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Research Paper on Fitness Mantra

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ABSTRACT –

In the dynamic landscape of modern health and fitness, Fitness Mantra emerges as a Ground breaking mobile application designed to revolutionize the way individuals approach their wellness journeys. This innovative fitness app leverages cutting-edge technologies to offer a comprehensive and personalized experience, catering to users with diverse fitness goals and preferences. Fitness Mantra employs advanced artificial intelligence algorithms to analyze user data, including fitness levels, preferences, and health metrics. This information is utilized to generate tailored workout plans and nutrition recommendations, ensuring a personalized and effective fitness experience. With a sleek design and easy navigation, users can effortlessly explore a myriad of features, from workout routines to progress tracking, making their fitness journey enjoyable and straightforward. Fitness Mantra integrates state-of-the-art tracking capabilities to monitor users' physical activities and nutrition intake.Users can connect with like-minded individuals, share achievements, and participate in challenges, fostering a supportive and motivating environment conducive to sustained fitness progress. Fitness Mantra introduces virtual coaching features, offering users the opportunity to access expert guidance remotely.

Furthermore, the app utilizes performance analytics to assess individual progress, providing actionable insights and recommendations for continuous improvement. The application goes beyond workouts by providing comprehensive nutritional guidance. Fitness Mantra offers personalized meal plans, recipes, and nutritional insights, empowering users to make informed dietary choices aligned with their fitness goals.

Keywords – Classification, Deep learning,Yoga pose Recognition,Computer Vision,Machine Learning

I. INTRODUCTION

It deals with localization of human joints in a picture or video to make a skeletal representation. To automatically detect a person's pose in a picture may be a difficult task because it depends on variety of aspects like scale and determination of the image, illumination variation, background clutter, clothing variations, surroundings, and interaction of humans with the environment.This software tells about the advantages of that pose and the accuracy of the performance. This algorithm draws a skeleton of a person's body by marking all the joint of a body and connects all the joints which provides a stick diagram. Personalized fitness companion that harnesses the power of Machine Learning (ML) to revolutionize your workout experience. Our cutting-edge application is designed to accurately detect and analyze yoga and exercise poses, ensuring that you get the most out of your fitness routine. Experience personalized workouts tailored to your skill level and goals, with ML models adapting to your progress. Receive instant feedback on form and technique, enhancing your performance and reducing the risk of injuries. Access an extensive library of video tutorials, each analyzed by ML algorithms to provide detailed instructions. Track your progress seamlessly, connect with a supportive fitness community, and benefit from AI-powered nutritional guidance. Fitness Mantra is not just an app; it's your intelligent fitness companion, empowering you to achieve your health and wellness goals with confidence. Fitness Mantra community and embark on a journey to a healthier, fitter, and more balanced lifestyle. Elevate your fitness experience with our state-of-the-art ML technology, making every workout a step towards a better lifestyle.

II. METHODOLOGY

Start: The process begins here.

Authenticate with Basic details: Users log in or sign up by providing basic information.

Exercise Details: Users enter details about their exercise routine.

ML Posture Detection: The app uses machine learning to analyze the user's posture during exercises.

Posture Correction Material: Based on the posture detection, the app provides materials or suggestions for posture correction.

Fitness Calculator: The app calculates various fitness metrics.

Calorie Calculator: To estimate the number of calories burned.

BMI Calculator: To calculate the Body Mass Index.

Activity Duration: To plan the duration of activities or exercises.

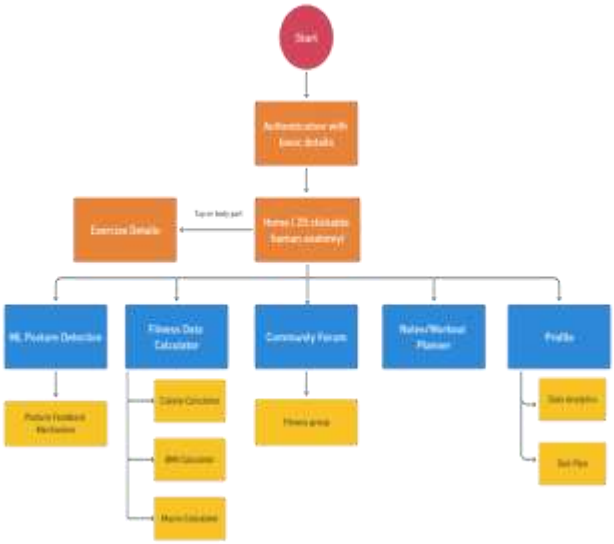

Fig 1 : System Architecture

The Fig1 shows the System architecture of the Fitness Mantra Application.

Home/Office suitable Home exercises: The app suggests exercises that can be done at home or in the office.

Community Forum: A platform within the app where users can interact with each other.

Notes/Workout Planner: Users can take notes and plan their workouts.

Profile: Users can view and edit their profile.

Data Analysis: The app analyzes the user's fitness data.

Goal Plan: Users can set and track their fitness goals.

