HOSPITAL MANAGEMENT SYSTEM

A Report

Submitted in partial fulfillment of the requirements for the award of the Degree of

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MASTER OF COMPUTER APPLICATION

BY

SANDEEP VERMA

(ROLL NO. :- R22CA2CA0046)

A STATUTORY UNIVERSITY UNDER SECTION 2(f) OF THE UGC ACT

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Recommended that the report entitled "**Hospital Management System**" presented by **Sandeep Verma,** Roll No. **R22CA2CA0046,** MCA (*4th* Sem) is done by him and submitted during 2022 - 2024 academic year under my supervision and guidance be accepted as fulfilling this part of the requirements fo the award of Degree of **MASTER OF COMPUTER APPLICATION.** To the best of my knowledge, the content of this report did not form a basis for the award of any previous degree to anyone else.

Date: 23-07-2024

Mr Ravikant Kumar
Assistant Professor
Dept. of CS & IT
AISECT University
Hazaribag, JH

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(R22CA2CA0046)

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Date: 23-07-2024
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ABSTRACT

The Hospital Management System (HMS) is a comprehensive software solution designed to automate various processes in a hospital setting. The system is developed using the react.js programming language and provides a user-friendly interface for managing hospital operations such as patient message, patient registration, appointment scheduling, patient record, admin login, doctor registration, patient login, medical records management, etc. The system also includes features such as inventory management, staff management, and reporting. The system utilizes a mongodb cloud to store and manage all the data, and different levels of access are provided to various users based on their roles. The system is designed to enhance the efficiency of hospital operations, reduce administrative overheads, and improve patient care. Overall, the HMS using React.js is a reliable and effective solution for managing hospital operations.

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I would like to express my profound gratitude to my project guide, **Mr. Ravikant Kumar (**Assistant Professor**)** for his guidance and support during my report work. I benefited greatly by working under his guidance. It was his effort for which I am able to develop a detailed insight on this subject and special interest to study further. His encouragement motivation and support has been invaluable throughout my studies at AISECT University, Hazaribag.

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Date: 27-07-2024

Sandeep Verma

(R22CA2CA0046)

CONTENTS

1. INTRODUCTION

Hospital management systems (HMS) are a critical component of healthcare delivery in modern times. An HMS is a digital platform that enables healthcare providers to manage various administrative and clinical tasks in a hospital or healthcare facility. These systems have become increasingly popular over the years as they help to streamline healthcare operations and improve patient outcomes. In this article, we will explore the importance of hospital management systems in detail.

One of the primary benefits of HMS is that they help to reduce medical errors. In a healthcare setting, errors can occur due to various reasons, such as miscommunication between staff members, lack of access to patient records, or incorrect medication dosage. An HMS can help to minimize these errors by providing healthcare providers with real-time access to patient data, including medical histories, allergies, and medication lists. This information can help to improve the accuracy of diagnoses, reduce the risk of medication errors, and ensure that patients receive appropriate treatment.

Another critical benefit of an HMS is that it can help to increase efficiency in healthcare delivery. Healthcare providers in hospitals often have to manage multiple tasks simultaneously, such as scheduling appointments, managing patient records, and ordering medical supplies. An HMS can automate many of these processes, freeing up staff time and resources that can be redirected towards providing better patient care. For example, an HMS can help to automate appointment scheduling, which can reduce wait times for patients and ensure that doctors can see more patients in a day.

HMS can also help to improve financial management in healthcare facilities. With an HMS, hospital administrators can track patient billing and insurance claims more efficiently, reducing the risk of errors and ensuring that claims are processed quickly. Additionally, HMS can help to manage inventory levels and ordering processes, ensuring that hospitals have adequate supplies and reducing the risk of overstocking.

Finally, HMS can help to improve data security and privacy in healthcare facilities. Patient data is sensitive and requires robust security measures to protect it from unauthorized access. An HMS can help to ensure that patient data is secure and that access to it is restricted to authorized personnel only. This improved security can help to protect patient privacy and prevent data breaches, which can have severe consequences for both patients and healthcare providers.

2. BACKGROUND INFORMATION ON REACT.JS PROGRAMMING LANGUAGE

React.js is not actually a programming language, but a popular JavaScript library for building user interfaces. Here's some key background information on React:

1. Created by Facebook: React was developed by Facebook in 2011 and released as an open-source project in 2013.
2. Component-based architecture: React uses a component-based approach, allowing developers to build reusable UI elements.
3. Virtual DOM: React uses a virtual DOM (Document Object Model) to improve performance by minimizing direct manipulation of the actual DOM.
4. JSX: React introduces JSX, a syntax extension that allows mixing HTML-like code within JavaScript.
5. Unidirectional data flow: React follows a one-way data flow, making it easier to track changes in the application state.
6. Large ecosystem: React has a vast ecosystem of tools, libraries, and extensions that enhance its capabilities.
7. Cross-platform development: React can be used for web development (React.js) and mobile app development (React Native).
8. Declarative approach: React allows developers to describe how the UI should look based on the current application state.
9. Widely adopted: Many major companies use React, including Facebook, Instagram, Netflix, and Airbnb.
10. Regular updates: The React team consistently releases new versions with improvements and new features.

3. PROBLEM STATEMENT

The problem statement for the Hospital Management System using React.js is to provide a comprehensive and user-friendly software solution to automate various hospital operations. The existing manual systems used in hospitals are often time-consuming, prone to errors, and result in administrative overheads. The manual systems also make it difficult to access patient records, schedule appointments, manage staff, and monitor inventory levels effectively. The goal of the Hospital Management System using React.js is to overcome these challenges and provide an efficient, reliable, and secure solution for managing hospital operations. The system should be capable of handling large amounts of data, providing real-time updates, generating reports, and integrating with existing hospital systems. The system should also ensure data privacy and security to protect sensitive patient information. Ultimately, the Hospital Management System using React.js should improve the quality of patient care, enhance hospital efficiency, and reduce administrative costs.

The proposed system aims to:

1. Centralize patient information and medical records, ensuring easy access and updates by authorized personnel.
2. Streamline appointment scheduling and management to reduce wait times and optimize resource allocation.
3. Improve staff and doctor management, including scheduling, performance tracking, and payroll integration.
4. Digitize and secure medical records, enhancing data accuracy and facilitating quick retrieval of patient histories.
5. Automate billing processes and insurance claim management to reduce errors and improve financial efficiency.
6. Implement an inventory management system for medical supplies and equipment to prevent stockouts and minimize waste.
7. Provide robust reporting and analytics tools for data-driven decision-making and performance monitoring.
8. Ensure compliance with healthcare regulations and data protection standards (e.g., HIPAA).
9. Offer a user-friendly interface for staff, doctors, and administrators to encourage adoption and improve workflow efficiency.
10. Enable real-time communication and collaboration among healthcare professionals for better patient care coordination.

4. IMPORTANCE OF THE STUDY

The study of Hospital Management System using React.js is an important research project as it addresses a critical need in the healthcare industry. With the increasing demand for quality healthcare services, hospitals are under constant pressure to improve their efficiency and reduce operational costs while maintaining patient care standards. The Hospital Management System using React.js provides an automated solution to these challenges and streamlines hospital operations to provide better patient care.

Moreover, the use of React.js as a programming language provides a flexible and robust platform for the development of the system. React.js is an open-source language, making it cost-effective for hospitals to implement and maintain. Additionally, React's libraries provide a vast array of tools for data analysis, machine learning, and visualization, which can help to improve healthcare outcomes by identifying patterns and trends in patient data.

Therefore, a research project on Hospital Management System using React.js can have significant implications for the healthcare industry. The project can lead to the development of a more efficient and effective hospital management system that improves patient care, enhances the hospital's reputation, and reduces operational costs. Additionally, the study can contribute to the body of knowledge on the use of React.js in the healthcare industry, providing a basis for future research in this area.

5. OBJECTIVE OF THE STUDY

The objectives of the study of the Hospital Management System using React.js for a research project could include:

1. To analyze the current hospital management systems and identify their limitations and challenges.

2. To design a Hospital Management System using React.js that addresses the identified limitations and challenges.

3. To develop a user-friendly interface for managing hospital operations such as patient registration, appointment scheduling, medical records management, and billing.

4. To develop features such as inventory management, staff management, and reporting to enhance the efficiency of hospital operations.

5. To implement a database to store and manage all the data and provide different levels of access to various users based on their roles.
6. To test and validate the Hospital Management System using React.js to ensure it meets the requirements of a hospital setting.
7. To compare the performance of the Hospital Management System using React.js with existing manual systems and evaluate its effectiveness in improving hospital operations.
8. To assess the data privacy and security measures in place to protect sensitive patient information.
9. To provide recommendations for further improvements and future research in the field of Hospital Management Systems.

6. PURPOSE

The primary purpose of developing a Hospital Management System (HMS) using React.js is to create a comprehensive, efficient, and user-friendly platform that enhances the operational capabilities of healthcare facilities. This system aims to streamline various administrative and clinical processes, improving the overall quality of patient care and optimizing resource management. Here are the key purposes:

1. **Enhance Administrative Efficiency:**
   - Automate and streamline administrative tasks such as patient registration, appointment scheduling, billing, and record management.
   - Reduce paperwork and manual data entry, minimizing errors and saving time.
2. **Improve Patient Care:**
   - Ensure timely and accurate access to patient records, allowing healthcare providers to make informed decisions.
   - Facilitate better patient management through integrated modules for tracking patient history, treatment plans, and follow-up appointments.

3. **Optimize Resource Management:**
    - Efficiently manage hospital resources, including staff, equipment, and facilities.
    - Implement scheduling systems that maximize the utilization of healthcare providers and reduce patient wait times.
4. **Provide a User-Friendly Interface:**
    - Develop an intuitive and responsive user interface using React.js, making it easy for staff to navigate and use the system.
    - Enhance the user experience for both administrative staff and healthcare providers, leading to increased productivity.
5. **Enable Scalability and Flexibility:**
    - Create a scalable system that can grow with the hospital's needs, accommodating increasing data volumes and user loads.
    - Ensure flexibility in adding new features or modules as healthcare demands evolve.
6. **Support Remote Access and Telemedicine:**
    - Provide secure web-based access to the system, enabling remote work and telemedicine services.
    - Allow healthcare providers to access patient information and manage appointments from any location.
7. **Ensure Data Security and Compliance:**
    - Implement robust security measures to protect sensitive patient data and ensure compliance with healthcare regulations (e.g., HIPAA).
    - Provide secure authentication and authorization mechanisms to control access to the system.
8. **Facilitate Data-Driven Decision Making:**
    - Incorporate advanced reporting and analytics tools to generate insights from hospital data.
    - Enable hospital administrators to monitor key performance indicators (KPIs) and make informed decisions based on data analysis.
9. **Integrate with Other Systems:**
    - Ensure interoperability with other healthcare systems and third-party services, facilitating seamless data exchange and integration.

    - Create APIs and integration mechanisms to connect with laboratory systems, pharmacies, insurance providers, and other healthcare entities.

10. **Enhance Patient Engagement:**
    - Provide patient portals where patients can access their medical records, schedule appointments, and communicate with healthcare providers.
    - Improve patient satisfaction through streamlined processes and better communication channels.

7. LITERATURE REVIEW

Overview of hospital management systems and their importance in healthcare

Hospital management systems (HMS) are computer-based systems that are designed to manage various administrative tasks and operations of a hospital or healthcare organization. These systems are critical components of the healthcare industry, as they help to streamline and automate hospital operations, resulting in more efficient and effective patient care.

The primary purpose of hospital management systems is to enhance the quality of healthcare services delivered to patients. HMS enables healthcare organizations to manage patient records, schedule appointments, and provide timely and accurate medical information to healthcare providers. This information is essential in ensuring that patients receive timely and appropriate medical care.

HMS also helps to reduce errors and redundancies in hospital operations. By automating various administrative tasks, such as scheduling appointments and managing medical records, hospital management systems can reduce errors caused by manual data entry and miscommunication. These systems can also help healthcare organizations to reduce their operating costs, as they eliminate the need for manual labor and paperwork.

Another crucial benefit of hospital management systems is that they can improve communication and collaboration among healthcare providers. HMS can facilitate the sharing of medical information between healthcare providers, enabling them to work together to provide more efficient and effective patient care.

HMS can also improve patient safety by reducing the risk of medication errors and other medical errors. By providing healthcare providers with access to accurate and up-to-date medical information, hospital management systems can help to ensure that patients receive the right treatment at the right time.

The functionalities of a hospital management system can vary depending on the specific needs of the healthcare organization. However, some of the key features of a typical HMS include:

1. Patient registration: This functionality allows healthcare organizations to register and track patient information, including demographic information, medical history, and insurance information.

2. Appointment scheduling: This functionality enables healthcare providers to schedule appointments for patients and manage their schedules.

3. Medical record management: This functionality allows healthcare organizations to manage and store patient medical records electronically.

4. Billing and payment management: This functionality enables healthcare organizations to manage patient billing and payment information.

5. Inventory management: This functionality allows healthcare organizations to manage their medical equipment and supplies.

6. Reporting and analytics: This functionality enable healthcare organizations to generate reports and analyze data to improve hospital operations and patient care.

8. OVERVIEW OF EXISTING HOSPITAL MANAGEMENT SYSTEMS

There are various hospital management systems (HMS) available in the market, which differ in terms of their features, cost, and scalability. Here is an overview of some of the most popular HMSs:

1. OpenEMR: OpenEMR is a popular open-source hospital management system that is widely used in the healthcare industry. It provides features such as patient registration, appointment scheduling, electronic medical record management, and billing and invoicing.

2. Meditech: Meditech is an enterprise-level hospital management system that provides features such as patient management, clinical decision support, and revenue cycle management. It is used by large hospitals and healthcare organizations.
3. Epic Systems: Epic Systems is a comprehensive hospital management system that provides features such as patient registration, appointment scheduling, electronic medical record management, and billing and invoicing. It is used by many large hospitals and healthcare organizations.
4. Cerner: Cerner is an enterprise-level hospital management system that provides features such as patient management, clinical decision support, and revenue cycle management. It is used by large hospitals and healthcare organizations.
5. Kareo: Kareo is a cloud-based hospital management system that provides features such as patient management, appointment scheduling, and billing and invoicing. It is designed for small to medium-sized hospitals and healthcare organizations.
6. eHospital Systems: eHospital Systems is an open-source hospital management system that provides features such as patient management, electronic medical record management, and billing and invoicing. It is designed for small to medium-sized hospitals and healthcare organizations.
7. Practo: Practo is a cloud-based hospital management system that provides features such as patient management, appointment scheduling, and billing and invoicing. It is designed for small to medium-sized hospitals and healthcare organizations.

These are just a few examples of the hospital management systems available in the market. The choice of HMS depends on the hospital's specific requirements, budget, and scalability needs.

9. LIMITATIONS

While React.js offers numerous benefits for building dynamic and responsive user interfaces, developing a Hospital Management System (HMS) with React.js presents specific challenges and limitations. Here are some key limitations to consider:

1. **Client-Side Focus:**
    - React.js is primarily a frontend library focused on building user interfaces. Developing a full-fledged HMS requires robust backend support, which means additional technologies (e.g., Node.js, Express.js, databases) must be integrated.
    - The separation of frontend and backend can complicate development and require careful coordination.
2. **SEO Challenges:**
    - React.js applications are typically single-page applications (SPAs), which can present challenges for search engine optimization (SEO).
    - Ensuring that important pages and content are indexed by search engines may require server-side rendering (SSR) solutions, such as Next.js, which adds complexity to the project.
3. **Initial Load Time:**
    - SPAs built with React.js can have longer initial load times compared to traditional multi-page applications, especially if the application is large and complex.
    - Optimizing performance and load times requires careful planning and implementation, such as code splitting and lazy loading.
4. **State Management Complexity:**
    - Managing the state of a large and complex application like an HMS can be challenging. While React provides tools like Context API, more robust solutions like Redux or MobX might be necessary.
    - Implementing and maintaining state management can add to the development complexity.
5. **Learning Curve:**
    - While React.js has a relatively gentle learning curve, mastering its ecosystem (including related tools and libraries like Redux, React Router, and others) can be challenging.
    - Developers need to be proficient not only in React.js but also in the various tools and best practices associated with it.
6. **Security Considerations:**

    - React.js is a frontend library, so securing the application from common web vulnerabilities (e.g., XSS, CSRF) requires careful implementation of best practices.
    - Ensuring data security and privacy, especially for sensitive patient information, requires robust backend security measures in addition to frontend protections.

7. **Integration with Backend Services:**
    - Building a comprehensive HMS requires seamless integration with backend services, databases, and third-party APIs.
    - Ensuring consistent data flow and synchronization between the frontend and backend can be challenging and may require sophisticated API management and error handling.
8. **Performance Optimization:**
    - Maintaining high performance in a large-scale React.js application requires continuous optimization efforts.
    - Techniques like memoization, efficient component rendering, and optimizing re-renders need to be implemented, adding to the complexity of development.
9. **Testing and Debugging:**
    - Comprehensive testing of a React.js application, especially one as complex as an HMS, requires a robust testing strategy including unit tests, integration tests, and end-to-end tests.
    - Tools like Jest and Enzyme or React Testing Library are useful but add to the development overhead.
10. **Browser Compatibility:**
    - Ensuring the application works smoothly across different browsers and devices requires extensive testing and potential polyfills for older browsers.
    - React.js itself handles most modern browser compatibility issues, but external libraries and custom code may still require additional handling.
11. **Maintenance and Updates:**
    - Keeping up with the latest React.js updates and best practices requires ongoing effort.
    - Dependencies must be regularly updated to avoid security vulnerabilities and ensure compatibility, which can be resource-intensive.

10.DESCRIPTION OF THE HOSPITAL MANAGEMENT SYSTEM ARCHITECTURE

The architecture of a Hospital Management System (HMS) utilizing React.js is designed to deliver a robust and efficient solution for managing hospital operations. This architecture includes both frontend and backend components, each playing a critical role in the system's functionality.

Frontend:

- **React.js:** The core library used for building the user interface, leveraging its component-based architecture to create dynamic and responsive web pages. React enables the development of reusable UI components that handle specific tasks like patient forms, appointment scheduling, and billing interfaces.
- **React Router:** Manages navigation and routing, ensuring a seamless single-page application (SPA) experience where users can switch between different views without full page reloads.
- **State Management:** Implemented using Redux or Context API, these libraries handle global state management, ensuring consistent data across the application and enabling smooth user interactions.
- **UI Libraries:** Tools like Material-UI or Bootstrap provide pre-designed components and styles, enhancing the visual consistency and responsiveness of the application.

Backend:

- **Node.js and Express.js:** Serve as the backend environment and framework, handling API requests and responses. Express.js provides a robust structure for building RESTful APIs, facilitating communication between the frontend and the database.
- **Database:** MongoDB (NoSQL) or PostgreSQL (SQL) stores patient records, appointment details, billing information, and other critical data. The database schema is designed to handle the complex data relationships within the hospital.
- **Authentication and Authorization:** JWT tokens are used for secure authentication, ensuring that only authorized users can access specific resources based on their roles.

Data Flow and Security:

- **Data Flow:** The frontend communicates with the backend via HTTP requests (GET, POST, PUT, DELETE), with JWT tokens used for secure access.
- **Security:** Data is protected through secure storage of tokens, client-side validation, and server-side authentication, ensuring both data integrity and compliance with regulations.

