📓 DocSpot: Seamless Appointment Booking for Health

Full Stack MERN Project Documentation

🏷️ 1. Introduction

Project Title:
DocSpot: Seamless Appointment Booking for Health

Team Id: LTVIP2025TMID52522

Team Leader:
Asudi Janani

Team Members:

Goranttla Lavanya
Ramisetttti Maneesha
Mekala Sravani

Overview:
DocSpot is a full-stack healthcare web application that streamlines the process of booking medical appointments. It provides a user-friendly interface for patients to book appointments online, doctors to manage their schedules, and administrators to oversee system operations. The app includes secure role-based logins and integrated online payments for a complete appointment experience.

📌 2. Project Overview

Purpose:
To provide a centralized, convenient, and secure platform for healthcare appointment management accessible by patients, doctors, and administrators.

Key Features:

- User (Patient) registration, login, and appointment booking
- Doctor login and appointment management dashboard
- Admin panel to manage users and appointments
- Razorpay integration for online payments
- Secure authentication using JWT

🏗️ 3. System Architecture

Frontend (React.js)

- Built with React and React Router
- UI components from Material UI, Bootstrap, Ant Design
- Axios for HTTP requests

- Responsive design for mobile and desktop

Backend (Node.js + Express.js)

- RESTful API architecture
- Role-based access control
- Razorpay payment API integration
- JWT authentication and route protection

Database (MongoDB)

- Collections:
    - users (patients)
    - doctors
    - appointments
    - admins
    - payments
- Mongoose for schema definitions and data modeling

⚙️ 4. Setup Instructions

Prerequisites:

- Node.js (v18+)
- MongoDB (Local or Atlas)
- npm
- Git

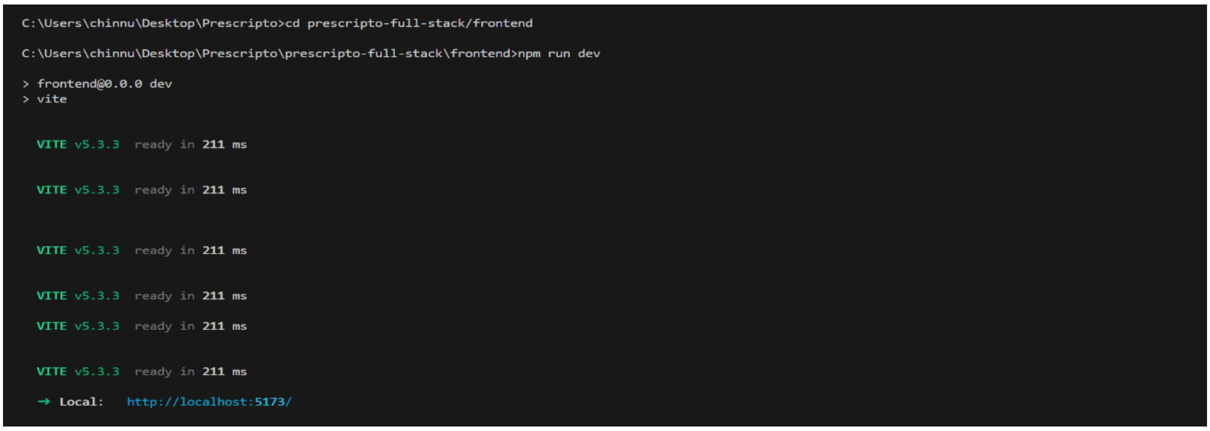
Installation & Setup:

bash

Copy code

```
# Clone repository
git clone https://github.com/your-username/docspot.git

# Frontend setup
cd client
npm install
```

Frontend terminal:



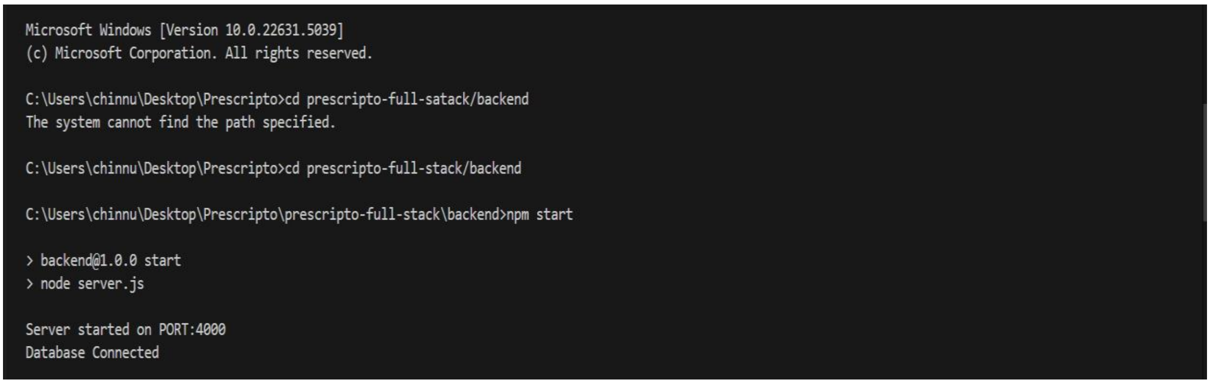
```
C:\Users\chinnu\Desktop\Prescripto>cd prescripto-full-stack/frontend

C:\Users\chinnu\Desktop\Prescripto\prescripto-full-stack\frontend>npm run dev

> frontend@0.0.0 dev
> vite


  VITE v5.3.3  ready in 211 ms


  VITE v5.3.3  ready in 211 ms



  VITE v5.3.3  ready in 211 ms


  VITE v5.3.3  ready in 211 ms

  VITE v5.3.3  ready in 211 ms


  VITE v5.3.3  ready in 211 ms

  ➜  Local:   http://localhost:5173/
```

