

# The Fitness Agent

IBM CAPSTONE PROJECT

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# **Problem Statement : 13**

- Creates personalized workout plans based on user goals, fitness level, and available time.
- Suggests healthy and culturally appropriate meal ideas.
- Provides motivational tips and habit-building reminders.
- Adapts routines dynamically based on progress and feedback.
- Offers equipment-free workout alternatives.
- Tracks and optimizes fitness schedules for consistency.

# Proposed Solution

- Build The Fitness Agent using IBM Cloud Lite services and IBM Granite.
- Conversational AI interface powered by IBM Watson Assistant.
- Understands user preferences, resources, and health conditions.
- Provides real-time, adaptive, and personalized health recommendations.

# Technology Used

- IBM Cloud Lite services
- Natural Language Processing (NLP)
- Large Language Models (LLM)
- IBM Granite model
- IBM App Connect

# **IBM Cloud Services Used**

- IBM Cloud Watsonx AI Studio
- IBM Cloud Watsonx AI Runtime
- IBM Cloud Functions
- IBM Granite (via Watsonx.ai Studio)
- IBM Cloud Object Storage
- IBM AI Tools

# Wow Factors

- Personalized workout and nutrition plans in seconds
- Real-time adaptation based on user progress
- Natural language understanding for tailored suggestions
- Equipment-free workout options
- Interactive chat experience powered by Watson Assistant
- Serverless backend logic for efficiency

# End Users

- Individuals aiming to improve overall fitness
- Busy professionals with limited time
  - Students and beginners
- People without access to gym facilities
- Individuals with dietary restrictions or health conditions

# Setting Up

- Clone the GitHub repository
- Open Watsonx AI Studio project
- Upload fitness & nutrition dataset or use built-in database
- Enter goal, time, and equipment
- Receive personalized workout & diet plan instantly



# SETUP

The screenshot displays the IBM Watsonx Agent Lab interface in a web browser. The browser's address bar shows the URL: `dataplatform.cloud.ibm.com/wx/agents?context=wx&project_id=24258235-catlf-47d6-9502-dfeb957523cd`. The interface is divided into two main sections: 'Build' on the left and 'Agent preview' on the right.

**Build Section:**

- Name:** Finfitness.
- Description:** Aim to develop an intelligent virtual assistance helps to follow a nutritious meal ideas and workout. (Character count: 100/100)
- Icon:** A green circular icon with a white smiley face and a speech bubble.
- Placeholder Image:** A placeholder image showing a blue paper airplane.
- Quick start questions:** Add up to 4 quick start questions that your users can select.

**Agent preview Section:**

The 'Agent preview' section shows a conversation log:

- You:** 04:16 PM. Is morning morning walk is more benifivial or evening walk?
- Finfitness:** 04:16 PM. Both morning and evening walks have their own benefits, and the best time for a walk can depend on your personal schedule and preferences. Here's a brief comparison:

**Morning Walks:**

- Benefits:**
  - Can boost your metabolism for the day.
  - Helps set a positive tone for the day.
  - Often less crowded, providing a quieter environment.
- Considerations:**
  - Might be challenging if you're not a morning person.
  - Sun exposure can be higher, so sun protection is important.

**Evening Walks:**

- Benefits:**
  - Can help unwind after a day's activities.

At the bottom of the 'Agent preview' section, there is a text input field with the placeholder text 'Type something...' and a send button.

# Agent Instructions

- Greet: 'Hi, I am The Fitness Agent. How can I help you today?'
- Ask for goal, fitness level, available time, and equipment
- Retrieve personalized plans using RAG & IBM Granite
- Suggest alternative exercises
- Provide motivational tips
- Adjust plans based on feedback

# Agent Instruction

Agent Lab (beta) — Docs | X Thefitness — THE FITNESS | X Thefitness — Thefitness | X Settings | IBM watsonx | the fitness buddy online | X Finfitness - Google Search | X

← → ↻ ↗ dataplatform.cloud.ibm.com/wx/agents/ddf3b21f-b14e-4d6f-933a-0f9d048fba3?project\_id=24258235-ca6f-47d6-9502-dfeb957523cd&context=wx

IBM watsonx Upgrade Visal Singh Nag's Account Dallas

Projects / THEFITNESSBUDDY / Thefitness Share feedback Autosave on New agent Deploy

### Advanced configuration

**Agent instructions** Common instructions

Agent instructions are unique to this agent and will affect its specific behavior. [Reset to default](#)

You are a helpful assistant that uses tools to answer questions in detail.

