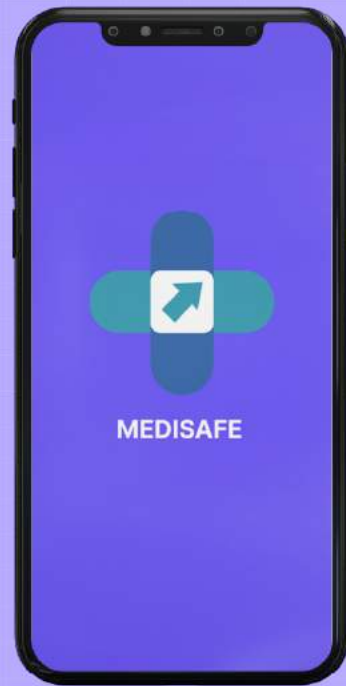




MEDISAFE
Mobile App for online
consultations with doctors



INTRODUCTION TO HUMAN COMPUTER INTERACTION

Assignment: **Tablet system for hospital**

Cohort: **DDM 1B**

Members: **RAMKALAWON KUSHAL**

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MEGRAJSING ATISH SHAM

POONYTH CAPIL LOCHUN

Research & Analyze

Interview and Structure creation

UI & UX design

Design system & development

Product testing & feedback



PROJECT SUMMARY

The telemedicine industry have grown exponentially in recent years and doctors are starting to integrate more technologies and services in the telemedicine field. But they have a lot of things to complete at once simultaneously, such include making appointment for patients to come in, keeping track of patients' documents, handling invoicing, and many other things. That's why they don't provide the greatest care to patients as they should in this difficult scenario.

To improve the workflow, eDoc will help them by providing features such as online & in-person visit scheduling, e-prescribing, medical history reports and billing invoice management all in one place thus enabling doctors to provide better care for patients.

1.Research & Analyze

We were assigned to do a project for a hospital. The project is that we need to create an app for the hospital.

What is an App?

An app, short for "application," is a computer program designed to perform a specific function or set of functions on a computer or mobile device. Apps can be developed for various platforms, such as desktop computers, mobile devices, and web browsers. They can be installed locally on a device, or accessed through a web browser.

The app we are going to develop will be for mobile phones and tablets. So, let's look what mobile apps are. A mobile app is a software application that is designed to run on a mobile device, such as a smartphone or tablet. Mobile apps can be



downloaded from app stores or marketplaces that are accessible from the device, such as the Apple App Store or Google Play Store.

How will the app be developed?

The app will be developed by a team of 5 members. We've split the work between us. First and foremost, we will have the research and analysis about the app and market research. Then comes the designing side. There will be the wireframing design (lo-fi and high-fi designs). And then comes the coding part.

Purpose of developing this app:

The purpose of developing this hospital app is to make both doctors/nurses or hospitals itself and the patient's life easier. A hospital is designed to facilitate communication and information exchange between a hospital and its patients, or is designed to help healthcare professionals manage patient care and hospital operations.

Devices & Platforms

The devices that we are targeting are the devices that people can use easily without any problem and that they can access quickly.

So, the devices we are targeting are:

- Smartphones:
 - Android
 - iOS
 - Windows Phone
- Tablets:
 - Android
 - iOS



Target Audience

The target audience for the App will be mainly the doctors. The app will help doctors to manage their workflow.

As we are in a computerized and digitalized era, most people use smartphones, even elderly people, so the targeted age will be 12 years old to 65 years old.

How the app will be used by the doctors and nurses?

The way that doctors and nurses use a healthcare app will depend on its specific features and functionality. Here are some examples of how healthcare professionals might use an app:

- **Patient management**

Provide doctors and nurses with a dashboard that shows them a list of patients they are responsible for. This dashboard could include information about each patient's medical history, current medications, and treatment plan. Doctors and nurses could use this information to monitor patients, update their treatment plans, and communicate with each other about patient care.

- **Communication**

Provide doctors and nurses with a messaging system that allows them to communicate with each other in real-time. This could be useful for discussing patient care, sharing information, or requesting assistance from other healthcare professionals.



- **Medication management**

Provide doctors and nurses with tools to manage patient medications, such as a database of medications and dosages, as well as reminders for when medications need to be administered.

- **Telemedicine**

Provide doctors and nurses with the ability to conduct virtual consultations with patients, allowing them to diagnose and treat patients remotely.

- **Analytics and reporting**

Provide doctors and nurses with data analytics and reporting tools that help them monitor patient outcomes and hospital operations. This could include metrics such as patient satisfaction, readmission rates, and hospital-acquired infection rates.

How will patients use the app?

A hospital app can be used by patients in a variety of ways, depending on its purpose and features. Here are some of the ways in which patients might use a hospital app:



- **Find information**

Patients can use a hospital app to find information about the hospital, its services, and its staff. They can also get directions to the hospital, find parking information, and learn about the hospital's policies and procedures.

- **Make appointments**

Appointments can be schedule with doctors, specialists, and other healthcare providers. They can also check the availability of doctors and book appointments based on their preferred time and date.

- **Access medical records**

The app can be used to access their medical records, including test results, medications, and diagnoses. This can help them stay informed about their health and make better decisions about their care.

- **Receive notifications**

Notifications from the hospital app regarding upcoming appointments, prescription refills, and other important healthcare information can be received.

- **Communicate with healthcare providers**

The app can be used to communicate with healthcare providers, ask questions, and get answers in a timely manner.

- **Pay bills**

Patients can use the app to pay their hospital bills, view their account balances, and review their payment history.



2. INTERVIEW AND CASE STUDY

The Healthcare industry is growing at an exponential rate since the outbreak of COVID -19 and technological development is accelerating the transformation of the healthcare industry.

But sometimes, getting a doctor's appointment, waiting in a long queue in a doctors' clinic can make us frustrated. With technology reaching our hands in the form of mobile phones, tablets, it will also be easier and convenient if everybody is able to consult doctors online. We as a team of 6 members took this project and designed an appointment booking app to overcome these challenges.

3. PROBLEM STATEMENT

In this project, we took two groups of users which are Doctors and Patients. Doctors face a challenge in managing their appointments and patients struggle to reach doctors and also wait in longer queues.

This app will help anyone to book an appointment instantly. Patients can search for the right doctor by speciality, symptoms, location, check doctor's available time slots and book instantly avoiding the need to wait in longer queues, making it easier and faster to reach doctors. They can also avail text checkups and online video consultation. Doctors can also manage their appointments and save time.



3. ROLES AND RESPONSIBILITIES

The whole team was responsible UX/UI designer in this project.

