Docteria-Your Health Buddy!

[1]Rutuja Uttam Kore, [2]Pritish Parashar Parkar, [3]Nitish Naresh Shetty, [4]Rupali Sathe

[1,2,3]Student, [4]Professor
Pillai Hocl College of Engineering and Technology
Khalapur, HOC Colony Rd, Taluka, Rasayani, Maharashtra, India

***Abstract*: Both for personal use by patients and for professional usage, the market for medical apps is quickly growing. There are many medical apps, but it is uncommon to find pertinent information about their drawbacks and risks. One-half of the eight medical apps evaluated in a model study that found data integrity deficiencies also had security and privacy problems. Standard users typically lack the tools, expertise, and time necessary for such studies before entrusting them with personal data, therefore in an ideal world, manufacturers would disclose information about the capabilities and restrictions of their products. Issues with data management, data protection, and privacy should all be covered in the mandatory information. A standardised reporting tool in the form of an app synopsis could be useful for delivering the necessary information and all the fundamental needs in order to promote transparency. A standardised reporting mechanism in the form of an app synopsis might be useful for giving the necessary information and all the fundamental requirements for the app are met in our app, which would boost transparency. As a result, our app offers complete security and integrity while also meeting user needs.**

***Keywords:* security, integrity, and satisfies the user need.**

INTRODUCTION

Docteria—Your Health Buddy! is a medical app that helps connect the patient with the doctor via a virtual interface. It is an app that recommends the user according to the user's needs. The user gets the recommendations of the doctors according to the disease mentioned, the user's liking, and the doctor whose best suited to the user. The recommendations are done with the help of AI and machine learning. As a result, our app will benefit society in a variety of ways. In situations like COVID, the Docteria-Medic app can be very useful. We can face situations like COVID very easily in the future. With the help of our app, the user can be treated at his or her house. Getting proper treatment at home was the main task during colonial times; thus, our app is the solution to this major issue. Also, the user who is not comfortable speaking openly about their disease can get proper treatment with proper maintenance of confidentiality.. Docteria—Your Health Buddy! is a medical app that helps connect the patient with the doctor via a virtual interface. It is an app that recommends the user according to the user's needs. The user gets the recommendations of the doctors according to the disease mentioned, the user's liking, and the doctor whose best suited to the user. The recommendations are done with the help of AI and machine learning. As a result, our app will benefit society in a variety of ways. In situations like COVID, the Docteria-Medic app can be very useful. We can face situations like COVID very easily in the future. With the help of our app, the user can be treated at his or her house. Getting proper treatment at home was the main task during colonial times; thus, our app is the solution to this major issue. Also, the user who is not comfortable speaking openly about their disease can get proper treatment with proper maintenance of confidentiality.

I.SCOPE

The Docteria-Medic app is integrated with the user's smart watch, allowing the doctors to monitor the user's activity around-the-clock using the smart watch. The doctor can give the patient greater care because he can continuously watch over the user's activity. As a result, our app has several levels; the lowest level will gain access to recommendations from a doctor and live chat with the doctor. With IOT devices, the top level will have access to doctor consultations around-the-clock (smart watches, etc.). An ambulance may be sent to the patient's location if the doctor thinks there is an emergency. For users of our app who suffer from illnesses like Alzheimer's, etc., geofencing is provided. Maintaining the Integrity of the Specifications.

I. PROBLEM STATEMENT

Due to the rise in health difficulties in today's culture, personal health monitoring is viewed as being of the utmost importance.The effects of an increasingly stressful lifestyle are being felt most acutely in the public health. Doctor fees have increased as a result of the lengthening wait times at hospitals and the rising number of patients, which is particularly impacting those who cannot afford the fee or who do not have serious illnesses but learn they have only

after paying a significant fee to the doctor. Studies and polls repeatedly demonstrate how the majority of serious health concerns can be prevented by treating minor health issues. By staying at home, you can usually fix most of these issues. The demand for time was present during COVID E-Medical App as well.

RELATED WORKS

Dr.Yudh Jayapravitra [2] - This essay asserts How well a product may be used by particular users to accomplish particular goals in a particular usage situation is measured in terms of effectiveness, efficiency, and satisfaction. This study makes a suggestion for a new medical alert app. The Med Alert App is useful since it can inform additional Responders about the occurrence, including local emergency services, family, friends, and neighbours.