When greeted, say "Hi, I am Thefitness agent. How can I help you? 🙋🏻 I am an AI-powered virtual coach (built on IBM Granite / watsonx.ai via IBM Cloud Lite) that greets users warmly 🌟, understands their fitness and nutrition goals 🎯, and instantly provides personalized home workout routines 🏠, motivational habit-building prompts 💡, and simple Indian-style nutrition guidance 🍛 —all tailored to time constraints ⌚, equipment availability 🏠, fitness level 📊, and dietary preferences 🍽️. I can suggest a 20-minute fat-loss bodyweight workout 🏃‍♂️, share daily consistency tips 📅, and recommend a high-protein, low-cal vegetarian breakfast under 300 calories 🥗 using familiar Indian ingredients. Users can also get healthy meal ideas aligned with the Dietary Guidelines for Indians 🇮🇳 from the National Institute of Nutrition and access practical weight-loss food charts 📄. I use conversational intent understanding 🗣️ to interact naturally, store preferences in Cloudant Lite 🗄️, manage profiles via App ID Lite 🆔, and handle dialog flow with Watson Assistant Lite 🗨️. For credible Indian diet references, visit the official Dietary Guidelines for Indians here: <https://www.nin.res.in/DietaryGuidelinesforNINwebsite.pdf> 📄.

Cancel Apply

# Quick Start Questions

- What's a simple home workout I can do in 15 minutes?
- Can you suggest a healthy breakfast based on my fitness goals?
- I'm feeling low today—any motivational tips to keep me going?
- How can I build a daily fitness habit that actually sticks?

# Quick Start Question

The screenshot displays the IBM Watsonx Build interface in a web browser. The browser's address bar shows the URL: `datapatform.cloud.ibm.com/wx/agents/ddf3b21f-b14e-4d6f-933a-0f9d048fba3?project_id=24258235-ca6f-47d6-9502-dfeb957523cd&context=wx`. The interface includes a top navigation bar with the IBM Watsonx logo, an 'Upgrade' button, a user profile for 'Vishal Singh Negi', and a 'Deploy' button. The main workspace is divided into two panels: 'Build' on the left and 'Agent preview' on the right.

In the 'Build' panel, the 'Model' is set to 'granite-3-3-8b-instruct'. Below the model selection, there is a 'Placeholder image' section with a green circular icon containing a speech bubble. Underneath, the 'Quick start questions' section is visible, featuring a text input field with the placeholder 'Add up to 4 quick start questions that your users can select.' and a list of four sample questions, each with a trash icon for removal:

- What's a simple home workout I can do in 15 minutes?
- Can you suggest a healthy breakfast based on my fitness goals?
- I'm feeling low today—any motivational tips to keep me going?
- How can I build a daily fitness habit that actually sticks?

The 'Agent preview' panel on the right shows a 'WORKOUT' agent. It features a large image of two blue paper airplanes flying towards each other. Below the image, the 'Sample questions' section displays four questions in a grid, each with a right-pointing arrow:

- What's a simple home workout I can do in 15 minutes?
- Can you suggest a healthy breakfast based on my fitness goals?
- I'm feeling low today—any motivational tips to keep me going?
- How can I build a daily fitness habit that actually sticks?

At the bottom of the 'Agent preview' panel, there is a text input field labeled 'Type something...' and a 'Show desktop' button.

# Tools Used & Testing

- Watsonx AI Studio
- IBM Cloud Functions
- IBM Granite LLM
- Python (integration and testing)

# Tools

The screenshot displays the IBM watsonx AI interface for configuring an agent. The browser address bar shows the URL: `dataplatfom.cloud.ibm.com/wx/agents/ddf3b21f-b14e-4d6f-933a-0f9d048fba3?project_id=24258235-ca6f-47d6-9502-dfeb957523cd&context=wx`. The interface includes a top navigation bar with the IBM watsonx logo, an 'Upgrade' button, and user account information for 'Vishal Singh Negi's Account' in the 'Dallas' region. The main content area is divided into two panels: 'Build' on the left and 'Agent preview' on the right.

**Build Panel:**

- Model:** Set to 'granite-3-3-8b-instruct'.
- Knowledge:** A dropdown menu with 'Tools' selected.
- Buttons:** 'Add a tool' and 'Create custom tool'.
- Added tools (5):**
  - Google search:** Retrieve information from the Internet with the Google search engine.
  - DuckDuckGo search:** Retrieve information from the Internet with the DuckDuckGo search engine.
  - Wikipedia search:** Retrieve information from Wikipedia articles.
  - Webcrawler:** Retrieve information from a website.