Responsibilities: User Research (Interviews), Secondary Research (Competitor Analysis), Ideation and Storyboarding, Wireframing and High Fidelity Design and Testing (Usability Study)

4. DESIGN PROCESS

We followed the concept of Design Thinking: Empathize, Define, Ideate and design.

5. MAIN INTERVIEWS(GENERAL)

First and foremost, Interviews involve speaking with stakeholders such as doctors, nurses, and other hospital staff members to understand their needs and requirements for the tablet system. These interviews help designers gain insight into the daily workflows and tasks performed by staff members and identify areas where the tablet system can help improve efficiency, reduce errors, and enhance patient Care.

The structure generation process typically involves creating a user persona or user profile based on the information gathered from the interviews. This persona represents the typical user of the tablet system and helps designers understand the user's needs, preferences, and behaviours. The information gathered from the interviews is then organised into categories or themes, such as communication,



medication management, and patient information management. These themes form

the basis of the design concept and help guide the development of the tablet system. Furthermore, by conducting interviews and using structure generation techniques, designers can create a tablet system that is tailored to the needs and requirements of the hospital and its staff members, ultimately leading to improved patient outcomes and better overall care.

There are some guidances of how to design the new tablet system for the hospital:

1. Research the Hospital's Needs and Requirements

The first step in designing a new tablet system for hospital XYZ is to understand the needs and requirements of the hospital. Conduct research to understand the workflows, processes, and tasks performed by doctors, nurses, and other staff members in the hospital. This research can be done through interviews, surveys, and Observations.

2. Define the Objectives

Once you have a clear understanding of the hospital's needs and requirements, define the objectives of the new tablet system. For example, the objectives could be to improve communication between doctors and nurses, to reduce errors in medication administration, or to improve patient outcomes.



3. Create a User-Centered Design

Design the tablet system with the end users in mind. This means that the design should be intuitive and easy to use for doctors, nurses, and other staff members. The

design should also consider the different levels of technical proficiency among the users.

4. Define the Features and Functions

Based on the objectives and user centered design, define the features and functions

of the tablet system. For example, the tablet system could include features such as patient information management, medication administration management, and communication tools.

5. Develop a Prototype

Once the features and functions have been defined, develop a prototype of the tablet

system. The prototype should be tested with end-users to gather feedback and make

Improvements.

6. Evaluate and Refine

Evaluate the prototype with end-users and refine the design based on their feedback.

This iterative process can help ensure that the final product meets the needs and requirements of the hospital.



By following these guidelines, you can design a tablet system that is tailored to the needs of hospital XYZ and can help improve patient outcomes, streamline workflows, and reduce errors.

7. Dashboard Interface:

The system should have a user-friendly dashboard that allows doctors to review patient data quickly. The dashboard should display the most critical information, such as demographics, test results, and lab reports.

Electronic Medical Records

The system must have a comprehensive electronic medical record (EMR) system that allows doctors to create and store patient notes. The EMR should be easily searchable and able to organise information by date, patient, and medical condition.

Drug Information

The system should have a drug database that provides information on indications, starting dosages, contraindications, drug interactions, and adverse drug reactions.

The database should be regularly updated to ensure that doctors have access to the latest information.



Sharing Information

The system must have the ability to share information with other users, allowing doctors to communicate and collaborate on patient care. The system should also support handovers between doctors during shift changes.

Electronic Prescriptions

The system should have an electronic prescription feature that allows doctors to write and sign prescriptions electronically. The feature should be integrated with the hospital's billing system.

Database Integration

The system must be able to integrate and interface directly with the hospital's database of patient records and other relevant databases. This feature ensures that doctors have access to the most up-to-date patient information.

Medical Updates

The system should have a newsfeed feature that provides doctors with the latest medical news, therapeutic updates, and medical journal information.



Synchronization

The system must be able to synchronise information on the medical unit PC system and home PC systems. This feature ensures that doctors have access to patient information, even when they are not in the hospital.

Training and Reference Materials

The system should have a comprehensive training and reference material library that supports junior doctors in their work. The library should be easily searchable and organised by topic.

Task Management

The system should have a task management feature that allows doctors to organize their tasks and operations during a shift. The feature should allow doctors to prioritize tasks and set reminders for important deadlines. Scientific Calculator and Daily Calendar

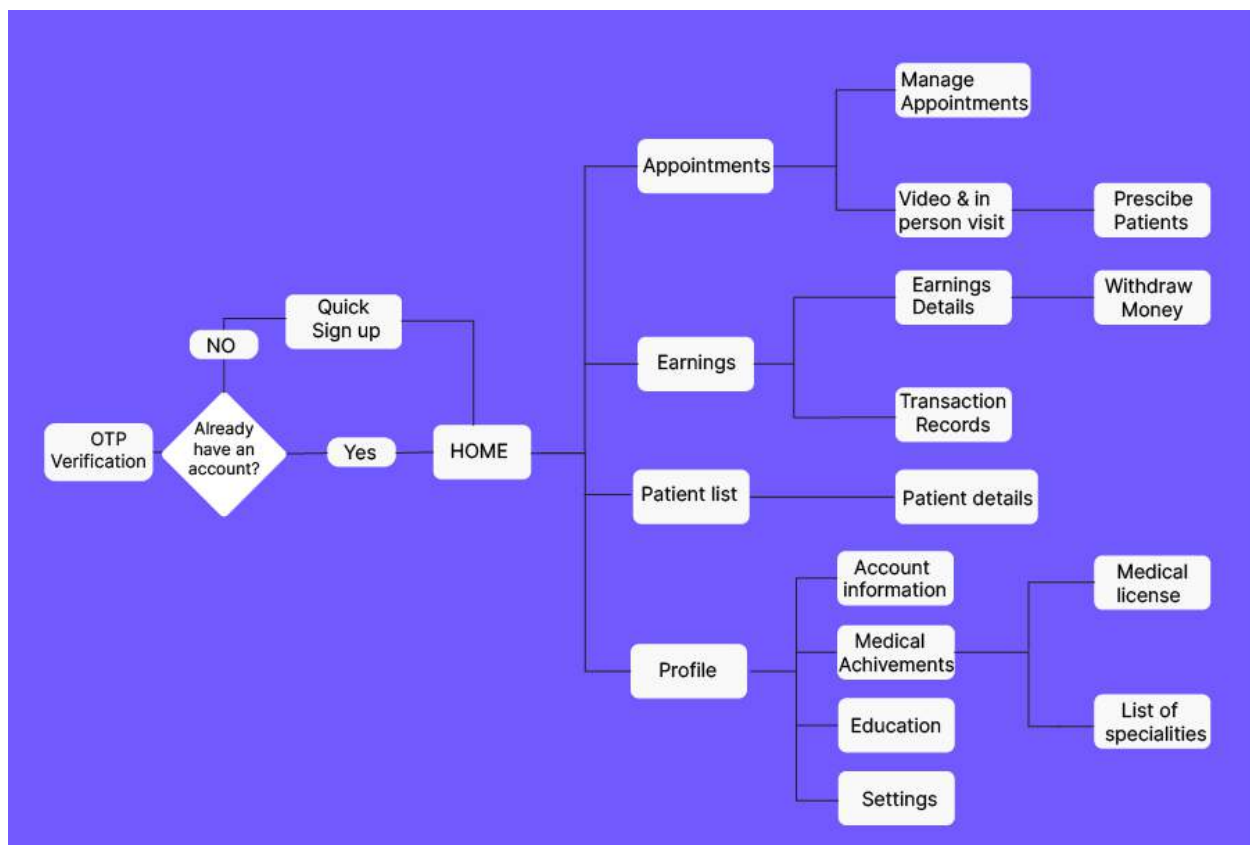
The system should include a scientific calculator and a daily calendar to improve efficiency and organisation of operations. The calculator should have advanced functions that doctors can use to perform complex calculations. The calendar should allow doctors to schedule appointments, set reminders, and view their schedule for the day.

