



VIT®
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

DOCTOR APPOINTMENT AND MANAGEMENT SYSTEM

CSI1007 – Software Engineering Principles Laboratory

ASAD IRFAN K - 23MID0442

ATIF AHMED J - 23MID0085

ASWATHI GANESHAN - 23MIC0085

HIBA FATHIMA T K - 23MID0057

DOCTOR APPOINTMENT MANAGEMENT SYSTEM

Description of the project

The Doctor Appointment Management System is designed to streamline the process of booking and managing doctor appointments. System aims to provide a seamless and efficient way to manage doctor appointments, benefiting both patients and healthcare providers.

Objectives: Ease of Booking: Allows patients to book appointments online, saving time and reducing the need for manual scheduling.

Efficient Management: Manages details of doctors, patients, appointments, tests, and medications.

Tracking and Monitoring: Tracks all appointment information, including booking details and patient history. User-Friendly Interface: Provides a simple and intuitive interface for both patients and doctors. Error Reduction: Minimizes errors by automating data entry and providing error messages for invalid inputs.

Functionalities: Search Facility: Allows searching based on various factors such as doctor, patient, booking, and medicine.

Appointment Management: Manages and updates appointment details efficiently.

Information Display: Shows detailed information about doctors and patients. Efficiency Improvement: Enhances the efficiency of managing doctor appointments.

Monitoring Transactions: Monitors booking information and transactions.

Modules:

Doctor Module: Includes a dashboard for viewing appointment details, changing appointment status, and generating reports.

User Module: Allows users to book appointments, check appointment status, and search for appointments

Scope of the Project

The “Doctor Appointment Management System” project has a broad scope that covers various aspects of the appointment booking and management process. This comprehensive scope ensures that the Doctor Appointment Management System meets the needs of patients, doctors, and administrators, providing a seamless and efficient way to manage healthcare appointments

Project Scope: 1. User Registration and Management: - Allowing new users (patients) to register and create accounts. - Managing user profiles, including personal and medical information.

2. Doctor Profile Management: - Adding and managing doctor profiles with relevant details (specialization, availability, contact information). - Doctors can update their availability and profile information.

3. Appointment Booking: - Enabling patients to search for doctors based on specialization, availability, and location. - Facilitating the booking of appointments online. - Providing options to reschedule or cancel appointments.

4. Appointment Management: - Allowing doctors to view and manage their schedules. - Sending automated reminders to patients and doctors about upcoming appointments.

5. Patient Records and History: - Maintaining patient records, including appointment history, medical history, and prescriptions. - Providing secure access to patients and doctors to view and update records.

6. Notifications and Reminders: - Sending notifications to patients and doctors for appointment confirmations, reminders, and updates. - Enabling communication between patients and doctors through messages or alerts.

- **Impact of the Project**

Economic Impact:

- Cost Savings: Reduces the administrative costs associated with manual appointment booking, cancellations, and rescheduling.
- Increased Efficiency: Streamlines operations, allowing healthcare providers to see more patients, thus increasing revenue.
- Job Creation: Development and maintenance of the system can create jobs in IT, customer support, and administrative roles.

Social Impact

- Improved Access to Healthcare: Makes it easier for patients to book appointments and access healthcare services, especially in remote areas.
- Patient Convenience: Reduces the need for long wait times and unnecessary trips to healthcare facilities.

Technological Impact

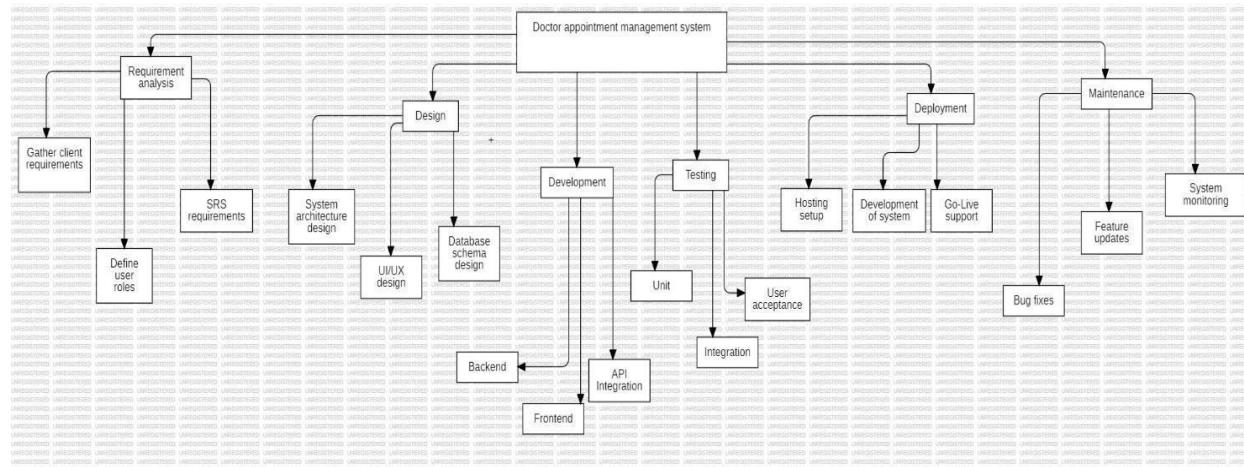
- Adoption of Advanced Technologies: Promotes the use of cloud computing, databases, and AI for managing appointments and patient records.
- Integration with Other Systems: Can be integrated with electronic health records (EHR) systems, payment gateways, and telemedicine platforms.
- Data Analytics: Enables healthcare providers to analyze appointment data for better decision-making and service improvements.

Environmental Impact:

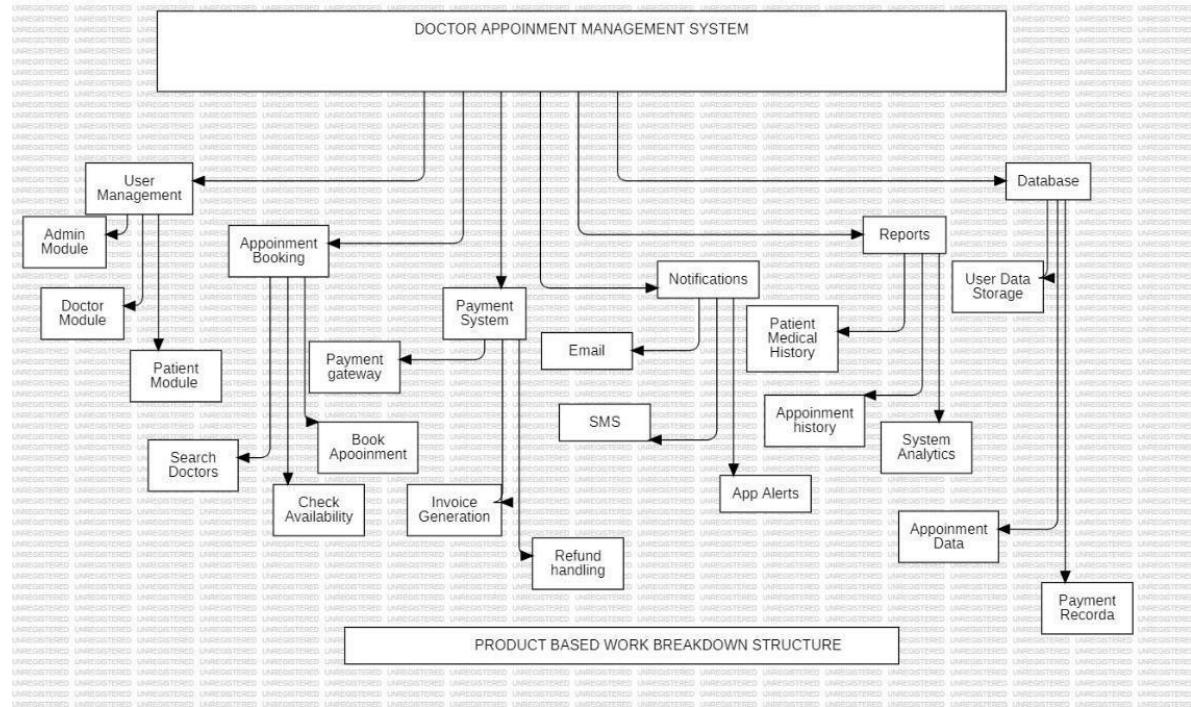
- Reduced Paper Usage: Minimizes the need for paper-based appointment books, records, and reminders, contributing to environmental sustainability.
- Decreased Carbon Footprint: Reduces the need for physical travel to book appointments, lowering carbon emissions from transportation.
- Energy Efficiency: Optimizes the use of resources and energy in healthcare facilities by streamlining operations and reducing redundancies
- Enhanced Patient Satisfaction: Improves the overall patient experience with timely notifications and easy access to medical records.

Work Breakdown Structure

- Process-Based Work Breakdown Structure



Product-Based Work Breakdown Structure



SRS Document

- Functional Requirements

1. User Registration and Login

- Patients:

- Create an account with personal details (name, email, phone number, medical history, etc.).
- Log in using email/phone and password, or through social media accounts.

- Doctors:

- Create a profile with professional details (specialization, availability, consultation fees, qualifications, etc.).
- Log in to manage their appointments.

- Admin:

- Admin can register and authenticate doctors.
- Admin can manage system users (patients, doctors, staff).

2. Appointment Scheduling (Patient Side)

- Search and Browse Doctors:

- Patients can search for doctors based on specialty, location, availability, ratings, etc.

- Select Doctor:

- Patients can view doctor profiles with details such as specialization, experience, fees, and availability.

- Book Appointment:
 - Patients can select a date and time slot.
 - Option to provide details about the reason for the visit or upload any required documents.
- Reschedule/Cancel Appointments:
 - Patients can reschedule or cancel appointments based on doctor availability.
 - Notification sent to patients and doctors for changes.

3. Appointment Scheduling (Doctor Side)

- Set Availability:
 - Doctors can set their availability (working hours, holidays, and breaks).
- Accept/Reject Appointments:
 - Doctors can view pending appointments and either accept or reject them based on their availability.
- View Appointment Details:
 - Doctors can see patient details, reason for visit, and other relevant information.
- View Schedule:
 - Doctors can view a calendar of upcoming appointments.

4. Appointment Notifications

- Patient Notifications:
 - Email/SMS notifications for appointment confirmation, reminders, cancellations, or changes.
- Doctor Notifications:
 - Email/SMS notifications for new appointments, cancellations, reschedules, or reminders.

5. Payment System

- Online Payment Integration:
 - Patients can pay for appointments using credit cards, debit cards, wallets, etc.
 - Doctors can set consultation fees.
- Payment Confirmation:
 - Send payment receipts to the patient and update the doctor's payment status.
- Refunds & Cancellations:
 - If an appointment is canceled, the system should handle refunds as per policy.

6. Doctor Reviews and Ratings

- Patient Reviews:
 - After the consultation, patients can rate and review doctors based on the service they received.
- Review Display:
 - Display patient reviews and ratings on the doctor's profile.
- Ratings Analysis:
 - Doctors can view their ratings and feedback to improve their services.

7. Admin Features

- Doctor Management:
 - Admin can approve, modify, or deactivate doctor profiles.
 - Admin can set specific working hours and fees for doctors.
- User Management:
 - Admin can manage both patient and doctor accounts.
- Analytics and Reports:

- Admin can view reports on appointments, revenue, doctor performance, and more.
- Support Management:
 - Admin can provide customer support or create a helpdesk system to assist users.

8. Search and Filter Features

- Patient Search Filters:
 - Patients can filter doctors by specialty, rating, availability, and location.
- Doctor Search Filters:
 - Doctors can search patient records based on appointments, consultation types, or specific medical needs.

9. Medical History and Records

- Patient Medical History:
 - Patients can upload past medical records and reports.
 - Doctors can access these records during consultations.
- Appointment Notes:
 - Doctors can update consultation notes after each appointment, which patients can access.

10. Privacy and Security

- Data Encryption:
 - Ensure the security of patient data (e.g., medical history, personal information) through encryption and secure transmission protocols.
- Role-Based Access Control:
 - Different levels of access for patients, doctors, and administrators.
- HIPAA or GDPR Compliance (depending on location):
 - Ensure compliance with health data protection regulations: SCOPE - SEP LAB - VL2024250503895- L13+L14

11. User Interface and Experience (UI/UX)

- Mobile-Friendly:
 - The system should be mobile-responsive or have a dedicated mobile app.
- Intuitive Interface:
 - Clear, easy navigation for both patients and doctors.
- Multi-Language Support:
 - Provide localization and support for different languages if needed.

12. Technical Features

- Real-Time Updates:
 - The system should provide real-time updates on appointment statuses, availability, etc.
- Database Management:
 - Manage all patient and doctor records, appointments, payments, etc., with redundancy and backup mechanisms.

