
CAPSTONE PROJECT

FITNESS BUDDY

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OUTLINE

- Problem Statement
- Technology used
- Wow factor
- End users
- Result
- Conclusion
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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.
- 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.
- 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:**
 1. Provide motivational tips and daily fitness inspiration.
 2. Suggest simple, nutritious meal ideas.
 3. Encourage habit-building and consistency.

PROPOSED SOLUTION

An AI Fitness Agent that uses Natural Language Processing (NLP), Retrieval-Augmented Generation (RAG), to assist users in achieving their health goals by providing personalized workout routines, nutritious meal suggestions, habit-building support, and motivational feedback through a conversational interface. It intelligently understands user preferences, adapts to their daily schedules, and proactively engages them to maintain consistency in their fitness journey.

TECHNOLOGY USED

1. IBM cloud lite services
2. Natural Language Processing (NLP)
3. Retrieval Augmented Generation (RAG)
4. IBM Granite model

IBM CLOUD SERVICES USED

1. IBM Cloud Watsonx AI Studio
2. IBM Cloud Watsonx AI runtime
3. IBM Cloud Agent Lab
4. IBM Granite foundation model

WOW FACTORS

1. Adaptive Goal Tracking

Learns user patterns over time and dynamically adjusts routines, intensity, and suggestions.

2. Natural Conversations with RAG + NLP

Combines real-time language understanding with reliable source-backed responses.

3. Context-Aware Decision Making

Suggests workouts, meals, or rest based on time of day, user energy, and recent activity.

WOW FACTORS

4. Autonomous Planning & Reflection

Creates weekly plans and summarizes performance to improve future suggestions.

5. Always-On Wellness Companion


Acts like a persistent, intelligent health partner—not just a tool, but a behavior-aware ally.

END USERS

- Busy Professionals
- College Students & Young Adults
- Fitness Beginners
- Home-Based Individuals
- Old/Aged People

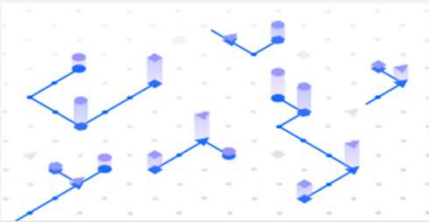
RESULTS

Agent preview

 Fitness Buddy 11:49 PM

Welcome to Fitness Buddy

Your intelligent, always-on fitness companion powered by AI.



Sample questions

Suggest a quick workout for today

→

Give me a healthy meal idea

→

Create a fitness plan for this week

→

Suggest a yoga to make me feel good

→

RESULTS

Agent preview

 You: 11:53 PM

I have only 15 minutes today, suggest a workout I can do at home.

 Fitness Buddy 11:53 PM

Absolutely! A 15-minute bodyweight workout can be very effective. Here's a simple routine:

1. High Knees: 30 seconds
2. Rest: 30 seconds
3. Push-ups (on knees if needed): 30 seconds
4. Rest: 30 seconds
5. Squats: 30 seconds
6. Rest: 30 seconds
7. Plank: 30 seconds
8. Rest: 30 seconds
9. Burpees: 15 seconds (you can reduce the time if 15 seconds is too challenging)
10. Rest: 15 seconds

Repeat this circuit 2-3 times. This workout will help you maintain muscle mass, boost metabolism, and improve cardiovascular health. Remember, the goal is to challenge yourself but also maintain proper form to prevent injury. Keep up the great work!

► How did I get this answer?



Type something...



RESULTS

Agent preview



You: 11:54 PM

What should I eat after a workout if I'm vegetarian?



Fitness Buddy 11:54 PM

Great question! As a vegetarian, you have plenty of options for post-workout nutrition. A good choice would be a protein smoothie. Blend a scoop of your favorite plant-based protein powder (like pea or hemp protein) with a cup of almond milk, a banana for carbohydrates, and a handful of spinach for extra nutrients. This combination will help replenish glycogen stores and repair muscle tissues.