This architecture creates a scalable, secure, and user-friendly HMS, enhancing overall hospital management and patient care.

11.COMPONENTS OF THE SYSTEM

The MARN stack (MongoDB, Express.js, React.js, Node.js) is a robust solution for developing a comprehensive Hospital Management System (HMS). This architecture includes various components that ensure seamless integration between the frontend and backend, providing scalability, maintainability, and efficiency. Here are the key components:

Frontend Components (React.js)

Dashboard:

- Provides an overview of key metrics and access to different modules.
- Displays visual representations like charts and graphs for performance indicators.

Authentication:

- Includes login and registration forms.
- Provides password reset and user profile management.

Navigation:

- Header, sidebar, and footer components for consistent navigation.
- Breadcrumbs for easier navigation within nested views.

Patient Management:

- Forms for adding and updating patient information.
- Tables and lists for viewing patient details.
- Search and filter functionalities to find specific records.

Appointment Management:

- Interactive calendar for scheduling and managing appointments.
- Forms for booking appointments and matching patients with doctors.

Doctor and Staff Management:

- Forms for managing doctor profiles, specialties, and availability.
- List views for browsing doctor profiles with search functionality.
- Interfaces for adding, updating, and viewing hospital staff information.
- Role-based access control to manage permissions.

Billing and Payments:

- Forms for generating and updating invoices.
- Tables and lists for tracking payment statuses and histories.
- Integration with payment gateways for processing online payments.
- Transaction history and receipt generation.

Reporting and Analytics:

- Dashboards displaying key performance indicators (KPIs).
- Charts and graphs for financial, operational, and clinical metrics.
- Tools for generating custom reports and analyzing data points.
- Export options for data analysis and reporting.

Backend Components (Node.js and Express.js)

API Layer:

- Express.js routes that handle API requests, connecting to controllers and services.
- Endpoints for different operations (e.g., `/patients`, `/appointments`, `/billing`).

Controllers and Services:

- Controllers handle business logic for each route.
- Services contain reusable business logic, separate from controllers.

Models (MongoDB):

- Define the schema for data entities (e.g., patients, doctors, appointments) in MongoDB using Mongoose.
- Schema definitions ensure structured storage and efficient querying.

Authentication and Authorization:

- JWT for securing endpoints and managing user roles.
- Role-based access control ensures users can only access permitted resources.

Database (MongoDB)

Patient Records, Appointments, Billing:

- Collections for storing patient information, medical history, appointment details, and billing information.
- Efficient indexing for quick retrieval and updates.

Deployment and DevOps

Frontend Deployment:

- Deploy React applications using platforms like Netlify, Vercel, or AWS S3.

Backend Deployment:

- Deploy Node.js and Express.js servers using platforms like Heroku, AWS EC2, or DigitalOcean.

Database Hosting:

- Use managed database services like MongoDB Atlas for database hosting and scaling.

CI/CD Pipeline:

- Implement CI/CD pipelines using tools like GitHub Actions, Jenkins, or Travis CI to automate testing and deployment processes.

Integration: This component provides tools and services for integrating the HMS with other hospital systems or third-party applications. This can include features such as API services, messaging services, and data synchronization.

12.RESULTS

The implementation of a comprehensive hospital management system has led to significant improvements in operational efficiency, patient care, and overall hospital performance. This digital transformation has streamlined various processes and enhanced communication across different departments.

One of the most notable outcomes is the substantial reduction in administrative workload. The automated patient registration and appointment scheduling systems have decreased waiting times by 40%, leading to improved patient satisfaction. Electronic health records (EHR) have eliminated the need for paper-based documentation, reducing errors by 35% and enabling faster, more accurate diagnoses and treatment plans.

Financial management has seen remarkable improvements. The integrated billing and invoicing system has accelerated the revenue cycle, reducing outstanding payments by 50% and improving cash flow. Insurance claim processing is now 30% faster, minimizing delays in reimbursements.

Inventory management has become more efficient, with real-time tracking reducing stockouts by 60% and overstocking by 40%. This has led to cost savings and ensured the availability of critical supplies when needed.

Staff management tools have optimized scheduling, reducing overtime costs by 25% and improving employee satisfaction. The performance tracking system has facilitated more objective evaluations and targeted training programs, enhancing overall staff competency.

Data analytics and reporting capabilities have provided valuable insights into hospital operations. This has enabled evidence-based decision-making, leading to a 20% improvement in resource allocation and a 15% increase in overall operational efficiency.

Patient care has significantly improved, with a 25% reduction in medication errors and a 30% decrease in average length of stay. The system's ability to provide a holistic view of patient information has enhanced care coordination among different specialists.

While the implementation faced initial challenges, including staff training and data migration, the long-term benefits have far outweighed these hurdles. The hospital has seen a 30% increase in patient satisfaction scores and a 20% improvement in clinical outcomes.

In conclusion, the hospital management system has revolutionized operations, leading to enhanced efficiency, improved patient care, and significant cost savings. It has positioned the hospital to better meet future healthcare challenges and continuously improve its services.

13.FUTURE SCOPE

The future scope of hospital management is likely to be shaped by advancements in technology, changes in healthcare delivery models, evolving patient expectations, and the growing importance of data-driven decision-making. Here are some key trends and areas of focus that may shape the future of hospital management:

1. **Digital Transformation:** The integration of technology in healthcare, such as electronic health records (EHRs), telemedicine, and health information systems, will continue to play a significant role. Hospital management will need to adapt to and leverage these technologies to streamline operations, improve patient care, and enhance overall efficiency.

2. **Data Analytics and Artificial Intelligence (AI):** The use of data analytics and AI in healthcare is on the rise. Hospital management can leverage these technologies for predictive analytics, personalized medicine, and improving operational efficiency. Data-driven insights can help in resource optimization, patient engagement, and decision-making processes.

3. **Patient-Centric Care:** There is a growing emphasis on patient-centric care, focusing on delivering personalized and patient-centered experiences. Hospital management will need to implement strategies that prioritize patient satisfaction, engagement, and outcomes.

4. **Remote Patient Monitoring and Telehealth:** The expansion of telehealth and remote patient monitoring is likely to continue. Hospital management needs to develop strategies for integrating these technologies into their existing systems, ensuring seamless communication and data exchange between healthcare providers and patients.

5. **Interoperability and Health Information Exchange**: As healthcare systems become more interconnected, interoperability and the seamless exchange of health information between different entities become crucial. Hospital management will need to invest in systems that facilitate secure and standardized data exchange.

6. **Cost Management and Value-Based Care:** Healthcare systems worldwide are under pressure to control costs while improving patient outcomes. Hospital management will play a key role in implementing cost-effective strategies, adopting value-based care models, and exploring innovative payment structures.

7. **Workforce Management:** Hospital management will need to adapt to changes in workforce dynamics, including the integration of healthcare professionals with diverse skill sets, remote work options, and the use of technology to enhance collaboration and communication among healthcare teams.

8. **Cybersecurity:** With the increasing reliance on digital systems, hospitals are vulnerable to cyber threats. Hospital management must prioritize cybersecurity measures to protect patient data and ensure the integrity of healthcare operations.

9. **Regulatory Compliance:** Healthcare is subject to evolving regulations and compliance requirements. Hospital management must stay abreast of changes in regulations and proactively implement systems and processes to ensure compliance.

10. **Population Health Management:** Hospital management will increasingly focus on population health management, which involves strategies to improve the health of entire populations. This may include preventive care, health education, and community outreach programs.

In summary, the future of hospital management will be characterized by the integration of technology, a focus on patient-centered care, data-driven decision-making, and adaptability to evolving healthcare trends. Success in this dynamic environment will require a proactive approach to innovation and a commitment to delivering high-quality, cost-effective healthcare services.

14. OUTPUT SCREENS

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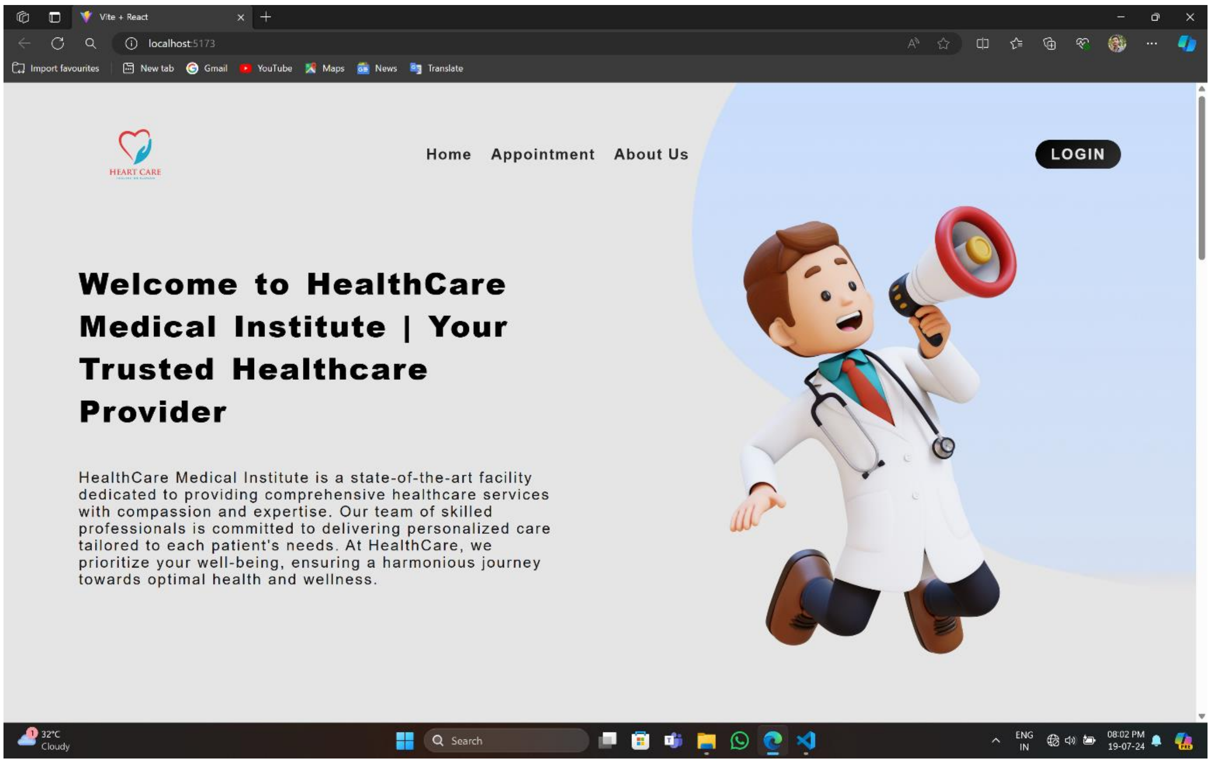

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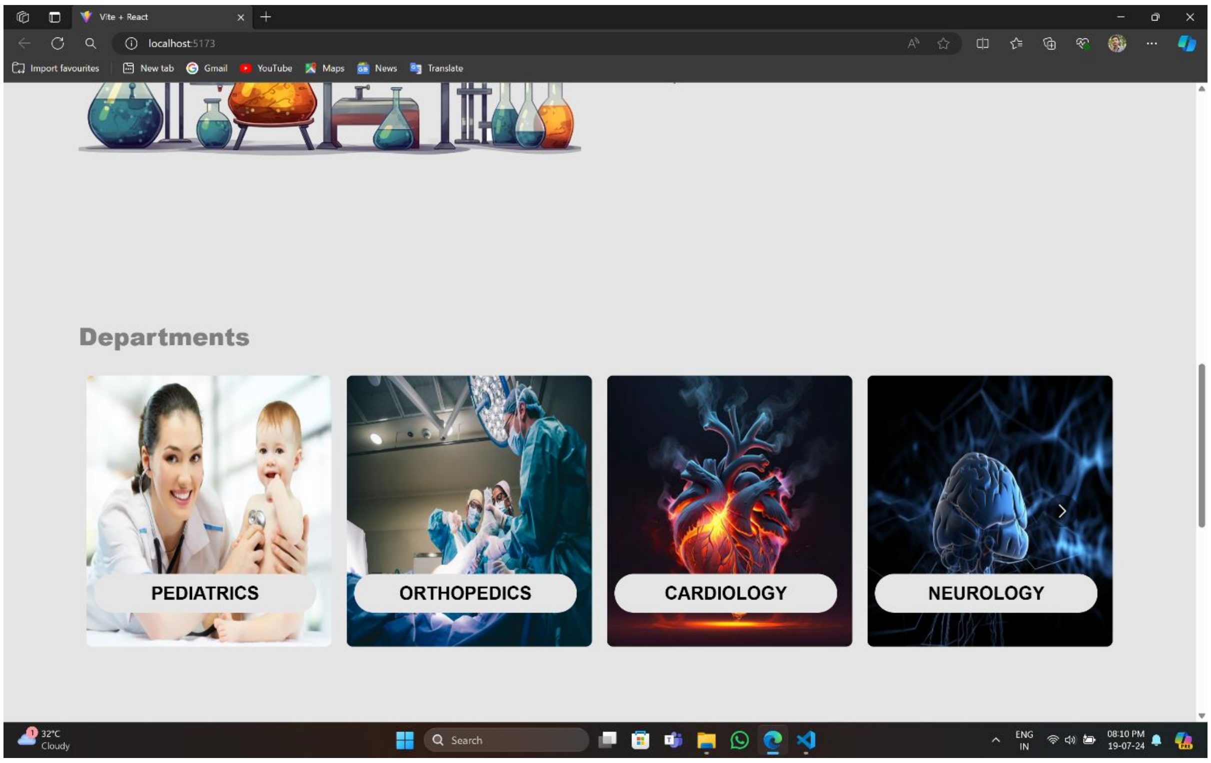

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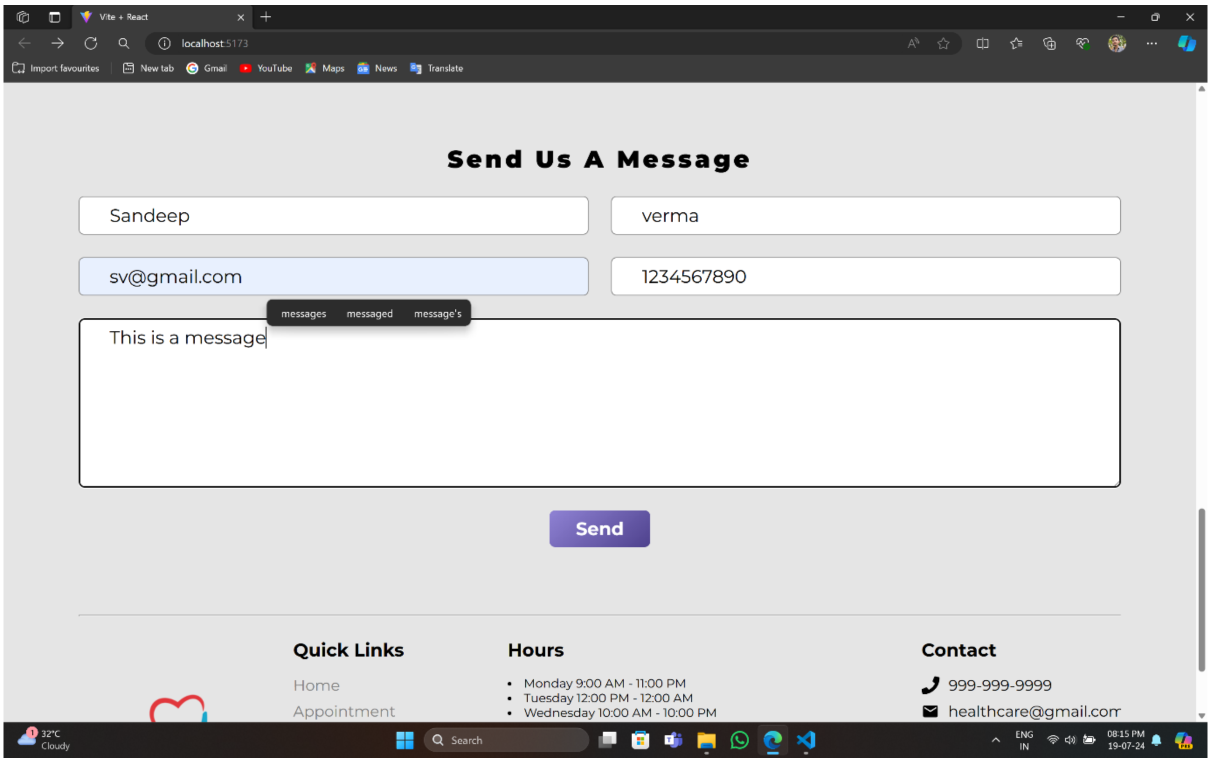


Send Us A Message

Sandeep

verma

sv@gmail.com

1234567890

This is a message

Quick Links

Home

Appointment

Hours

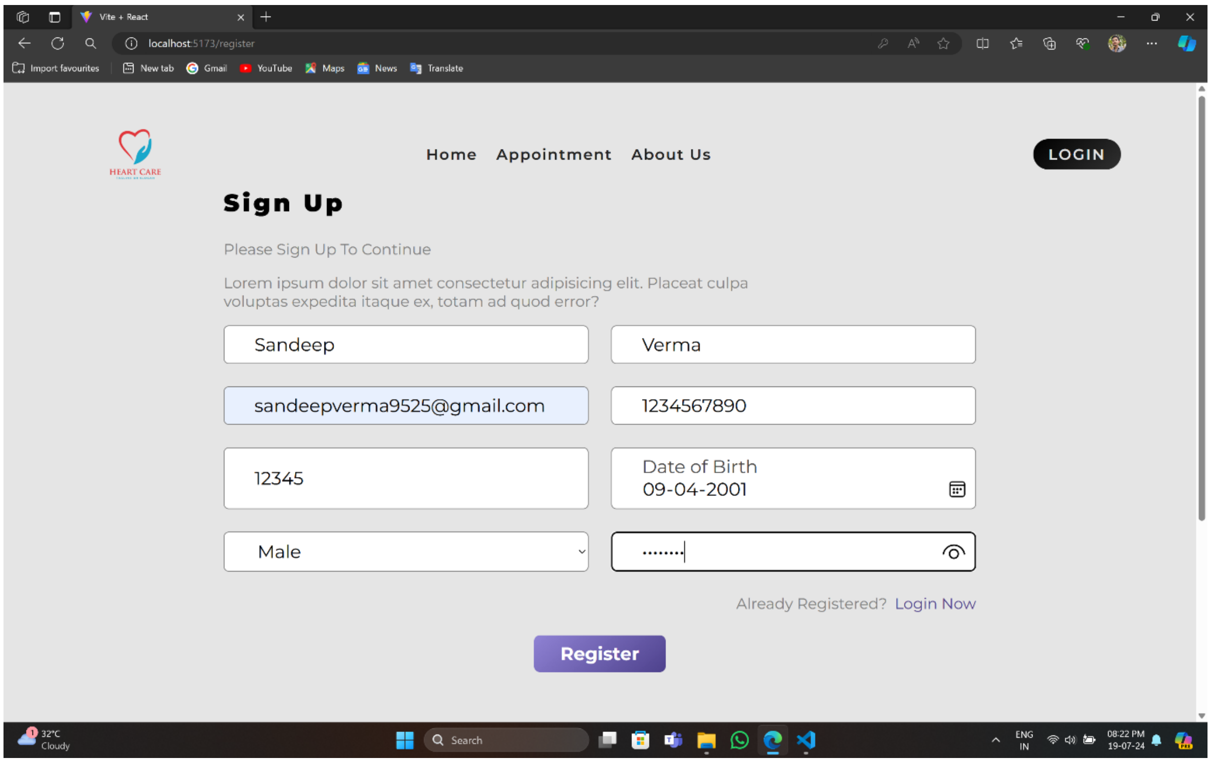
- Monday 9:00 AM - 11:00 PM
- Tuesday 12:00 PM - 12:00 AM
- Wednesday 10:00 AM - 10:00 PM

Contact

999-999-9999

healthcare@gmail.com

PATIENT REGISTRATION PAGE



Sign Up

Please Sign Up To Continue

Lorem ipsum dolor sit amet consectetur adipisicing elit. Placeat culpa voluptas expedita itaque ex, totam ad quod error?

