
CAPSTONE PROJECT

RECIPE PREPARATION AGENT

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OUTLINE

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

PROBLEM STATEMENT

Users often struggle to decide what to cook when they have limited available groceries. This leads to:

- Food wastage
- Time lost searching recipes
- Ignoring dietary needs

Proposed Solution:

An AI-powered Recipe Preparation Agent using RAG (Retrieval-Augmented Generation) that:

- Suggests recipes based on available ingredients
- Offers substitutions and dietary alternatives
- Provides step-by-step cooking instructions

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:

- Converts leftover ingredients into meals
- Offers **smart substitutions** for unavailable items
- Provides **dietary adjustments** (vegan, gluten-free)
- Minimizes food waste
- Makes cooking **faster, smarter, and more sustainable**

END USERS

- Home Cooks
- Students in hostels
- Working professionals
- Elderly users
- Health-conscious individuals

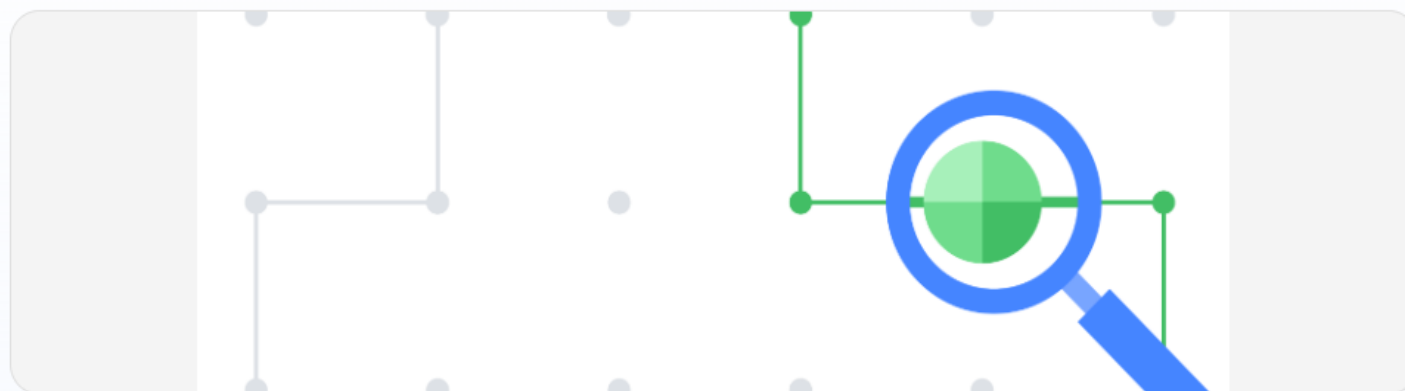
RESULTS



Recipe_Preparation_Agent 08:35 PM

Welcome to Recipe_Preparation_Agent

A Recipe Preparation Agent helps users cook meals using only the ingredients they have on hand.



Sample questions

Can I cook something without using oil?



Suggest recipes based on current weather



Type something...



RESULTS



You 08:26 PM

Suggest a dinner using leftover rice and vegetables.



Recipe_Preparation_Agent 08:26 PM

Here are some dinner ideas using leftover rice and vegetables:

1. Easy Fried Rice Recipe (Ready in 15 Minutes!) - This recipe uses leftover cooked rice and adds vegetables like peas, carrots, and green onions.
2. Vegetable Fried Rice - This recipe uses cooked rice and adds a variety of vegetables like broccoli, bell peppers, and onions.
3. Veggie Rice Fritters - This recipe uses cooked rice and grated vegetables like zucchini, carrots, and cheese to make crispy fritters.
4. Extra Vegetable Fried Rice - This recipe uses brown rice and adds extra vegetables like mushrooms, snow peas, and bell peppers.

Type something...



RESULTS



You 08:28 PM

Easy Fried Rice Recipe (Ready in 15 Minutes!) - explain step by step



Recipe_Preparation_Agent 08:28 PM

Here's a step-by-step guide to making an Easy Fried Rice Recipe:

Servings: 2-3 people **Cooking Time:** 15 minutes **Ingredients:**

- 2 cups cooked rice (preferably leftover or day-old rice)
- 1 tablespoon vegetable oil
- 1 small onion, diced
- 2 cloves garlic, minced
- 1 cup mixed vegetables (e.g., peas, carrots, corn)

Type something...



RESULTS

Deployed AI Agent

IBM watsonx

Upgrade



Puskar Das's Account

Dallas

PD

[Deployment spaces](#) / [Recipe_Preparation_Agent](#) / [Recipe_Preparation_Agent](#) /



Recipe_Preparation_Agent ✓ Deployed Online

API reference

Test

Preview

New chat +



You 08:26 PM

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Recipe_Preparation_Agent 08:26 PM

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Type something...



CONCLUSION

The Recipe Preparation Agent is a smart solution to everyday cooking challenges.

- Simplifies meal planning
- Respects dietary constraints
- Promotes sustainability

It turns your pantry into a personal chef.

GITHUB LINK

[Ctrl+Click on this text to Visit GitHub Repository of This Project](#)

FUTURE SCOPE

- Voice-controlled recipe assistant
- Integration with grocery ordering apps
- Multilingual support
- Weekly meal planner feature
- Calorie and nutrition tracking
- IoT integration with kitchen appliances

IBM CERTIFICATIONS

In recognition of the commitment to achieve
professional excellence



Puskar Das

Has successfully satisfied the requirements for:

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IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

PUSKAR DAS

for the completion of

**Lab: Retrieval Augmented Generation with
LangChain**

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 22 Jul 2025 (GMT)

Learning hours: 20 mins



THANK YOU