

## ONLINE HEALTH CARE MANAGEMENT SYSTEM

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The Online Health Care Management System is a fully functional, web-based application designed to streamline healthcare services, including appointment booking, disease prediction, blood donation management, and AI-powered patient interaction. This system is built using Flask(python), SQLite, HTML, CSS, and javascript ,ensuring a seamless and responsive user experience without relying on third-party APIs. The system incorporates role-based authentication to differentiate between patients, doctors, and administrators incorporating ensuring secure access to medical records and sensitive data. Machine learning models are integrated to predict diseases based on patient symptoms, optimize appointment scheduling by forecasting peak hours, and detect fraudulent activities through anomaly detection. A custom AI chatbot, developed using NLP techniques, assists users by answering medical inquiries and guiding them through the system. Furthermore, the platform includes a blood donation management system, where potential donors are matched with compatible recipients based on medical history and blood type. Data security measures, such as AES-256 encryption and JWT-based authentication, ensure the protection of user information. The system is designed to be scalable, efficient, and adaptable for real-world healthcare applications, providing a self-contained, API-free digital solution for modern healthcare management.