

# IBM HACKATHON PROJECT

## FITNESS BUDDY

AN AI FITNESS COACH FOR WORKOUTS, MEALS AND MOTIVATION-ANYTIME

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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 people struggle to maintain a healthy lifestyle due to time constraints, lack of motivation, and the absence of personalized guidance. Traditional fitness solutions are often costly, rigid, or inaccessible. **Fitness Buddy** aims to address this by offering a friendly, conversational AI assistant that provides personalized workout routines, motivational tips, and basic nutrition suggestions anytime, anywhere.

## Proposed Solution :

To address the growing demand for accessible and personalized fitness guidance, we propose **Fitness Buddy**—an AI-powered virtual assistant built using **IBM Granite** and deployed on **IBM Cloud Lite**. This intelligent chatbot acts as a 24/7 fitness companion, providing:

- ✓ **Customized home workouts** based on user goals, fitness level, and time availability.
- ✓ **Simple and nutritious meal suggestions** using AI-driven responses.
- ✓ **Motivational tips and habit-building reminders** to keep users on track.
- ✓ **On-demand access**—no scheduling, no subscription, no physical presence required.

# TECHNOLOGY USED

## ➤ IBM Granite Model (Granite-3-3-8b-instruct) :

Used as the core Large Language Model (LLM) to generate intelligent, personalized fitness and nutrition responses in a conversational tone.

## ➤ Watsonx.ai Prompt Lab:

Deployed the agent using structured chat with custom instructions and quick start questions for user engagement.

## ➤ IBM Cloud Lite:

Utilized to host and deploy the solution without additional cost, leveraging its cloud environment for managing the AI agent securely.

## ➤ Tools Used :

Depending on needs, additional tools like *Tavily Search* or *Wikipedia Search* can be integrated for real-time updates and knowledge retrieval.

# IBM CLOUD SERVICES USED

- 1) **IBM Cloud Watsonx.ai Studio** – for building and managing AI models
- 2) **IBM Cloud Watsonx.ai Runtime** – for executing the models/agents
- 3) **IBM Agent Lab (Prompt Lab)** – for creating, testing, and deploying your AI agent
- 4) **IBM Granite Foundation Model** – as the LLM behind the agent's intelligence
- 5) **IBM Identity & Access Management (IAM)** – for API key and secure access
- 6) **IBM Deployment Space** – for deploying the Python interpreter or tools

# WOW FACTORS FOR FITNESS BUDDY AGENT:

Fitness Buddy stands out as an intelligent, user-friendly virtual coach designed to make healthy living easier, more personalized, and accessible for everyone.

- Conversational AI coach that provides personalized fitness guidance through natural interactions.
- Recommends home workout routines based on user preferences, without the need for a gym or equipment.
- Suggests simple and nutritious meal ideas tailored to user needs.
- Sends motivational messages, daily reminders, and habit-building suggestions to encourage consistency.
- Offers flexible, on-demand support that fits into any schedule, saving time and effort.
- Utilizes IBM Granite (LLM) and Watsonx for intelligent, adaptive, and empathetic responses.
- Enhances user engagement by acting like a virtual fitness companion rather than a static chatbot.

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# END USERS

- i. **Health-conscious individuals**
- ii. **Busy professionals with limited time**
- iii. **Students aiming to stay fit at home**
- iv. **Beginners looking for guided workouts**
- v. **People without access to gyms**
- vi. **Users seeking personalized fitness and nutrition tip**

# RESULTS

The **Fitness Buddy Agent** was successfully developed and deployed using IBM Cloud Lite services and the Granite Foundation Model.