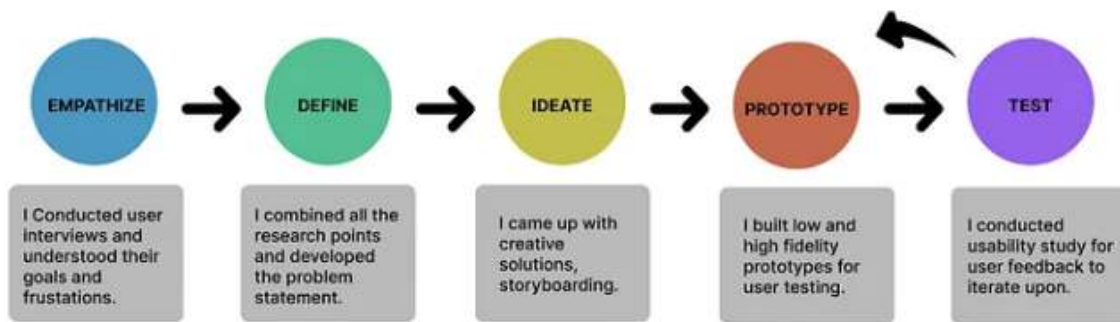
In summary, the tablet system should have a user-friendly dashboard interface, an electronic medical record system, a drug database, sharing information capabilities,



electronic prescriptions, database integration, medical updates, synchronization, training and reference materials, task management, a scientific calculator, and a daily calendar. These features will help doctors provide high-quality patient care while streamlining their work processes.

UX AND UX DESIGN AND DESIGN SYSTEM DEVELOPMENT





Participant characteristics:

- 2 of them are professional doctors with an experience of 15 years.
- 2 of them are recent medical college graduates who have started practicing medicine. I chose recent graduates to understand the needs of doctors who have started practicing recently.

We asked the following questions to Doctors:

- *Are you a registered doctor in any other appointment booking app?*
- *If yes, what are the challenges that you face in the app?*
- *How are you able to manage your appointments?*
- *What are some of the things that you like about the current process?*
- *What features do you think are most important in such kind of apps?*



User Interview (Patient flow): I interviewed 3 people for patient's flow.

Participant characteristics:

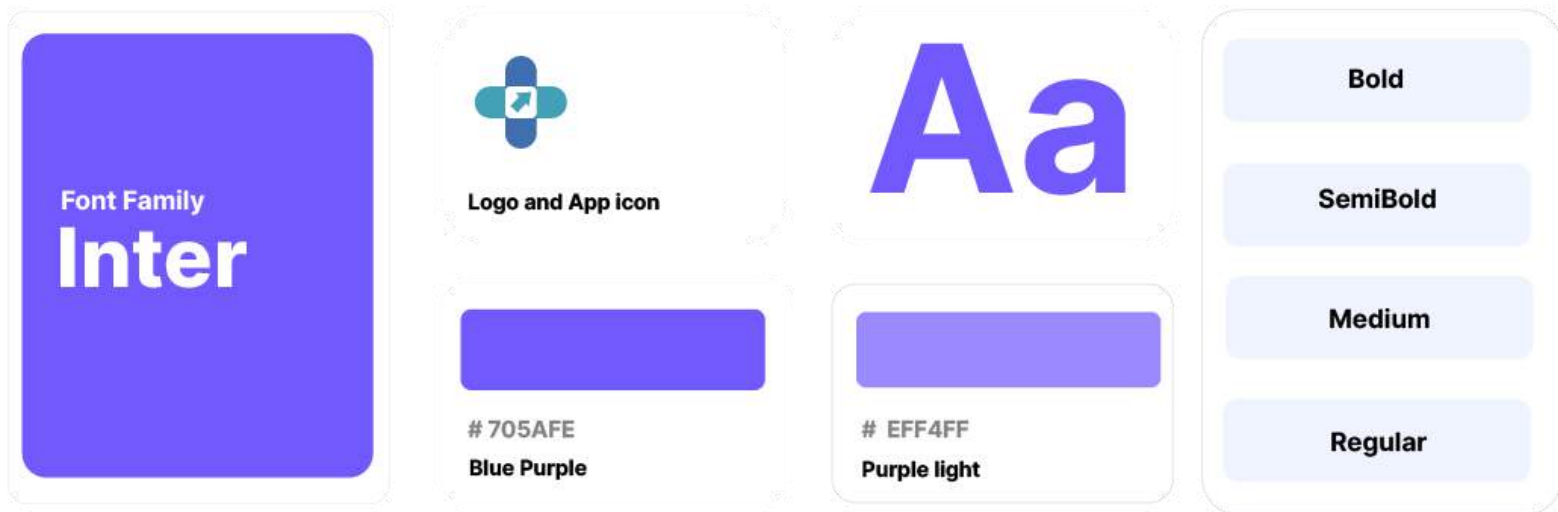
- one who is a mother of an infant.
- one in late 40's .
- one who was having elderly parents at home.

