IBM AICTE PROJECT

THE SMART AI NUTRITION ASSISTANT

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OUTLINE

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PROBLEM STATEMENT

In an era where health awareness is growing, individuals increasingly seek personalized nutrition guidance. However, most existing tools provide generic diet plans, lack real-time adaptability, and fail to consider a person's holistic lifestyle, cultural preferences, allergies, and evolving health conditions. Furthermore, dieticians and nutritionists face limitations in scaling personalized consultations due to time and resource constraints.

Proposed Solution:

The Smartest Al Nutrition Assistant leverages IBM Watsonx.ai to offer personalized, adaptable nutrition advice in real-time. By analyzing user input, including health conditions, fitness goals, preferences, and allergies, this Al model generates meal plans, healthy food swaps, and provides contextual explanations on why certain foods are recommended.



TECHNOLOGY USED

IBM Watsonx.ai Studio: For building, training, and deploying the AI assistant.

IBM Granite Foundation Model (LLM): Leveraging large language models to understand and generate nutrition-related recommendations.

IBM Cloud Object Storage: For storing and managing food databases and user preferences.

Natural Language Processing (NLP): For understanding user inputs and generating personalized responses.

Vector Index for Retrieval-Augmented Generation (RAG): To fetch relevant dietary data and recommendations from uploaded food and nutrition PDFs.



IBM CLOUD SERVICES USED

- IBM Cloud Watsonx AI Studio
- IBM Cloud Watsonx AI runtime
- IBM Cloud Agent Lab
- IBM Granite foundation model



WOW FACTORS

The **Smartest Al Nutrition Assistant** offers unmatched real-time adaptability, continuously evolving its recommendations based on user feedback, goals, and progress. This dynamic system ensures that users receive **personalized**, **up-to-date advice** tailored to their specific health and dietary needs, making it far more effective than static diet apps.

Unique features:

Real-time Adaptability: Continuously updates meal plans and suggestions based on user feedback, making it always relevant to changing health goals and preferences.

Personalized Meal Planning: Generates tailored meal plans that align with individual health conditions, fitness goals, and dietary restrictions.

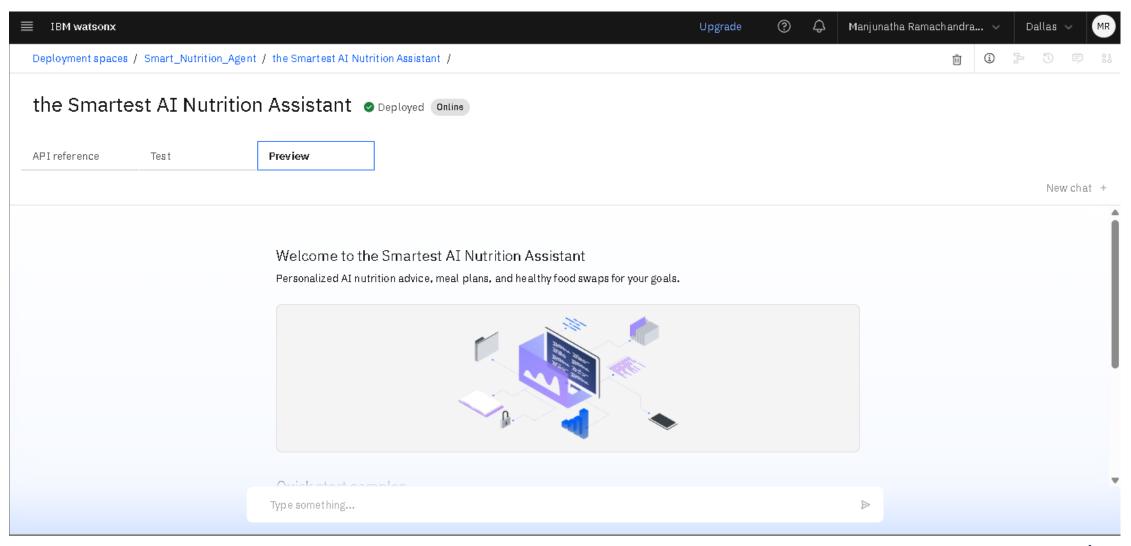


END USERS

- General Public: Seeking personalized meal plans and nutrition advice.
- Fitness Enthusiasts: Individuals looking for tailored dietary recommendations.
- People with Health Conditions: Users needing specific dietary advice for managing conditions like diabetes, hypertension, etc.
- Students & Young Professionals: Individuals who want quick, accessible nutrition advice.
- Organizations/NGOs: Groups focusing on improving community health with nutritional education.