# Backend setup

cd ../server

npm install

Backend terminal:



```
Microsoft Windows [Version 10.0.22631.5039]
(c) Microsoft Corporation. All rights reserved.

C:\Users\chinnu\Desktop\Prescripto>cd prescripto-full-satack/backend
The system cannot find the path specified.

C:\Users\chinnu\Desktop\Prescripto>cd prescripto-full-stack/backend

C:\Users\chinnu\Desktop\Prescripto\prescripto-full-stack\backend>npm start

> backend@1.0.0 start
> node server.js

Server started on PORT:4000
Database Connected
```

# .env file in /server/

MONGO_URI=your_mongo_uri

JWT_SECRET=your_jwt_secret

RAZORPAY_KEY=your_razorpay_key

```
RAZORPAY_SECRET=your_razorpay_secret

PORT=5000
```

🗁 5. Folder Structure

Client:

pgsql

Copy code

```
client/
 ├── public/
 ├── src/
|    ├── components/
|    ├── pages/
|    ├── context/
|   └── App.js, index.js
```

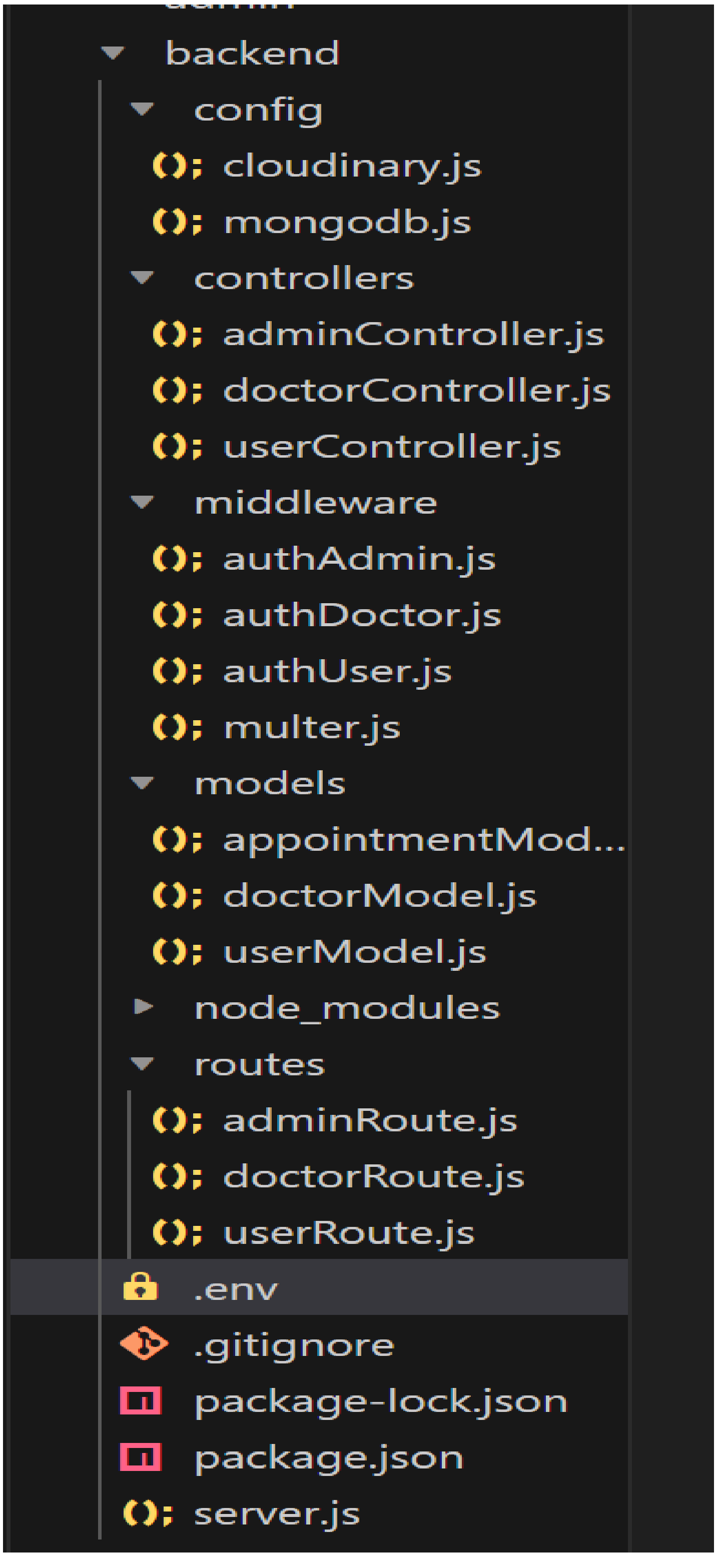
Server:

pgsql

Copy code

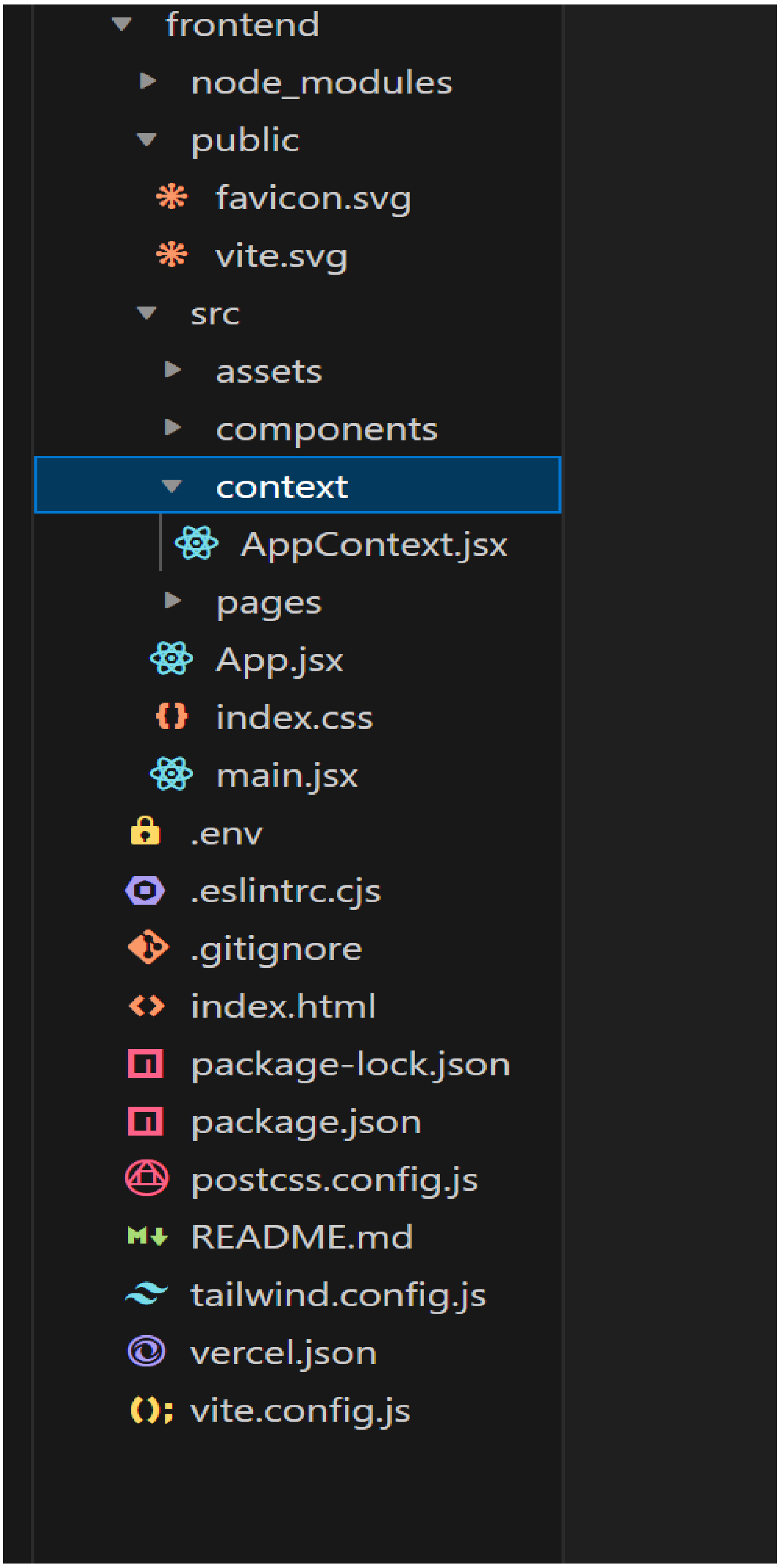
```
server/
 ├── controllers/
 ├── routes/
 ├── models/
 ├── config/
 ├── middlewares/
└── server.js
```

Backend Folder Structure:



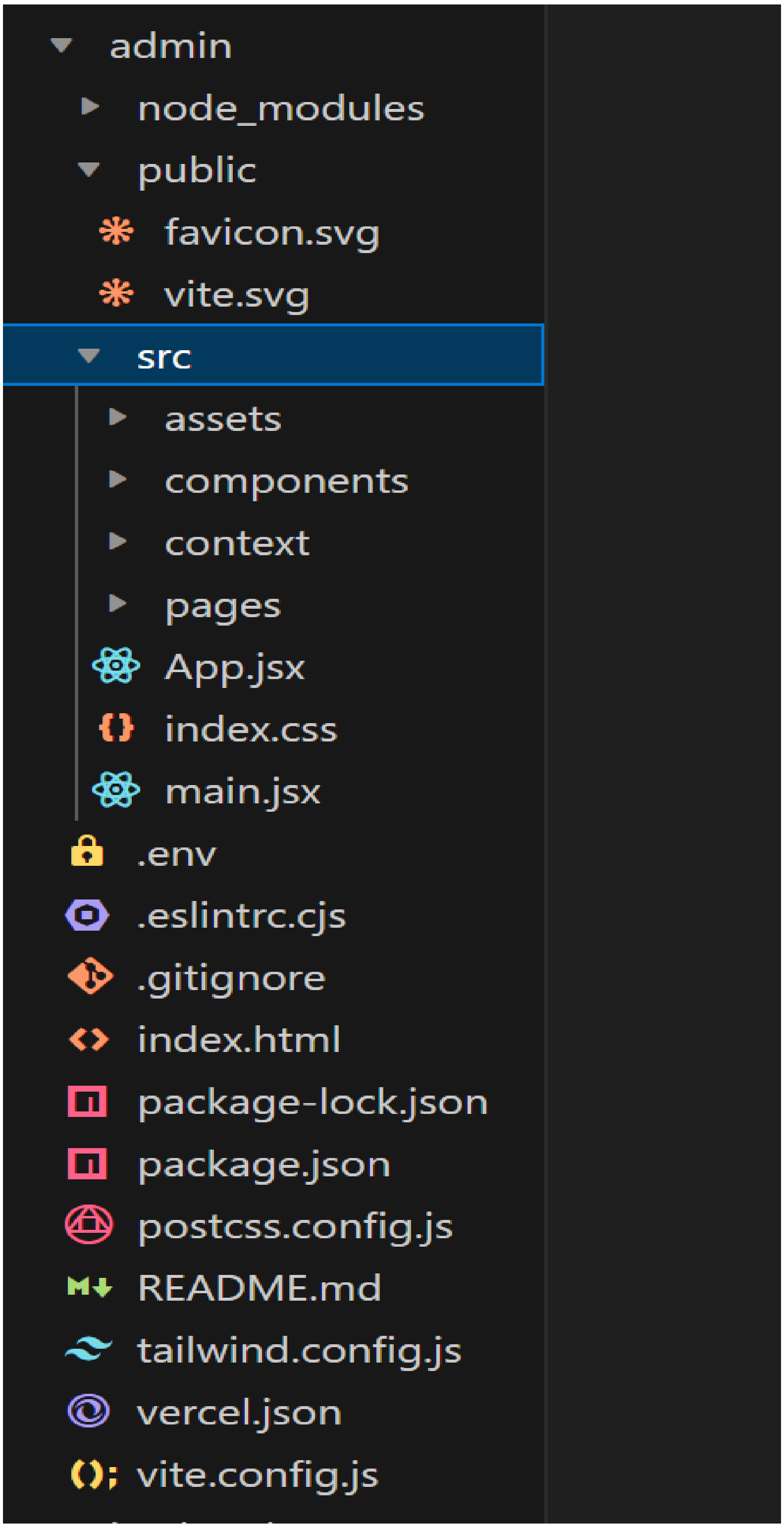
```
  admin
▾ backend
  ▾ config
      cloudinary.js
      mongodb.js
  ▾ controllers
      adminController.js
      doctorController.js
      userController.js
  ▾ middleware
      authAdmin.js
      authDoctor.js
      authUser.js
      multer.js
  ▾ models
      appointmentMod...
      doctorModel.js
      userModel.js
  ▸ node_modules
  ▾ routes
      adminRoute.js
      doctorRoute.js
      userRoute.js
    .env
    .gitignore
    package-lock.json
    package.json
    server.js
```

