

Arogya360 - Modern Hospital Management Mobile Application

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Abstract - The hospital management system is an initiative to digitally transform hospitals to make them more accessible, practical, and affordable. The demand for scheduling doctor appointments occurs as a result of the rapid rise in health difficulties in the healthcare sector, necessitating the creation of a mobile application that may facilitate easy communication between patients and doctors. The major purpose of this system is to keep track of patient data and reports. Many hospitals typically perform these tasks by hand. This system registers patients and doctors, keeps their information, and updates it as needed for medical professionals to analyze. Patients can schedule appointments, check the hospital's doctor availability, and sign up for medication and doctor feed alerts. Users can interact with doctors easily and ask any doubts and suggestions using the chat functionality provided in the application.

Index Terms - Appointment Scheduling, Water Reminder, Tracking Medicine.

I. INTRODUCTION

There are times when people have difficulty keeping track of their medications, maintaining their medical histories, and speaking with their doctors directly. As a result, hospital administration systems have been created. These systems are well-structured, computerized, and well-programmed to manage everyday operations and hospital activity management. Receiving the report following the consultation is currently the biggest problem for patients. Many hospitals maintain records in their systems, but patients residing outside of the hospital are unable to access them. As part of this project, we will add the capacity to save the report in a database and make it reachable from everywhere in the world.

Patients are registered as part of Project Arogya360, and doctors' information is stored in the system.

Users must register before they may access the functionalities of the program, whether they are licensed medical professionals or registered patients. Using their email address and password, the user can access the system. The major goal of this software is to bridge the communication gap between patients and doctors. Users have the option to record their reports and medications so they may quickly access the information as needed.

The primary features of this program include feeds from doctors, emergency contact information, health management advice, medication and water alerts, and appointment scheduling.

All of the aforementioned characteristics are both demands from people and answers to contemporary issues. This software offers some tools to combat patient medication maintenance issues, delayed treatment, and miscommunication. Serious problems in society and hospitals include the causes of dehydration and its effects, failing to remember to take recommended medications, and sluggish communication between patients and doctors. Therefore, this application serves the purpose of overcoming it.

MONGO DB is the best and most convenient document database to keep information secure because it can be used in a variety of fields where preserving records is important. React Native, a frontend JavaScript framework that makes it simple to build sophisticated apps, is used to build the app. Express Js framework and Node Js, a server-side platform for open-source development that supports JavaScript code, are used to build the project's backend APIs.

II. LITERATURE SURVEY

[1] One can select the right hospital and first aid using this research document, as well as learn more about any necessary medications.

[2] As a result of his research, he has figured out how to employ IMUS (inertial measuring units) to continuously monitor the patient's health. This enables the appropriate development of complex algorithms for use in sensing.

[3] This study discusses how multi-agent systems can be used to find the best balance between patient wait times and doctor utilization of their time.

[4] A hospital's suggested technique of organizing doctors' duties is advantageous when transporting patients to emergency because of unforeseen events.

III. WORKING

The software has a tonne of features, including the ability to immediately make doctor visits, track medications for patients, remind them to drink water if they frequently become dehydrated, and have reports generated by doctors. All of these characteristics support the hospital's high standards and the patients' well health. The following list of the app's characteristics is detailed:

1) Patient (Stakeholder)

Numerous details about each patient are made available, including name, age, phone number, email, password, medical history, reports on current therapies, interactions with other patients, and activities carried out inside the app. All of these things work together to collect data and send it on for additional analysis to provide meaningful information.

2) Physician (Participant)

On the other hand, doctors have access to the ability to create patient reports that are automatically linked to the necessary patient based on the patient's ID. Doctors can also offer articles about health problems they've encountered and solutions. Since all doctors must be confirmed, extra criteria, such as education, degree, etc., are taken into account when registering a doctor.

3) A medication tracker

The reports that the doctor creates are added to the patient's data, and it automates notifications for the desired medications that the doctor has prescribed in the report. The device's built-in features are being utilised to remind the patient to take his or her medications. In the event that a dose is missed, the patient's history can be checked and confirmed to determine when the medication was missed, allowing the doctor to better treat the patient by maintaining complete transparency.

4) Water warning

Dehydration frequently affects our health in a variety of ways, so remembering to drink water every few minutes or hours might help prevent it. The functionality can be altered to suit the user's requirements. The user can change the reminder's intervals to suit their preferences.

5) The advice to use cautious

The backend analyses the vast data produced by the users (patients and doctors), and the information gleaned is then shared on the app in the form of warnings. The data is analysed using reports created, a recent common illness, medications prescribed, and other factors.

