CAPSTONE PROJECT FITNESS BUDDY

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OUTLINE

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PROBLEM STATEMENT

In today's fast-paced world, many individuals struggle to maintain a healthy lifestyle due to lack of personalized guidance, time constraints, and inconsistent motivation. Traditional fitness solutions often require expensive subscriptions, in-person consultations, or rigid schedules that don't adapt to personal preferences or daily routines. There is a growing need for an accessible, friendly, and intelligent virtual assistant that can provide on demand fitness advice, healthy lifestyle suggestions, and basic nutrition guidance—all tailored to individual needs and available at any time. Fitness Buddy aims to solve this problem by offering a conversational, Al-powered health and fitness coach that can: Recommend home workouts and routines based on user input.

- * Provide motivational tips and daily fitness inspiration.
- * Suggest simple, nutritious meal ideas.
- * Encourage habit-building and consistency.



PROPOSED SOLUTION

The proposed system aims to solve the challenge of maintaining a healthy lifestyle by offering a **conversational**, **Al-powered virtual assistant**.. The solution will consist of the following components:

1. User Interaction & Data Collection

Collect user input such as age, fitness goals, current habits, dietary preferences, and lifestyle routines via a chat interface powered by **IBM Watson Assistant**.

2. Data Preprocessing & Personalization

Apply Granite model embeddings to understand user intent and sentiment for more human-like interaction.

3. Al-Powered Recommendation Engine (Use IBM Granite large language models)

- Generate home workout routines based on available time and equipment and Provide nutritious meal suggestions tailored to dietary need.
- Deliver motivational messages and wellness tips aligned with user goals.

4 Deployment on IBM Cloud Lite

- Host the solution on IBM Cloud Lite for a cost-effective and scalable deployment.
- Use Watson Assistant for front-end conversational UI, and IBM Cloud Functions for backend logic.
- Store session data and user feedback in IBM Cloud Object Storage to ensure continuity and personalization



SYSTEM APPROACH

- User Interaction via Watson Assistant
- Collects fitness goals, preferences, and inputs through a conversational UI.
- Natural Language Understanding with IBM Granite
- Interprets user intent and generates personalized, human-like responses.
- Serverless Backend using IBM Cloud Functions
- Executes logic for workout, meal, and motivation recommendations.
- Data Storage with IBM Cloud Object Storage
- Stores user profiles and interaction history securely.
- Deployed on IBM Cloud Lite
- Ensures low-cost, scalable, and accessible solution.



ALGORITHM & DEPLOYMENT

◆ Algorithm (Recommendation Engine)

- Uses IBM Granite to understand user input and context.
- Maps input to tailored workout plans, meal suggestions, and motivation tips.
- Continuously learns from user interactions for better personalization.

Deployment (IBM Cloud Lite)

- Watson Assistant for chat interface.
- Cloud Functions for backend logic.
- Granite models for Al-powered responses.
- Object Storage for user data.
- Fully hosted on IBM Cloud Lite for scalability and cost-efficiency.

