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1. **Define AI Agents**

   AI agents, also known as artificial intelligence agents, are software systems that use AI techniques to perform tasks on behalf of users. Some of their main characteristics are reasoning, acting, observing, planning, collaborating, and self-refining. Reasoning lets AI agents use available information and logic to solve problems and make decisions. Acting allows AI agents to make decisions and influence its environment. Observing allows AI agents to gather information from their environment. Planning allows agents to make goals and decide how to achieve them. Collaborating allows agents to work with other systems or humans to complete tasks. There are different types of AI agents, the four common examples are reactive agents, deliberative agents, learning agents, and conversational agents. Reactive agents respond to inputs given to them by the user they don't plan or have any memory. Deliberate agents take in information from the user and they plan the best choice before acting. They have memory which helps them keep track of the past responses. Learning agents improve their responses by analysing their data from before. Conversational agents allow them to communicate with humans and they have human-like conversations.

2. **Explore Tools and Platforms**

   For our project, my team has chosen to use OpenAI API because it will allow users to generate personalized workouts and meal plans. The users will input their information for example body weight, height, age, gender, and their goal.

3. **Identify a Real-World Problem**

   A real-world problem I chose is a study assistant for students. As a college student, I I often need quick clarification on concepts or help with different topics when I'm studying, or even learning material for the first time and might not have access to a professor or tutor because I'm studying after hours. I want a software tool that I can ask questions and get quick responses, or if I want further explanation on a topic I am learning. For example, for my calculus class, an AI agent can give quick responses to questions, explain different topics, and give examples if needed. The AI agent would be able to explain a topic, break down a problem, and give additional problems for me to practice on.

4. **Define Goals, Objectives, and Success Criteria**

   The main goal for my AI agent is to act like a virtual tutor to help students with any questions they might have for any course. The specific objectives it must meet is to give step by step explanations, further explain if the user isn't still understanding, and give additional problems for the user to use to study. One way to measure its success is to have students only use it to train the agent and also to take a survey.

5. **Connect Research to Your Project**

   My research on AI agents, types, applications, and tools informs my own Capstone project design because it has exposed me to explore different types of AI agents and learn more about them and how they can help users in different ways.