AI Fitness Coach Push-up Counter-chatbot

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Abstract- In our current lifestyle, many students and working professionals struggle with physical inactivity. Regular exercise is important for both physical and mental health. However, people often skip workouts due to lack of motivation, poor guidance, or not having enough time. This project suggests an AI-based Fitness Coach that can automatically detect and count push-ups using computer vision techniques. The system captures real-time body movements with a camera and checks the posture using pose detection algorithms. It counts how many push-ups a user does and offers real-time feedback through a chatbot interface. This project helps users perform exercises correctly, lowers the need for a personal trainer, and promotes a healthy lifestyle using smart technology.

Index Terms- Artificial Intelligence, Computer Vision, Fitness Tracking, Push-Up Counter, Chatbot System

I.INTRODUCTION

The digital age has caused a situation where people spend most of their lives seated in front of computer monitors and television sets, resulting in unhealthy lifestyles. Sedentary lifestyles lead to obesity, stress, and a host of diseases. Exercise is obligatory; however, most people lack proper instruction and motivation to exercise regularly.

With the advent of Artificial Intelligence and Machine Learning, it has now become possible to track physical movements using cameras and smart algorithms. An AI-based fitness system has the capability to interpret the movement of the human body and give immediate feedback. This proposed project aims to design an AI-based push-up counter that assists the user in performing their tasks correctly while monitoring their performance.

The system is meant to fill the gap between traditional forms of exercise and new smart technologies.

II.EXISTING SYSTEM

- Most fitness tracking applications rely on manual input, where users enter the number of push-ups performed.
- Traditional fitness apps do not check body posture, which can lead to incorrect exercise execution.
- Many systems require personal trainers, which increases cost and is not affordable for all users.
- Existing fitness solutions provide limited or no real-time feedback during workouts.
- Wearable devices used for fitness tracking are often expensive and not easily accessible to students.
- Manual counting of push-ups can result in human errors and inaccurate tracking.
- Most applications lack AI-based movement detection and posture validation.
- Existing systems offer less motivation, as feedback is not instant or personalized.