CAPSTONE PROJECT

RECIPE PREPARATION AGENT

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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

A Recipe Preparation Agent helps users cook meals using only the ingredients they have on hand. By inputting available groceries, users receive tailored recipe suggestions using a RAG-based AI system. The agent retrieves relevant recipes and generates step-by-step instructions adapted to ingredient limitations. It offers substitutions, cooking tips, and dietary adjustments based on user preferences or restrictions. Designed to reduce food waste and save time, it turns pantry items into practical meal solutions. This AI assistant makes everyday cooking smarter, simpler, and more sustainable.

Proposed Solution:
 A Recipe Preparation Agent that uses NLP and Retrieval-Augmented Generation (RAG) on IBM Cloud to help users find practical, tasty recipes using the ingredients they have. The agent provides stepwise instructions, suggests substitutions, and adapts for dietary needs, making everyday cooking smarter, faster, and more eco-friendly.

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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 reduces food waste, saves time, and makes daily cooking easier, especially for students and busy families.
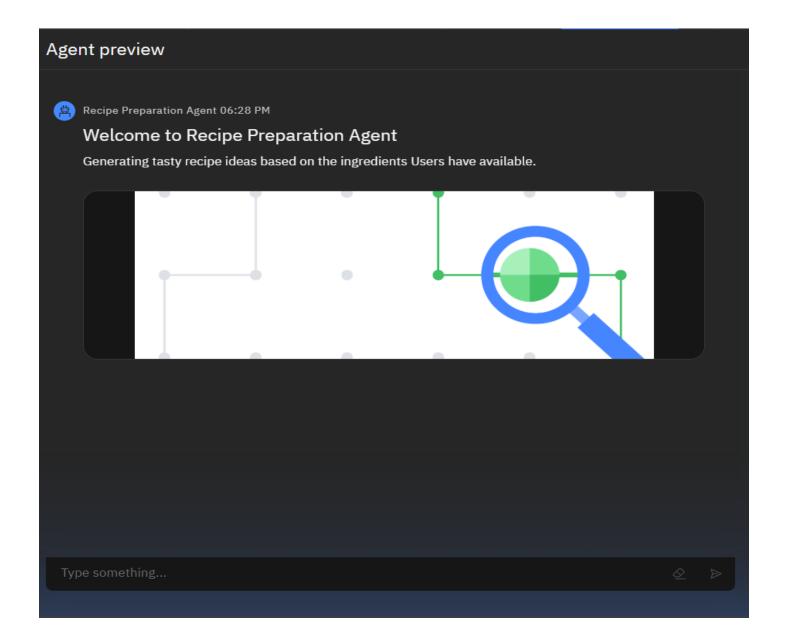
Unique features:

- Custom recipe suggestions from user's available ingredients
- Smart substitutions if some items are missing
- Step-by-step adaptive instructions
- Cooking tips, dietary and allergy adjustments
- Personalized meal planning
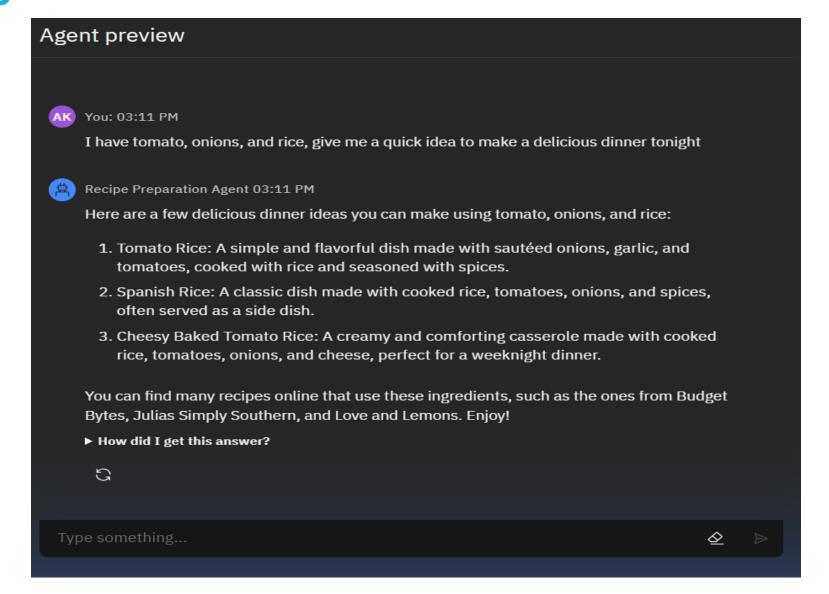- Makes cooking accessible, fun, and less wasteful