Non-Functional Requirements

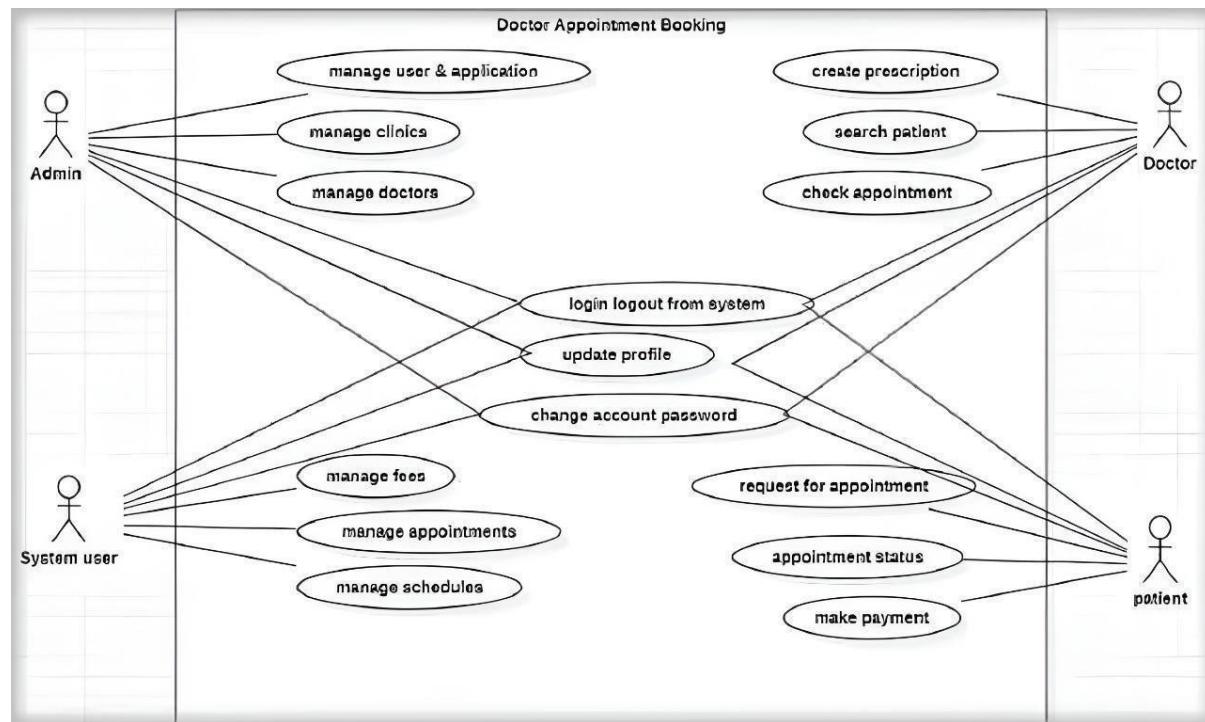
Non-functional requirements of a doctor appointment management system typically focus on the system's overall quality and performance rather than specific features. These include:

- Scalability: The ability to handle an increasing number of users and appointments without compromising performance.
- Security: Ensuring patient data is encrypted and access is restricted to authorized personnel.
- Reliability: Guaranteeing the system operates consistently and minimizes downtime.
- Usability: Providing an intuitive interface for both patients and healthcare providers.
- Performance: Ensuring quick response times for scheduling and managing appointments.

- Interoperability: Compatibility with other healthcare systems, such as electronic health records (EHR).
- Maintainability: Ease of updating and fixing issues in the system.

