CAPSTONE PROJECT

FITNESS BUDDY

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OUTLINE

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- **Technology used**

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PROBLEM STATEMENT

In today's fast-paced world, many individuals struggle to start and maintain a healthy lifestyle due to a lack of personalized guidance, inconsistent motivation, and significant time constraints. Manually sifting through generic fitness plans and conflicting diet advice online is often overwhelming, ineffective, and difficult to sustain.

Proposed Solution:
An AI-powered health and fitness coach, Fitness Buddy, that uses Natural Language Processing (NLP) to understand individual goals, limitations, and preferences. It assists users by generating personalized workout routines, suggesting simple and nutritious meal ideas, providing daily motivational support, and encouraging consistent, sustainable habits.

TECHNOLOGY USED

IBM cloud lite services

Natural Language Processing (NLP)

Retrieval Augmented Generation (RAG)

IBM Granite model

IBM CLOUD SERVICES USED

- IBM Cloud Watsonx AI Studio

- IBM Cloud Watsonx AI runtime

- IBM Cloud Agent Lab

- IBM Cloud Object Storage

- IBM Granite foundation model

WOW FACTORS

This agent will empower users to take control of their health, build sustainable habits, and achieve their fitness goals by making personalized guidance accessible and motivation constant.

Unique features:

Creates unique workout and nutrition suggestions based on real-time conversations about goals, mood, time, and available equipment.

Recognizes user sentiment (e.g., frustration, success) and provides supportive, non-judgmental encouragement to build confidence and consistency.

Answers vague questions appropriately by asking relevant questions in order to provide accurate response

END USERS

- Fitness Beginners and Enthusiasts

- Health-Conscious Individuals

- Gym Instructors Clients (as a supplementary tool)

RESULTS

Agent preview

JB You: 03:59 PM

Give me a workout.

Fitness Buddy 03:59 PM

Absolutely, let's create a personalized workout for you! To make sure it fits your needs perfectly, could you please tell me:

1. What's your main fitness goal—losing weight, building muscle, boosting endurance, or just staying active?

2. How would you describe your current fitness level—beginner, intermediate, or advanced?

3. How much time can you commit per workout session (e.g., 15, 30, or 45 minutes)? How many days a week?

4. Do you have any equipment available—like dumbbells, resistance bands, or a yoga mat? If not, no worries at all!

5. Are there exercises you love or dislike? Any injuries or limitations I should know about?

Once I have this information, I can provide a custom workout plan for you.

JB You: 04:05 PM

I missed my workout yesterday and I feel guilty

Fitness Buddy 04:05 PM

It's completely okay to miss a workout sometimes! Don't feel guilty—it's all part of the journey. Life happens, and it's important to be kind to yourself. What matters most is that you're committed to getting back on track.

Let's focus on today. How about we start with a gentle 10-minute stretching session to help relax your body and mind? This can be a great way to ease back into your routine without adding pressure.

Remember, progress isn't linear. Every day is a new opportunity to move forward, and consistency is key. Would you like some suggestions for a light workout today to help you get back into the swing of things?

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RESULTS

JB You: 04:09 PM

I was doing those lunges and I felt a sharp pain in my knee.

Fitness Buddy 04:09 PM

I'm sorry to hear that you experienced pain during your workout. It's crucial to listen to your body, and sharp pain is a clear signal to stop. Given your knee issue, lunges might be too intense at this time. Let's modify the plan to avoid further discomfort.

How about we replace lunges with seated leg presses? This exercise targets similar muscles (quads, glutes, hamstrings) but is kinder to the knee joint. You can use a resistance band for this exercise if you have one.

Here's how to do a seated leg press with a resistance band:

1. Sit on a chair or bench with your back straight.
2. Loop the resistance band around your feet and hold the ends in your hands.
3. Extend your legs in front of you, keeping some tension on the band.
4. Press your feet outward against the resistance of the band, then bring them back in.

Perform 3 sets of 10-12 reps. Remember, the key is to keep the movement controlled and avoid locking your knees.

If you continue to experience pain, please consult with a healthcare professional or a physical therapist to ensure you're exercising safely.

Let me know if you have any other questions or if there's anything else I can assist you with today.

JB You: 04:18 PM

what should I have in my breakfast to maintain a bulk body

Fitness Buddy 04:18 PM

Great question! Breakfast is an important meal, especially when you're aiming to maintain a bulky physique. It kickstarts your metabolism and provides the energy and nutrients needed for your day, including supporting muscle growth and recovery. Here are some ideas for a bulk-friendly breakfast:

1. **Protein-Packed Smoothie:** Blend a scoop of whey protein (or a plant-based alternative if you're vegetarian), a banana, a handful of spinach, a tablespoon of almond butter, and enough almond milk or water to reach your desired consistency. This provides a good balance of protein, carbs, and healthy fats.

2. **Greek Yogurt with Fruit and Nuts:** Greek yogurt is high in protein. Top it with a variety of fruits for additional carbs and fiber, and add a sprinkle of nuts for healthy fats and extra protein.

3. **Oatmeal with Protein:** Cooked oats with protein powder, a scoop of nut butter, and your choice of fruits or nuts. Oats provide complex carbs for sustained energy, while the protein and nut butter add to the protein content.

4. **Whole Grain Toast with Avocado and Egg:** Whole grain bread provides complex carbs, avocado offers healthy fats and fiber, and eggs contribute a good amount of protein.

5. **Quinoa Porridge:** Cook quinoa with almond milk and sweetener of your choice (like honey or a bit of maple syrup), then top with nuts and fruits. This is a great plant-based option that's high in protein and fiber.

Remember, the key is to include a good balance of macronutrients—protein, carbs, and fats—in your breakfast to support your bulking goals. Adjust portion sizes based on your specific caloric needs and how it makes you feel.

And don't forget to pair this nutritious breakfast with your regular workout routine for optimal results. Let me know if you need more ideas or any other assistance with your fitness journey!

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RESULTS

Deployed AI Agent

CONCLUSION

- The agent can generate detailed workout and diet plans based on the user inputs.

- It saves time by automating repetitive tasks like planning daily workouts and tracking performance metrics.

- The agent supports the user by not only guiding them with their workouts and diet but it also keeps them motivated too.

FUTURE SCOPE

- Smart Calendar and Schedule Integration

- Computer Vision for Workout Form Correction

- Wearable or Health App Integration

- Audio Guided Workouts

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GITHUB LINK

- Make sure that there should be readme file

IBM CERTIFICATIONS

Credly certificate

(getting started with AI)

In recognition of the commitment to achieve professional excellence

Jerry Britto

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence

Issued on: Jul 18, 2025
Issued by: IBM SkillsBuild

Verify: https://www.credly.com/badges/887b8607-010e-4b5a-b3cb-ad7ab02efc0c

IBM CERTIFICATIONS

RAG LAB Certificate

IBM SkillsBuild Completion Certificate

This certificate is presented to

Jerry Britto

for the completion of

Lab: Retrieval Augmented Generation with LangChain

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 19 Jul 2025 (GMT)   **Learning hours:** 20 mins

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THANK YOU

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