

Analysis of E-Health Monitoring Systems and its uses

Abhishek Jitendra Mishra*

Abstract

Health care has been one of the most crucial topic post COVID-19 era. Researches have shown that people are more aware about their health now and are starting to take it seriously. Hence even the healthcare system is now extended to online and electronics medium to provide assistant to people. E-health can provide assistant to people without any time and geographical bounds. This paper will be used to understand the current usage of E-healthcare systems. The main objective of this web app project is to ease the health monitoring on daily basis, even doctors can fetch up patient through this app which can help in their business and admin on the other hand can have administrative functionalities like add del alter doctor details for smooth functioning of the application. Proposed system is all in one which provides facilities of self-assessment and establishes communication between doctors and patients which the current system lacks. The input parameters for existing system is too technical for patients use which is countered in our system as we ask only simple inputs which is user friendly.

Keywords: Internet, E-health, E-checkups, Healthcare, Medical

INTRODUCTION

Internet and electronics has been used in different fields and has increased efficiency and provide better customer satisfaction. During pandemic when humanity was in lockdown there was a sense of confusion regarding healthcare and uncertainty about one's health. E-health checkups have ensured people about their health by providing them online assistance. Increase in technologies in healthcare will be beneficial for the stakeholders and the customers. Telemedicine, Online patient records, computer assist surgery are some of the example of e-health.

People are interested to know and be aware about their health post pandemic and e-health can provide them assistant 24/7 without any time and boundaries restrictions. Studies have shown that e-health promotes a positive and a healthy lifestyle and assist people in bringing positive changes in their fitness regimes. As e-health is an emerging concepts their doesn't seem to have a fix definition.

*Author for Correspondence

Abhishek Jitendra Mishra

Student, MCA, Thakur Institute of Management Studies,
Career Development & Research (TIMSCDR), Mumbai,
Maharashtra, India

Received Date: June 08, 2022

Accepted Date: June 28, 2022

Published Date: July 04, 2022

Citation: Abhishek Jitendra Mishra. Analysis of E-Health Monitoring Systems and its uses. Journal of Advanced Database Management & Systems. 2022; 9(2): 1–5p.

LITERATURE REVIEW

Wearable sensor system that was used to monitor patient system was created [1].

A system that can measure psychological parameters like blood pressure and body temperature was created. Through Bluetooth the sensor transmits the data to the gateway. Gateway then analyse the observation and send the data to the cloud.

A web based application is created that take reading and detects any heart related problems.

Symptomate.com [2]

Another system that was analysed during the creation of this report is Symptomate.com

About Symptomate.com

Symptomate is an excellent tool for checking your symptoms. Every time you visit this web page and add your symptoms, we analyse it and give you personalized results. AI connects to our thorough medical knowledge base and gives you precise findings [2].

All its features can be used in 19 languages. Over 9 M people have used Symptomate to date to receive advice on health-related issues.

How does it Work?

It is easy to use symptomate. Start by giving your symptoms. Multiple symptoms can be added. Then, similar to physical consultancy, answer several questions so that we can calculate more accurately.

You will be given a list of potential diagnoses following the analysis, along with the corresponding explanation, description, and advice for the best level of medical care.

MedIndia.com [3]

- Another website that we came across while creation of this paper was medindia.com
- Medindia is one of the top most website for health related information, apps and services for patients, doctors, healthcare professionals worldwide.
- Medindia, currently ranks top in India/South Asia in terms of traffic in the health services and among the top health websites globally.

Medindia's content is viewed by over 2 M users each month worldwide. It provides almost 1 M pages of verified wellness data including news, special reports, health articles, video/animations, videos, medicinal information, health calculators, personalized health record, mobile software's, interactive tools, applications and much more.

OBJECTIVE

- a. The main purpose of writing this research paper is to study the post covid impact and usage of E-health Monitoring system so that we can increase the efficiency of current model.
- b. The main objective of this proposed system is to ease the health monitoring on daily basis, even doctors can fetch up patient through this app which can help in their business and admin on the other hand can have administrative functionalities like add del alter etc. for smooth functioning of the application.

