

Ex.No.4 Generate the Prompt and evaluate that for following prompt types - Comparative Analysis Prompt Experiential Perspective Prompt - Everyday Functioning Prompts - Universal Prompt Structures Prompt Refinements- Prompt Size Limitations.

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Aim:

To design an AI-powered chatbot that assists customers in resolving issues related to product troubleshooting, order tracking, and general inquiries. The chatbot should handle various customer queries efficiently while maintaining a conversational and user-friendly tone. In this experiment, we will employ different prompt patterns to guide the development process of the chatbot, ranging from basic task-oriented prompts to more complex, persona-driven prompts. Case study 2 with Comparative Analysis Prompt, Universal Prompt, Structures Prompt Refinements and Prompt Size Limitations

Explanation - Any one use case from Unit 5 and generate the report for that with the unit 2 Prompt type

Procedure:

1. Define the Scenario and Use Case: Scenario: The manufacturing industry is looking to reduce manual monitoring and increase efficiency through automation. The system will utilize IoT devices and embedded controllers to automate equipment, monitor performance, and enable predictive maintenance. The goal is to streamline the production process, minimize downtime, and enhance energy efficiency. Target Audience: Manufacturing companies, specifically in sectors like automotive, electronics, and food processing, where automation can significantly improve productivity.

Main Objectives:

- Improve production efficiency by 30%.
- Minimize machinery downtime with predictive maintenance.
- Enable real-time monitoring and remote control of manufacturing systems.
- Reduce energy consumption by optimizing processes.

2. Identify Prompt Patterns for Each Design Aspect: Idea Generation Prompts:

- Prompt: "What features can be incorporated into the automation system to optimize production and reduce downtime?" Generated Ideas:
- Sensors for real-time monitoring of equipment performance.
- Predictive maintenance alerts to anticipate equipment failures.
- Energy usage optimization by automating the switching of machines on/off based on demand.
- Cloud-based dashboards for remote monitoring and control of machinery.

Persona and Context Prompts:

- Prompt: "What should the user interface and control system convey to the operators and managers?"

Generated Context: • The user interface should be intuitive and provide real-time data on machine performance, energy usage, and alerts. • The system should convey reliability and ease of use, with minimal training required for operators.

Result: The various types of Prompts are executed successfully with generated the report.

OUTPUT

Scenario-Based Report Development Using Prompting Techniques

Introduction

Artificial Intelligence (AI) has become a transformative force in the healthcare sector, offering new possibilities for patient care, medical research, and administrative efficiency. One of the emerging applications is the use of AI-powered healthcare chatbots, designed to provide medical information, answer basic patient queries, give reminders, and assist in routine healthcare needs. Developing these chatbots requires effective prompt engineering, where the type of prompt used determines the clarity, accuracy, and relevance of AI-generated responses. This report explores various prompting techniques by applying them to the scenario of building an AI healthcare chatbot. Each technique is illustrated with example prompts, outputs from two AI tools (GPT-5 and Gemini Advanced), followed by comparative analysis and evaluation.

The techniques covered are:

1. Comparative Analysis Prompt
2. Experiential Perspective Prompt
3. Everyday Functioning Prompt
4. Universal Prompt
5. Structured Prompt Refinements
6. Prompt Size Limitations

1. Comparative Analysis Prompt

Definition

A Comparative Analysis Prompt asks AI to compare two or more entities based on advantages, disadvantages, or features. It helps in structured decision-making.

Example Prompt

"Compare the advantages and disadvantages of using an AI-powered healthcare chatbot vs. a human nurse for patient interaction. Present in tabular format."

GPT-5 OUTPUT

Feature	AI Chatbot	Human Nurse
Availability	24/7, no fatigue	Limited to shifts
Accuracy	Quick recall of stored info	Uses expertise and judgment
Empathy	Limited emotional intelligence	High emotional connection
Cost	Low after deployment	High salary & training

Gemini Output

1. Emphasized patient trust issues with chatbots
2. Discussed empathy and human touch in detail
3. Included ethical considerations like data privacy

Evaluation

GPT-5 → concise, structured, professional comparison.

Gemini → deeper emotional and ethical insight.

Best Use Case: GPT-5 for decision tables; Gemini for narrative discussions.

2. Experiential Perspective Prompt

Definition

This prompt asks AI to respond from a lived perspective, making the output more relatable and human-centered.