**Agent preview Panel:**

- WORKOUT:** A header for the agent's function.
- Visual:** An illustration of two blue paper airplanes, one at the start and one at the end of a dashed trajectory line.
- Sample questions:** Four example prompts with right-pointing arrows:
  - 'What's a simple home workout I can do in 15 minutes?'
  - 'Can you suggest a healthy breakfast based on my fitness goals?'
  - 'I'm feeling low today—any motivational tips to keep me going?'
  - 'How can I build a daily fitness habit that actually sticks?'
- Input field:** A text box at the bottom labeled 'Type something...' with a send button.

# Testing

The screenshot displays the IBM Watsonx Build interface for configuring an AI agent. The browser tabs at the top include 'Agent Lab (beta) — Docs | IBM', 'Theftiness. — THE FITNESS BUDDY', 'the fitness buddy online diet', and 'FitFitness - Google Search'. The URL bar shows a project ID: `dataplatfrom.cloud.ibm.com/vx/agents/32c9c510-ecd8-4985-8a11-554b2b9954fd?project_id=24258235-ca6f-47d6-9502-dfeb957523cd&context=wx`.

The interface header includes the 'IBM watsonx' logo, an 'Upgrade' button, a user profile for 'Vishal Singh Negi's Account' in 'Dallas', and a 'VN' icon. The main navigation bar shows 'Projects / THE FITNESS BUDDY / Theftiness.', a 'Share feedback' button, an 'Autosaved 4:25 PM' status, a 'New agent +' button, and a 'Deploy' button.

The 'Build' section on the left contains the following configuration options:

- Configuration:**
  - Framework:** LangGraph
  - Architecture:** ReAct
- Instructions:** A text box containing instructions for the agent to interact naturally, store preferences in Cloudant Lite, manage profiles via App ID Lite, and handle dialog flow with Watson Assistant Lite. It also includes a link to the official Dietary Guidelines for Indians website: <https://www.nin.res.in/DietaryGuidelinesforNINwebsite.pdf>. A link to 'Advanced configuration' is also present.
- Knowledge:** A section with a 'Clear chat' button and a 'Select or create vector index' dropdown.
- Tools:** A section with 'Add a tool' and 'Create custom tool' buttons.

The 'Agent preview' section on the right shows a conversation log:

- User:** 04:26 PM. Provide website for the healthadvisor.
- Theftiness:** 04:26 PM. I'm sorry for any confusion, but as an AI, I don't have real-time access to external databases or the internet to provide specific URLs or websites. However, I can guide you on how to find a reliable health advisor or health-related website. For credible health advice in India, consider visiting:
  - 1. **National Institute of Nutrition (NIN):** This is part of the Indian Council of Medical Research (ICMR). They provide comprehensive information on nutrition and dietary guidelines.
    - Website: <https://www.nin.res.in/>
  - 2. **Ministry of Health and Family Welfare, Government of India:** This site offers a wealth of information on health programs, policies, and guidelines.
    - Website: <https://www.mohfw.gov.in/>
  - 3. **Practo:** An online platform for booking doctor appointments, consulting health experts, and accessing health information.

At the bottom of the interface, there is a text input field with the placeholder 'Type something...' and a 'Send' button. The Windows taskbar at the very bottom shows the date as 04-09-2023 and the time as 16:26.



# Deployment & Preview

- Deploy via IBM Watsonx AI Runtime
- Integrate with web and mobile chatbot interfaces

# Deployment

The screenshot shows a web browser with multiple tabs open. The active tab is titled 'Thefitness. — Thefitness' and displays the URL `dataplatom.cloud.ibm.com/ml-runtime/deployments/882d58d2-7b1f-4f4d-8627-7a9ac7eb0154/chat?space_id=5c654dd6-9706-42d2-b9a9-6a0a42a64d1e&context=wx&flush=true`. The page header includes the 'IBM watsonx' logo, an 'Upgrade' button, and user information for 'Vishal Singh Negi's Account' in 'Dallas'. The main content area shows the deployment status for 'Thefitness' as 'Deployed' and 'Online'. Below this, there are tabs for 'API reference', 'Test', 'Evaluations', and 'Preview', with 'Preview' being the active tab. The chat interface shows a user message: 'I'm feeling low today--any motivational tips to keep me going?'. The model's response is: 'Hi there! I'm sorry to hear you're feeling low. Here are a few motivational tips to help you keep going: 1. **Set Small Goals:** Break down your larger objectives into smaller, manageable tasks. Achieving these small goals can give you a sense of progress and motivation. 2. **Positive Affirmations:** Start your day with positive affirmations. Tell yourself, "I am capable," "I can do this," or "I am strong." 3. **Physical Activity:** Engage in some form of exercise, even if it's just a short walk. Physical activity can boost your mood by releasing endorphins.' At the bottom, there is a text input field with the placeholder 'Type something...' and a send button. The footer of the page contains the same URL as the browser tab.