END USERS

- Home cooks and families

- Students living away from home

- Working Professionals
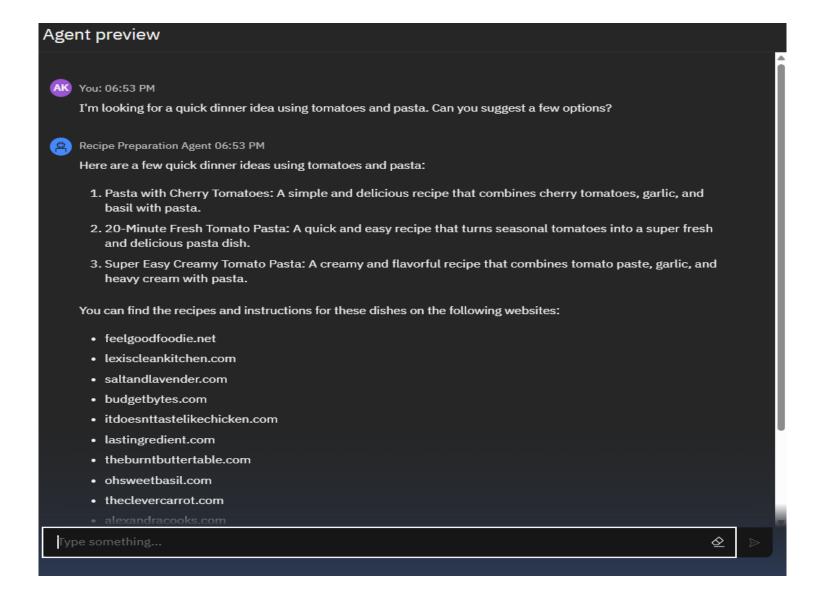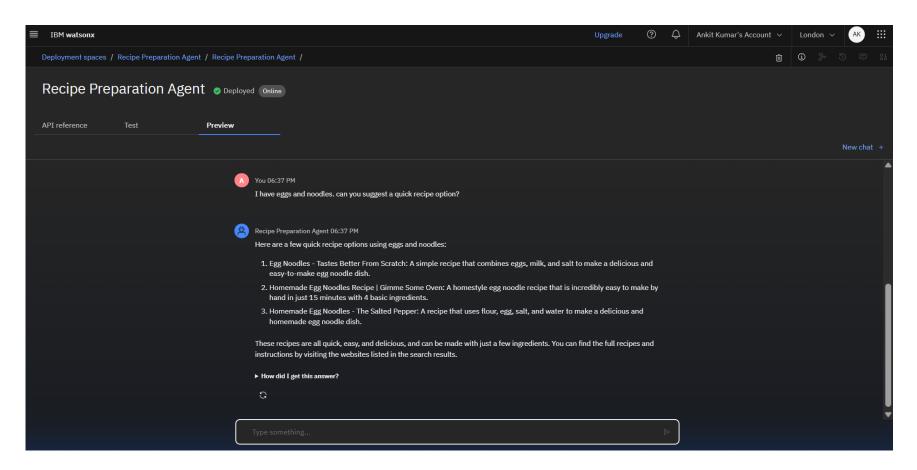
- Anyone wanting to save time and reduce kitchen waste

RESULTS

Agent preview

Recipe Preparation Agent 06:28 PM

Welcome to Recipe Preparation Agent
Generating tasty recipe ideas based on the ingredients Users have available.

Type something...

RESULTS

RESULTS

RESULTS

Deployed AI Agent

CONCLUSION

The Recipe Preparation Agent helps users turn ordinary kitchen items into delicious meals with AI-powered suggestions. It makes homemaking efficient by reducing food waste and optimizing what's already available.

- Saves money, effort, and food

- Personalized and easy to use

- Can be integrated with kitchen apps/devices

FUTURE SCOPE

- Voice input & output for hands-free kitchen use

- Multi-language support for regional cuisines

- Integration with online grocery ordering

- Nutritional tracking and health-focused meal planning

- Feedback based recipe improvement

IBM CERTIFICATIONS

- Screenshot/ credly certificate(getting started with AI)

In recognition of the commitment to achieve professional excellence

Getting Started with Artificial Intelligence
IBM SkillsBuild

Ankit Kumar

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence

Issued on: Jul 16, 2025
Issued by: IBM SkillsBuild

Verify: https://www.credly.com/badges/b267740a-d5b6-4266-a1b4-359851b54536

IBM.

Attach your RAG LAB certificate here

IBM **SkillsBuild**   Completion Certificate

This certificate is presented to

Ankit Kumar

for the completion of

Lab: Retrieval Augmented Generation with LangChain

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 24 Jul 2025 (GMT)   **Learning hours:** 20 mins
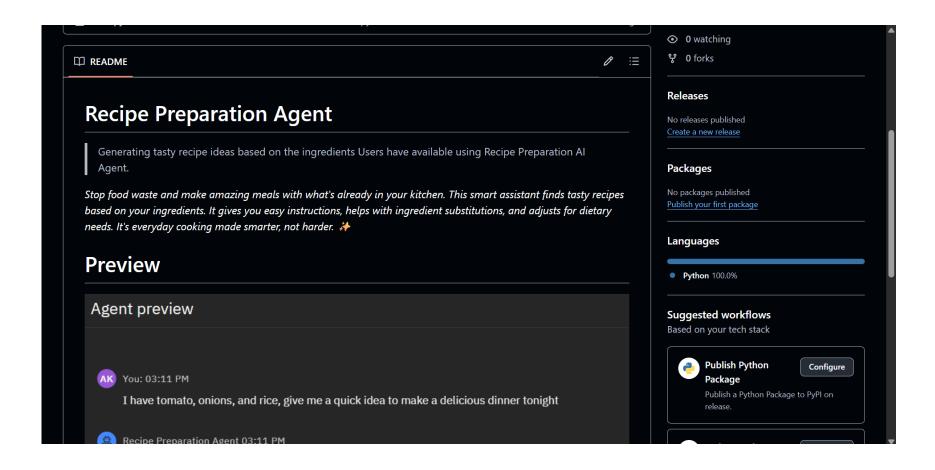
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GitHub Link: https://github.com/ChikuX/Recipe-Preparation-Agent

GITHUB LINK

- Make sure that there should be readme file

- https://github.com/ChikuX/Recipe-Preparation-Agent

THANK YOU