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EXP:4 Scenario-Based Report Development Utilizing Diverse Prompting Techniques

Aim:
To create a comprehensive report for the design of a specific application, such as **AI-powered chatbot** using diverse prompt patterns. This report will employ scenario-based prompting techniques to guide each stage of the design process, ensuring the solution meets the functional and user experience requirements for the chosen application.

Procedure:

1. **Define the Scenario and Use Case:**
   Outline the purpose of the design, the target audience or user base, and its main objectives. Specify the goals the design aims to fulfill, such as **user engagement/energy efficiency/task automation**.
2. **Identify Prompt Patterns for Each Design Aspect:**
   Select appropriate prompt patterns to guide different aspects of the design. Examples of prompt patterns and their applications in the report include:
   - **Idea Generation Prompts:** Brainstorm innovative features or functions the design should incorporate to meet specific goals.
   - **Persona and Context Prompts:** Define the tone, style, or experience the design should convey (e.g., **user-friendly/sustainable/reliable**), aligning with the intended audience.
   - **Exploratory Prompts:** Investigate resources or information essential for the design, such as **user needs/environmental constraints/technical requirements**.
   - **Refinement Prompts:** Refine design elements by adjusting specifications, materials, or style to meet project standards.
   - **Scenario Testing Prompts:** Simulate realistic scenarios or use cases to test the design's effectiveness and adaptability in **user interaction/environmental settings/production workflows**.
   - **Error Handling Prompts:** Design prompts to handle potential issues or challenges effectively within the **user interface/system functionality/automation processes**.
3. **Implementation Plan:**
   Describe the steps to build and implement the design, from **system configuration/component selection/automation setup** to **testing and deployment/installation/integration**.
4. **Evaluation and Feedback Collection:**
   Use targeted feedback prompts to gather insights from **users/stakeholders/operators**,

refining the design based on their input for improved functionality and alignment with objectives.

5. **Documentation of Findings:**
   Summarize insights from each prompting technique, noting how they enhanced the design. Include any best practices, limitations, or future improvements.

Deliverables:

1. **Detailed Report:**

Aim:

The aim of this report is to design an AI-powered chatbot application that leverages diverse prompting techniques to meet both functional and user experience requirements.

Background:

AI-powered chatbots are increasingly used across various industries for customer service, personal assistants, and information retrieval.

Audience Needs:

End Users (Customers):

- Instant responses to product inquiries, order status updates, and troubleshooting.
- User-friendly interaction that feels human-like and personalized.
- Ability to escalate issues to human agents seamlessly.

Business Stakeholders:

- Efficient handling of customer inquiries to reduce workload on human agents.
- Data collection and analysis of customer interactions to improve service quality.
- Easy-to-integrate solution with existing e-commerce platforms.

Primary Objectives:

Design a chatbot that can process and respond to a wide range of customer queries accurately.

Ensure the chatbot delivers personalized experiences based on user data and previous interactions.

Stage 1: Initial Design & Conceptualization

Prompt Pattern: "Goal-Oriented Questions"

Purpose: To define the chatbot's core capabilities and narrow down its functions.

Example Prompt: "What specific actions should the chatbot perform for e-commerce customers? E.g., order tracking, product recommendation, etc."

Stage 2: Information Gathering and Data Processing

Prompt Pattern: "User-Centric Prompts"

Purpose: To gather user-specific data to personalize interactions.

Example Prompt: "How can the chatbot gather and store user preferences (e.g., product interests, order history) for future interactions?"

2. **Prototype/System Outline:**
   AI-Powered Chatbot Features:
   - **Natural Language Processing (NLP):** Powered by NLP models to understand and respond to customer queries.
   - **Personalization:** Based on past interactions, the chatbot tailors responses and suggestions to the user's preferences.
   - **Multilingual Support:** To cater to a global customer base, the chatbot will support multiple languages.
   - **Real-Time Integration:** Integration with the e-commerce system to provide up-to-date information on orders, inventory, and product details.

3. **Prompt Effectiveness Summary:**
   - **Goal-Oriented Questions:** These prompts helped to establish a clear set of features for the chatbot, ensuring it aligns with business goals and user expectations.
   - **Empathy-Driven Prompts:** These prompts improved the chatbot's handling of frustrated users, increasing customer satisfaction during negative interactions.
   - **Example:** "How should the chatbot acknowledge and respond to a user's frustration with delayed shipping?"

4. **User Testing Results and Improvement Plan:**
   Testing Results:
   - **Positive Feedback:**
   - Fast responses to queries.
   - Personalized recommendations based on user history.
   - Seamless escalation to human agents for complex issues.

   Areas for Improvement:
   - Users occasionally found the chatbot's responses too scripted or robotic, particularly during troubleshooting scenarios. More options for users to provide feedback on chatbot interactions for continuous learning.