

Hospital Management System

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Project Overview: Hospital Management System

- The Hospital Management System is a web application designed to digitize and streamline core operations within medical facilities. The system provides a user-friendly interface for managing:
- **Patients:** Registering, modifying, and deleting patient data.
- **Doctors:** Registering doctor information, specialties, and contact details.
- **Users:** Managing user accounts (administrators and assistants) with specific permissions.
- The project was developed using **Spring Boot** for the backend and **Thymeleaf** for the frontend, with a **MySQL** database. The project strongly focuses on providing a secure and reliable experience for users and data.

Implemented Security Features

- Authentication and Authorization
- Input Validation
- Encryption
- Threat Modeling / Risk Analysis
- Documentation
- Secure Communication via HTTPS/TLS
- Centralized Security Configuration
- Defense in Depth
- Secure Logging and Monitoring
- Error Handling & Information Disclosure Prevention
- Secure Defaults and Initial State

Project Summary

- We have developed a functional Hospital Management System with a strong emphasis on security as an integral part of the development lifecycle. By integrating best security practices such as:
 - Comprehensive use of **Spring Security** to provide robust authentication and authorization mechanisms.
 - Protecting sensitive data through effective encryption and strict input validation.
 - Applying the principle of **Defense in Depth** to create multiple layers of protection against threats.
 - Accurate monitoring and logging of security events to detect and respond to suspicious activities.
 - Secure session management and configuration of secure HTTP headers to enhance browser security.
- This project aims to provide a model for developing secure and reliable web applications, capable of efficiently and effectively protecting user information and sensitive data. This work represents a strong foundation for a scalable system resilient to common security threats.