Frontend Folder Structure:



```
▾ frontend
  ▸ node_modules
  ▾ public
      favicon.svg
      vite.svg
  ▾ src
    ▸ assets
    ▸ components
    ▾ context
        AppContext.jsx
    ▸ pages
      App.jsx
      index.css
      main.jsx
    .env
    .eslintrc.cjs
    .gitignore
    index.html
    package-lock.json
    package.json
    postcss.config.js
    README.md
    tailwind.config.js
    vercel.json
    vite.config.js
```

Admin Folder Setup:



```
▼ admin
  ▶ node_modules
  ▼ public
     favicon.svg
     vite.svg
  ▼ src
    ▶ assets
    ▶ components
    ▶ context
    ▶ pages
     App.jsx
     index.css
     main.jsx
   .env
   .eslintrc.cjs
   .gitignore
   index.html
   package-lock.json
   package.json
   postcss.config.js
   README.md
   tailwind.config.js
   vercel.json
   vite.config.js
```

▶️ 6. Running the Application

bash

Copy code

```
# Frontend

cd client

npm start


# Backend

cd server

npm start
```

📡 7. API Documentation

Method	Endpoint	Description
POST	/api/users/register	Register a new user
POST	/api/users/login	Login as user
POST	/api/doctors/login	Doctor login
POST	/api/admin/login	Admin login
POST	/api/appointments/book	Book an appointment
GET	/api/doctors/:id/appointments	Doctor views appointments
GET	/api/admin/appointments	Admin views all appointments
POST	/api/payments/order	Initiate Razorpay order
POST	/api/payments/verify	Verify payment

🔐 8. Authentication & Authorization

- **JWT Tokens** used for secure authentication
- **Protected Routes**: Based on roles (User, Doctor, Admin)
- **Token Flow**:
  - On login, token is generated and stored in local storage
  - Every protected request includes this token in the headers

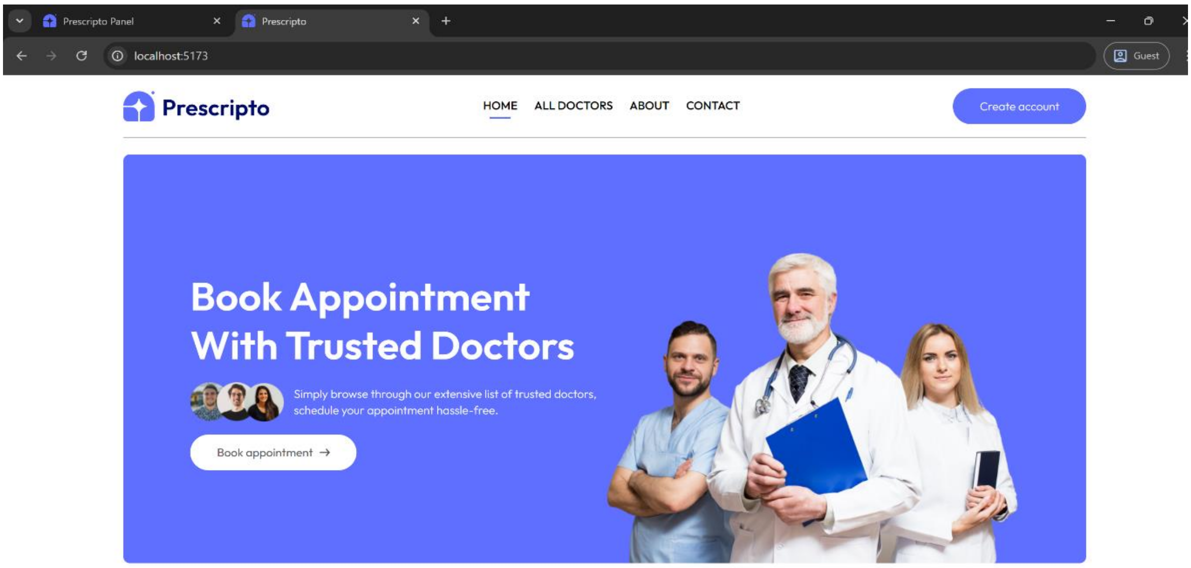
---

🎨 9. User Interface Screenshots

Please upload the following screenshots with the specified names:

Page	Screenshot Name
User Login Page	user-login.png
Doctor Login Page	doctor-login.png
Admin Login Page	admin-login.png
User Dashboard (after login)	user-dashboard.png
Appointment Booking Page	book-appointment.png
Payment Checkout Page	payment-page.png
Doctor Dashboard	doctor-dashboard.png
Admin Dashboard	admin-dashboard.png
Success Message after Booking	success-booking.png
Payment Success Page	payment-success.png

Home page(website):



