Department of Computer Science and Engineering,
Chitkara University

Project Report on

“Healthcare Appointment System”

Medica

Submitted by :

Name - Yashika
Roll No - 2110991585
Group - G7 (5th sem)

[Batch 2021-25]

Problem Statement

Build a system that facilitates appointment scheduling for healthcare services. Include features like user profiles, appointment reminders, and a calendar for healthcare professionals.

Introduction

This project presents a full stack functional “Doctor Application” developed using the MERN stack (MongoDB, Express.js, React.js, and Node.js). The application facilitates user registration (authentication), doctor appointment, using backend APIs which are implemented from scratch.

Technologies used

Frontend - React.js, CSS, with Bootstrap and Ant Design for a user friendly and intuitive interface.

Backend - Express.js for API development and Node.js for server-side operations.

Database - MongoDB for storing user data.

Features

1. **User Authentication with Extended Session Duration**: The application prioritizes user convenience by implementing a token-based authentication system that maintains user sessions for 24 hours. This feature significantly reduces the frequency of logins, enhancing user experience and engagement.

2. **Appointment Scheduling:**

Admin (Doctor): Doctor will be able to see the appointment notification that user has booked the appointment and is able to respond either “Approved” to give message to user(patient) that doctor is available, and “Reject” to to give message to user(patient) that doctor is not available at given time.

3. **Appointment Reminders:**

Use(patient) will receive a reminder in the Notification section about the approval of the appointment.

4. **Appointment Reminders:**

User(patient) will receive a reminder in the Notification section about either the approval or the rejection of the appointment.

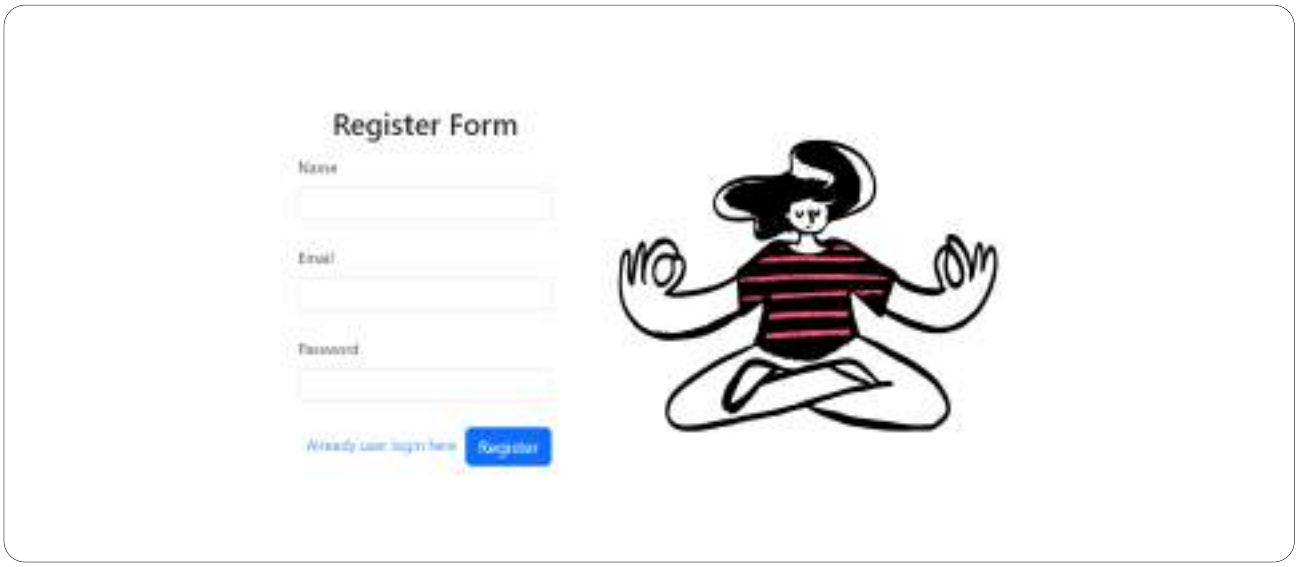
5. **Waiting List Management**

Doctor can maintain a waiting list for appointments in case of unavailability. Patients will be notified when slots become available.

On Boarding Screens

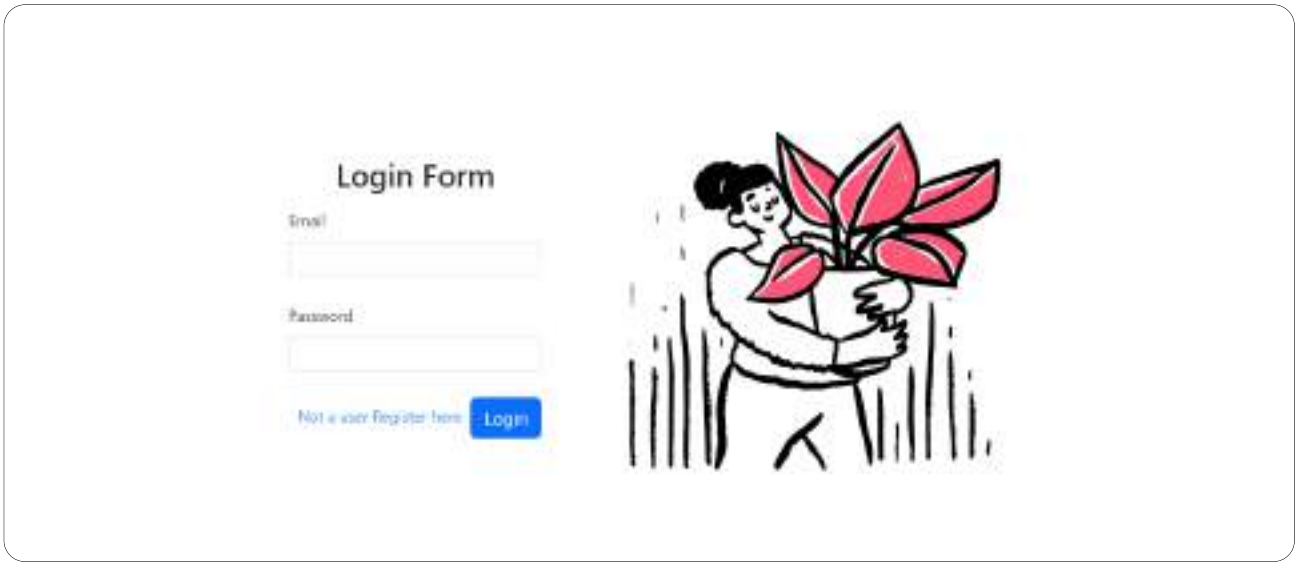
Register Form Page

If the user is new, the user needs to register by filling Name, Email and Password



Log-In Form Page

If the user has previously created the account, the user needs to login by filling Email and Password

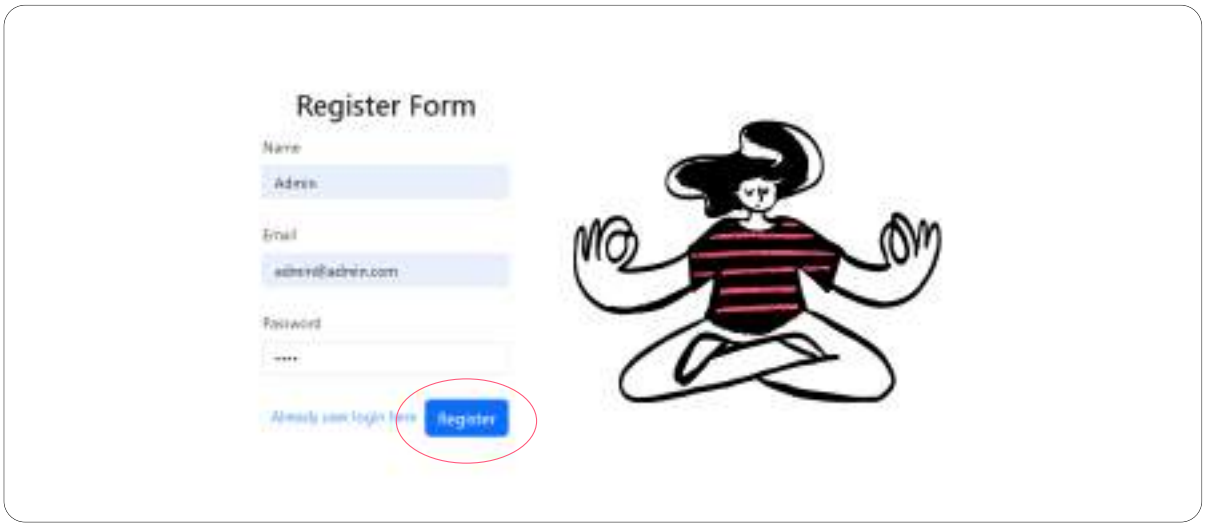


Create Admin Account

The “Admin” is responsible for approving the doctor request. If any user has applied for the “Apply Doctor” by submitting valid proofs, the admin can verify and approve or reject the application.

Register Form Page

For Instance,
Name = Admin, Email = admin@admin.com, Password = 12345



Now after filling the form, the user will click “Register”

MongoDB Compass

To make user, admin, isAdmin value will be changed to “true”

Now, the user is “Admin”.