I asked the following questions to Patients:

- *What are the difficulties that you face when you want to book an appointment with a doctor?*
- *Do you prefer in-clinic visit or online consultation?*
- *What are the features do you think are important in such kind of apps?*
- *What are the features that you admire in the current process?*

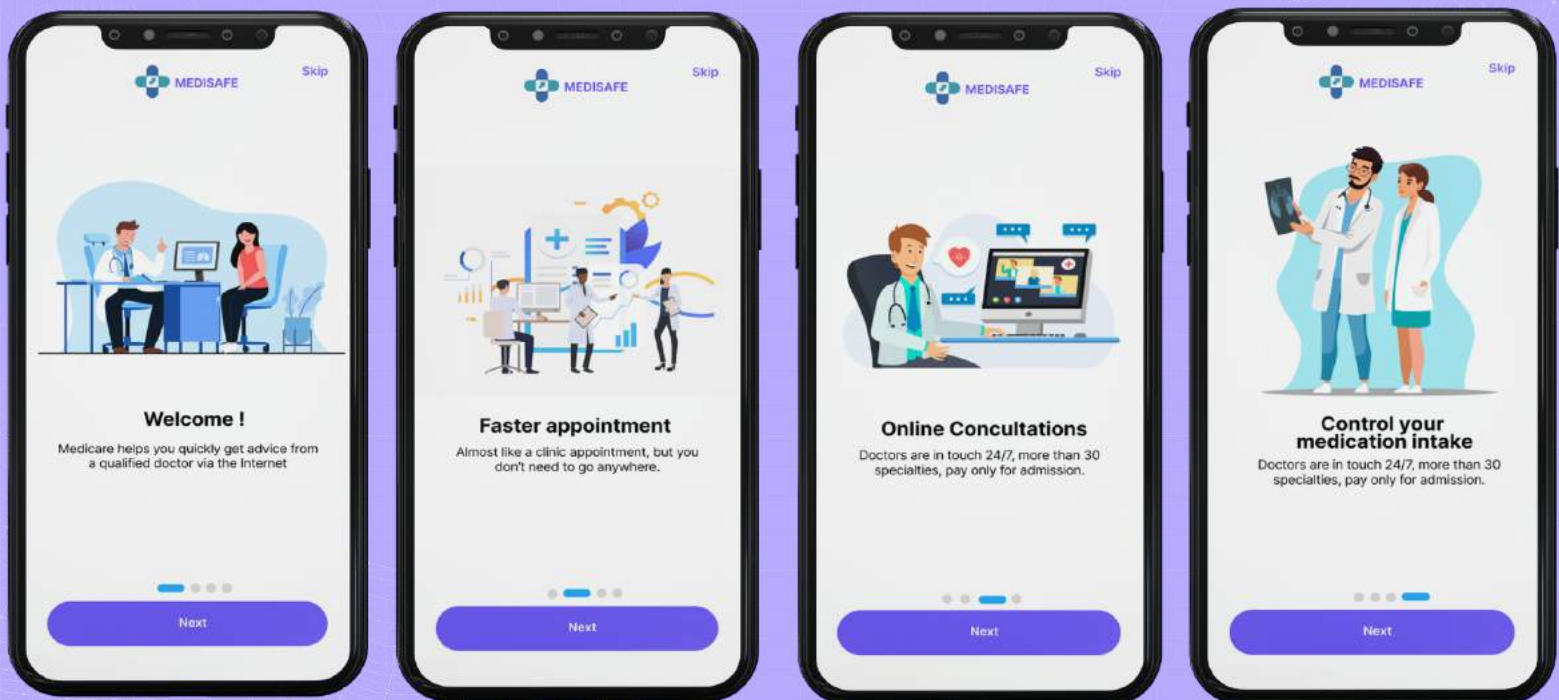


BRAND TYPOGRAPHY



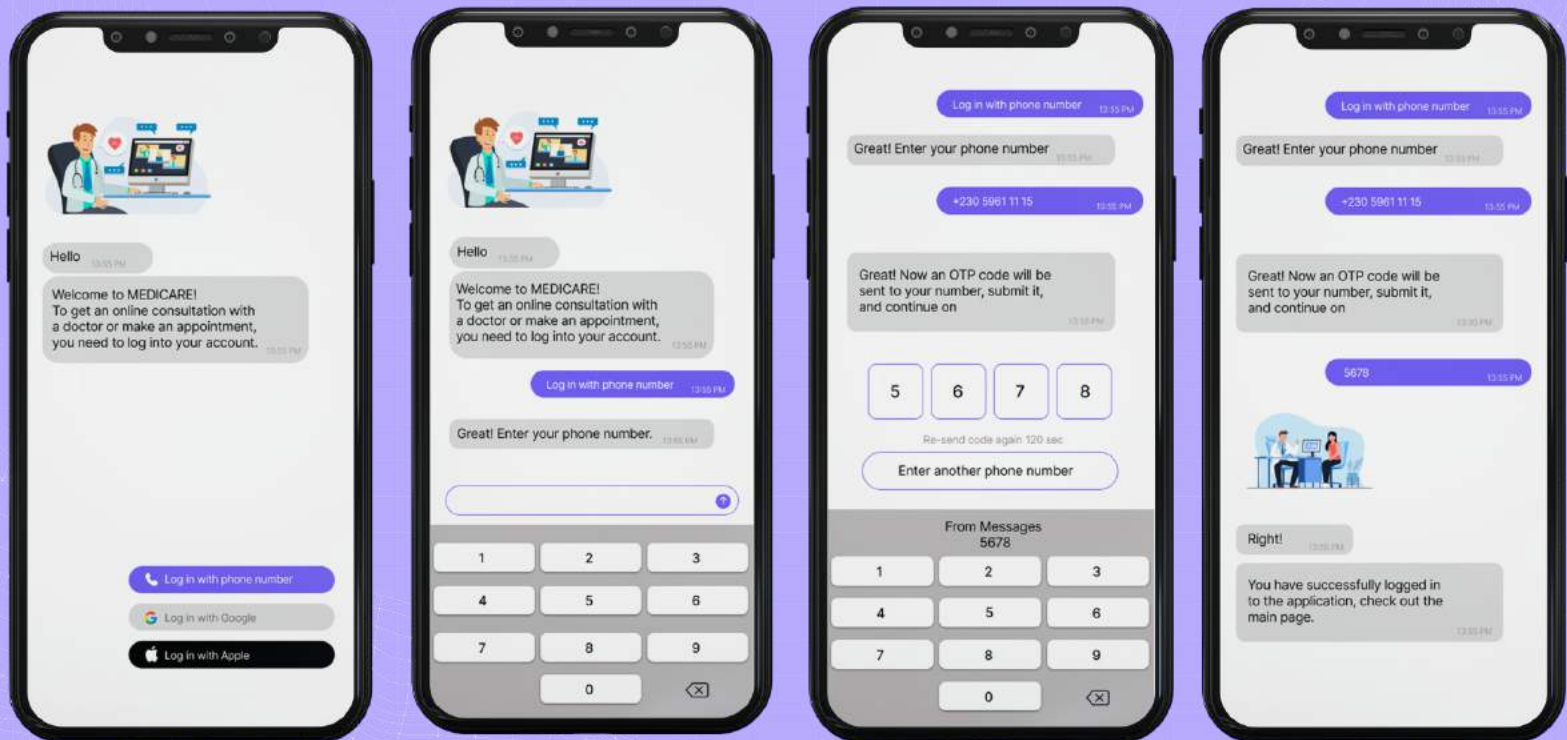
ONBOARDING OF THE MEDICAL APPLICATION

Onboarding introduces the user to the application and helps to engage and onboard new users. It is used not only at the first launch, but also when adding new functions to the application.



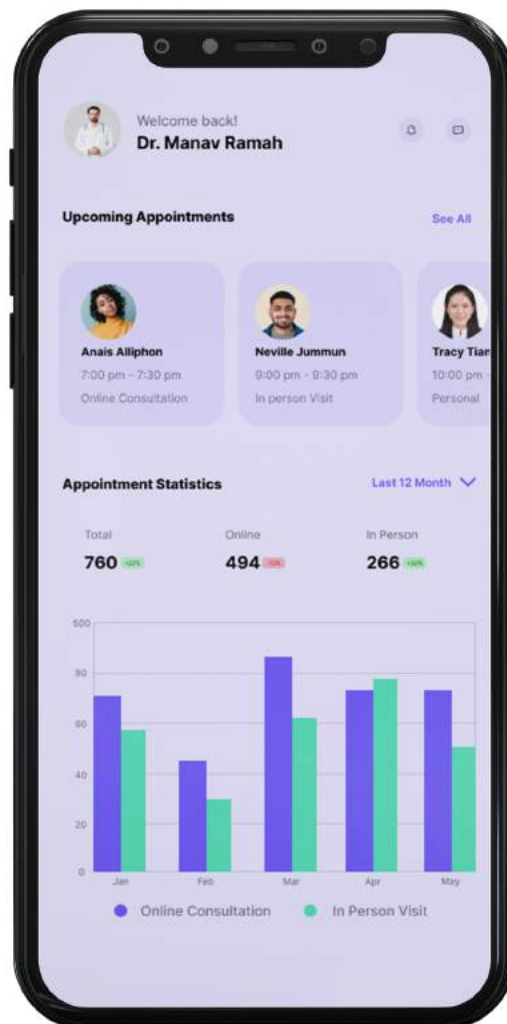
REGISTRATION PROCESS

Registration takes place in a friendly format in the form of a chat, the sometimes tedious registration or login process.



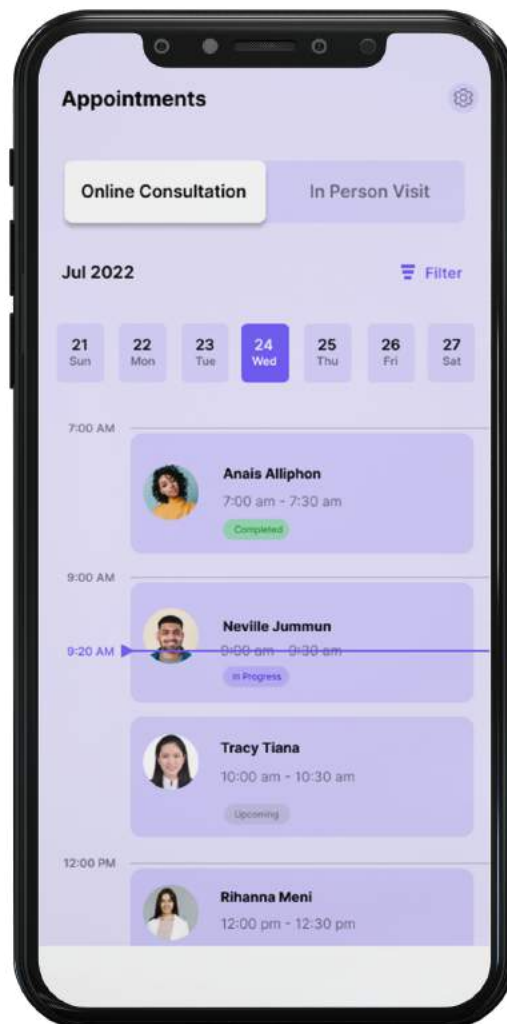
MAIN PAGE

On the main page, there's a quick search on for doctor history the most popular section of online consultations and an appointment to the hospital xyz. Also on the main page you can find all information about the hospital.



ONLINE CONSULTATION

You can find a doctor by selecting the desired category. More information on doctors can be found from the doctors card, it reflects specialization, experience, rating and reviews.



DOCTOR APPOINTMENT

APPOINTMENT FOR ONLINE CONSULTATION

- Users didn't have the option to save the profile of any doctor (Patient flow): When patients feel that when a doctor is good and have the best ratings and feedback, they didn't have an option to save the doctor profile for future use. This issue was fixed by adding a Bookmark option in all of the doctor profile so that users can Bookmark and these bookmarked profiles can be viewed in a separate section under the navigation menu.
- Users wanted to filter the doctors by Rating (Patient flow): From the list of doctors appearing when patients searched a doctor by symptom or speciality, they didn't have the option to filter by ratings. Most users found it difficult to scroll the list of doctors. This issue was resolved by adding a "Filter by ratings" option so that users can filter the top rated doctors.



- Doctors preferred a Recurring All feature (Doctor flow): Doctors found it frustrating to customize the calendar everyday. This was improved by adding a “Recurring on All Days” toggle button so that the same timings and slots can be applied for all the days.