N.A.M Alduais Wireless and Radio Science Centre(WARAS) [3] - An effective data gathering algorithm for wearable and mobile tracking devices within the IoT/WSN system was proposed in this paper.The suggested algorithm's performance was assessed by simulation using real-time dataset.

Andreas Bardoutsos [4]- In this study, we suggest a Web-based dataset creation and annotation tool that is human-centered and makes use of the Web Bluetooth API. The user can efficiently gather motions from a nearby BLE-enabled device, tag the data they have gathered, and save it remotely and in real-time.This study suggested a module for real-time data collecting.

Bikash Pradhan [5]-In the present review, various components of the HIT system were analyzed. The article thoroughly discusses the architecture, components, and interconnections of an IoT system. Additionally, the study takes into consideration the current healthcare services that have been explored with IoT-based solutions. Through the implementation of these ideas, IoT technology has aided healthcare practitioners in monitoring and diagnosing various health problems, measuring diverse health indicators, and offering diagnostic services in distant areas

Jinfang Zhang [6] - The results of the study revealed that the integration model of doctor, nurse, and patient based on RHR management strategies significantly increased the levels of RHR, SBP, and DBP. It also improved the ability of young and middle-aged hypertensive outpatients to regulate their blood pressure independently. Additionally, patient awareness of RHR-related information and adherence to medication significantly improved.

U. Pawar [7]- Methods to explain predictions made by AI systems are being explored in the topic of explainable AI (XAI). In this paper, XAI is investigated as a potential approach for AI-based systems to assess and diagnose health data. Also provided is a suggested approach for creating responsibility. Improvements to the healthcare model, tracking of results, and transparency.

EXISTING SYSTEM

All of Document's functionalities are not present in the current system. The current system only includes one component; for instance, one app only displays nearby doctors, another app only schedules an appointment, etc. While the current system lacks security components, apps do offer integrity. Users don't feel secure disclosing their private information. The current system does offer live doctor chat, but it lacks features like the best doctor advice and IOT device-based health monitoring.

IMPLEMENTATION

A.methodology

The design process for an app starts with determining the problem it addresses and the user demographic it is intended for. Mobile applications for the healthcare industry typically fall into one of two categories:
apps designed for doctors, other medical professionals, or even organizations The purpose of their functionality is to aid medical personnel.
Patient solutions include apps created for and by patients. Hence, the conflict between a doctor and patient software is the central problem in your healthcare app, and this issue can have a significant impact on the solution's purpose, structure, and operation
.

1) Application for physician:

Doctors can manage patient records, make appointments, and conduct information searches using healthcare applications. Thus, we built the following features into a healthcare app for doctors :

A doctor working with patients should be able to manage appointments and use a calendar. As a result, calendar functionality for mobile applications should include the ability to create, update, or delete appointments, as well as to annotate and remark on them as well as to send reminders.
Tracking: As the majority of physical ailments and conditions call for ongoing observation, the doctor should be able to keep track of each patient's various medical problems, complaints, test results, readings, etc. The tracking capability should additionally enable the creation of graphs for a visual representation of the patient's dynamics. DB access: A doctor must acquire the whole patient record from the hospital or from a national database in order to view it.Security, data protection, and privacy are top priorities in the healthcare industry, which requires a multi-level access technique and a secure authentication system. The ability to configure permissions for reading, modifying, or copying data from the patient database should be provided so that access to the patient files is guaranteed in accordance with a carefully controlled system of multi-level access. Push notifications for relaying various reminders, social features that allow for the creation of communities for medical discussions, support for image galleries storing visual information about patients, text and video chatting for remote consultations, etc. are some additional features that are useful. In addition, enterprise-scale software is available for doctors.
2)Application for patients:

Selection is made possible by the range of patient solutions. Apps for finding the closest hospital or doctor can be found here. Some software programs feature a booking option on occasion and assist users in obtaining driving directions.
Applications doctors-on-demand—healthcare marketplaces that let users receive fast guidance via text or video chat Users can obtain a rough diagnosis based on their symptoms using self-diagnostic tools and criteria.
applications for monitoring chronic illnesses, such blood sugar levels for diabetics.
Applications for planning a course of treatment and reminding patients to take their medications or perform tests The e-medic app, a healthy lifestyle app, addresses all aspects of healthy living, including weight loss programs, sleep tracking tools, and fitness or yoga software.
auto-complete text search for doctors, hospitals, symptoms, medications, and other items.
map service to provide location details and travel instructions. A map service is frequently integrated using the API of a different map provider, such Google Maps.
The calendar and schedule both enable the ability to book appointments. Patients and doctors can communicate in real time by chatting.
Directly through the application a payment solution that enables and secures payments.
Customers' value having a variety of payment choices. Social network accounts can be used to sign in during simple registration. The programmer should offer this capability because lifestyle applications should keep track of users' progress in their accounts. However, registration may not be required for hospital search applications, in which case it can be skipped to spare users from extra processes.
Push notifications can deliver many kinds of reminders, such as those to take medications, log meals, or work out. It is unnecessary to point out that alerts are a key component of appointment scheduling software, where they are utilized to notify users of forthcoming doctor's appointments.
An app must be easy to use and offer reliable information supported by the training of qualified medical professionals. Moreover, a very effective, user-friendly, and compatible application. The world's population will undoubtedly welcome technological health apps. We were in charge of giving doctors a quick, comfortable tool so they could use their free time to increase their clientele.
The created application connects skilled healthcare professionals who want to offer this form of medical support with people who need care at home.
Patients and doctors around the world will undoubtedly enjoy technological health apps.
The goal of the development was to provide a system that would allow consumers to call a doctor online and would make healthcare providers reachable to potential patients.

FRAMEWORK

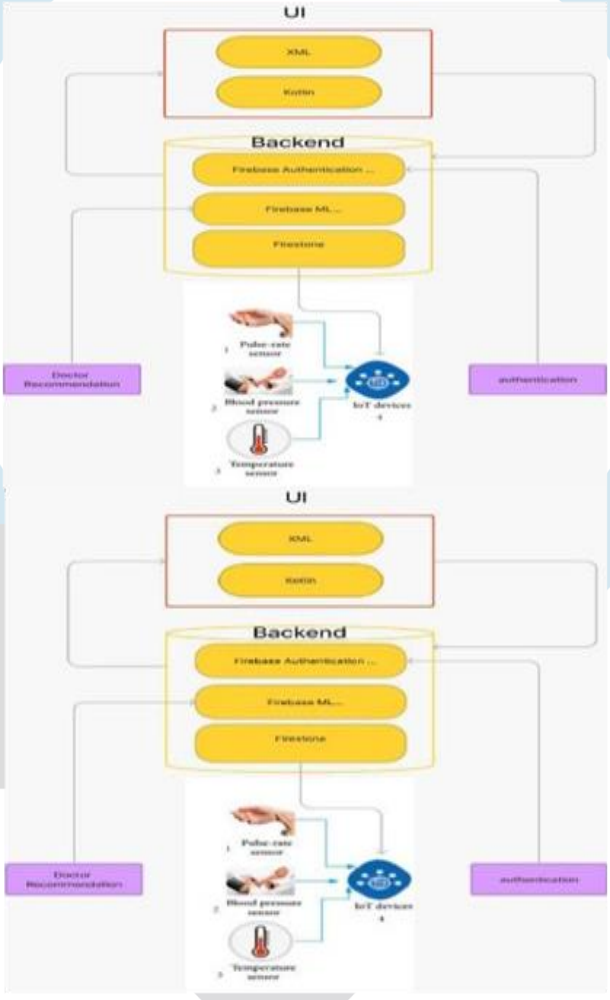
When it comes to using medical apps in a clinical setting, there are both benefits and drawbacks to consider, just like with many other aspects of medicine. Deciding whether to use a particular medical app requires a careful balancing of these factors. Healthcare providers must be fully aware of the potential advantages, limitations, and risks associated with medical apps to make informed decisions about their use.To make a well-informed decision about using a medical app, healthcare providers must be aware of the different risk categories that medical apps may increase. These risk categories can range from privacy concerns to inaccuracies in the app's information. Once the risk categories are identified, healthcare providers can develop a comprehensive risk assessment framework to evaluate the app's suitability for use in a clinical setting.