3rd Party: Integration with third-party services or devices.

This System Architecture outlines the user journey within the app, starting from authentication to accessing various features aimed at improving fitness and engaging with the community. It's designed to help users manage their health and fitness through technology, providing tools for tracking progress and staying motivated.

III. FLOWCHART

Start: The process begins.

User Input: The system asks for the user's age, height, weight, and gender.

Exercise Decision:If the user chooses not to exercise, the flowchart directs them to:

Diet Plan Suggestion: The system suggests a diet plan based on the user's food intake preferences.

If the user chooses to exercise, the flowchart leads to:

Workout Suggestions: The system provides workout recommendations.

Workout Challenge Due?: The system checks if it's time for a workout challenge.

If not, it loops back to the workout suggestions.

If yes, the user is instructed to:

Select Try Option: Choose whether it's their first try or a retry.

Stand Facing Forward Towards Camera: Get ready for pose detection.

Try to Replicate Model Pose: Attempt the pose as per the model's guidance.

Model Predicts Pose: The system uses a model to predict the accuracy of the pose.

Is Pose Correct?: The system evaluates the pose.

If the pose is incorrect, it loops back to the try again option.If the pose is correct, the flowchart proceeds to the final step

Stop: The process ends successfully

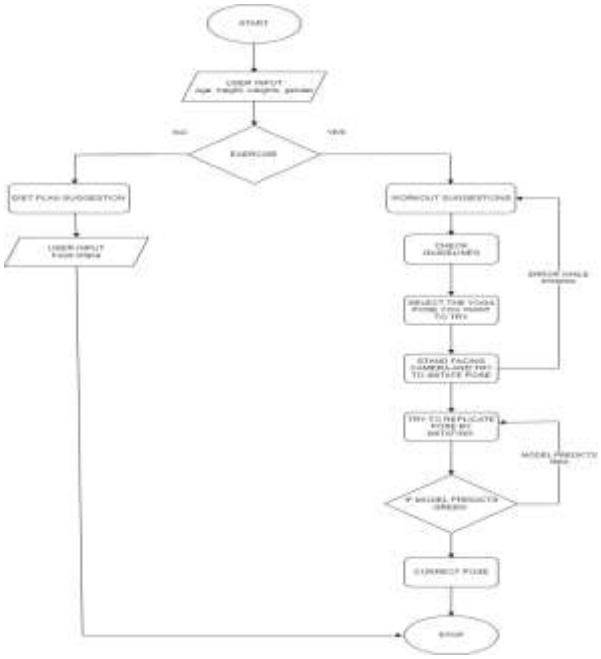

Fig 2 : Flowchart

The Fig 2 flowchart is designed to guide users through a personalized fitness and diet regimen, incorporating interactive elements and artificial intelligence for pose prediction and diet suggestions. It emphasizes the importance of correct exercise form and provides a structured approach to health and fitness goals

IV. CONCLUSION

In conclusion, a fitness App that offers the user what they are looking for will allow them to have a high positive perceived quality and therefore, a better experience during its use, which will result in greater satisfaction in this use.

It helps people struggling with obesity to adopt a healthy workout routine powered by these apps. The app is designed to be user-friendly, interactive, and engaging. It aims to help the user achieve their fitness goals and improve their quality of life.“ Fitness Mantra is more than just an app; it is a lifestyle”.

V. REFERENCES

[1] Yali Liu, Maria Avello, “Status of the Research in fitness apps:A bibliometric Analysis Sep. 2020.

[2] Deepa Bura, “Comparison of different Health and Nutrition Management Apps: A Comprehensive Analysis” Jan. 2022.

[3] Kavitha R, Amala Rosy Mishma J, Charulatha J, Roshini N B, “Live Fit:A Smart Fitness App” May. 2022.

[4] Santhosh Kumar Yadav, Amitojdeep Singh, Abhishek Gupta, “Real time pose recognition using deep learning” Vol 03, pp: 1008-1012, May. 2023.

[5] Marc Pifarre Montala, Jordi Vilaplana, Jordi Mateo Fornes “Fitness app:A Diet Mobile App” Aug. 2020.

[6] Satyam Goyal, Animesh Jain “Yoga pose perfection using deep learning: An Algorithm to estimate the error in Yogic Poses” Journel of Student Research 10(3), Nov. 2021.

[7] Abhishek Sharma, Yash Shah, Yash Agrawal Prateek Jain “Real-time recognition of yoga poses using computer vision for smart health care” Jan. 2022.

[8] Vivek Anand Thoutam, Anugrah Srivastava "Yoga pose estimation and feedback generation using deep learning" Vol 2022, Art. id. 4311350, Mar. 2022.

[9] Utkarsh Bahu Khandi, Dr Shikha Gupta "Yoga pose detection and classification using machine learning techniques" Vol. 03, Dec. 2021.

[10] Arun Kumar Rajendran and Sibi Chakravarthy Sethuraman "Yogic posture recognition using deep learning" Jan. 2023.