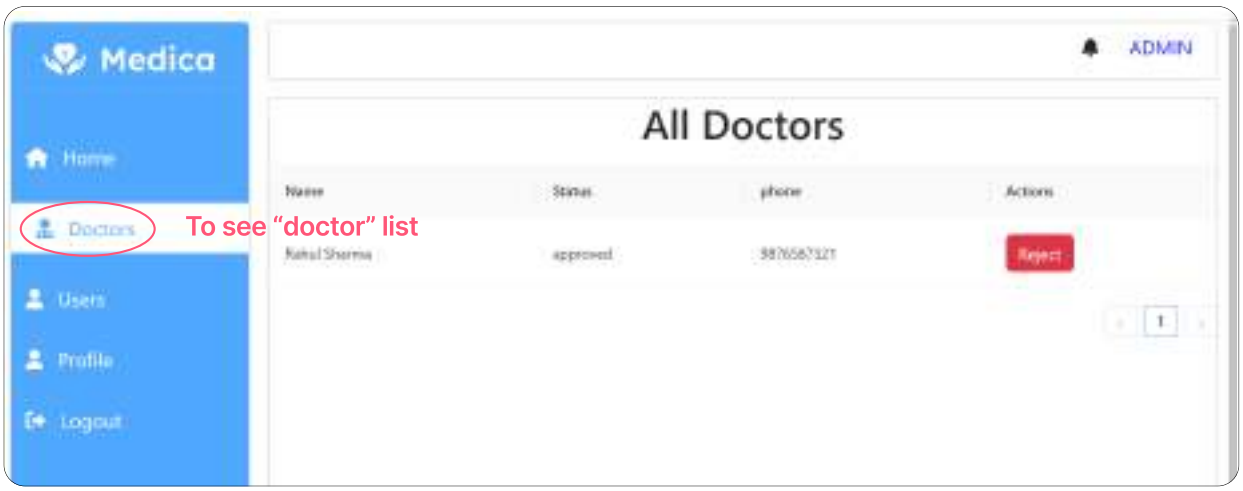
Login Form Page

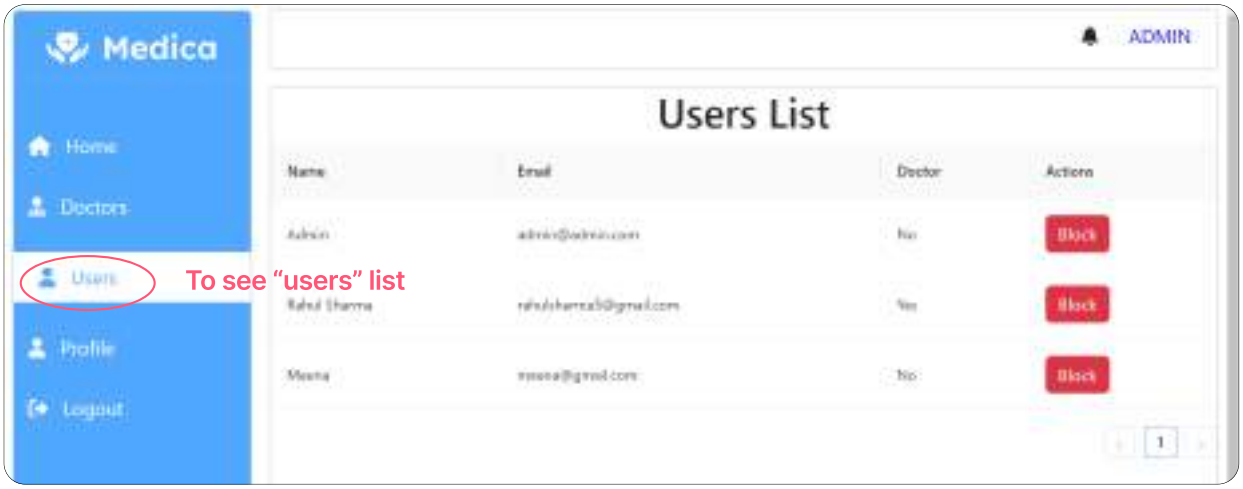
Now after filling the form, the user will click “Login” button

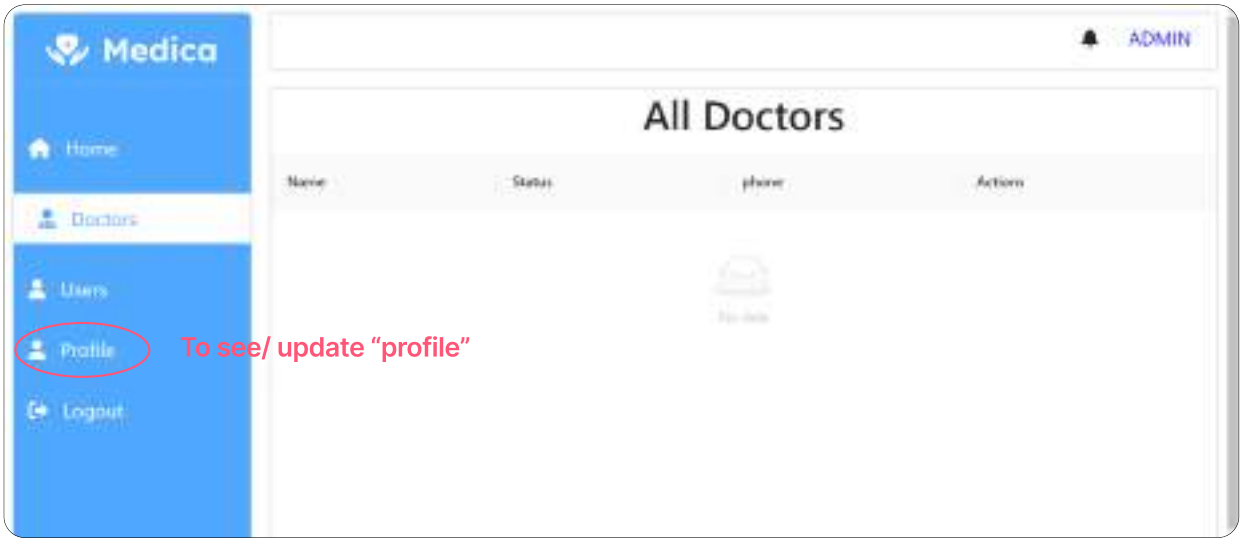
Admin account is successfully created.

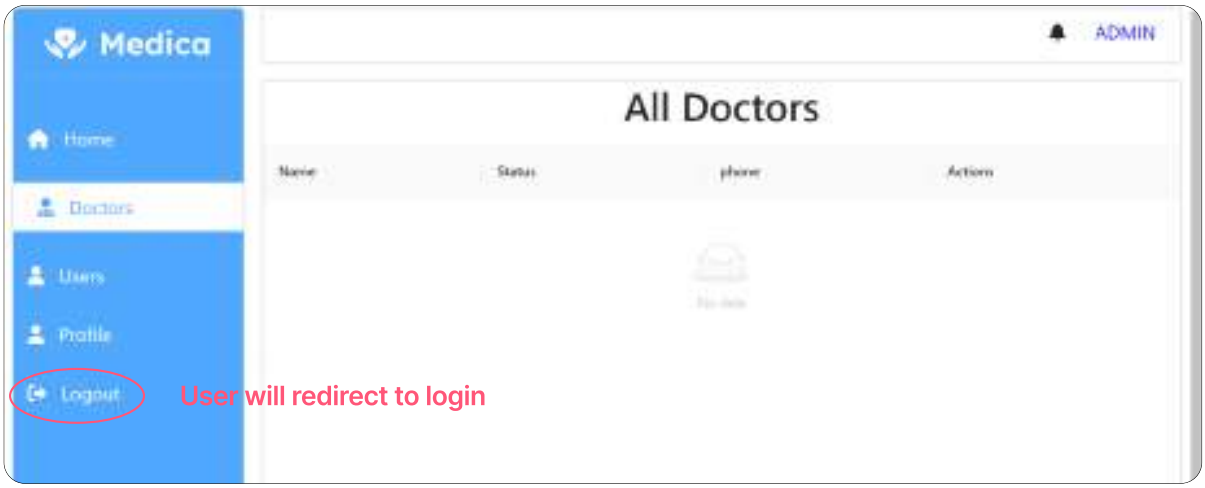
Home Page

We will now direct to the Home page.



