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# IBM AICTE PROJECT

## THE SMART AI NUTRITION ASSISTANT

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# OUTLINE

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

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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, dietitians and nutritionists face limitations in scaling personalized consultations due to time and resource constraints.

Proposed Solution:

**The Smartest AI 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 AI model generates **meal plans, healthy food swaps**, and provides **contextual explanations** on why certain foods are recommended.

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# 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.

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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

The **Smartest AI 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.

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## 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

IBM watsonx

Upgrade ?

Manjunatha Ramachandra... Dallas MR

[Deployment spaces](#) / [Smart\\_Nutrition\\_Agent](#) / [the Smartest AI Nutrition Assistant](#)

the Smartest AI Nutrition Assistant

✓ Deployed Online

API reference


Test

Preview

New chat +

Welcome to the Smartest AI Nutrition Assistant

Personalized AI nutrition advice, meal plans, and healthy food swaps for your goals.





Quickstart examples

Type something...









# RESULTS



 IBM watsonx

Upgrade ?  Manjunatha Ramachandra... Dallas MR


Deployment spaces / Smart\_Nutrition\_Agent / the Smartest AI Nutrition Assistant


## the Smartest AI Nutrition Assistant ✓ Deployed Online

API reference  

New chat +

 You 01:13 PM


i need diet plan for 6 packs in 8 week's?

 the Smartest AI Nutrition Assistant 01:13 PM

To create a diet plan for achieving a six-pack in 8 weeks, I need to know a few details about you first:

1. Current weight and height
2. Current level of physical activity
3. Any dietary restrictions or allergies
4. Current eating habits

With this information, I can provide a more tailored and effective plan. In general, achieving visible abdominal muscles (a six-pack) involves a combination of regular strength training, cardiovascular exercise, and a balanced diet that supports fat loss while preserving muscle mass.

Type something... 

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## 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\\_AI](https://github.com/Rama-2805/The_Smart_Nutrition_Agent_AI)

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## 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:

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### Getting Started with Artificial Intelligence

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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

**Completion date:** 21 Jul 2025 (GMT)

**Learning hours:** 20 mins



**THANK YOU**