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Virtual Gym for Yoga Application

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ABSTRACT –Recently, we can see that people have become really lazy and sedentary in terms of lifestyle. And the coronavirus has just aggravated this issue. With help of mobile and internet, nowadays, fitness apps have had a really life changing experience on people's exercise behaviours. The new exercising apps promote people's exercise behaviour and encourage people to work out regularly. Fitness applications nowadays are emerging and the pandemic has further helped the usage of these applications.

1. INTRODUCTION

Yoga is an ancient practice that can be traced back to the early 3000BC in India. A surge of usage of smartphone users in the last decade can be seen nowadays. Our Virtual Gym enables users/enthusiasts to workout at home on their devices without any hassle. It is quite surprising how yoga has a better experience and high satisfaction rates can improve willingness to keep using yoga apps. About 75% of investment in healthcare is spent on lifestyle related chronic conditions like cardiovascular diseases, type 2 diabetes, obesity, and cancer. Clinical studies show that nearly 60% of the people are unaware about the diseases or health problems they are having. Nowadays people are less concerned about their health.

Yoga is an ancient practice of spiritual, mental and physical, and all sorts of different deep exercises. Even different clinical studies can prove that practicing yoga can reduce health risks and to improve on psychological healing process. From the beginning of the fourth industrial revolution several years ago, digitalization and the use of the internet in societies continues growing euros, 4.4% of the national GDP, and assuming the creation of 450,000 employees, 2.1% of the total employed population, confirms the great economic and social impact for society. The tremendous growth in the fitness application

market and can be attributed to different aspects such as greater innovations and development in technology. Popularity of e-commerce businesses is increasing especially in developing countries and increase in purchasing power of the average consumer also increases.

Faced with COVID-19, gymnasiums have the challenge of continuing to apply and implement digitization to continue growing and adapting to the new ways for user relationships to grow and nurture. The changes produced by digitalization also affect the management of sports facilities, as well as their relationship with customers. Sports continues to grow and evolves towards a greater organization and professionalization in their strategies, resources, and business processes.

II. LITERATURE SURVEY

Over a few years, the lifestyle of people has become dull/sedentary and the mobile health applications are helping to overcome this situation. The main motivation for the people in the world to practice yoga is to improve their physical and mental states. Virtual Gym applications belong to the mHealth category. However, there are many specific application categories in mHealth, and the existing literature related to user experience design is rarely directed at yoga applications. Yoga is a safe and effective way to reduce blood pressure and even a person's waist who is not into regular workouts. Vijaya Raghavan proposed a smart phone application which makes use of Yoga and music therapy techniques to reduce the mental stress of a human. Their application monitors the EEG reading of the person while he is performing this yoga and music is played for the user through this application in the mobile phone. They claim that their system can restore the calm state of mind of the user during any stressed period. Practicing Yoga can even reduce neck pain as experimented by Kim.

Their results proved that yoga will be beneficial for persons to reduce their neck pain in an efficient and effective manner. Smartphones with internet access has made it easier to download and access mobile health applications. The usage of such exercising apps is on a rise and involves constant exchange of information which allows for users to set their monthly goals and targets, monitor their overall progress, and achieve their goals, at the end of every month. These fitness applications track and monitor the consumers physical activity and give them constant updates on parameters such as number of steps, weight and calories burned which helps them keep a check on their progress. Research was conducted and shown that yoga could play a vital role in a person's bodies and mind. The study claimed that yoga can activate body fat, regulating heart rate, decreases the stress over a person's heart, thus energizing the physical health of men. It is claimed that men performing yoga can improve their interpersonal relationship and improves social adaptability. Because of Quarantine, there were numerous health adversities like stress and depressive episodes due to lack of physical activity, poor diet, and a bad sleeping cycle. Because of lack of resources, people's movement was limited and they were not eating a balanced diet but instead binging on unhealthy foods to counter stress. After COVID-19, it was a must to encourage people to work out or at least eat clean and healthy food.

III. BACKGROUND

Our Virtual GYM can be considered in the health industry category/sector. However, there are many specific application categories in this sector, and the existing literature related to user experience design is rarely directed at yoga application. Mobile apps and Fitness trackers play a key role in supporting healthy behaviours and deliver public health interventions during the pandemic. A survey was conducted at an international level, where people were asked about their health, and their use of technologies during the COVID-19 pandemic.

The fitness apps can be segregated into 4 types:

- Lifestyle Monitoring Applications
- Workout Applications
- Diet and Nutrition Regulation applications
- Medication monitoring apps amongst others

Nowadays, physical activity is very important for everyone and it is said to boost metabolism and it even helps keep weight of a person in check. WHO had recommended in their report (WHO Report, 2020) that people who are not suffering from COVID or showing any respiratory illness in quarantine period were said to indulge in homebased physical activity using mobile fitness applications and video-supported programs. The extensive use of mobile phones and applications has meant that gymnasiums nearby have also implemented their own applications with the aim of generating greater adherence to physical exercise and loyalty to the fitness centre itself. Some benefits of workout/gym applications include motivation, feedback, engagement, goal setting, food alarms, etc.

