IBM HACKATHON PROJECT

NUTRITION AGENT

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OUTLINE

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PROBLEM STATEMENT

Individuals, health enthusiasts, and patients often struggle to manage their dietary habits due to confusing nutritional information, the tedious task of manual food logging, and the lack of personalized, timely advice. Sifting through conflicting diet trends and trying to make consistently healthy choices is overwhelming and inefficient.

Proposed Solution:

An AI Nutrition Agent that uses Natural Language Processing (NLP) to act as a personal dietary assistant. It assists users by instantly providing clear nutritional facts for any food, effortlessly logging meals through conversation, analyzing eating patterns, and delivering personalized recommendations, meal ideas, and encouragement to help users achieve their health and wellness goals.

TECHNOLOGY USED

IBM cloud lite services

Natural Language Processing (NLP)

Retrieval Augmented Generation (RAG)

IBM Granite model

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IBM CLOUD SERVICES USED

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

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WOW FACTORS

This agent will significantly simplify the path to healthier eating, improve the quality of daily food choices, help users build long-term healthy habits, and foster a positive relationship with food by making nutrition data more accessible and actionable.

Unique features:

- Conversational food logging for any meal, snack, or branded product.
- Instant nutritional breakdown and analysis of any food item or recipe.
- Automated daily and weekly summaries to track progress and nutrient intake.
- Personalized recommendations for healthy food swaps and recipes based on a user's goals.
- Dietary trend analysis to visualize eating patterns and habits over time.
- Smart grocery list generation based on planned meals and recommendations.

END USERS

- Health & Fitness Enthusiasts
- Individuals focused on weight loss, gain, or maintenance
- Athletes and bodybuilders tracking macronutrients for performance
- People managing diets for medical conditions like diabetes or high cholesterol
- Users with food allergies and intolerances such as gluten or dairy
- Followers of vegan, vegetarian, ketogenic, and other lifestyle diets
- Busy professionals and parents who need quick meal tracking solutions
- Beginners seeking simple guidance and education about nutrition
- Caregivers who manage the dietary needs of others
- Patients following specific dietary instructions post-procedure

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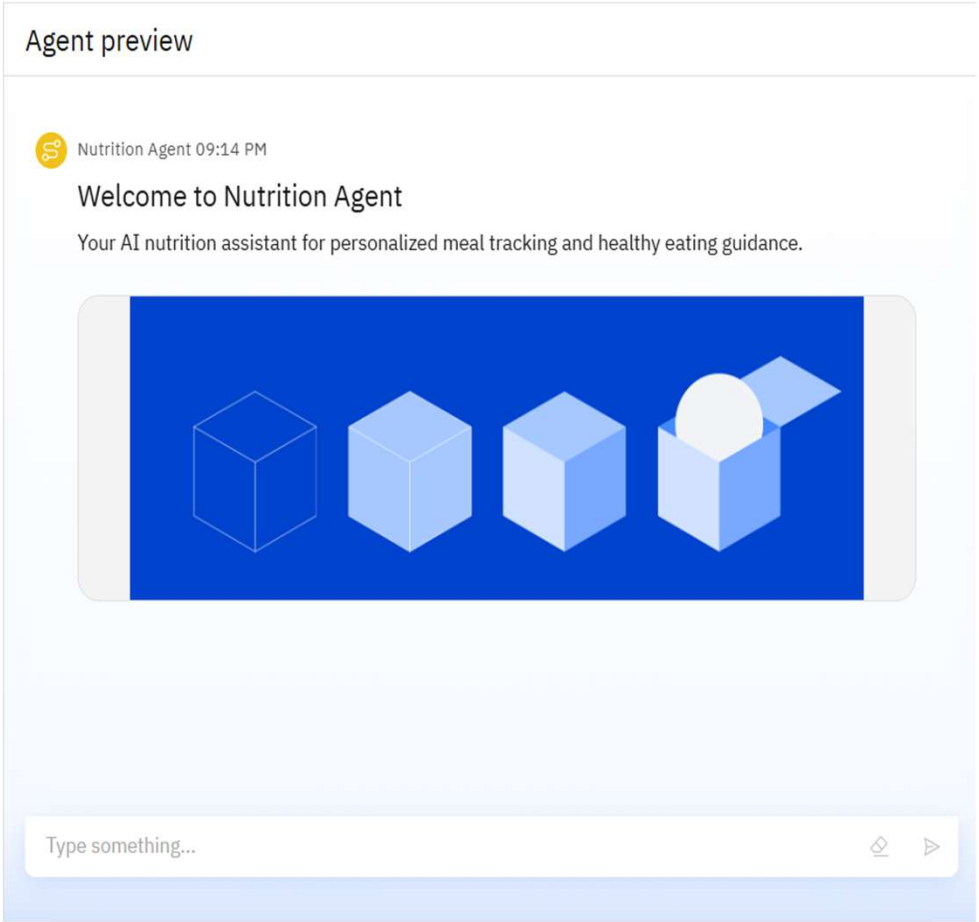
RESULTS