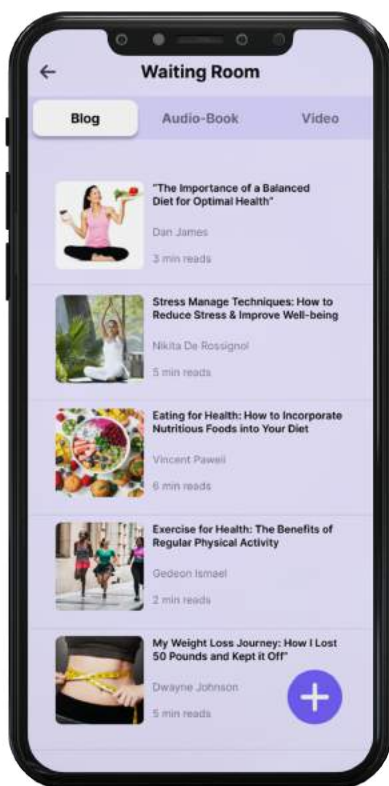
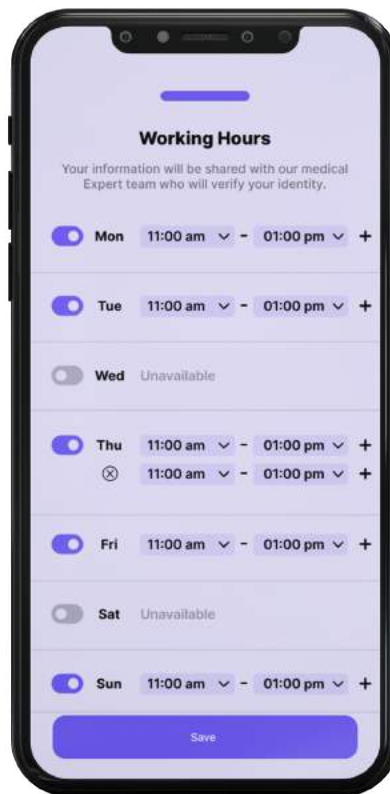
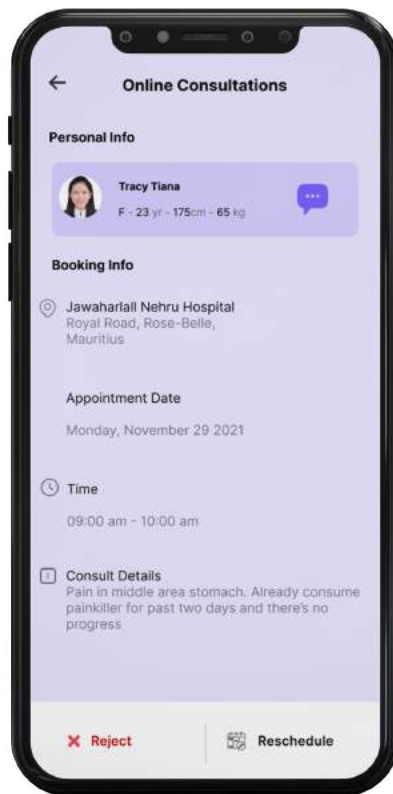
KEY FEATURES (For Doctors)

- TOGGLE ON/OFF ONLINE CONSULTATION: The online consultation feature(Text checkup and Video consultation) has been designed in a doctor friendly way so that it can be enabled or disabled as required by the doctors.
- DOCTOR FRIENDLY APPOINTMENT SLOTS: The appointment slots and the clinic timings are customizable by the doctors. Doctors can also set per slot timings. Toggle on/off button for Morning, Afternoon and Evening slots. This feature can really help doctors to manage their appointments and save time.



- RECURRING ON ALL DAYS: I have designed a toggle button for recurring on All days. This feature if toggled on sets the appointment slots and clinic timings recurring for all days.
- INSTANT APPOINTMENT CANCELLATION: In case of any emergency for Doctors, they can cancel the appointment for any particular slot by clicking the Cancel All button.
- PATIENT HISTORY PRIOR TO CONSULTATION: Doctors are provided with a brief description about Symptoms and complications of the patients even before attending the appointment.
- VIEW PATIENT FEEDBACK AND RATINGS: Doctors can view the ratings and feedback provided by the Patients.
- INSTANT NOTIFICATION ON CANCELLATION BY PATIENTS: If any patient cancels any appointment, the doctors will receive a SMS notification.





Payments

1234 1234 1234 1234

Teerachna Rajcoomar
Exp 09/24

VISA

Card Name
Teerachna Rajcoomar

Card Number
0000-0000-000

Date
3/17/2023

CVV/CVC
567

Next

Review Summary

Manav Ramah Online

Dermatologist of the first category
10 years of experience

Date & Hour
March 17 2023/7:00 am

Package
Message

Duration
1 hour

Payment
Rs 1000

Discount
3%

Total
Rs 1000

VISA -----000 [Change](#)

Pay now

Review Summary

Adish Ramkalawon Online

Dermatologist of the first category
10 years of experience

Thank you!

Doctor
Manav Ramah

Package
Message

Time
1 hour

Date
March 17 2023/7:00 am

Price
Rs 1000

[View appointment](#)

[Back to Main](#)

Pay now



KEY FEATURES (For Patients)

- SCHEDULING AT FEW TAPS: Users can schedule an appointment instantly in just a few taps.
- SEARCH FOR DOCTOR BY SPECIALITY, SYMPTOM, LOCATION: Users can search for a doctor either by speciality or by symptom or by location.
- CLEAR AND DETAILED DOCTOR PROFILE: The users are able to view the Doctor's complete profile with information like Years of experience, Specialization, Location, rating, feedbacks received and consultation fees.
- INTEGRATED PAYMENT SYSTEM: Patients can pay the consultation fees through the app while booking. In case of cancellation, they will be refunded.



- **BOOKMARKING FEATURE:** Patients can bookmark any doctor and can view them in a separate Bookmarks section.
- **TEXT CHECKUP AND VIDEO CONSULTATION ON SUBSCRIPTION BASIS:**
Users can avail text checkups and video consultation at a minimal subscription rate. They are provided with subscription for 1 month, 3 month and 6 month package.
- **VIDEO CALL WAITING TIME:** For patients who are searching for video consultation, the waiting time for them on any particular doctor is also mentioned.
- **RESCHEDULE OR CANCEL APPOINTMENT INSTANTLY:** User can Cancel or Reschedule their appointment instantly.
- **RATING SYSTEM:** After each appointment has been completed, the users will receive a notification on the homepage to provide feedback for the doctor.