SCOPE

This online E-monitoring system will help the user to keep a track of his health and future complication can be countered with it.

Beside when we talk about the doctor the profession itself is a business where in doctor need to fetch patient to practice, this application also helps in this and doctors can get an starting boost to their careers.

The admin on the other hand can manage doctors and training data for the application which will be very help in smooth functioning of the application on user as well as doctor side.

OPERATIONAL FEASIBILITY

Tools required to access the platform and keep it running are as follows:

- System to have internet access (computer, mobile etc.)
- Internet

Hence the operable requirements of the project are feasible which ensures the smooth running of the project.

WORKING

- There are many aspects of e-health monitoring systems. E-health monitoring system can be a web based project, an application or something related to the sensors. In our case it is a web based application that detects any health issue in the customer and proved them equivalent solution (Figure 1).
- Besides it also help in knowing the basic health care routine and other habits that one can inculcate in him to bring in healthy and positive change in him. We also have features to connect to doctor and book appointment according to one problem and his locations.
- The admin part is where admin can use to put in training data for the disease with disease and help one to enhance the accuracy of detected disease.
- Admin can also help in adding doctor and its credentials in the system and can be useful for one to find doctor and coordinate accordingly.
- Because older patients make up the majority of the population, more emphasis was placed on user interface design [4]. After researching in various aspects and different domain a user-friendly and a shuttle UI is being proposed. Having this fact in mind that the elderly people can easily get confused in finding information the system was design to reach to information in fewer steps.
- Administrator work is to provide access to the system that has their profile, creating new account and managing some general information.

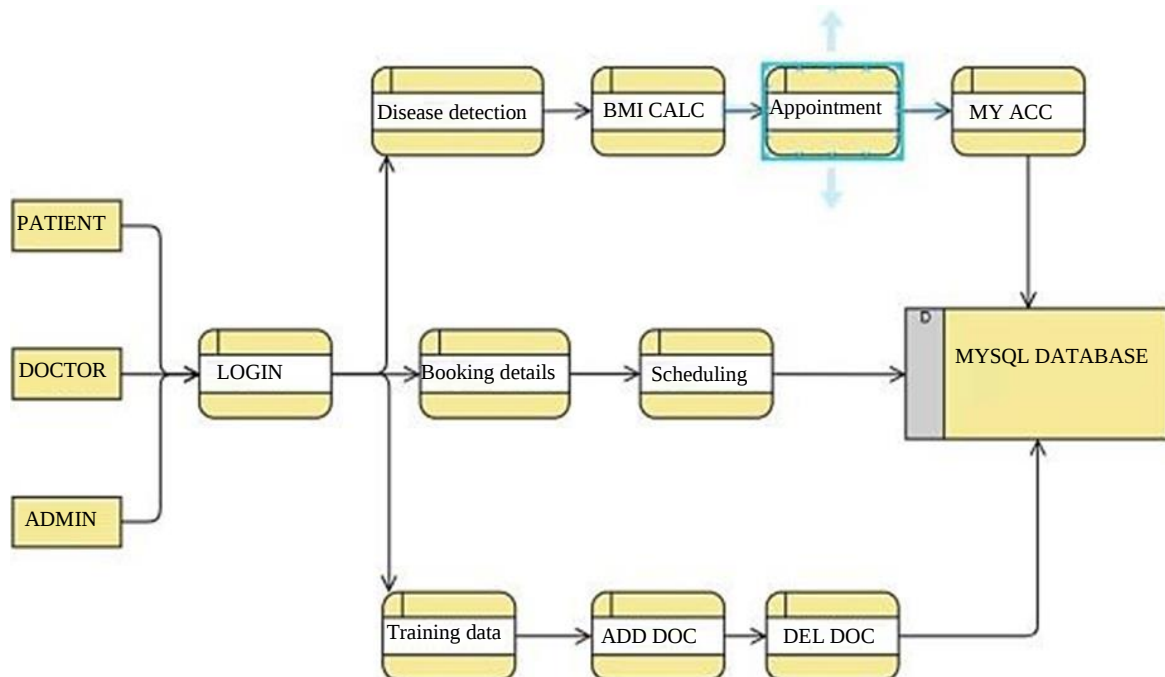


Figure 1. System design process.