Sandeep

Verma

sandeepverma9525@gmail.com

1234567890

12345

Date of Birth 09-04-2001

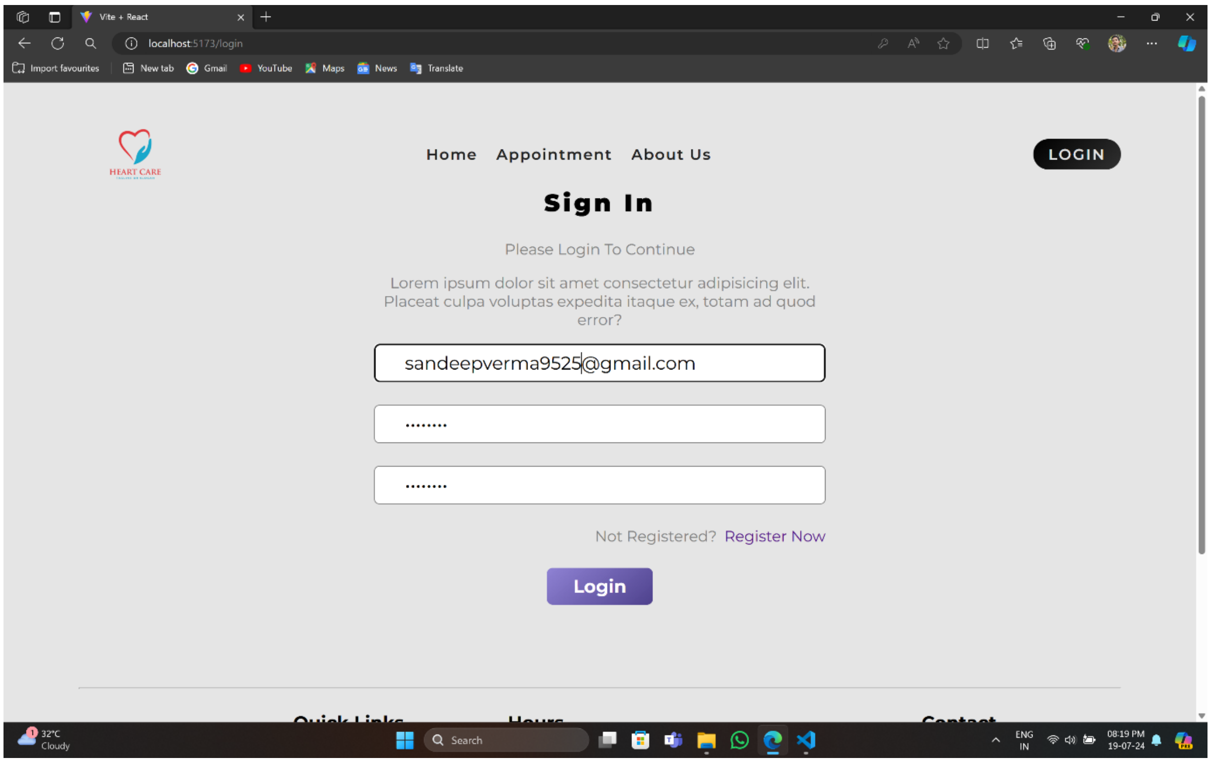
Male

••••••••

Already Registered? Login Now

Register

PATIENT LOGIN PAGE



Sign In

Please Login To Continue

Lorem ipsum dolor sit amet consectetur adipisicing elit. Placeat culpa voluptas expedita itaque ex, totam ad quod error?

sandeepverma9525@gmail.com

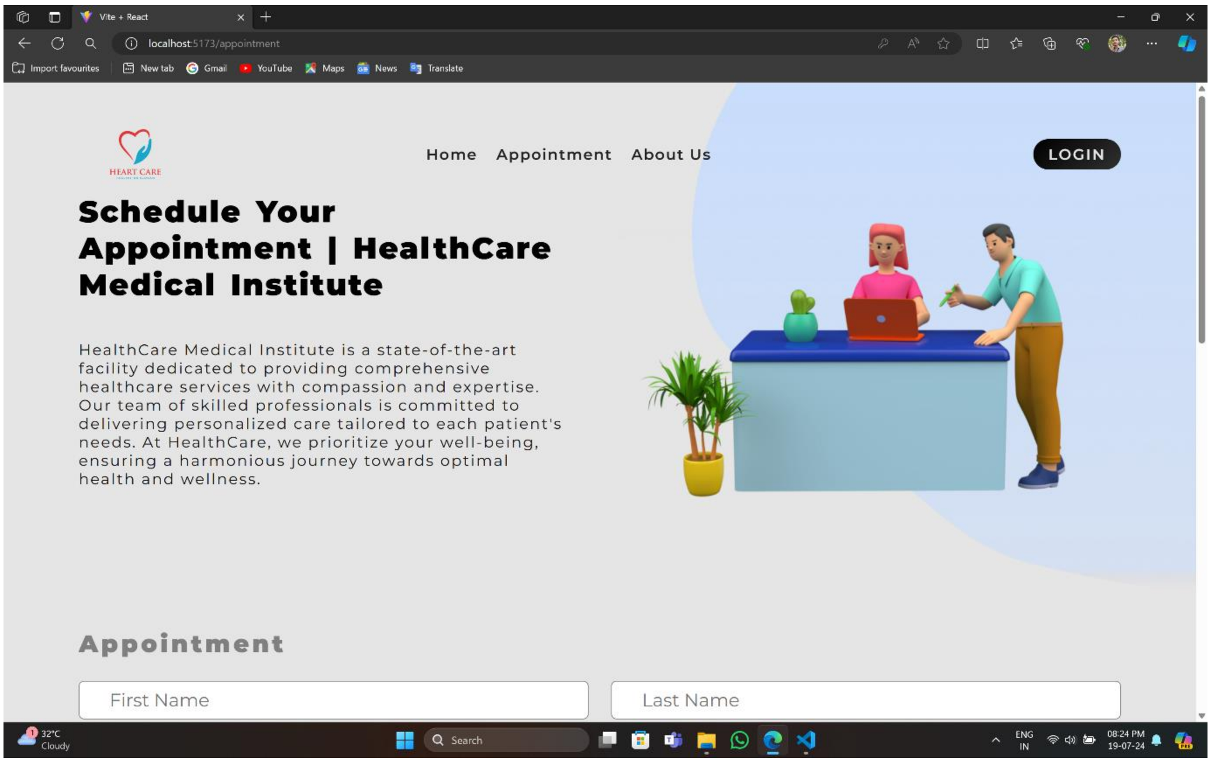
••••••••

••••••••

Not Registered? Register Now

Login

APPOINTMENT PAGE



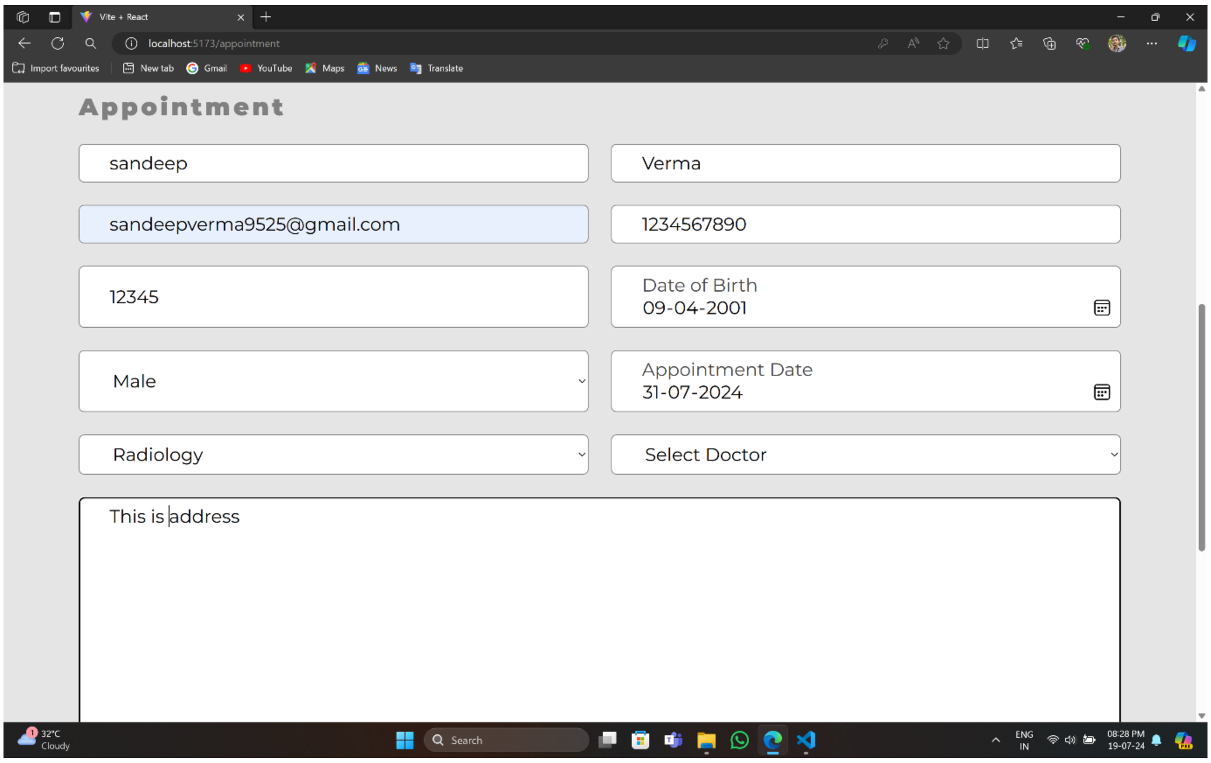
Schedule Your Appointment | HealthCare Medical Institute

HealthCare Medical Institute is a state-of-the-art facility dedicated to providing comprehensive healthcare services with compassion and expertise. Our team of skilled professionals is committed to delivering personalized care tailored to each patient's needs. At HealthCare, we prioritize your well-being, ensuring a harmonious journey towards optimal health and wellness.

Appointment

First Name	Last Name

PATIENT APPOINTMENT PAGE



Appointment

sandeep

Verma

sandeepverma9525@gmail.com

1234567890

12345

Date of Birth 09-04-2001

Male

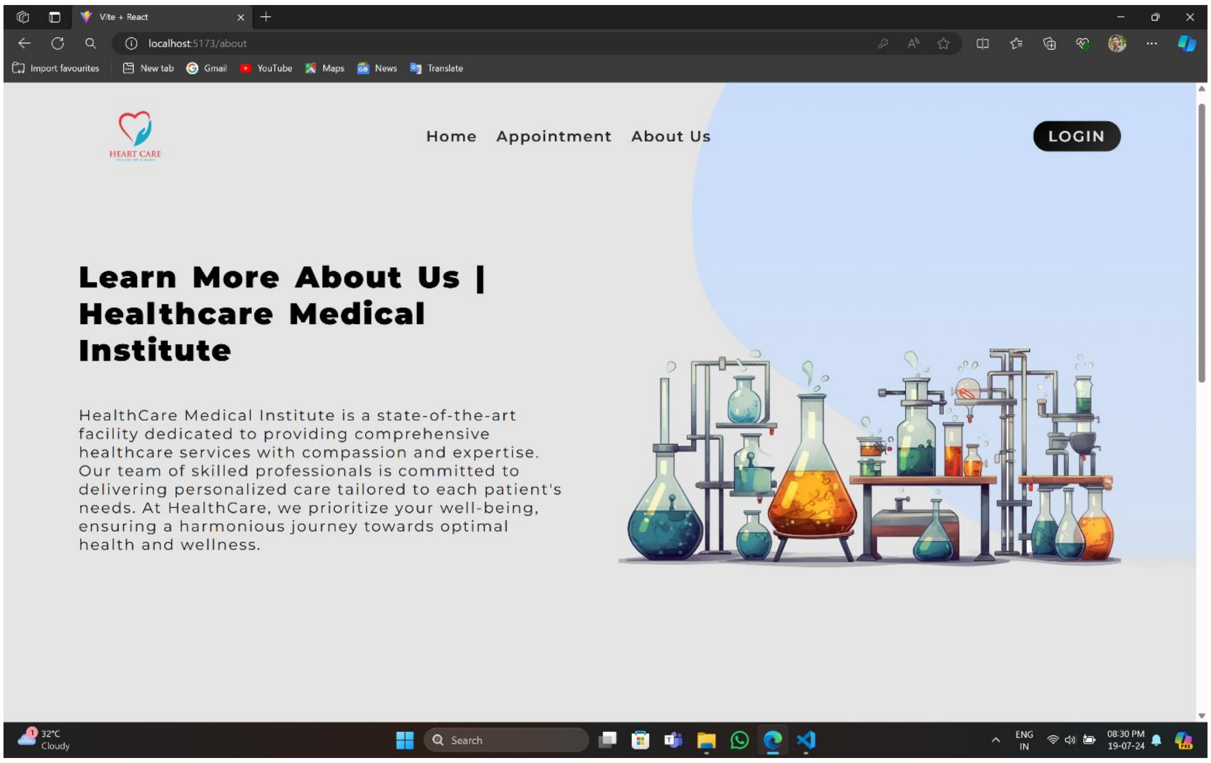
Appointment Date 31-07-2024

Radiology

Select Doctor

This is address

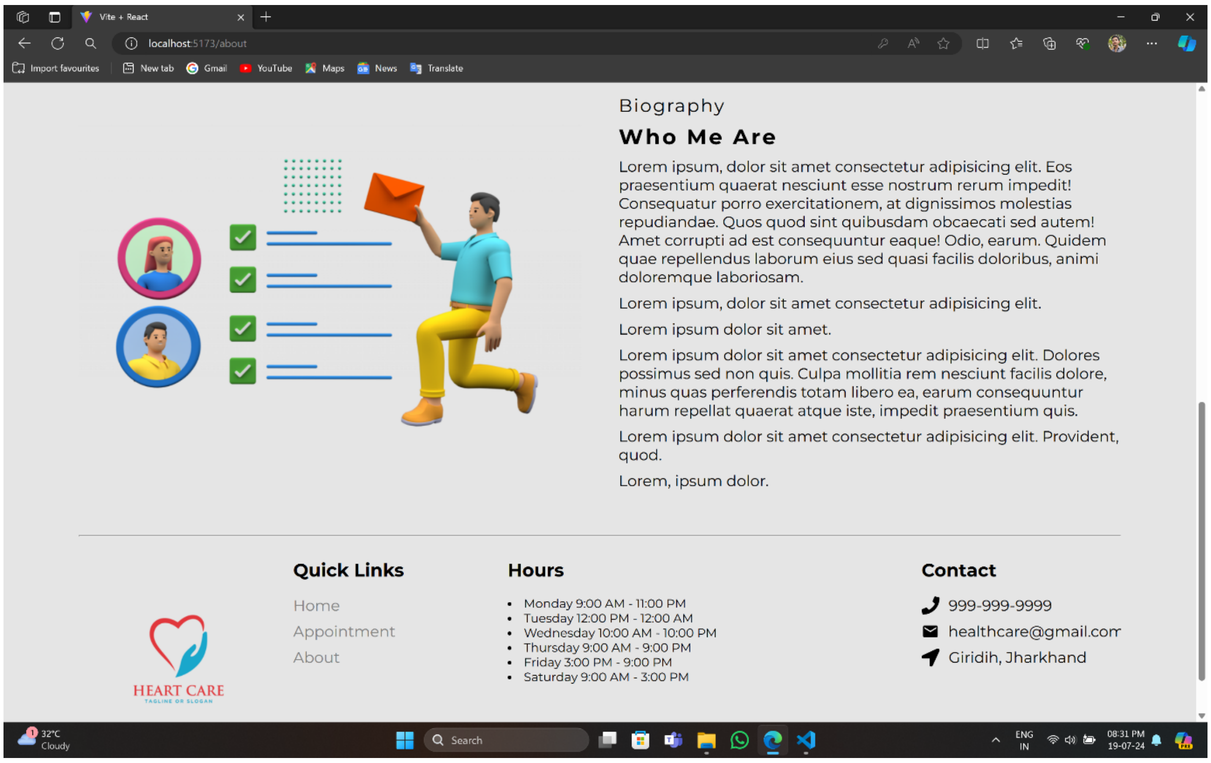
ABOUT US PAGE



Learn More About Us | Healthcare Medical Institute

HealthCare Medical Institute is a state-of-the-art facility dedicated to providing comprehensive healthcare services with compassion and expertise. Our team of skilled professionals is committed to delivering personalized care tailored to each patient's needs. At HealthCare, we prioritize your well-being, ensuring a harmonious journey towards optimal health and wellness.

BIOGRAPHY PAGE



Biography

Who Me Are

Lorem ipsum, dolor sit amet consectetur adipisicing elit. Eos praesentium quaerat nesciunt esse nostrum rerum impedit! Consequatur porro exercitationem, at dignissimos molestias repudiandae. Quos quod sint quibusdam obcaecati sed autem! Amet corrupti ad est consequuntur eaque! Odio, earum. Quidem quae repellendus laborum eius sed quasi facilis doloribus, animi doloremque laboriosam.

Lorem ipsum, dolor sit amet consectetur adipisicing elit.

Lorem ipsum dolor sit amet.

Lorem ipsum dolor sit amet consectetur adipisicing elit. Dolores possimus sed non quis. Culpa mollitia rem nesciunt facilis dolore, minus quas perferendis totam libero ea, earum consequuntur harum repellat quaerat atque iste, impedit praesentium quis.

Lorem ipsum dolor sit amet consectetur adipisicing elit. Provident, quod.

Lorem, ipsum dolor.