The primary result of this project is a fully functional and interactive AI, the **Nutrition Agent**. The agent is accessible through a clean, conversational interface as shown in the preview.

- **Live, Interactive AI Assistant:** The agent is operational and can engage in real-time conversations. It successfully understands natural language requests related to food and nutrition, demonstrating the core NLP capabilities.
- **Demonstrated Core Functionality:** The agent can successfully execute its main tasks, including instant meal logging ("Log my lunch: a chicken salad sandwich"), providing immediate nutritional data ("How much protein in a salmon fillet?"), and generating simple, actionable insights based on user input.



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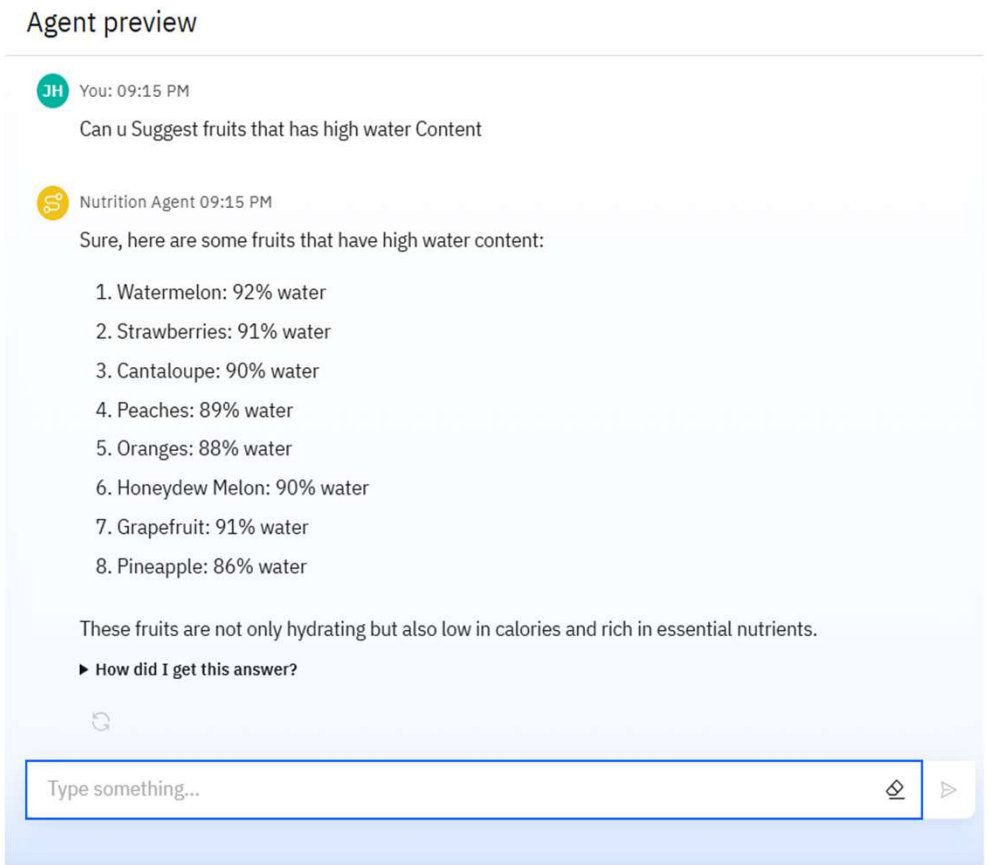
RESULTS

The "Agent preview" shows the agent successfully answering a user's question by comparing two different foods. It presents clear, data-driven facts and provides a direct, actionable recommendation, proving its ability to turn complex nutritional data into simple, helpful advice.