CHALLENGES

There are several challenges when it comes to e-health monitoring systems. When talking about the system the main and foremost concern is the accuracy of the detection. As we have seen there have been several new viruses and health condition that has emerged that can be hindrance in systems accuracy. Besides the accuracy the treatment and is something that is not offered in the systems. Another is the comfort environments that doctors provide while interacting with that lacks in the systems.

Data privacy and security are major concerns in digital health systems, therefore both patients and medical professionals must have complete faith in their confidentiality [5]. There are patient medical history and some disease which are an important data that need to safeguard.

Lack of adequate awareness of information on medical is the also a challenge that need to be tackled.

Making of adequate law is also a challenge that doesn't bind the innovation but monitor the malpractices in e-health sectors.

BENEFITS

There are many positive aspects to this as well firstly, these systems aren't time or location bounded they can be access anywhere and anyhow. Any records any medicals report that are saved in the system are easily accessible to the patients.

The e-health can also be beneficial for the doctors since it can act as a bridge between the patient and the doctor. Advance procedure can be done with help of ICT in medical field without the presence of experts.

Timely detection and diagnosis of the disease may not lead to further complication in the future and fatal risk can be avoided.

During covid where there is a shortage of doctors so with the help of e-health checkup system we can detect the match able disease, home remedies can come to aid and can be helpful to avoid future complications.

With the help of e-health monitoring system people using it will be more informed about the habits and their understanding towards their own health condition increases. The way of professional dealing with diseases has also changed e-health can also provide optimum treatment for various diseases.

The efficiency of health related bodies have also increase and they are able to work effectively [6].

NEW TECHNOLOGIES USED IN E-HEALTH

There has been use of many advance technologies in e-health system and some of them are as follows.

IoT

IoT has brought in a revolutionary change in e-health. Components of IoT such as sensors, Reader are used in and are providing great assistance to healthcare workers. It also save cost and is its accurate reading have enable many healthcare workers to work more effectively and efficiently.

Big Data

Detection of risk and macro analysis can be effectively done by big data. Big data can be accurate depending upon the usage the more it is challenged the better the results are.

AIML

Understanding the sequence of anti bodies and future treatments can be achieved by artificial intelligence.

Blockchain

Administrative work like keep a track of all the patient records can be done using block chain. It can be used to keep tabs on all the medications in drug research labs [7].

Other technologies such as 3D printing, Chat bot, VR are also been used on timely basis [8].

CONCLUSION

This paper is the study of how e-health monitoring system can be useful in real life what the challenges it might face are and the benefits of its usage. As we know there are two aspects of any technologies this study analyze both aspects and it possible outcomes.

REFERENCES

1. Shetty H, Shetty A. A review on health monitoring system using IoT. International Journal of Engineering Research and Technology (IJERT). 2018; 6: 1–3.
2. Symptomate. Made by doctors, scientists and other good people [Online]. Available from <https://symptomate.com/about>
3. Med India. About Medindia [Online]. Available from <https://www.medindia.net/aboutus.asp>
4. Faculty of Information and Communication Technologies Bitola (FICT). Proceedings of the 6th International Conference on Applied Internet and Information Technologies Bitola, 3–4 JUNE 2016 [Online]. Available from <https://eprints.ugd.edu.mk/16980/1/Proceedings%20AIIT2016%20-%20202.pdf>
5. Hanson Zandi. 7 Major Challenges Facing E-health [Online]. Available from <https://www.hansonzandi.com/7-major-challenges-facing-ehealth>
6. Benefits of Benefits of everything that matters Harri Daniel (28th Mar, 2022). Benefits Of e-health [Online]. Available from <http://benefitof.net/benefits-of-e-health/>
7. Tutorials Point. SaltStack-Git as a File Server [Online]. Available from https://www.tutorialspoint.com/saltstack/saltstack_git_as_file_server.htm
8. Iberdrola. eHealth, when technology becomes the key to social well-being [Online]. Available from <https://www.iberdrola.com/innovation/ehealth>