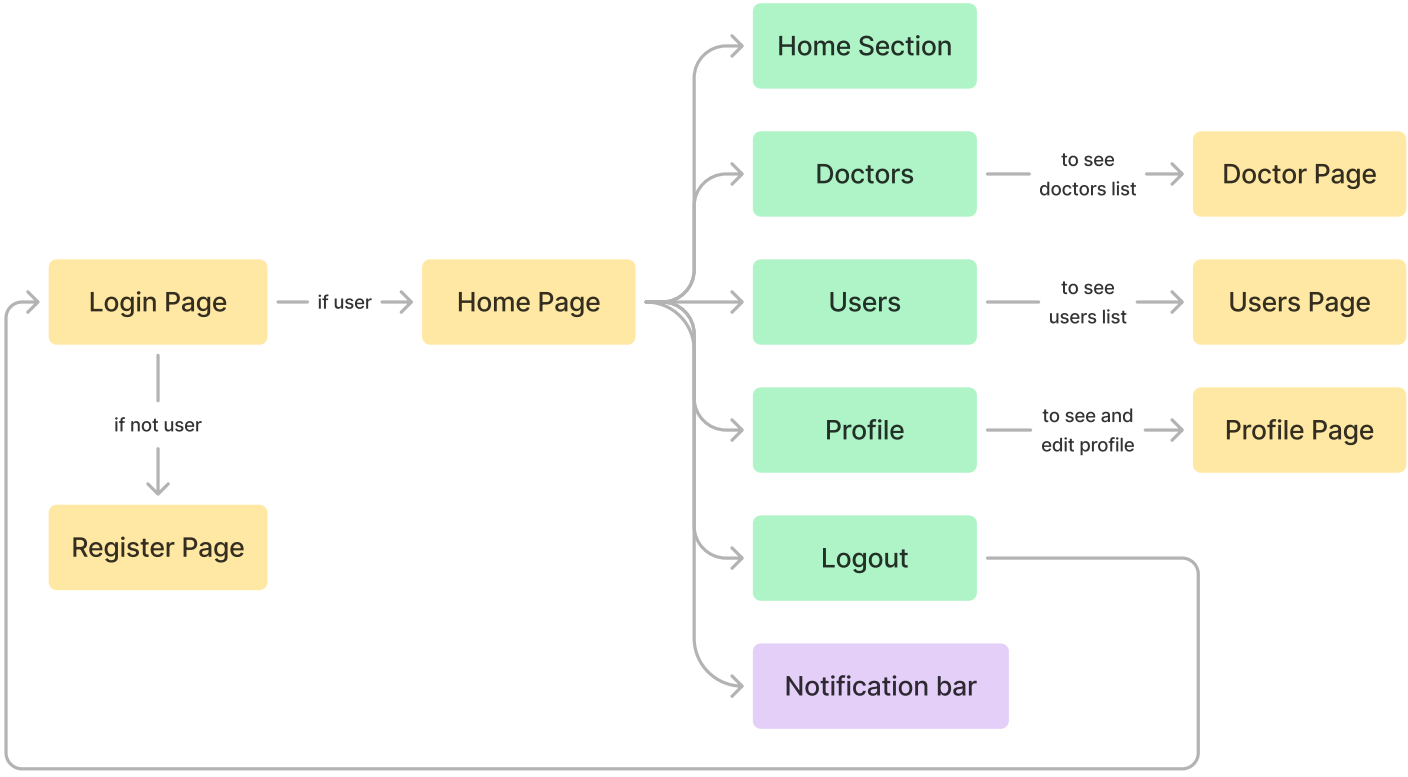





Medica
ADMIN
All Doctors
Home
Doctors
Users
Profile
Logout
User will redirect to login

Login Form
Email
Password
Not a user Register here
Login

Flow Chart

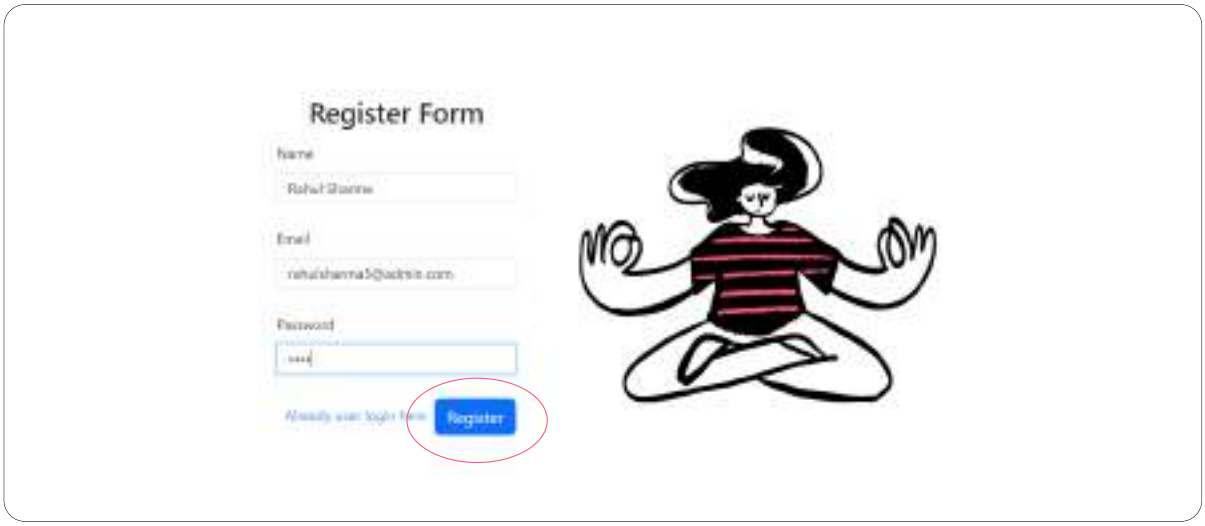

Login Page
if user
Home Page
if not user
Register Page
Home Section
Doctors
to see doctors list
Doctor Page
Users
to see users list
Users Page
Profile
to see and edit profile
Profile Page
Logout
Notification bar

Create Doctor Account

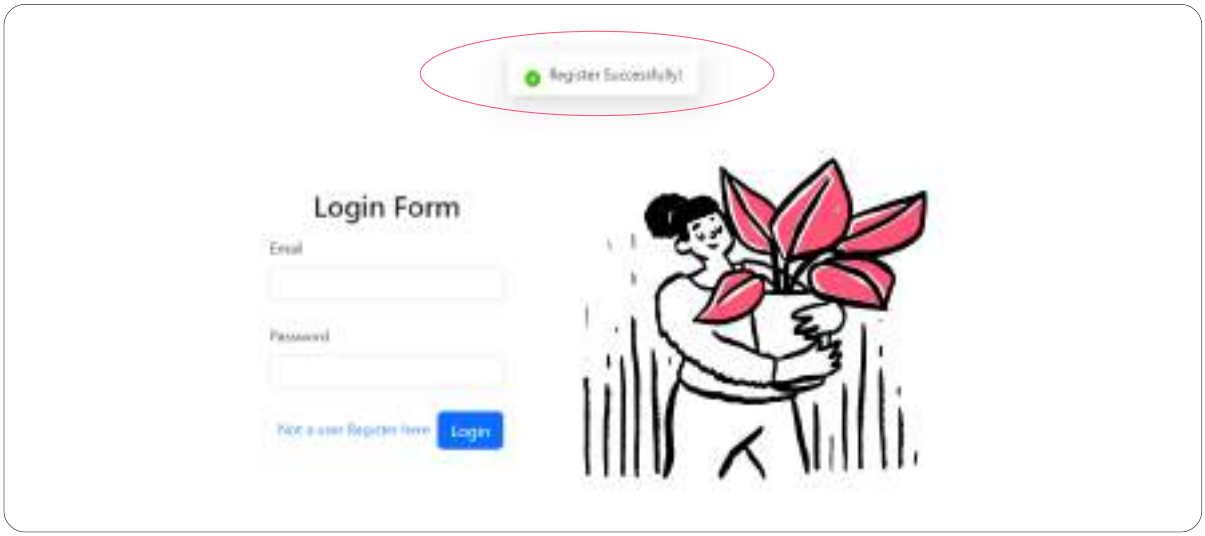
The “Doctor” first needs to create an account and apply for ‘Doctors’. Then, the admin will receive a notification and can either approve the request or reject it. If admin approves it doctor can receive the notifications for appointment and will update the user if he is available or not.

Register Form Page

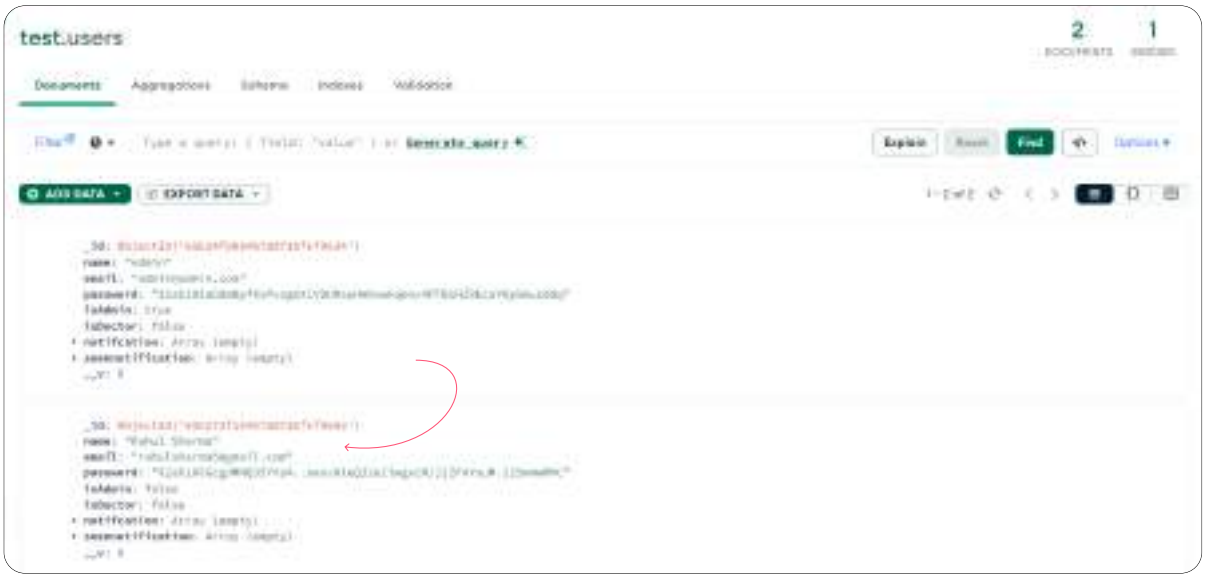
For Instance,
Name = Rahul Sharma, Email = rahulsharma5@gamil.com, Password = !12a