Key features of a successful GYM APP may include self-monitoring, feedback, social support, personal customization, education, prompting, reminding, and motivating participants.

One of the most common features in any GYM/YOGA application, is the feature of incentives in the form of feedbacks and rewards.

These Virtual Gym consumers have behavioural intentions based on storage, management, and measurement of health data.

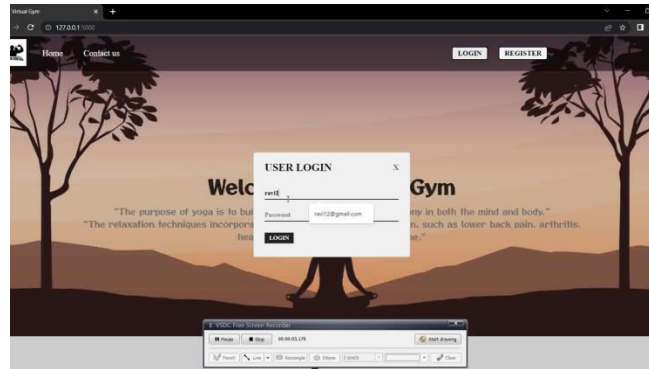
These gym applications need to take into account the intentions of healthy customers and consumers in order to make an effective application. Efficiency is directly proportional to how the user interface is, and this can improve a user's satisfaction.

Regarding the functionality, it is designed to be used to guide personal yoga/exercising sessions with different activities.

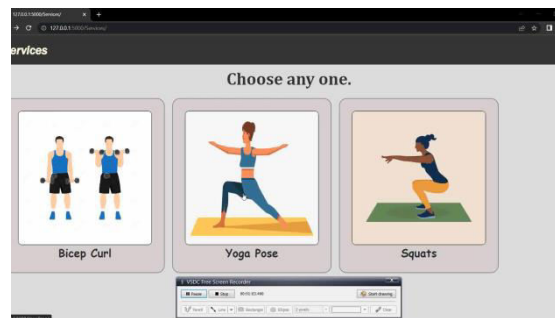
The main elements of the app are yoga activities, squats and an bicep counter.

MAIN FEATURES:

SEAMLESS LOGIN AND SIGN-UP:



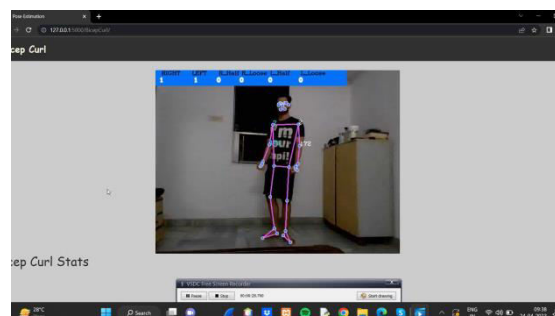
The log in feature allows users to access the application and all its amazing features without the interruption of any useless advertisements.



SERVICES:

1. BICEP CURL
2. YOGA POSE
3. SQUATS

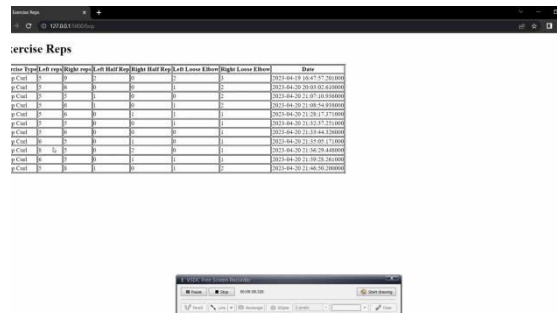
1. *BICEP CURL-*



The Bicep Curl Service enables users to ensure that their curls are accurate. Our application can detect if a user's reps are incomplete or half reps.



Our application has the ability to detect half curls, loose curls on both the right hand as well as the left hand separately. This feature enables users to work on their weaker arm better.

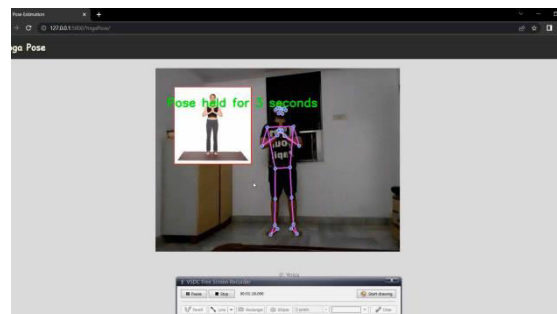


A particular user’s data is saved in Bicep Curl stats section where all the data is saved and can be easily accessed at the click of a single button.