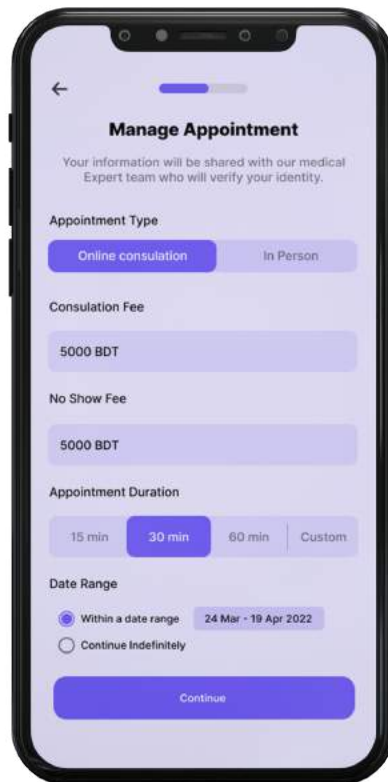


- INSTANT NOTIFICATION ON CANCELLATION BY DOCTORS: If any doctor cancels their appointment, the users will receive a SMS notification.



SCHEDULED APPOINTMENT

The schedule meeting can be found on the personal planner. It displays card with information about meeting, the date and the time of the appointment, the doctor specialization.

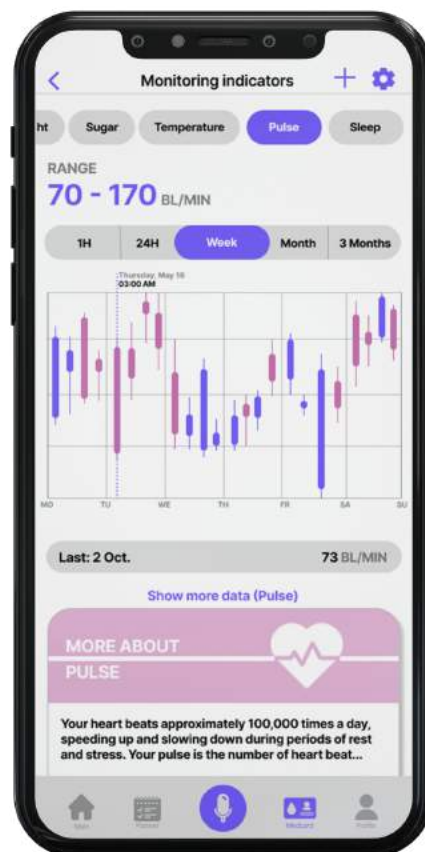
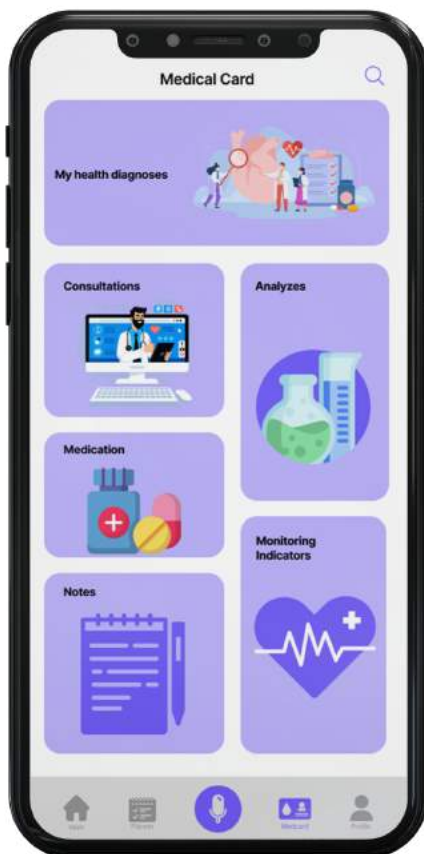


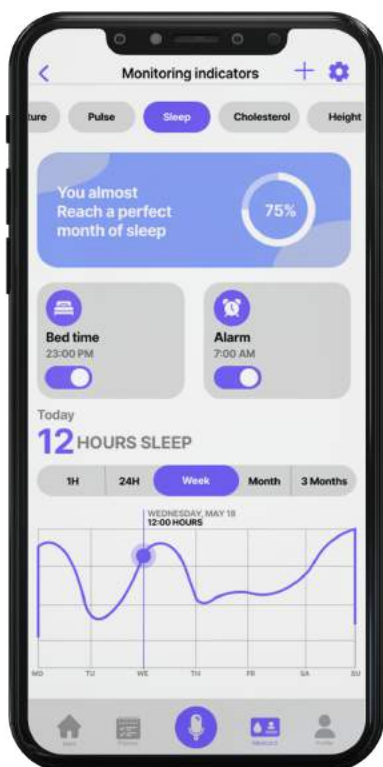
The screenshot shows a mobile application interface for managing appointments. At the top, there is a back arrow and a progress bar. The title is "Manage Appointment". Below the title, a message states: "Your information will be shared with our medical Expert team who will verify your identity." The form is divided into several sections: "Appointment Type" with buttons for "Online consultation" (selected) and "In Person"; "Consultation Fee" with a text input field containing "5000 BDT"; "No Show Fee" with a text input field containing "5000 BDT"; "Appointment Duration" with buttons for "15 min", "30 min" (selected), "60 min", and "Custom"; and "Date Range" with radio buttons for "Within a date range" (selected) and "Continue Indefinitely". The "Within a date range" option has a date picker showing "24 Mar - 19 Apr 2022". At the bottom, there is a large blue "Continue" button.



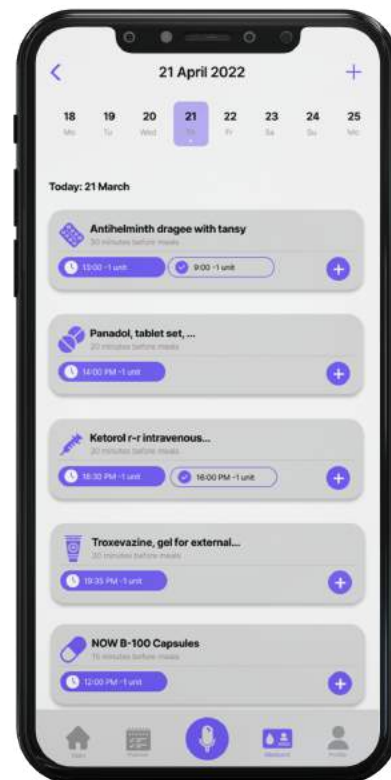
MEDICAL REPORT

In the medical report, the patient can view the doctor conclusion and monitor the medical health indicators, and also leave notes.