It is important to note that the factors that can influence risk in medical apps can be divided into general risk factors and those specific to a particular app. General risk factors can include the complexity of the app and the potential for harm if the app is used improperly. Specific risk factors, on the other hand, are unique to a particular app and can include issues such as data privacy and security.

While there are unique issues to consider when it comes to mobile applications, such as their complexity and potential for harm, these problems can also be found in other sources of medical information, such as websites or textbooks. Therefore, healthcare providers should take precautions to reduce risks to patient safety and professional reputation when using any medical information source, whether it is a mobile app or not.

In summary, healthcare providers should recognize all risk categories and key factors that influence risk to create a robust risk assessment model that accounts for app complexity and potential for harm. This will help ensure that the use of medical apps in a clinical setting is done safely and effectively, resulting in better patient outcomes.

SYSTEM ARCHITECTURE DESIGN



RESULT AND DISCUSSION

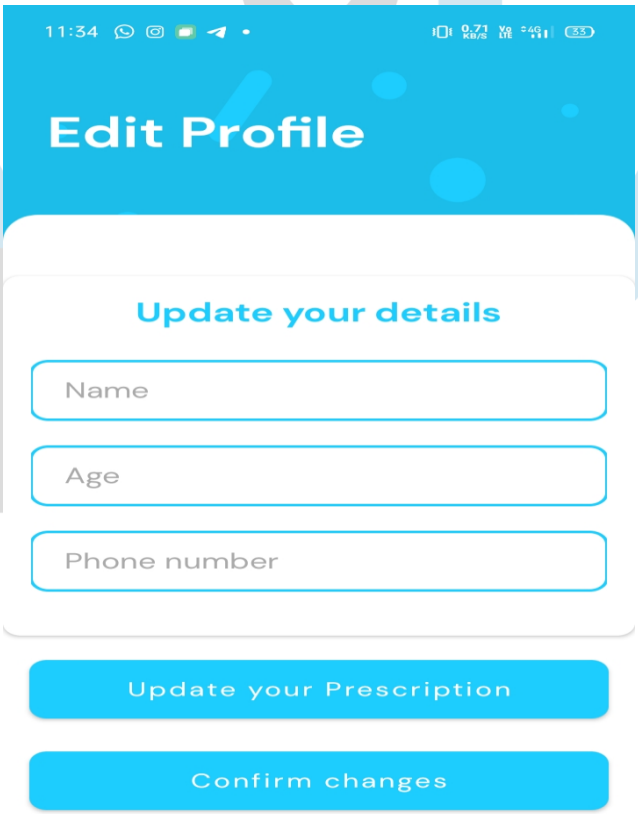
A Standardized reporting mechanism in the form of an app summary might be useful for giving the essential information and all the fundamental requirements for the app are met in our app, which would boost transparency. As a result, our software offers complete security and integrity while also meeting user needs. In colonial times, the biggest challenge was receiving good care at home; our software is the answer to this significant problem. Also, the user who feels uncomfortable discussing their illness in public can receive the appropriate care while maintaining confidentiality. A medical app called Docteria—Your Health Buddy! aids in establishing a virtual connection between the patient and the doctor.

In order to acquire a wider perspective, we have thus compared our Docteria app with two other android apps, namely

