

Healing Hands

^{*1}M Vineela,²Aravelli Anushka, ²Kurimindlla Jhansi Laxmi

^{*1}Associate Professor, Department of CSE, Bhoj Reddy Engineering College for Women, Hyderabad, India

^{2,3}Student, Department of CSE, Bhoj Reddy Engineering College for Women, Hyderabad, India

ARTICLE INFO

Article History:

Accepted: 10 April 2023

Published: 25 April 2023

Publication Issue

Volume 10, Issue 2

March-April-2023

Page Number

545-548

ABSTRACT

Monitoring of patient's health is an essential factor in the healthcare domain, although it is usually done using physical documentation in hospitals and other healthcare facility centres. With the advancement of technology nowadays Electronic Health Records (EHR) are maintained which makes the process less time-consuming and cost-efficient. In recent years, there is an increase in the collection of health-related data by the means of technologies such as portable devices with embedded sensors, remote monitoring devices, wearable devices, and smartphone apps that help monitor the user's basic health condition. In case of chronic ailments like diabetes, transplants, or heart conditions, constant monitoring and follow-up of the patient is necessary and usually done in person. Along with digitalization, e-health monitoring has come into the picture with a wider scope which includes integrating IoT-based applications, remote monitoring, telehealth, etc. Although along with this if other features like medicine reminders, emergency alerts, hospital connectivity, and a user-friendly interface for interactive and efficient communication between the doctors and patients would take e-health to next level.

Keywords : Healthcare, Electronic Health Records, Sensors, Telehealth.

I. INTRODUCTION

Healing hands is one such eHealth platform through which the doctors can remotely stay connected with the patient and analyze their condition, based on the requirements the doctor can opt for the features/parameter the patient needs to feed, and in case of lab reports the text can be extracted and according to the condition can be analyzed. There will be facilities like setting emergency alerts that would be available to the doctor to pay immediate

care to the patient. Other features include sending messages with the doctor for efficient communication. As the condition and reports are recorded digitally, the entire patient history will be recorded and hence the doctor can easily refer for future treatment. Along with this, the necessary information regarding the nearby medical facilities and emergency treatments has been provided. Hence as a whole, it would serve as a helping hand to the patient which is available 24x7 and can be used widely to take the treatment remotely. The key enabler of this e-health monitoring

system is remote health monitoring, consultations, out-of-hospital follow-ups, personalized care, efficient communication, and systematic medication.

II. EXISTING SYSTEM

When it comes to e-health advancements, there are primarily three types of monitoring systems available: IoT-enabled systems that include multiple sensors to monitor patient health, record-based systems that include EHRs and digital footprints of medical records including insurances, and telehealth monitoring, which is a broader term than telemedicine which refers to both remote clinical and non-clinical services.

Disadvantages:

- No continuous monitoring
- Time consuming
- No effective communication with the doctor

III. PROPOSED SYSTEM

Healing hands is one such eHealth platform through which the doctors can remotely stay connected with the patient and analyze their condition. This application would serve as a helping hand to the patient which is available 24x7 and can be used widely to take the treatment remotely.

Advantages:

- Continuous monitoring
- Out-of-hospitals follow-ups
- Emergency alerts

IV. SYSTEM ARCHITECTURE

Design represents the number of components we are using as a part of the project and the flow of request processing i.e., what components in processing the request and in which order. A system architecture is

the conceptual model that defines the structure, behavior, and more views of a system. An architecture description is a formal description and representation of a system, organized in a way that supports reasoning about the structures and behaviors of the system. Architecture is of two types. They are

1. Software Architecture
2. Technical Architecture

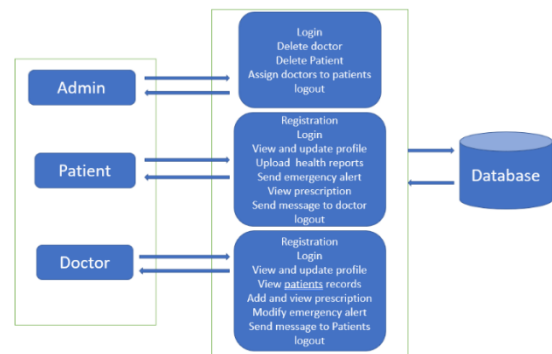


Fig.1 Software Architecture

The software architecture of a system represents the design decisions related to overall system structure and behaviour. Architecture helps stakeholders understand and analyse how the system will achieve essential qualities such as modifiability, availability, and security. Software architecture supports analysis of system qualities when teams are making decisions about the system rather than after implementation, integration, or deployment. Whether designing a new system, evolving a successful system, or modernizing a legacy system, this timely analysis enables teams to determine whether the approaches they've chosen will yield an acceptable solution. An effective architecture serves as the conceptual glue that holds every phase of the project together for all its stakeholders, enabling agility, time and cost savings, and early identification of design risks.