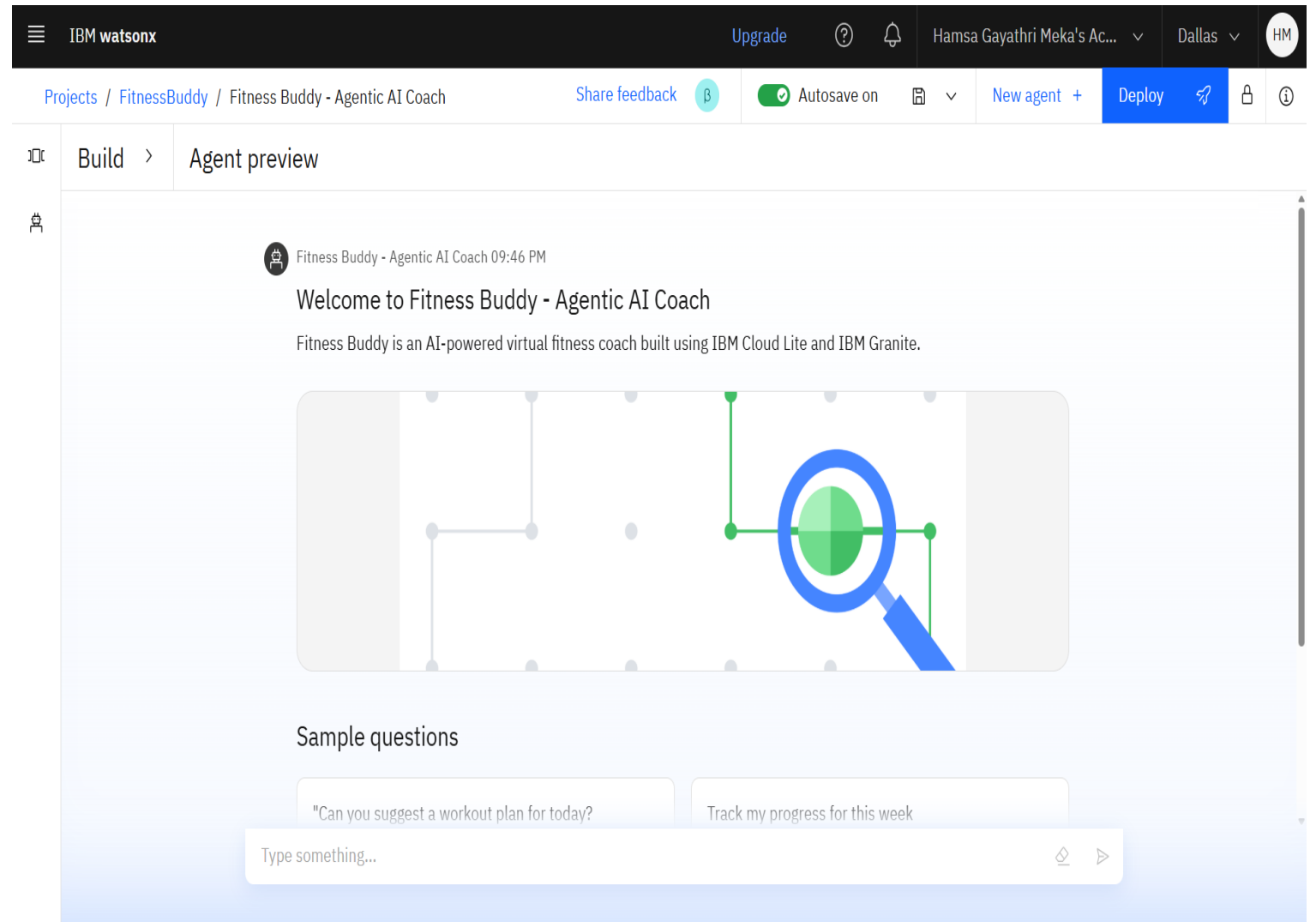
It was able to:

Respond to user queries with personalized fitness advice.

Recommend home workout routines based on input.

Provide healthy meal suggestions and motivational tips.

Adapt its responses to individual user needs through conversational interactions.





# RESULTS

In the preview, user tested the agent with two real-world queries:  
◆ **“Track my fitness progress for this week.”**

The agent asked the needs.

◆ **“Can you Suggest a home workout routine without any equipment.”**

The agent recommended an effective bodyweight workout plan tailored to the user’s fitness level and time availability.

The screenshot displays the IBM watsonx interface for the 'Fitness Buddy - Agentic AI Coach'. The top navigation bar includes the IBM watsonx logo, an 'Upgrade' button, a help icon, a notification bell, the user's name 'Hamsa Gayathri Meka's Ac...', the location 'Dallas', and a profile icon 'HM'. Below the navigation bar, the breadcrumb trail shows 'Projects / FitnessBuddy / Fitness Buddy - Agentic AI Coach', followed by a 'Share feedback' button and a beta badge. The main interface has a 'Build' tab and an 'Agent preview' tab. The 'Agent preview' tab shows a chat history with the following messages:

- User (HM):** 09:47 PM  
Track my progress for this week
- Fitness Buddy - Agentic AI Coach:** 09:47 PM  
Of course, I'd be happy to help you track your progress! To provide the best assistance, could you please tell me which specific fitness goals you're currently working on? For example, are you focusing on strength training, cardio, flexibility, or a combination of these?  
▶ **How did I get this answer?**
- User (HM):** 09:47 PM  
Can you suggest a home workout routine without any equipment?
- Fitness Buddy - Agentic AI Coach:** 09:47 PM  
Absolutely! Here's a simple home workout routine you can do without any equipment. Remember to warm up before starting and cool down afterwards. Let's go!  
  1. **Jumping Jacks:** 2 sets of 30 reps
  2. **Push-ups:** 2 sets of 10 reps (modify on your knees if needed)

At the bottom, there is a text input field with the placeholder 'type something...' and a send button.