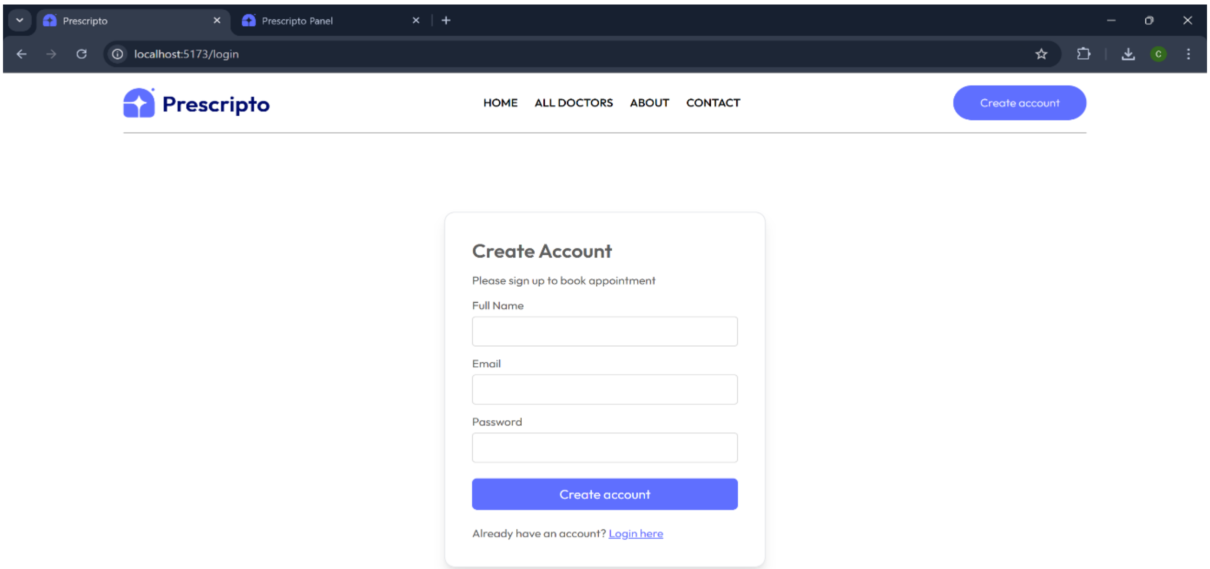
Book Appointment
With Trusted Doctors

Simply browse through our extensive list of trusted doctors, schedule your appointment hassle-free.

Find by Speciality

Simply browse through our extensive list of trusted doctors, schedule your appointment hassle-free.

User Login:



Create Account

Please sign up to book appointment

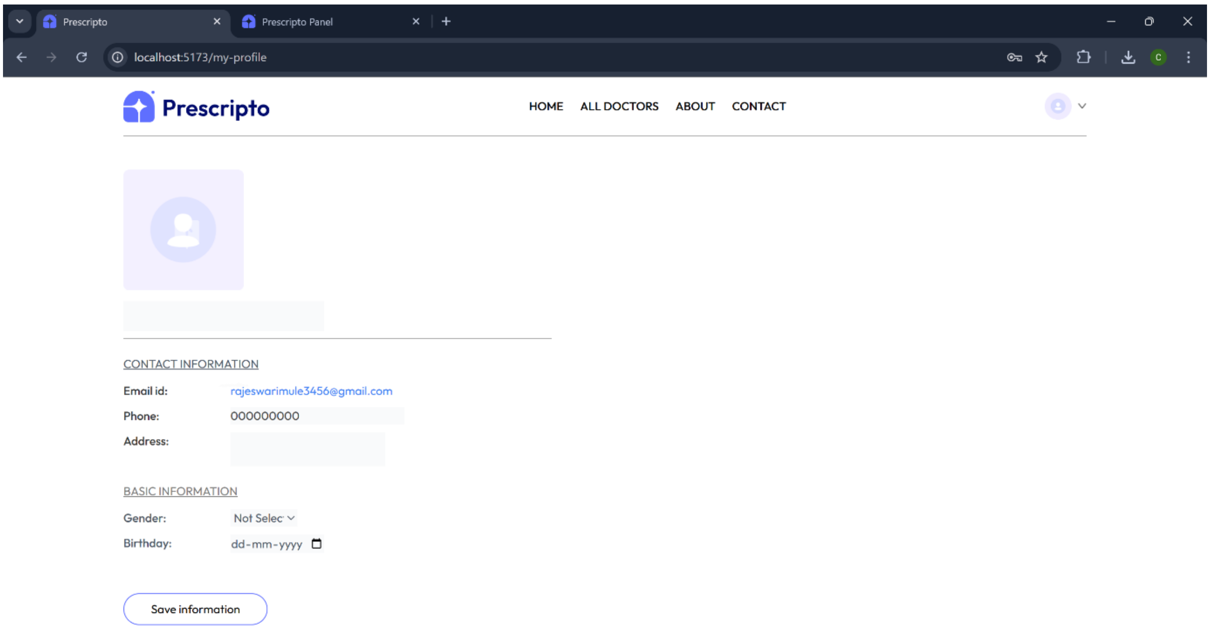
Full Name

Email

Password

Already have an account? Login here

User Dashboard:



CONTACT INFORMATION

Email id: rajeswarimule3456@gmail.com

Phone: 000000000

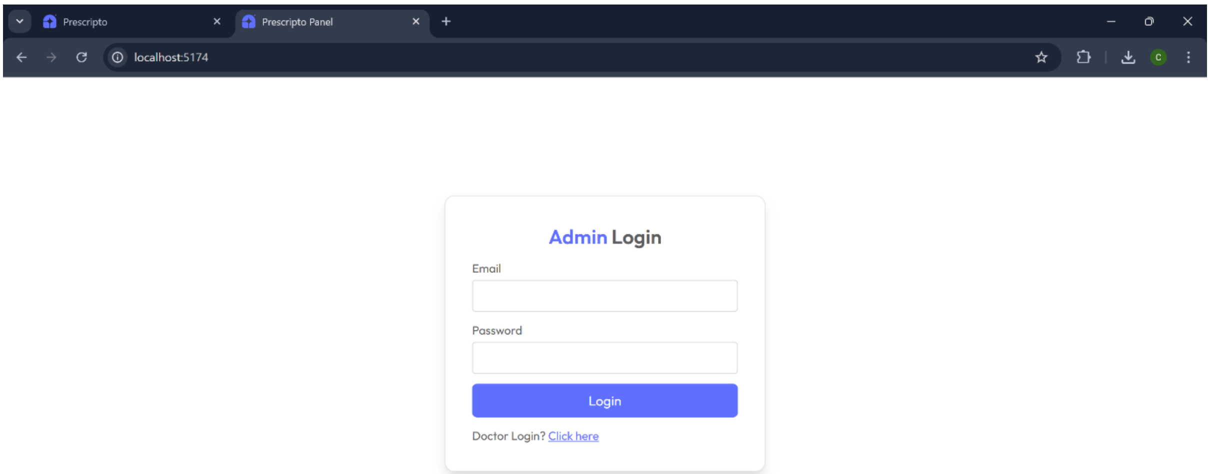
Address:

BASIC INFORMATION

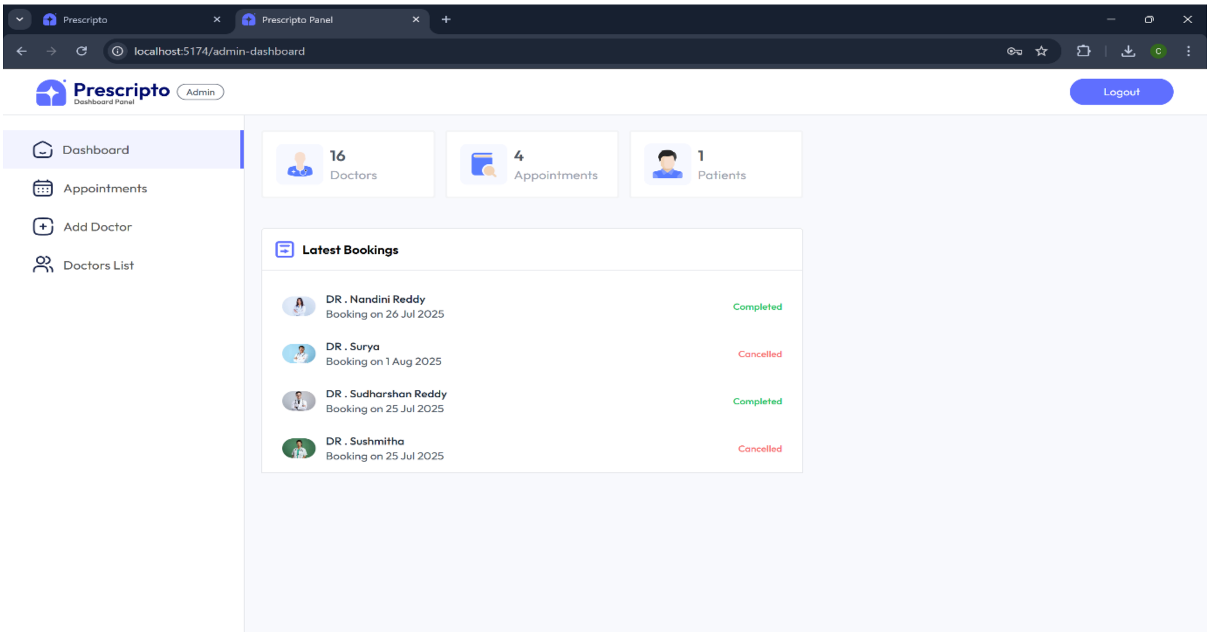
Gender: Not Selec

Birthday: dd-mm-yyyy

Admin Login Page:



Admin Dashboard Page:



16 Doctors

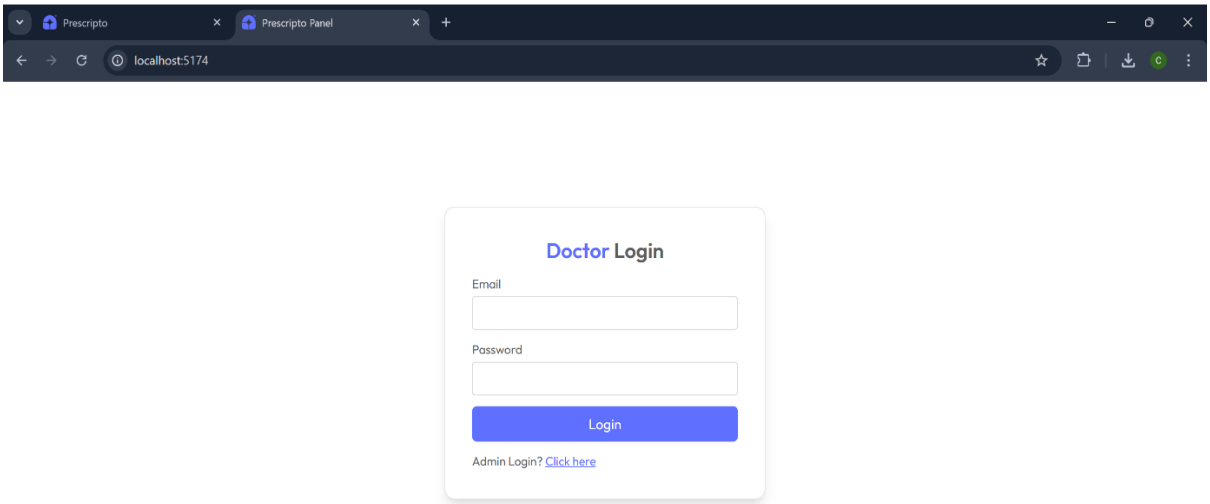
4 Appointments

1 Patients

Latest Bookings

DR . Nandini Reddy Booking on 26 Jul 2025	Completed
DR . Surya Booking on 1 Aug 2025	Cancelled
DR . Sudharshan Reddy Booking on 25 Jul 2025	Completed
DR . Sushmitha Booking on 25 Jul 2025	Cancelled

