1. How to Install and Run the Student Clinic EMR Application

1.1 Prerequisites

Make sure the following are installed on your machine:

- **MySQL 8.0+**
- **.NET 7 SDK** (for the StudentClinicAPI)
- **Node.js 18+** (or at least 16+)
- **Angular CLI 17+** (install via npm install -g @angular/cli)
- A SQL client (e.g., **MySQL Workbench**)
- An editor/IDE (e.g., Visual Studio / VS Code) – optional but helpful

1.2 Source Code Structure

After unzipping the project ZIP:

- **StudentClinicAPI/** – ASP.NET Core 7 Web API
- **EMRApp/** – Angular 17 front-end
- **/sql/ -** Database creation run SQL query https://github.com/prakasamv-uncc/studentClinicAPI/blob/main/sql/student_clinic_emr.sql

1.2.1 Step 1 – Set Up the Database

1. **Start MySQL Server** (e.g., from services or XAMPP).
2. Open **MySQL Workbench** (or your SQL client).

3. Create the database (if not created in the script), for example:

4. CREATE DATABASE student_clinic_emr CHARACTER SET utf8mb4 COLLATE utf8mb4_unicode_ci;

5. Run the provided SQL scripts in this order (folder names may vary slightly):
    - 01_create_tables.sql (or similar) – creates all tables, views, indexes.
    - 02_seed_data.sql – inserts sample roles, users, departments, patients, etc.

6. Verify that key tables contain data, e.g.:

7. USE student_clinic_emr;

8. SELECT * FROM patient LIMIT 5;

9. SELECT * FROM role LIMIT 5;

10. SELECT * FROM staff_user LIMIT 5;

Note: The seed script usually creates **demo users** (doctor, nurse, pharmacist, patient, etc.). Use those email/password pairs when you log into the UI.

1.2.2 Step 2 – Configure and Run the API (StudentClinicAPI)

1. Go to the API project folder:

2. cd StudentClinicAPI

3. Open appsettings.json and check the **connection string**:

4. "ConnectionStrings": {
   "DefaultConnection":
   "Server=127.0.0.1;Port=3306;Database=student_clinic_emr;User=root;Password=root;AllowUserVariables=True;UseAffectedRows=False;"
   }
    - Make sure:

- Server and Port match your MySQL server.
    - Database matches the DB you created.
    - User and Password are your MySQL credentials.

5. Restore NuGet packages and run the API:
6. dotnet restore
7. dotnet run
8. The API will start at:
    - **Base URL:** http://localhost:5000
    - **Swagger UI:** http://localhost:5000/swagger
9. Open http://localhost:5000/swagger in a browser to confirm:
    - You should see all endpoints (Auth, Patients, Visits, Prescriptions, Pharmacy, Users, etc.).
    - Try a simple GET, e.g., list patients or roles, to verify the DB connection.

1.2.3 Step 3 – Configure and Run the Angular App (EMRApp)

1. In a new terminal, go to the Angular app folder:
2. cd EMRApp
3. Install NPM dependencies:
4. npm install
5. Check the API URL in src/environments/environment.ts:
6. export const environment = {

   production: false,

   apiUrl: 'http://localhost:5000/api'

   };

1.2.4 Step 4 – Install the PlantUML extension in VS Code

1. Open **Visual Studio Code**.
2. Click the **Extensions** icon on the left sidebar (or press Ctrl+Shift+X).
3. In the search box, type: **PlantUML**
4. Install the extension named **"PlantUML"** (usually by *jebbs*).
5. Reload VS Code if it asks.

1.2.5 Step 5 Preview the diagram

Open file in VS Code : https://github.com/prakasamv-uncc/studentClinicAPI/blob/main/Diagram's/Student_Clinic_EMR_Complete.plantuml

- Option A: **Right-click** in the editor → click **"Preview Current Diagram"**
- Option B: Press **Ctrl+Shift+P** → type **"PlantUML: Preview Current Diagram"** → Enter

A preview pane will open showing the rendered UML.

This should match the API URL you saw earlier (http://localhost:5000).

7. Start the Angular development server:
8. npm start
9. # or
10. ng serve

11. Open the front-end in a browser:
    - **URL:** http://localhost:4200
12. Log in with one of the **seed users** created by your SQL script (e.g., doctor, pharmacist, patient).
    - If you're not sure of the credentials, open your seed SQL and look at the user_auth / staff_user inserts.

1.2.6 Verifying the System End-to-End

Once both the API and the front-end are running:

1. **Login** as a staff user (e.g., Doctor / Nurse):
    - URL: http://localhost:4200
    - Use demo email/password from your seed data.
2. **Test core flows**:
    - Create a **patient** in the Patients screen.
    - Create a **visit** and record chief complaint.
    - Add a **prescription** for that visit.
    - Switch to the **Pharmacy** screen to see the prescription queue and mark it as **Dispensed**.
3. **Login as a Patient**:
    - Use a portal user created in the seed script.
    - Navigate to **"My Visits" / "My Prescriptions"** to confirm row-level security is working.
4. Optionally, in MySQL:
    - Check audit_log to see entries for INSERT/UPDATE/DELETE operations.

1.2.7 Common Issues & Quick Fixes

- **API cannot connect to the database**
    - Check appsettings.json connection string.
    - Confirm MySQL is running and DB name/credentials are correct.
- **Angular app gets CORS errors**
    - Ensure the API is running *before* starting Angular.

    - CORS is already enabled in the API; if you changed ports/URLs, update the config.
- **Login fails**
    - Double-check the seed SQL for the correct email/password.
    - Ensure passwords weren't changed manually in the DB (they're stored hashed).