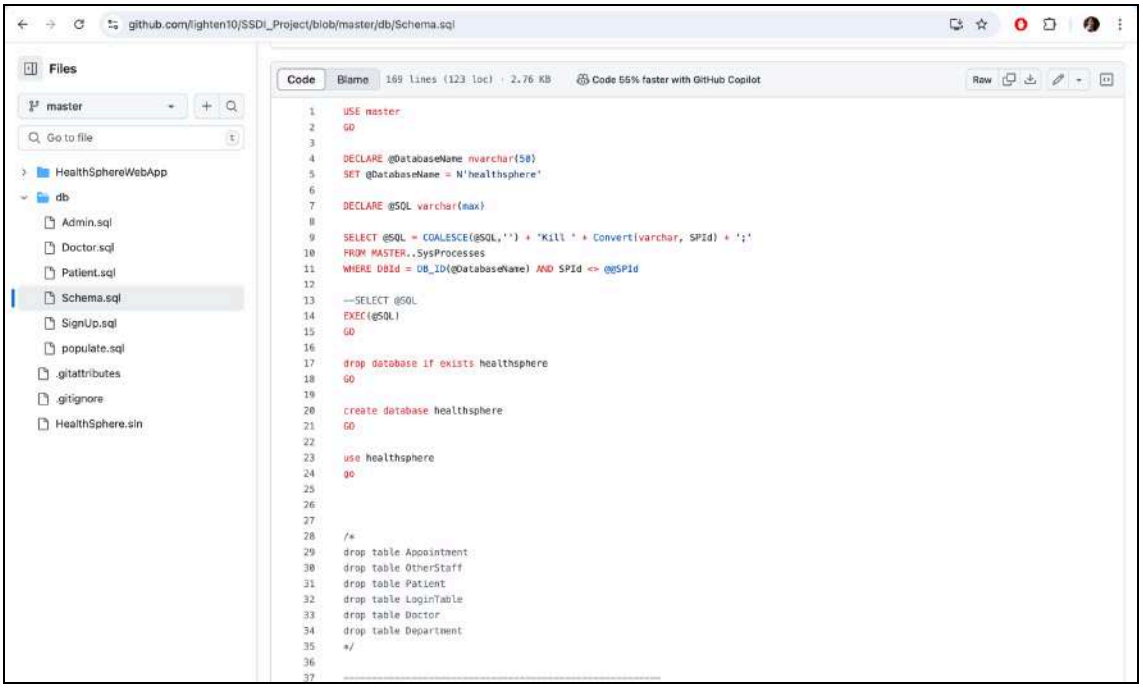
Health Sphere User Manual

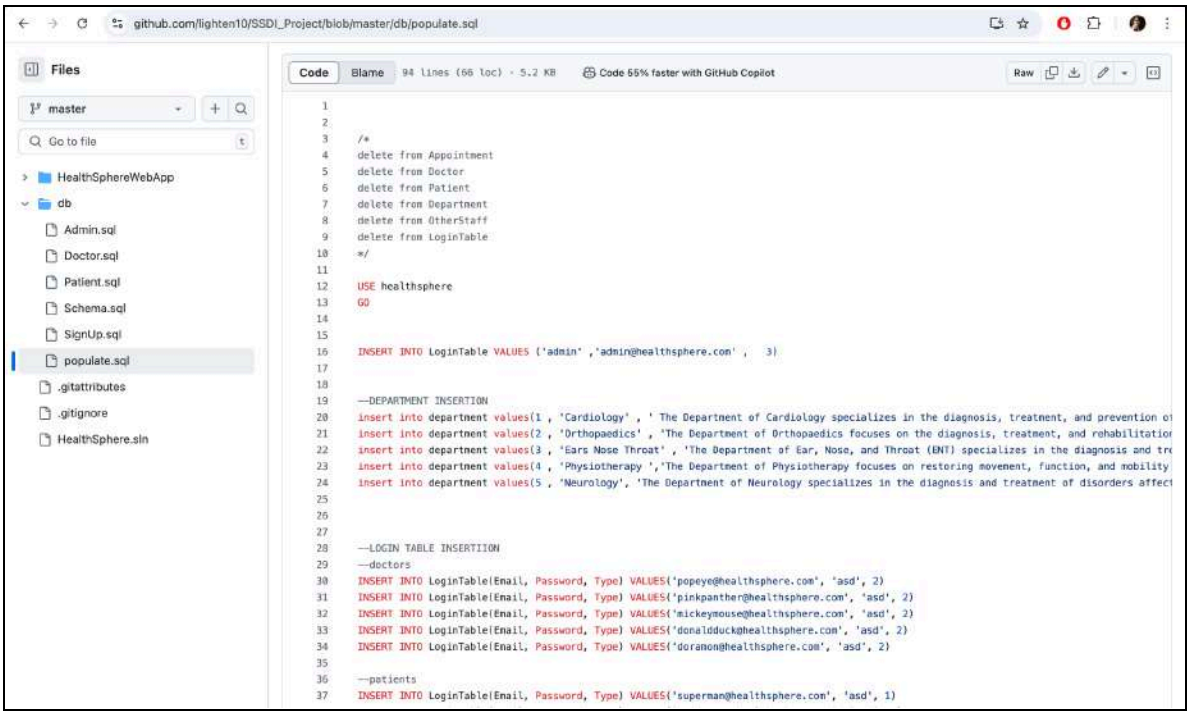
Installation/Setup Instructions:

1. **Install the following prerequisites:**
    - Microsoft Visual Studio - Community edition
    - Microsoft SQL Server Express
    - Microsoft SQL Server Management Studio (SSMS)
2. **Connect to SQL Server:**
    - Open **SQL Server Management Studio**
    - In the *"Connect to Database Engine"* window, enter the following:
        - **Server Name:** .\SQL EXPRESS
        - **Authentication:** Windows Authentication
3. **Create the Database and Tables:**
    - Open the Schema.sql file and execute it. This will create the necessary database and table structures.



- Then, execute the following SQL files in order:
  - Admin.sql
  - Doctor.sql
  - Patient.sql
  - Signup.sql

4. **Populate the Database:**
   - Run the populate.sql file to add sample data to the database.



- This file also contains sample login credentials for doctors, patients, and an admin, which you can use to test the system's functionality.

5. **Run the Project:**
    - Open the Visual Studio solution file HealthSphere.sln.
    - Set SignUp.aspx as the startup page.
    - Click the **IIS Express** run button to launch the application.

Technical Specification of the Health Sphere project

🖥️ System Requirements

- Operating System: Windows 10 or later (64-bit)
- Processor: Intel Core i5 or equivalent (minimum)

💻 Software Requirements

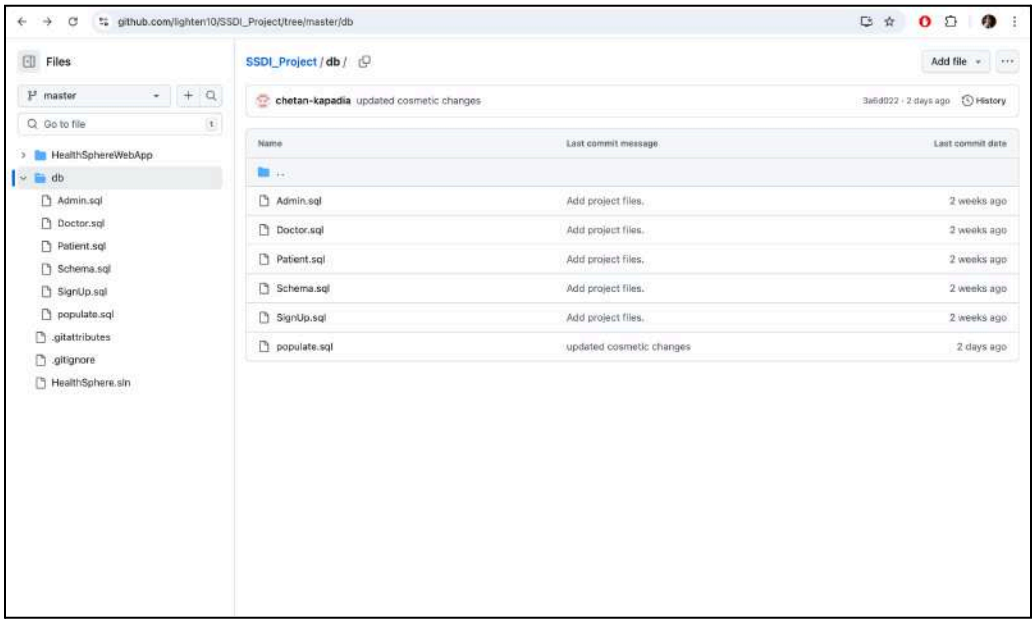
- Microsoft Visual Studio 2022 (or later)
    - Workload: ASP.NET and web development
- .NET Framework 4.7.2, Bootstrap(CSS, JS)
- Microsoft SQL Server Express 2019 (or later)
- SQL Server Management Studio (SSMS)

