

IBM AICTE PROJECT

FITNESS BUDDY

Presented By:

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**College Name & Department : Computer Science and
Engineering, NSS College of Engineering, Palakkad, Kerala**

OUTLINE

- Problem Statement
- Technology used
- Wow factor
- End users
- Result
- Conclusion
- Git-hub Link
- Future scope
- IBM Certifications

PROBLEM STATEMENT

Many people struggle to maintain a healthy lifestyle due to:

- Lack of personalized fitness advice
- Time constraints & low motivation
- Rigid or expensive fitness plans
- Limited access to adaptable home routines

Proposed Solution – Fitness Buddy

A conversational Agentic AI assistant powered by IBM Granite, offering:

- Tailored home workout plans
- Quick, healthy meal suggestions
- Daily motivation & habit-building tips

anytime/anywhere.

TECHNOLOGY USED

IBM Cloud lite services

Natural Language Processing (NLP)

IBM Granite model

IBM CLOUD SERVICES USED

- IBM Cloud WatsonX AI Studio
- IBM Cloud WatsonX AI runtime
- IBM Cloud Agent Lab
- IBM Granite foundation model

WOW FACTORS

➤ **Agentic AI Integration**

Utilizes IBM's Granite large language model to simulate an intelligent, goal-driven virtual fitness coach capable of dynamic, context-aware interactions.

➤ **Personalized Wellness Guidance**

Delivers tailored home workout routines, nutritional suggestions, and motivational coaching based on individual user inputs and preferences.

➤ **Conversational User Experience**

Implements a natural-language chat interface, enhancing usability and making health guidance more accessible and engaging for all users.

➤ **Cloud-Native & Serverless Architecture**

Deployed using IBM Cloud Functions, ensuring scalability, zero server maintenance, and real-time availability without infrastructure overhead.

➤ **Modular & Extensible Design**

Built with future integrations in mind—can be extended to include habit tracking, user progress monitoring, reminders, and wearable sync.

➤ **Efficient Use of IBM Watsonx.ai**

Demonstrates optimal prompt engineering within WatsonX.ai to simulate distinct expert roles (trainer, nutritionist, motivator) in a unified assistant.

➤ **Inclusive and Practical Application**

Addresses a real-world need by providing an accessible, low-cost, and adaptive fitness solution for users with time, space, or resource limitations.

END USERS

- Students and Young Professionals
- Remote Workers and Freelancers
- Health-Conscious Beginners
- Budget-Constrained Users
- General Public Seeking Home-Based Wellness

RESULTS

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Projects / Fitness_Buddy / FitnessBuddy

Share feedback β

Autosave on

New agent +

Deploy

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Agent preview

FitnessBuddy 08:01 PM

Welcome to FitnessBuddy

I'm your personalised fitness and nutrition coach providing workout plans, meal ideas and much more!



Sample questions

Give me a quick 30 minute workout to be done at home

Can you provide meals which are high in protein

Give a few motivational quotes which can inspire me to workout

Provide a weekly workout plan for beginners

Type something...

RESULTS - Deployed

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of will." - Vince Lombardi

Remember, every workout is a step towards your goals. Keep pushing, and these quotes will be there to inspire you along the way!

You 06:48 PM

Provide a weekly workout plan for beginners

FitnessBuddy 06:48 PM

Sure, here's a beginner-friendly weekly workout plan for you:

Title: Beginner's Weekly Workout Plan (30-45 mins, 3-4 times a week)

Day 1 - Full Body

- Warm-up: 5 mins (light cardio like marching in place or slow jogging)
- Squats: 2 sets of 12 reps
- Push-ups (on knees if needed): 2 sets of 8-10 reps

Type something... ▶

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- Squats: 2 sets of 12 reps
- Push-ups (on knees if needed): 2 sets of 8-10 reps
- Seated Dumbbell Row (if you have dumbbells): 2 sets of 10 reps per arm
- Plank: 2 sets of 20 seconds hold
- Cool down: 5 mins (stretching)

Day 2 - Rest or Light Activity

- Consider a gentle walk, yoga, or stretching to promote recovery.

Day 3 - Full Body

- Repeat Day 1 routine.

Day 4 - Rest or Light Activity

- Consider a gentle walk, yoga, or stretching to promote recovery.

Day 5 - Full Body

- Warm-up: 5 mins (light cardio)
- Step-ups: 2 sets of 10 reps per leg

Type something... ▶

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of will." - Mahatma Gandhi

- Step-ups: 2 sets of 10 reps per leg
- Dumbbell Bench Press (if you have dumbbells): 2 sets of 10 reps
- Seated Cable Row (if available at a gym): 2 sets of 10 reps per arm
- Bicycle Crunches: 2 sets of 15 reps per side
- Cool down: 5 mins (stretching)

Day 6 & 7 - Rest

- Allow your body to recover for optimal muscle growth and strength development.

Tips:

- Prioritize form over speed or weight.
- Increase reps or sets as you get stronger.
- Listen to your body and adjust as needed.

