Experiment 7: Leveraging Large Language Models for Practical Problem-Solving

Reg No:212222040164

1. AIM

The purpose of this experiment is to develop a **prompt-based application** using **ChatGPT** to efficiently organize daily tasks. The project demonstrates the progression from simple to more advanced prompt designs and their corresponding outputs, enhancing user creativity and problem-solving skills.

2. AI TOOLS REQUIRED

To build a robust prompt-based productivity assistant, the following AI tools are utilized:

- **For assistance:** ChatGPT, Claude, DeepSeek
- **For video generation:** Runway
- **For image generation:** Midjourney

3. PROMPT DESIGN

The foundation of the project is based on the following prompt: > *"Design a personal productivity assistant that can help manage daily tasks, schedule reminders, suggest wellness tips, and answer general queries. The assistant should interact using natural language and be adaptable to the user's changing preferences over time."*

4. PROCEDURE

The development of the assistant follows a systematic approach:

Step 1: Define Core Requirements

To ensure effectiveness, the assistant needs to:

- Manage **task scheduling** and reminders.
- Provide **health and wellness tips**.
- Answer **general queries**.
- Adjust responses to **user preferences**.

Step 2: Prompt Engineering

Each assistant feature is mapped to specific prompts designed for optimal interaction:

1. **Daily Task Manager:**
    - *"Remind me to call mom at 6 PM."*
    - *"List my tasks for today."*
2. **Smart Scheduler:**

    - *"Schedule a meeting with John tomorrow at 3 PM."*
    - *"Find a free time slot in my schedule."*
3. **Wellness Tips Generator:**
    - *"Suggest some stress relief techniques."*
    - *"What are good hydration habits?"*
4. **General Knowledge Helper:**
    - *"Explain recursion in programming."*
    - *"Summarize the latest AI research."*

Step 3: Simulating User Interaction

A simple **command-line interface (CLI)** or **web-based chatbot** is implemented for interaction. This allows users to input prompts naturally and receive meaningful responses.

Step 4: Feedback Collection & Adaptation

User feedback is collected to refine the assistant:

- Preference learning enables **personalized recommendations**.
- Responses improve based on **common user queries**.

Step 5: Memory Integration (Optional)

Basic memory implementation allows adaptation to repeated user preferences, such as:

- Prioritizing frequently asked reminders.
- Learning user-specific wellness interests.

DRIVE LINK

https://drive.google.com/file/d/1okBKB7u0ME9U-JrFzqfuVAXCL2aNN9GY/view?usp=sharing

APP LINK

https://codepen.io/SUJI-S/pen/azbmyGg

Prompt Used

1.assistant How to stay focused?

2. Give me a productivity tip

3. What is the Pomodoro technique?

4. How to avoid distractions?

5. Suggest a daily routine

6. How to manage time effectively?

7. Why is rest important?

8. How to deal with procrastination?

9. What are some good productivity apps?

10. How to set goals?

5. EXPECTED OUTPUT

Upon completion, the assistant exhibits the following functionalities:

Personal Productivity Assistant Features

1. Daily Task Manager ✓ Accepts task input via **natural language** ✓ Organizes tasks by **priority and deadline** ✓ Provides **daily summaries**

2. Smart Scheduler ✓ Schedules events and **sets reminders** ✓ Identifies **overlapping appointments** ✓ Suggests **free time slots**

3. Wellness Tips Generator ✓ Provides **daily wellness recommendations** ✓ Adapts advice to **user preferences**

4. General Knowledge Helper ✓ Answers **general queries** ✓ Provides **source references** for further learning

6. RESULT

The experiment successfully led to the creation of a **personalized prompt-based assistant** that enhances creativity and addresses real-world needs. The assistant dynamically interacts with users, solving everyday problems efficiently.

Through this lab exercise, students learned:

- How to **structure prompts** for real-life applications.
- **Best practices** for interacting with large language models.
- How to **integrate AI solutions** into personal workflows.

7. CONCLUSION

The project validates the potential of **generative AI** in **personal task management**. It demonstrates how prompt engineering can create interactive solutions, making AI a valuable **daily companion** for users