response focuses on specific causes like the Treaty of Versailles, economic factors, and the rise of fascism, providing detailed context.

Scenario 2: Scientific Concepts

- **Naïve Prompt:** "Explain gravity."
- *Observation:* Basic definition provided, with examples that lack detail about underlying principles.
- **Basic Prompt:** "How does gravity affect the orbits of planets?"
- *Observation:* Detailed explanation of gravitational forces and orbital mechanics, with references to Newton's laws.

Scenario 3: Literature Analysis

- **Naïve Prompt:** "Tell me about Shakespeare."
- *Observation:* General overview of Shakespeare's life and works, lacking depth in analysis.
- **Basic Prompt:** "What themes are explored in Shakespeare's 'Hamlet'?"
- *Observation:* Detailed exploration of themes like madness, revenge, and mortality, with examples from the text.

Scenario 4: Environmental Issues

- **Naïve Prompt:** "What about pollution?"
- *Observation:* Lists types of pollution but provides no context or details on impacts.
- **Basic Prompt:** "What are the effects of plastic pollution on marine life?"
- *Observation:* Focused discussion on how plastics harm marine life, including statistics and specific examples.

Scenario 5: Cultural Aspects

- **Naïve Prompt:** "What is art?"
- *Observation:* Definitions and examples provided, but lacks exploration of art's societal role or emotional impact.
- **Basic Prompt:** "How does art influence social movements?"
- *Observation:* Analyzes historical examples, such as art in civil rights or environmental movements.

Result:

1. **Naïve Prompts:**
   - Produce responses that are generic and lack coherence.
   - Accuracy is lower due to vague and broad inputs.
   - Limited depth, as responses fail to explore nuances.
2. **Basic Prompts:**
   - Lead to more focused, coherent, and logical responses.
   - Improved accuracy due to specific guidance in the prompt.
   - Greater depth, with detailed exploration of concepts and connections.