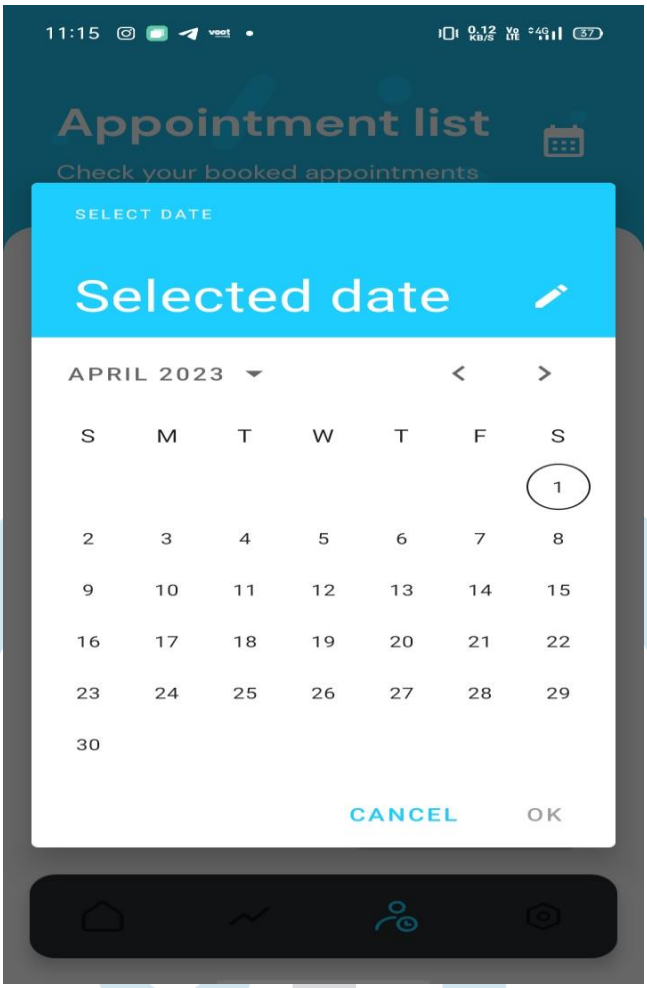
the fitness app and the healthcare app. This comparison thus shows the additional capabilities included in the Docteria app.

Parameters	Docteria	Healthcare App	Fitness App
Live Health data monitoring	Present	Not Present	Present
Connectivity with IOT devices	Present	Not Present	Partially present
Online appointment booking	Available	Available	Available
AI doctor recommendation	Available	Manual Selection of doctors	Not Available
Geofencing	Available	Not Available	Not Available
Super-app	Yes	No	No
Prescription Sharing	Present	Present	Not Present

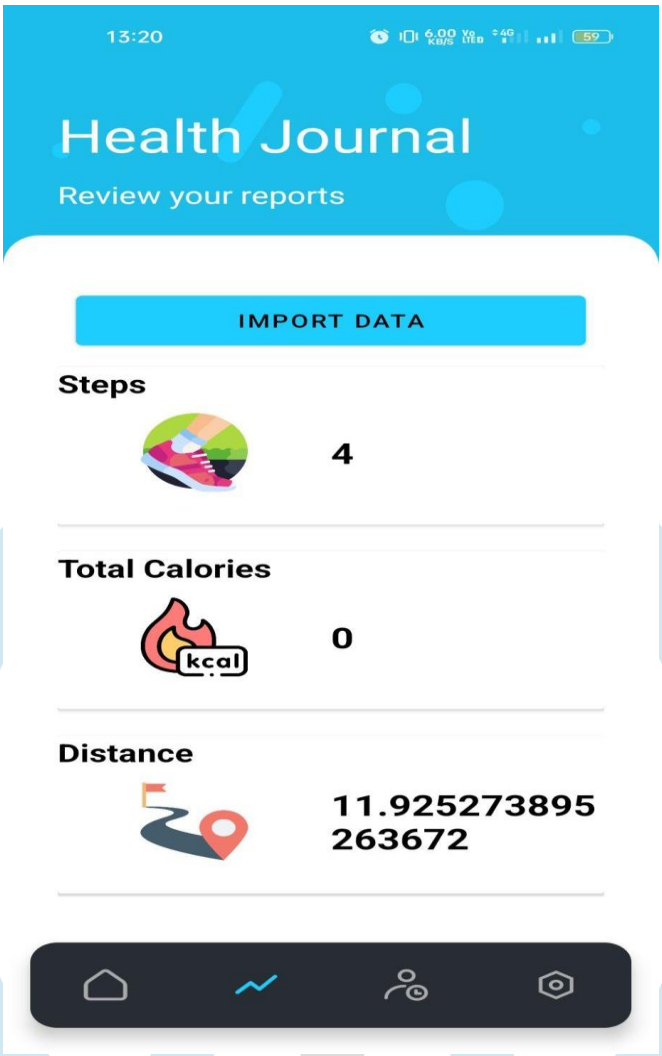
.