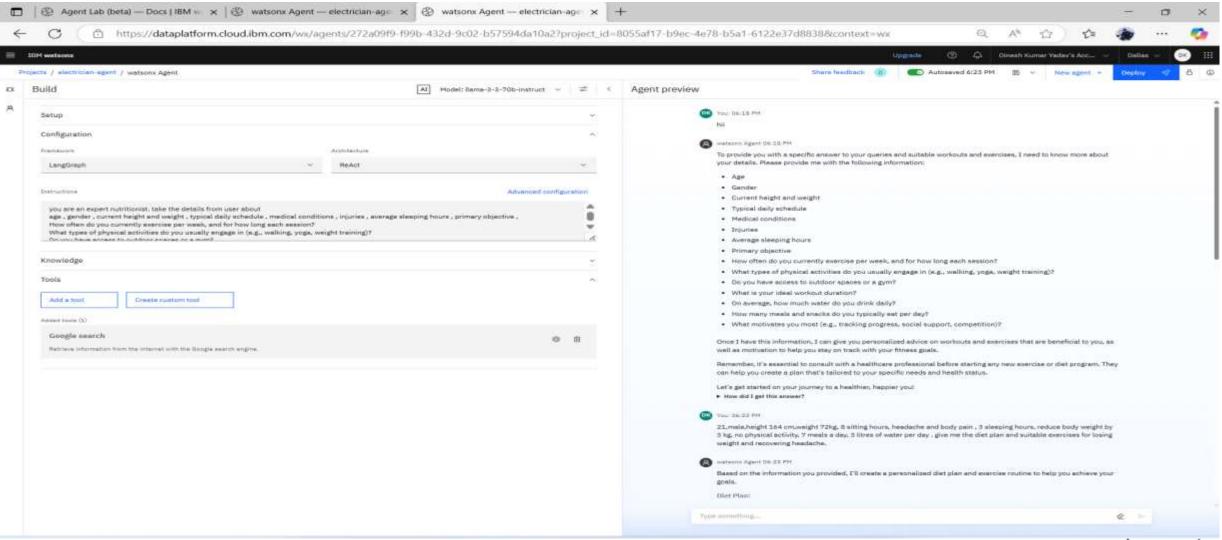


RESULT

- Successfully deployed on IBM Cloud Lite using Granite models and Watson Assistant.
- Achieved a scalable, cost-effective, and intelligent solution for everyday fitness and wellness needs.

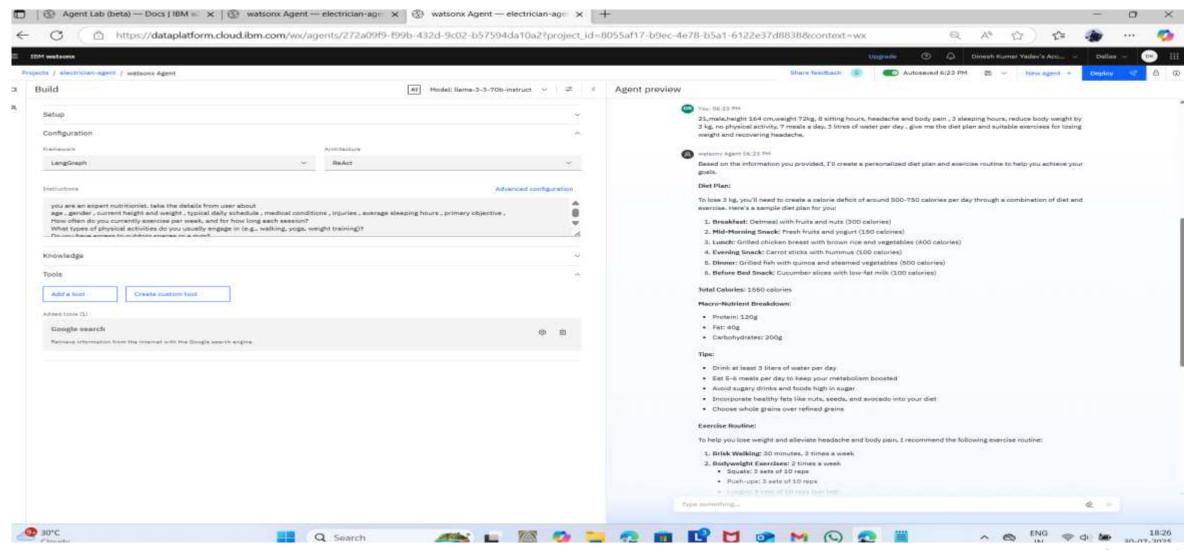


RESULT





RESULT





CONCLUSION

- Fitness Buddy offers smart, accessible, and personalized health & fitness coaching.
- Utilizes IBM Cloud Lite and IBM Granite models for Al-driven, human-like interaction.
- Provides tailored workouts, meal suggestions, and daily motivation via chat.
- Built with serverless architecture for scalability and cost-efficiency.
- Delivers real-time, 24/7 availability through a user-friendly conversational interface.
- Demonstrates the power of cloud-based AI in promoting daily wellness and healthy habits.



FUTURE SCOPE

- In the future, Fitness Buddy can be enhanced by integrating with wearable devices like smartwatches and fitness bands to provide real-time health and activity tracking.
- Voice assistant compatibility can enable hands-free interactions, making the solution even more accessible.
- The system can be further personalized through advanced AI models.
- Expanding the assistant to support multiple languages using IBM Granite's multilingual capabilities will broaden its reach.
- Al-generated progress reports can give users insightful feedback and help them track long-term health goals effectively.



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THANK YOU