Now after filling the form, the user will click “Register”



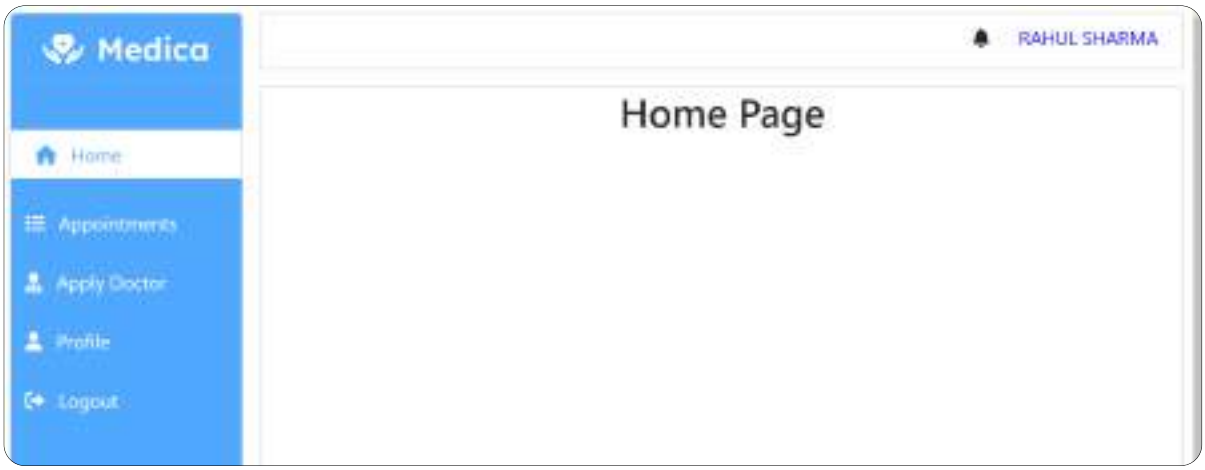
MongoDB Compass



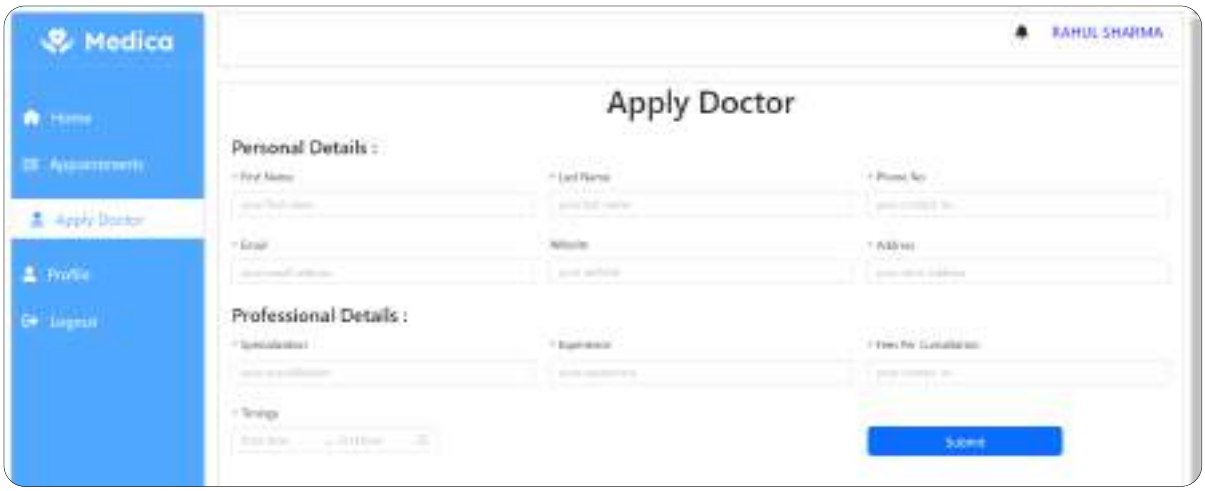
Login Form Page

Now after filling the form, the user will click “Login” button

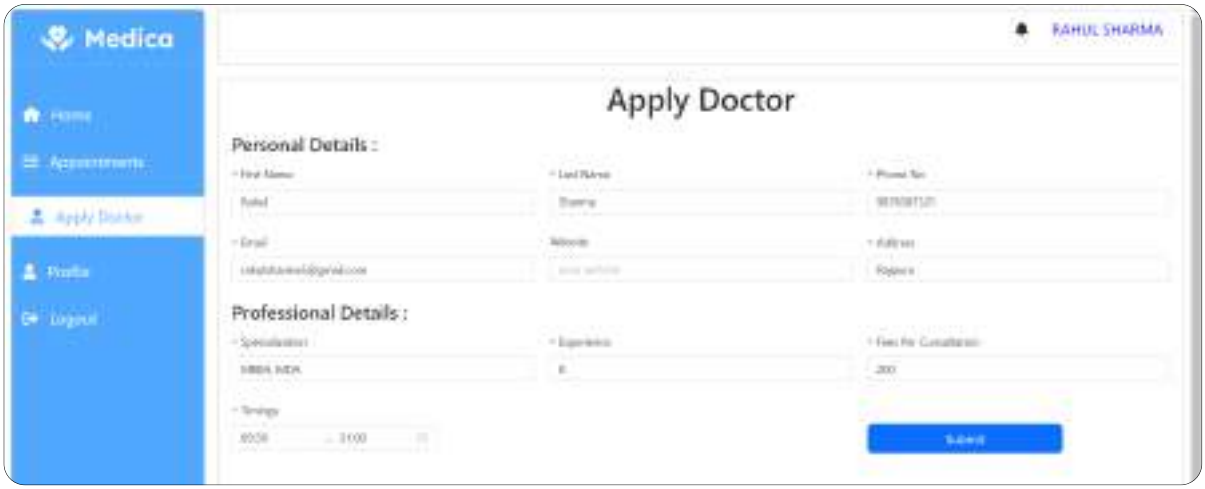
Home Page

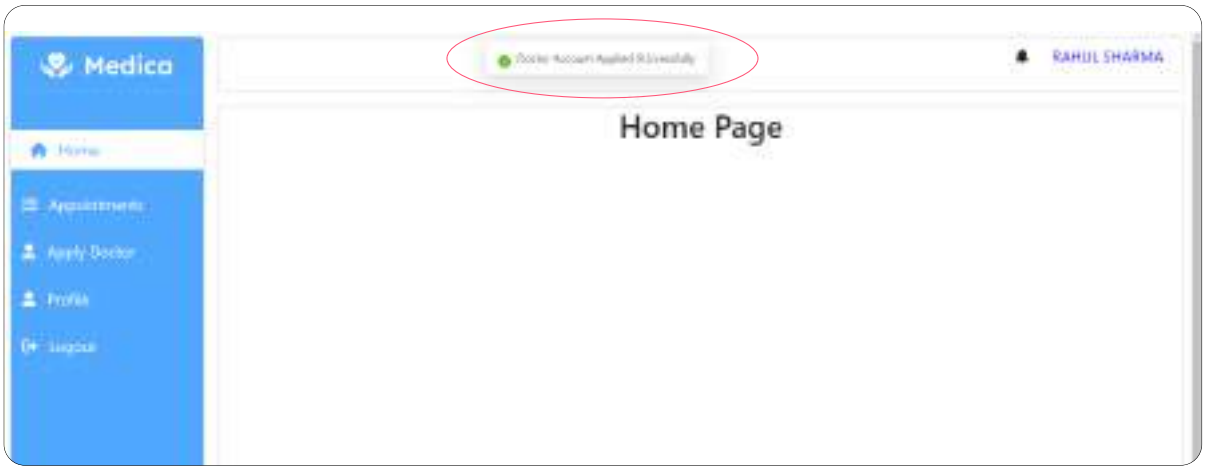


User account is successfully created. Now user will apply as ‘Doctor’. First the user will go to “Apply Doctor” section.



User will now fill the form details, and click “Submit” button.





