

CAPSTONE PROJECT

FITNESS BUDDY

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(Science)

OUTLINE

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

PROBLEM STATEMENT

Researchers, students, and professionals often struggle to stay updated with the rapidly growing volume of academic publications, technical articles, datasets, and evolving research trends. Manually reviewing, filtering, and synthesizing information across multiple domains is time-consuming and inefficient.

Proposed Solution:

An AI Research Agent that uses Natural Language Processing (NLP), Retrieval-Augmented Generation (RAG), to assist users in conducting efficient literature reviews, generating summaries, identifying research gaps, and recommending relevant papers, datasets, or collaborators.

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 reduce research time, improve the quality of literature reviews, help early-stage researchers find direction, and foster interdisciplinary collaboration by making knowledge more accessible and actionable.






Unique features:






Fitness Buddy AI offers a personalized fitness journey with real-time workout recommendations based on user goals, fitness level, and equipment access. It tracks progress using AI-driven analytics, offering adaptive routines and habit-building nudges. smart rest-day planning, motivational daily quotes, and simple meal suggestions tailored to dietary needs. Integration with wearables enhances tracking accuracy, while a virtual coach mode provides feedback on form using camera input. It also supports community challenges and progress sharing to boost motivation. With multilingual support and offline accessibility, Fitness Buddy AI is your 24/7 smart health companion.


END USERS

- ⊠ Academic Researchers
- ⊠ Research Institutions and Universities
- ⊠ Industry R&D Teams
- ⊠ Educators

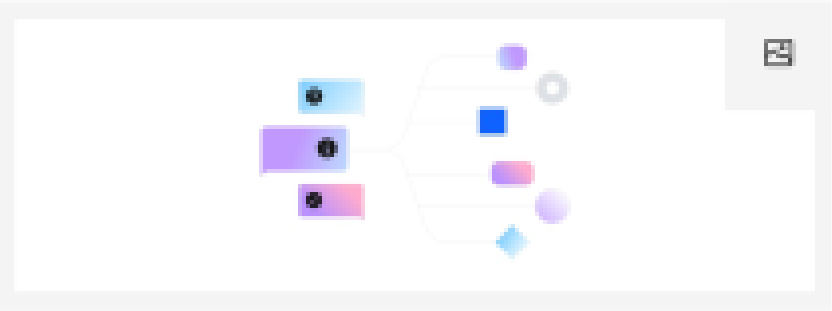
RESULTS

dataplatform.cloud.ibm.com/wx/agents?context=wx&project_id=a2abe1da-b0f6-47

IBM watsonxUpgradeHD

[Projects](#) / [Fitness_buddy](#) / Agent Lab

Placeholder image





Quick start questions

Add up to 4 quick start questions that your users can ask

30 Days Exercise and Diet Plan →

Vegan diet plan →

Non Vegan Diet plan →



RESULTS



dataplatfom.cloud.ibm.com/wx/agents?context=wx&project_id=a2abe1da-b0f6-47:



12



IBM watsonx

Upgrade



HD

Projects / Fitness_buddy / Agent Lab



Build

AI

Model: granite-3-3-8b-instruct



Configuration

Framework

Architecture

LangGraph



ReAct



Instructions

[Advanced configuration](#)

uses input.

Provide motivational tips and daily fitness inspiration.

Agent preview

vegan meal plan




Fitness Buddy 07:29 PM

Here's a simple vegan meal plan for a day:


Breakfast:


- Overnight oats: Mix 1/2 cup oats, 1/2 cup almond milk, 1 tablespoon chia seeds, and a dash of vanilla extract. Top with fresh berries and nuts in the morning.


RESULTS


 IBM watsonx


Upgrade










 HD


Projects / Fitness_buddy / Agent Lab





Build

AI

Model: granite-3-3-8b-instruct





 Configuration

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Instructions

user input.
□ Provide motivational tips and daily fitness inspiration.
□ Suggest simple, nutritious meal ideas.
□ Encourage habit-building and consistency.


[Advanced configuration](#)

Agent preview


and adjust portion sizes according to your personal nutritional needs and level of physical activity.


For workout recommendations, could you please specify your fitness level (beginner, intermediate, advanced) and your available equipment (at home, gym, bodyweight only, etc.)?

► How did I get this answer?



