

Hospital Management System (HMS) - Project Guide

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Overview

The Hospital Management System (HMS) is a comprehensive software designed to digitize and streamline healthcare services. It includes modules for patient management, appointments, billing, emergency handling, inventory management, and security measures to ensure safe data handling.

Core Files

- HMS.py → Main application code.
- HMST.text → Database creation and tables setup.
- HDT.py → Clone of HMS.py used for debugging, testing, and adding new features.

Steps to Build & Run the HMS Project

1 System Requirements

- Python 3.x installed
- MySQL Server installed and running
- Required Python Libraries:

```
pip install streamlit mysql-connector-python pandas plotly fpdf python-dotenv
```

2 Database Setup (Run HMST.text)

1. Open MySQL Workbench or Command Line.

2. Execute the script in HMST.text to create the database and tables.

Running the HMS Application

1. Open a terminal and navigate to the project directory.

2. Run the command:

```
streamlit run HMS.py
```

3. The system will launch in a web browser.

Debugging & Testing

- Use HDT.py for testing new features before deploying in HMS.py.

Features of HMS

- ☒ Role-Based Access Control (Admin, Doctor, Nurse, Patient)
- ☒ Secure User Authentication (SHA-256 Password Hashing)
- ☒ Real-Time Appointment & Patient Management
- ☒ Billing & Invoice Generation
- ☒ Emergency ICU & Ambulance Handling
- ☒ Interactive Dashboard & Data Analytics

Security Measures Implemented

- ✓ Password Encryption using SHA-256 hashing
- ✓ Role-Based Access Control (RBAC) for restricted data access
- ✓ Secure MySQL Transactions to prevent SQL Injection
- ✓ User Activity Logging for tracking actions

Common Issues & Solutions

Issue	Possible Cause	Solution
Database Connection Error	Incorrect credentials	Check <code>.env</code> file for DB details
Module Not Found	Missing dependencies	Run <code>pip install -r requirements.txt</code>
App Not Opening	Port already in use	Change port using <code>streamlit run HMS.py --server.port=8502</code>

Future Enhancements

- ✓ AI-Powered Health Prediction
- ✓ Blockchain for Patient Data Security
- ✓ Mobile App for Remote Access
- ✓ Machine Learning for Diagnostics Support

☒ Conclusion

The Hospital Management System by Yuvraj Kumar Gond is a modern healthcare solution that automates hospital workflows, ensures data security, and improves patient management efficiency. It is built using Streamlit, MySQL, and Python, offering a secure and scalable approach to healthcare management.

For the latest updates and new features, visit the GitHub repository:
<https://github.com/YuvrajKG>