Advanced Health & Fitness Planner – Summary

1. Utility of the Prototype
    - Provides personalized meal and workout plans based on user input (profile, dietary restrictions, fitness preferences).
    - Allows users to interact with AI through conversational chatbots, enabling iterative refinement of plans.
    - Tracks user progress over time with interactive charts and summary metrics, giving users insight into their health improvements.

2. Main Design Decisions
    - Modular Tab-Based Layout: The app is split into four tabs (Profile, Meal Plan, Workout Plan, and Progress) to separate functionalities clearly.
    - Chatbot Interfaces: Both meal and workout plans are handled via chatbot interfaces that leverage conversation history to generate and refine plans dynamically.
    - Data Persistence with Session State: User inputs and history are stored in “st.session_state” to maintain state across interactions and sessions.
    - Interactive Visualizations: Using Plotly for interactive progress charts and Streamlit’s “st.metric” for summary metrics enhances user experience and data interpretation.
    - Custom CSS & Branding: Custom CSS and sidebar navigation were added for a consistent, visually appealing, and user-friendly interface.

3. Main Difficulties Found
    - Ensuring LLM Compliance: Getting the LLM to strictly adhere to constraints (e.g., generating exactly 3 workout days) required iterative prompt engineering and adjustments.
    - Maintaining Conversation Context: Preserving and managing conversation history for chatbot interactions to generate coherent and context-aware responses was challenging.
    - State Management and Rerun Logic: Handling state persistence and triggering interface updates (using st.rerun()) in Streamlit to reflect real-time changes posed integration challenges.
    - API Reliability and Error Handling: Occasional internal server errors from the LLM API required careful debugging and fallback strategies.

Link to the demo video: Recording-20250329_115738.webm