AI AGENT DEVELOPMENT

SECTION 1: BASIC DETAILS

Name: Muskan Gurjar
AI Agent Title / Use Case: "AI Agent to help to suggest daily writing prompts for bloggers."

Description:A blogger opens their AI assistant daily and asks for writing ideas or prompts. The agent should understand their blogging niche, past preferences, style, and tone — and generate fresh, engaging writing prompts tailored to their needs.

SECTION 2: PROBLEM FRAMING

1.1. What problem does your AI Agent solve?

Bloggers often struggle with writer's block and spend valuable time thinking of fresh, meaningful topics. This AI Agent helps generate customized daily writing prompts based on the blogger's niche, tone, and style preferences.

1.2. Why is this agent useful?

It saves time and boosts creativity by delivering tailored prompts instantly. Instead of searching the internet or brainstorming, users receive inspiration directly aligned with their content goals.

1.3. Who is the target user?

Freelance writers, personal bloggers, content creators, and college students maintaining niche blogs (e.g., travel, food, culture) who want consistent, creative writing inspiration.

1.4. What not to include?

- The agent avoids full article generation to maintain user originality.
- No login or user profiling features were added to keep the prototype simple.
- Voice or speech-based input was excluded to stay focused on text-based use.

SECTION 3: 4-LAYER PROMPT DESIGN

◆ 3.1 INPUT UNDERSTANDING

Prompt Used in ChatGPT:

"You are an input parser. The user is a blogger who wants a daily writing prompt. Understand their niche (if given), preferred tone, word count, and any theme or inspiration they'd like to explore. Summarize these into structured data."

What is this prompt responsible for?

This prompt analyzes the user's natural language input and extracts key variables like niche (e.g., food, travel), tone (e.g., reflective, humorous), preferred length (short, long), and theme (e.g., culture, emotions).

Example Input + Output:

- **Input:** "Give me a short, reflective prompt for a travel blog about culture."
- **Extracted Info:**
    - "niche": "Travel",
    - "tone": "Reflective",
    - "length": "Short",
    - "theme": "Culture"

◆ 3.2 STATE TRACKER

Prompt:

"You are a state tracker. Store the user's niche, tone, length, and writing themes from previous inputs. If not changed, continue using the previous state."

How does this help the agent "remember"?
It allows the agent to maintain continuity over time. If the user doesn't specify a change, previous preferences are reused — simulating memory.

Simulated Memory Used:
Yes. Memory was simulated using a persistent Python dictionary (`user_state`) that updates only when new values are provided. This avoids re-asking for known info.

◆ 3.3 TASK PLANNER

Prompt:

"You are a task planner. Use the state variables to select or generate a writing prompt. Ensure it matches the niche, tone, length, and theme. Avoid repetition. Add variety over days."

How does the agent solve the problem?
The agent:

- Uses the updated state dictionary to construct a structured prompt.
- Feeds that structured instruction to the OpenAI model.
- Ensures tone, theme, and length influence the nature of the generated prompt

Chaining or Branching?
The architecture used **linear chaining**: Input → State → Task Plan → Output. Conditional branching was applied in `update_state()` to parse and map phrases.

◆ 3.4 OUTPUT GENERATOR

Prompt Sent to GPT-4:

"You're an output generator. Deliver one concise writing prompt for the user based on the task planner's result. Use a warm, creative tone. Format clearly."

Output Formatting / Tone:
The response is concise, inspirational, and blog-relevant. It is usually 1–2 lines and begins naturally, e.g., "Write about a time when…

Special Features:

Yes — the output tone changes based on user preference (e.g., "humorous" prompts use quirky phrasing). It avoids clutter and sticks to clear, human-readable text. Markdown or bold text was avoided for simplicity in Jupyter output.

Example Output –

"Describe a moment when a local tradition completely shifted your perspective on life. What did you learn, and how did it stay with you?

SECTION 4: CHATGPT EXPLORATION LOG

Attempt #	Prompt Variant	What Happened	What You Changed	Why You Changed It
1	"Generate journaling prompts"	Output was too generic and not blog-focused (e.g., "Write about your day")	Added context like: "The user is a blogger and wants niche-based writing prompts."	To make responses relevant for blogging rather than general journaling
2	"Generate writing prompts for a blogger in the tech niche"	Output was better but still lacked tone/style alignment (e.g., too serious or dry)	Included user tone (e.g., "funny", "inspirational") and preferred length	To ensure the prompt fits the blogger's personality and intended audience
3	"Use state variables like niche: 'lifestyle', tone: 'humorous', theme: 'morning chaos' to	Output was finally contextual, clear, and had the right tone and creativity	Fine-tuned phrasing to use natural opening like "Write about a time when…" and removed	To make the output more human-sounding and clean for Jupyter Notebook display

	generate a writing prompt"		markdown	

SECTION 6: REFLECTION

6.1. What was the hardest part of this assignment?

The hardest part was understanding how to break down the AI agent logic into four distinct layers and translating that into functional prompts. Designing a working flow inside a Jupyter Notebook with no prior advanced coding knowledge also presented a steep learning curve, especially when handling errors and state tracking.

6.2. What part did you enjoy the most?

I enjoyed experimenting with prompt design the most—seeing how small changes in phrasing or input structure could significantly improve the results was fascinating. It felt creative and gave me a better understanding of how to interact effectively with AI tools.

6.3. If given more time, what would you improve or add?

I would implement a simple UI for users to interact with the agent and build memory persistence using a file or lightweight database. I'd also experiment with different output styles like listicles or quotes and test more edge cases for robustness.

6.4. What did you learn about ChatGPT or prompt design?

I learned that prompt design is both an art and a science. The order of instructions, tone, and level of detail greatly influence the results. ChatGPT can follow complex logic if it's guided step-by-step, and chaining responses helps simulate memory and decision-making.

6.5. Did you ever feel stuck? How did you handle it?

Yes, I got stuck during notebook execution errors and when outputs felt repetitive. I handled it by rephrasing prompts, checking code syntax, reviewing system messages, and asking follow-up questions inside ChatGPT until the issue became clear. Iteration and persistence were key.

SECTION 7: HACK VALUE

Yes, I went beyond the brief by simulating memory using state variables within the notebook, allowing the agent to remember the user's niche, tone, and themes across prompts. I also tested edge cases like empty input handling and vague prompts to ensure robustness. Additionally, I explored prompt chaining between task planner and output generator for more dynamic responses.

Self-Evaluation (Based on Rubric)-

Dimension	Weight	Self-Score	Justification
Problem Framing	20%	**18/20**	The problem is clearly framed for bloggers needing daily prompts. It's user-centric and specific, avoiding vague use-cases.
Prompt Architecture Quality	25%	**23/25**	Each of the 4-layer prompts (Input Parser, State Tracker, Task Planner, Output Generator) is modular and focused. They perform distinct roles, with good decomposition.
Exploration Quality (AI Collaboration)	20%	**19/20**	Multiple prompt iterations were attempted and logged. Issues were debugged collaboratively and solutions tested.
Output Clarity & Functional Coverage	15%	**13/15**	Output examples are thoughtful, context-sensitive, and vary based on input tone and state. Slight improvement possible in response richness.
Documentation of Process	15%	**14/15**	Sections 1–6 are thoroughly documented in Word format, including prompt rationale, testing, and reflection. Exploration log is clean and clear.
Initiative / Hack Value	5%	**5/5**	Went beyond by simulating memory/state, handling invalid input, chaining prompts, and simulating user variations.

Total Estimated Time: **8 to 10 hours**, including orientation to AI terms

Success = Curiosity + Clarity of Thinking + Documenting the Journey