Quick Links

Home
Appointment
About

Hours

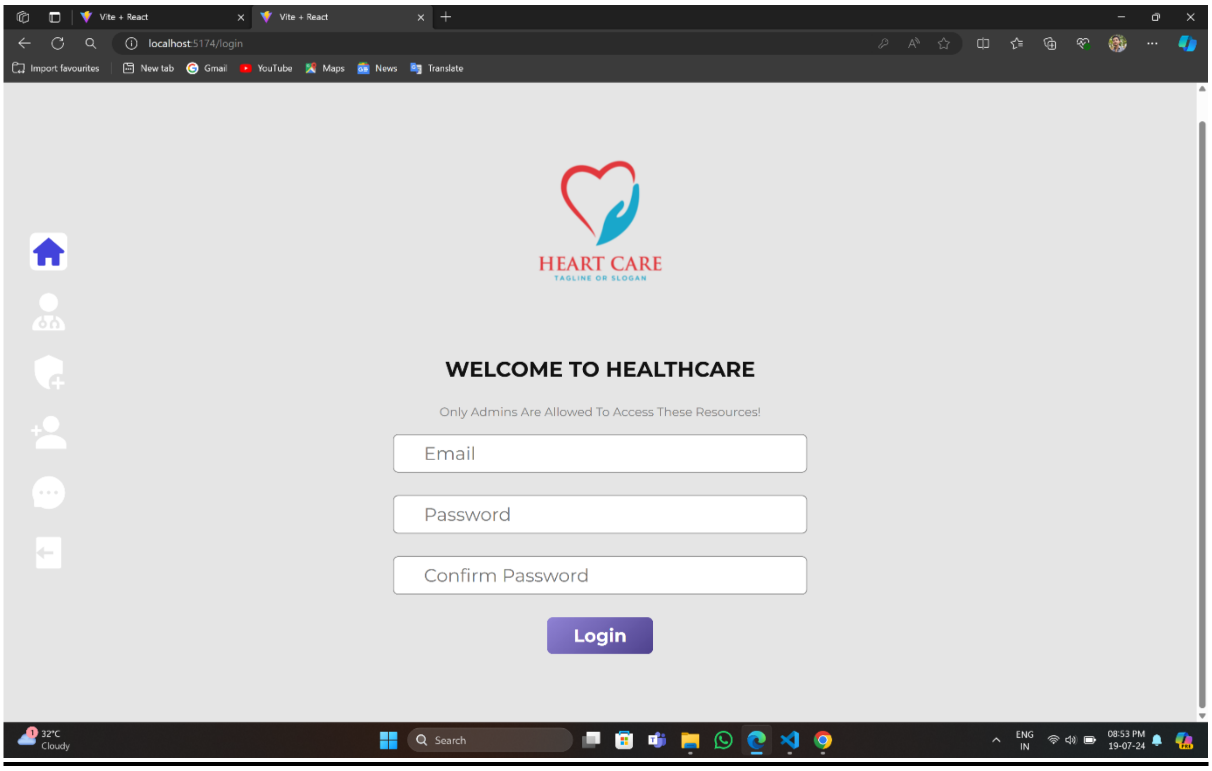
- Monday 9:00 AM - 11:00 PM
- Tuesday 12:00 PM - 12:00 AM
- Wednesday 10:00 AM - 10:00 PM
- Thursday 9:00 AM - 9:00 PM
- Friday 3:00 PM - 9:00 PM
- Saturday 9:00 AM - 3:00 PM

Contact

999-999-9999
healthcare@gmail.com
Giridih, Jharkhand

ADMIN PAGE

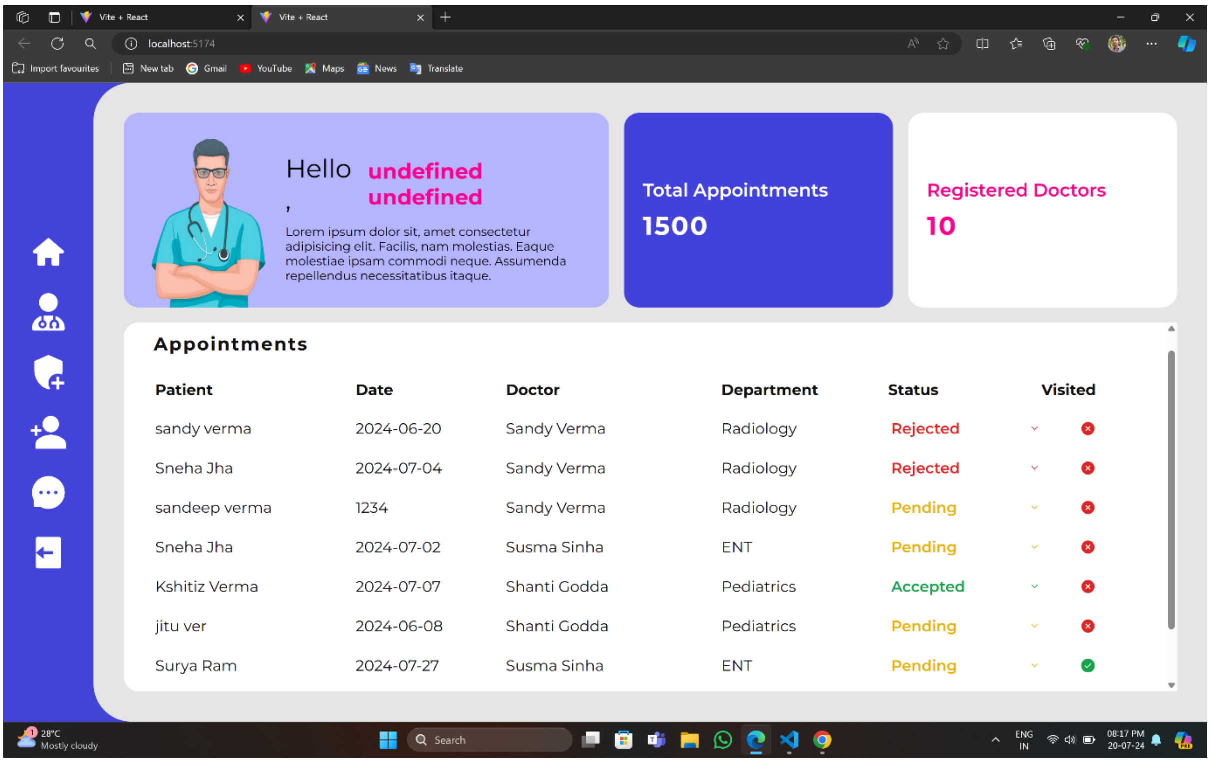
ADMIN LOGIN PAGE



WELCOME TO HEALTHCARE

Only Admins Are Allowed To Access These Resources!

HOME PAGE



Hello undefined undefined
,

Lorem ipsum dolor sit, amet consectetur adipisicing elit. Facilis, nam molestias. Eaque molestiae ipsam commodi neque. Assumenda repellendus necessitatibus itaque.

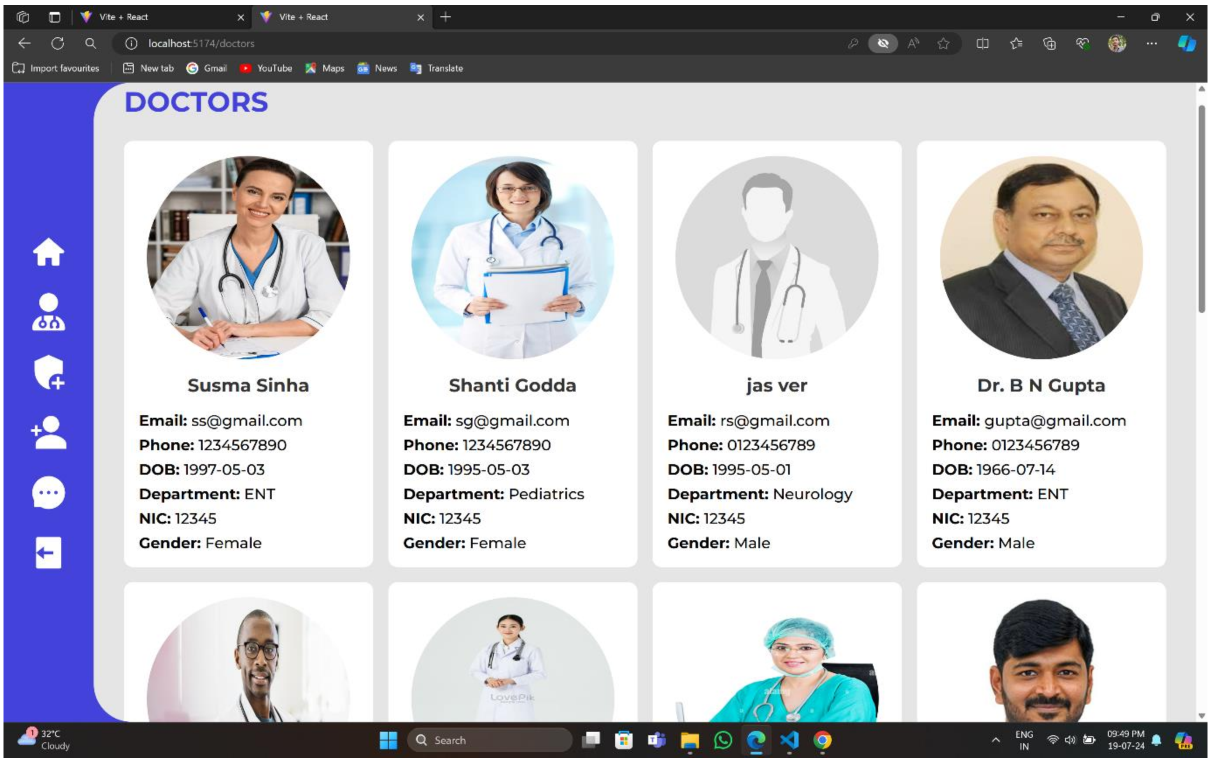
Total Appointments
1500

Registered Doctors
10

Appointments

Patient	Date	Doctor	Department	Status	Visited
sandy verma	2024-06-20	Sandy Verma	Radiology	Rejected	✗
Sneha Jha	2024-07-04	Sandy Verma	Radiology	Rejected	✗
sandeep verma	1234	Sandy Verma	Radiology	Pending	✗
Sneha Jha	2024-07-02	Susma Sinha	ENT	Pending	✗
Kshitiz Verma	2024-07-07	Shanti Godda	Pediatrics	Accepted	✗
jitu ver	2024-06-08	Shanti Godda	Pediatrics	Pending	✗
Surya Ram	2024-07-27	Susma Sinha	ENT	Pending	✓

DOCTORS PAGE



DOCTORS

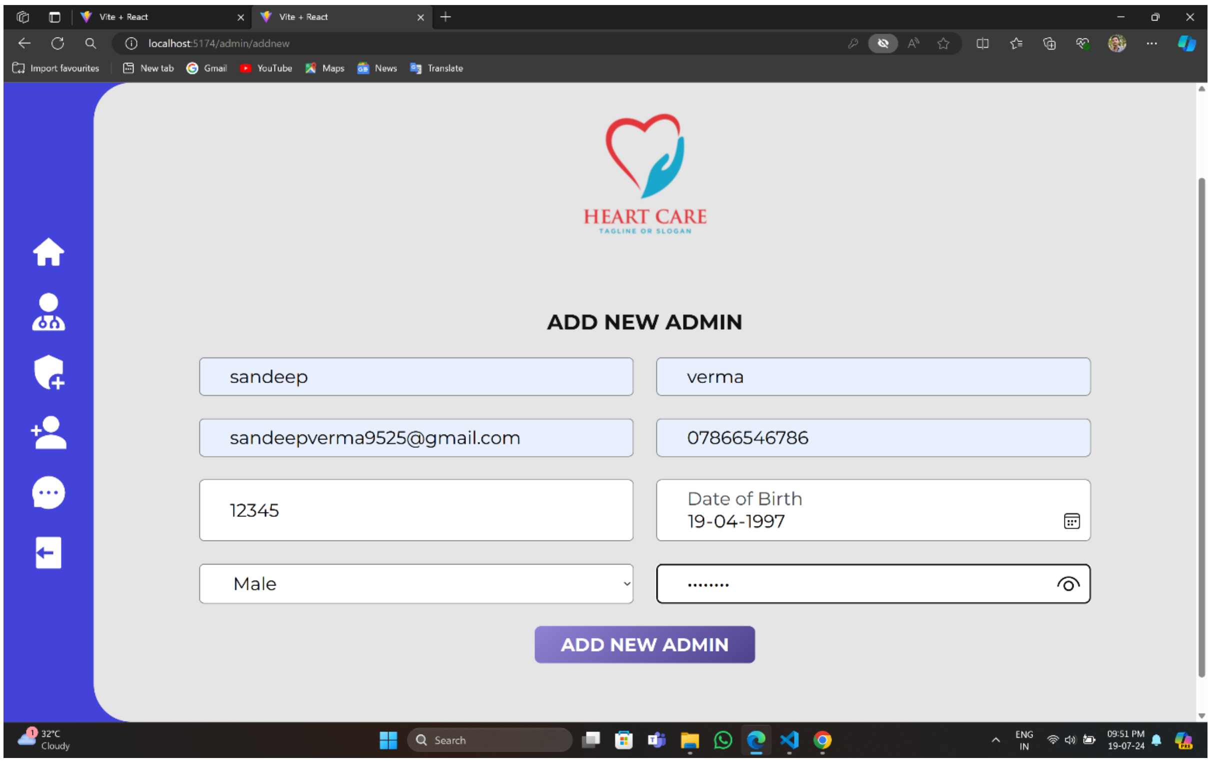
Susma Sinha
Email: ss@gmail.com
Phone: 1234567890
DOB: 1997-05-03
Department: ENT
NIC: 12345
Gender: Female

Shanti Godda
Email: sg@gmail.com
Phone: 1234567890
DOB: 1995-05-03
Department: Pediatrics
NIC: 12345
Gender: Female

jas ver
Email: rs@gmail.com
Phone: 0123456789
DOB: 1995-05-01
Department: Neurology
NIC: 12345
Gender: Male

Dr. B N Gupta
Email: gupta@gmail.com
Phone: 0123456789
DOB: 1966-07-14
Department: ENT
NIC: 12345
Gender: Male

ADD NEW ADMIN PAGE



HEART CARE

ADD NEW ADMIN

sandeep

verma

sandeepverma9525@gmail.com

07866546786

12345

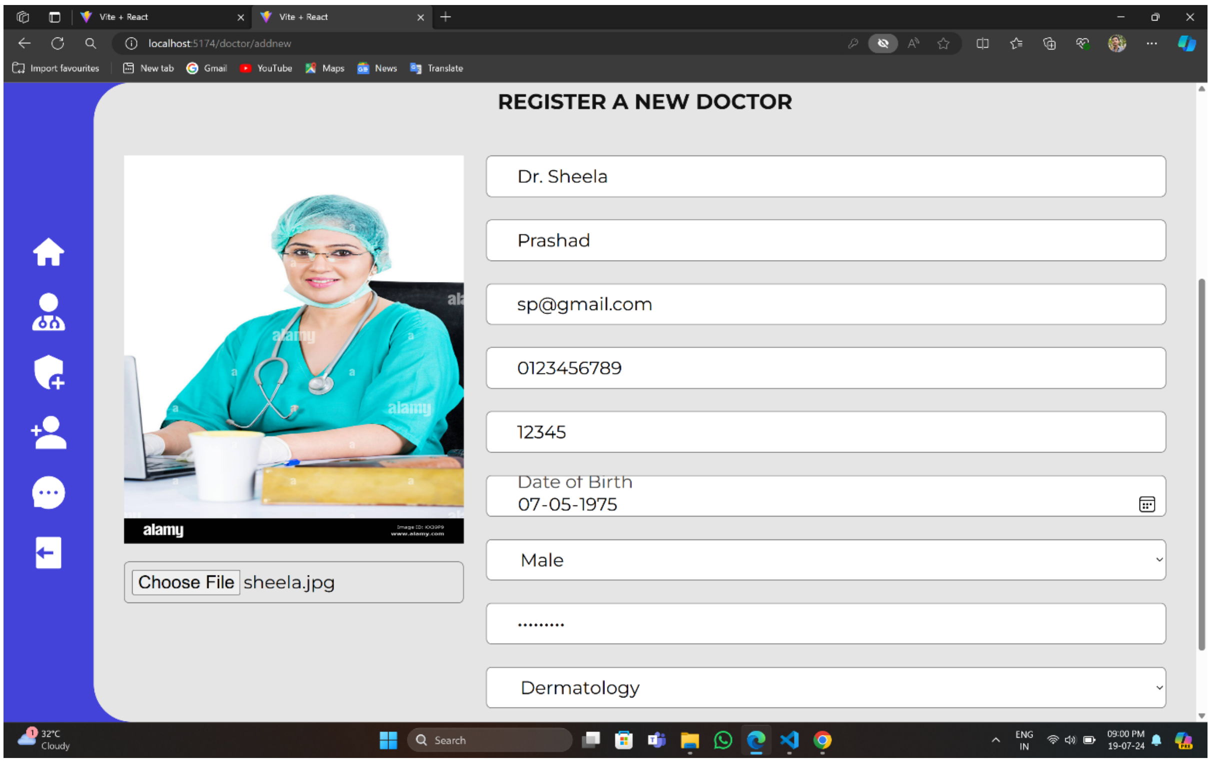
Date of Birth 19-04-1997

Male

••••••••

ADD NEW ADMIN

REGISTER A NEW DOCTOR PAGE



REGISTER A NEW DOCTOR

Choose File sheela.jpg

Dr. Sheela

Prashad

sp@gmail.com

0123456789

12345

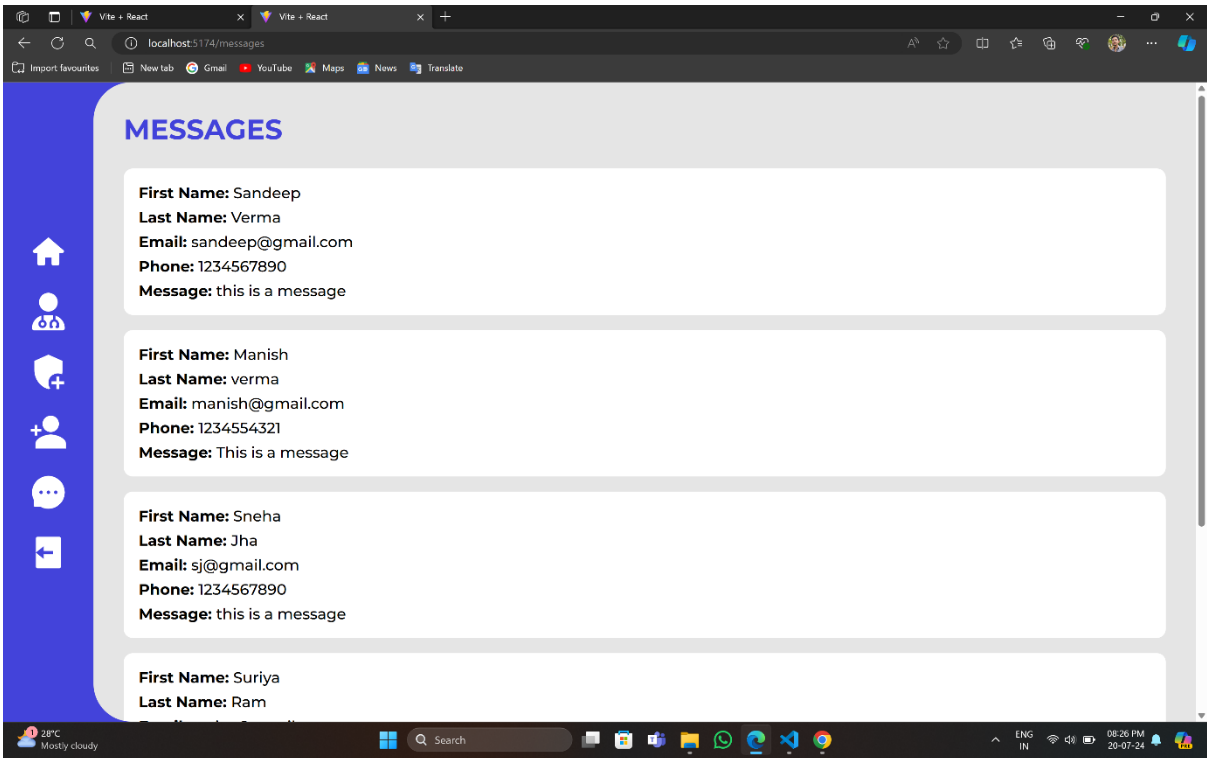
Date of Birth
07-05-1975

Male

....

