
CAPSTONE PROJECT

FITNESS BUDDY

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OUTLINE

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

PROBLEM STATEMENT

In today's fast-paced world, many individuals struggle to maintain a healthy lifestyle due to lack of personalized guidance, time constraints, and inconsistent motivation. Traditional fitness solutions often require expensive subscriptions, in-person consultations, or rigid schedules that don't adapt to personal preferences or daily routines.

Proposed Solution:

Fitness Buddy that uses Natural Language Processing (NLP), Retrieval-Augmented Generation (RAG), is an AI-powered virtual health coach designed to help users achieve their fitness goals through personalized workout recommendations, nutrition guidance, and motivational support. It leverages IBM Cloud Lite services and IBM Granity to deliver a scalable, intelligent, and user-friendly experience.

TECHNOLOGY USED

Technologies	Purpose
IBM Cloud lite services	Serverless functions for dynamic responses
IBM Watson Assistant	Chatbot for user interaction
Natural Language Processing (NLP)	Enables chatbot to understand and respond to user queries in a natural, conversational way.
Retrieval Augmented Generation (RAG)	Combines document retrieval with generative AI to provide accurate, informative, and personalized responses.
IBM Granite model	Context-aware recommendations and insights

IBM CLOUD SERVICES USED

- IBM Cloud Watsonx AI Studio
- IBM Cloud Watsonx AI runtime
- IBM Cloud Agent Lab
- IBM Cloud Object Storage(Lite)
- IBM Granite foundation model(Granite-3-3-8b-instruct)

WOW FACTORS

- **Hyper-Personalized Recommendations** – Tailors workouts and meals to your unique goals and lifestyle.
- **Smart Conversations with NLP & RAG** – Understands natural language and delivers accurate, relevant health advice.
- **No Equipment? No Problem!** – Offers effective workouts you can do anytime, anywhere, without gear.
- **Daily Motivation & Habit Nudges** – Keeps you inspired and consistent with reminders, quotes, and challenges.
- **Instant Meal Ideas Based on What You Have** – Suggests healthy recipes using ingredients already in your kitchen.
- **Seamless Integration with IBM Cloud & Granity** – Runs on a secure, scalable platform with smart contextual insights.
- **Available 24/7 – No Appointments Needed** – Always accessible for support, guidance, and motivation.
- **Friendly, Conversational Personality** – Feels like chatting with a supportive, knowledgeable fitness buddy.

END USERS

- **Busy Professionals** – Need quick, efficient fitness and nutrition support that fits into tight schedules.
- **Students** – Seek affordable, easy-to-follow workouts and meal ideas to stay healthy on a budget.
- **Health-Conscious Seniors** – Prefer gentle, guided routines and personalized wellness advice.
- **Fitness Enthusiasts & Beginners** – Want structured plans, progress tracking, and motivational coaching.
- **Home Workout Users** – Rely on gear-free, space-friendly exercises they can do anytime.
- **Weight Loss & Nutrition Seekers** – Look for personalized diet tips, calorie tracking, and habit support.
- **Remote or Underserved Users** – Benefit from accessible, 24/7 health guidance without needing a gym or trainer.

RESULTS

Deployed AI Agent

The screenshot displays the IBM watsonx web interface. At the top, the header includes the 'IBM watsonx' logo, an 'Upgrade' button, a help icon, a notification bell, and user account information for 'Tiyasa Saha's Account' in 'Dallas'. The breadcrumb trail shows the path: 'Deployment spaces / Fitness_Agent1 / Fitness Buddy /'. The main content area is titled 'Fitness Buddy' with a green checkmark indicating it is 'Deployed' and an 'Online' status badge. Below this, there are three tabs: 'API reference', 'Test', and 'Preview', with the 'Preview' tab currently selected. The chat interface shows a message from 'Fitness Buddy' at 06:55 PM: 'Welcome to Fitness Buddy. I'm your AI Fitness Buddy- AI powered health and fitness coach.' Below the text is a diagram of a grid with nodes and connecting lines, featuring a magnifying glass icon over a specific node. At the bottom, there is a text input field with the placeholder 'Type something...' and a send button.

