**🧾 SECTION 1: BASIC DETAILS  
Name: Unnam Aditya  
AI Agent Title / Use Case:** AI Agent to help students revise for exams with smart topic quizzing

### **🧠 SECTION 2: PROBLEM FRAMING**

**1.1. What problem does your AI Agent solve?**  
Many students struggle to retain information before exams. This agent provides personalised revision questions on any topic they ask for.

**1.2. Why is this agent useful?**  
It simplifies revision by generating context-aware, engaging quiz questions that can boost recall and confidence.

**1.3. Who is the target user?**  
College or high school students revising for exams.

**1.4. What not to include?**  
No automated grading or deep curriculum mapping—focus is just on question generation.

**🧱 SECTION 3: 4-LAYER PROMPT DESIGN**

**🔹 3.1 INPUT UNDERSTANDING**

**Prompt:**

“Interpret the user’s request to identify the subject/topic and preferred question format (MCQ, short answer, etc). Extract these clearly.”

**Responsible for:** Extracting intent and topic  
**Example Input:** “Can you quiz me on organic chemistry with MCQs?”  
**Output:**

* Topic: Organic Chemistry
* Format: MCQ

**🔹 3.2 STATE TRACKER**

**Prompt:**

“Maintain a memory of the last 3 topics the user was quizzed on. Use a variable like recentTopics and ensure repetition is avoided.”

**Memory Strategy:** Simulate memory using system messages or context variables (e.g., “recentTopics = [Algebra, World History]”).

**🔹 3.3 TASK PLANNER**

**Prompt:**

“Based on the extracted topic and format, create 3 quiz questions. If format is not specified, default to short answer. Ensure variety in question complexity.”

**Planner Role:** Breaking task into:

1. Select topic
2. Select format
3. Generate 3 diverse questions

**🔹 3.4 OUTPUT GENERATOR**

**Prompt:**

“Present the quiz questions clearly with markdown formatting. Use bullets or numbering. Keep tone friendly but focused.”

**Format Example:**

\*\*Quiz: Organic Chemistry (MCQs)\*\*

1. What is the IUPAC name of CH₃–CH₂–OH?

a) Methanol

b) Ethanol

c) Propanol

d) Butanol

**🔍 SECTION 4: CHATGPT EXPLORATION LOG**

| **Attempt #** | **Prompt Variant** | **What Happened** | **What You Changed** | **Why** |
| --- | --- | --- | --- | --- |
| 1 | “Generate a quiz on physics” | Gave long answers, not questions | Added “use MCQ format” | Needed more structure |
| 2 | “Include an AI API” | Included, but was not giving questions. | Changed the API key and updated the code | To access a free API |
| 3 | “I want a quiz on Algebra” | Repeated old questions | Added state tracker: recent Topics | Avoid redundancy |
| 4 | “Give 3 MCQs on World War II” | Good, but too easy | Added: “Include one hard question” | To add a challenge |
| 5 | “Generate questions of different levels” | It was generated, but was given at a time | Asked to be given separately as per user selection | To make users see the selecting level question only at a time |

### **🧪 SECTION 5: OUTPUT TESTS (Optional but Recommended)**

**Test 1: Normal input**  
**Input:** “Give me a quiz on photosynthesis”  
**Output:**

1. What gas is released during photosynthesis?
2. What pigment is vital for photosynthesis?
3. Write the chemical equation for photosynthesis.

**Test 2: Vague input**  
**Input:** “Quiz me”  
**Output:**

* Interpreted as defaulting to general science.
* Prompted user: “Please specify a topic like Math, History, or Biology.”

**Test 3: Invalid input**  
**Input:** “????”  
**Output:**  
“Sorry, I didn’t get that. Can you mention a subject or topic you want help with?”

**🔄 SECTION 6: REFLECTION**

**6.1. Hardest Part:** Designing prompts that balance generality with precision, especially input understanding and output generation.

**6.2. Most Enjoyed:** Watching how better prompts changed the quality of questions and the quality of the project.

**6.3. Improvements:** Add real-time scoring and explanations for answers to make it better. I also added answers, but scoring should be added to improve it.

**6.4. Learning from ChatGPT:** It’s not just about getting outputs; it’s about iterating thoughtfully and prompting it clearly, and understanding how that is working.

**6.5. Feeling stuck:** Yes, when responses are repeated. Solved by introducing the memory simulation with a state variable, and when the API didn’t work, I searched for many other API sources and resolved it.

**🧠 SECTION 7: HACK VALUE (Optional)**

Simulated context memory (recent Topics): Based on recent topics, it can also suggest a few topics, and the AI agent also understands the pattern of questions and tries to avoid similar ones.

Handled vague user input gracefully: If the user even gives vague inputs like just a word like “motion” or “geometry”, the AI agent can still process it and generate a question based on it.