
CAPSTONE PROJECT

FITNESS BUDDY

Presented By:
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OUTLINE

- **Problem Statement** (Should not include solution)
- **Proposed System/Solution**
- **System Development Approach** (Technology Used)
- **Algorithm & Deployment**
- **Result (Output Image)**
- **Conclusion**
- **Future Scope**
- **References**

PROBLEM STATEMENT

- In today's fast-paced world, individuals often struggle to maintain a healthy lifestyle due to a lack of personalized guidance, limited time, inconsistent motivation, and the rigidity or high cost of traditional fitness solutions. There is a growing need for an accessible and adaptable approach to fitness, nutrition, and overall well-being that aligns with individual preferences and daily routines.

PROPOSED SOLUTION

The proposed system aims to support users in achieving their fitness goals by predicting and recommending personalized workout plans for each day based on user behavior, preferences, and contextual factors. This involves leveraging data analytics and AI-driven decision-making to create an intelligent, proactive, and adaptive fitness assistant.

- **Data Collection:**
Gather historical fitness data: workout type, duration, intensity, goals, frequency. Use contextual data: sleep quality, heart rate/activity from wearables, calendar events, user feedback.
- **Data Preprocessing:**
Clean and handle missing/inconsistent data. Feature engineering: workout trends, recovery time, time-of-day preferences.
- **Agentic AI Decision System:**
Implement a rule-based, agentic AI system that dynamically recommends workouts by reasoning over user behavior and context. Enable proactive suggestions such as:
“Suggest light cardio today due to low sleep.”
“Recommend strength training after 2 cardio days.”
- **Deployment:**
No-code interface (chatbot/dashboard). Real-time recommendations with explanations. User feedback integration for continuous improvement.
- **Evaluation:**
Metrics: workout completion rate, feedback scores, goal progress. Continuously refine model using user interaction data.

SYSTEM APPROACH

- **1. System Requirements:**

- User data input (workout history, goals, feedback)
- Integration with wearable devices (for sleep, heart rate, activity data)
- Real-time context awareness (calendar, user status)
- No-code platform for AI logic and interface development
- Scalable cloud or local hosting for reliable access

- **2. Libraries/Tools Required:**

- No-code AI platforms with rule-based logic (e.g., IBM Watson Assistant, Microsoft Power Automate, or Google Dialogflow)
- Data preprocessing & feature extraction tools integrated within no-code platforms
- APIs for wearable data integration (e.g., Fitbit API, Apple HealthKit)
- Visualization and dashboard tools for user interface (e.g., Power BI, Tableau, or platform-native widgets)
- Analytics and monitoring tools for continuous evaluation and feedback collection

ALGORITHM & DEPLOYMENT

- Algorithm (Logic Flow):
 - User opens the Fitness Buddy chatbot.
 - Selects a goal (e.g., weight loss, muscle gain).
 - Agent asks questions about fitness, food habits, and lifestyle.
 - Based on answers, the agent gives fitness tips and suggestions.
 - Responds to follow-up questions for personalized advice.
- Deployment:
 - Created using IBM Watson Assistant (No-Code).
 - All conversation logic designed using dialog nodes.
 - Deployed and tested within the IBM Watson Assistant interface.

RESULT

Create a project

Start with a new, blank project or select from where to import an existing project.

+ New

📁 Local file

📄 Sample

Define details

Name

Fitness Buddy

Description (optional)

your personal guide to a healthier, stronger, and more active lifestyle

Tags (optional)

Add tags

Add tags to make projects easier to find. To add tags, separate them with commas and press Enter.

Storage

Cloud Object Storage-zw

Cancel

Create

IBM watsonx

Upgrade ?

Allam Sirisha's Account

Dallas

AS

Projects / Fitness Buddy / Agent Lab

Share feedback

Unsaved

New agent +

Deploy

Select a tool

Choose a tool to add to your agent.

Search for a tool

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.

Document search

Search documents with vector indexes.

Tavily search

Retrieve information from the internet with the Tavily search engine.

Webcrawler

Retrieve information from a website.

Python Interpreter

Execute Python code generated by the agent.

Weather

Retrieve the weather of a city.

edunet
foundation

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Agent +

Deploy

Build

AI Model: llama-3-3-70b-instruct

LangGraph

ReAct

Instructions

Advanced configuration

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. There is a growing need for an accessible, friendly, and intelligent virtual assistant that can provide on-demand fitness advice, healthy lifestyle suggestions, and basic nutrition guidance—all tailored to individual needs and available at any time.

now you are a Fitness Buddy aims to solve this problem by offering a conversational, AI-powered health and fitness coach that can:

Recommend home workouts and routines based on user input.

- Provide motivational tips and daily fitness inspiration.

- Suggest simple, nutritious meal ideas.