Admin Account

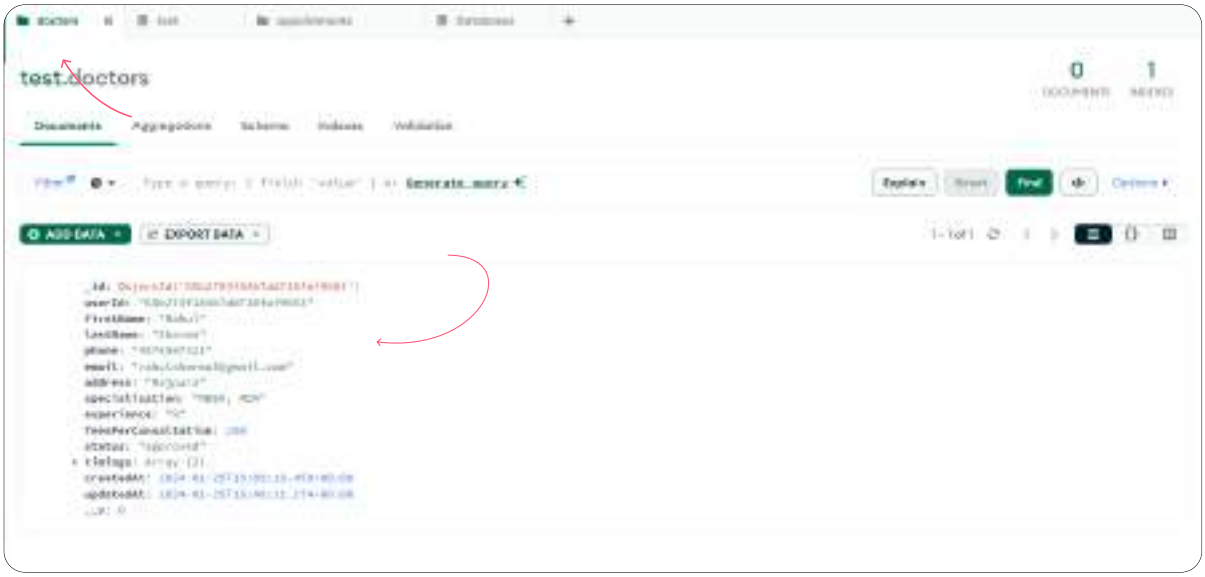
Now admin will receive the update if user has applied for the ‘doctor’. The admin will verify the details and will either approve or keep it in the waiting list.

After approving the screen will be as follows-

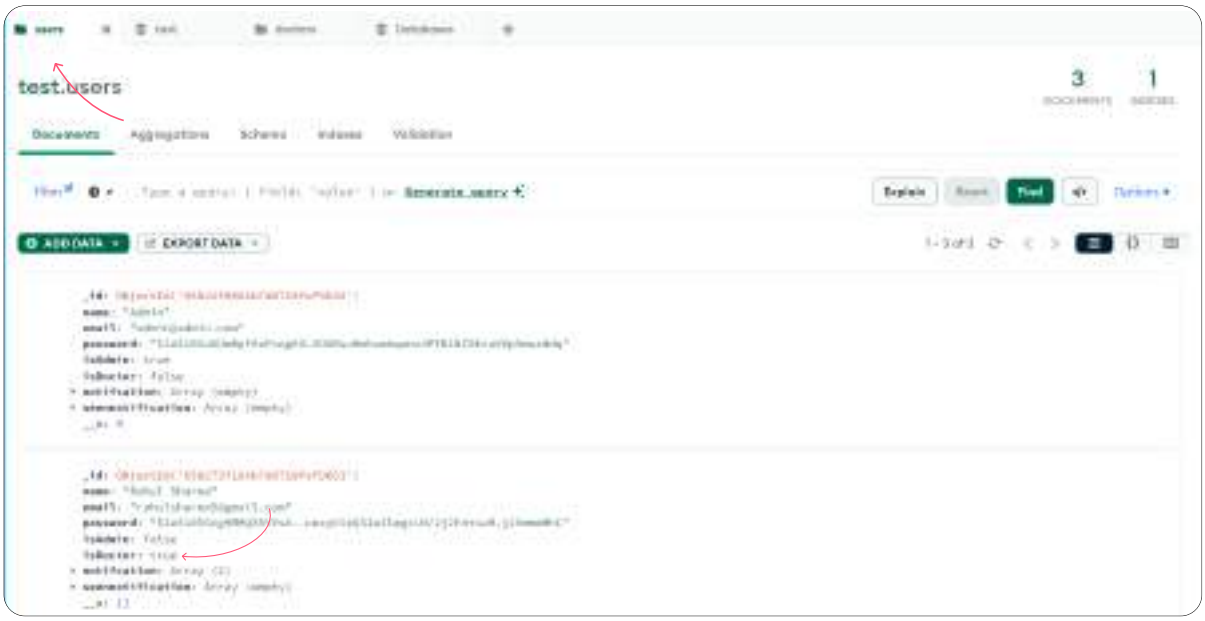
User Account

User receives the notification and in Home Page section, user can see his doctor section. Also, the “Apply Doctor” section will be dismissed.