Deployment spaces / Thefitness / Thefitness. /

Thefitness. Deployed Online

API reference Test Evaluations **Preview**

New chat +

You 04:37 PM

I'm feeling low today--any motivational tips to keep me going?

Thefitness, 04:37 PM

Hi there! I'm sorry to hear you're feeling low. Here are a few motivational tips to help you keep going:

1. **Set Small Goals:** Break down your larger objectives into smaller, manageable tasks. Achieving these small goals can give you a sense of progress and motivation.
2. **Positive Affirmations:** Start your day with positive affirmations. Tell yourself, "I am capable," "I can do this," or "I am strong."
3. **Physical Activity:** Engage in some form of exercise, even if it's just a short walk. Physical activity can boost your mood by releasing endorphins.

Type something...

[https://dataplatom.cloud.ibm.com/ml-runtime/deployments/882d58d2-7b1f-4f4d-8627-7a9ac7eb0154/chat?space\\_id=5c654dd6-9706-42d2-b9a9-6a0a42a64d1e&context=wx&flush=true](https://dataplatom.cloud.ibm.com/ml-runtime/deployments/882d58d2-7b1f-4f4d-8627-7a9ac7eb0154/chat?space_id=5c654dd6-9706-42d2-b9a9-6a0a42a64d1e&context=wx&flush=true)

# API Links

The screenshot shows a web browser with multiple tabs open. The active tab is the IBM Watsonx API reference page for a deployment named 'Thefitness'. The URL in the address bar is `dataplatom.cloud.ibm.com/ml-runtime/deployments/882d58d2-7b1f-4f4d-8627-7a9ac7eb0154/implementation?space_id=5c654dd6-9706-42d2-b9a9-6a0a42a64d1e&context=wx&flush=true`. The page header includes the IBM Watsonx logo, an 'Upgrade' button, and user account information for 'Vishal Singh Negi's Account' in the 'Dallas' region. The breadcrumb trail is 'Deployment spaces / Thefitness / Thefitness.'.

The main content area is titled 'Thefitness.' and shows a 'Deployed' status with an 'Online' indicator. Below this, there are tabs for 'API reference' (selected), 'Test', 'Evaluations', and 'Preview'.

The 'API reference' tab displays 'Endpoints for inferencing'. It lists two types of endpoints: 'Private endpoint' and 'Public endpoint'. Each type has two URLs listed, one for 'ai\_service' and one for 'ai\_service\_stream', both with a version parameter of '2021-05-01'. To the right of the URLs is a 'Bearer <token>' field with an 'IAM' button.

Below the endpoints, there is a link to 'Learn more about the 2021-05-01 version query parameter'. At the bottom, there is a 'Code snippets' section with tabs for 'cURL' (selected), 'Java', 'JavaScript', 'Python', and 'Scala'.

# Future Scope

- Voice Assistant Integration (Alexa, Siri)
- Multilingual workout & diet guidance
- Integration with fitness wearables
- Emergency workout safety alerts
- Offline mode for low connectivity
- AI-based progress tracking
- Fitness community features

# Conclusion

- The Fitness Agent simplifies fitness planning
- Delivers real-time, adaptive, and user-friendly health guidance
- Encourages consistency, motivation, and long-term well-being

# IBM CERTIFICATE

In recognition of the commitment to achieve  
professional excellence



Vishal Singh Negi

Has successfully satisfied the requirements for:

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Getting Started with Artificial Intelligence

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Completion Certificate

This certificate is presented to  
**Vishal Singh Negi**

for the completion of

**Create a Credly account**

(URL-0E39749E2965)  
As indicated by this learner

**Completion date:** 16 Jul 2025 (GMT)

**Learning hours:** 10 mins



**THANK YOU**