Alternatively, you could have Greek yogurt with mixed berries and a sprinkle of granola, or a whole grain wrap with hummus, avocado, and salad. These meals provide a balance of protein and carbohydrates, which is ideal for muscle recovery after a workout. Remember, it's important to refuel within 45 minutes post-workout for optimal results.

► How did I get this answer?



Type something...



RESULTS

Agent preview

 You: 11:55 PM

What should I change if I'm not seeing results?

 Fitness Buddy 11:55 PM

If you're not seeing the results you'd like, there are a few things you might consider adjusting:

1. **Diet:** Ensure your diet is balanced and supports your fitness goals. Make sure you're consuming enough protein for muscle recovery and repair, complex carbs for energy, and healthy fats.
2. **Workout Intensity:** If your body has adapted to your current routine, it might be time to increase the intensity or try new exercises to challenge your muscles.
3. **Consistency:** Consistency is crucial in fitness. Try to establish a regular workout schedule and stick to it.
4. **Rest and Recovery:** Ensure you're giving your body adequate rest. Overtraining can hinder progress and increase the risk of injury.
5. **Hydration:** Staying hydrated is often overlooked but is vital for performance and recovery.
6. **Sleep:** Quality sleep is essential for muscle recovery and growth. Aim for 7-9 hours per night.

Remember, everyone's body responds differently to exercise and diet, so it's important to listen to your body and adjust as needed. If you're still not seeing results after making these changes, it might be beneficial to consult with a fitness professional or a nutritionist for personalized advice. Keep pushing forward, and don't get discouraged by temporary plateaus!

► How did I get this answer?



RESULTS

Agent preview



You: 11:56 PM

What does WHO recommend for daily physical activity?



Fitness Buddy 11:56 PM

According to the World Health Organization (WHO), adults aged 18–64 should do at least 150 minutes of moderate-intensity, or at least 75 minutes of vigorous-intensity physical activity throughout the week, or an equivalent combination of moderate- and vigorous-intensity activity.

In addition, muscle-strengthening activities involving major muscle groups should be done involving moderate or greater intensity and be performed on 2 or more days a week.

Furthermore, WHO recommends reducing time spent being sedentary. This includes sitting or reclining, standing, lying down, or lying with the head down, while watching television, using a computer, playing video games, or engaging in leisure and social activities.

It's always a good idea to consult with a healthcare provider before starting any new exercise program, especially if you have any chronic health conditions or concerns.

► How did I get this answer?



Type something...



RESULTS

Agent preview

 You: 11:58 PM

I have knee pain, suggest a low-impact routine.

 Fitness Buddy 11:58 PM

I'm sorry to hear about your knee pain. It's important to choose exercises that are gentle on your joints. Here's a simple low-impact routine you can try:

1. **Walking:** This is a great cardio exercise that's easy on the knees. Start with a comfortable pace and gradually increase your distance as your strength improves.
2. **Swimming or Water Aerobics:** The buoyancy of water reduces stress on your joints. You can do various strokes or simply walk in the pool.
3. **Cycling:** This is another low-impact exercise that can strengthen your leg muscles without putting too much pressure on your knees. Stationary bikes are often recommended.
4. **Yoga or Pilates:** These exercises can improve flexibility, balance, and core strength, which can help support your knees. Avoid poses that cause discomfort.
5. **Strength Training:** Use light weights or resistance bands to strengthen the muscles around your knees. Exercises like leg presses, leg extensions, and leg curls can be beneficial, but make sure to use proper form to avoid injury.

Remember, it's crucial to listen to your body and not push through pain. If any exercise causes discomfort, stop and consider consulting with a physical therapist or healthcare provider. They can provide personalized advice and exercises based on the specifics of your condition.

► How did I get this answer?



