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The Future of Wellness: Transforming Lives with PosePlay – Genki

¹Anuj Bhandare, ²Yash Shingan, ³Sanay Patil, ⁴Atharva Dalvi, ⁵Prerana Jalgaonkar

U.G. Student, Department of Information Technology, Vidyalankar Polytechnic, Wadala(E), Maharashtra, India^{1,2,3,4}

Lecturer, Department of Information Technology, Vidyalankar Polytechnic, Wadala(E), Maharashtra, India⁵

ABSTRACT: In a world where prioritizing health can feel like a daunting task, PosePlay - Genki emerges as a beacon of accessibility, breaking down barriers that often hinder individuals from embracing fitness. This innovative app transcends mere convenience, offering a comprehensive approach to well-being. By utilizing pose estimation technology to ensure proper form, providing personalized nutritional guidance through a built-in dietician, and offering constant motivation and support via the LLM Gymbro chatbot, PosePlay - Genki becomes more than just a fitness tool—it becomes a trusted companion on the journey to better health.

Whether users are fitting in a quick workout amidst a hectic schedule or committing to a structured fitness routine, PosePlay - Genki seamlessly adapts to their lifestyle, empowering them to take charge of their fitness journey. With its arsenal of tools and unwavering support, PosePlay - Genki transcends the realm of a typical fitness app, sparking a lifestyle revolution. It redefines the paradigm of prioritizing health and wellness in today's fast-paced world, offering a holistic solution that caters to the diverse needs of individuals striving for a healthier lifestyle.

KEYWORDS: Fitness app, accessibility, holistic approach, pose estimation, personalized guidance, lifestyle revolution.

I. INTRODUCTION

In today's fast-paced world, where prioritizing health often takes a back seat amidst busy schedules and competing demands, PosePlay - Genki emerges as a groundbreaking solution to this common challenge. This innovative fitness application transcends mere convenience, offering a comprehensive approach to well-being that addresses the barriers hindering individuals from embracing fitness. By leveraging advanced pose estimation technology to ensure proper form, delivering personalized nutritional guidance through a built-in dietician, and providing constant motivation and support via the LLM Gymbro chatbot, PosePlay - Genki becomes more than just a fitness tool—it becomes a trusted companion on the journey to better health. With its adaptable nature, PosePlay - Genki seamlessly integrates into users' lifestyles, empowering them to take charge of their fitness journey regardless of their hectic schedules. As it revolutionizes the paradigm of prioritizing health and wellness, PosePlay - Genki offers a holistic solution that caters to the diverse needs of individuals striving for a healthier lifestyle in today's fast-paced world.

Paper is organized as follows. Section II elaborates on PosePlay - Genki's pose estimation technology, integrating morphological operations, connected component analysis, and selection or rejection criteria for form detection, accompanied by a flow diagram. Section III, the methodology, delves into pose estimations using OpenCV with Python and Google's MediaPipe library. In Section IV, experimental results demonstrate the app's efficacy, followed by a comprehensive conclusion in Section V, emphasizing PosePlay - Genki's impact on health and wellness in today's fast-paced world.

II. RELATED WORK

Section II explores prior research and developments in the field of fitness technology, particularly focusing on innovations aimed at enhancing accessibility and effectiveness. Various studies have investigated the integration of advanced technologies, such as pose estimation and chatbot functionality, into fitness applications to provide personalized guidance and support. Notably, PosePlay - Genki stands out as a pioneering solution that transcends conventional fitness apps by offering a holistic approach to health and well-being. Through a review of relevant literature, this section provides insights into the current state-of-the-art in fitness technology and highlights the significance of PosePlay - Genki's innovative approach in addressing the challenges of prioritizing health in today's fast-paced world.