RESULTS

IBM watsonx

Upgrade ?

Tiyasa Saha's Account

Dallas

TS

Deployment spaces / Fitness_Agent1 / Fitness Buddy /

Fitness Buddy

✔ Deployed

Online

API referenceTestPreview

New chat +

T

You 06:53 PM

Can you provide healthy meal ideas or recipes?

Fitness Buddy 06:53 PM

I can certainly suggest some general healthy meal ideas, but for specific recipes, I recommend using a dedicated cooking or nutrition app. However, here are some broad categories of nutritious foods you might consider incorporating into your diet:

1. Lean Proteins: Chicken breast, turkey, fish like salmon and tuna, tofu for vegetarians/vegans.

2. Whole Grains: Brown rice, quinoa, whole grain bread and pasta.

3. Fruits & Vegetables: Aim for a variety of colors to get different types of nutrients - berries (blueberries strawberries), leafy greens (spinach kale), cruciferous veggies (broccoli cauliflower).

4. Healthy Fats: Avocados olive oil nuts seeds like almonds walnuts chia flaxseeds in moderation as they're high in calories too!

Remember that balanced meals often combine protein with complex carbs and lots of veggies or fruits for fiber intake which

Type something...

RESULTS

IBM watsonx

Upgrade ? 🔔 Tiyasa Saha's Account Dallas TS

[Deployment spaces](#) / [Fitness_Agent1](#) / [Fitness Buddy](#) /

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Fitness Buddy ✔️ Deployed Online

API reference

Test

Preview

New chat +

T You 06:51 PM

What exercises do you recommend to lose weight?

🗣️ Fitness Buddy 06:51 PM

To lose weight, I recommend a combination of cardio and strength training exercises. Cardio workouts like running, cycling, or brisk walking can help burn calories quickly. High-Intensity Interval Training (HIIT) is also very effective for fat loss as it continues to burn calories even after your workout session.

For strength training, focus on compound movements that engage multiple muscle groups at once such as squats, deadlifts, lunges, push-ups and pull-ups if you have access to equipment. If not bodyweight exercises like planks and burpees are equally beneficial. Aim for 20-30 minutes of cardio followed by 20 minutes of strength training per day most days of the week for best results. Remember consistency is key!

► How did I get this answer?

🔄

Type something...

➤

CONCLUSION

- **User-Centric Design:** Fitness Buddy provides personalized health and fitness guidance tailored to individual goals and preferences.
- **AI-Powered Coaching:** Utilizes NLP and Retrieval-Augmented Generation (RAG) to deliver intelligent, conversational support.
- **Cloud-Native Architecture:** Built on IBM Cloud Lite and Granity for scalability, reliability, and ease of deployment.
- **Always Available:** Offers 24/7 access to fitness tips, routines, and motivation—anytime, anywhere.
- **Engaging Experience:** Combines smart recommendations with friendly interaction to boost user engagement and habit formation.
- **Scalable & Adaptable:** Designed to grow with user needs and integrate future enhancements seamlessly.

GITHUB LINK

Tiyasa7/Fitness-Buddy: Fitness Buddy that uses Natural Language Processing (NLP), Retrieval-Augmented Generation (RAG), is an AI-powered virtual health coach designed to help users achieve their fitness goals through personalized workout recommendations, nutrition guidance, and motivational support. It leverages IBM Cloud Lite services and IBM Granity.

FUTURE SCOPE

- Integration with wearables
- Voice assistant support
- Advanced health insights using predictive analytics
- Multilingual support
- Gamification features
- Integration with nutrition APIs
- AI-powered mental wellness support

IBM CERTIFICATIONS

In recognition of the commitment to achieve
professional excellence



Tiyasa Saha

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



Issued on: Mar 04, 2025
Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/77226889-6812-4d1f-83b8-65d8e06ad2d1>



IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

Tiyasa Saha

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



THANK YOU