FLUTTER DEVELOPMENT FOR PHR APPLICATION

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Independent Project

ABSTRACT

This project report abstract outlines our proposal to implement an NDHM-compliant personal health records (PHR) platform that caters to the needs of users. Our primary objective is to provide patients with a platform where they can securely store and access their health data in an organized and meaningful way.

To achieve this, our solution involves the implementation of a comprehensive logging page. This page will not only allow users to log their vitals but also import data from various sources, including wearables and other tracking applications. By centralizing data from multiple sources, users can conveniently access all their logged information in one place. Furthermore, with user consent, this data can be synchronized with their ABHA health profile.

In addition to data storage and organization, our platform will display the logged data in longitudinal graphs. This feature will enable users to visualize their health progress over time, empowering them to make informed decisions about their well-being.

Furthermore, our platform will offer value-added services that can be monetized. These services may include personalized health insights, appointment scheduling, medication reminders, and other features aimed at enhancing the user experience and improving health outcomes.

Moreover, our NDHM-compliant PHR platform will provide helpful information to doctors and insurance agencies, subject to the patient's consent. This will facilitate efficient and informed medical consultations and support streamlined insurance processes.

By implementing this solution, we aim to create a user-centric PHR platform that addresses the diverse needs of patients.

WORK DONE

The project report describes the work completed on the personal health records (PHR) platform. The following tasks were accomplished:

1. App Introduction Pages: We designed the app introduction pages using Figma UI, providing an engaging and informative onboarding experience for users.

2. Signup and Sign-in Page: We developed a global, user-friendly signup and sign-in page connected to Firebase authentication. This allows users to create accounts and securely log in to the platform.

3. ABHA integration: The user can easily use his/her ABHA account credentials (Health ID, OTP) for a secure login/logout. And further view his/her account details on the application screen as well.

4. Home Page and Medical Timeline: The home page displays a medical timeline feature. Users can input a "from" and "to" date range, and the platform fetches vital information from the backend database for the specified period. Graph integration was implemented to visualize different types of vital data.

5. User Account and Profile Information: We created a user account and profile information page where users can view and manage their personal details.

6. OCR Integration for Medical Documents: We integrated OCR (Optical Character Recognition) functionality for relevant medical documents. Users have the option to choose an image from their mobile memory or capture a new picture. The OCR system identifies important text within the images based on their category.

7. Profile Page and Logout Option: The profile page includes a logout option for users to securely sign out of their accounts. Additionally, the page provides access to features like appointments, where users can view their upcoming appointments and book new ones. The "Book Appointment" feature incorporates a calendar-like interface for convenient scheduling.

8. Integration into a Flutter App: All the aforementioned features and functionalities were integrated into a single Flutter app. The app was built from scratch, ensuring seamless navigation and a cohesive user experience.

Overall, these accomplishments contribute to the development of a comprehensive PHR

platform that focuses on user engagement with ABHA account integration, secure data management, vital data visualization, OCR integration, and convenient appointment management.

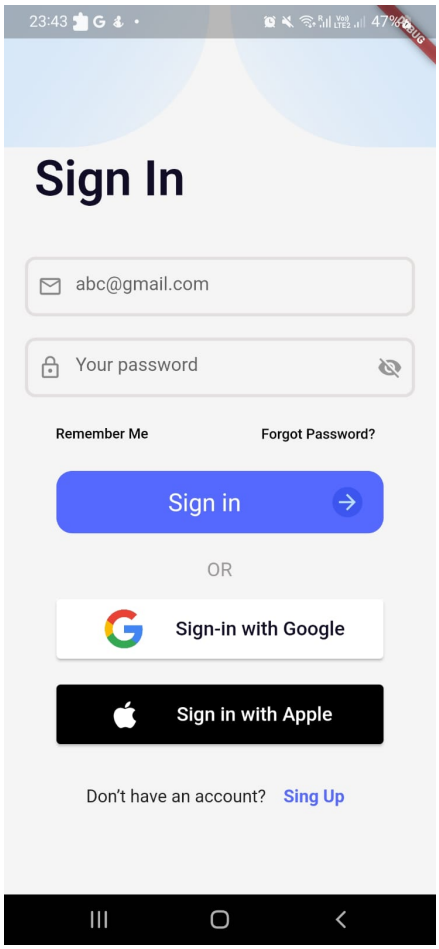
The work conducted on the Flutter platform involved developing the PHR platform from scratch. This included integrating features such as timeline, vitals, and graph functionalities, as well as implementing OCR integration for medical documents and introducing a new appointments feature.