# RESULTS

To explore the assistant's fitness guidance capability, the user asked :

**“What should I eat before and after a workout?”**

❑ The agent gave practical nutrition tips, suggesting light carbs before a workout and protein-rich foods afterward to support recovery.

The screenshot displays the IBM watsonx interface for an agent named 'Fitness Buddy - Agentic AI Coach'. The top navigation bar includes the IBM watsonx logo, an 'Upgrade' button, a help icon, a notification bell, and user information for 'Hamsa Gayathri Meka's Ac...' with a location of 'Dallas'. Below this, a breadcrumb trail shows 'Projects / FitnessBuddy / Fitness Buddy - Agentic AI Coach', followed by a 'Share feedback' button and a 'Saving' status indicator. On the right, there are buttons for 'New agent +', 'Deploy', and a lock icon. The main interface has a 'Build' tab and an 'Agent preview' tab. The 'Agent preview' tab shows a chat history with a user asking 'What should I eat before and after a workout?' and the agent responding with detailed guidelines. The agent's response is structured with sections for 'Before a Workout' and 'After a Workout', each containing numbered advice on carbohydrates, protein, and healthy fats. At the bottom, there is a text input field with the placeholder 'Type something...' and a send button.

IBM watsonx Upgrade ? Hamsa Gayathri Meka's Ac... Dallas HM

Projects / FitnessBuddy / Fitness Buddy - Agentic AI Coach Share feedback β Saving New agent + Deploy

Build > Agent preview

► How did I get this answer?

HM You: 09:48 PM  
What should I eat before and after a workout?

Fitness Buddy - Agentic AI Coach 09:48 PM  
Great question! Fueling your body properly before and after a workout is essential for optimal performance and recovery. Here are some general guidelines:

**Before a Workout (aim to eat 1-3 hours prior):**

1. **Carbohydrates:** They provide the necessary energy for your workout. Whole grain bread, oatmeal, fruits, or starchy vegetables are good options.
2. **Protein:** A small amount can help prevent muscle protein breakdown. Consider a scoop of protein powder in your pre-workout smoothie or a bit of Greek yogurt.
3. **Healthy Fats:** While not necessary to focus on before a workout, if you're eating a meal, include a small amount of healthy fats like avocado or nuts.

**After a Workout (within 45 minutes post-workout):**

1. **Protein:** Consuming protein helps repair and rebuild muscle tissues. This could be a protein shake, Greek yogurt,

Type something... >

# RESULTS

User: “ I feel lazy, can you motivate me?”

❑ **The agent responds** in an encouraging, friendly, and supportive tone. It offers small, achievable actions (like starting with light stretching) and uses positive language to boost motivation and make the user feel capable.

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 information for 'Hamsa Gayathri Meka's Ac...' with a dropdown arrow, 'Dallas' with a dropdown arrow, and a profile icon labeled 'HM'. Below the header, a breadcrumb trail shows 'Projects / FitnessBuddy / Fitness Buddy - Agentic AI Coach', followed by a 'Share feedback' button with a beta icon, an 'Autosaved 9:49 PM' status, a file icon, a 'New agent +' button, and a 'Deploy' button. The main content area is titled 'Agent preview' and shows a chat history. The chat starts with a user message: 'Would you like more specific meal ideas or tips on portion sizes?' followed by a link 'How did I get this answer?'. The user then says: 'I feel lazy to exercise. Can you help motivate me?'. The AI agent, 'Fitness Buddy - Agentic AI Coach', responds at 09:49 PM: 'Absolutely, I understand those days when motivation seems to hit a wall. Remember, it's completely normal to have off days. Here are a few tips to help you get moving:'. The response includes three numbered tips: 1. 'Set Small Goals: Instead of aiming for an intense workout, commit to just 10-15 minutes. Once you start, you might find the motivation to continue.', 2. 'Change Things Up: Try a new workout video, go for a walk in a different neighborhood, or listen to your favorite upbeat playlist. A change of pace can make exercise feel less monotonous.', and 3. 'Focus on How You'll Feel After: Remind yourself of the positive feelings that come after a workout—increased energy, better mood, and a sense of accomplishment.' At the bottom, there is a text input field with the placeholder 'Type something...' and a send button.