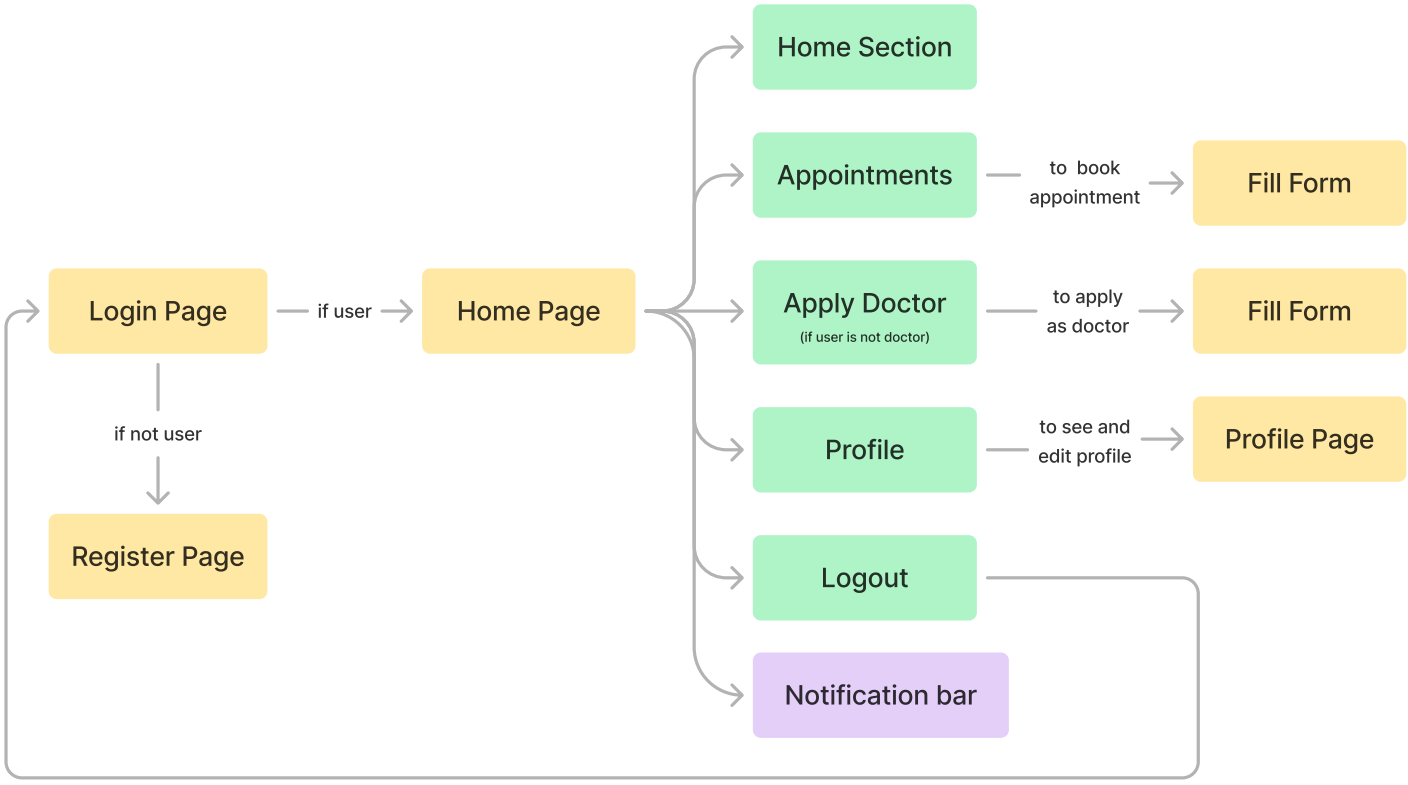
MongoDB Compass



MongoDB Compass

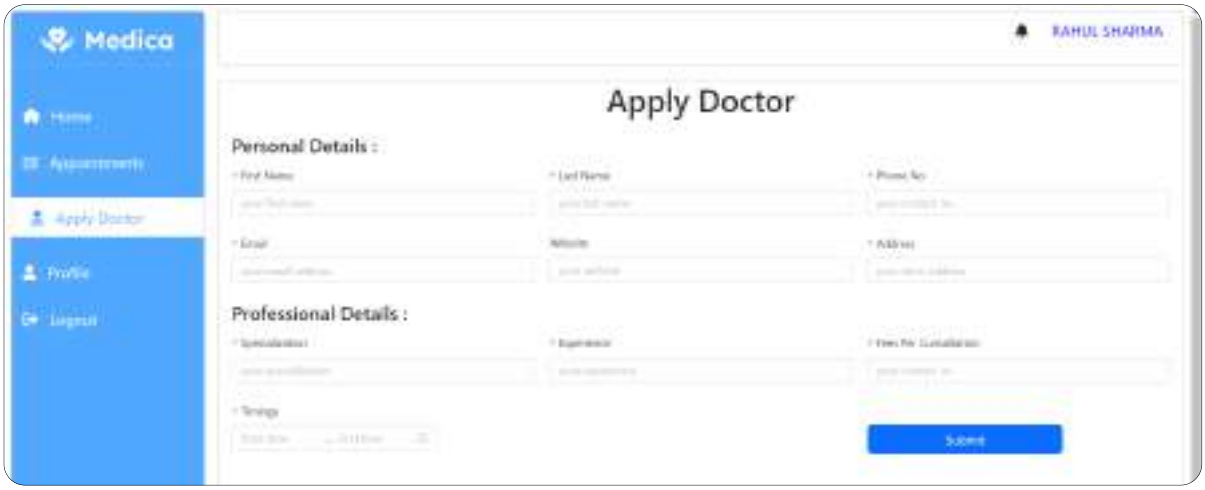


Flow Chart

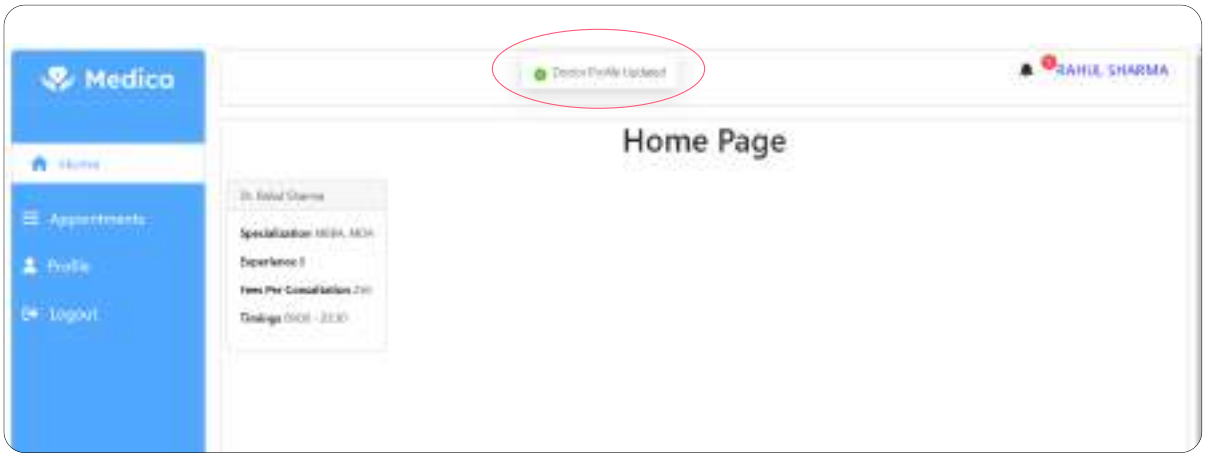


Updating Profile

If doctor wants to change any information, doctor can go to the profile section and update required the details.



Click “Submit” button.

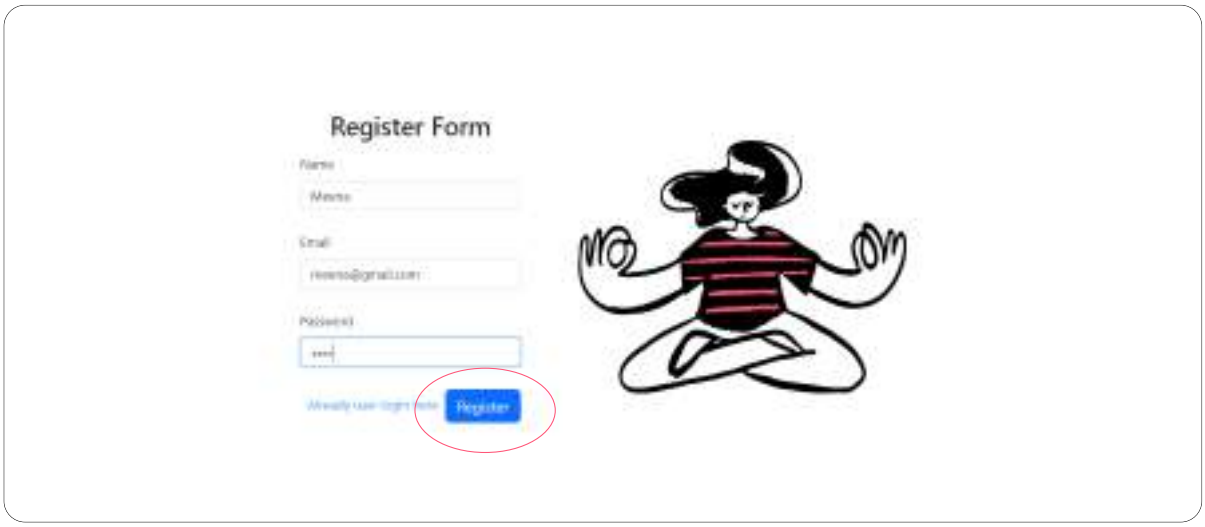


Create User Account

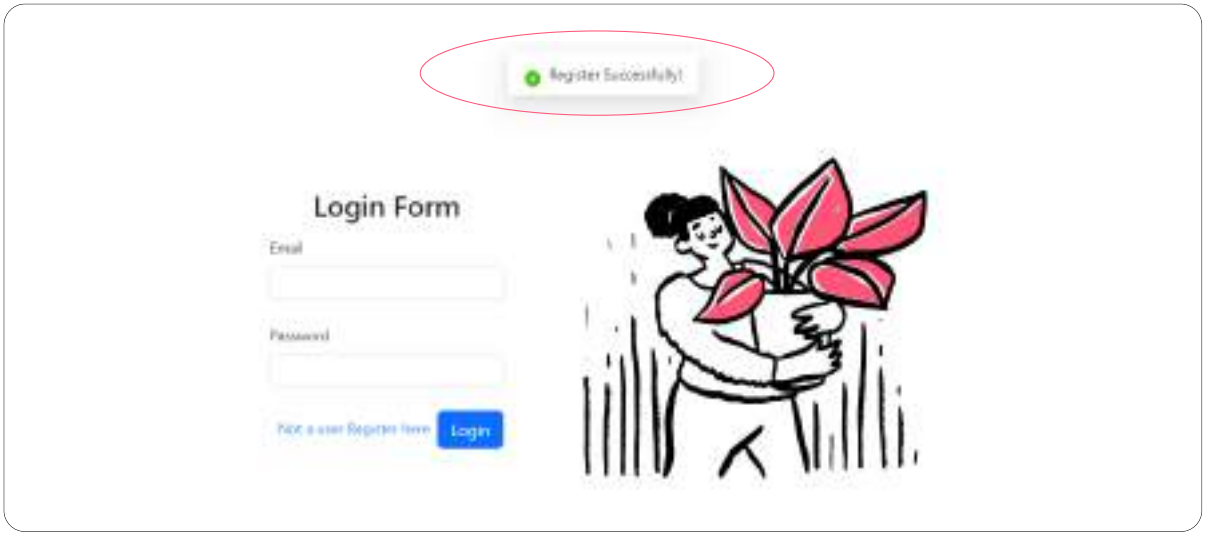
The “User” first needs to create an account and is able to check the doctor availability and can book the appointment. The doctor will get update about the appointment will update the user if he is available or not.