WORK DISTRIBUTION

Harsh - Medical timeline, OCR/NER, vitals graph, appointments feature, and ABHA integration.

Aayush - Introductory pages, sign-up/sign-in pages, user account, medical timeline, profile information, and ABHA integration.

WORKING APP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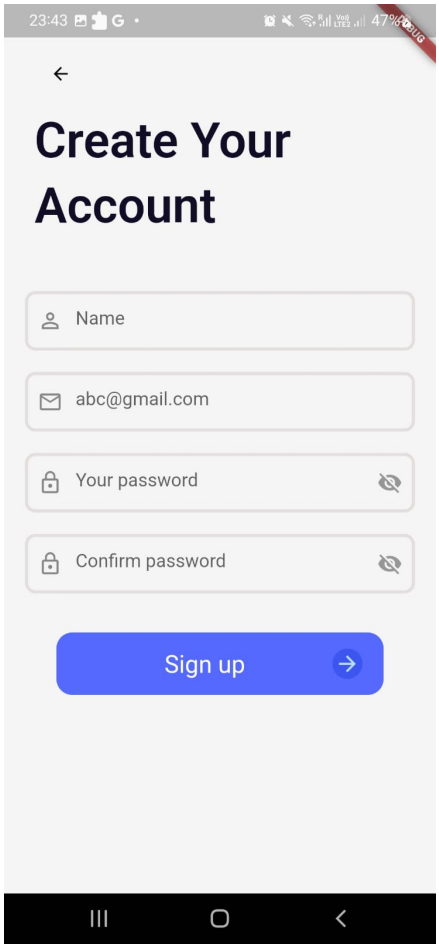
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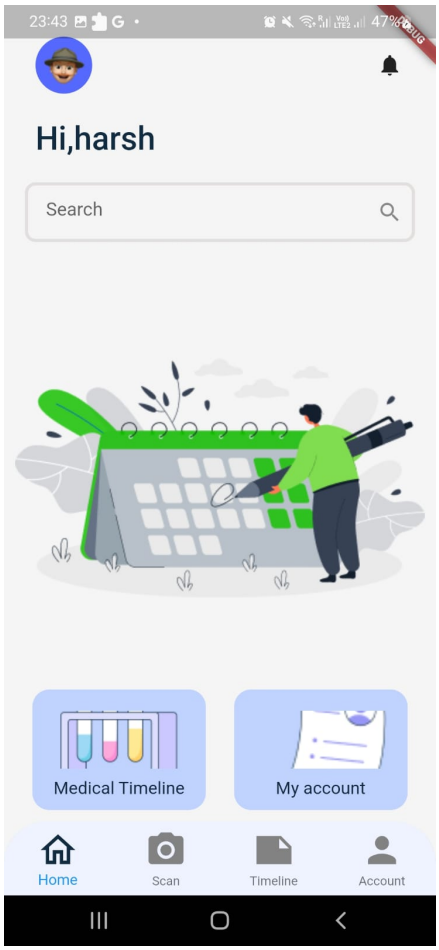
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Timeline
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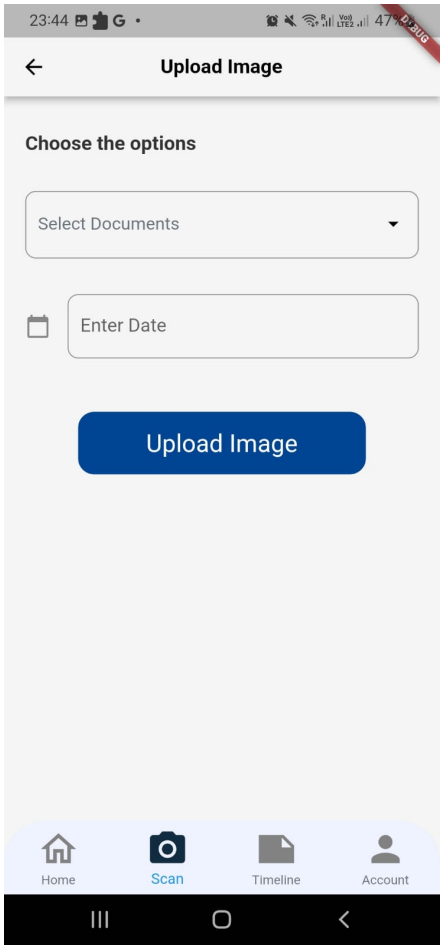
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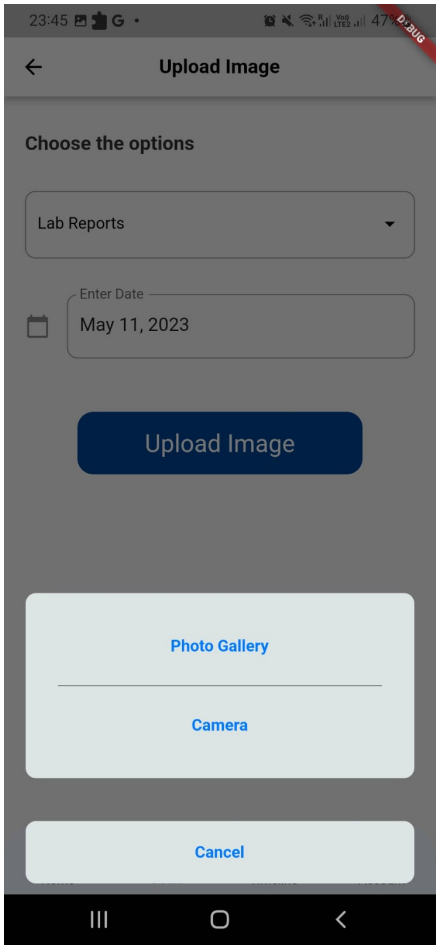
