

Prescripto: Healthcare Appointment and Prescription Management System

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Abstract: *The healthcare industry is steadily moving toward digital transformation, yet many clinics and hospitals still depend on manual appointment booking and paper prescriptions. These traditional methods often lead to scheduling conflicts, long waiting times, misplaced prescriptions, and poor record management. To address these issues, this paper presents PRESCRIPTO, an intelligent web-based healthcare platform designed to simplify appointment scheduling and prescription management.*

The system is developed using the MERN stack, enabling patients to discover doctors, book appointments, and access digital prescriptions through a secure and user-friendly interface. Doctors can efficiently manage schedules, monitor patient appointments, and generate prescriptions online, while administrators can supervise user verification and system reports. The platform also employs JWT-based authentication to ensure privacy and secure data exchange.

The developed solution improves operational efficiency, reduces administrative workload, and enhances patient convenience by creating a connected digital healthcare environment.

Keywords: Healthcare System, MERN Stack, Appointment Scheduling, Digital Prescription, Web Application, JWT Security

I. INTRODUCTION

Healthcare services in many clinics still rely on phone calls, manual registers, and handwritten prescriptions. Such practices are not only time-consuming but also prone to errors, data loss, and inefficiency. Patients often struggle to find the right specialist, face delays in appointment confirmation, and have difficulty maintaining their medical records. With the growth of web technologies, healthcare platforms can now offer better accessibility and real-time services. PRESCRIPTO is designed as a modern solution that digitally connects patients, doctors, and administrators on a single platform. The system focuses on reducing manual effort while improving service quality, record accessibility, and communication.

The proposed platform allows patients to book appointments instantly, view prescription history, and manage profiles, while doctors can issue prescriptions digitally and organize their schedules more effectively. The overall aim is to make healthcare interactions faster, safer, and more reliable. Based on the uploaded project synopsis, the system strongly aligns with real-world clinic workflow requirements.

II. LITERATURE REVIEW

Existing healthcare platforms such as online doctor booking systems have already demonstrated the benefits of digital healthcare services. Most of these solutions focus mainly on doctor discovery and appointment booking. However, many systems either lack prescription management or are too complex for small clinics and independent practitioners.

A review of current systems suggests the need for a lightweight and scalable application that equally prioritizes appointment handling and secure prescription storage. PRESCRIPTO addresses this gap by integrating both services into a single streamlined workflow.



Compared with existing models, the proposed system emphasizes simplicity, faster interaction, centralized records, and role-based dashboards for patients, doctors, and administrators

III. METHODOLOGY

A. System Design

The platform follows a **client-server architecture** using the MERN stack:

- **Frontend:** React.js with Tailwind CSS
- **Backend:** Node.js and Express.js
- **Database:** MongoDB Atlas
- **Authentication:** JWT
- **Cloud Storage:** Cloudinary

B. Functional Modules

1) Patient Module

- User registration and login
- Doctor search by specialty
- Appointment booking and cancellation
- Prescription history access
- Profile updates

2) Doctor Module

- Professional profile management
- Appointment scheduling
- Patient history review
- Digital prescription generation

3) Admin Module

- Doctor verification
- User monitoring
- Dashboard analytics
- System reporting

4) Notification Module

- Booking confirmations
- Appointment reminders
- Prescription updates

IV. TECHNOLOGIES USED

The following technologies were used in implementation:

- React.js
- Node.js
- Express.js
- MongoDB
- Tailwind CSS
- JWT Authentication
- Cloudinary
- Postman
- Vercel deployment



The chosen stack provides fast development, flexibility, scalability, and easier maintenance.

V. HARDWARE AND SOFTWARE REQUIREMENTS

Hardware

- Intel Core i3 / i5 processor
- Minimum 8 GB RAM
- 128 GB SSD storage

Software

- Windows / Linux / macOS
- Node.js 16+
- MongoDB Atlas
- VS Code
- Chrome / Edge browser

VI. RESULTS AND DISCUSSION

The implementation of PRESCRIPTO showed significant improvements in healthcare workflow digitization. The platform successfully supports:

- Quick doctor search
- Real-time appointment scheduling
- Secure login and authentication
- Digital prescription storage
- Centralized patient history

The system minimizes paperwork and improves doctor-patient communication. It also reduces missed appointments through automated reminders.

Feature	Traditional Method	PRESCRIPTO
Booking	Manual	Online Instant
Prescriptions	Paper-based	Digital
Data Security	Moderate	High
Access Time	Limited	Anytime
Notifications	No	Yes

VII. CONCLUSION AND FUTURE SCOPE

This paper presents PRESCRIPTO as a practical and user-focused healthcare management system that simplifies the complete appointment and prescription lifecycle. By integrating booking, record storage, authentication, and notifications into one platform, the system improves healthcare accessibility and efficiency.

The use of the MERN stack makes the solution scalable and suitable for clinics, hospitals, and telemedicine extensions.

Future Scope

- AI-based doctor recommendations
- Online consultation/video calls
- Mobile application support
- Online payment integration
- Smart medicine reminders



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