
IBM HACKATHON PROJECT

NUTRITION AGENT

Presented By:

Student name : Jeevan HS

**College Name & Department : Mysore University School of
Engineering, Artificial Intelligence and Data Science**

OUTLINE

- Problem Statement
- Technology used
- Wow factor
- End users
- Result
- Conclusion
- Git-hub Link
- Future scope
- IBM Certifications

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

IBM CLOUD SERVICES USED

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

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.

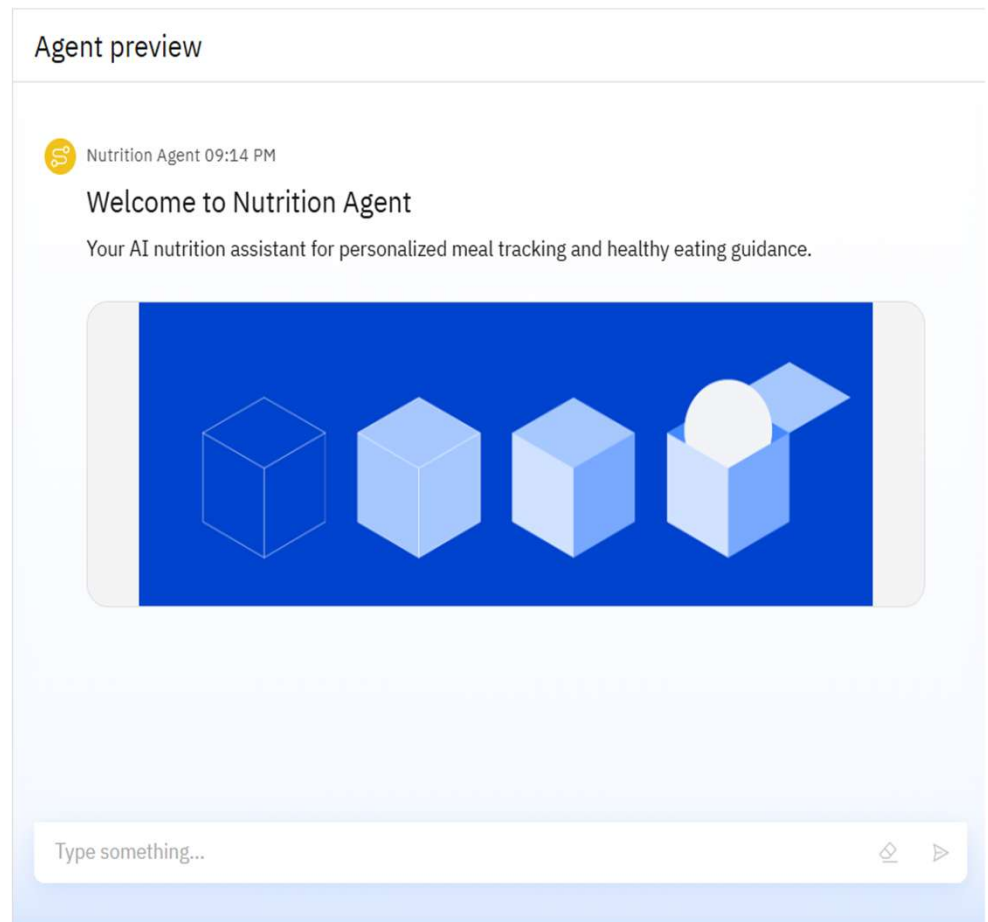
END USERS

- **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**

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.



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.

Agent preview



You: 09:15 PM

Can u Suggest fruits that has high water Content



Nutrition Agent 09:15 PM

Sure, here are some fruits that have high water content:

1. Watermelon: 92% water
2. Strawberries: 91% water
3. Cantaloupe: 90% water
4. Peaches: 89% water
5. Oranges: 88% water
6. Honeydew Melon: 90% water
7. Grapefruit: 91% water
8. Pineapple: 86% water

These fruits are not only hydrating but also low in calories and rich in essential nutrients.

► How did I get this answer?



Type something...



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.

Agent preview



You: 09:16 PM

Can u suggest me Protein rich healthy breakfast



Nutrition Agent 09:16 PM

Absolutely! Here's a protein-rich, healthy breakfast idea:

Greek Yogurt Parfait

Ingredients:

- 1 cup of Greek yogurt (around 20g of protein)
- 1/2 cup of mixed berries (strawberries, blueberries, raspberries)
- 1/4 cup of granola (check the label for added sugars, ideally it should be low)
- A sprinkle of chia seeds or flaxseeds (optional, for extra fiber and omega-3 fatty acids)

Instructions:

1. Start with a base of Greek yogurt.
2. Layer with your mixed berries for natural sweetness and antioxidants.
3. Top with a small amount of granola for crunch.
4. Sprinkle chia or flaxseeds if you wish.

|Type something...



RESULTS

Deployed AI Agent

The screenshot displays the IBM watsonx interface for the Nutrition Agent. The top navigation bar includes the IBM watsonx logo, an Upgrade button, a help icon, a notification bell, and user information for Jeevan HS's Account in Dallas. The breadcrumb trail shows the path: Deployment spaces / Agents / Nutrition Agent. The main header for the Nutrition Agent indicates it is 'Deployed' and 'Online'. Below this, there are tabs for 'API reference', 'Test', and 'Preview', with the 'Preview' tab currently selected. The chat interface shows a message from the user asking for the minimum water intake for a 60 kg person. The Nutrition Agent responds with a detailed guideline: 'The general guideline for water intake is about 30 milliliters per kilogram of body weight per day. For a person weighing 60 kg, that would equate to approximately 1800 milliliters, or about 1.8 liters, per day. However, individual needs can vary based on physical activity, climate, and overall health. It's always a good idea to listen to your body and drink when you're thirsty.' A text input field at the bottom is labeled 'type something...'. A 'New chat +' button is located in the top right corner of the chat area.

IBM watsonx Upgrade ⓘ 🔔 Jeevan HS's Account ▼ Dallas ▼ JH

Deployment spaces / Agents / Nutrition Agent /

Nutrition Agent ✓ Deployed Online

API reference Test **Preview**

New chat +

10. Sweet potatoes (1 medium = 3.8g fiber)

Remember, it's important to increase fiber intake gradually and drink plenty of water to prevent bloating and discomfort.

J You 09:28 PM
Can u say the Minimum water intake for the person weighs 60 Kg

SA Nutrition Agent 09:28 PM
The general guideline for water intake is about 30 milliliters per kilogram of body weight per day. For a person weighing 60 kg, that would equate to approximately 1800 milliliters, or about 1.8 liters, per day. However, individual needs can vary based on physical activity, climate, and overall health. It's always a good idea to listen to your body and drink when you're thirsty.

type something... ➤

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.

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**

IBM CERTIFICATIONS



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

THANK YOU