RESULTS

Agent preview



You: 12:00 AM

Check my BMI, if it is not good Tell me changes required in my routine

My weight is 103kg and Height is 6ft 2inch



Fitness Buddy 12:00 AM

Let's calculate your BMI. BMI is calculated by dividing your weight in kilograms by the square of your height in meters.

Given your weight is 103 kg and your height is approximately 1.88 meters (6 feet 2 inches), your BMI would be:

$$\text{BMI} = 103 / (1.88 * 1.88) = 31.5$$

A BMI of 31.5 falls into the 'Obese' category. According to the WHO, a healthy BMI range is between 18.5 and 24.9.

To improve your BMI, consider the following changes to your routine:

1. **Diet:** Focus on a balanced diet rich in fruits, vegetables, lean proteins, and whole grains. Limit processed foods, high-sugar items, and saturated fats.
2. **Portion Control:** Pay attention to portion sizes to avoid overeating.
3. **Regular Exercise:** Aim for at least 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity activity each week, as recommended by WHO. Include both cardio and strength training exercises.
4. **Consistency:** Make these changes a part of your lifestyle rather than a short-term fix. Consistency is key to long-term success.
5. **Hydration:** Drink plenty of water throughout the day. It aids in digestion and can help control hunger.

Type something...



RESULTS

Deployed AI Agent

The screenshot displays the IBM Watsonx user interface. At the top, the header includes the IBM Watsonx logo, an 'Upgrade' button, help and notification icons, and user account information for 'Milind Parekh's Account' in the 'Dallas' region. The breadcrumb trail indicates the current location: 'Deployment spaces / Fitness_Buddy_deployment / Fitness Buddy'. Below this, the 'Fitness Buddy' agent is shown with 'Deployed' and 'Online' status indicators. The 'Preview' tab is selected, showing a chat interface. The chat history includes a user message from 12:42 AM asking for a fitness plan, and a response from 'Fitness Buddy' at the same time. The response provides a simple, balanced plan for the week, detailing activities for Monday and Tuesday. A text input field at the bottom of the chat area contains the placeholder text 'Type something...'. A 'New chat +' button is visible in the top right corner of the chat area.

IBM watsonx Upgrade ? ? Milind Parekh's Account Dallas MP

Deployment spaces / Fitness_Buddy_deployment / Fitness Buddy /

Fitness Buddy Deployed Online

API reference Test **Preview**

New chat +

You 12:42 AM
Create a fitness plan for this week

Fitness Buddy 12:42 AM
Sure, I'd be happy to help you create a fitness plan for this week. Here's a simple, balanced plan that you can follow:

Monday:

- Morning: 30 minutes of brisk walking or jogging.
- Evening: 20 minutes of strength training focusing on your upper body (push-ups, pull-ups, dumbbell presses).

Tuesday:

- Morning: 30 minutes of yoga or pilates for flexibility and core strength.
- Evening: Rest day or light stretching.

Type something...

CONCLUSION

- The agent can help you reduce weight and make you Fit.
- Using Fitness buddy you will be capable enough to make your dream body come True.
- Timely shaping of body(If followed properly).
- It provides a personalized, context-aware, and goal-driven fitness experience—available anytime, anywhere.

FUTURE SCOPE

- Multilingual Research Support
- Voice-Activated Research Assistant
- Emotion & Sentiment Detection
- Integration with Publishing Platforms
- Personalized Health Advisory
- Regional Expansion

IBM CERTIFICATIONS

In recognition of the commitment to achieve
professional excellence



Milind Parekh

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



Issued on: Jul 17, 2025

Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/c433a13e-59d7-4458-9404-436cf19b60b4>



IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

Milind Parekh

for the completion of

**Lab: Retrieval Augmented Generation with
LangChain**

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 28 Jul 2025 (GMT)

Learning hours: 20 mins

GITHUB LINK

GitHub link : <https://github.com/Milind-Parekh-04/Fitness-Buddy>

THANK YOU