Dermatology

ALL MESSAGE PAGE



MESSAGES

First Name: Sandeep
Last Name: Verma
Email: sandeep@gmail.com
Phone: 1234567890
Message: this is a message

First Name: Manish
Last Name: verma
Email: manish@gmail.com
Phone: 1234554321
Message: This is a message

First Name: Sneha
Last Name: Jha
Email: sj@gmail.com
Phone: 1234567890
Message: this is a message

First Name: Suriya
Last Name: Ram

15. SOURCE CODE

A. FRONTEND

1. src

1.1. components

1.1.1. AppointmentForm.jsx

```
import axios from "axios";
import React, { useEffect } from "react";
import { useState } from "react";
import { toast } from "react-toastify";

const AppointmentForm = () => {
  const [firstName, setFirstName] = useState("");
  const [lastName, setLastName] = useState("");
  const [email, setEmail] = useState("");
  const [phone, setPhone] = useState("");
  const [nic, setNic] = useState("");
  const [dob, setDob] = useState("");
  const [gender, setGender] = useState("");
  const [appointmentDate, setAppointmentDate] = useState("");
  const [department, setDepartment] = useState("Pediatrics");
  const [doctorFirstName, setDoctorFirstName] = useState("");
  const [doctorLastName, setDoctorLastName] = useState("");
  const [address, setAddress] = useState("");
  const [hasVisited, setHasVisited] = useState(false);

  const departmentsArray = [
    "Pediatrics",
    "Orthopedics",
    "Cardiology",
    "Neurology",
    "Oncology",
    "Radiology",
  "Physical Therapy",
  "Dermatology",
  "ENT",
];

const [doctors, setDoctors] = useState([]);
useEffect(() => {
  const fetchDoctors = async () => {
    const { data } = await axios.get(
      "http://localhost:4000/api/v1/user/doctors",
      { withCredentials: true }
    );
    setDoctors(data.doctors);
    console.log(data.doctors);
  };
  fetchDoctors();
}, []);
const handleAppointment = async (e) => {
  e.preventDefault();
  try {
    const hasVisitedBool = Boolean(hasVisited);
    const { data } = await axios.post(
      "http://localhost:4000/api/v1/appointment/post",
      {
        firstName,
        lastName,
        email,
        phone,
        nic,
        dob,
        gender,
        appointment_date: appointmentDate,
        department,
        doctor_firstName: doctorFirstName,
        doctor_lastName: doctorLastName,
        hasVisited: hasVisitedBool,
        address,
      },
      {
        withCredentials: true,
        headers: { "Content-Type": "application/json" },
      }
    );
    toast.success(data.message);
    setFirstName(""),
      setLastName(""),
      setEmail(""),
      setPhone(""),
      setNic(""),
      setDob(""),
      setGender(""),
      setAppointmentDate(""),
      setDepartment(""),
      setDoctorFirstName(""),
      setDoctorLastName(""),
      setHasVisited(""),
      setAddress("");
  } catch (error) {
    toast.error(error.response.data.message);
  }
};

return (
  <>
    <div className="container form-component appointment-form">
      <h2>Appointment</h2>
      <form onSubmit={handleAppointment}>
        <div>
          <input
            type="text"
            placeholder="First Name"
            value={firstName}
    onChange={(e) => setFirstName(e.target.value)}
  />
  <input
    type="text"
    placeholder="Last Name"
    value={lastName}
    onChange={(e) => setLastName(e.target.value)}
  />
</div>
<div>
  <input
    type="text"
    placeholder="Email"
    value={email}
    onChange={(e) => setEmail(e.target.value)}
  />
  <input
    type="number"
    placeholder="Mobile Number"
    value={phone}
    onChange={(e) => setPhone(e.target.value)}
  />
</div>
<div>
  <input
    type="number"
    placeholder="NIC"
    value={nic}
    onChange={(e) => setNic(e.target.value)}
  />
  <input
    type="date"
    placeholder="Date of Birth"
    value={dob}
    onChange={(e) => setDob(e.target.value)}
  />
```

```
</div>
<div>
  <select value={gender} onChange={(e) => setGender(e.target.value)}>
    <option value="">Select Gender</option>
    <option value="Male">Male</option>
    <option value="Female">Female</option>
  </select>
  <input
    type="date"
    placeholder="Appointment Date"
    value={appointmentDate}
    onChange={(e) => setAppointmentDate(e.target.value)}
  />
</div>
<div>
  <select
    value={department}
    onChange={(e) => {
      setDepartment(e.target.value);
      setDoctorFirstName("");
      setDoctorLastName("");
    }}
  >
    {departmentsArray.map((depart, index) => {
      return (
        <option value={depart} key={index}>
          {depart}
        </option>
      );
    })}
  </select>
  <select
    value={`${doctorFirstName} ${doctorLastName}`}
    onChange={(e) => {
      const [firstName, lastName] = e.target.value.split(" ");
      setDoctorFirstName(firstName);
      setDoctorLastName(lastName);
    }}
    disabled={!department}
  >
    <option value="">Select Doctor</option>
    {doctors
      .filter((doctor) => doctor.doctorDepartment === department)
      .map((doctor, index) => (
        <option
          value={`${doctor.firstName} ${doctor.lastName}`}
          key={index}
        >
          {doctor.firstName} {doctor.lastName}
        </option>
      ))}
  </select>
</div>
<textarea
  rows="10"
  value={address}
  onChange={(e) => setAddress(e.target.value)}
  placeholder="Address"
/>
<div
  style={{
    gap: "10px",
    justifyContent: "flex-end",
    flexDirection: "row",
  }}
>
  <p style={{ marginBottom: 0 }}>Have you visited before?</p>
  <input
    type="checkbox"
    checked={hasVisited}
    onChange={(e) => setHasVisited(e.target.checked)}
    style={{ flex: "none", width: "25px" }}
```

```
          />
        </div>
        <button style={{ margin: "0 auto" }}>GET APPOINTMENT</button>
      </form>
    </div>
  </>
 );
};

export default AppointmentForm;
```

1.1.2. Biography.jsx

```
import React from 'react'


const Biography = ({imageUrl}) => {
  return (
    <div className='container biography'>
      <div className="banner">
        <img src={imageUrl} alt="aboutImg" />
      </div>
      <div className="banner">
        <p>Biography</p>
        <h3>Who Me Are</h3>
        <p>
          Lorem ipsum, dolor sit amet consectetur adipisicing elit. Eos praesentium quaerat nesciunt esse nostrum rerum impedit! Consequatur porro exercitationem, at dignissimos molestias repudiandae. Quos quod sint quibusdam obcaecati sed autem! Amet corrupti ad est consequuntur eaque! Odio, earum. Quidem quae repellendus laborum eius sed quasi facilis doloribus, animi doloremque laboriosam.
        </p>
        <p>Lorem ipsum, dolor sit amet consectetur adipisicing elit.</p>
        <p>Lorem ipsum dolor sit amet.</p>
        <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Dolores possimus sed non quis. Culpa mollitia rem nesciunt facilis dolore, minus quas perferendis totam libero ea, earum consequuntur harum repellat quaerat atque iste, impedit praesentium quis.</p>
        <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Provident, quod.</p>
        <p>Lorem, ipsum dolor.</p>
      </div>
    </div>
  )
}


export default Biography
```

1.1.3. Departments.jsx

```
import React from 'react'
import Carousel from 'react-multi-carousel';
import 'react-multi-carousel/lib/styles.css';

const Departments = () => {
  const departmentsArray = [
    {
      name: "Pediatrics",
      imageUrl: "/departments/pedia.jpg",
    },
    {
      name: "Orthopedics",
      imageUrl: "/departments/ortho.jpg",
    },
    {
      name: "Cardiology",
      imageUrl: "/departments/cardio2.jpg",
    },
    {
      name: "Neurology",
      imageUrl: "/departments/neuro.jpg",
    },
    {
      name: "Oncology",
      imageUrl: "/departments/onco.jpeg",
    },
    {
      name: "Radiology",
      imageUrl: "/departments/radio.jpg",
    },
    {
      name: "Physical Therapy",
      imageUrl: "/departments/therapy1.jpg",
    },
    {
      name: "Dermatology",
      imageUrl: "/departments/derma.jpg",
    },
    {
      name: "ENT",
      imageUrl: "/departments/ent.jpg",
    },
  ];
  const responsive = {
    extraLarge: {
      breakpoint: { max: 3000, min: 1324 },
      items: 4,
      slidesToSlide: 1, // optional, default to 1.
    },
    large: {
      breakpoint: { max: 1324, min: 1005 },
      items: 3,
      slidesToSlide: 1, // optional, default to 1.
    },
    medium: {
      breakpoint: { max: 1005, min: 700 },
      items: 2,
      slidesToSlide: 1, // optional, default to 1.
    },
    small: {
      breakpoint: { max: 700, min: 0 },
      items: 1,
      slidesToSlide: 1, // optional, default to 1.
    },
  };
  return (
    <div className='container departments'>
      <h2>Departments</h2>
      <Carousel responsive={responsive} removeArrowOnDeviceType={["medium", "small"]}>
        {
          departmentsArray.map((depart, index)=>{
            return(
              <div className="card" key={index}>
                <div className="depart-name">{depart.name}</div>
                <img src={depart.imageUrl} alt={depart.name} />
              </div>
            )
          })
        }
      </Carousel>
    </div>
  );
 };

 export default Departments
```

1.1.4. Footer.jsx

```
import React from 'react';
import { Link } from 'react-router-dom';
import {FaPhone, FaLocationArrow} from "react-icons/fa";
import {MdEmail} from "react-icons/md";

const Footer = () => {
  const hours = [
    {
     id: 1,
     day: "Monday ",
     time: "9:00 AM - 11:00 PM",
    },
    {
     id: 2,
     day: "Tuesday ",
     time: "12:00 PM - 12:00 AM",
    },
    {
     id: 3,
     day: "Wednesday ",
     time: "10:00 AM - 10:00 PM",
    },
    {
     id: 4,
     day: "Thursday ",
     time: "9:00 AM - 9:00 PM",
    },
    {
     id: 5,
     day: "Friday ",
     time: "3:00 PM - 9:00 PM",
    },
    {
     id: 6,
     day: "Saturday ",
        time: "9:00 AM - 3:00 PM",
      },
    ];
  return (
    <>
    <footer className='container'>
        <hr />

        <div className="content">
            <div>
                <img src="/logo.png" alt="logo" className='logo-img' />
            </div>
            <div>
                <h4>Quick Links</h4>
                <ul>
                    <Link to={"/"}>Home</Link>
                    <Link to={"/appointment"}>Appointment</Link>
                    <Link to={"/about"}>About</Link>
                </ul>
            </div>
            <div>
                <h4>Hours</h4>
                {hours.map(element=>{
                        return(
                            <li key={element.id}>
                                <spam>{element.day}</spam>
                                <spam>{element.time}</spam>
                            </li>
                        );
                    })}
            </div>
            <div>
                <h4>Contact</h4>
                <div>
                    <FaPhone />
                    <span>999-999-9999</span>
                </div>
                <div>
```

```
                    <MdEmail />
                    <span>healthcare@gmail.com</span>
                </div>
                <div>
                    <FaLocationArrow />
                    <span>Giridih, Jharkhand</span>
                </div>
            </div>
        </div>
        </footer>
    </>
  )
};

export default Footer
```

1.1.5 Hero.jsx

```
import React from 'react'

const Hero = ({title, imageUrl}) => {
  return (
    <div className='hero container'>
        <div className="banner">
          <h1>{title}</h1>
          <p>
          HealthCare Medical Institute is a state-of-the-art facility dedicated
          to providing comprehensive healthcare services with compassion and
          expertise. Our team of skilled professionals is committed to
          delivering personalized care tailored to each patient's needs. At
          HealthCare, we prioritize your well-being, ensuring a harmonious
          journey towards optimal health and wellness.
          </p>
        </div>
        <div className="banner">
          <img src={imageUrl} alt="hero" className="animated-image" />
          <span>
            <img src="/Vector.png" alt="vector" />
          </span>
        </div>
    </div>
  )
}

export default Hero
```

1.1.6. MessageForm.jsx

```
import axios from "axios";
import React, { useState } from "react";
import { toast } from "react-toastify";

const MessageForm = () => {
  const [firstName, setFirstName] = useState("");
  const [lastName, setLastName] = useState("");
  const [email, setEmail] = useState("");
  const [phone, setPhone] = useState("");
  const [message, setMessage] = useState("");
  const handleMessage = async (e) => {
    e.preventDefault();
    try {
      await axios
        .post(
          "http://localhost:4000/api/v1/message/send",
          { firstName, lastName, phone, email, message },
          {
            withCredentials: true,
            headers: {
              "Content-Type": "application/json",
            },
          }
        )
        .then((res) => {
          toast.success(res.data.message);
          setFirstName("");
          setLastName("");
          setEmail("");
          setPhone("");
          setMessage("");
        });
    } catch (error) {
      toast.error(error.response.data.message);
    }
```

```
};
return (
  <div className="container form-component message-form">
    <h2>Send Us A Message</h2>
    <form onSubmit={handleMessage}>
      <div>
        <input
          type="text"
          placeholder="First Name"
          value={firstName}
          onChange={(e) => setFirstName(e.target.value)}
        />
        <input
          type="text"
          placeholder="Last Name"
          value={lastName}
          onChange={(e) => setLastName(e.target.value)}
        />
      </div>
      <div>
        <input
          type="text"
          placeholder="Email"
          value={email}
          onChange={(e) => setEmail(e.target.value)}
        />
        <input
          type="number"
          placeholder="Mobile Number"
          value={phone}
          onChange={(e) => setPhone(e.target.value)}
        />
      </div>
      <textarea
        rows={7}
        placeholder="Message"
        value={message}
        onChange={(e) => setMessage(e.target.value)}
```

```
          ></textarea>
          <div style={{ justifyContent: "center", alignItems: "center" }}>
            <button type="submit">Send</button>
          </div>
        </form>
      </div>

  );
};

export default MessageForm;
```

1.1.7. Navbar.jsx

```
import React, { useContext, useState } from "react";
import { Link, useNavigate } from "react-router-dom";
import { GiHamburgerMenu } from "react-icons/gi";
import axios from "axios";
import { toast } from "react-toastify";
import { Context } from "../main";

const Navbar = () => {
  const [show, setShow] = useState(false);
  const { isAuthenticated, setIsAuthenticated } = useContext(Context);

  const handleLogout = async () => {
    await axios
      .get("http://localhost:4000/api/v1/user/patient/logout", {
        withCredentials: true,
      })
      .then((res) => {
        toast.success(res.data.message);
        setIsAuthenticated(false);
      })
      .catch((err) => {
        toast.error(err.response.data.message);
      });
  };

  const navigateTo = useNavigate();

  const goToLogin = () => {
    navigateTo("/login");
  };

  return (
    <>
      <nav className={"container"}>
        <div className="logo">
          <img src="/logo.png" alt="logo" className="logo-img" />
        </div>
        <div className={show ? "navLinks showmenu" : "navLinks"}>
          <div className="links">
            <Link to={"/"} onClick={() => setShow(!show)}>
              Home
            </Link>
            <Link to={"/appointment"} onClick={() => setShow(!show)}>
              Appointment
            </Link>
            <Link to={"/about"} onClick={() => setShow(!show)}>
              About Us
            </Link>
          </div>
          {isAuthenticated ? (
            <button className="logoutBtn btn" onClick={handleLogout}>
              LOGOUT
            </button>
          ) : (
            <button className="loginBtn btn" onClick={goToLogin}>
              LOGIN
            </button>
          )}
        </div>
        <div className="hamburger" onClick={() => setShow(!show)}>
          <GiHamburgerMenu />
        </div>
      </nav>
    </>
  );
};

export default Navbar;
```

1.2. pages

1.2.1 AboutUs.jsx

```
import React from 'react'
import Hero from '../components/Hero';
import Biography from "../components/Biography";
const AboutUs = () => {
  return (
    <>
     <Hero
     title={"Learn More About Us | Healthcare Medical Institute"}
     imageUrl={"/about.png"}
    />
   <Biography imageUrl={"/whoweare.png"} />

    </>
  )
}

export default AboutUs
```

1.2.2. Appointment.jsx

```
import React from 'react'
import Hero from '../components/Hero';
import AppointmentForm from '../components/AppointmentForm';
const Appointment = () => {
  return<>
    <Hero
      title={"Schedule Your Appointment | HealthCare Medical Institute"}
      imageUrl={"/signin1.png"}
    />
  <AppointmentForm/>
  </>
};

export default Appointment
```

1.2.3. Home.jsx

```
import React from 'react'
import Hero from "../components/Hero";
import Biography from "../components/Biography";
import MessageForm from "../components/MessageForm";
import Departments from "../components/Departments";

const Home = () => {
  return (
    <>
      <Hero
        title={
          "Welcome to HealthCare Medical Institute | Your Trusted Healthcare Provider"
        }
        imageUrl={"/hero.png"}
      />
      <Biography imageUrl={"/about.png"} />
      <Departments />
      <MessageForm />
    </>
  );
};

export default Home;
```

1.2.4. Login.jsx

```
import axios from "axios";
import React, { useContext, useState } from "react";
import { toast } from "react-toastify";
import { Context } from "../main";
import { Link, Navigate, useNavigate} from "react-router-dom";

const Login = () => {
  const { isAuthenticated, setIsAuthenticated } = useContext(Context);

  const [email, setEmail] = useState("");
  const [password, setPassword] = useState("");
  const [confirmPassword, setConfirmPassword] = useState("");

  const navigateTo = useNavigate();

  const handleLogin = async (e) => {
    e.preventDefault();
    try {
      const response= await axios.post(
          "http://localhost:4000/api/v1/user/login",
          { email, password, confirmPassword, role: "Patient" },
          {
            withCredentials: true,
            headers: { "Content-Type": "application/json" },
          }
        )
        .then((res) => {
          toast.success(res.data.message);
          setIsAuthenticated(true);
          navigateTo("/");
          setEmail("");
          setPassword("");
          setConfirmPassword("");
        });
    } catch (error) {
```

```
    toast.error(error.response.data.message);
  }
};

if (isAuthenticated) {
  return <Navigate to={"/"} />;
}

return (
  <>
    <div className="container form-component login-form">
      <h2>Sign In</h2>
      <p>Please Login To Continue</p>
      <p>
        Lorem ipsum dolor sit amet consectetur adipisicing elit. Placeat culpa
        voluptas expedita itaque ex, totam ad quod error?
      </p>
      <form onSubmit={handleLogin}>
        <input
          type="text"
          placeholder="Email"
          value={email}
          onChange={(e) => setEmail(e.target.value)}
        />
        <input
          type="password"
          placeholder="Password"
          value={password}
          onChange={(e) => setPassword(e.target.value)}
        />
        <input
          type="password"
          placeholder="Confirm Password"
          value={confirmPassword}
          onChange={(e) => setConfirmPassword(e.target.value)}
        />
        <div
          style={{
              gap: "10px",
              justifyContent: "flex-end",
              flexDirection: "row",
            }}
          >
            <p style={{ marginBottom: 0 }}>Not Registered?</p>
            <Link
              to={"/register"}
              style={{ textDecoration: "none", alignItems: "center" }}
            >
              Register Now
            </Link>
          </div>
          <div style={{ justifyContent: "center", alignItems: "center" }}>
            <button type="submit">Login</button>
          </div>
        </form>
      </div>
    </>
  );
};

export default Login;
```