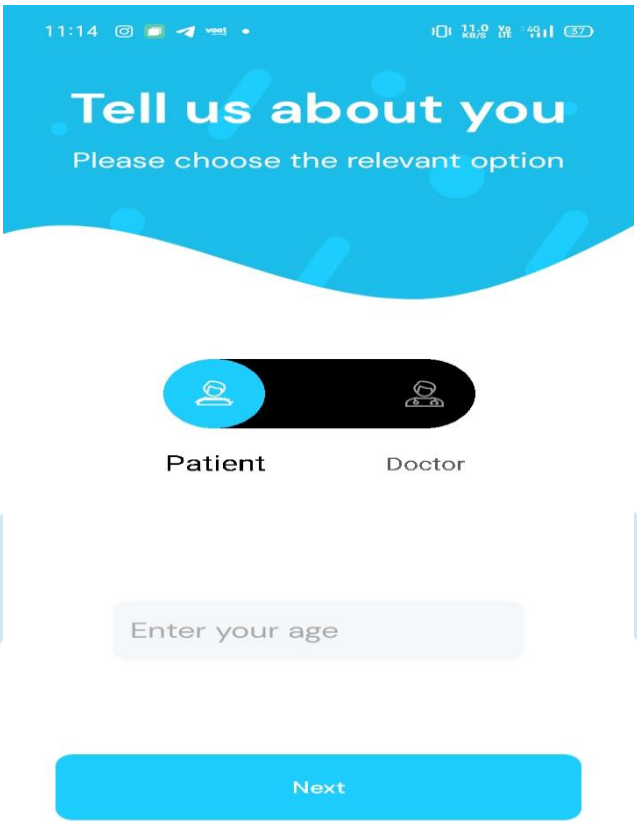
On this form, the user may change their prescription as well as personal information like name, age, and others. The user can effectively change their profile as a result. By pressing the change button, all of these modifications may be made.



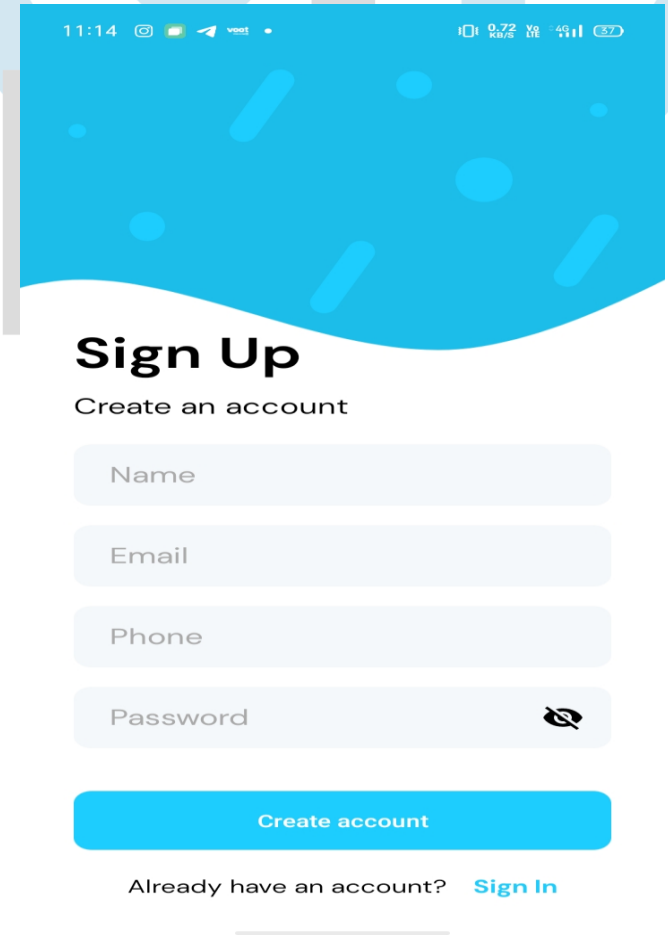
The user may choose an appointment date that is convenient for them, and the doctor can monitor his appointment dates everyday.



The user may use this software to log their steps, calories burned, and heart rate, and the doctor can use it to monitor their health.



With this application, there are many login possibilities for both physicians and patients. In order to log in, the patient may click the patient button, and the doctor can click the physicians button.



