

An Android based Therapeutic History Maintenance Application

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Abstract—In this work an application has been developed for storing patient's personal medical record. This app is convenient when someone is consulting a specialist and managing an abundance of documents. Users' can store and update their medical reports, prescriptions, visit history and any other information that is needed while visiting a doctor. These details can be shared with the doctors. A calendar based notification on medication has also been incorporated into the designed model. Overall, the app is a middleman between patients and medical practitioners. It is designed to make the user's role more active in their medical life and provides a very user friendly interface.

Index Terms— Android, therapeutic, medical history, GUI.

I. INTRODUCTION

The most common method followed by common man for maintaining medical records is in the form of papers and books. The drawback with such a method is the difficulty in managing paper records pertaining to the complete medical history. Apart from this the possibility that a patient may forget to carry all documents while making a visit to the doctor and the fact that they may forget to tell all consequential information about their health is of major concern. Every single available detail is very important for a doctor in his diagnosis. This being the situation it becomes necessary that an application be developed for a seamless communication between the doctor and patient. Providing a very user friendly mobile app where a person can maintain all his medical data would prove to be useful in such situations.

II. LITERATURE SURVEY

This section provides a brief review of the existing literature in the field of medical app development. Mahmud et al.,[1] in their paper have developed a mobile application for Patients Medical Record and History for storing medical data for patients. Gandhi et al., [2] has discussed development of an AI Based Medical Assistant for maintaining the patient record. IntelliDoctor is an Artificial Intelligence (AI) based personal medical assistant. Mehra et al., [3] in their paper have developed a Mobile Medical Card Android Application for medical data maintenance. Suresh et al.,[4]] has discussed about development of a Mobile Medical Card android application

for medical data maintenance. It incorporates a QR code to access patient-categorical medical data through a card in the smartphone. Shklovskiy-Kordi et al.,[5] has discussed Multimedia case history as a tool for management of patients and clinical trials. Kim et al.,[6] has developed an application for Evaluation of Personal Health Information Management System. Hansen et al.,[7] in their paper have developed an Application for Personal Electronic Health Records in the Hands of Patients-Owners for electronic health records. Ellenbecker et al.,[8] in their paper have developed an application Patient Safety and Quality in Home Health Care.

III. MATERIALS AND METHODS

The following section discusses the formulation of objectives and design of the proposed method for the development of Medical Record and Maintenance App customized to the needs of the practitioner. The traditional method of keeping medical records follow the manual method involving papers and books.

Pen-paper methods are widely used to keep track of medical progresses and reports. People find it difficult to keep track and manage one's all medical records in the form of a paper all at one place. To avail patients in storing their medical data in an organized manner and to identify the medical errors for more effective medication by providing precise medical record to the practitioner they are consulting with an application software.

Hence the development of an application software where the users can store and update their vitals, medical reports and their entire medical history all at one place.

The system architecture showing the various modules and their interconnections is shown in fig1. The system divides the flow of architecture into a series of blocks each having its own functions and data flows.

In the system architecture we have a doctor section and a user section in which we can control the app through doctor and user.

The user section of the app first need to sign in to the app through mail and then they can access the section where they can upload information such as medical reports, their vitals, their bills of their recent visit to the hospital etc.,

The data that the user uploaded will go to the Google firebase storage which is a cloud based storage.

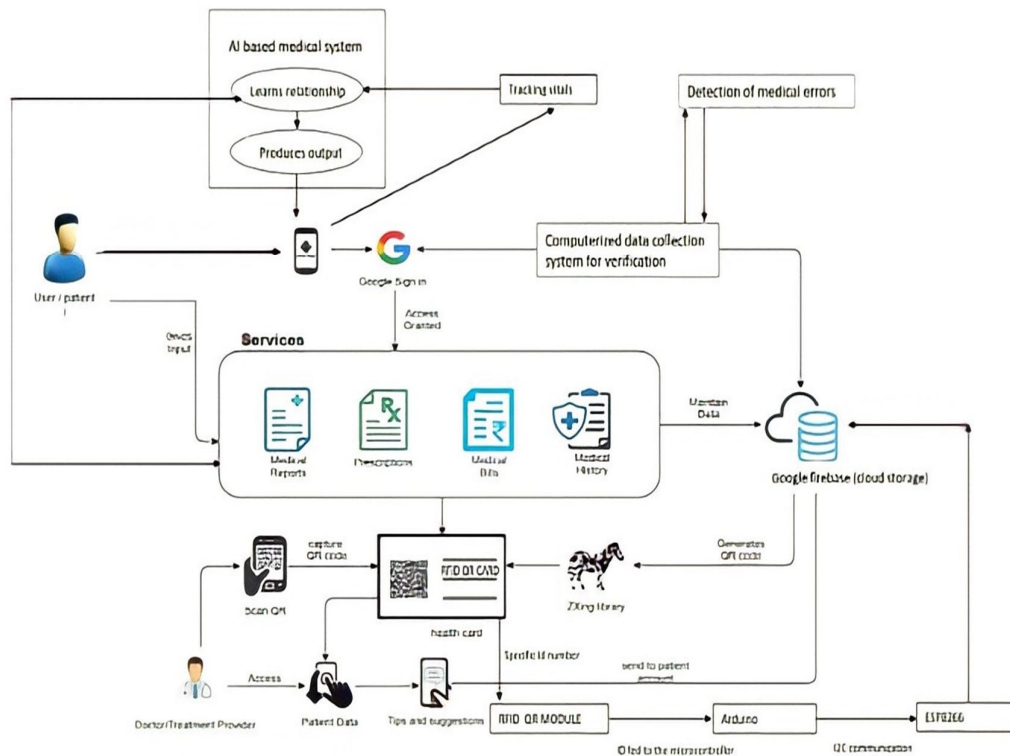
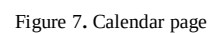
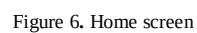
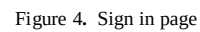
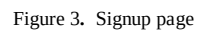
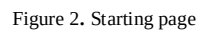


