**Project Overview: Hospital Management System (HMS)**

**1. Project Structure**

* **Database Name**: hospita
* **Frontend Framework**: Streamlit
* **Database Management System**: PostgreSQL

**2. ER Diagram and Features**

* **Users**: Three types of users (patients, doctors, and managers) can log in.
* **Roles**: User roles include patients, doctors, and managers, each with specific permissions.
* **Tables Created**:
  + **Users**: Stores user details including username, password, email, and role.
  + **Roles**: Defines user roles and their permissions.
  + **Doctors**: Contains information about doctors, including their specialization.
  + **Appointments**: Records appointment details with references to users and doctors.
  + **Availability**: Tracks the availability of doctors for appointments.
  + **Tablets**: Lists medication tablets available with quantity and price.
  + **Prescriptions**: Contains prescription details linking patients, doctors, and tablets.
  + **Bills**: Records billing information for patients, including total cost and payment status.

**3. Database Tables and Relationships**

* **Foreign Key Relationships**:
  + Users.role\_id references Roles.role\_id.
  + Appointments.patient\_id references Users.user\_id.
  + Appointments.doctor\_id references Doctors.doctor\_id.
  + Availability.doctor\_id references Doctors.doctor\_id.
  + Prescriptions.patient\_id references Users.user\_id.
  + Prescriptions.doctor\_id references Doctors.doctor\_id.
  + Prescriptions.tablet\_id references Tablets.tablet\_id.
  + Bills.patient\_id references Users.user\_id.
  + Bills.appointment\_id references Appointments.appointment\_id.

**4. Functionality**

* **Login**: Users can log in as patients, doctors, or managers.
* **Appointment Booking**: Patients can book appointments, with checks to ensure no conflicts with doctors' schedules.
* **Prescription Management**: Doctors can prescribe medications, linked to the patient and the specific tablets.
* **Billing**: Patients receive bills that indicate the total cost and payment status.
* **Email Notifications**: Email confirmations and cancellations are integrated for appointments.

**5. Next Steps**

* Develop the Streamlit frontend to create an interactive user interface for the HMS.
* Implement features for appointment booking, prescription management, and billing processes.
* Ensure user roles and permissions are properly enforced throughout the system.