Doctor Login Page:



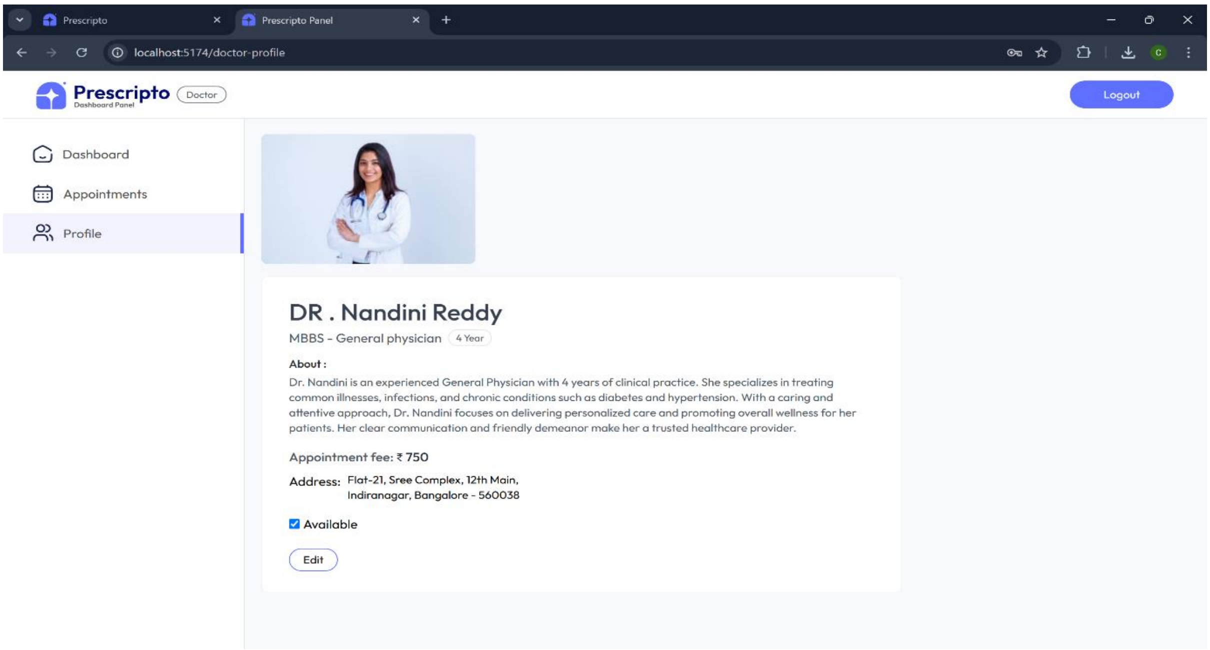
Doctor Login

Email

Password

Admin Login? Click here

Doctor Dashboard:



DR . Nandini Reddy

MBBS - General physician 4 Year

About :

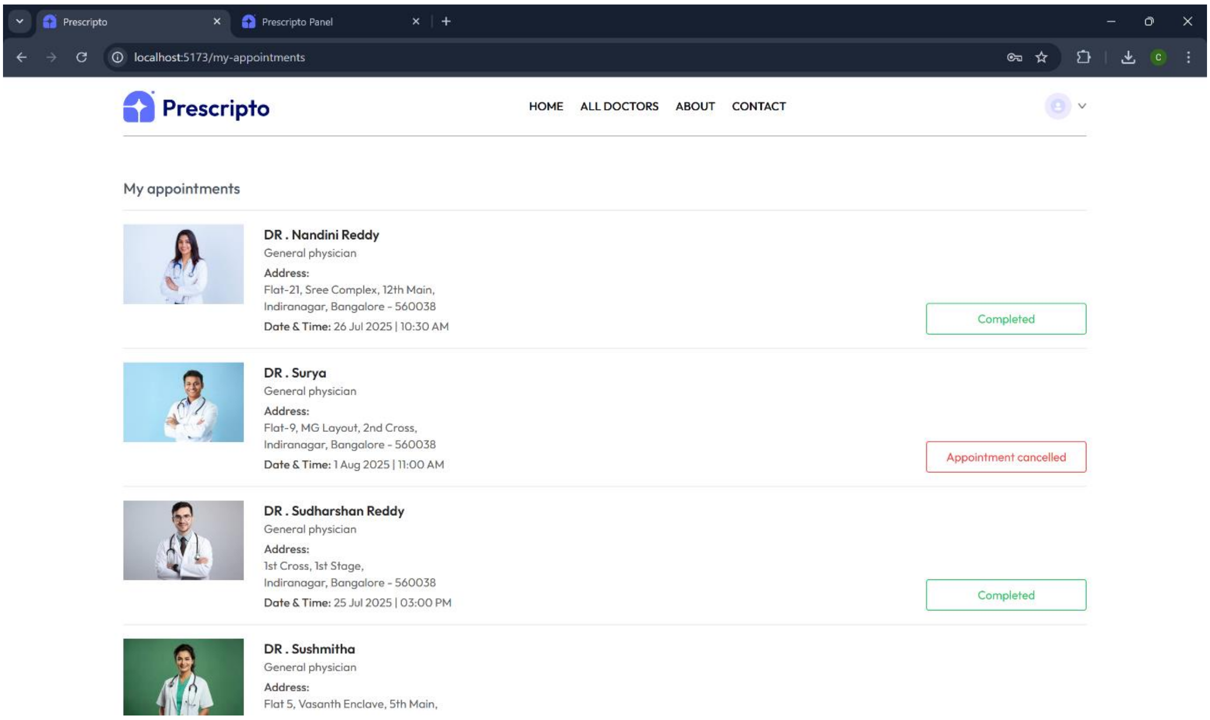
Dr. Nandini is an experienced General Physician with 4 years of clinical practice. She specializes in treating common illnesses, infections, and chronic conditions such as diabetes and hypertension. With a caring and attentive approach, Dr. Nandini focuses on delivering personalized care and promoting overall wellness for her patients. Her clear communication and friendly demeanor make her a trusted healthcare provider.