Figure 1. System architecture

The user Interface of the application is shown below in Fig.2 which represents the starting page of the application. On clicking the getting started button it takes the user to the signup page as shown in Fig.3. The user can sign up either using the email account or with google account. If the user already has an account he can login to the application. Fig.4 shows the sign in page for the existing user to enter Email and Password for logging in. Fig.5 shows selecting doctor or patient for signing in. Fig.6 shows the home screen where the various functionalities provided in the app are displayed of the application. The calendar section for noting the day of visit to the hospital and other medical notification is shown in Fig 7. The Reminder section for alarm is shown in Fig.8. Fig.9 shows the information about their doctor and to share their data with them. Fig.10 shows the settings page of the application.



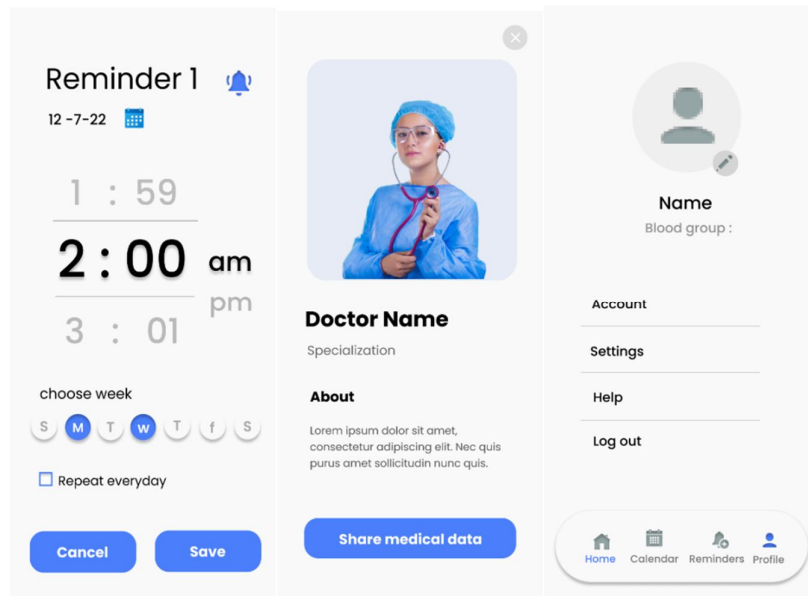


Figure 8. Reminder Page

Figure 9. Data Sharing Page

Figure 10. Settings Page

V. CONCLUSION

In this work a comprehensive and user friendly android application has been developed for patients and doctors to communicate with each other in a more effective manner. The app includes module for the user to upload and store their medical history and to share their details with the doctors. With the help of such an application software, users' can effortlessly manage their medical data all at one place. A bridge between patient and doctor is created through this work. The app developed can be customized based on the requirements of any medical practitioner

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REFERENCES

- [1] M. T. Mahmud, F. Soroni and M. M. Khan "Development of a Mobile Application for Patient's Medical Record and History," 2021 IEEE World AI IoT Congress(AIIoT), 2021, pp. 0081-0085, doi: 10.1109/AIIoT52608.2021.9454227.
- [2] M. Gandhi, V. K. Singh and V. Kumar "IntelliDoctor - AI based Medical As- sistant," 2019 Fifth International Conference on Science Technology Engineer- ing and Mathematics (ICONSTEM), 2019, pp. 162-168, doi: 10.1109/ICON-STEM.2019.8918778.
- [3] V. Mehra, P. Sarvari and N. Ruban , "RFID Based Secured, Remotely Acces- sible Personal Medical Data Base Including the Medicinal History," 2018 4th In- ternational Conference on Computing Communication and Automation (ICCCA), 2018, pp. 1-4, doi: 10.1109/CCAA.2018.8777617.
- [4] C. Suresh, C. Chandrakiran, K. Prashanth, K. V. Sagar and K. Priyanka , "Mobile Medical Card" – An Android Application For Medical Data Maintenance," 2020 Second International Conference on In- ventive Research in Computing Applications (ICIRCA), 2020, pp. 143-149,doi:10.1109/ICIRCA48905.2020.9183307.
- [5] N. Shklovskiy-Kordi et al., "Multimedia case history as a tool for man- agement of patients and clinical trials," 16th IEEE Symposium ComputerBased Medical Systems, 2003. Proceedings., 2003, pp. 269-272, doi:10.1109/CBMS.2003.1212800. Neurosurgeon Psychiatry: 2003.
- [6] Eung-Hun Kim, Maisie Wang, Christopher Lau and Yongmin Kim, "Ap- plication and Evaluation of Personal Health Information Management System," The 26th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2004, pp. 3159-3162, doi: 10.1109/IEMBS.2004.1403891.

- [7] I. B. Hansen, "CipherMe: Personal Electronic Health Records in the Hands of Patients-Owners," 1st Transdisciplinary Conference on Distributed Diagnosis and Home Healthcare, 2006. D2H2., 2006, pp. 148-151, doi: 10.1109/DDHH.2006.1624818.
- [8] C.H. Ellenbecker, L. Samia, M. J. Cushman, and K. Alster, "Patient Safety and Quality in Home Health Care". In: Hughes RG, editor. Patient Safety and Quality: An Evidence-Based Handbook for Nurses. Rockville (MD): Agency for Healthcare Research and Quality (US), 2008, <http://www.ncbi.nlm.nih.gov/books/>.