GYM MANAGEMENT SYSTEM USING AUGMENTED REALITY

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Abstract - *Gyms have become a part of daily routines of many individuals. An app to take care of all the gym related activities would be a useful aid for these individuals. All of the gym related information in one spot. This app will show the gyms nearby to the user along with the joining fees. This will help the user to compare and decide which gym they want to register at. It will keep a record of the attendance of the user.. The user can scan a machine in the gym using this app and it will show them the right way to use the machine. This will be of great aid to the user if they don't know the use of a particular machine. Workout and diet plans will be listed for the users to follow.*

Key Words: *Augmented Reality , Gym Management System, Machine Learning , image Processing ,*

1. INTRODUCTION

Being healthy is a first thing we need to keep in mind. Being fit and healthy gives us energy to do anything. Physical fitness includes diet, exercise and sleep. These three basic things have their own importance in each individual's life. Everyone should be sensible with regard to these for a healthy life. Being fit and healthy gives us power to do anything, anywhere. The aim of the project is to designed and developed the automated system i.e. machine work. System will help members as well as Administrators to keep record of various Operations performed in the gym. Augmented reality (AR) enhances real-world environments with additional virtual information. The presence of AR is spread across our lives in areas such as gaming, study, work, and travel. "Pokémon Go" has increased the AR presence in the lives of its users. The prototype of AR system was introduced in 1968 by Sutherland. Real-world and virtual objects are seamlessly blended in the AR applications. Applications have been widely used for the real-world interactions in humans such as those for work, study, training, relaxation, and travel.

2. LITERATURE SURVEY

The difficulties faced by gym owners for management of the data of the customers because of the manual work can be tiresome. The suggestions already available are the use of database management system for this purpose. The database management system eases the headache of using pen and paper. Paper on Smart Gym Management System by Monir Ahmed &Jannatun Nayeem suggests this model. In this paper they have used features like online payment, web cam integration and face recognition. The required SMS can be sent to the user by making use of APIs.

Augmented reality means the use of a device to place a virtual object into the world which can be viewed through the screen of the device. It combines virtual and actual objects into the real environment. Ryan Alturki and Valerie Gay in their paper Augmented and Virtual Reality in Mobile Fitness Application make use of AR to motivate the user to user to workout. Augmented Reality can be used for variety of applications in the actual world. It can be used for travel guide or windshield displays.

The main survey articles on augmented reality have categorised the key AR technologies and their difficulties. In 1997, Azuma identified sensing errors and registration as two significant issues. An accurate registration of virtual objects in the actual world requires an accurate tracking of the viewpoint and locations of the target objects. The development of an AR system can be attained with a computational framework like the ARToolkit. In 2010, Krevelen et al. introduced various types of user interface and interaction through their survey paper. The interest in, information management , dynamic scene generation,natural interfaces, , and mobile portability information management has rapidly increased.

3. PROPOSED WORK

3.1 Problem Definition

Health is the most vital part of a happy life. A healthy life can be obtained by regularly exercising and proper balanced diet. Currently, there is no dedicated platform for gym users. The manual documentation of the current gym system is time consuming. There are no softwares

available to scan and display the exercises that can be performed on the gym equipments. This feature can be useful when the user wants to perform exercises but there is no guidance available.

3.2 Existing System

An Existing framework alludes to the framework that's being taken after till presently. The exercise center is working physically. The current framework is time expending additionally it is exceptionally expensive, since it include the printed material. To physically handle the framework was exceptionally troublesome errand. But now a days computerization made simple to work .why the current system have to be computerized:

1.To diminish the load of paper work.

2.To spare time administration for recording points of interest of each member and work.

3.every work/task /records within the existing framework is done on paper manually which takes much more time.

4.When everything is done physically there are always chances of human error.

3.3 Proposed system

We are planning to make a dedicated app for gym which will make use of   Augmented Reality to scan the machine and which shows how that machine works. Our App will make all functionality easier for both owners and members, and members may not need a trainer unless you are planning to become a professional bodybuilder. You will basically need a Smartphone, either android or IOs.

3.4 Augmented Reality

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In AR physical reality can gotten to be improved through the extra data that computers can create in genuine time. There are numerous apps with AR highlights created for different purposes. Portable AR could be a combination of diffent components such as show innovation, computational stage, information get to technology, wireless communication and interaction innovation. Expanded portable apps way better empower the utilize of versatile gadgets among those with declining cognitive

4. RESULTS
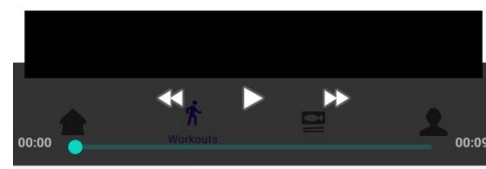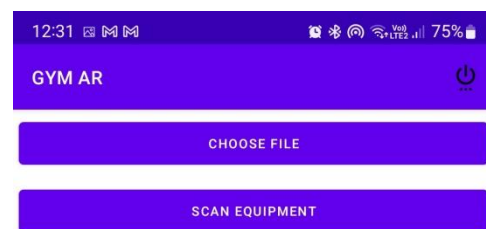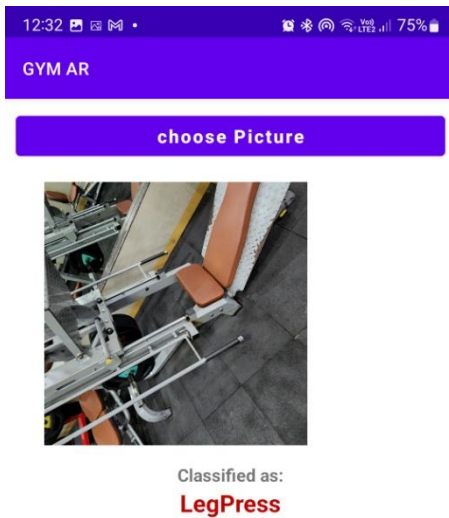
dissertation, without which the study undertaken wouldn't have been accomplished.

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5. CONCLUSION

The main focus of this project is to build a dedicated app for gym requirements and managing all the data without the hassle of the manual work. One of the important features of this app is the use of augmented reality to identify the equipment and display the exercises to be performed on these equipments. The recommendation model for workout plans will be suggested by using decision tree which is to be constructed using ID3 algorithm. The decision tree suggests the workout plan based on attributes like age, BMI, gender and medical condition.

Acknowledgement