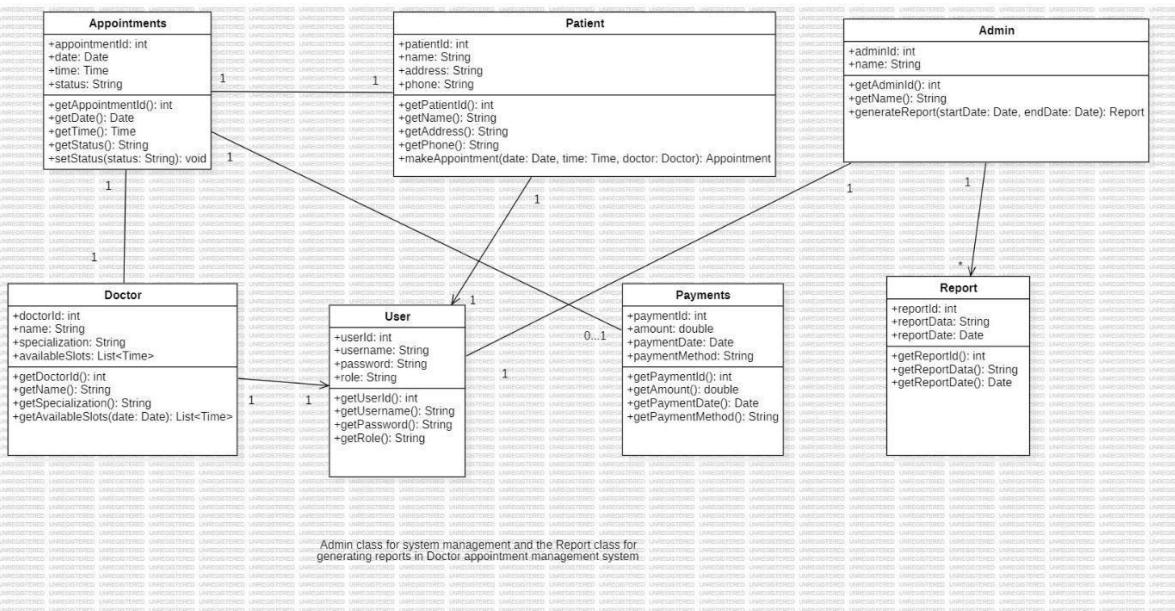
UML - Diagrams

USE CASE DIAGRAM

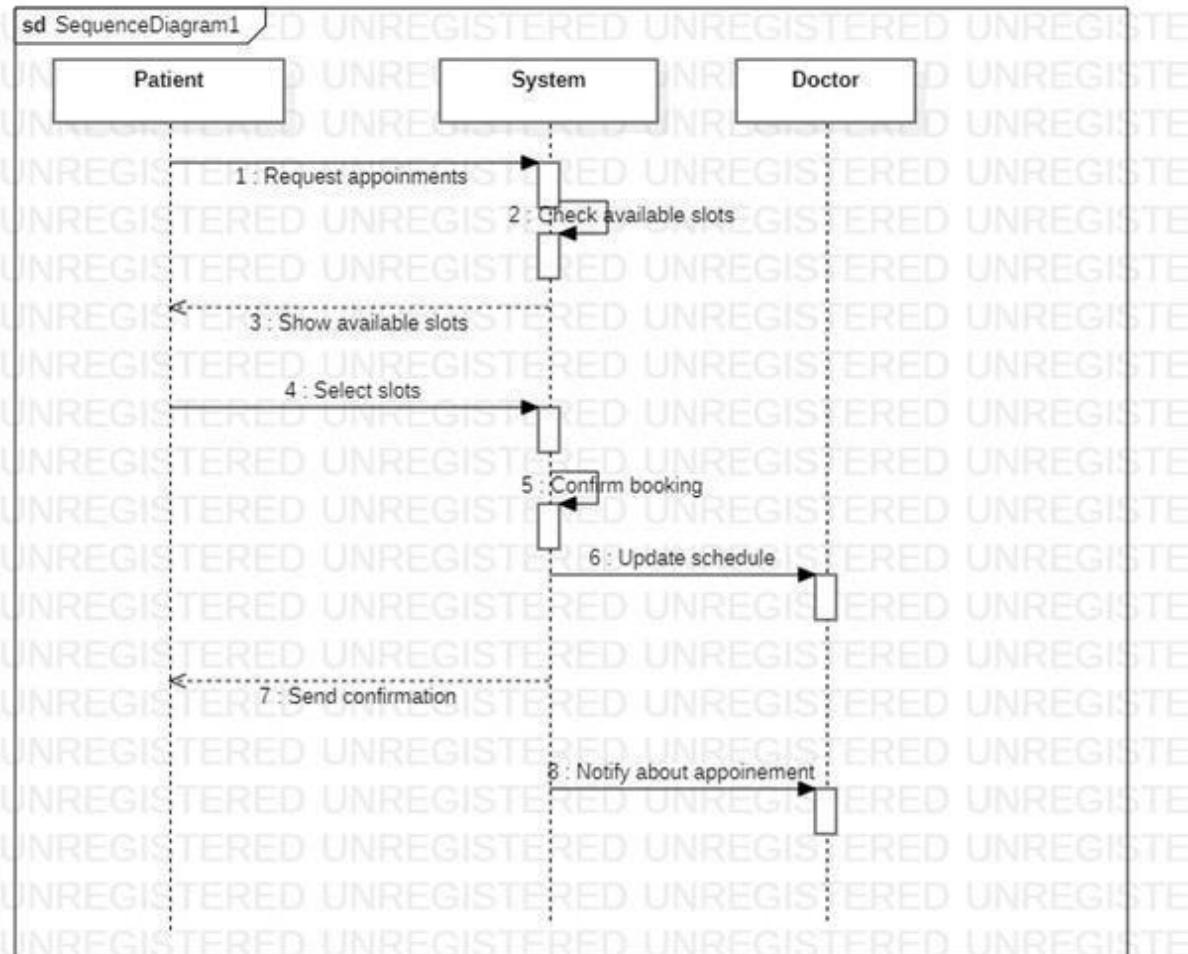


CLASS DIAGRAM

VIT - SCOPE - SEP LAB - VL2024250503895- L13+L14



SEQUENCE DIAGRAM



Scenario 1: PATIENT BOOKS AN APPOINTMENT

- VL2024250503895- L13+L14

- Comprehensive testing for any two scenarios

Test Case 1: Successful Appointment Booking

- Test Case ID: TC001
- Description: Ensure that a patient can successfully book an available appointment.
- Preconditions:
 - Patient is logged into the system.
 - The doctor has available slots.
- Test Steps:
 1. Navigate to the appointment booking page.
 2. Select a doctor.
 3. View available time slots.
 4. Choose a preferred slot and confirm the booking.
 5. System confirms the appointment and updates the doctor's schedule.
 6. Both patient and doctor receive a confirmation notification.

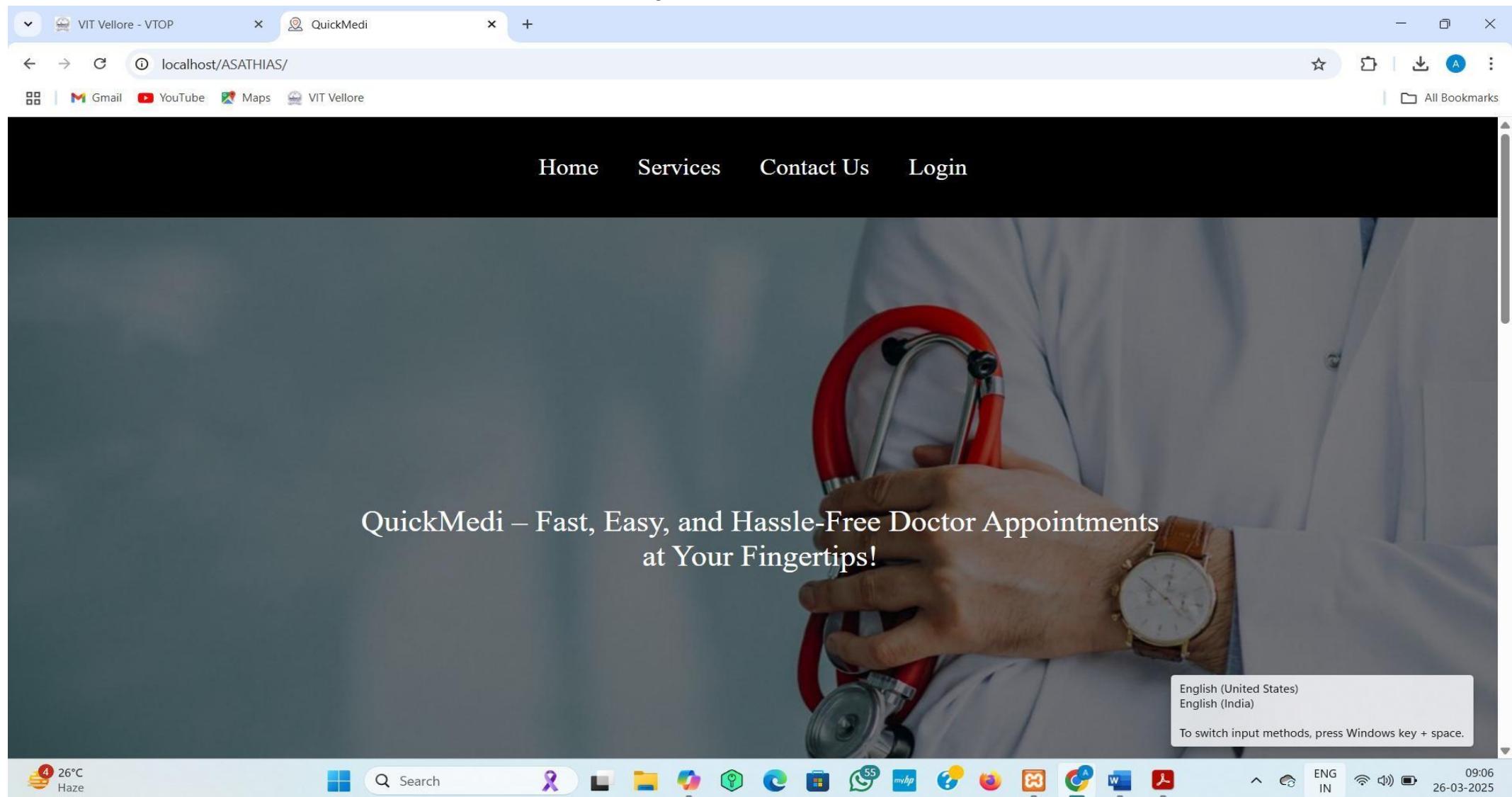
- Expected Result:
 - Appointment is successfully booked.
 - System updates the doctor's schedule.
 - Patient and doctor receive confirmation.
- Actual Result:
 - Appointment booked successfully.
 - Confirmation message displayed.
 - Doctor's schedule updated.
- Pass/Fail:  Pass

Test Case 2: Doctor Cancels an Appointment

- Test Case ID: TC002
- Description: Ensure that a doctor can cancel a previously booked appointment, and the patient is notified.
- Preconditions:
 - Doctor is logged into the system.
 - At least one scheduled appointment exists.
- Test Steps:
 1. Doctor navigates to their schedule.
 2. Selects an appointment to cancel.
 3. Confirms the cancellation request.
 4. System updates the schedule and removes the appointment.
 5. Patient receives a cancellation notification.
- Expected Result:
 - Appointment is successfully canceled.
 - Schedule is updated.