Appointment fee: ₹ 750

Address: Flat-21, Sree Complex, 12th Main,
Indiranagar, Bangalore - 560038

☑ Available

Appointment Booking:



My appointments

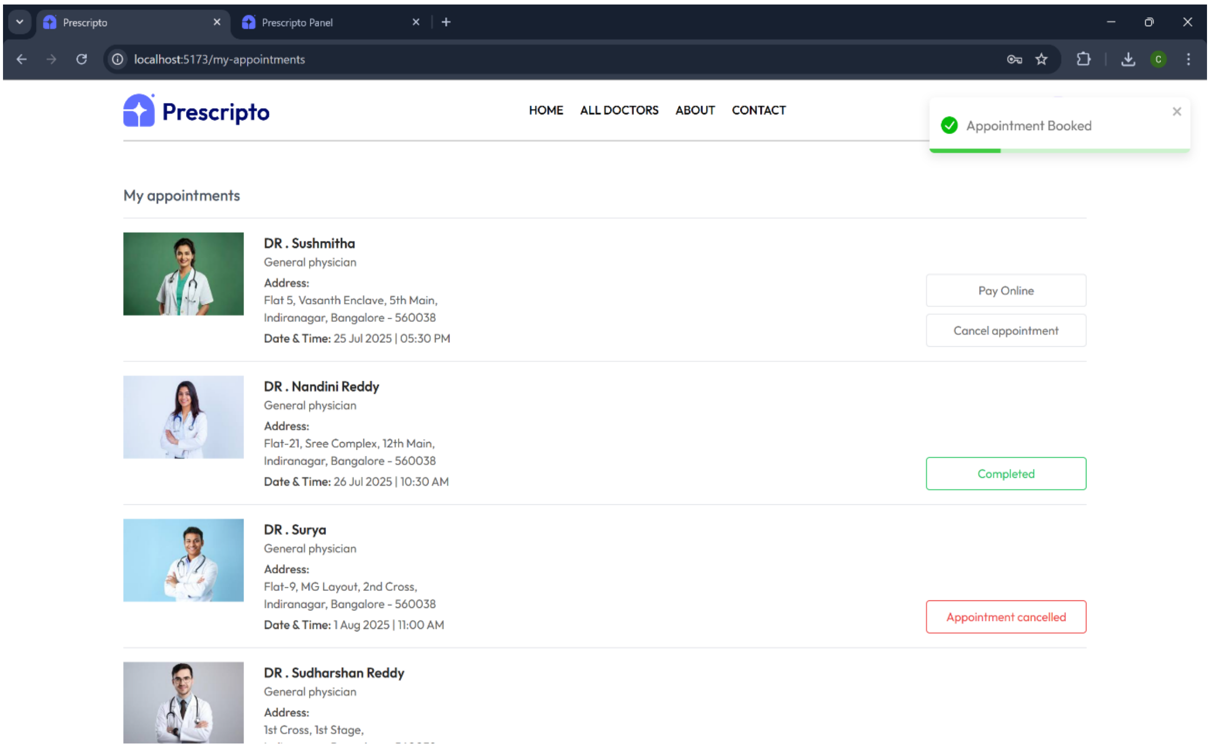
DR . Nandini Reddy
General physician
Address:
Flat-21, Sree Complex, 12th Main,
Indiranagar, Bangalore - 560038
Date & Time: 26 Jul 2025 | 10:30 AM
Completed

DR . Surya
General physician
Address:
Flat-9, MG Layout, 2nd Cross,
Indiranagar, Bangalore - 560038
Date & Time: 1 Aug 2025 | 11:00 AM
Appointment cancelled

DR . Sudharshan Reddy
General physician
Address:
1st Cross, 1st Stage,
Indiranagar, Bangalore - 560038
Date & Time: 25 Jul 2025 | 03:00 PM
Completed

DR . Sushmitha
General physician
Address:
Flat 5, Vasanth Enclave, 5th Main,

Appointment Booked Successfully:



localhost:5173/my-appointments

Appointment Booked

My appointments

DR . Sushmitha
General physician
Address:
Flat 5, Vasanth Enclave, 5th Main,
Indiranagar, Bangalore - 560038
Date & Time: 25 Jul 2025 | 05:30 PM

DR . Nandini Reddy
General physician
Address:
Flat-21, Sree Complex, 12th Main,
Indiranagar, Bangalore - 560038
Date & Time: 26 Jul 2025 | 10:30 AM

DR . Surya
General physician
Address:
Flat-9, MG Layout, 2nd Cross,
Indiranagar, Bangalore - 560038
Date & Time: 1 Aug 2025 | 11:00 AM

DR . Sudharshan Reddy
General physician
Address:
1st Cross, 1st Stage,

□ 10. Testing

Tools Used:

- Postman – Backend API testing
- Lighthouse – Frontend performance and accessibility
- Browser DevTools – UI and console validation

Testing Coverage:

- User login/logout and protected routes
- Doctor and admin access control
- Appointment conflict handling
- Payment success/failure scenarios

📷 11. Demo or Showcase

- **Screenshots**: As listed above
- **Optional Demo Video Link:** *[Insert YouTube/Google Drive demo link]*

⚠ 12. Known Issues

- No pagination for appointment list
- Doctor profile editing not implemented
- No email/SMS notifications yet

🚀 13. Future Enhancements

- Implement video consultations via WebRTC or Jitsi
- Add appointment filtering (by date/speciality)
- Notifications for appointment reminders
- Email confirmations for patients
- Real-time availability for doctors

📌 14. Conclusion

DocSpot successfully integrates frontend and backend technologies to deliver a secure and user-friendly platform for medical appointment management. With online payments and role-based control, it lays the groundwork for scalable future enhancements in digital healthcare.