



Smart OPD: An Online Outpatient Department Management System

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Peer Review Information	Abstract
<p><i>Submission: 18 April 2026</i></p> <p><i>Revision: 09 May 2026</i></p> <p><i>Acceptance: 26 May 2026</i></p> <p>Keywords</p> <p><i>Smart OPD, Healthcare System, Appointment Booking, Spring Boot, MySQL, Web Application</i></p>	<p>Healthcare management systems are essential for improving hospital efficiency and patient experience. This paper presents Smart OPD, an online outpatient department management system designed to simplify appointment booking and patient record management. The system allows patients to register, book appointments, and access doctor information through a web-based interface. It uses Java and Spring Boot for backend processing, MySQL for database management, and Google Authentication for secure login. The frontend is developed using Thymeleaf, HTML, CSS, Bootstrap, and JavaScript. The system reduces waiting time, improves accessibility, and enhances overall healthcare service efficiency.</p>

Introduction

Traditional outpatient department systems often involve long waiting times and manual processes. Patients need to physically visit hospitals for registration and appointment booking, which leads to inefficiency.

Smart OPD is proposed as a web-based solution that allows patients to book appointments online, view doctor availability, and manage records efficiently. The system improves accessibility and reduces workload on hospital staff.

Literature Review

Several healthcare systems have been developed to digitize hospital operations. Earlier systems were manual or semi-automated, leading to inefficiencies.

Modern systems use web technologies and databases for managing patient data. However, many lack secure authentication and user-friendly design. Smart OPD addresses these

limitations using modern frameworks and secure login mechanisms.

Proposed System

The Smart OPD system provides an online platform for managing outpatient services.

User Login → Appointment Booking → Doctor Allocation

→ Data Storage → Confirmation

The system allows users to:

- Login using Google Authentication
- Book appointments with doctors
- View appointment details
- Access services online

System Architecture

The system consists of the following modules:

- 1) User Interface (Frontend)
- 2) Authentication Module (Google OAuth)
- 3) Backend (Spring Boot)
- 4) Database (MySQL)
- 5) Appointment Management

Technology Stack

The Smart OPD system is developed using Java and Spring Boot for backend processing. MySQL is used for database management.

Google Authentication provides secure login functionality. The frontend is built using Thymeleaf, HTML, CSS, Boot-strap, and JavaScript to ensure a responsive and user-friendly interface.

Results

The Smart OPD system successfully manages patient ap-ointments and hospital data through a web-based interface. The system provides secure login, efficient appointment book-ing, and real-time data handling.

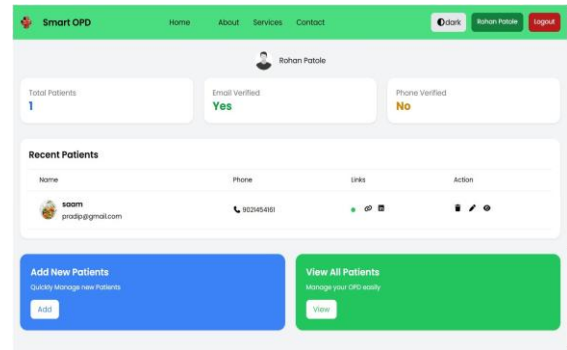


Fig. 4. Appointment Confirmation and Details

Conclusion

Smart OPD simplifies outpatient management by providing an efficient and user-friendly platform. It reduces manual work and improves hospital workflow.

FUTURE SCOPE

- Mobile application development
- Online consultation
- Notification system
- AI-based recommendations

References

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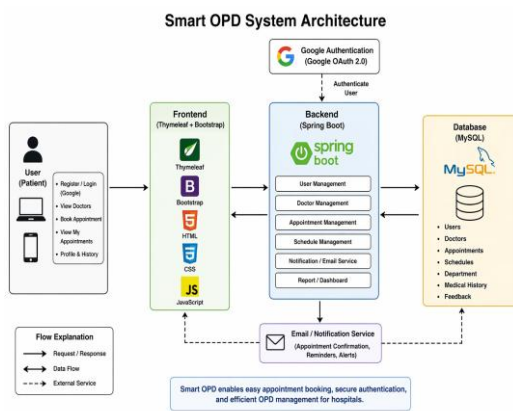


Fig. 1. Smart OPD System Architecture

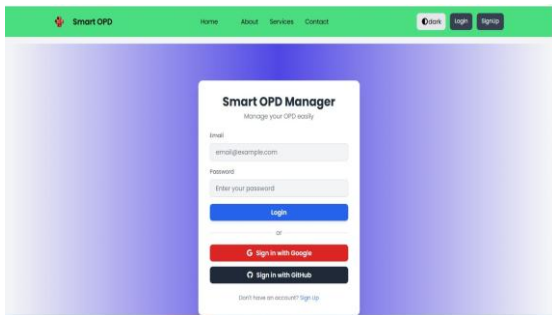


Fig. 2. User Login and Dashboard Interface

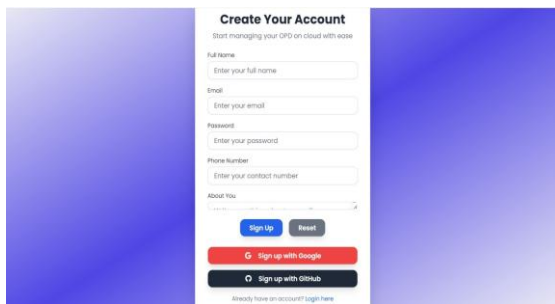


Fig. 3. Appointment Booking Page