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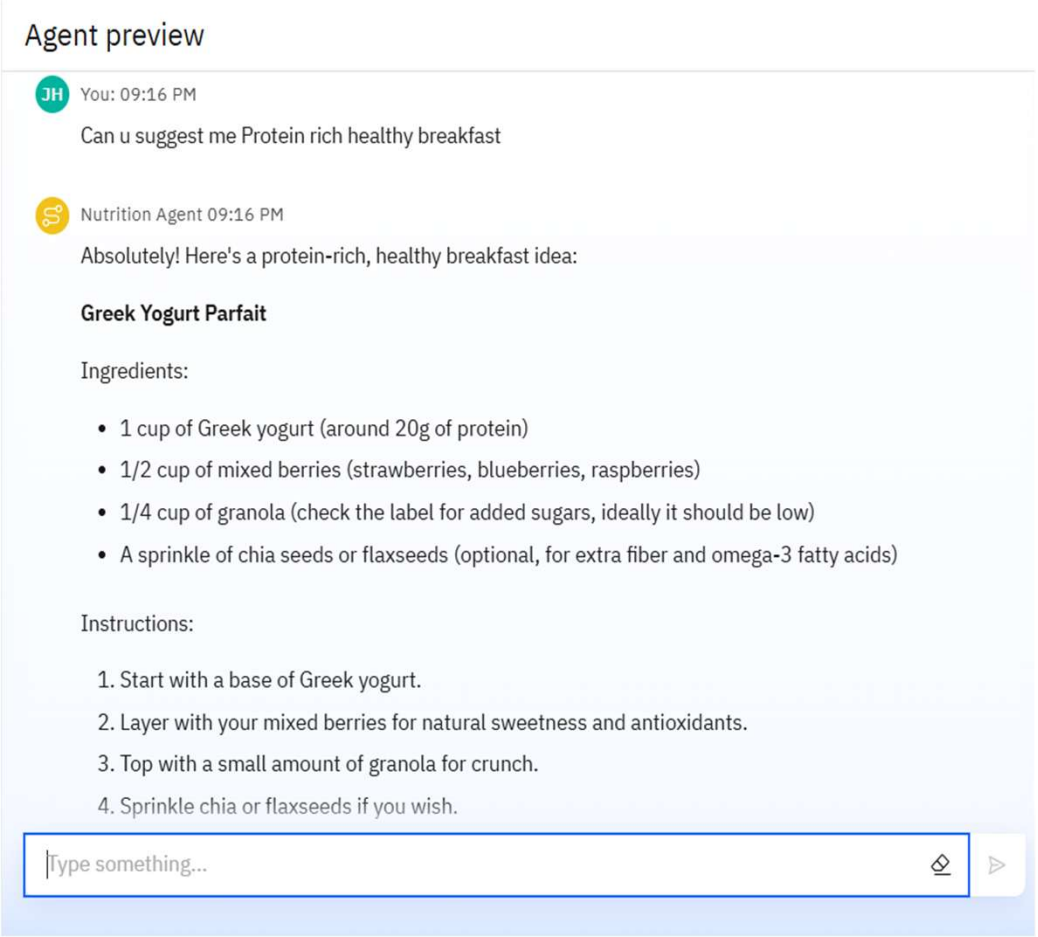
RESULTS

The "Agent preview" shows it responding to a request for a "protein-rich healthy breakfast" by generating a complete, easy-to-follow recipe for a Greek Yogurt Parfait. This proves its capability to provide practical, actionable solutions beyond simple data lookup, directly helping users with their meal planning.