After entering all of their general personal information, both the user and the doctor may now log in to this app.

Users also have access to a geofencing tool, which may assist patients dealing with diseases like alzheimer's by alerting guardians when a patient is in need.

CONCLUSION

Our system offers strong digital connectivity between doctors and their patients across the nation. help facilitate and speed recuperation. utilizing IOT devices to establish a connection between the user and the doctor (a smartwatch). AI or machine learning-based medical advice. people with conditions like Alzheimer's can use geofencing. Doctors can send an ambulance to the uutilizingser's location in an emergency. The app has many levels, with the highest one providing access to a doctor every day of the week, 24 hours a day. Consultancy. Live chat with the doctor will be available at the lowest level. Our app is useful for people who are hesitant or uncomfortable disclosing their illness in public. They can receive appropriate consultation while respecting confidentiality.

FUTURE SCOPE

Several IOT devices will be added, which will further enhance the system. The system's present objective is to enable user connections to smartwatches and fitness bands. By supplying health data that was previously either unavailable or of lower quality, the addition of various other IOT devices such as asthma inhalers, sleep therapy devices, etc. can only benefit the system.

Both users and doctors could make judgments more easily with the aid of machine learning. The algorithm will pick up on the patterns of the user and the doctor and make the appropriate suggestions for small concerns. The doctor can better concentrate on making important choices as a result.

Only the doctor recommendation system is available at the moment, however, hospital suggestions with additional information like open slots, beds, etc. may be made available in the future.

REFERENCE

[1] Open SOA Health Web Platform for Mobile Medical Apps Connecting Securely Mobile Devices with Distributed Electronic Health Records and Medical Systems JÄrg-Uwe MeyerMT2ITResearchMT2IT GmbH & Co. KG Ratzeburg, Germany.

[2] iEMS1669: An Innovative Med Alert App for Thai Emergency Medical System. Dr.Yudh Jayapravitra College of Arts, Media and Technology Chiang Mai University, Thailand.

[3] An Efficient Data Collection Algorithm for Wearable / Mobile Tracking System in IoT/WSN. N.A.M Alduais Wireless and Radio Science Centre(WARAS) Universiti Tun Hussein Onn Malaysia Batu Pahat, Johor, Malaysia.

[4] A human-centered Web-based tool for the effective real-time motion data collection and annotation from BLE IoT devices. Andreas Bardoutsos.
[5] Bikash Pradhan, Saugat Bhattacharyya, Kunal Pal, "IoT-Based Applications in Healthcare Devices", Journal of Healthcare Engineering, vol. 2021, Article ID 6632599, 18 pages, 2021.
[6] Jinfang Zhang, Zehong Han, Min Jia, Juanjuan Guo, Hua Guo, Hui Deng, "Application Effect of Doctor-Nurse-Patient Integration Model Based on Heart Rate Management Strategies in Middle-Aged and Young Outpatients with Hypertension", Computational and Mathematical Methods in Medicine, vol. 2022, Article ID 7459518, 9 pages, 2022.
[7] U. Pawar, D. O'Shea, S. Rea and R. O'Reilly, "Explainable AI in Healthcare," 2020 International Conference on Cyber Situational Awareness, Data Analytics and Assessment (CyberSA), Dublin, Ireland, 2020, pp. 1-2, doi: 10.1109/CyberSA49311.2020.9139655.
[8] J. E. Pedi Reddy, C. N. Bhuwaneshwar, S. Palakurthi and A. Chavan, "AI-IoT based Healthcare Prognosis Interactive System," 2020 IEEE International Conference for Innovation in Technology (INOCON), Bangluru, India, 2020, pp. 1-5, doi: 10.1109/INOCON50539.2020.9298232
[9] Zao, J.K., Fan, SC., Wen, MH. et al. Activity-Oriented Design of Health Pal: A Smart Phone for Elders' Healthcare Support. J Wireless Com Network 2008, 582194 (2007).
[10] Almotairi, K.H. Application of internet of things in healthcare domain. J. Umm Al-Qura Univ. Eng.Archit. (2022).
[11] Uslu, B.Ç., Okay, E. & Dursun, E. Analysis of factors affecting IoT-based smart hospital design. J Cloud Comp 9, 67 (2020).