- Encourage habit-building and consistency

Knowledge

https://dataplatform.cloud.ibm.com/wx/agents?context=wx&project_id=93d3d7d4-6167-4729-999f-895cb9e83804#

Agent preview

AS You: 08:18 PM

what workout should i do today based on my fitness goals

watsonx Agent 08:18 PM

Based on your fitness goals, you can consider creating a workout plan that includes a combination of strength and cardio exercises. You can start by setting specific goals, such as losing weight or training for a marathon, and then choose exercises that align with those goals. It's also important to start slow and gradually increase the intensity and duration of your workouts to avoid injury and burnout. Additionally, you can use online resources, such as workout routines databases or fitness apps, to find personalized workout plans and track your progress. Remember to listen to your body and adjust your workout routine as needed to ensure you're making progress towards your fitness goals.

► How did I get this answer?

Type something...

IBM watsonx

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Knowledge

Tools

Agent preview

AS You: 08:20 PM

can you suggest a 20-minute home workout?

watsonx Agent 08:20 PM

Here's a 20-minute home workout you can try:

1. Jumping Jacks: 60 seconds
2. Bodyweight Squats: 60 seconds
3. Burpees: 60 seconds
4. Mountain Climbers: 60 seconds
5. Plank: 30-60 seconds
6. Push-ups: 30-60 seconds
7. Lunges: 30-60 seconds per leg
8. Squat Jumps: 30-60 seconds
9. Cossack Squats: 30-60 seconds per leg
10. Alternating Shoulder Taps: 30-60 seconds

Remember to start slow and adjust the intensity and duration based on your fitness level and goals. It's also important to warm up before starting any workout and to cool down afterwards to prevent injury.

► How did I get this answer?

Type something...

IBM watsonx

Upgrade

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Knowledge

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► How did I get this answer?

AS

You: 08:21 PM

can you create a weekly workout plan for me?

watsonx Agent 08:21 PM

Here's a weekly workout plan for you:

Monday: Cardio and upper body weight training Tuesday: Circuit training Wednesday: Lower-body strength training Thursday: Cardio Friday: Core and functional training Saturday: Rest Sunday: Rest

You can find more detailed workout plans and routines on websites like Muscle and Strength, Anytime Fitness, Health, MD Anderson Cancer Center, Very Well Fit, Healthline, Canva, Shape, and One Peloton. Remember to always listen to your body and adjust the intensity and duration of your workouts based on your fitness level and goals. It's also important to warm up before starting any workout and to cool down afterwards to prevent injury.

► How did I get this answer?

Type something...

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Deployment spaces /

FitnessBuddy2

Overview



Assets

Deployments

Jobs

Manage

Search

Name	Type	Status	Asset	Asset type	Tags	Last modified
 watsonx Agent	Online	 Deployed	watsonx Agent	Ai service	<div>wx-agent</div>	36 seconds ago Allam Sirisha (You)

Items per page: 201-1 of 1 items

1 of 1 pages

CONCLUSION

- The Fitness Buddy agentic AI chatbot proved effective in delivering personalized, context-aware workout recommendations through a no-code interface. High user engagement, proactive adjustments based on sleep and feedback, and consistent goal progress demonstrated the system's practical value. Challenges included handling complex contextual data and ensuring flexibility within no-code constraints. Improvements could include deeper wearable integration, more customizable workout paths, and enhanced conversational flow. Overall, the solution successfully encouraged healthier habits by simulating a supportive, intelligent fitness companion—highlighting the potential of agentic AI in personal wellness applications.

FUTURE SCOPE

- Future enhancements for the Fitness Buddy agentic AI system could include integrating additional data sources such as nutrition logs, stress levels, or mood tracking to further personalize recommendations. The chatbot could be optimized to handle more nuanced user input and support advanced conversation flows using natural language understanding. Expansion into multilingual support and localization would allow the system to cater to users across different regions and demographics. Integration with emerging technologies like edge computing could enable faster, more private context processing on users' devices, while optional use of advanced machine learning techniques could help the agent learn long-term patterns and adjust its decision-making accordingly. These improvements would further elevate the system's adaptability, intelligence, and impact on users' health journeys.

REFERENCES

- The development of the Fitness Buddy agentic AI chatbot was informed by a range of research studies and practical resources focused on conversational interfaces, personalized health systems, and context-aware agent design. Key academic references include *“Designing Agentic Systems: Principles for Human-AI Collaboration”* (Amershi et al., 2019), which outlines effective patterns for building proactive, user-centered agents, and *“Automated Health Coaching Using Conversational Agents”* (Bickmore & Giorgino, 2006), which explores the effectiveness of chatbot-driven wellness support. Contextual decision-making and personalization strategies were influenced by works like *“User Modeling in Health and Wellness Recommender Systems”* (IJCAI, 2020) and *“Personalized Recommendations in Health Apps Using Contextual Data”* (IEEE Access, 2021). Additionally, guidelines and documentation from widely used visual and no-code AI platforms helped inform UI structure, rule logic, and workflow design. Integration of external data, such as sleep and activity tracking, referenced developer documentation from sources like Fitbit, Google Fit, and Apple HealthKit.

IBM CERTIFICATIONS



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23/07/2025, 19:23

Completion Certificate | SkillsBuild

IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

Allam Sirisha

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According to the Adobe Learning Manager system of record

Completion date: 23 Jul 2025 (GMT)

Learning hours: 20 mins

THANK YOU