6) Arranging meetings

The software allows the doctors to engage and display their schedules and availability in the form of a calendar. In contrast, patients can check and make an appointment by confirming a doctor's open slots. Once the doctor has approved the appointment, the time and date are reserved for the same check-up and assigned to both the patient and the doctor.

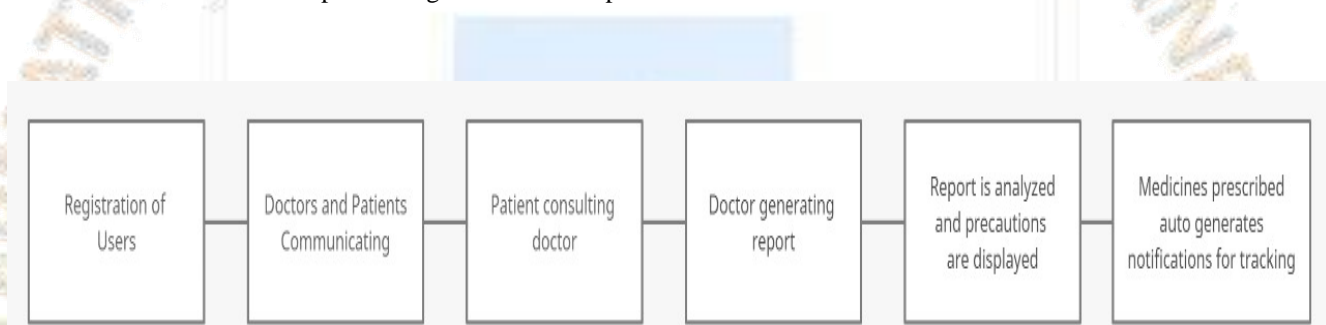


Fig 1. Process Flow Diagram

IV. IMPLEMENTATION

The system is developed using React Native a JavaScript Framework. It is owned by two stakeholders' doctor and patient. This application can be run across all Android and IOS phones. To develop applications that can run on Android and iOS devices, Android Studio and XCode are used to verify their integrated development environment.

Patient Module:

Patients can register themselves search for doctors, and book appointments using the appointment tab inside the menu, they can connect with doctors using the chat functionality, and keep records of the reports, medicine, etc.

Doctor Module:

Doctors can share reports with patients, solve patients' queries using chat, and share relevant articles which both the stakeholders can share with their friends and family.

V. RESULTS AND DISCUSSIONS

The user is led to a screen where they must log in or register as soon as they install the application. After completing the registration process, users can log in using their email address and password. Once logged in, the user can see the feeds posted by doctors on the main screen. Users can schedule appointments using the system on the following tab based on their and the doctors' availability. If the user requires it, there is also a feature for a prescription tracker and a water reminder. There is a tab that opens a chat window where users can consult with doctors and converse with them. In this chat box, doctors can give patients reports.