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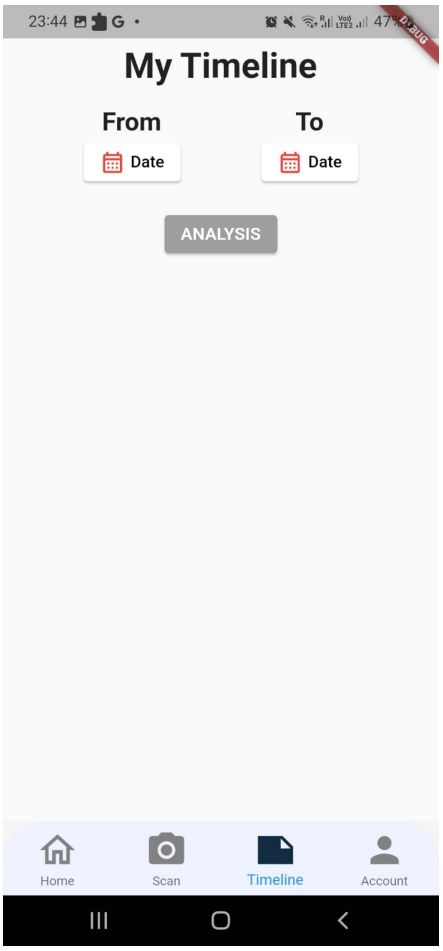
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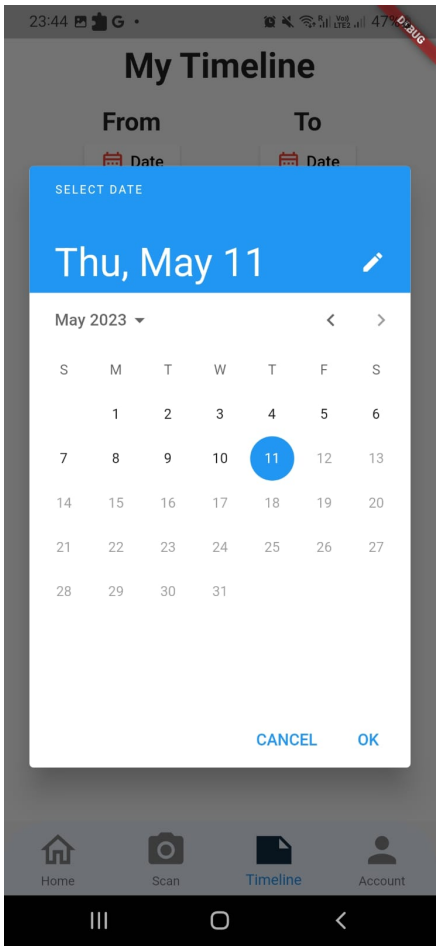
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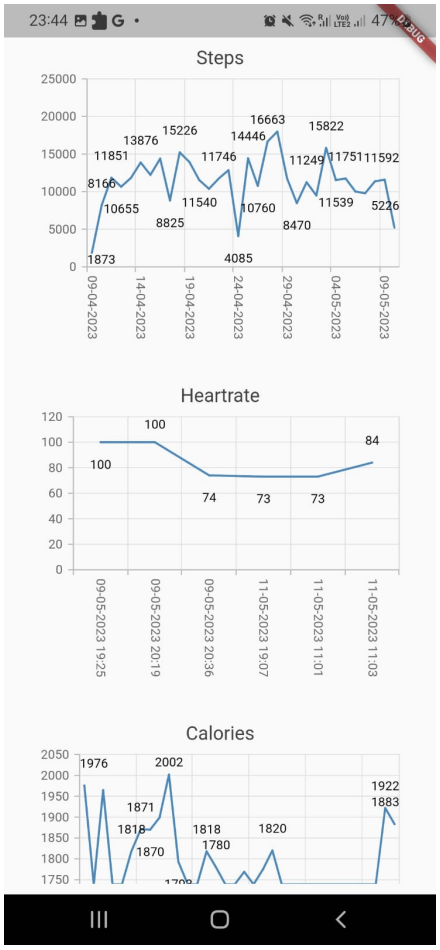
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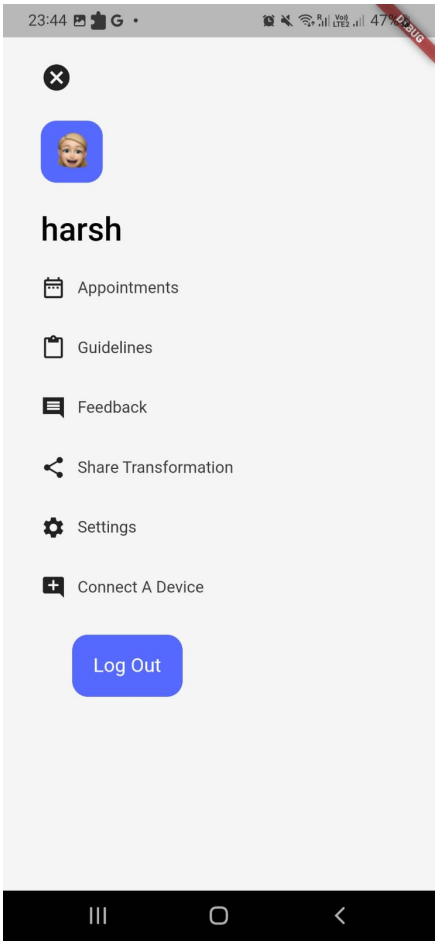
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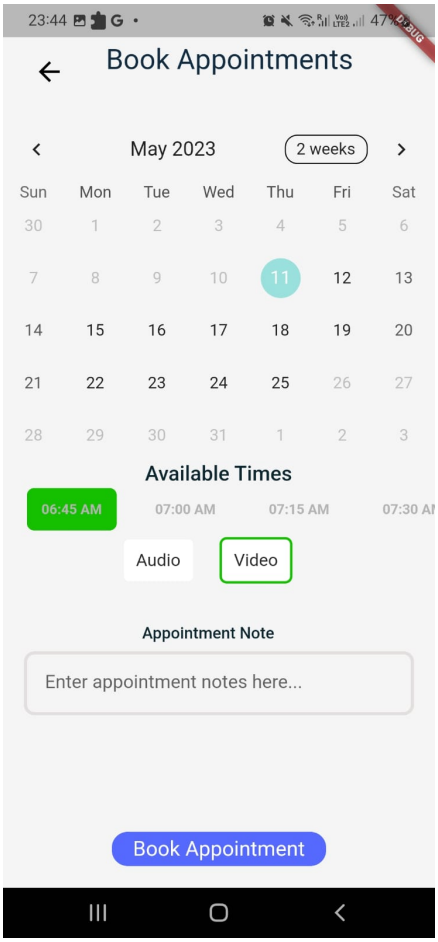
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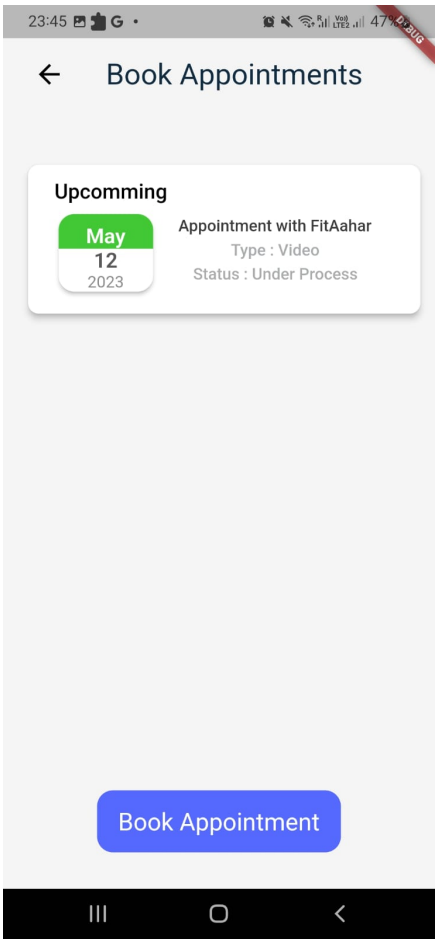
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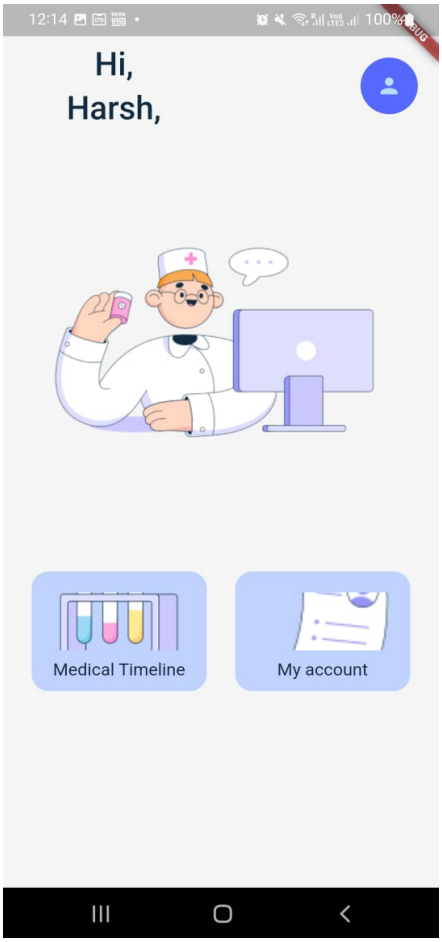
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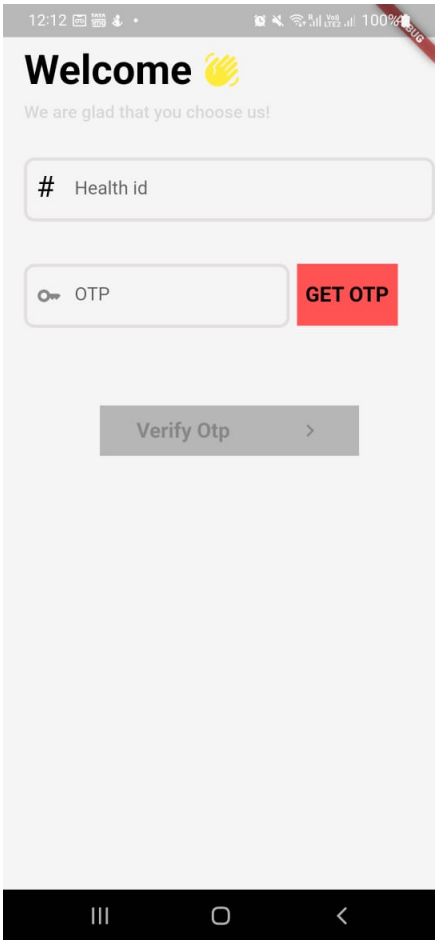
My account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mobile: 7428486861

FUTURE WORK

The following tasks are planned for future work in the project:

1. OCR Integration:

- OCR in integrated (API is being called) in the given code but facing some errors.

The reason OCR might not be working in Flutter but working in Java could be due to factors such as the availability and compatibility of OCR libraries or APIs in the Flutter ecosystem. Java, being a more mature language, has a wider range of OCR libraries available, while Flutter's ecosystem might have fewer options specifically tailored for OCR as the difference in the compressed Base64 strings between Flutter and Java, which can be attributed to the algorithm implementation of the compression function.

To resolve the OCR issue in Flutter, one would need to explore OCR libraries or APIs compatible with Flutter and ensure proper integration and usage within the Flutter application.

2. ABHA Integration:

- The integration of ABHA (specific system or module) is required.

- This integration task should be prioritized and completed as part of future work.

3. Watch App Connectivity:

- The app needs to be connected to a watch device.

- Establishing a seamless connection between the mobile application and the watch is crucial.

These tasks will be addressed in the future phases of the project to enhance the functionality and performance of the application.

Github - https://github.com/phr-winter23/phr-flutter.git