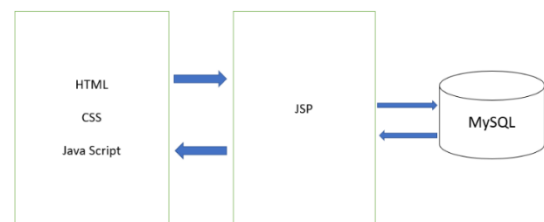


Fig. 2 Technical Architecture

Technical Architecture (TA) is a form of IT architecture that is used to design computer systems. It involves the development of a technical blueprint with regard to the arrangement, interaction, and interdependence of all elements so that system-relevant requirements are met. Technical architecture refers to the structural process of designing and building system's architecture with focus on the users and sponsors view of the environment. On the client-side user should have a web browser like Internet Explorer in which display is done using HTML pages. From the client-side HTTP requests are sent to the server to perform different operations. At the server-side server contains servlets which have control and business logic. If information is to be retrieved, then it is done by executing SQL queries which return the required data from the database. Using the data dynamic pages are built and it is sent as HTTP response to the client-side.

V. CONCLUSION AND FUTURE SCOPE

In this project, we have created a web application wherein the patients and the doctors can connect and interact with each other in order to monitor their timely health conditions. So, in this project, we have extended the e-health monitoring by providing health report storage along with progress analysis and an interface wherein the patient and doctor can interact freely by messages which is not usually the case in the existing applications. Our application also provides emergency alerts which can help doctors prioritize the treatment procedure based on the patient's condition. With the segregated patient view, the doctor can easily differentiate and track the patient history in a remote mode. This application can be extended further to aid the elderly people by setting medicine reminders by the doctors integrating them with the SMS services which can notify the dear ones and the doctor in case of an emergency. The geo-map locations can be extended from hospitals to nearby pharmacies and other health care services and the

platform can also be integrated for the patients to order the required medicines and medical equipment with ease directly with this application. Also, now-a-days especially post pandemic people have started using smart devices which record the health-related data like heart rate, SpO2 levels, etc., These can also be integrated in order to provide more accurate information about the patient's routine to the doctor.

VI. REFERENCES

- [1]. Kharrazi, H., Ma, X., Chang, H.-Y., Richards, T. M., & Jung, C. (2021). Comparing the predictive effects of patient medication adherence indices in electronic health record and claims-based risk stratification models. *Population Health Management*, 24(5), 601–609.
- [2]. A Wireless Health Monitoring System. *IEEE Xplore*. (n.d.). Retrieved March 15, 2022, from <https://ieeexplore.ieee.org/abstract/document/163509>
- [3]. N. Y. Philip, J. J. P. C. Rodrigues, H. Wang, S. J. Fong and J. Chen, "Internet of Things for In-Home Health Monitoring Systems: Current Advances, Challenges and Future Directions," in *IEEE Journal on Selected Areas in Communications*, vol. 39, no. 2, pp. 300-310, Feb. 2021, doi: 10.1109/JSAC.2020.3042421.
- [4]. Integration of Smart Home Technologies in a health monitoring system for the elderly. *IEEE Xplore*. (n.d.). Retrieved March 15, 2022, from <https://ieeexplore.ieee.org/abstract/document/4224207>
- [5]. Baumann LA, et al. The impact of electronic health record systems on clinical documentation times: A systematic review. *Health Policy* (2018), <https://doi.org/10.1016/j.healthpol.2018.05.014>
- [6]. Bitar, H., & Alismail, S. (2021). The role of eHealth, telehealth, and telemedicine for chronic disease patients during COVID-19 pandemic: A rapid systematic review. *DIGITAL*

HEALTH, 7, 205520762110093.
<https://doi.org/10.1177/20552076211009396>

- [7]. Campagna, B. R., Tutino, R., Stevanovic, K., Flood, J., Halevi, G., Shemesh, E., &
- [8]. Annunziato, R. A. (2021). Acceleration of mobile health for monitoring post- transplant in the Covid-19 ERA: Applications for pediatric settings. *Pediatric Transplantation*, 26(1).
<https://doi.org/10.1111/petr.14152>
- [9]. Van Olmen, J. (2022, January 26). The promise of digital self-management: A reflection about the effects of patient-targeted e-health tools on self-management and Wellbeing. MDPI.
<https://www.mdpi.com/1660-4601/19/3/1360/htm>

Cite this article as :

M Vineela, Aravelli Anushka, Kurimindlla Jhansi Laxmi, "Healing Hands", *International Journal of Scientific Research in Computer Science, Engineering and Information Technology (IJSRCSEIT)*, ISSN : 2456-3307, Volume 9, Issue 2, pp.545-548, March-April-2023.