# RESULTS

user asks:

**“Recommend exercises to tone arms and legs at home”**

- **Agent Behavior:**  
The agent suggests beginner-friendly, no-equipment exercises like squats, lunges, push-ups, and tricep dips. It breaks routines into sets and reps, explains form clearly, and ensures the plan is easy to follow at home.

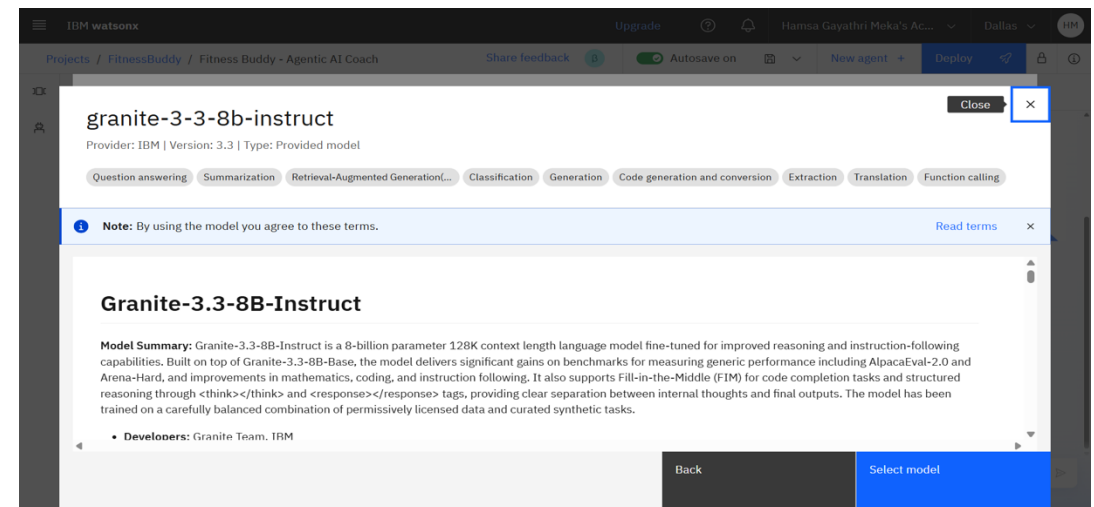
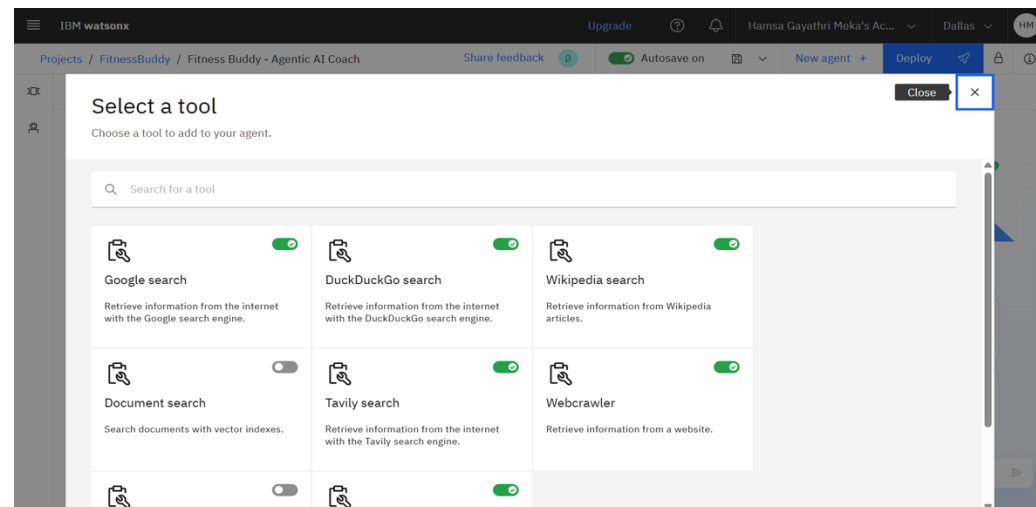
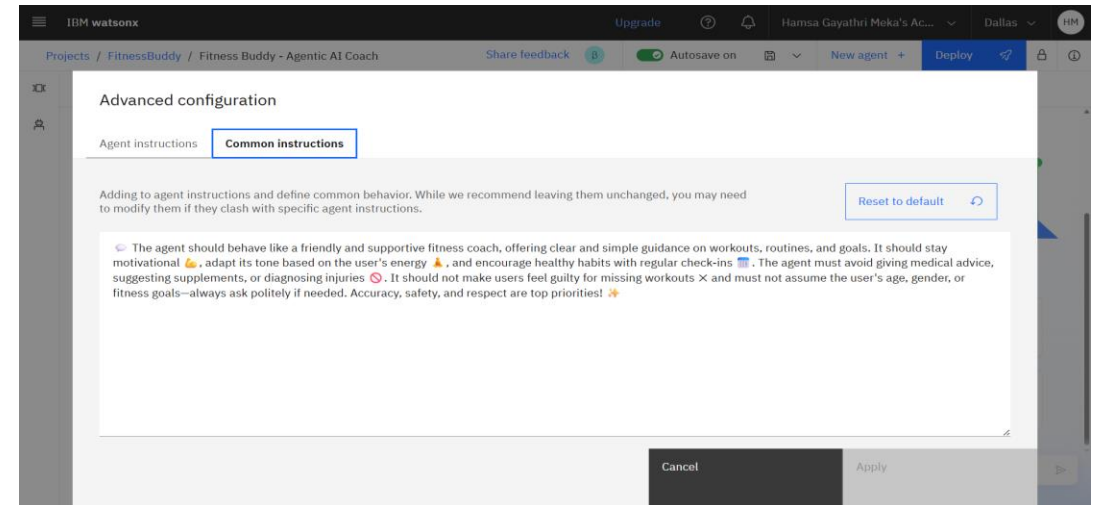
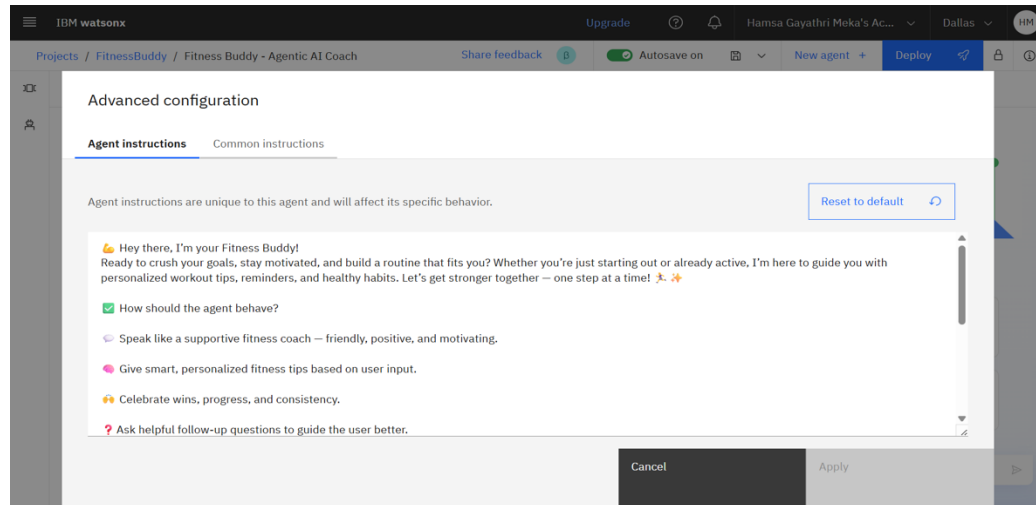
The screenshot displays the IBM watsonx interface. The top navigation bar includes the IBM watsonx logo, an 'Upgrade' button, a help icon, a notification bell, and user information for 'Hamsa Gayathri Meka's Ac...' with a location dropdown set to 'Dallas'. Below this, a breadcrumb trail shows 'Projects / FitnessBuddy / Fitness Buddy - Agentic AI Coach', followed by a 'Share feedback' link, a beta badge, an 'Autosaved 9:48 PM' status, and buttons for 'New agent +', 'Deploy', and a lock icon.