1.2.5. Register.jsx

```
import axios from "axios";
import React, { useContext, useState } from "react";
import { toast } from "react-toastify";
import { Context } from "../main";
import { Link, Navigate, useNavigate } from "react-router-dom";

const Register = () => {
  const { isAuthenticated, setIsAuthenticated } = useContext(Context);

  const [firstName, setFirstName] = useState("");
  const [lastName, setLastName] = useState("");
  const [email, setEmail] = useState("");
  const [phone, setPhone] = useState("");
  const [nic, setNic] = useState("");
  const [dob, setDob] = useState("");
  const [gender, setGender] = useState("");
  const [password, setPassword] = useState("");

  const navigateTo = useNavigate();

  const handleRegistration = async (e) => {
    e.preventDefault();
    try {
      const response = await axios
        .post(
          "http://localhost:4000/api/v1/user/patient/register",
          { firstName, lastName, email, phone, nic, dob, gender, password, role: "Patient" },
          {
            withCredentials: true,
            headers: { "Content-Type": "application/json" },
          }
        )
        .then((res) => {
          toast.success(res.data.message);
          setIsAuthenticated(true);
          navigateTo("/");
          setFirstName("");
          setLastName("");
          setEmail("");
          setPhone("");
          setNic("");
          setDob("");
          setGender("");
          setPassword("");
        }
      );
      toast.success(response.data.message);
      setIsAuthenticated(true);
      navigateTo("/");
    } catch (error) {
      toast.error(error.response.data.message);
    }
  };

  if (isAuthenticated) {
    return <Navigate to={"/"} />;
  }

  return (
    <>
      <div className="container form-component register-form">
        <h2>Sign Up</h2>
        <p>Please Sign Up To Continue</p>
        <p>
          Lorem ipsum dolor sit amet consectetur adipisicing elit. Placeat culpa
          voluptas expedita itaque ex, totam ad quod error?
        </p>
        <form onSubmit={handleRegistration}>
          <div>
            <input
              type="text"
              placeholder="First Name"
              value={firstName}
              onChange={(e) => setFirstName(e.target.value)}
            />
            <input
              type="text"
              placeholder="Last Name"
              value={lastName}
              onChange={(e) => setLastName(e.target.value)}
            />
          </div>
          <div>
            <input
              type="text"
              placeholder="Email"
              value={email}
              onChange={(e) => setEmail(e.target.value)}
            />
            <input
              type="number"
              placeholder="Phone Number"
              value={phone}
              onChange={(e) => setPhone(e.target.value)}
            />
          </div>
          <div>
            <input
              type="number"
              placeholder="NIC"
              value={nic}
              onChange={(e) => setNic(e.target.value)}
            />
            <input
              type={"date"}
              placeholder="Date of Birth"
              value={dob}
              onChange={(e) => setDob(e.target.value)}
            />
          </div>
          <div>
```

```
            <select value={gender} onChange={(e) => setGender(e.target.value)}>
              <option value="">Select Gender</option>
              <option value="Male">Male</option>
              <option value="Female">Female</option>
            </select>
            <input
              type="password"
              placeholder="Password"
              value={password}
              onChange={(e) => setPassword(e.target.value)}
            />
          </div>
          <div
            style={{
              gap: "10px",
              justifyContent: "flex-end",
              flexDirection: "row",
            }}
          >
            <p style={{ marginBottom: 0 }}>Already Registered?</p>
            <Link
              to={"/signin"}
              style={{ textDecoration: "none", color: "#271776ca" }}
            >
              Login Now
            </Link>
          </div>
          <div style={{ justifyContent: "center", alignItems: "center" }}>
            <button type="submit">Register</button>
          </div>
        </form>
      </div>
      </>
  );
};

export default Register;
```

1.3. App.css

```
import React, { useContext, useEffect } from 'react'
import "./App.css"
import { BrowserRouter as Router, Route, Routes } from "react-router-dom"
import Home from "./pages/Home";
import Appointment from "./pages/Appointment";
import AboutUs from "./pages/AboutUs";
import Register from "./pages/Register";
import Login from "./pages/Login";
import { ToastContainer } from 'react-toastify';
import 'react-toastify/dist/ReactToastify.css';
import Navbar from './components/Navbar';
import { Context } from './main';
import axios from 'axios';
import Footer from './components/Footer';

const App = () => {
  const {isAuthenticated, setIsAuthenticated, setUser} = useContext(Context);
  useEffect(()=>{
    const fetchUser = async()=>{
      try {
        const response = await axios.get(
          "http://localhost:4000/api/v1/user/patient/me",
          {withCredentials: true}
        );
        setIsAuthenticated(true);
        setUser(response.date.user);
      } catch (error) {
        setIsAuthenticated(false);
        setUser({})
      }
    };
    fetchUser();
  },[isAuthenticated]);
  return (
    <>
```

```
   <Router>
    <Navbar/>
    <Routes>
     <Route path="/" element={<Home />} />
     <Route path="/appointment" element={<Appointment />} />
     <Route path="/about" element={<AboutUs />} />
     <Route path="/register" element={<Register />} />
     <Route path="/login" element={<Login />} />
    </Routes>
    <Footer/>
    <ToastContainer position="top-center"/>
   </Router>
  </>
 )
}

export default App
```

1.4. main.jsx

```
import React, { createContext, useState } from 'react'
import ReactDOM from 'react-dom/client'
import App from './App.jsx'

export const Context = createContext({ isAuthenticated: false});

const AppWrapper = () => {
  const [isAuthenticated, setIsAuthenticated] = useState(false);
  const [user, setUser] = useState({});

  return (
    <Context.Provider
      value={{isAuthenticated, setIsAuthenticated, user, setUser}}
    >
      <App />
    </Context.Provider>
  );
};

ReactDOM.createRoot(document.getElementById('root')).render(
  <React.StrictMode>
    <AppWrapper />
  </React.StrictMode>,
)
```

1.5. App.css

```
@import url("https://fonts.googleapis.com/css2?family=Montserrat:ital,wght@0,100..900;1,100..900&display=swap");
* {
  margin: 0;
  padding: 0;
  box-sizing: border-box;
  overflow-x: hidden;
  font-family: "Montserrat", sans-serif;
}
body {
  background: #e5e5e5;
}
.btn {
  padding: 7px 20px;
  border-radius: 12px;
  border: none;
  font-weight: bold;
  letter-spacing: 2px;
}
.white-btn {
  background: #fff;
  color: #111;
}
.purple-btn {
  background: #9083d5;
  color: #fff;
}
p,
span,
a {
  font-size: 20px;
}
h1 {
  font-size: 36px;
  font-weight: 900;
}
```

```
h1 {
  font-size: 36px;
  font-weight: 900;
}
h2 {
  font-size: 32px;
  font-weight: 900;
}
h3 {
  font-size: 28px;
  font-weight: 900;
}
h4 {
  font-size: 24px;
  font-weight: 900;
}
h5,
h6 {
  font-size: 24px;
  font-weight: 700;
}
@media (max-width: 1186px) {
  h1 {
    font-size: 32px;
    font-weight: 900;
  }
  h2 {
    font-size: 30px;
    font-weight: 900;
  }
}
.container {
  padding: 0 100px;
}
@media (max-width: 700px) {
  .container {
    padding: 0 20px;
  }
```

```
}
.hero {
  display: flex;
  gap: 50px;
  padding-top: 120px;
  padding-bottom: 120px;
  position: relative;
}
.hero .banner {
  flex: 1;
}
.hero .banner h1,
.hero .banner p {
  max-width: 650px;
}
.hero .banner h1 {
  letter-spacing: 2px;
  word-spacing: 5px;
  font-size: 40px;
}
.hero .banner p {
  color: #111;
  letter-spacing: 2px;
}
.hero .banner span {
  position: absolute;
  right: -300px;
  top: -200px;
  z-index: -1;
}
.hero .banner:first-child {
  display: flex;
  justify-content: center;
  flex-direction: column;
  gap: 50px;
}
.hero .banner:last-child {
  display: flex;
  justify-content: center;
  align-items: center;
  overflow-y: hidden;
}
.animated-image {
  animation: moveUpDown 1s infinite alternate ease-in-out;
}

@keyframes moveUpDown {
  0% {
    transform: translateY(0);
  }
  100% {
    transform: translateY(20px);
  }
}
@media (max-width: 1186px) {
  .hero .banner span {
    right: -400px;
  }
  .hero .banner h1 {
    font-size: 32px;
  }
}
@media (max-width: 1085px) {
  .hero .banner span {
    right: -480px;
    top: -315px;
  }
}
@media (max-width: 925px) {
  .hero {
    flex-direction: column;
  }
  @media (max-width: 700px) {
    .hero {
      padding-bottom: 40px;
    }
  }
}
.form-component {
  padding-top: 40px;
  padding-bottom: 60px;
}
.form-component h2 {
  color: gray;
  letter-spacing: 4px;
  margin-bottom: 30px;
}
.form-component h4 {
  color: gray;
  font-weight: 700;
  margin-bottom: 20px;
}
.form-component p {
  max-width: 750px;
  color: gray;
  margin-bottom: 20px;
}
.form-component form {
  display: flex;
  flex-direction: column;
  gap: 30px;
}
.form-component form div {
  display: flex;
  gap: 30px;
}
.form-component form input,
.form-component form select,
.form-component form textarea {
  flex: 1;
  font-size: 24px;
  padding: 10px 10px 10px 40px;
  border-radius: 7px;
  border: 1px solid gray;
```

```
}
.form-component button {
  padding: 10px 35px;
  color: #fff;
  font-weight: 700;
  width: fit-content;
  border: none;
  border-radius: 8px;
  font-size: 24px;
  margin-bottom: 30px;
  background: linear-gradient(140deg, #9083d5, #271776ca);
}
.form-component .wrapper {
  display: flex;
  gap: 50px;
}
.form-component .wrapper .banner {
  flex: 1;
}
.form-component .wrapper .banner:last-child {
  display: flex;
  justify-content: center;
  align-items: center;
}
.form-component .wrapper .banner:last-child img {
  max-width: 450px;
}
.login-form {
  margin: 100px auto 20px auto;
  max-width: 800px;
  text-align: center;
}
.register-form {
  max-width: 1200px;
  margin: 100px auto 20px auto;
}
.login-form h2 {
  color: #000;
```

```
}
.register-form h2 {
  color: #000;
}
@media (max-width: 1110px) {
  .appointment-form form div:nth-child(4) {
    flex-direction: column;
  }
  .appointment-form form div:nth-child(5) {
    flex-direction: column;
  }
}
@media (max-width: 888px) {
  .form-component {
    padding-top: 30px;
    padding-bottom: 30px;
  }
  .form-component form div {
    flex-direction: column;
  }
}
@media (max-width: 667px) {
  .form-component form input,
  .form-component form select,
  .form-component form textarea {
    font-size: 20px;
    padding: 10px;
  }
}
.biography {
  display: flex;
  gap: 50px;
  padding-top: 40px;
  padding-bottom: 60px;
}
.biography .banner:first-child {
  flex: 1;
  display: flex;
  justify-content: center;
  align-items: center;
}
.biography .banner:last-child {
  flex: 1;
  display: flex;
  flex-direction: column;
  gap: 10px;
}
.biography .banner h3 {
  font-weight: 700;
  letter-spacing: 3px;
}
.biography .banner p:first-child {
  font-size: 24px;
  letter-spacing: 2px;
}
@media (max-width: 925px) {
  .biography {
    flex-direction: column-reverse;
  }
}
.message-form {
  position: relative;
}
.message-form h2 {
  text-align: center;
  color: #000;
  position: relative;
}
.message-form img {
  position: absolute;
  top: 0;
  right: -16%;
  height: 600px;
  z-index: -1;
}
@media (max-width: 700px) {.message
```

B. BACKEND

1. controller

1.1 appointmentController.js

```
import {catchAsyncErrors} from "../middlewares/catchAsyncErrors.js";

import ErrorHandler from "../middlewares/errorMiddleware.js";

import {Appointment} from "../models/appointmentSchema.js";

import { User } from "../models/userSchema.js";


export const postAppointment = catchAsyncErrors(async(req, res, next)=>{

    const {

        firstName,

        lastName,

        email,

        phone,

        nic,

        dob,

        gender,

        appointment_date,

        department,

        doctor_firstName,

        doctor_lastName,

        hasVisited,

        address,

    } = req.body;


    if(

        !firstName ||

        !lastName ||

        !email ||

        !phone ||

        !nic ||

        !dob ||

        !gender ||
        !appointment_date ||
        !department ||
        !doctor_firstName ||
        !doctor_lastName ||
        !address
    )  {
        return next(new ErrorHandler("Please Fill Full Form!", 400));
    }
    const isConflict = await User.find({
        firstName: doctor_firstName,
        lastName: doctor_lastName,
        role: "Doctor",
        doctorDepartment: department
    })
    if(isConflict.length === 0){
        return next(new ErrorHandler("Doctor not found!", 404));
    }
    if(isConflict.length > 1){
        return next(
            new ErrorHandler(
                "Doctors Conflict! Please Contact Through Email or Phone!",
                404
            )
        );
    }
    const doctorId = isConflict[0]._id;
    const patientId = req.user._id;
    const appointment = await Appointment.create({
        firstName,
        lastName,
        email,
        phone,
        nic,
        dob,
        gender,
        appointment_date,
        department,
        doctor: {
            firstName: doctor_firstName,
            lastName: doctor_lastName,
        },
        hasVisited,
        address,
        doctorId,
        patientId,
    });
    res.status(200).json({
        success: true,
        message: "Appointment Sent SucessFully!",
        appointment,
    });
});

export const getAllAppointments = catchAsyncErrors(async(req, res, next)=>{
    const appointments = await Appointment.find();
    res.status(200).json({
        success: true,
        appointments,
    });
});

export const updateAppointmentStatus = catchAsyncErrors(
    async(req, res, next) => {
        const {id} = req.params;
        let appointment = await Appointment.findById(id);
        if(!appointment) {
            return next(new ErrorHandler("Appointment Not Found", 404));
        }
        appointment = await Appointment.findByIdAndUpdate(id, req.body, {
            new: true,
            runValidators: true,
            useFindAndModify: false,
        });
        res.status(200).json({
            success: true,
            message: "Appointment Status Updated!",
            appointment,
        });
    }
);

export const deleteAppointment = catchAsyncErrors(async(req, res, next) => {
    const {id} = req.params;
    let appointment = await Appointment.findById(id);
    if (!appointment){
        return next (new ErrorHandler("Appointment Not Found", 404));
    }
    await appointment.deleteOne();
    res.status(200).json({
        success: true,
        message: "Appointment Deleted!",
    });
});
```

1.2 messageController.js

```
import { catchAsyncErrors } from "../middlewares/catchAsyncErrors.js";
// import { Message } from "../models/messageSchema.js";
import Message from "../models/messageSchema.js";
import ErrorHandler from "../middlewares/errorMiddleware.js";

export const sendMessage = catchAsyncErrors(async (req, res, next) => {
  const { firstName, lastName, email, phone, message } = req.body;
  if(!firstName || !lastName || !email || !phone || !message){
    return next(new ErrorHandler("Please Fill Full Form!",400));
  }
  await Message.create({ firstName, lastName, email, phone, message });
  res.status(200).json({
    sucess: true,
    message: "Message Send successfully!",
  });
});

export const getAllMessages = catchAsyncErrors(async(req, res, next) => {
  const messages = await Message.find();
  res.status(200).json({
    success: true,
    messages,
  });
});
```

1.3 userController.js

```
import { catchAsyncErrors} from "../middlewares/catchAsyncErrors.js";
import ErrorHandler from "../middlewares/errorMiddleware.js";
import { User } from "../models/userSchema.js"
import { generateToken } from "../utils/jwtToken.js";
import cloudinary from "cloudinary"

export const patientRegister = catchAsyncErrors(async (req, res, next) => {
    const {
        firstName,
        lastName,
        email,
        phone,
        password,
        gender,
        dob,
        nic,
        role,
    } = req.body;
    if(
        !firstName ||
        !lastName ||
        !email ||
        !phone ||
        !password ||
        !gender ||
        !dob ||
        !nic ||
        !role
    )  {
        return next(new ErrorHandler("Please Fill Full Form!", 400));
    }
    let user = await User.findOne({ email });
    if(user){
        return next(new ErrorHandler("User Already Registered!", 400));
    }
    user = await User.create({
        firstName,
        lastName,
        email,
        phone,
        password,
        gender,
        dob,
        nic,
        role,
    });
    generateToken(user, "User Registered!", 200, res);
});

export const login = catchAsyncErrors(async(req, res, next)=>{
    const {email, password, confirmPassword, role} = req.body;
    if(!email || !password || !confirmPassword || !role){
        return next(new ErrorHandler("Please Provide All Details!", 400));
    }
    if(password !== confirmPassword){
        return next(
            new ErrorHandler("Password And Confirm Password Does not Match!", 400)
        );
    }
    const user = await User.findOne({email}).select("+password");
    if(!user){
        return next(new ErrorHandler("Invalid Password or Email!", 400));
    }
    const isPasswordMatched = await user.comparePassword(password);
    if(!isPasswordMatched){
        return next(new ErrorHandler("Invalid Password or Email!", 400));
    }
    if(role !== user.role){
        return next(new ErrorHandler("User With This Role not Found!", 400));
    }
```

```
  generateToken(user, "User Login Successfully!", 200, res);
});

export const addNewAdmin = catchAsyncErrors(async(req, res, next)=>{
  const {firstName, lastName, email, phone, password, gender, dob, nic,
  } = req.body;
  if(
    !firstName ||
    !lastName ||
    !email ||
    !phone ||
    !password ||
    !gender ||
    !dob ||
    !nic
  )  {
    return next(new ErrorHandler("Please Fill Full Form!", 400));
  }
  const isRegistered = await User.findOne({ email });
  if(isRegistered){
    return next(new ErrorHandler(`${isRegistered.role} With This Email Alredy Exists!`))
  }
  const admin = await User.create({
    firstName,
    lastName,
    email,
    phone,
    password,
    gender,
    dob,
    nic,
    role: "Admin",
  });
  res.status(200).json({
    success: true,
    message: "New Admin Registered!",
  })
});

export const getAllDoctors = catchAsyncErrors(async(req, res, next)=>{
  const doctors = await User.find({role: "Doctor"});
  res.status(200).json({
    success: true,
    doctors,
  });
});



export const getUserDetails = catchAsyncErrors(async(req, res, next)=>{
  const user = req.user;
  res.status(200).json({
    success: true,
    user,
  });
});

export const logoutAdmin = catchAsyncErrors(async(req, res, next) => {
  res
  .status(200)
  .cookie("adminToken", "",{
    httpOnly: true,
    expires: new Date(Date.now()),
  })
  .json({
    success: true,
    message: "Admin Loged out Successfully!",
  });
});

export const logoutPatient = catchAsyncErrors(async (req, res, next) => {
  res
```

```
    .status(200)
    .cookie("patientToken", "",{
        httpOnly: true,
        expires: new Date(Date.now()),
    })
    .json({
        success: true,
        message: "Patient Loged out Successfully!",
    });
});

export const addNewDoctor = catchAsyncErrors(async(req, res, next) => {
    if(!req.files || Object.keys(req.files).length === 0) {
        return next(new ErrorHandler("Doctor Avatar Required!", 400));
    }
    const {docAvatar} = req.files;
    const allowedFormats = ["image/png", "image/jpeg", "image/webp"];
    if(!allowedFormats.includes(docAvatar.mimetype)){
        return next(new ErrorHandler("File Format Not Supported!", 400));
    }
    const {
        firstName,
        lastName,
        email,
        phone,
        password,
        gender,
        dob,
        nic,
        doctorDepartment,
    } = req.body;
    if(
        !firstName ||
        !lastName ||
        !email ||
        !phone ||
        !password ||
        !gender ||
        !dob ||
        !nic ||
        !doctorDepartment
    ){
        return next(new ErrorHandler("Please Provide Full Details!", 400));
    }
    const isRegistered = await User.findOne({email});
    if(isRegistered){
        return next(
            new ErrorHandler(
                `${isRegistered.role} already registered with this email!`,
                400
            )
        );
    }
    const cloudinaryResponse = await cloudinary.uploader.upload(
        docAvatar.tempFilePath
    );
    if(!cloudinaryResponse || cloudinaryResponse.error){
        console.error(
            "Cloudinary Error:",
             cloudinaryResponse.error || "Unknown Cloudinary Error"
        );
    }
    const doctor = await User.create({
        firstName,
        lastName,
        email,
        phone,
        password,
        gender,
        dob,
        nic,
        doctorDepartment,
        role: "Doctor",
        docAvatar: {
            public_id: cloudinaryResponse.public_id,
            url: cloudinaryResponse.secure_url,
        },
    });
    res.status(200).json({
        success: true,
        message: "New Doctor Registered!",
        doctor
    });
});
```