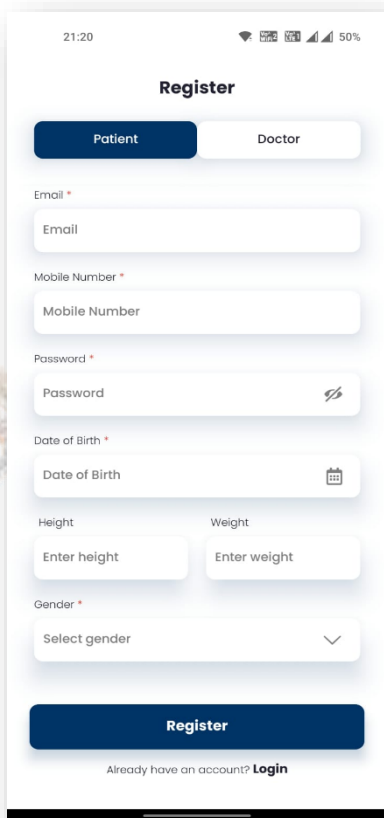


Fig 5.1 Registration Screen

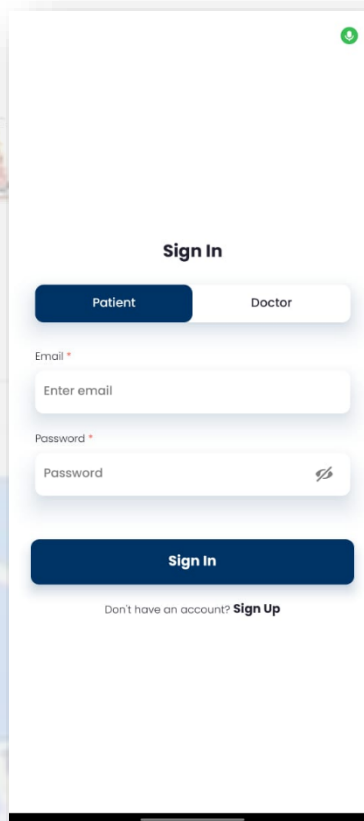


Fig 5.2 Login Screen

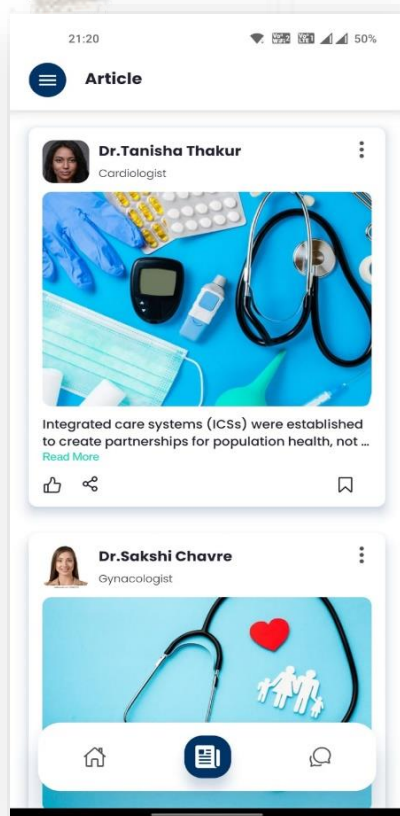


Fig 5.3 Article Screen

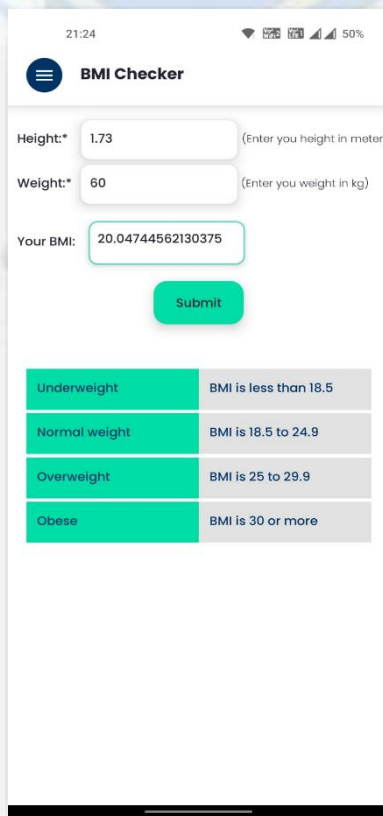


Fig 5.4 BMI Checker



Fig 5.5 Emergency Contacts

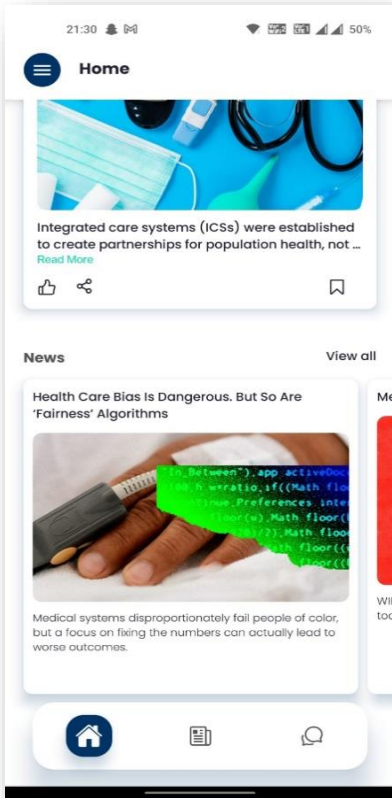


Fig 5.6 Home Screen

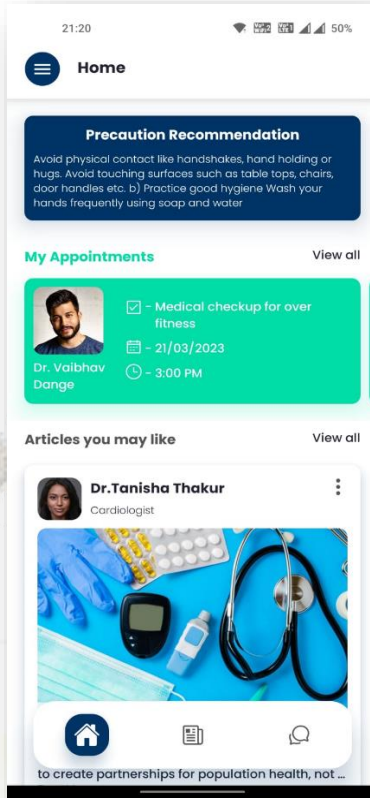


Fig 5.7 Home Screen

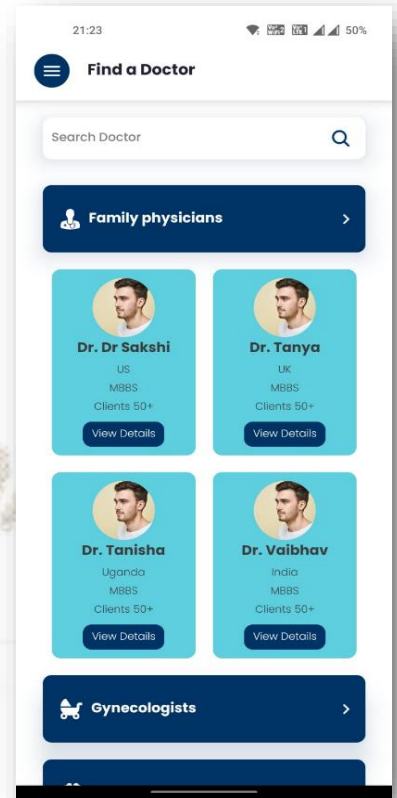


Fig 5.8 Doctor List

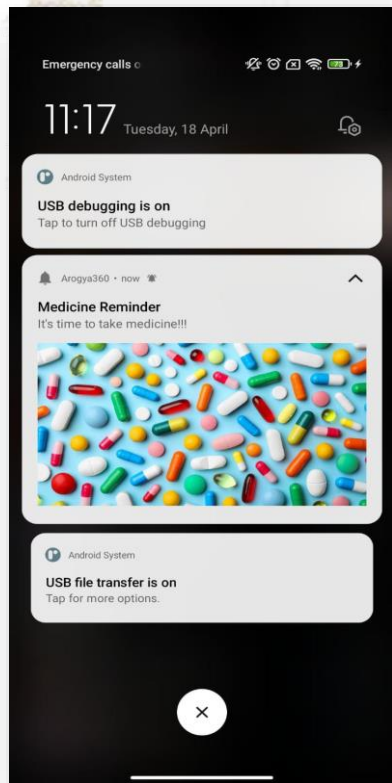


Fig 5.9 Notification

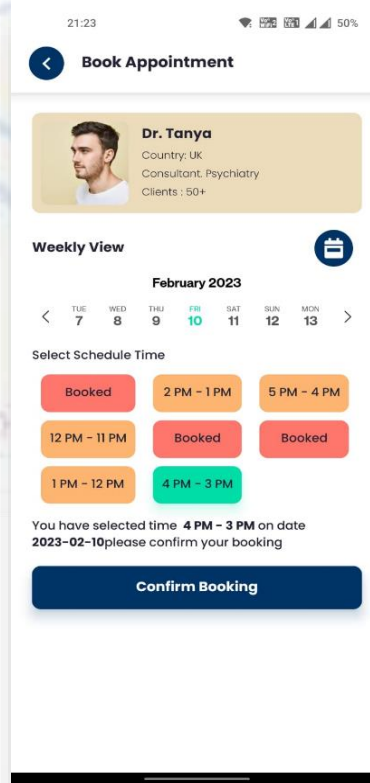


Fig 5.10 Appointment Screen

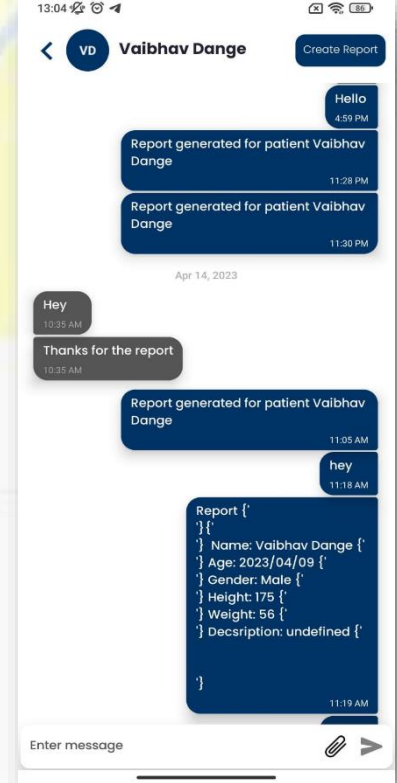


Fig 5.11 Chat Screen

VI. CONCLUSIONS

To sum up, the health sector needs to digitalize its management system so that managing patients is much simpler, more effective, and takes less time. The Hospital Management System is crucial for keeping track of patient and physician information, making it simple for both patients and physicians to access reports. Users' and doctors' time will be saved by offering health care suggestions, checking doctors' schedules, and making appointments in advance, documenting patient reports, reminding patients to take their medications and drink enough water, and facilitating simple chat communications with professionals on a single platform. The time spent searching the internet for information is eliminated with this software. We hope that this application causes improvements in the medical industry that are advantageous to both patients and physicians.

VII. REFERENCES

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