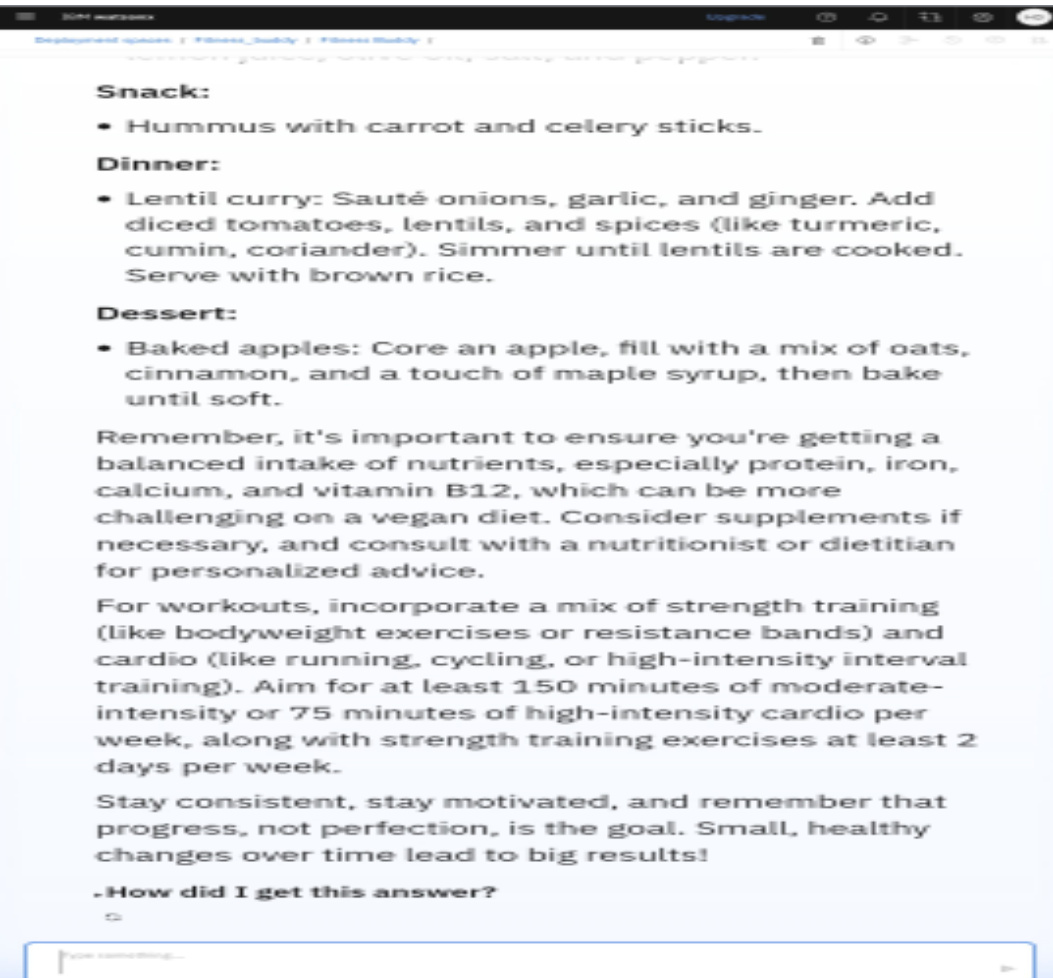
Type something...





RESULTS

Deployed AI Agent



The screenshot shows a web application with a dark header bar containing the text "IBM watsonx" and "Deployed spaces / Fitness_buddy / Fitness Buddy /". Below the header, there are three sections: "Snack:", "Dinner:", and "Dessert:". Each section contains a list of recipes. At the bottom, there is a chat interface with a text input field and a "Send" button.

Snack:

- Hummus with carrot and celery sticks.

Dinner:

- Lentil curry: Sauté onions, garlic, and ginger. Add diced tomatoes, lentils, and spices (like turmeric, cumin, coriander). Simmer until lentils are cooked. Serve with brown rice.

Dessert:

