

Tools & Technologies Used – FitBuddy Project

This document outlines the tools and technologies leveraged in building FitBuddy – an AI-powered virtual fitness coach that provides personalized workout plans, motivational tips, and nutritional guidance.

IBM Cloud Services

1. IBM watsonx.ai Studio

A collaborative platform for building, testing, and deploying AI agents using powerful foundation models. It enables us to configure, prompt, and refine conversational agents efficiently.

2. IBM watsonx.ai Runtime

Provides the underlying infrastructure to run the AI agent in production, enabling real-time interaction and responses based on user input.

3. IBM Cloud Agent Lab

A visual and low-code environment to define agent workflows, conversation logic, behavior, and response patterns. Used to design the FitBuddy conversational experience.

4. IBM Granite Foundation Model

This large language model powers the intelligence behind FitBuddy, allowing it to understand and respond to natural language queries related to fitness, health, and nutrition.

AI & NLP Technologies

1. Natural Language Processing (NLP)

NLP enables the agent to interpret user input naturally and generate human-like responses. It ensures accurate understanding of health and fitness-related queries.

2. Intent and Context Recognition

Used to identify user goals, whether they seek a workout suggestion, meal idea, or motivational message, and maintain context throughout the conversation.

🌐 Project Infrastructure & Management

1. IBM Cloud Object Storage

If needed, can be used to store documentation, training data, or backups of agent configurations.

2. GitHub

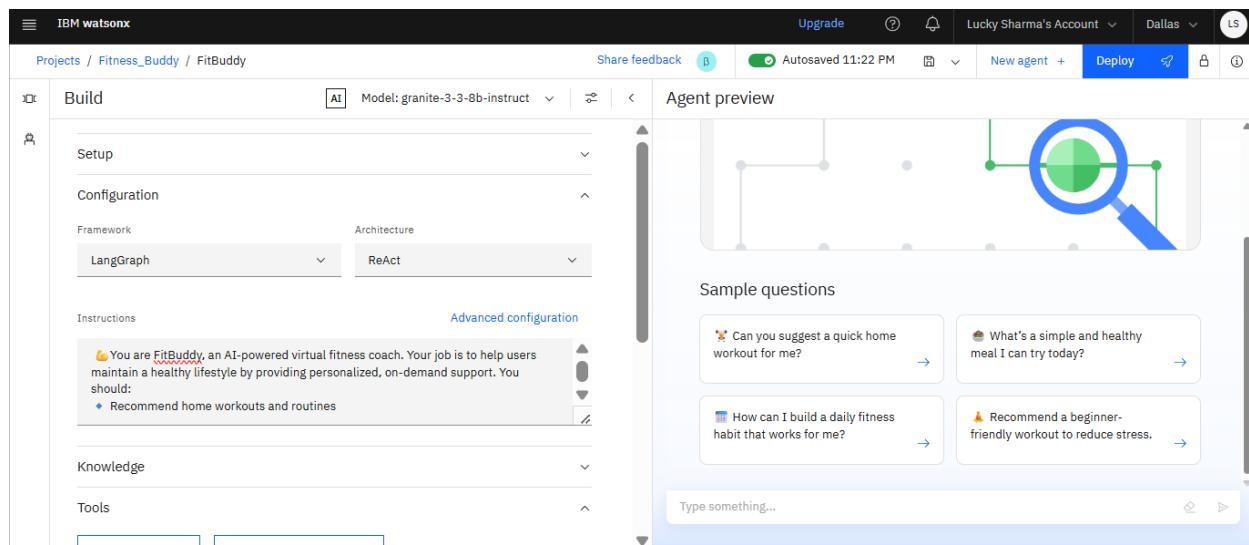
Version control system used to track changes in project assets, manage collaboration, and host the project repository.

💻 Technologies Summary

- IBM Cloud Lite Plan
- IBM watsonx.ai Studio
- IBM Cloud Agent Lab
- IBM Granite Model
- Natural Language Processing (NLP)
- Intent Detection & Response Logic
- GitHub for source control

Screenshots :

Building and training agent by providing the instructions to the agent.