Remember, consistency is more important than intensity. Keep up the good work, and you'll see progress over time!

Motivational Quote: "Strength does not come from physical capacity. It comes from an indomitable will." - Mahatma Gandhi

Type something... ▶



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Tips:

- Maintain proper form to prevent injuries.
- Adjust the sets and reps based on your fitness level.
- Stay hydrated and take short breaks if needed.

Remember, consistency is key. Keep pushing, and you'll see progress!

Motivational Quote: "The first step towards getting somewhere is to decide that you are not going to stay where you are." - J.P. Donleavy

V

You 06:45 PM

can you provide me tips for cooking

🗣️

FitnessBuddy 06:45 PM

I'm not programmed to guide you in cooking tips, but I can certainly help with nutrition and meal planning. If you're looking for nutritious meal ideas, I can certainly assist with that. What dietary preferences or restrictions do you have?

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V

You 06:45 PM

can you help me with programming

🗣️

FitnessBuddy 06:45 PM

I'm sorry, but I am not programmed to guide you in programming. My expertise lies in fitness, nutrition, and providing motivational content. If you have any questions related to these areas, feel free to ask!

V

You 06:46 PM

Can you provide a list of meals which are high in protein

🗣️

FitnessBuddy 06:46 PM

Of course! Here are three high-protein meal ideas tailored for you:
Title: High-Protein Meal Ideas
1. Grilled Chicken with Quinoa Salad

Type something...

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1. Grilled Chicken with Quinoa Salad

- Ingredients:** Grilled chicken breast, cooked quinoa, mixed greens, cherry tomatoes, cucumber, avocado, lemon juice, olive oil, salt, and pepper.
- Instructions:** Grill the chicken until fully cooked. Mix all salad ingredients together, slice the chicken, and top the salad with grilled chicken slices. Drizzle with lemon-olive oil dressing.
- Nutrition Note:** Quinoa is a complete protein and fiber-rich, while chicken provides lean protein.

2. Tofu Stir-Fry with Brown Rice

- Ingredients:** Extra-firm tofu, mixed vegetables (bell peppers, broccoli, carrots), low-sodium soy sauce, garlic, ginger, brown rice.
- Instructions:** Sauté garlic and ginger, add tofu and vegetables, stir-fry until cooked. Serve over brown rice.
- Nutrition Note:** Tofu is an excellent source of plant-based protein, and brown rice provides additional protein and fiber.

3. Greek Yogurt Parfait with Nuts and Seeds

- Ingredients:** Greek yogurt, mixed berries, chia seeds, pumpkin seeds, honey (optional).
- Instructions:** Layer Greek yogurt, berries, and top with chia seeds and pumpkin seeds. Drizzle honey if desired.

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2. Tofu Stir-Fry with Brown Rice

- Ingredients:** Extra-firm tofu, mixed vegetables (bell peppers, broccoli, carrots), low-sodium soy sauce, garlic, ginger, brown rice.
- Instructions:** Sauté garlic and ginger, add tofu and vegetables, stir-fry until cooked. Serve over brown rice.
- Nutrition Note:** Tofu is an excellent source of plant-based protein, and brown rice provides additional protein and fiber.

3. Greek Yogurt Parfait with Nuts and Seeds

- Ingredients:** Greek yogurt, mixed berries, chia seeds, pumpkin seeds, honey (optional).
- Instructions:** Layer Greek yogurt, berries, and top with chia seeds and pumpkin seeds. Drizzle honey if desired.
- Nutrition Note:** Greek yogurt is high in protein, and chia seeds and pumpkin seeds add extra protein and healthy fats.

Remember, balanced nutrition is essential for fueling your workouts and recovery. Keep up the great work on your health journey!

Motivational Quote: "Let food be thy medicine and medicine be thy food." - Hippocrates

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3. Greek Yogurt Parfait with Nuts and Seeds

- Ingredients:** Greek yogurt, mixed berries, chia seeds, pumpkin seeds, honey (optional).
- Instructions:** Layer Greek yogurt, berries, and top with chia seeds and pumpkin seeds. Drizzle honey if desired.
- Nutrition Note:** Greek yogurt is high in protein, and chia seeds and pumpkin seeds add extra protein and healthy fats.

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Motivational Quote: "Let food be thy medicine and medicine be thy food." - Hippocrates

You 06:46 PM

Provide a weekly workout plan for beginners

FitnessBuddy 06:46 PM

Sure, here's a beginner-friendly weekly workout plan for you:

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V You 06:47 PM

Give a few motivational quotes which can inspire me to workout

FitnessBuddy 06:47 PM

Absolutely, here are a few motivational quotes to inspire your workout sessions:

1. "The last three or four reps is what makes the muscle grow. This area of pain divides the champion from someone else who is not a champion." - Arnold Schwarzenegger


2. "You don't have to be great to start, but you have to start to be great." - Zig Ziglar

3. "Success is the sum of small efforts, repeated day in and day out." - Robert Collier