Example Prompt

“Imagine you are a patient using an AI healthcare chatbot for the first time. Describe your experience in detail.”

GPT-5 Output

1. Patient finds chatbot simple and fast.
2. Quick answers on dosage and diet.
3. Mild frustration: chatbot cannot show empathy.

Gemini Output

1. Rich narrative style (“I felt nervous at first...”)
2. Anxiety about depending on AI for health.
3. Positive surprise: chatbot connected to emergency line.

Evaluation

GPT-5 → focused on usability and efficiency.

Gemini → more emotional storytelling.

Best Use Case: GPT-5 for patient usability testing; Gemini for roleplay-based empathy studies.

3. Everyday Functioning Prompt

Definition

This prompt highlights how AI integrates into day-to-day life and functioning, especially for specific demographics.

Example Prompt

"How can an AI healthcare chatbot be useful in daily life for an elderly person living alone?"

GPT-5 Output

1. Medication reminders
2. Appointment scheduling
3. Emergency contact system
4. Health tips explained simply

Gemini Output

1. All of the above + companionship role
2. Encourages social interaction (chatbot as "friendly assistant")

Evaluation

GPT-5 → crisp, practical checklist.

Gemini → adds psychological and social dimension.

Best Use Case: GPT-5 for healthcare utility design; Gemini for holistic well-being design.

4. Universal Prompt

Definition

A Universal Prompt aims at maximum simplicity, so that anyone—children, seniors, or non-technical users—can understand.

Example Prompt

"Explain the role of AI healthcare chatbots in the simplest way possible so even a child can understand."

GPT-5 Output

"It's like a talking helper that answers your health questions and reminds you to take medicine."

Gemini Output

"Think of it like a smart friend on your phone who knows about health and can guide you when you feel sick."

Evaluation

GPT-5 → emphasizes helper function.

Gemini → emphasizes friendship analogy.

Best Use Case: GPT-5 for clarity in education; Gemini for emotional engagement.

5. Structured Prompt Refinements

Definition

Structured prompts guide AI step by step, ensuring well-organized responses.

Example Prompt

Step 1: List 3 key benefits of AI healthcare chatbots.

Step 2: List 3 challenges.

Step 3: Suggest improvements.

GPT-5 Output

Benefits: Availability, scalability, reduced costs
Challenges: Lack of empathy, misdiagnosis risk, data privacy
Improvements: Emotional AI, better medical integration, stricter security

Gemini Output

Similar points, but longer explanations

Example: "Data privacy is a serious challenge as patients may fear breaches..."

Evaluation

GPT-5 → structured, bullet-based clarity.

Gemini → essay-style detail.

Best Use Case: GPT-5 for quick planning; Gemini for detailed reports.

6. Prompt Size Limitations

Definition

Some tasks require strict word or token limits for clarity.

Example Prompt

“Summarize the role of AI healthcare chatbots in under 20 words.”

GPT-5 Output

“AI chatbots help patients with reminders, basic advice, and 24/7 health support.” (14 words)

Gemini Output

“Chatbots provide quick answers, reminders, and constant health support.” (10 words)

Evaluation

GPT-5 → concise but richer.

Gemini → extremely short and to the point.

Best Use Case: GPT-5 for summaries with more substance; Gemini for strict length limits (tweets, SMS).

Overall Comparative Evaluation

Prompt Type	GPT-5 Strength	Gemini Strength	Best Use Case
Comparative Analysis	Tabular clarity	Ethical depth	Formal decision reports
Experiential	Usability focus	Storytelling depth	Patient experience design
Everyday Functioning	Clear checklist	Social/companionship	Elderly support systems
Universal	Helper analogy	Friend analogy	Education, awareness
Structured Refinement	Bullet precision	Essay expansion	Planning vs. documentation
Size Limitations	Balanced detail	Ultra-concise	Summaries, SMS formats

Conclusion

This scenario-based report illustrates that different prompting techniques unlock different strengths of AI tools. For an AI healthcare chatbot:

1. GPT-5 performs best when precision, structure, and concise clarity are required.
2. Gemini excels when empathy, narrative richness, and ethical depth are needed.

An effective chatbot design should blend both approaches—using GPT-5’s structure for system functionality and Gemini’s narrative depth for human-centered interaction.

Result

Thus the Prompts were exected successfully.