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Digital Healthcare

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Abstract: *The population of the world is multiplying with each coming year and so are the diseases and health issues. There is a rise in the need for blood as the population grows. There are many potential blood donors thanks to the world's expanding population. Blood banks play an important role in the process of collecting blood and managing blood stocks, approving blood requests, updating donations, and updating available blood types. The use of digital healthcare software makes it easier for patients and healthcare professionals to communicate with one another. With the help of this function, medical professionals such as doctors and therapists can interact intimately with their patients and provide them with very individualized health information. The software system is an online healthcare management system that helps in managing various blood banks and healthcare operations effectively. The project comprises a central repository with a variety of blood deposits and related information. These particulars include blood type, storage location, and storage date. These specifics aid in preserving and keeping an eye on the blood deposits. The project is an online system that enables users to determine whether the blood bank has the required blood deposits for a specific group. Moreover, the system also has added features such as patient name and contacts, blood booking, and even use for certain blood groups provided in case of emergency. Also, the project has various other health care facilities like providing contact of hospitals with dialysis services, booking blood test schedules online scheduling of appointments, ambulance services, and ventilator services.*
Key Word: *Sql, Database, Languages, Flutter.*

I.INTRODUCTION

This online system is developed on the Flutter platform and supported by an SQL database to store blood and user-specific details. Through this project, we hope to show how My SQL operations like creating, reading, updating, and deleting are used. This project contains adding details of the doctor. Once, registration is done doctor and registered candidate/patient can add blood donor/receiver details with blood group, quantity, age, etc. Now, when a patient requires blood, clinicians may quickly determine the available blood type and give it to the recipient. The project will also provide details about the blood camps so that number of people can participate in a good cause and save many people's life. Online scheduling enables individuals to securely and conveniently book their appointments via tablet etc. The online booking of appointments will also provide reminders through notifications and emails, which will be sent to patients or individuals on the date booked before their scheduled time of booking. Users who have an android phone & active internet connection can be contacted.

Digital healthcare is an android application providing various healthcare services in minimum time and money. The advantages of this project are- time savings, monetary savings, 24 hours convenience, online booking of appointments, centralized information system. These problems can be dealt with by automating the existing healthcare management system. A high-end, efficient, highly available, and scalable system that bridges the gap between the patients/users and the healthcare recipients to reduce the efforts required in search of healthcare services

II.TECHNOLOGY USED

Flutter: Google developed the open-source UI software development kit known as Flutter. It is used to create cross-platform software from a single codebase for platforms like Android, iOS, Linux, macOS, Windows, Google Fuchsia, and the web.Flutter was introduced in 2015 and launched in May 2017.

Flutter's initial release, "Sky," utilized the Android operating system. With the stated goal of being able to display continuously at 120 frames per second, it was revealed at the 2015 Dart developer summit. Google released the last significant release before Flutter 1.0, Flutter Release Preview 2, at the keynote address of Google Developer Days in Shanghai in September 2018. Flutter 1.0, the first stable version of the framework, was launched on December 4th of that year at the Flutter Live event. On December 11, 2019, Flutter 1.12 was released at the Flutter Interactive event.

The components of flutter are:
1. Dart platform
2. Flutter engine

3. Foundation library
4. Design-specific widgets
5. Flutter Development Tools (Dev Tools)

The Flutter engine, which is mostly built in C++, offers low-level rendering functionality utilizing either the unique "Impeller" graphics layer or Google's Skia graphics library. It also interacts with platform-specific SDKs like those for Android and iOS to handle native plug in support, file and network I/O, and more.

Using a single codebase, Flutter is a portable UI toolkit for creating native-like apps for mobile, web, and desktop. It integrates Material Design and Cupertino widgets and makes use of the Dart programming language. Developers using Flutter can produce stunning user interfaces that feel and look native. Despite the fact that you just have one codebase, it functions normally on all platforms.

The only framework with a mobile SDK that offers a responsive design without a Java script bridge is Flutter, which achieves a level of speed comparable to that of its cousin and main competition React Native. The many platforms, including Android, iOS, and Linux, MAC, Windows, and Google Fuchsia applications, are all simply integrated.

