

DocSpot: Seamless Appointment Booking for Health

1. Introduction

Project Title: DocSpot: Seamless Appointment Booking for Health

Team ID : LTVIP2026TMIDS44539

Team Leader : Katta Karthik

Team member : Veerla Hanumath Kumar

Team member : Vanabathina Saritha

Team member : Kocherla Venkata Hemanth Kumar

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.

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

Backend (Node.js + Express.js):

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

Database (MongoDB):

- Collections: users, doctors, appointments, admins, payments
- Mongoose for schema definitions and data modeling

4. Setup Instructions

Prerequisites:

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

Setup:

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

Frontend:

```
cd client
```

```
npm install
```

```
PS D:\FullStack\docspot-seamless-appointment-booking-for-health\Project File> cd frontend
PS D:\FullStack\docspot-seamless-appointment-booking-for-health\Project File\frontend> npm run dev

> frontend@0.0.0 dev
> vite

  VITE v5.4.19 ready in 1122 ms

  → Local: http://localhost:5173/
  → Network: use --host to expose
  → press h + enter to show help
```

Backend:

```
cd ../server
```

```
npm install
```

```
PS D:\FullStack\docspot-seamless-appointment-booking-for-health\Project File> cd backend
PS D:\FullStack\docspot-seamless-appointment-booking-for-health\Project File\backend> npm run dev

> backend@1.0.0 dev
> nodemon server.js

[nodemon] 3.1.4
[nodemon] to restart at any time, enter `rs`
[nodemon] watching path(s): ***!
[nodemon] watching extensions: js,mjs,cjs,json
[nodemon] starting `node server.js`
Server started on PORT:4000
Database Connected
```

.env file:

```
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/

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

server/

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

Backend Folder Structure:

```
backend
  config
    clouddinary.js
    mongodb.js
  controllers
    adminController.js
    doctorController.js
    userController.js
  middleware
    authAdmin.js
    authDoctor.js
    authUser.js
    multer.js
  models
    appointmentMode...
    doctorModel.js
    userModel.js
  node_modules
  routes
  .env
  package-lock.json
  package.json
  server.js
```

FRONTEND FOLDER STRUCTURE:

```
✓ frontend
  > node_modules
  > public
  ✓ src
    > assets
    ✓ components
      ⚡ Banner.jsx
      ⚡ Footer.jsx
      ⚡ Header.jsx
      ⚡ Navbar.jsx
      ⚡ RelatedDoctors.jsx
      ⚡ SpecialityMenu.jsx
      ⚡ TopDoctors.jsx
    > context
    > pages
      ⚡ App.jsx
      # index.css
      ⚡ main.jsx
    ⚙ .env
    <> index.html
    { } package-lock.json
    { } package.json
    JS postcss.config.js
    ⓘ README.md
    JS tailwind.config.js
    { } vercel.json
    ⚡ vite.config.js
    ⓘ readme.md
```

6. Running the Application

Frontend:

```
cd client
```

```
npm start
```

Backend:

```
cd server
```

```
npm start
```

7. API Documentation

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

User Login:

The screenshot shows a web browser window with two tabs: 'Prescripto' and 'Prescripto Panel'. The main content area displays the 'Prescripto' logo and a navigation bar with links for 'HOME', 'ALL DOCTORS', 'ABOUT', and 'CONTACT'. A blue button labeled 'Create account' is located on the right. Below the navigation is a 'Create Account' form with fields for 'Full Name', 'Email', and 'Password', each with its own input field. A blue 'Create account' button is centered below the fields. At the bottom of the form, there is a link 'Already have an account? [Login here](#)'.

Create Account

Please sign up to book appointment

Full Name

Email

Password

Create account

Already have an account? [Login here](#)

User Dashboard:

The screenshot shows the 'User Dashboard' for a user named 'Gopal'. The dashboard features a profile picture placeholder, the user's name 'Gopal', and sections for 'CONTACT INFORMATION' and 'BASIC INFORMATION'. Under 'CONTACT INFORMATION', details include Email id: shyam@gmail.com and Phone: 000000000. Under 'BASIC INFORMATION', details include Gender: Not Selected and Birthday: Not Selected. An 'Edit' button is located at the bottom left of the dashboard.

Gopal

CONTACT INFORMATION

Email id: shyam@gmail.com

Phone: 000000000

Address:

BASIC INFORMATION

Gender: Not Selected

Birthday: Not Selected

Edit

Admin Login Page:



Admin Dashboard Page:

A screenshot of a web browser window showing the 'Admin Dashboard' page. The title bar says 'Prescripto Admin' and the address bar shows 'localhost:5174/admin-dashboard'. The page features a header with the Prescripto logo and a 'Logout' button. On the left is a sidebar with icons for 'Dashboard', 'Appointments', 'Add Doctor', and 'Doctors List'. The main area has three cards: '16 Doctors', '4 Appointments', and '1 Patients'. Below these is a section titled 'Latest Bookings' with four entries: DR. Nandini Reddy (Completed), DR. Surya (Cancelled), DR. Sudharshan Reddy (Completed), and DR. Sushmitha (Cancelled). Each entry includes a small profile picture and the booking date.

Doctor Login Page:



Doctor Login

Email

Password

Admin Login? [Click here](#)

Doctor Dashboard:

A screenshot of the 'Prescripto Dashboard Panel' showing the 'doctor-profile' page. The URL in the address bar is 'localhost:5174/doctor-profile'.

The sidebar on the left shows navigation options: 'Dashboard', 'Appointments', and 'Profile' (which is currently selected).

The main content area displays a profile picture of a female doctor and the following information:

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
[Edit](#)

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,	

10. Testing

Tools Used:

- Postman (API testing)
- Lighthouse (Frontend performance)
- Browser DevTools

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

Demo Video: [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.