III. METHODOLOGY

In PosePlay-Genki, the Spotter feature utilizes cutting-edge pose detection technology to analyze users' exercise forms in real-time, providing immediate feedback to ensure safe and effective workouts tailored to individual needs. GymBro, integrated within the app and powered by Gemini API, serves as the ultimate fitness companion, offering personalized assistance and guidance. With access to tailored workout plans and nutrition tips, users receive comprehensive support, empowering them to achieve their fitness goals with confidence and efficiency. GymBro revolutionizes the fitness experience by providing unparalleled personalized assistance, offering customized workout plans and nutrition advice to enhance users' fitness routines, fostering empowerment and enjoyment. In addition to GymBro's personalized assistance and guidance, PosePlay-Genki incorporates a built-in dietitian feature. This component utilizes advanced algorithms to offer tailored nutritional guidance, ensuring users receive comprehensive support in both their exercise routines and dietary habits. With access to personalized meal plans and nutritional tips, users are equipped with the tools necessary to optimize their overall health and wellness journey. Additionally, the History Tracker, integrated with the spotter technology, meticulously monitors users' progress, offering insightful feedback and guiding them through exercises with precision, motivating them to push further towards their fitness goals with each session.

IV. EXPERIMENTAL RESULTS

Figure 1 represents the Dashboard page (Fig a) of PosePlay-Genki, the central hub allowing users to access various components, including Workout (Fig b), GymBro (Fig c), Dietician (Fig d), and History Tracker (Fig e). These sections offer tailored exercise routines, personalized assistance, nutritional guidance, and progress tracking, empowering users through their fitness journey within the app.

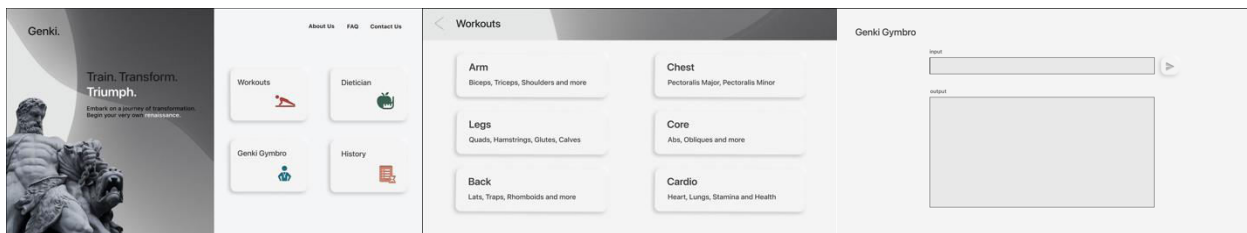


Fig.(a) Dashboard page

Fig.(b) Workouts Section

Fig.(c) GymBro Companion

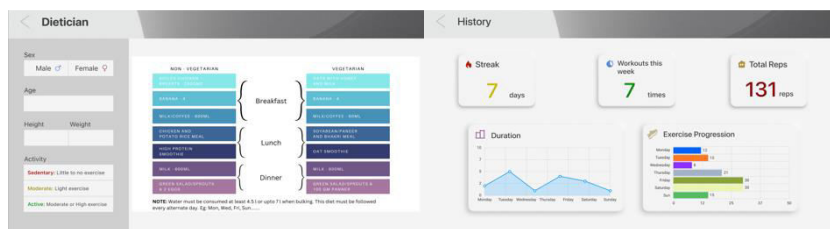


Fig.(d) Dietician Feature

Fig.(e) History Tracker

Fig. 2. Represents the various workout starting pages such as, Bicep Curls (Fig a), Hammer Curls (Fig b), Pushups (Fig c), Leg Raises (Fig d) and finally, Squats (Fig e) from where user can start their spotter session.