Register Form Page

For Instance,
Name = Meena, Email = meena@gamil.com, Password = !ab3



Now after filling the form, the user will click “Register”



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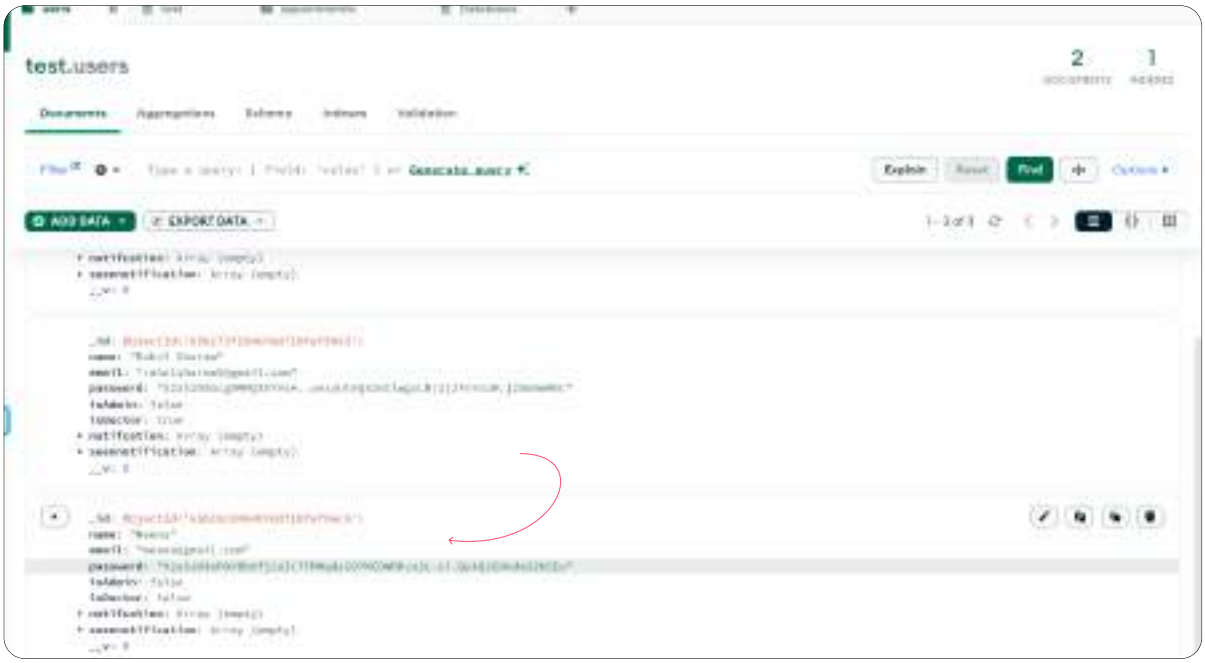
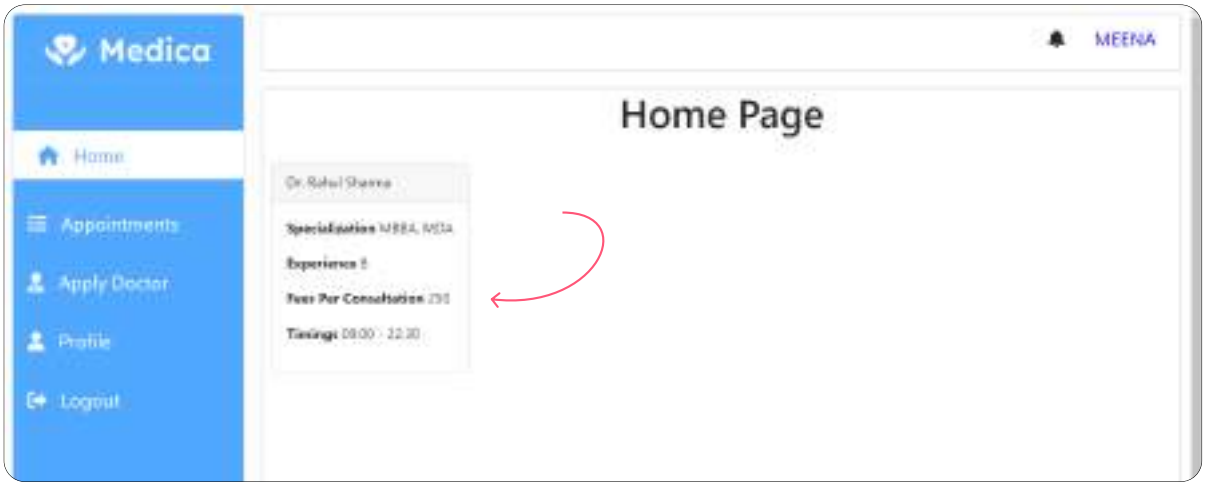


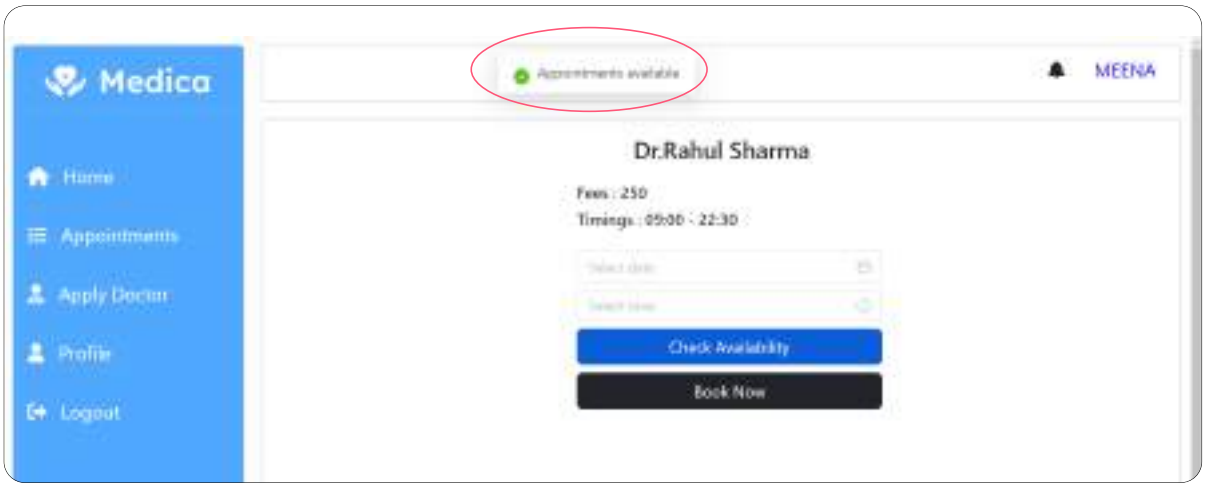
Login Form Page

Now after filling the form, the user will click “Login” button

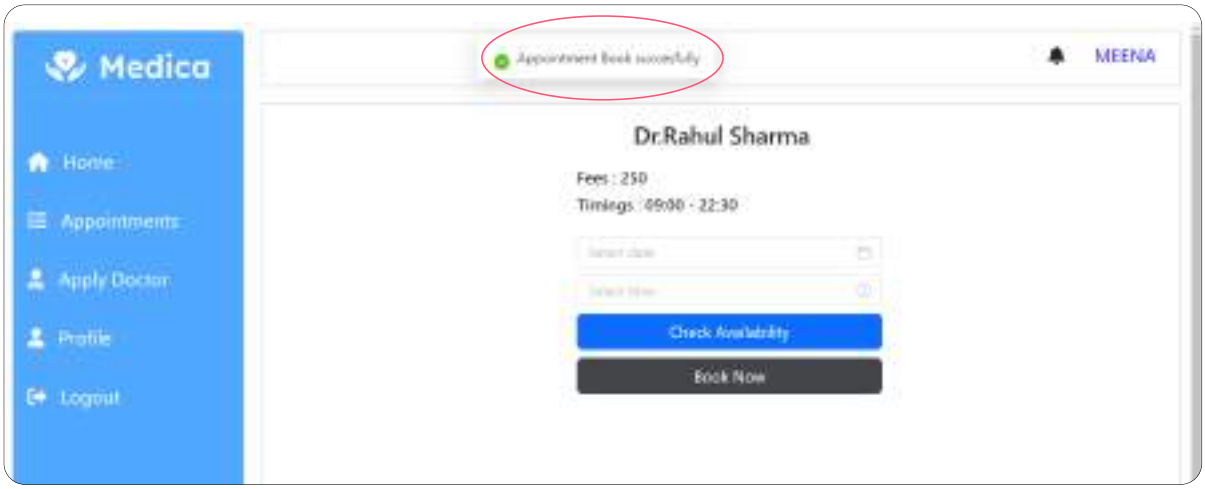
Home Page

In home section user can see the doctors list & can decide to which doctor the user want to book the appointment. Here, user will select card of “Dr Rahul Sharma”