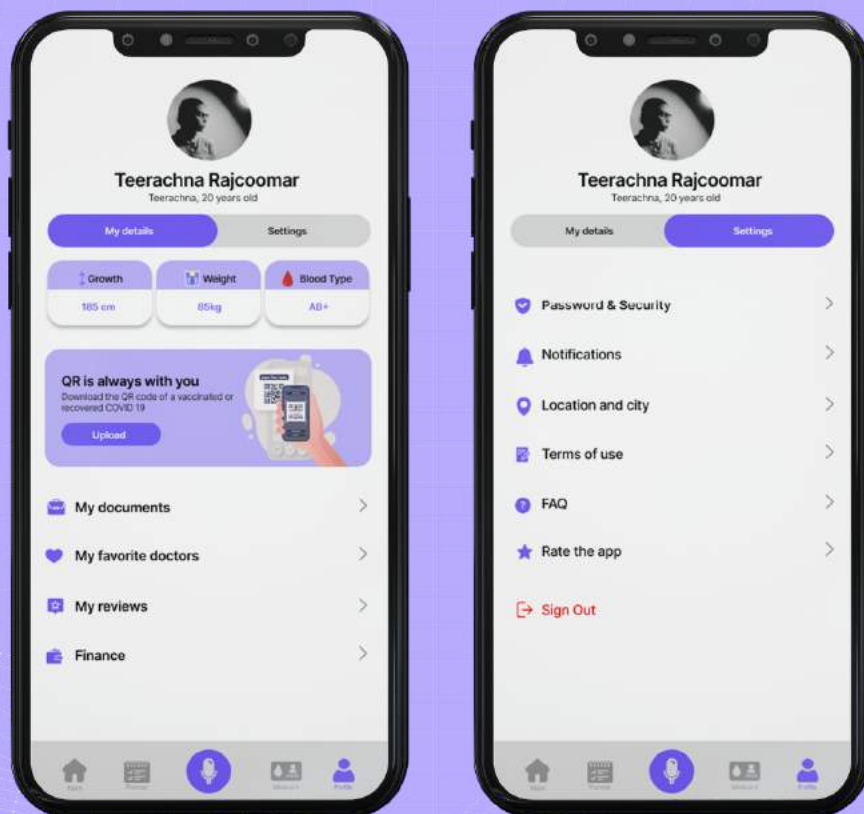


The screen is titled 'Add medication intake'. The 'Medication' field contains 'Odeston, 200 mg, tablets 20 pcs.'. Under 'Preparat form', icons for Tablet, Capsule, Dragée, Sachet, and Gel are shown. The 'Reminder and dosage' section shows a 'Course' of '2 times a day'. It includes fields for '1 reception' (9:00) and '2 reception' (Time, Dose). A 'Remind' toggle is set to 'At the specific time'. The 'Reception mode' is set to 'Weekdays' with a cycle of MON, TUE, WED, THU, FRI, SAT, SUN. The 'Duration' is set to '2 times a day'.

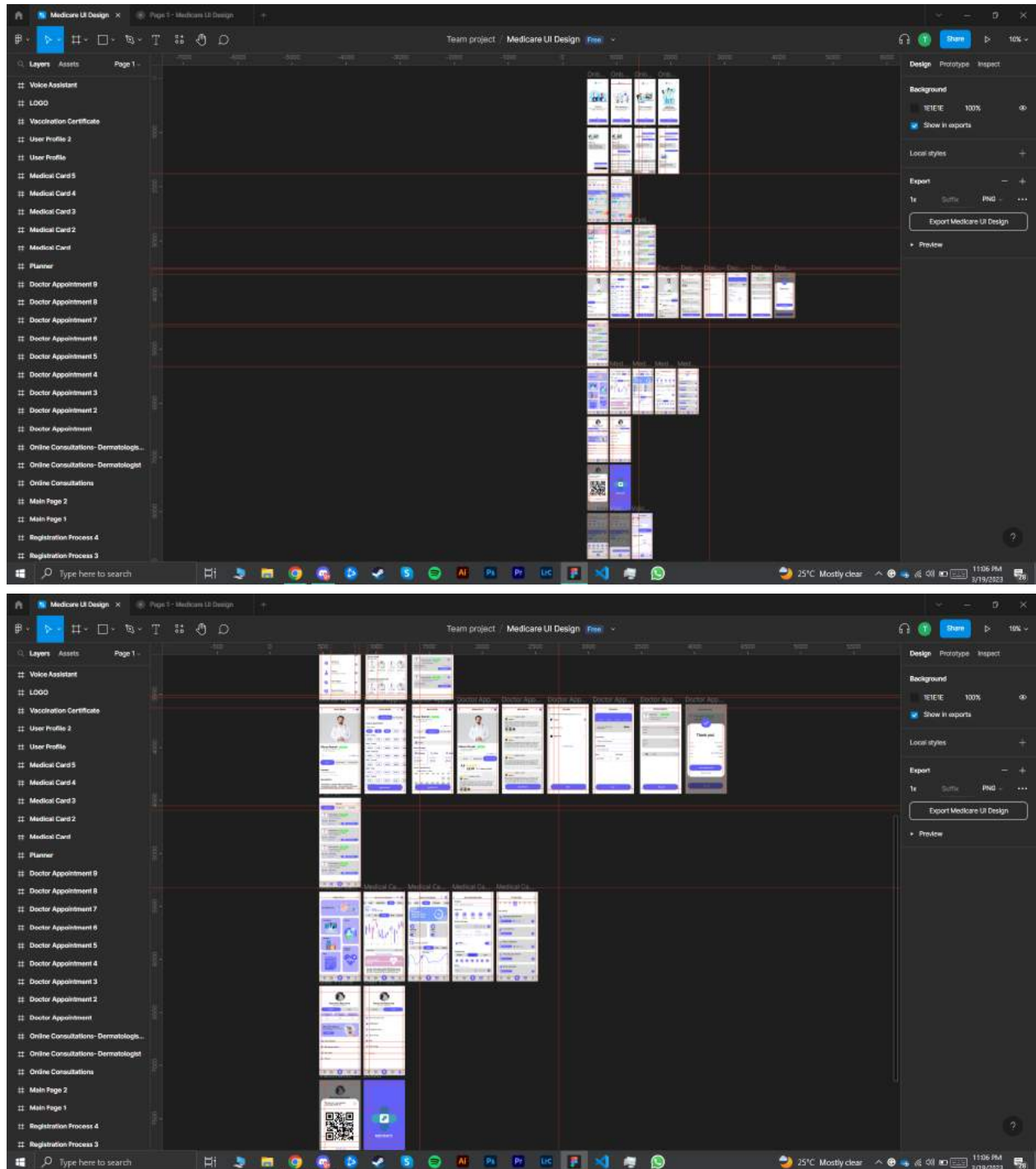


USER PROFILE

In the profile, you can find the personal details and profile setting. In personal details you can enter important documents. (doctors user profile)



Behind the Scenes



Note: All the designs have been conducted on Figma