Dart Language: A programming language called Dart was created specifically for client development, including web and mobile apps. It was created by Google and may be used to create desktop and server apps.
It is a class-based, garbage-collected, object-oriented language with C-style syntax. It supports type inference, interfaces, mixins, abstract classes, reified generics, and can be compiled to either machine code or JavaScript.

Android App: A software program called an Android App is created to operate on an Android device or emulator. The acronym APK, which stands for Android package, is often used to refer to a file. The app code, resources, and meta data are all contained in this file, which is a Zip archive. Kotlin, Java, and C++ can all be used to create Android apps, which are then executed by a virtual machine. Android development has a low cost and a great return on investment. Applications cost less since Android attracts a sizable clientele from a wide range of socioeconomic backgrounds. In contrast to other operating systems, the majority of the applications are readily available on the Google Play Store and are free to download. Companies are now understanding how mobile apps may expand their consumer base and help them reach a wider audience in the digital age. The fact that practically everyone has a smart phone and can access a wide range of applications has undoubtedly greatly boosted the e Commerce industry.

Today, a sizable portion of mobile app development is controlled by Android OS. Globally, there are currently over 2.5 billion active users, and that number is constantly increasing. What makes it significant as the preferred platform for companies are compelling advantages like massive customer reach, seamless customization, faster deployment, improved scalability & much more.

III.EXISTING SYSTEM

Systems that are already developed by others provide various healthcare facilities individually. Some of them are web-based system and some of them are android-based system for accessing facilities one has to interact with several systems to gain several facilities which make the process of gaining and acquiring facilities are bit complex and tough. The only dissatisfactory thought about these is that they are good at providing many single healthcare facilities but are not able to provide many healthcare facilities as a whole.

IV. PROPOSED SYSTEM

The proposed system deals with the dissatisfactory thought of another system by providing several facilities as a whole. Our system is an android-based application that covers all the demerits of another existing system [4]. Our application is built using a flutter interface and provides healthcare facilities simply and easily. The proposed project will help the blood bank administrator or the hospital administrator to meet the demand of patients/users by providing the request when required. This application will provide a common ground for all three parties (recipient, healthcare service provider, and admin).
Easy contact between patient/user and recipient through this android application includes:

- User Databases
- User Login & Sign up
- Donor Details
- Finding blood groups easily
- Finding Nearby Hospitals
- Achievements & Rewards
- Appointments
- Ambulance services
- Dialysis services
- Ventilator services

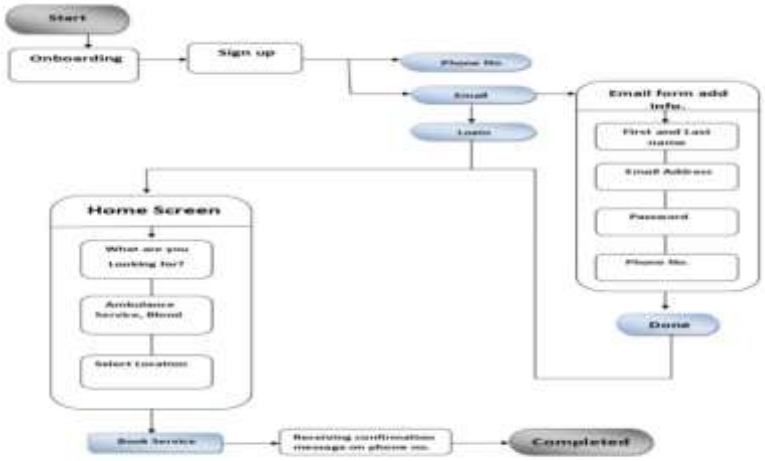

Fig: Flowchart of digital healthcare

V.CONCLUSION

There are currently numerous studies on healthcare facilities or providing healthcare facilities via digital media. However, even though there are numerous ways to obtain blood, health care services, many people still struggle to do it on time. Most of the systems work only for particular facilities and not for special blood groups or services as a whole and most of them don't have a centralized form of system. Some of their work is only for donors and some only work for blood bank and some of them only work for different facilities. So, it is necessary to make a system that combines all these healthcare facilities in a single system so that people can easily access those facilities just by using this application [3]. The proposed project will help the blood bank administrator or the hospital administrator to meet the demand of patients/users by providing the request when required. This application will provide a common ground for all three parties (recipient, healthcare service provider, and admin)[6].

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