Final Project Submission Report

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Internship Program: UCT Full Stack Internship
Project Title: Hospital Management Web Application (Full Stack MERN)

Objective

Design and deploy a **secure, role-based Hospital Management Web Application** using the MERN stack, enabling seamless interactions among patients, doctors, and administrators, with secure authentication, real-time data updates, and an intuitive interface.

Key Features

Authentication & Authorization

- Secure JWT-based login and registration for Admin and Patients.
- Passwords securely hashed using bcrypt.
- Token-based access for protected routes.

Role-Based Access

- **Admin Panel:** Manage users, appointments, and reply to messages.
- **Patient Panel:** Book, view, and cancel appointments; send queries to Admin.
- Real-time messaging between Admin and users.

Operations

- Patient and staff record management with search and edit options.
- Appointment scheduling and history tracking.
- RESTful APIs with validated, secure endpoints and meaningful feedback.

Technology Stack

- **Frontend:** React.js, Tailwind CSS
- **Backend:** Node.js, Express.js
- **Database:** MongoDB Atlas
- **Authentication:** JWT, bcrypt
- **Hosting:** Render
- **API Testing:** Postman
- **Version Control:** Git, GitHub

Deployment

- **Live Application:** https://for-upload.onrender.com
- **GitHub Repository:** https://github.com/DIPANSHU66/upskillCampus

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Testing

- Verified all API routes and role-based access using Postman.
- Tested UI responsiveness and integration across devices.
- Validated secure backend and frontend integration.

Learning Outcomes

✅Developed and deployed a professional-grade MERN web app.
✅Gained expertise in JWT authentication and secure user management.
✅Implemented scalable REST APIs integrated with MongoDB Atlas.
✅Learned live deployment practices with Render and GitHub.

Submitted by: Dipanshu Bansal
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