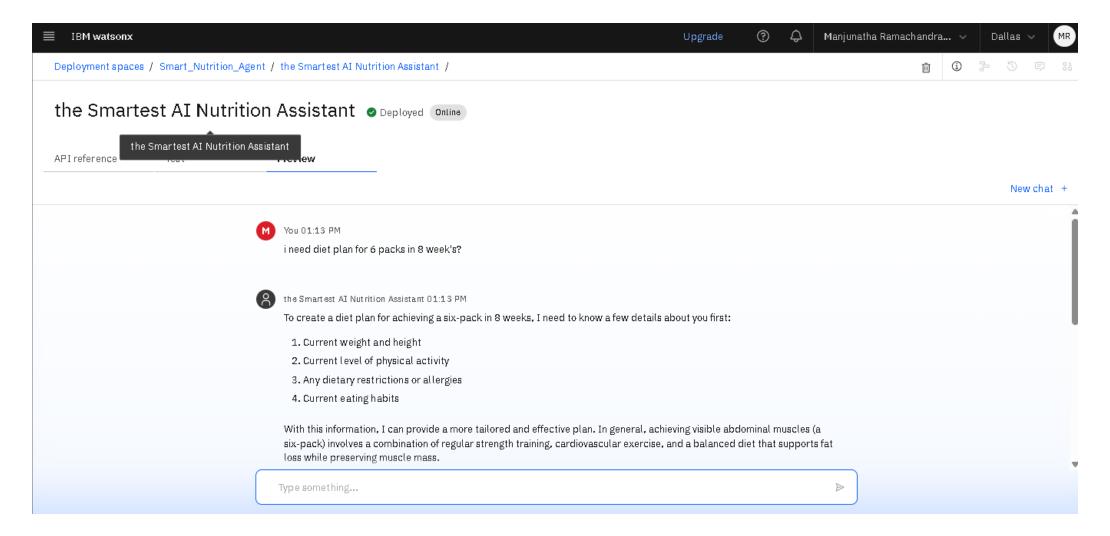


RESULTS





RESULTS





CONCLUSION

- Real-time Personalization & Adaptability: Continuously updates meal plans and advice based on user feedback and changing health goals, ensuring the most relevant, up-to-date recommendations.
- Smart Food Swaps: Provides personalized healthier alternatives to common foods, helping users stick to their goals without sacrificing taste or enjoyment.
- Personalized Meal Planning: Generates meal suggestions tailored to individual health goals, fitness needs, and dietary restrictions, making healthy eating easier for everyone.



GITHUB LINK

https://github.com/Rama-2805/The_Smart_Nutrition_Agent_Al



FUTURE SCOPE

- Voice Integration: Adding speech-to-text support for voice-driven queries.
- Mobile App: Developing a companion mobile app for on-the-go nutrition advice
- Multilingual Support: Expanding to multiple languages for a global user base using IBM Language Translator.
- Real-Time Feedback Loop: Integrating real-time health tracking (e.g., from wearables) to adjust meal plans dynamically.



IBM CERTIFICATIONS

In recognition of the commitment to achieve professional excellence



Manjunatha R

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



lssued on: Jul 15, 2025 Issued by: IBM SkillsBuild



Verify: https://www.credly.com/badges/f05f4c49-df6b-4c2c-8a59-e98bd915d099



IBM SkillsBuild

Completion Certificate



This certificate is presented to

Manjunatha R

for the completion of

Lab: Retrieval Augmented Generation with LangChain

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

edunet

Learning hours: 20 mins

THANK YOU