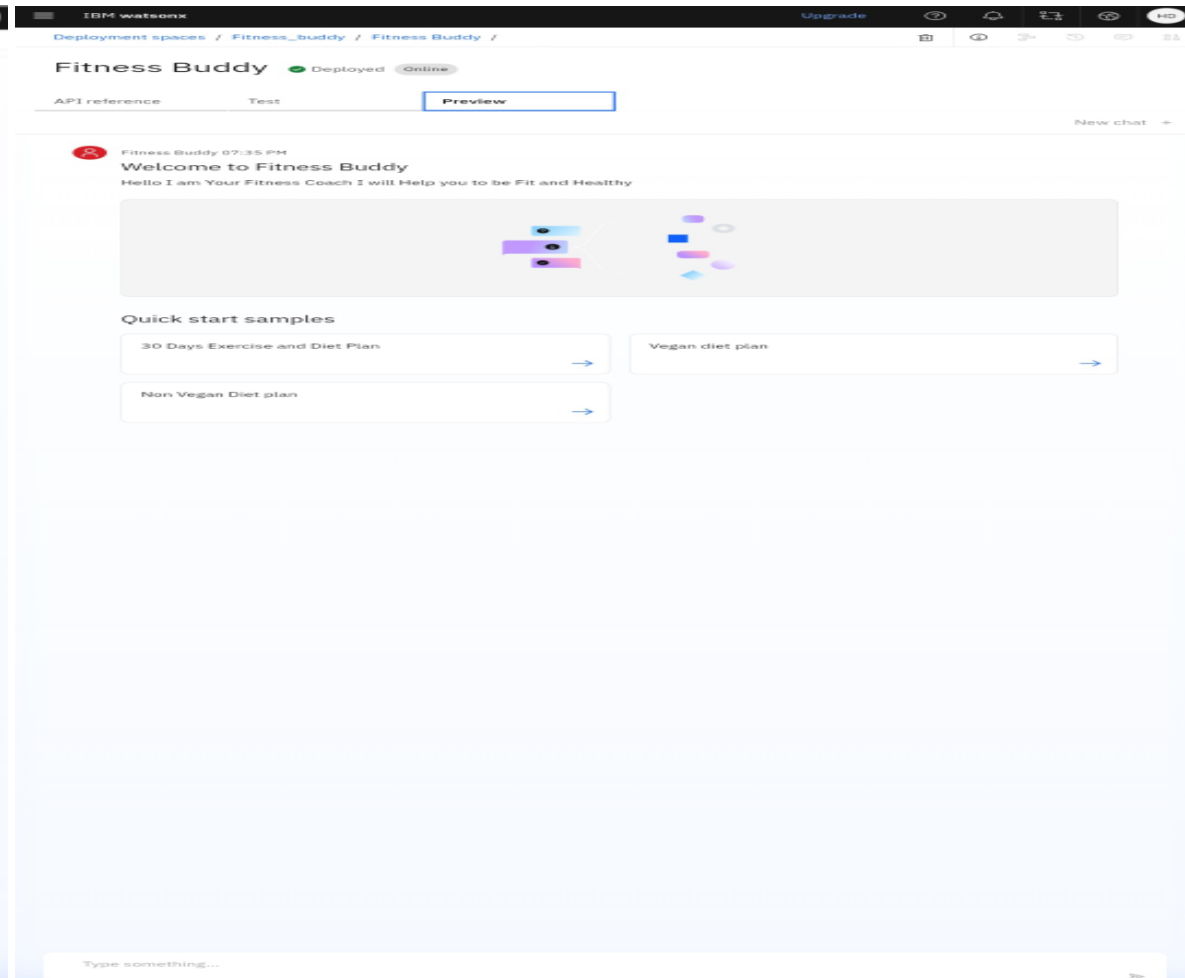
- Baked apples: Core an apple, fill with a mix of oats, cinnamon, and a touch of maple syrup, then bake until soft.

Remember, it's important to ensure you're getting a balanced intake of nutrients, especially protein, iron, calcium, and vitamin B12, which can be more challenging on a vegan diet. Consider supplements if necessary, and consult with a nutritionist or dietitian for personalized advice.

For workouts, incorporate a mix of strength training (like bodyweight exercises or resistance bands) and cardio (like running, cycling, or high-intensity interval training). Aim for at least 150 minutes of moderate-intensity or 75 minutes of high-intensity cardio per week, along with strength training exercises at least 2 days per week.

Stay consistent, stay motivated, and remember that progress, not perfection, is the goal. Small, healthy changes over time lead to big results!

How did I get this answer?



The screenshot shows a web application with a dark header bar containing the text "IBM watsonx" and "Deployed spaces / Fitness_buddy / Fitness Buddy /". Below the header, there are three tabs: "API reference", "Test", and "Preview". The "Preview" tab is selected. The main content area shows a chat interface with a text input field and a "Send" button. The chat history shows a message from "Fitness Buddy" with a timestamp of "07:35 PM". The message says "Welcome to Fitness Buddy" and "Hello I am Your Fitness Coach I will Help you to be Fit and Healthy". Below the chat history, there are two buttons: "30 Days Exercise and Diet Plan" and "Vegan diet plan".

Fitness Buddy Deployed Online

API reference Test **Preview**

New chat +

Fitness Buddy 07:35 PM
Welcome to Fitness Buddy
Hello I am Your Fitness Coach I will Help you to be Fit and Healthy

Quick start samples

30 Days Exercise and Diet Plan →

Vegan diet plan →

Non Vegan Diet plan →

CONCLUSION

- ⊠ 1. Personalized Guidance – Delivers customized workouts, meal plans, and motivation tailored to individual fitness goals and lifestyles.
- ⊠ 2. Smart Tracking – Uses AI to monitor progress, adjust routines, and ensure consistent improvement.
- ⊠ 3. 24/7 Support – Acts as a virtual coach available anytime, anywhere, including offline.
- ⊠ 4. Community & Motivation – Encourages accountability through challenges, reminders, and positive reinforcement.

GITHUB LINK

- ☒ Make sure that there should be readme file

FUTURE SCOPE

- ⌘ Multilingual Research Support
- ⌘ Voice-Activated Research Assistant
- ⌘ Real-Time Collaboration Features
- ⌘ Research Gap and Novel Topic Identification
- ⌘ Integration with Publishing Platforms
- ⌘ AI-Assisted Paper Drafting

IBM CERTIFICATIONS

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This certificate is presented to

Harsh Diwedi

for the completion of

Lab: Retrieval Augmented Generation with LangChain

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record



THANK YOU