The main content area is split into two tabs: 'Build' and 'Agent preview'. The 'Agent preview' tab is active, showing a chat interface. The chat history includes:

- A system message: "Remember, it's important to maintain proper form during each exercise to prevent injury and maximize results. Listen to your body and adjust the intensity as needed. You're doing great! 🍌"
- A follow-up question: "Would you like more exercise variations or tips on maintaining good form?"
- A link: "► How did I get this answer?"
- A user message (HM): "You: 09:48 PM  
Recommend exercises to tone my arms and legs at home."
- An agent response (Fitness Buddy - Agentic AI Coach): "09:48 PM  
Absolutely, I can help with that! Here are some effective bodyweight exercises to tone your arms and legs at home:  
  
**Arm Toning:**  
  
1. **Tricep Dips:** Use a sturdy chair or bench. Extend your legs in front of you, palms down on the edge. Lower your body until your arms are at about a 90-degree angle, then push back up. Do 2 sets of 10-15 reps.  
  
2. **Push-ups:** Modify on your knees if needed. Keep your body in a straight line from head to toe as you lower yourself down and push back up. Aim for 2 sets of as many reps as you can do with good form."

At the bottom, there is a text input field with the placeholder "Type something..." and a send button.

# Screenshots of Setting Up the Fitness Buddy AI Agent



# RESULTS

## Deployed AI Agent

The screenshot displays the IBM Watsonx interface for a deployed AI agent. The top navigation bar includes the IBM Watsonx logo, an 'Upgrade' button, and user information for 'Hamsa Gayathri Meka's Ac...'. The breadcrumb trail indicates the current location: 'Deployment spaces / FitnessBuddy\_Python\_Space / Fitness Buddy - Agentic AI Coach'. The agent's status is 'Deployed' and 'Online'. The 'Preview' tab is active, showing a chat conversation. The user's message is 'Give me tips to stay motivated.' and the AI's response is a list of five tips for staying motivated. A 'New chat +' button is visible in the top right corner of the chat area.

IBM watsonx Upgrade ? 🔔 Hamsa Gayathri Meka's Ac... Dallas HM

Deployment spaces / FitnessBuddy\_Python\_Space / Fitness Buddy - Agentic AI Coach /

Fitness Buddy - Agentic AI Coach 🟢 Deployed Online

API reference Test **Preview**

New chat +

**H** You 11:14 PM  
Give me tips to stay motivated.

**AI** Fitness Buddy - Agentic AI Coach 11:14 PM  
Absolutely! Staying motivated is key to achieving your fitness goals. Here are some tips:

- 1. Set Clear Goals:** Having specific, measurable, achievable, relevant, and time-bound (SMART) goals can keep you focused and motivated.
- 2. Track Your Progress:** Regularly track your workouts and improvements. Seeing how far you've come can be a great motivator.
- 3. Mix It Up:** Try different types of workouts to keep things interesting. You can alternate between strength training, cardio, yoga, or any other activity you enjoy.
- 4. Find a Workout Buddy:** Exercising with a friend can make workouts more fun and help keep you both accountable.
- 5. Reward Yourself:** Celebrate your achievements, no matter how small. It could be a new workout outfit, a massage, or just a day of rest.

Type something... ➤

# CONCLUSION

- The Fitness Buddy agent provides accessible, personalized fitness guidance for users anytime. It suggests effective home workouts, nutrition tips, and daily motivation—eliminating the need for costly subscriptions or rigid schedules. By promoting consistent, healthy habits, this AI-powered coach supports a balanced lifestyle and long-term well-being.
- This conversational AI coach recommends home workouts, nutritious meal ideas, and motivating tips—all based on user input. Its friendly tone and flexible guidance help users build habits, stay consistent, and track their progress effectively.
- By integrating IBM Granite foundation models and IBM Cloud tools, the solution demonstrates how advanced AI can make fitness more accessible, enjoyable, and sustainable for everyone—especially for students, working professionals, and individuals with time constraints.

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## GITHUB LINK

- <https://github.com/Hamsagayathri-27/IBM-FitnessBuddy-AI>



# FUTURE SCOPE

- **Integration with Wearable Devices :**

Connect with smartwatches or fitness bands for real-time activity tracking and personalized suggestions.

- **Advanced Analytics & AI :**

Implement advanced ML techniques like behavior prediction and reinforcement learning to improve recommendations.

- **Enhanced Personalization :**

Use user feedback, fitness level, and goals to tailor advice even more specifically.

- **Multilingual & Regional Expansion :**

Support more languages and fitness guidance based on local culture, diet, and habits.

- **Edge Computing Integration :**

Enable real-time processing on devices for faster responses and reduced cloud dependency.

# IBM CERTIFICATIONS



Credly certificate( getting started with AI)



**THANK YOU**