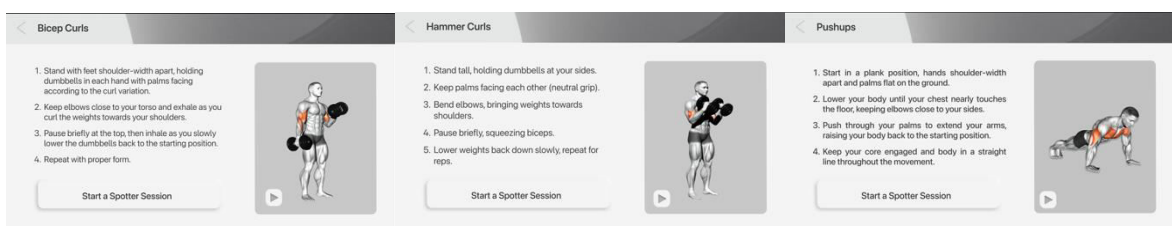


Fig (a) Bicep Curls session page

Fig (b) Hammer curls session page

Fig (c) Pushups session page

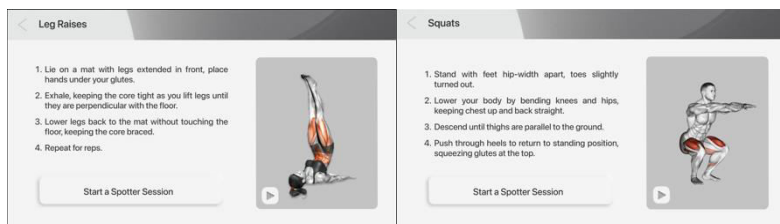


Fig (d) Leg raises session page

Fig (e) Squats session page

Fig. 3. Workout Section (a) Selecting Arm workout (b) Selecting Bicep curls (c) Description about the workout and starting spotter section (d) Started Spotter session (e) Doing workout and spotter counting the correct repetition.

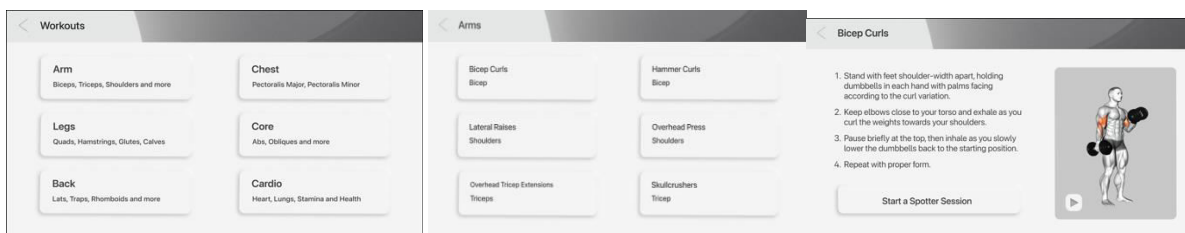


Fig.(a)Workout Section

Fig.(b) Arms section

Fig. (c) Bicep Curls Section

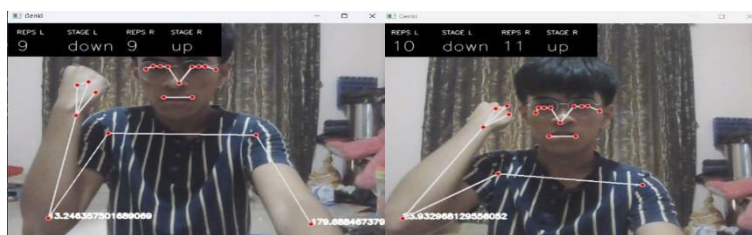


Fig.(d) Spotter Session

Fig.(e) Rep Count Increase

The Spotter feature in PosePlay-Genki leverages advanced technology for precise measurement of users' exercise form coordinates (Fig d). This accuracy enables the system to provide immediate feedback during workouts (Fig e), ensuring users maintain proper form. By analyzing real-time data with precision, the Spotter feature enhances the effectiveness and safety of users' exercise routines...

VI. CONCLUSION

In conclusion, PosePlay-Genki presents a pioneering solution to the challenge of prioritizing health in today's busy world. By integrating advanced pose estimation technology, personalized nutritional guidance, and constant support from GymBro, the app offers a comprehensive approach to well-being. Through experimentation, PosePlay-Genki has demonstrated its efficacy in enhancing fitness routines and empowering users to take control of their health amidst hectic schedules. As we move forward, PosePlay-Genki remains poised to revolutionize the paradigm of health and wellness, making significant strides in promoting healthier lifestyles in our fast-paced society.

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