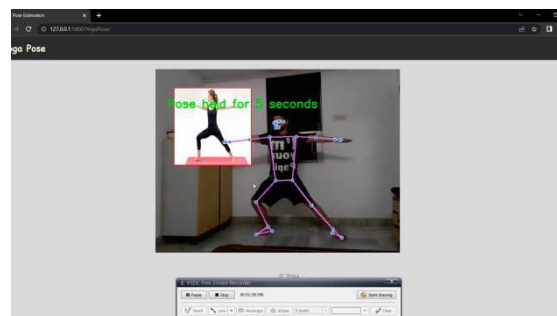
2. YOGA POSE-

There are a total of 4 different yoga poses currently in our application. These poses can later on be increased in amount and/or difficulty.

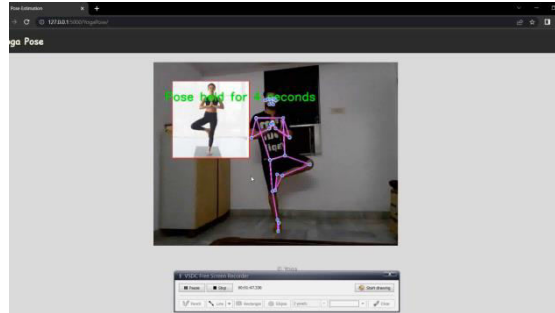
POSE 1-



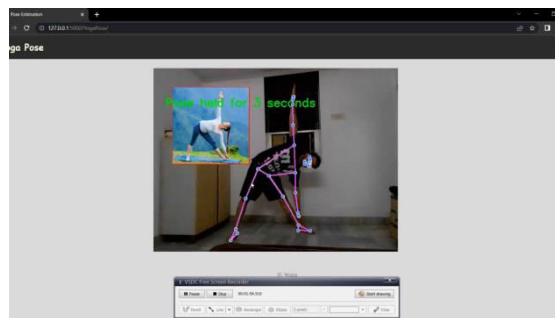
POSE 2-



POSE 3-



POSE 4-



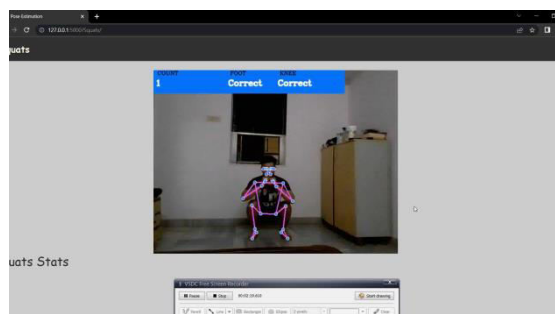
3. SQUATS-

The third and final part of our exercising application consists of an squats feature.

This feature enables users to carry out their squats without any mistake.

Our application can detect whether a particular user's feet are too tight/close or not and corrects the user's posture.

Our application also checks the alignment of a user's knee because a bad knee alignment during squats can hinder/hurt the ligaments in really bad way.



The application can detect if the feet are too close to each other or not.

It even detects whether the knee of the user is too wide or not.

Hence, enabling the user to do a perfect squat.

IV. FUTURE WORK

Regarding future lines of research that give continuity and depth to this study, it would be considered interesting to be able to develop longitudinal studies, with wider temporal spaces, being able to compare between them and thus obtain results with a broader vision of the influence of the use of applications of the own fitness centres on their users.

One of the biggest challenges faced by fitness applications is to protect the user's personal and private information. So, in the future, work can be done on improving security in these applications as they contain sensitive and private data of user's.

Another way this application can improve would be analysis based on a personal client's profile, taking into account the clients age, socio-demographic condition, gender, etc.

In this way we could offer client's their customized workout plans/patterns.

In addition, it would be of great interest to be able to analyse the influence and use of mobile applications according to the business model of the fitness centre, as well as the method of implementation of the mobile application of each fitness centre, assessing its impact on users and their differences in function of the aforementioned business model. Despite the disruption caused by the pandemic, the industry has seen a rapid increase in the number of fitness enthusiasts over the last two years. The industry's resilience and adaptability worked in its favour. A heightened sense of awareness among the people led the industry to innovate and adopt technology-first solutions.

In the future, we will try to make a personalized fitness application that can be integrated with numerous wearable devices and hardware.

V. CONCLUSION

Our study found a positive impact of mobile apps and fitness trackers on physical activity during the pandemic. Though the entire world is moving towards smart technology, we are proposing an application for assisting persons who performs yoga. Though the entire world is moving towards smart technology and IoT based systems, we are proposing an IoT based yoga kit for assisting persons who performs yoga.

There are areas of further improvements in the existing prototype, however majority of initial requirements are full filled, tested and works in a good manner.

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