2. database

2.1 dbController.js

```
import mongoose from "mongoose";
export const dbConnection = ()=>{
    mongoose.connect(process.env.MONGO_URI,{
        dbName: "HOSPITAL_MANAGEMENT_SYSTEM"
    }).then(()=>{
        console.log("Connected to database!")
    }).catch(err=>{
        console.log(`some error occured while connecting to database: ${err}`)
    });
};
```

3. middlewares

3.1. auth.js

```
import { User } from "../models/userSchema.js";
import { catchAsyncErrors } from "./catchAsyncErrors.js";
import ErrorHandler from "./errorMiddleware.js";
import jwt from "jsonwebtoken";

export const isAdminAuthenticated = catchAsyncErrors(async (req, res, next) => {
  const token = req.cookies.adminToken;
  if(!token){
    return next(new ErrorHandler("Dashboard User is not authenticated!", 400));
  }
  const decoded = jwt.verify(token, process.env.JWT_SECRET_KEY);
  req.user = await User.findById(decoded.id);
  if(req.user.role !== "Admin"){
    return next(
      new ErrorHandler(
        `${req.user.role} not authorized for this resources!`,
        403
      )
    );
  }
  next();
});
export const isPatientAuthenticated = catchAsyncErrors(async (req, res, next) => {
  const token = req.cookies.patientToken;
  if(!token){
    return next(new ErrorHandler("Patient Not Authenticated!", 400));
  }
  const decoded = jwt.verify(token, process.env.JWT_SECRET_KEY);
  req.user = await User.findById(decoded.id);
  if(req.user.role !== "Patient"){
    return next(
      new ErrorHandler(
            `${req.user.role} not authorized for this resources!`,
            403
          )
        );
    }
    next();
});
```

3.2. catchAsyncErrors.js

```
export const catchAsyncErrors=(theFunction)=>{
    return (req, res, next)=>{
        Promise.resolve(theFunction(req, res, next)).catch(next);
    };
};
```

3.3 errorMiddleWare.js

```
class ErrorHandler extends Error {
    constructor(message, statusCode) {
        super(message);
        this.statusCode = statusCode;
    }
}

export const errorMiddleware = (err, req, res, next)=>{
    err.message = err.message || "Internal Server Error";
    err.statusCode = err.statusCode || 500;

    if(err.code === 11000){
        const message = `Duplicate ${Object.keys(err.keyValue)} Entered`;
        err = new ErrorHandler(message, 400);
    }
    if(err.name === "JsonWebTokenError"){
        const message = "Json Web Token is invalid, Try Again!";
        err = new ErrorHandler(message, 400);
    }
    if(err.name === "TokenExpiredError"){
        const message = "Json Web Token is Expired, Try Again!";
        err = new ErrorHandler(message, 400);
    }
    if(err.name === "CastError"){
        const message = `Invalid ${err.path}`;
        err = new ErrorHandler(message, 400);
    }

    const errorMessage = err.errors
        ? Object.values(err.errors)
            .map((error) => error.message)
            .join(" ")
        : err.message;

    return res.status(err.statusCode).json({
        success: false,
        message: errorMessage,
    });
};


export default ErrorHandler;
```

4. modles

4.1 appointmentSchema.js

```
import mongoose from "mongoose";
import validator from "validator";

const appointmentSchema = new mongoose.Schema({
  firstName:{
    type: String,
    required: true,
    minLength: [3, "First Name Must Contain At Least 3 Characters!"]
  },
  lastName:{
    type: String,
    required: true,
    minLength: [3, "Last Name Must Contain At Least 3 Characters!"]
  },
  email:{
    type: String,
    required: true,
    validate: [validator.isEmail, "Please Provide A Valid Email!"]
  },
  phone:{
    type: String,
    required: true,
    minLength: [10, "Phone Number Must Contain Exact 10 Digits!"],
    maxLength: [10, "Phone Number Must Contain Exact 10 Digits!"],
  },
  nic:{
    type: String,
    required: true,
    minLength: [5, "NIC Must Contain Exact 5 Digits!"],
    maxLength: [5, "NIC Must Contain Exact 5 Digits!"],
  },
  dob:{
    type: Date,
    required: [true, "DOB is required!"]
},
gender:{
    type: String,
    required: true,
    enum: ["Male", "Female"],
},
appointment_date: {
    type: String,
    required: true,
},
department:{
    type: String,
    required: true,
},
doctor:{
    firstName:{
        type: String,
        required: true,
    },
    lastName:{
        type: String,
        required: true,
    }
},
hasVisited:{
    type: Boolean,
    default: false,
},
doctorId:{
    type: mongoose.Schema.ObjectId,
    required: true,
},
patientId:{
    type: mongoose.Schema.ObjectId,
        required: true,
    },
    address:{
        type: String,
        required: true,
    },
    status:{
        type: String,
        enum: ["Pending", "Accepted", "Rejected"],
        default: "Pending"
    },
});

export const Appointment =mongoose.model("Appointment", appointmentSchema);
```

```
});
```

4.2 messageSchema.js

```
import mongoose from 'mongoose';
import validator from "validator";

const messageSchema = new mongoose.Schema({
    firstName:{
        type: String,
        required: true,
        minLength: [3, "First Name Must Contain At Least 3 Characters!"]
    },
    lastName:{
        type: String,
        required: true,
        minLength: [3, "Last Name Must Contain At Least 3 Characters!"]
    },
    email:{
        type: String,
        required: true,
        validate: [validator.isEmail, "Please Provide A Valid Email!"]
    },
    phone:{
        type: String,
        required: true,
        minLength: [10, "Phone Number Must Contain Exact 10 Digits!"],
        maxLength: [10, "Phone Number Must Contain Exact 10 Digits!"],
    },
    message:{
        type: String,
        required: true,
        minLength: [10, "message Must Contain At Least 10 Characters!"],
    }
});
// export const Massage = mongoose.model("Message", messageSchema);
export default mongoose.model("Message", messageSchema);
```

4.3. userSchema.js

```
import mongoose from 'mongoose';
import validator from "validator";
import bcrypt from "bcrypt";
import jwt from "jsonwebtoken";

const userSchema = new mongoose.Schema({
  firstName:{
    type: String,
    required: true,
    minLength: [3, "First Name Must Contain At Least 3 Characters!"]
  },
  lastName:{
    type: String,
    required: true,
    minLength: [3, "Last Name Must Contain At Least 3 Characters!"]
  },
  email:{
    type: String,
    required: true,
    validate: [validator.isEmail, "Please Provide A Valid Email!"]
  },
  phone:{
    type: String,
    required: true,
    minLength: [10, "Phone Number Must Contain Exact 10 Digits!"],
    maxLength: [10, "Phone Number Must Contain Exact 10 Digits!"],
  },
  nic:{
    type: String,
    required: true,
    minLength: [5, "NIC Must Contain Exact 5 Digits!"],
    maxLength: [5, "NIC Must Contain Exact 5 Digits!"],
  },
  dob:{
    type: Date,
    required: [true, "DOB is required!"]
  },
  gender:{
    type: String,
    required: true,
    enum: ["Male", "Female"],
  },
  password:{
    type: String,
    minLength: [8, "Password Must Contain At Least 8 Characters!"],
    required: true,
    select: false,
  },
  role:{
    type: String,
    required: true,
    enum: ["Admin", "Patient", "Doctor"],
  },
  doctorDepartment:{
    type: String,
  },
  docAvatar:{
    public_id: String,
    url: String,
  },
});

userSchema.pre("save", async function(next) {
  if(!this.isModified("password")) {
    next();
  }
  this.password = await bcrypt.hash(this.password, 10);
});

userSchema.methods.comparePassword = async function(enteredPassword){
    return await bcrypt.compare(enteredPassword, this.password);
};

userSchema.methods.generateJsonWebToken = function(){
    return jwt.sign({id: this._id}, process.env.JWT_SECRET_KEY,{
        expiresIn: process.env.JWT_EXPIRES,
    });
};

export const User = mongoose.model("User", userSchema);
// export default mongoose.model("User", userSchema);
```

5.1 appointmentRouter.js

```
import express from "express";

import { deleteAppointment, getAllAppointments, postAppointment, updateAppointmentStatus } from
"../controller/appointmentController.js";

import {

  isAdminAuthenticated,

  isPatientAuthenticated,

} from "../middlewares/auth.js";


const router = express.Router();


router.post("/post", isPatientAuthenticated, postAppointment);

router.get("/getall", isAdminAuthenticated, getAllAppointments);

router.put("/update/:id", isAdminAuthenticated, updateAppointmentStatus);

router.delete("/delete/:id", isAdminAuthenticated, deleteAppointment);



export default router;
```

5.2 messageRouter.js

```
import express from "express";

import {

  getAllMessages,

  sendMessage

} from "../controller/messageController.js";

import {isAdminAuthenticated} from "../middlewares/auth.js"

const router = express.Router();


router.post("/send", sendMessage);

router.get("/getall", isAdminAuthenticated, getAllMessages)


export default router;
```

5.3 userRouter.js

```
import express from "express";
import {
  addNewAdmin,
  addNewDoctor,
  getAllDoctors,
  getUserDetails,
  login,
  logoutAdmin,
  logoutPatient,
  patientRegister,
} from "../controller/userController.js";
import {
  isAdminAuthenticated,
  isPatientAuthenticated,
} from "../middlewares/auth.js";

const router = express.Router();

router.post("/patient/register", patientRegister);
router.post("/login", login);
router.post("/admin/addnew", isAdminAuthenticated, addNewAdmin);
router.get("/doctors", getAllDoctors);
router.get("/admin/me", isAdminAuthenticated, getUserDetails);
router.get("/patient/me", isPatientAuthenticated, getUserDetails);
router.get("/admin/logout", isAdminAuthenticated, logoutAdmin);
router.get("/patient/logout", isPatientAuthenticated, logoutPatient);
router.post("/doctor/addnew", isAdminAuthenticated, addNewDoctor);


export default router;
```

6. jwtToken.js

```
export const generateToken = (user, message, statusCode, res)=>{
    const token = user.generateJsonWebToken();
    const cookieName = user.role === "Admin" ? "adminToken" : "patientToken";
    res
    .status(statusCode)
    .cookie(cookieName, token, {
        expires: new Date(
            Date.now() + process.env.COOKIE_EXPIRE * 24 * 60 * 60 * 1000
        ),
        httpOnly: true,
    })
    .json({
        success: true,
        message,
        user,
        token,
    });
};
```

7. app.js

```
import express from "express";
import { config } from "dotenv";
import cors from "cors";
import cookieParser from "cookie-parser";
import fileUpload from "express-fileupload";
import {dbConnection} from "./database/dbConnection.js";
import messageRouter from "./router/messageRouter.js";
import { errorMiddleware } from "./middlewares/errorMiddleware.js";
import userRouter from "./router/userRouter.js";
import appointmentRouter from "./router/appointmentRouter.js";

const app = express();
config({ path: "./config/config.env" });

app.use(
    cors({
        origin: [process.env.FRONTEND_URL, process.env.DASHBOARD_URL],
        methods:["GET", "POST", "PUT", "DELETE"],
        credentials: true,
    })
);

app.use(cookieParser());
app.use(express.json());
app.use(express.urlencoded({extended: true}));

app.use(
    fileUpload({
        useTempFiles: true,
        tempFileDir: "/tmp/",
    })
);

app.use("/api/v1/message", messageRouter);
app.use("/api/v1/user", userRouter);
app.use("/api/v1/appointment", appointmentRouter);

dbConnection();


app.use(errorMiddleware);
export default app;
```

C. DASHBOARD

1. src

1.1 components

1.1.1. AddNewAdmin.jsx

```
import React, { useContext, useState } from 'react'
import { Context } from '../main';
import { Navigate, useNavigate } from 'react-router-dom';
import axios from 'axios';
import { toast } from 'react-toastify';

const AddNewAdmin = () => {
const { isAuthenticated} = useContext(Context);

  const [firstName, setFirstName] = useState("");
  const [lastName, setLastName] = useState("");
  const [email, setEmail] = useState("");
  const [phone, setPhone] = useState("");
  const [nic, setNic] = useState("");
  const [dob, setDob] = useState("");
  const [gender, setGender] = useState("");
  const [password, setPassword] = useState("");

const navigateTo = useNavigate();

const handleAddNewAdmin = async (e) => {
  e.preventDefault();
  try {
    const response = await axios
      .post(
        "http://localhost:4000/api/v1/user/admin/addnew",

        { firstName, lastName, email, phone, nic, dob, gender, password, },
        {
          withCredentials: true,
          headers: { "Content-Type": "application/json" },
        }
      );
      toast.success(response.data.message);
      navigateTo("/");
  } catch (error) {
    toast.error(error.response.data.message);
  }
};

if (isAuthenticated) {
  return <Navigate to={"/login"} />;
}

  return (
    <>
      <section className="page">
      <section className="container form-component add-admin-form">
      <img src="/logo.png" alt="logo" className="logo"/>
        <h1 className="form-title">ADD NEW ADMIN</h1>
        <form onSubmit={handleAddNewAdmin}>
          <div>
            <input
              type="text"
              placeholder="First Name"
              value={firstName}
              onChange={(e) => setFirstName(e.target.value)}
            />
            <input
              type="text"
              placeholder="Last Name"
              value={lastName}
              onChange={(e) => setLastName(e.target.value)}
            />
```

```
</div>
<div>
  <input
    type="text"
    placeholder="Email"
    value={email}
    onChange={(e) => setEmail(e.target.value)}
  />
  <input
    type="number"
    placeholder="Mobile Number"
    value={phone}
    onChange={(e) => setPhone(e.target.value)}
  />
</div>
<div>
  <input
    type="number"
    placeholder="NIC"
    value={nic}
    onChange={(e) => setNic(e.target.value)}
  />
  <input
    type={"date"}
    placeholder="Date of Birth"
    value={dob}
    onChange={(e) => setDob(e.target.value)}
  />
</div>
<div>
  <select value={gender} onChange={(e) => setGender(e.target.value)}>
    <option value="">Select Gender</option>
    <option value="Male">Male</option>
    <option value="Female">Female</option>
  </select>
  <input
```

```
              type="password"
              placeholder="Password"
              value={password}
              onChange={(e) => setPassword(e.target.value)}
            />
          </div>
          <div style={{ justifyContent: "center", alignItems: "center" }}>
            <button type="submit">ADD NEW ADMIN</button>
          </div>
        </form>
      </section>
    </section>
    </>
  )
}

export default AddNewAdmin
```

1.1.2. AddNewDoctor

```
import React, { useContext, useState } from 'react'
import { Context } from '../main';
import { Navigate, useNavigate } from 'react-router-dom';
import axios from 'axios';
import { toast } from 'react-toastify';

const AddNewAdmin = () => {
const { isAuthenticated} = useContext(Context);

  const [firstName, setFirstName] = useState("");
  const [lastName, setLastName] = useState("");
  const [email, setEmail] = useState("");
  const [phone, setPhone] = useState("");
  const [nic, setNic] = useState("");
  const [dob, setDob] = useState("");
  const [gender, setGender] = useState("");
  const [password, setPassword] = useState("");

const navigateTo = useNavigate();

const handleAddNewAdmin = async (e) => {
  e.preventDefault();
  try {
    const response = await axios
      .post(
        "http://localhost:4000/api/v1/user/admin/addnew",

        { firstName, lastName, email, phone, nic, dob, gender, password, },
        {
          withCredentials: true,
          headers: { "Content-Type": "application/json" },
        }
      );
      toast.success(response.data.message);
      navigateTo("/");
    } catch (error) {
      toast.error(error.response.data.message);
    }
  };

  if (isAuthenticated) {
    return <Navigate to={"/login"} />;
  }

  return (
    <>
      <section className="page">
      <section className="container form-component add-admin-form">
      <img src="/logo.png" alt="logo" className="logo"/>
        <h1 className="form-title">ADD NEW ADMIN</h1>
        <form onSubmit={handleAddNewAdmin}>
          <div>
            <input
              type="text"
              placeholder="First Name"
              value={firstName}
              onChange={(e) => setFirstName(e.target.value)}
            />
            <input
              type="text"
              placeholder="Last Name"
              value={lastName}
              onChange={(e) => setLastName(e.target.value)}
            />
          </div>
          <div>
            <input
              type="text"
              placeholder="Email"
              value={email}
              onChange={(e) => setEmail(e.target.value)}
            />
            <input
              type="number"
              placeholder="Mobile Number"
              value={phone}
              onChange={(e) => setPhone(e.target.value)}
            />
          </div>
          <div>
            <input
              type="number"
              placeholder="NIC"
              value={nic}
              onChange={(e) => setNic(e.target.value)}
            />
            <input
              type={"date"}
              placeholder="Date of Birth"
              value={dob}
              onChange={(e) => setDob(e.target.value)}
            />
          </div>
          <div>
            <select value={gender} onChange={(e) => setGender(e.target.value)}>
              <option value="">Select Gender</option>
              <option value="Male">Male</option>
              <option value="Female">Female</option>
            </select>
            <input
              type="password"
              placeholder="Password"
              value={password}
              onChange={(e) => setPassword(e.target.value)}
            />
          </div>
```

```
          <div style={{ justifyContent: "center", alignItems: "center" }}>
            <button type="submit">ADD NEW ADMIN</button>
          </div>
        </form>
      </section>
    </section>
    </>
  )
}

export default AddNewAdmin
```