4. "Strong people don't give up, that's why they're strong." - Unknown

5. "The difference between a successful person and others is not a lack of strength, not a lack of knowledge, but rather a lack of will." - Vince Lombardi

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You 06:50 PM

actually i am busy on the weekdays. can you adjust the plan so that the workout is just 30 minutes on weekdays. for weekdays keep the duration same

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FitnessBuddy 06:50 PM

Absolutely, here's an adjusted plan focusing on efficiency for your busy weekdays:

Title: Condensed Weekday Workout Plan (30 mins, 3-4 times a week)

Day 1 & Day 3 - Upper Body Focus

- Warm-up: 5 mins (light cardio)
- Push-ups: 3 sets of AMRAP (As Many Reps As Possible) in 45 seconds
- Dumbbell Bench Press or Push-ups (if no dumbbells): 3 sets of AMRAP in 45 seconds
- Dumbbell Rows or Seated Rows (if available at a gym): 3 sets of AMRAP in 45 seconds
- Plank: 3 sets of 30 seconds hold
- Cool down: 5 mins (stretching)

Day 2 & Day 4 - Lower Body & Core Focus

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Day 2 & Day 4 - Lower Body & Core Focus

- Warm-up: 5 mins (light cardio)
- Squats or Lunges: 3 sets of AMRAP in 45 seconds
- Glute Bridges: 3 sets of 15 reps
- Bicycle Crunches: 3 sets of AMRAP in 45 seconds
- Cool down: 5 mins (stretching)

Day 5 - Full Body

- Warm-up: 5 mins (light cardio)
- Step-ups: 2 sets of 10 reps per leg
- Dumbbell Bench Press or Push-ups: 2 sets of 10 reps
- Seated Cable Row or Dumbbell Row: 2 sets of 10 reps per arm
- Plank: 2 sets of 30 seconds hold
- Cool down: 5 mins (stretching)

Weekend - Rest or Light Activity

➤ Prioritize a longer walk, hike, or gentle yoga session to promote recovery.

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Cool down: 5 mins (stretching)

Weekend - Rest or Light Activity

- Consider a longer walk, hike, or gentle yoga session to promote recovery.

Tips:

- AMRAP (As Many Reps As Possible) within the 45-second window pushes you without needing to count reps.
- Adjust sets and reps based on your fitness level and available equipment.
- Always prioritize form to prevent injuries.

Remember, even shorter, consistent workouts can lead to significant improvements over time. Keep pushing, and you'll reach your fitness goals!

Motivational Quote: "The first step towards getting somewhere is to decide that you are not going to stay where you are." - J.P. Donleavy

► How did I get this answer?

🔄

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You 06:51 PM

also include workouts on one of the weekends

FitnessBuddy 06:51 PM

Absolutely, here's the updated plan with a weekend workout:

Title: Weekend Workout Plan (30 mins)

Saturday or Sunday - Active Recovery

- Warm-up: 5 mins (light cardio like brisk walking or cycling)
- Bodyweight Circuit (30 mins):
 - Jumping Jacks: 3 sets of 20 reps
 - Push-ups: 3 sets of 8-10 reps (on knees if needed)
 - Squats: 3 sets of 15 reps
 - Plank: 3 sets of 30 seconds hold
 - Lunges: 3 sets of 10 reps per leg
 - Cool down: 5 mins (stretching)

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- Cool down: 5 mins (stretching)

Tips:

- This workout combines active recovery with strength training to keep your body moving and engaged without being overly strenuous.
- Adjust the sets and reps based on your fitness level and how you feel that day.
- Listen to your body and rest if needed.

Remember, rest and recovery are crucial for muscle growth and injury prevention. Enjoy your weekend workout and the progress it brings!

Motivational Quote: "Rest when you're weary. Refresh and renew yourself, your body, your mind, and your spirit." - Ralph Marston

Keep up the great work on your fitness journey!

How did I get this answer?

Type something...

CONCLUSION

- The AI agent simulates an intelligent fitness coach by leveraging IBM's Granite foundation model through Watsonx.ai.
- It uses prompt engineering to dynamically switch roles—trainer, nutritionist, and motivator—based on user intent.
- The agent delivers context-aware, personalized responses that adapt to user goals, fitness level, and preferences.
- It demonstrates the power of Agentic AI in providing real-time, on-demand wellness guidance in a conversational format.

FUTURE SCOPE

- User Profiling and Progress Tracking
- Multi-Modal Input and Output
- Habit-Building and Smart Reminders
- Integration with Wearables and Health Apps
- Gamification for Motivation
- Localized and Multilingual Support
- AI Personalization Enhancements

IBM CERTIFICATIONS

Getting
Started with
Artificial
Intelligence

In recognition of the commitment to achieve
professional excellence



V Deepak

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



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According to the Adobe Learning Manager system of record

Completion date: 24 Jul 2025 (GMT)

Learning hours: 20 mins

RAG Lab

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GITHUB LINK

- <https://github.com/VDeepak05/Fitness-buddy1>



THANK YOU