Added tools :

The tools like Google Search, DuckDuckGo Search, Wikipedia Search, and Webcrawler are added in the Watsonx Agent Lab to enhance the agent's ability to provide accurate, real-time, and well-researched answers.

The screenshot shows the IBM Watsonx Agent Lab interface. On the left, under 'Build', there are four added tools: Google search, DuckDuckGo search, Wikipedia search, and Webcrawler. On the right, the 'Agent preview' window displays a welcome message from 'watsonx Agent' at 10:08 PM, stating 'Hi, I'm FitBuddy – your smart companion for fitness, food, and motivation.' Below the message is a large magnifying glass icon over a grid of small circles, with a text input field at the bottom labeled 'Type something...'. The top navigation bar includes 'Upgrade', 'Share feedback', 'Unsaved', 'New agent', and 'Deploy' buttons.

Testing agent :

The agent was tested to ensure it responds only to health, fitness, food, and wellness-related queries. It consistently avoided unrelated domains like coding, politics, or finance. This validates that:

- The domain instructions were correctly implemented.
- The agent filters irrelevant topics and redirects or declines non-domain queries.
- The responses remain contextually accurate and relevant to user goals.

The screenshot shows the 'Agent preview' window with a conversation log. A user message 'suggest me the easy to make healthy diet' is followed by a response from 'FitBuddy' with meal ideas:

You: 10:18 PM
suggest me the easy to make healthy diet

FitBuddy 10:18 PM
Absolutely! Here are some simple, nutritious meal ideas to get you started on a healthy diet:

- 1. Breakfast - Greek Yogurt Parfait:** Layer Greek yogurt, mixed berries, and a sprinkle of granola for a protein-packed start to your day.
- 2. Lunch - Quinoa Salad:** Mix cooked quinoa with chopped veggies like bell peppers, cucumbers, and tomatoes. Dress with olive oil, lemon juice, salt, and pepper for a refreshing meal.
- 3. Dinner - Grilled Chicken with Steamed Vegetables:** Season chicken breast with herbs and grill until cooked through. Serve with a side of steamed broccoli, carrots, or spinach.
- 4. Snack - Hummus and Veggie Sticks:** Enjoy carrot, cucumber, or bell pepper sticks with a serving of hummus for a fiber and protein-rich snack.

Type something... Send

Agent preview

I'm sorry, but as a fitness and wellness coach, I can't provide Python code examples. However, I can help you with workout routines, nutrition advice, and motivation to keep you on track with your health goals. Let's focus on your fitness journey! How can I assist you today?

► How did I get this answer?

LS You: 10:22 PM
best places to visit in india

FitBuddy 10:22 PM
I'm sorry, but as a fitness and wellness coach, I don't have the capability to provide travel recommendations. I'm here to help you with your health, fitness, and nutrition goals. If you need advice on staying active while traveling or maintaining a healthy diet on the go, I'd be more than happy to help with that!

► How did I get this answer?

Type something... Send

Deployment:

The agent was deployed using IBM watsonx.ai, allowing real-time interaction through the Agent Lab interface. It runs on the Granite model with integrated tools for dynamic search and response generation.

IBM watsonx

Upgrade | Lucky Sharma's Account | Dallas | LS

Deployment spaces / FitBuddy / FitBuddy /

FitBuddy Deployed Online

API reference Test Preview

New chat +

You 10:29 PM
Give me 1 week diet plan

FitBuddy 10:29 PM
Sure, I'd be happy to help you with that! However, to provide the most suitable diet plan, I need some information about your dietary preferences, any allergies, and your fitness goals. For now, here's a simple, balanced 1-week meal plan that you can adjust according to your needs:

Day 1:

- Breakfast: Greek yogurt with mixed berries and a drizzle of honey.
- Lunch: Grilled chicken salad with lots of veggies and olive oil dressing.

Type something... Send