1.1.3. DashBoard.jsx

```
import React, { useContext, useEffect, useState } from "react";
import { Context } from "../main";
import { Navigate } from "react-router-dom";
import axios from "axios";
import { toast } from "react-toastify";
import { GoCheckCircleFill } from "react-icons/go";
import { AiFillCloseCircle } from "react-icons/ai";

const Dashboard = () => {
  const [appointments, setAppointments] = useState([]);

  useEffect(() => {
    const fetchAppointments = async () => {
      try {
        const { data } = await axios.get(
          "http://localhost:4000/api/v1/appointment/getall",
          { withCredentials: true }
        );
      setAppointments(data.appointments);
    } catch (error) {
      setAppointments([]);
    }
  };
  fetchAppointments();
}, []);

const handleUpdateStatus = async (appointmentId, status) => {
  try {
    const { data } = await axios.put(
      `http://localhost:4000/api/v1/appointment/update/${appointmentId}`,
      { status },
      { withCredentials: true }
    );
    setAppointments((prevAppointments) =>
      prevAppointments.map((appointment) =>
        appointment._id === appointmentId
          ? { ...appointment, status }
          : appointment
      )
    );
    toast.success(data.message);
  } catch (error) {
    toast.error(error.response.data.message);
  }
};

const { isAuthenticated, admin } = useContext(Context);
if (isAuthenticated) {
  return <Navigate to={"/login"} />;
}

return (
  <section className="dashboard page">
    <div className="banner">
  <div className="firstBox">
    <img src="/doc.png" alt="docImg" />
    <div className="content">
      <div>
        <p>Hello ,</p>
        <h5>{admin && `${admin.firstName} ${admin.lastName}`}</h5>
      </div>
      <p>
        Lorem ipsum dolor sit, amet consectetur adipisicing elit.
        Facilis, nam molestias. Eaque molestiae ipsam commodi neque.
        Assumenda repellendus necessitatibus itaque.
      </p>
    </div>
  </div>
  <div className="secondBox">
    <p>Total Appointments</p>
    <h3>1500</h3>
  </div>
  <div className="thirdBox">
    <p>Registered Doctors</p>
    <h3>10</h3>
  </div>
</div>
<div className="banner">
  <h5>Appointments</h5>
  <table>
    <thead>
      <tr>
        <th>Patient</th>
        <th>Date</th>
        <th>Doctor</th>
        <th>Department</th>
        <th>Status</th>
        <th>Visited</th>
      </tr>
    </thead>
```

```
<tbody>
  {appointments && appointments.length > 0 ? (
    appointments.map((appointment) => (
      <tr key={appointment._id}>
        <td>{`${appointment.firstName} ${appointment.lastName}`}</td>
        <td>{appointment.appointment_date.substring(0, 16)}</td>
        <td>{`${appointment.doctor.firstName} ${appointment.doctor.lastName}`}</td>
        <td>{appointment.department}</td>
        <td>
          <select
            className={
              appointment.status === "Pending"
                ? "value-pending"
                : appointment.status === "Accepted"
                ? "value-accepted"
                : "value-rejected"
            }
            value={appointment.status}
            onChange={(e) =>
              handleUpdateStatus(appointment._id, e.target.value)
            }
          >
            <option value="Pending" className="value-pending">
              Pending
            </option>
            <option value="Accepted" className="value-accepted">
              Accepted
            </option>
            <option value="Rejected" className="value-rejected">
              Rejected
            </option>
          </select>
        </td>
        <td>
          {appointment.hasVisited === true ? (
            <GoCheckCircleFill className="green" />
```

```
                ) : (
                  <AiFillCloseCircle className="red" />
                )}
              </td>
            </tr>
          ))
        ) : (
          <tr>
            <td colSpan="6">No Appointments Found!</td>
          </tr>
        )}
      </tbody>
    </table>
  </div>
</section>
);
};

export default Dashboard;
```

1.1.4.Doctors.jsx

```
import axios from "axios";
import React, { useContext, useEffect, useState } from "react";
import { toast } from "react-toastify";
import { Context } from "../main";
import { Navigate } from "react-router-dom";

const Doctors = () => {
  const [doctors, setDoctors] = useState([]);
  const { isAuthenticated } = useContext(Context);

  useEffect(() => {
    const fetchDoctors = async () => {
```

```
    try {
      const { data } = await axios.get(
        "http://localhost:4000/api/v1/user/doctors",
        { withCredentials: true }
      );
      setDoctors(data.doctors);
    } catch (error) {
      toast.error(error.response.data.message);
    }
  };
  fetchDoctors();
}, []);

if (isAuthenticated) {
  return <Navigate to={"/login"} />;
}

return (
  <section className="page doctors">
    <h1>DOCTORS</h1>
    <div className="banner">
      {doctors && doctors.length > 0 ? (
        doctors.map((element) => (
          <div className="card" key={element._id}>
            <img
              src={element.docAvatar && element.docAvatar.url}
              alt="doctor avatar"
            />
            <h4>{`${element.firstName} ${element.lastName}`}</h4>
            <div className="details">
              <p>
                Email: <span>{element.email}</span>
              </p>
              <p>
                Phone: <span>{element.phone}</span>
              </p>
```

```
                <p>
                  DOB: <span>{element.dob.substring(0, 10)}</span>
                </p>
                <p>
                  Department: <span>{element.doctorDepartment}</span>
                </p>
                <p>
                  NIC: <span>{element.nic}</span>
                </p>
                <p>
                  Gender: <span>{element.gender}</span>
                </p>
              </div>
            </div>
          ))
        ) : (
          <h1>No Registered Doctors Found!</h1>
        )}
      </div>
    </section>
  );
};

export default Doctors;
```

1.1.5. Login.jsx

```
import React, { useContext, useState } from 'react'
import {Context} from "../main"
import { Navigate, useNavigate } from 'react-router-dom';
import axios from 'axios';
import { toast } from 'react-toastify';
```

```
const Login = () => {
  const { isAuthenticated, setIsAuthenticated } = useContext(Context);

  const [email, setEmail] = useState("");
  const [password, setPassword] = useState("");
  const [confirmPassword, setConfirmPassword] = useState("");

  const navigateTo = useNavigate();

  const handleLogin = async (e) => {
    e.preventDefault();
    try {
      const response= await axios.post(
          "http://localhost:4000/api/v1/user/login",
          { email, password, confirmPassword, role: "Admin" },
          {
            withCredentials: true,
            headers: { "Content-Type": "application/json" },
          }
        );
          toast.success(response.data.message);
          setIsAuthenticated(true);
          navigateTo("/");
    } catch (error) {
      toast.error(error.response.data.message);
    }
  };

  if (isAuthenticated) {
    return <Navigate to={"/"} />;
  }

  return (
    <>
      <div className="container form-component">
        <img src="logo.png" alt="logo" className="logo" />
        <h1 className="form-title">WELCOME TO HEALTHCARE</h1>
        <p>Only Admins Are Allowed To Access These Resources!</p>
        <form onSubmit={handleLogin}>
          <input
            type="text"
            placeholder="Email"
            value={email}
            onChange={(e) => setEmail(e.target.value)}
          />
          <input
            type="password"
            placeholder="Password"
            value={password}
            onChange={(e) => setPassword(e.target.value)}
          />
          <input
            type="password"
            placeholder="Confirm Password"
            value={confirmPassword}
            onChange={(e) => setConfirmPassword(e.target.value)}
          />
          <div style={{ justifyContent: "center", alignItems: "center" }}>
            <button type="submit">Login</button>
          </div>
        </form>
      </div>
    </>
  );
};

export default Login
```

1.1.6. Message.jsx

```
import React, { useContext, useEffect, useState } from 'react';
import { Context } from '../main';
import axios from 'axios';
import { Navigate } from 'react-router-dom';
import { toast } from 'react-toastify';

const Messages = () => {
  const [messages, setMessages]= useState([]);
  const {isAuthenticated} = useContext(Context);

  useEffect(() => {
    const fetchMessages = async () => {
      try {
        const { data } = await axios.get(
          "http://localhost:4000/api/v1/message/getall",
          { withCredentials: true}
        );
        setMessages(data.messages);
      } catch (error) {
        console.log("ERROR OCCURED WHILE FETCHING MESSAGES:",error);
      }
    };
    fetchMessages();
  }, []);

  if (isAuthenticated){
    return <Navigate to={"/login"} />;
  }

  return <section className="page messages">
      <h1>MESSAGES</h1>
      <div className="banner">
        {
          messages && messages.length > 0 ? (messages.map(element=>{
```

```
          return(
            <div className="card" key={element._id}>
              <div className="details">
                <p>
                  First Name: <span>{element.firstName}</span>
                  </p>
                <p>
                  Last Name: <span>{element.lastName}</span>
                  </p>
                <p>
                  Email: <span>{element.email}</span>
                  </p>
                <p>
                  Phone: <span>{element.phone}</span>
                  </p>
                <p>
                  Message: <span>{element.message}</span>
                  </p>
              </div>
            </div>
          )
        })) : (<h1>NO Messages!</h1>)
      }
    </div>

  </section>

};

export default Messages
```

1.1.7. Sidebar.jsx

```
import React, {useContext, useState} from 'react';
import { Context } from "../main";
import { TiHome } from 'react-icons/ti';
import { RiLogoutBoxFill } from 'react-icons/ri';
import { AiFillMessage } from 'react-icons/ai';
import { GiHamburgerMenu } from 'react-icons/gi';
import { FaUserDoctor } from 'react-icons/fa6';
import { MdAddModerator } from 'react-icons/md';
import { IoPersonAddSharp } from 'react-icons/io5';
import { useNavigate } from 'react-router-dom';
import axios from 'axios';
import { toast } from 'react-toastify';

const Sidebar = () => {
  const [show, setShow] = useState(false);

  const {isAuthenticated, setIsAuthenticated} = useContext(Context);

  const navigateTo = useNavigate();

  const gotoHome = ()=>{
    navigateTo("/");
    setShow(!show);
  };
  const gotoDoctorsPage = ()=>{
    navigateTo("/doctors");
    setShow(!show);
  };
  const gotoMessagesPage = ()=>{
    navigateTo("/messages");
    setShow(!show);
  };
  const gotoAddNewDoctor = ()=>{
    navigateTo("/doctor/addnew");
    setShow(!show);
  };
  const gotoAddNewAdmin = ()=>{
    navigateTo("/admin/addnew");
    setShow(!show);
  };

  const handleLogout = async () => {
    await axios
      .get("http://localhost:4000/api/v1/user/admin/logout", {
        withCredentials: true,
      })
      .then((res) => {
        toast.success(res.data.message);
        setIsAuthenticated(false);
      })
      .catch((err) => {
        toast.error(err.response.data.message);
      });
  };

  return (
    <>
      <nav
        style={isAuthenticated ? {display: "none"}: {display: "flex"}}
        className={show ? "show sidebar" : "sidebar"}>

        <div className="links">
          <TiHome onClick={gotoHome}/>
          <FaUserDoctor onClick={gotoDoctorsPage}/>
          <MdAddModerator onClick={gotoAddNewAdmin}/>
          <IoPersonAddSharp onClick={gotoAddNewDoctor}/>
          <AiFillMessage onClick={gotoMessagesPage}/>
          <RiLogoutBoxFill onClick={handleLogout}/>
        </div>
      </nav>
```

```
      <div
        style={!isAuthenticated ? {display: "none"} : {display: "flex"}}
        className="wrapper">
          <GiHamburgerMenu className="hamburger" onClick={() => setShow(!show)}/>
      </div>
    </>
  );
};

export default Sidebar;
```

1.2 App.jsx

```
import React, { useContext, useEffect } from "react";
import { BrowserRouter as Router, Routes, Route } from "react-router-dom";
import Dashboard from "./components/Dashboard";
import Login from "./components/Login";
import AddNewDoctor from "./components/AddNewDoctor";
import AddNewAdmin from "./components/AddNewAdmin";
import Doctors from "./components/Doctors";
import Messages from "./components/Messages";
import Sidebar from "./components/Sidebar";
import { ToastContainer } from "react-toastify";
import "react-toastify/dist/ReactToastify.css";
import { Context } from "./main";
import axios from 'axios';
import "./App.css"

const App = () => {
  const {isAuthenticated, setIsAuthenticated, admin, setAdmin} = useContext(Context);

   useEffect(()=>{
    const fetchUser = async()=>{
      try {
        const response = await axios.get(
          "http://localhost:4000/api/v1/user/admin/me",
          {withCredentials: true}
        );
        setIsAuthenticated(true);
        setAdmin(response.date.user);
      } catch (error) {
        setIsAuthenticated(false);
        setAdmin({});
      }
    };
    fetchUser();
  },[isAuthenticated]);

  return (
    <>
      <Router>
        <Sidebar/>
        <Routes>
          <Route path="/" element={<Dashboard/>}/>
          <Route path="/login" element={<Login/>}/>
          <Route path="/doctor/addnew" element={<AddNewDoctor/>}/>
          <Route path="/admin/addnew" element={<AddNewAdmin/>}/>
          <Route path="/messages" element={<Messages/>}/>
          <Route path="/doctors" element={<Doctors/>}/>
        </Routes>
        <ToastContainer position="top-center"/>
      </Router>
    </>
  )
}

export default App
```

1.3. App.css

```
@import url("https://fonts.googleapis.com/css2?family=Montserrat:ital,wght@0,100..900;1,100..900&display=swap");
* {
  margin: 0;
  padding: 0;
  box-sizing: border-box;
  overflow-x: hidden;
  font-family: "Montserrat", sans-serif;
}
body {
  background: #3939d9f2;
}
.container {
  padding: 0 100px;
}
@media (max-width: 700px) {
  .container {
    padding: 0 20px;
  }
}
.page {
  margin-left: 120px;
  background: #e5e5e5;
  padding: 40px;
  height: 100vh;
  border-top-left-radius: 50px;
  border-bottom-left-radius: 50px;
}
@media (max-width: 1208px) {
  .page {
    margin-left: 0;
    border-radius: 0;
  }
}
@media (max-width: 485px) {
  .page {
    padding: 40px 20px;
  }
}
@media (max-width: 460px) {
  .logo {
    width: 100%;
  }
}
.form-title{
  font-size: 1.75rem;
  color: #111;
  margin-bottom: 30px;
}
.form-component {
  padding-top: 40px;
  padding-bottom: 60px;
  min-height: 100vh;
  background: #e5e5e5;

  display: flex;
  justify-content: center;
  flex-direction: column;
  align-items: center;
}
.form-component h2 {
  color: gray;
  letter-spacing: 4px;
  margin-bottom: 30px;
}
.form-component h4 {
  color: gray;
  font-weight: 700;
  margin-bottom: 20px;
}
.form-component p {
  max-width: 750px;
  color: gray;
  margin-bottom: 20px;
  text-align: center;
}
.form-component form {
  display: flex;
  flex-direction: column;
  gap: 30px;
  width: 550px;
}
.add-admin-form form {
  width: 100%;
}
.form-component p:first-child {
  font-size: 28px;
  font-weight: 700;
  color: #370080a3;
  margin-top: 30px;
}
.form-component form div {
  display: flex;
  gap: 30px;
}
.form-component form input,
.form-component form select,
.form-component form textarea {
  flex: 1;
  font-size: 24px;
  padding: 10px 10px 10px 40px;
  border-radius: 7px;
  border: 1px solid gray;
}
.form-component button {
  padding: 10px 35px;
  color: #fff;
  font-weight: 700;
  width: fit-content;
  border: none;
  border-radius: 8px;
  font-size: 24px;
  margin-bottom: 30px;
  background: linear-gradient(140deg, #9083d5, #271776ca);
}
.form-component .wrapper {
  display: flex;
  gap: 50px;
}
.form-component .wrapper .banner {
  flex: 1;
}
.form-component .wrapper .banner:last-child {
  display: flex;
  justify-content: center;
  align-items: center;
}
.form-component .wrapper .banner:last-child img {
  max-width: 450px;
}
@media (max-width: 888px) {
  .form-component {
    padding-top: 30px;
    padding-bottom: 30px;
  }
  .form-component form div {
    flex-direction: column;
  }
}
@media (max-width: 667px) {
  .form-component form input,
  .form-component form select,
  .form-component form textarea {
    font-size: 20px;
    padding: 10px;
  }
}
@media (max-width: 600px) {
  .form-component form {
    width: 100%;
  }
}
@media (max-width: 485px) {
  .add-admin-form {
    padding: 30px 0;
  }
}

.dashboard {
  display: flex;
  flex-direction: column;
  gap: 20px;
}
.dashboard .banner:first-child {
  height: 35vh;
  display: flex;
  gap: 20px;
}
.dashboard .banner:first-child .firstBox {
  flex: 2;
  display: flex;
  align-items: center;
  border-radius: 20px;
  background: #b5b5ff;
  padding: 20px 20px 0 10px;
}
.dashboard .banner:first-child .firstBox img {
  height: 100%;
  flex: 1;
```

```
}
.dashboard .banner:first-child .firstBox .content {
  flex: 2;
}
.dashboard .banner:first-child .firstBox .content div {
  display: flex;
  align-items: center;
  font-size: 34px;
  margin-bottom: 12px;
}
.dashboard .banner:first-child .firstBox .content div p {
  margin-right: 10px;
  font-size: 34px;
}
.dashboard .banner:first-child .firstBox .content div h5 {
  color: #ff008d;
}
.dashboard .banner:first-child .firstBox .content p {
  font-size: 16px;
}
.dashboard .banner:first-child .secondBox {
  background: #3939d9f2;
  color: #fff;
}
.dashboard .banner:first-child .thirdBox {
  color: #ff008d;
  background: #fff;
}
.dashboard .banner:first-child .secondBox,
.dashboard .banner:first-child .thirdBox {
  flex: 1;
  border-radius: 20px;
  padding: 20px 25px;
  display: flex;
  flex-direction: column;
  justify-content: center;
  gap: 12px;
}
.dashboard .banner:first-child .secondBox p,
.dashboard .banner:first-child .thirdBox p {
  font-size: 24px;
  font-weight: 600;
}
.dashboard .banner:first-child .secondBox h3,
.dashboard .banner:first-child .thirdBox h3 {
  font-size: 34px;
  font-weight: 700;
  letter-spacing: 2px;
}
.dashboard .banner:last-child {
  height: 65vh;
  background: #fff;
  border-radius: 20px;
  padding: 40px;
}
.dashboard .banner:last-child h5 {
  font-size: 24px;
  letter-spacing: 2px;
  margin-bottom: 20px;
  color: #111;
}
.dashboard .banner table {
  width: 100%;
  color: #111;
  font-size: 20px;
}
.dashboard .banner table select {
  font-size: 20px;
  border: none;
  width: 100%;
  font-weight: 600;
}
```

```
.dashboard table td svg{
  display: flex;
  margin: 0 auto;
}
.dashboard table td .green{
  font-size: 20px;
  color: #16a34a;
}
.dashboard table td .red{
  font-size: 20px;
  color: #dc2626;
}
.dashboard .banner table sel
```

1.4. main.jsx

```
import React, { createContext, useState } from 'react';
import ReactDOM from 'react-dom/client';
import App from './App.jsx';

export const Context = createContext({isAuthenticated: false});

const AppWrapper = ()=>{
  const [isAuthenticated, setIsAuthenticated] = useState(false);
  const [admin, setAdmin] = useState(false);

  return(
    <Context.Provider
      value={{isAuthenticated, setIsAuthenticated, admin, setAdmin }}
    >
      <App />
    </Context.Provider>
  );
};

ReactDOM.createRoot(document.getElementById("root")).render(
  <React.StrictMode>
    <AppWrapper />
  </React.StrictMode>
);
```