- Patient is notified of the cancellation.
- Actual Result:
 - Appointment removed from doctor's schedule.
 - Patient received a cancellation email and notification.
- Pass/Fail:  Pass

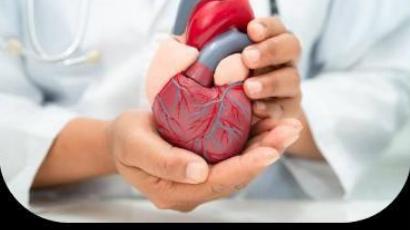
Project – UI Screenshots



VIT Vellore - VTOP QuickMedi

localhost/ASATHIAS/

Gmail YouTube Maps VIT Vellore All Bookmarks



Cardiologist

Explore



Endocrinologist

Explore



Oncologist

Explore



Neurologist

Explore



Dermatologist

Explore



Gastroenterologist

Explore



Gynaecology

Explore

4 26°C Haze

Search

myhp

WPS Office

Google Sheets

Google Slides

Google Docs

Windows Start

File Explorer

Control Panel

WhatsApp

Microsoft Edge

Firefox

File Manager

PowerPoint

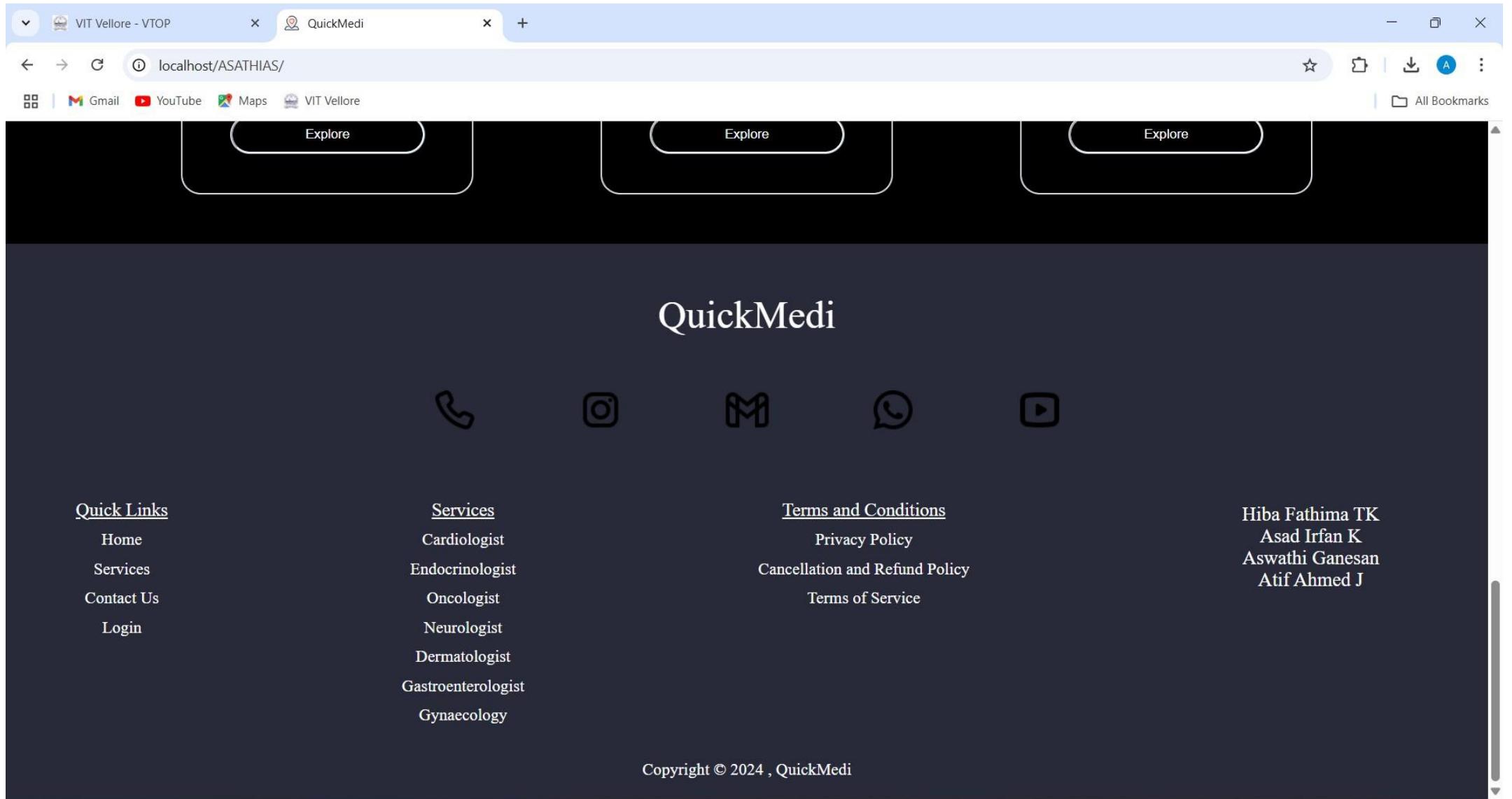
OneNote

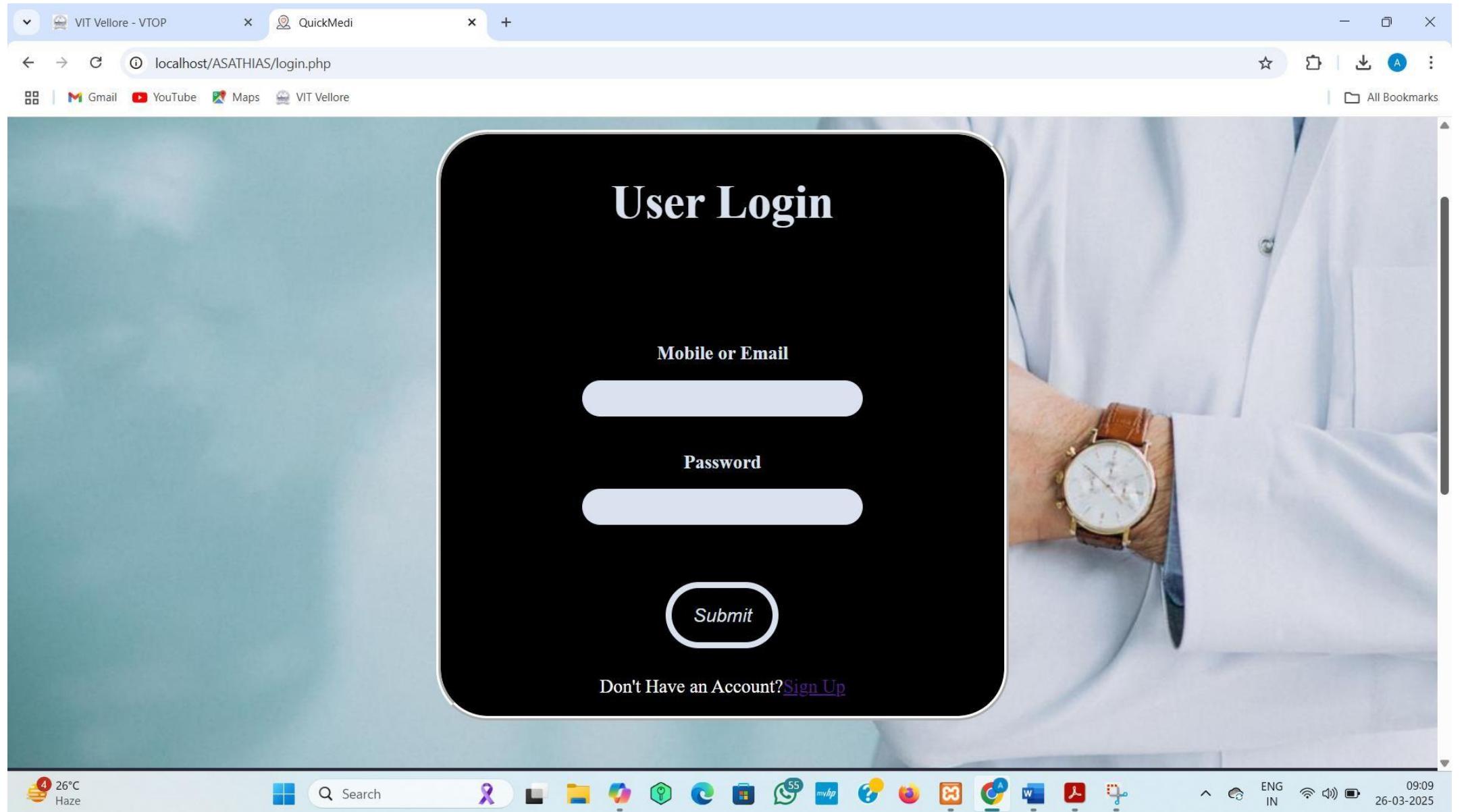
OneDrive

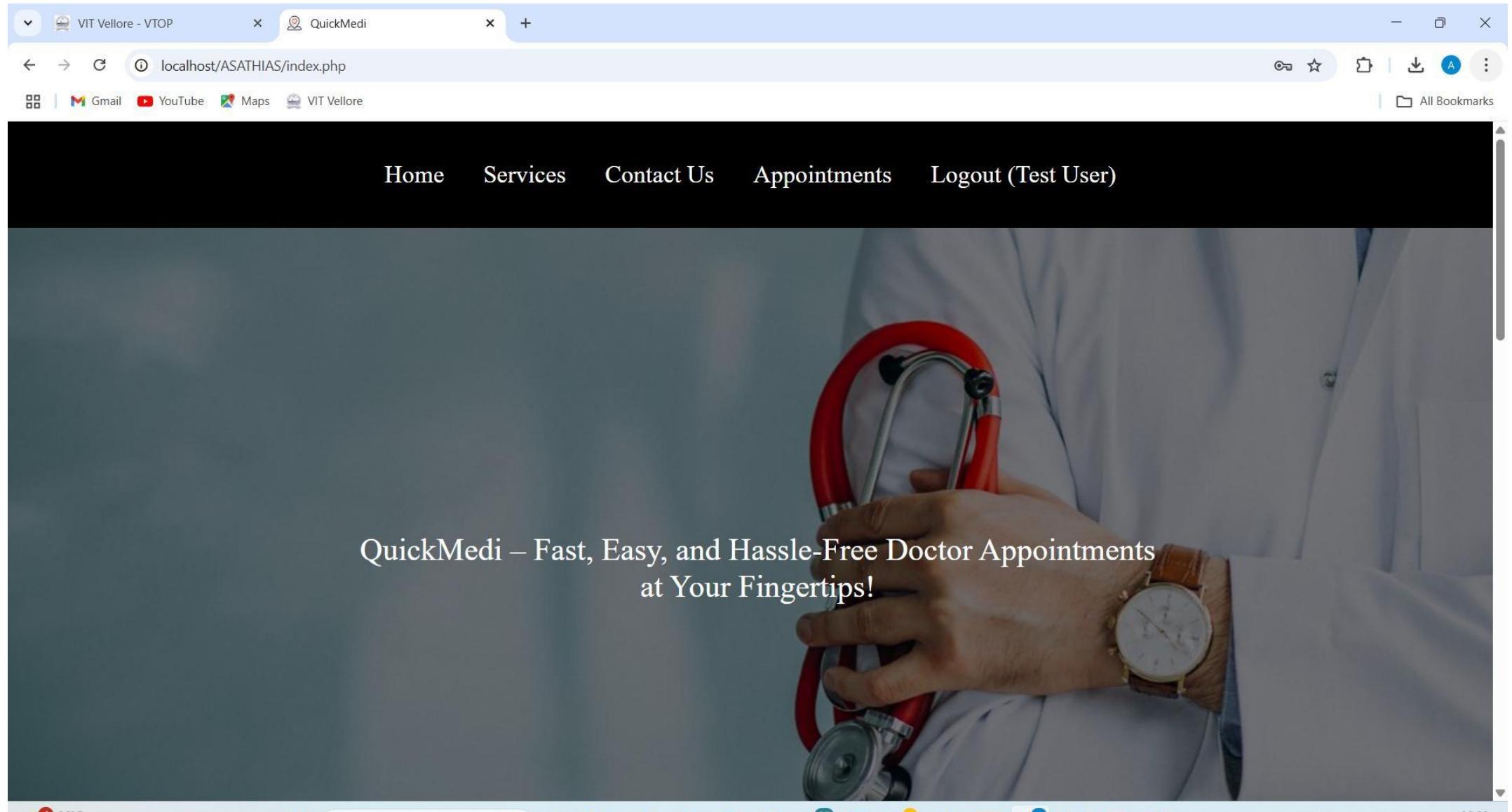
ENG IN

09:07

26-03-2025







VIT Vellore - VTOP QuickMedi

localhost/ASATHIAS/

Gmail YouTube Maps VIT Vellore All Bookmarks



Cardiologist

Explore



Endocrinologist

Explore



Oncologist

Explore



Neurologist

Explore



Dermatologist

Explore



Gastroenterologist

Explore



Gynaecology

Explore

4 26°C Haze

Search

WPS Office

File Explorer

OneDrive

Microsoft Edge

WhatsApp

myhp

Firefox

Microsoft Word

Microsoft Powerpoint

Microsoft Excel

Microsoft Teams

09:07

ENG IN

26-03-2025

VIT Vellore - VTOP QuickMedi

localhost/ASATHIAS/explore.php?id=1

Gmail YouTube Maps VIT Vellore All Bookmarks

Cardiologist

A cardiologist is a medical specialist focused on diagnosing, treating, and preventing diseases related to the heart and blood vessels. They play a crucial role in managing conditions such as hypertension, heart attacks, arrhythmias, congenital heart defects, and heart failure. Using advanced diagnostic tools like ECG, echocardiography, and cardiac catheterization, cardiologists assess heart health and recommend appropriate treatments, including medications, lifestyle modifications, or surgical interventions if necessary. Whether providing preventive care or managing complex cardiac conditions, cardiologists ensure patients receive expert care to maintain a healthy heart. At our hospital, our experienced cardiologists are dedicated to offering comprehensive cardiac care with cutting-edge technology and personalized treatment plans.

