

AI Agent Development Assignment - Shivam Kumar

SECTION 1: BASIC DETAILS

****Name:**** Shivam Kumar
****AI Agent Title / Use Case:**** AI Agent to help startup founders identify bottlenecks in their growth system

SECTION 2: PROBLEM FRAMING

- **1.1. What problem does your AI Agent solve?****
Founders often feel their startup is stuck, even when the team is working hard. The Agent helps them identify **which part** of their system is broken - product, marketing, retention, feedback loops, etc. - based on their real symptoms.
- **1.2. Why is this agent useful?****
It brings clarity when things feel chaotic. Instead of vague metrics, it gives focused questions and suggests possible root causes - helping the founder make better decisions faster.
- **1.3. Who is the target user?****
Early-stage startup founders or solo entrepreneurs who feel stuck and want to grow sustainably.
- **1.4. What not to include?****
- No ready-made growth hacks or unrealistic advice
 - No technical jargon or heavy analytics - it should feel like talking to a clear-headed advisor
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SECTION 3: 4-LAYER PROMPT DESIGN

3.1 INPUT UNDERSTANDING

****Prompt:****
"Analyze the founder's input and identify what they are struggling with - e.g., low retention, user confusion, unclear positioning, or team misalignment. Translate vague statements into specific symptoms."

****What is this prompt responsible for?****
To turn unclear founder inputs into actionable pain points.

3.2 STATE TRACKER

****Prompt:****

"Track what the founder has already mentioned (team size, current challenges, past efforts tried). Store these in a memory summary to avoid repeating advice and personalize suggestions."

****How does this help the agent remember'?'****

It helps the agent stay context-aware across turns and avoid suggesting things the founder has already tried.

3.3 TASK PLANNER

****Prompt:****

"Based on the identified symptoms, follow this flow:

1. Ask 1-2 clarifying questions
2. Suggest possible root causes
3. Recommend 1 small experiment to test a fix
4. Mention a similar pattern seen in real startups (if applicable)"

****How is complexity managed?****

The prompt uses chaining logic - from understanding -> to diagnosis -> to experiment.

3.4 OUTPUT GENERATOR

****Prompt:****

"Respond in a calm, strategic tone. Use short paragraphs. Avoid jargon. Focus on clarity and action. End with one reflective question to keep the founder thinking."

****Special behavior:****

Tone: clear, calm, like a mentor

Structure: Insight -> Suggestion -> Next Step -> Reflection

SECTION 4: CHATGPT EXPLORATION LOG

Attempt #	Prompt Variant	What Happened	What You Changed	Why You Changed It
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1	"Our product is fine but no one's using it much."	Output was too generic - only said "check retention."	Added prompt to translate vague input into specific friction points	To improve understanding of the real user issue
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2	"We keep adding features but nothing's moving."	ChatGPT blamed feature bloat but didn't suggest fixes	Adjusted task planner to ask clarifying questions before diagnosing	To prevent assumptions and add context awareness
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| 3 | "Team is working hard, but growth is flat." | Response lacked structure | Rewrote output prompt to follow:
Insight -> Suggestion -> Next Step -> Reflection | To guide the founder step by step |

SECTION 5: OUTPUT TESTS

****Test 1: Normal input****

****Input:**** "We've built a solid product, but users are not coming back."

****Output:**** "It sounds like retention may be a challenge. Let's break this down. Are users dropping off after onboarding, or is the core value unclear? A small test: send a follow-up survey to inactive users asking what didn't click. In many startups, this step reveals messaging gaps."

****Test 2: Vague input****

****Input:**** "Something feels off in our growth."

****Output:**** "Let's explore what 'off' means. Is traffic low, or are conversions dropping? Has your team changed anything recently? Try listing the top 3 changes made in the last month. This will help spot possible causes. What's the one metric you trust most right now?"

****Test 3: Invalid/Empty input****

****Input:**** " "

****Output:**** "I didn't catch that - could you tell me a bit more about what you're facing? A sentence or two would help me guide you better."

SECTION 6: REFLECTION

****6.1. What was the hardest part of this assignment?****

Getting the prompts to feel human but structured was tricky. I had to balance logic with empathy - especially for stressed founders.

****6.2. What part did you enjoy the most?****

Designing the output response. I liked shaping the tone and making it feel like calm, actionable advice.

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

I'd simulate more back-and-forth conversations with the agent to test memory, adaptiveness, and emotional tone.

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

Prompt design isn't just about the right words - it's about structure. Each layer serves a role, and chaining logic makes agents smarter.

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

Yes - when outputs felt generic. I paused, re-read the prompt, and asked ChatGPT how to improve it - treating it like a teammate.

SECTION 7: HACK VALUE (Optional)

I added branching in the task planner, used reflective questions at the end of responses, and ensured state memory to avoid repeating advice. These small touches made the agent feel more human and context-aware.