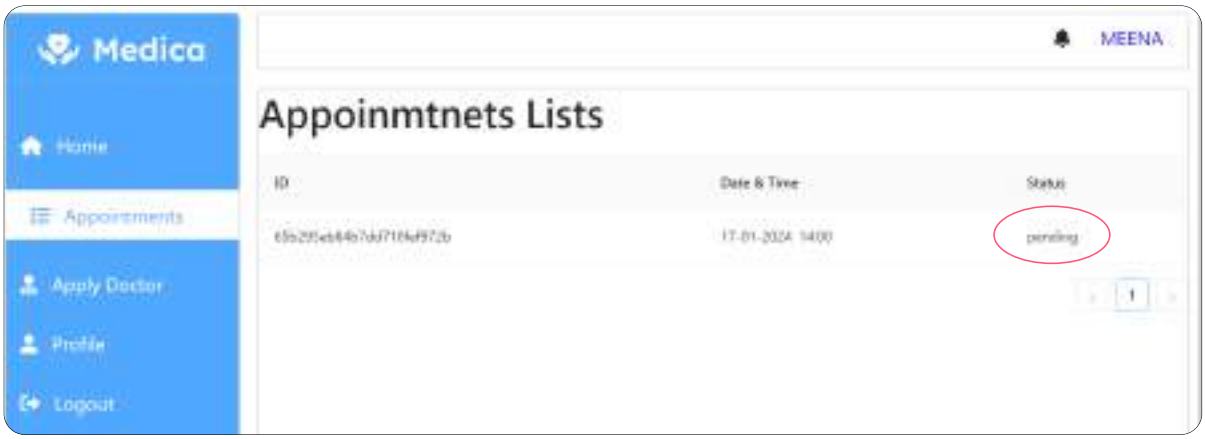




Since availability is available, user will now book the appointment



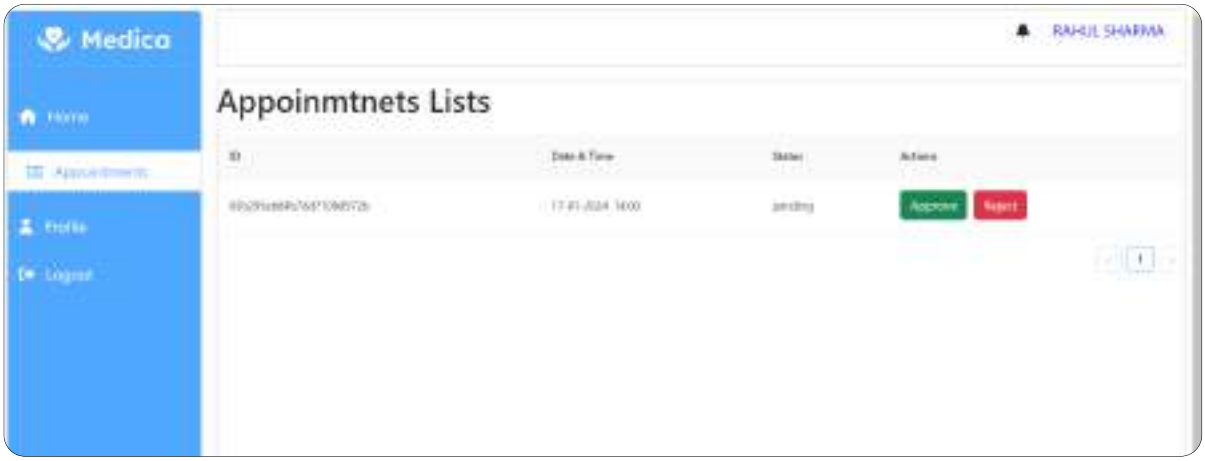
In appointment section,



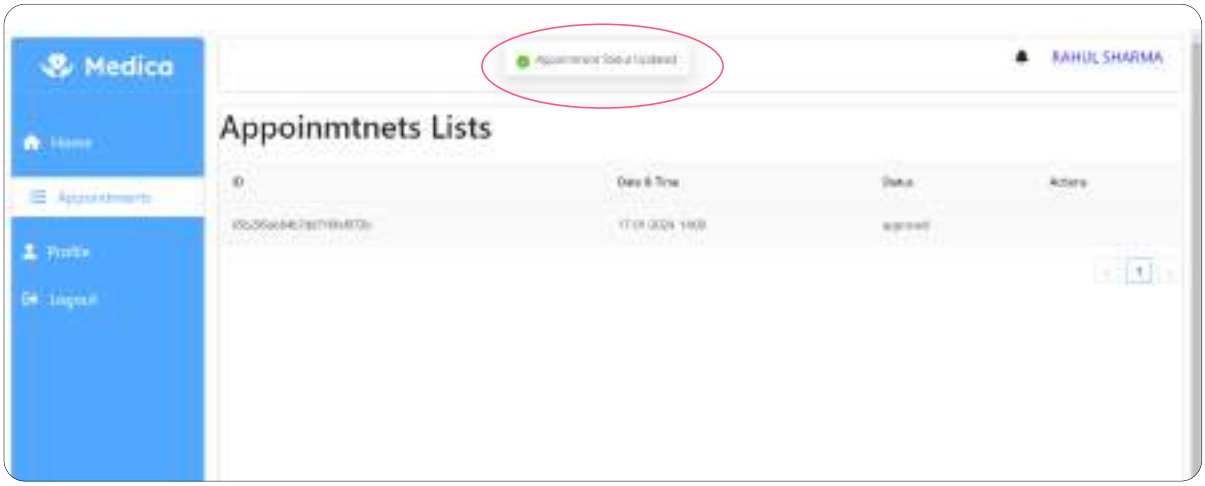
MongoDB Compass

Doctor Account

In appointment section, doctor is able to see the appointment, is doctor is available he will click “Approve”, if nor then “Reject”

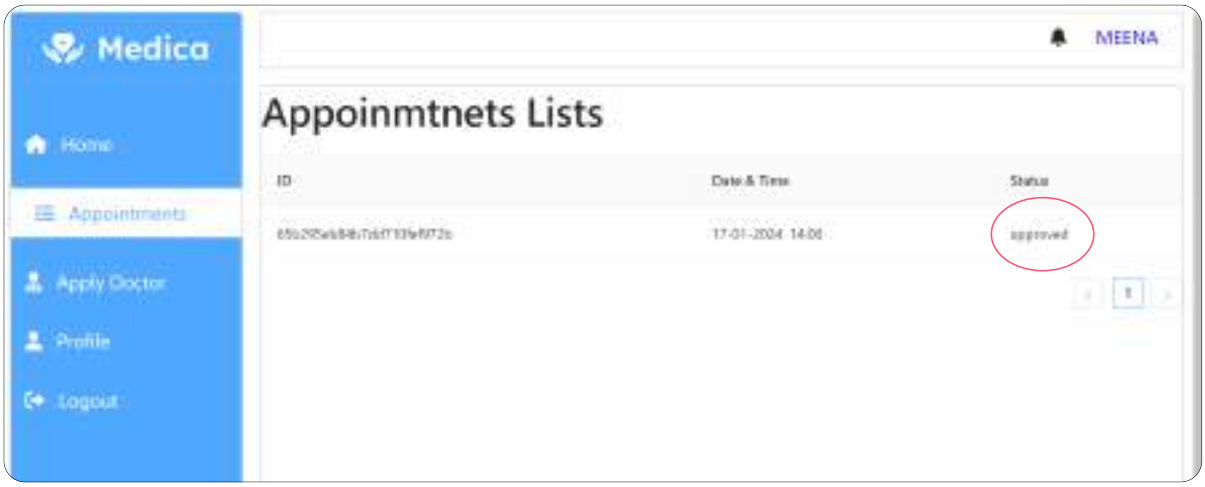


Clicking “Approve” we can see,

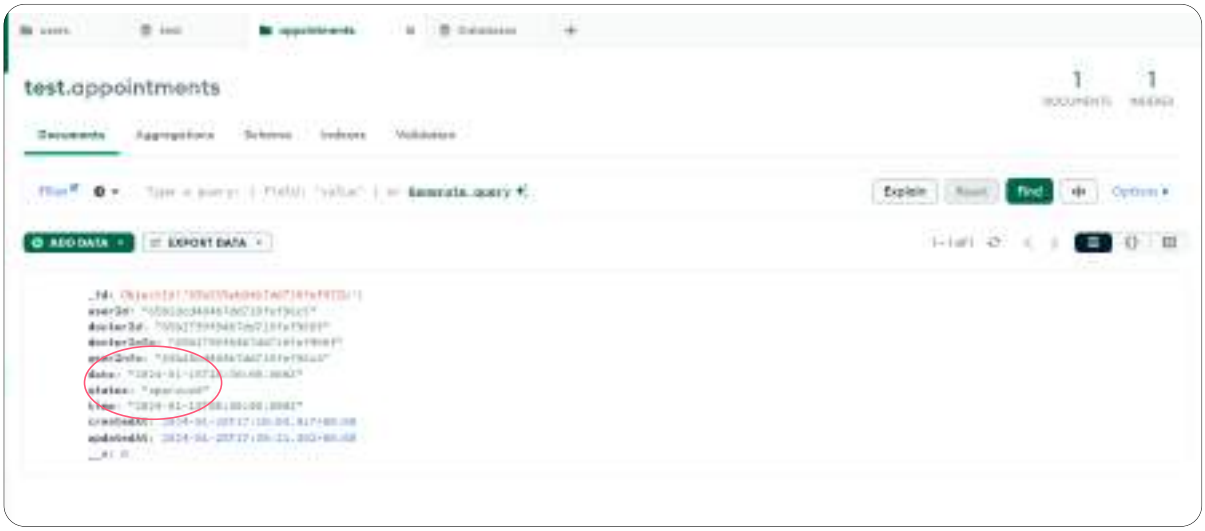


Home Page

The user can also see the approved appointment.



MongoDB Compass



Logout

Future Advancement

1. Doctor & Patient Communication

The live communication between Doctor and Patient can save a lot of time. The means of communication could be chat stream, voice or video call.

2. Medical Record Managment

Patient to upload and manage their medical records within the system for healthcare professionals to access with their consent so that doctor can rectify the disease easily. This can also save time if by mistake patients forget to bring their records to the clinic

3. Reporting & Analysing

Generating reports on appointment data, user activity, and system performance for insights and optimization can be really beneficial for both doctors and patients as they can see the live track.

4. Multi-language system

Language can’t be a barrier to anything, anyone can seek medical help

5. Feedback and Rating system

Feedback and Rating from patients can really help doctors, it can increase the trust for other users by seeing the rating and feedback that is provided bt other in real.

Thank You!