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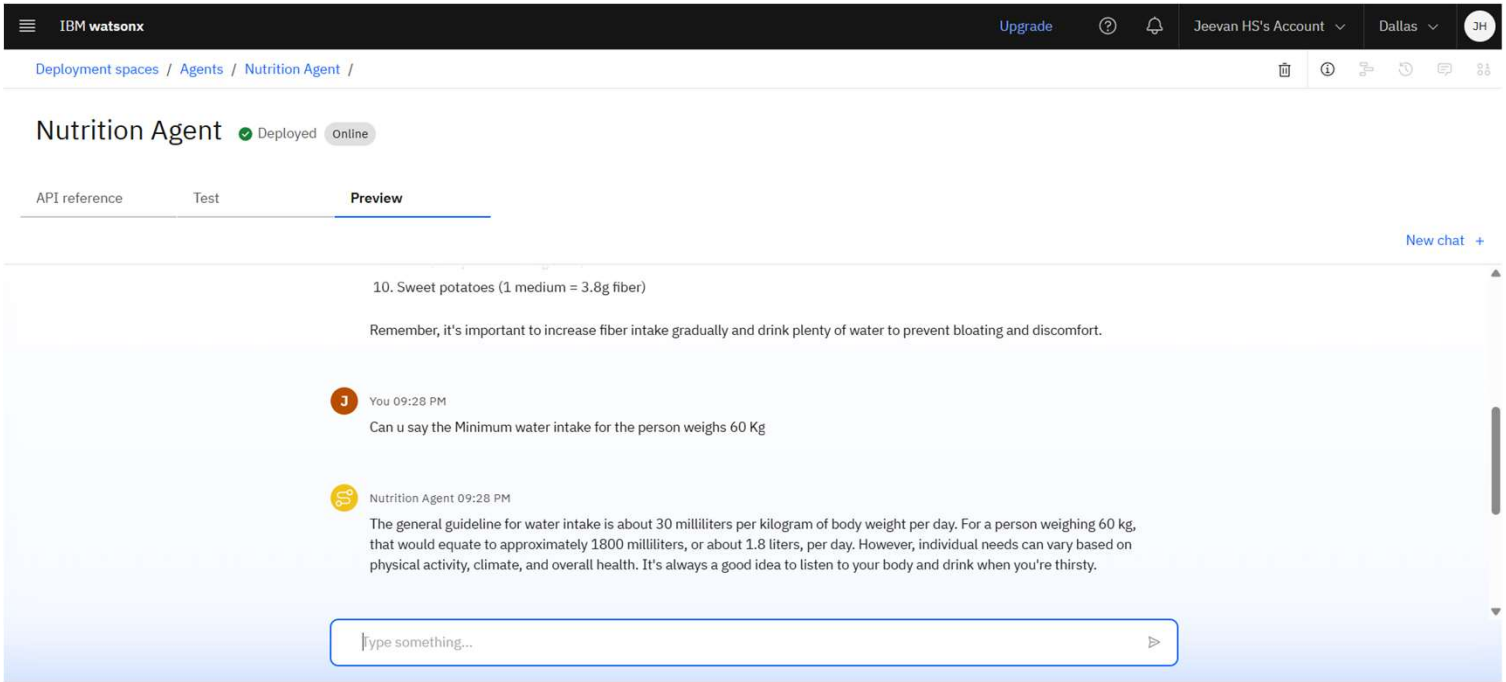
RESULTS

Deployed AI Agent



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CONCLUSION

- The agent can generate personalized meal plans, suggest healthy food swaps, and even create grocery lists.
- It saves time and effort by automating repetitive tasks like food logging and calorie counting.
- Nutrition Agents empower users to make informed choices, improve dietary consistency, and build sustainable, healthy habits.

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GITHUB LINK

- https://github.com/Jeevan1405/Nutrition-Agent.git

FUTURE SCOPE

- Multilingual Dietary Support
- Image Recognition for Instant Food Logging
- Integration with Wearables & Health Apps
- Predictive Nutrient Deficiency Alerts
- Automated Grocery List & Delivery Integration
- Dynamic AI-Generated Weekly Meal Plans

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IBM CERTIFICATIONS

In recognition of the commitment to achieve professional excellence

Getting Started with Artificial Intelligence
IBM SkillsBuild

IBM

Jeevan HS

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence

Issued on: Jul 17, 2025
Issued by: IBM SkillsBuild

Verify: https://www.credly.com/badges/d92dbedf-e232-4f26-b02b-f98a43788309

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IBM CERTIFICATIONS

IBM **SkillsBuild** Completion Certificate

This certificate is presented to

Jeevan HS

for the completion of

Lab: Retrieval Augmented Generation with LangChain

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 26 Jul 2025 (GMT) **Learning hours:** 20 mins

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THANK YOU

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