Book Now



26°C

Haze



Search

09:11
ENG
IN
26-03-2025

VIT Vellore - VTOP Book Appointment - Hospital

localhost/ASATHIAS/booking_page.php?id=1

Gmail YouTube Maps VIT Vellore

All Bookmarks

Home Services Contact Us Appointments Logout (Test User)

Book an Appointment

Select Specialization Select Date Select Doctor

Cardiologist 28 - 03 - 2025 Dr. Anil Mehta

Available Timings

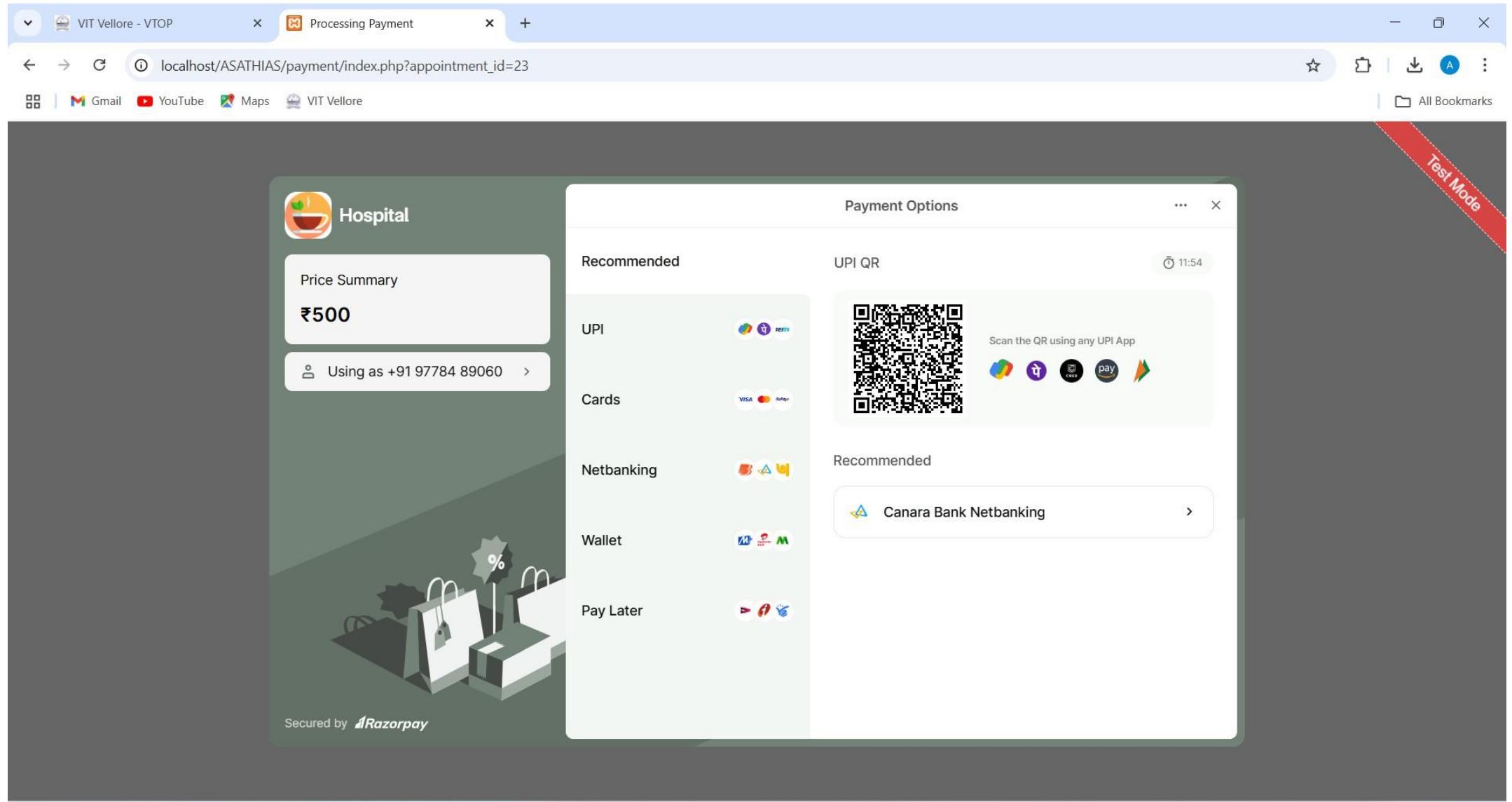
10:00:00

Book Now

27°C Haze

Search

9:12 IN 26-03-2025



27°C
Haze



Search



Ribbon



File



Settings



Phone



Store



WhatsApp



myhp



Firefox



Sheets



Slides



Docs



Word



Excel



Powerpoint



Edge



Speaker



Battery



Signal

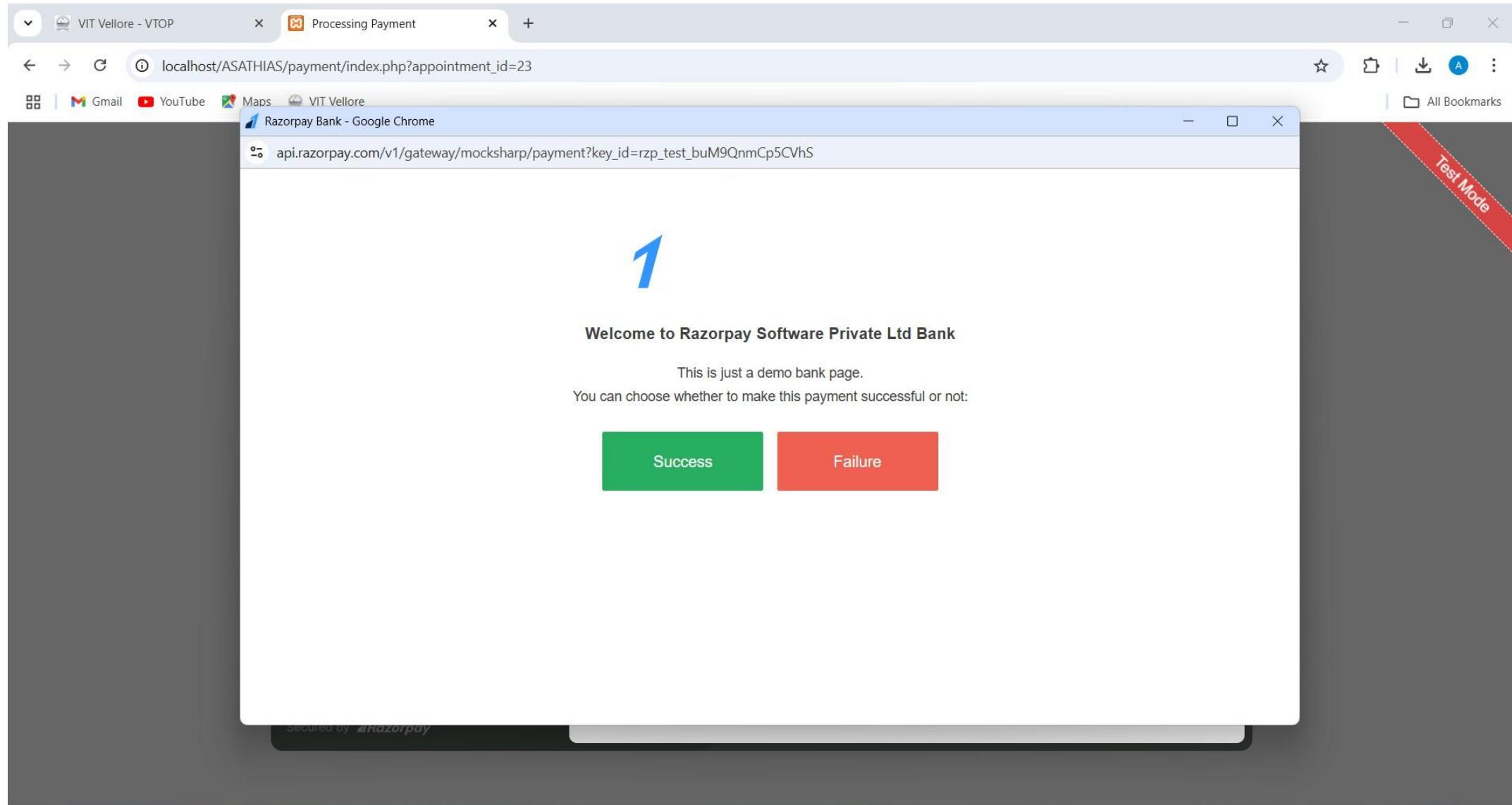


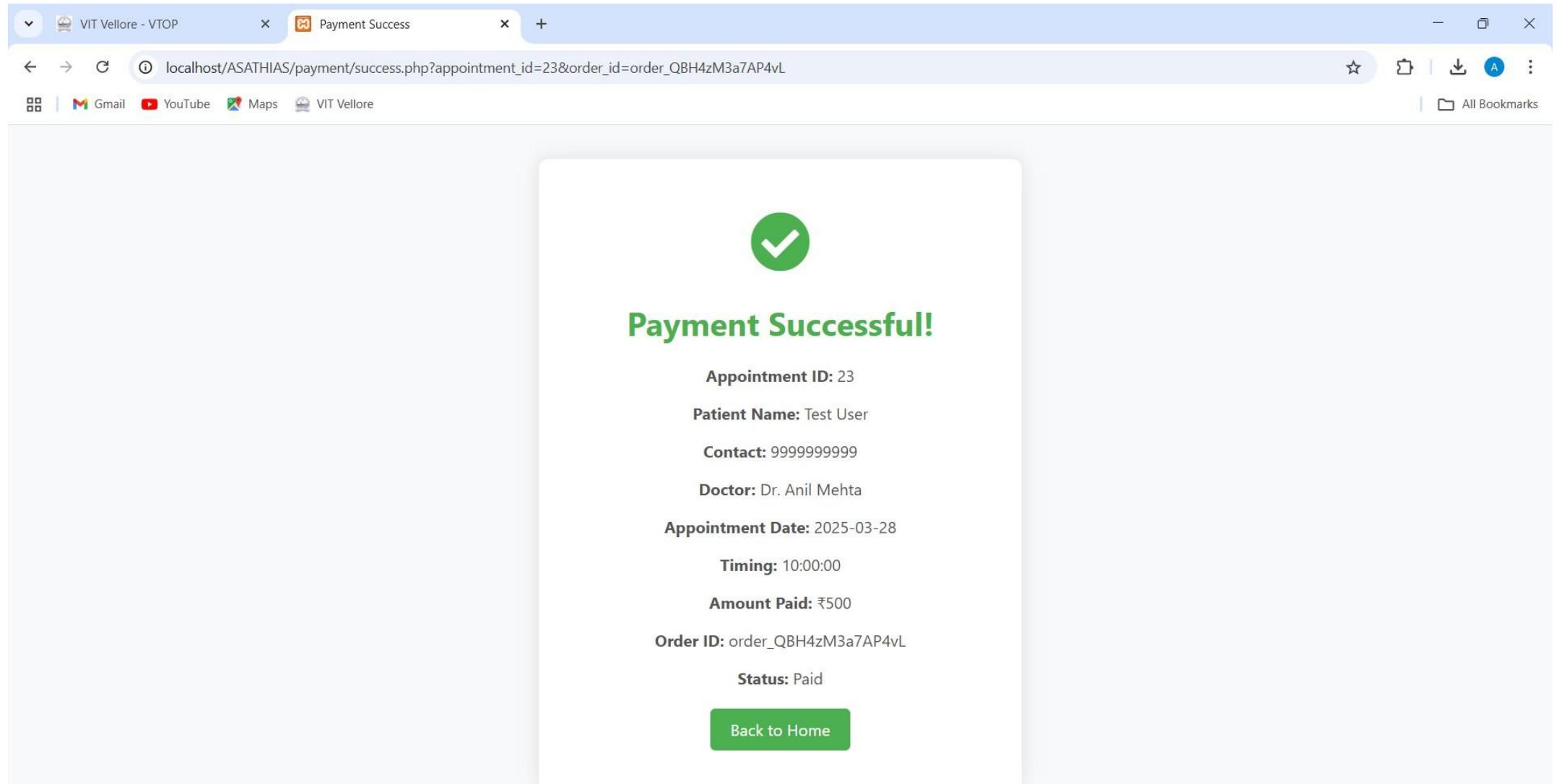
Wi-Fi



Battery

09:12
26-03-2025





Search



VIT Vellore - VTOP My Appointments

localhost/ASATHIAS/orders.php

Gmail YouTube Maps VIT Vellore

All Bookmarks

Home Services Contact Us Appointments Logout (Test User)

My Appointments

Doctor: Dr. Anil Mehta
Patient Name: Test User
Contact: 9999999999
Appointment Date: 2025-03-28
Timing: 10:00:00
Status: Paid
Order ID: order_QBH4zM3a7AP4vL

Doctor: Dr. Pooja Menon
Patient Name: Test User
Contact: 9999999999
Appointment Date: 2025-03-27
Timing: 11:00:00
Status: Failed

Doctor: Dr. Sneha Nair
Patient Name: Test User
Contact: 9999999999
Appointment Date: 2025-03-29
Timing: 13:30:00
Status: Failed

Doctor: Dr. Ramesh Patel
Patient Name: Test User
Contact: 9999999999
Appointment Date: 2025-03-27
Timing: 12:00:00
Status: Paid
Order ID: order_QBG2i8gKOppl7



3

Haze



Search



26-03-2025