🔌 Dependencies

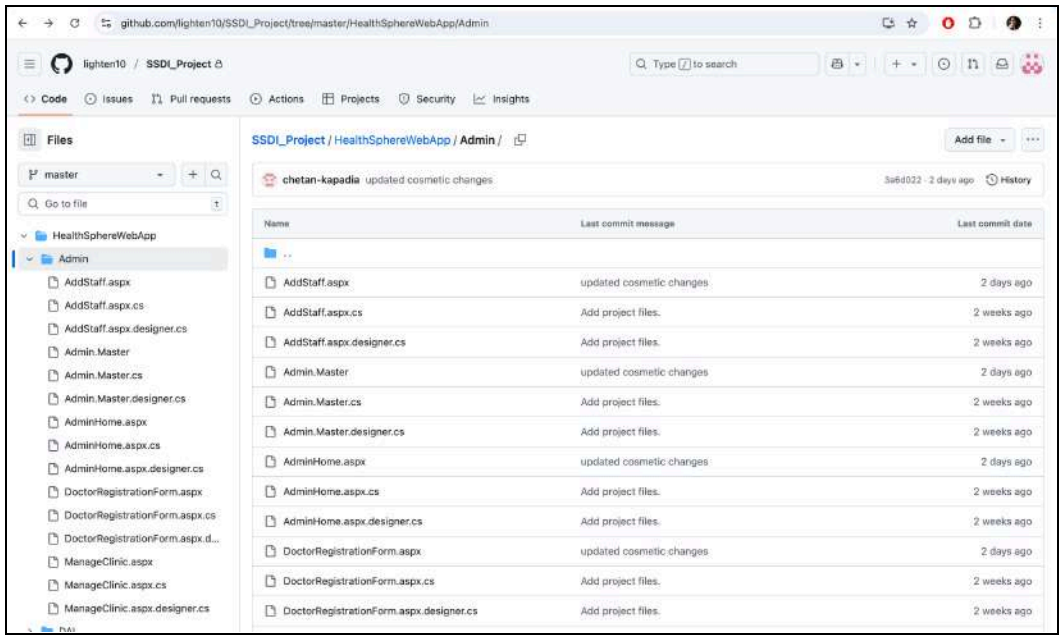
- IIS Express (automatically included with Visual Studio)
- ASP.NET Web Forms
- SQL Server LocalDB or SQL Express instance
- Browsers: Google Chrome, Microsoft Edge (latest versions recommended)

🗃️ Project Structure

- Database Files - Admin.sql, Doctor.sql, Patient.sql, Schema.sql, SignUp.sql, Populate.sql



- Health Sphere Web App - 3 distinct roles (Admin’s role, Doctor’s role, and Patient’s role)


github.com/lighten10/SSDI_Project/tree/master/HealthSphereWebApp/Admin
lighten10 / SSDI_Project
Code
Issues
Pull requests
Actions
Projects
Security
Insights
Files
master
Go to file
HealthSphereWebApp
Admin
AddStaff.aspx
AddStaff.aspx.cs
AddStaff.aspx.designer.cs
Admin.Master
Admin.Master.cs
Admin.Master.designer.cs
AdminHome.aspx
AdminHome.aspx.cs
AdminHome.aspx.designer.cs
DoctorRegistrationForm.aspx
DoctorRegistrationForm.aspx.cs
DoctorRegistrationForm.aspx.d...
ManageClinic.aspx
ManageClinic.aspx.cs
ManageClinic.aspx.designer.cs
SSDI_Project / HealthSphereWebApp / Admin /
Add file
chetan-kapadia updated cosmetic changes
3a6d022 · 2 days ago
History
Name
Last commit message
Last commit date
AddStaff.aspx updated cosmetic changes 2 days ago
AddStaff.aspx.cs Add project files. 2 weeks ago
AddStaff.aspx.designer.cs Add project files. 2 weeks ago
Admin.Master updated cosmetic changes 2 days ago
Admin.Master.cs Add project files. 2 weeks ago
Admin.Master.designer.cs Add project files. 2 weeks ago
AdminHome.aspx updated cosmetic changes 2 days ago
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AdminHome.aspx.designer.cs Add project files. 2 weeks ago
DoctorRegistrationForm.aspx updated cosmetic changes 2 days ago
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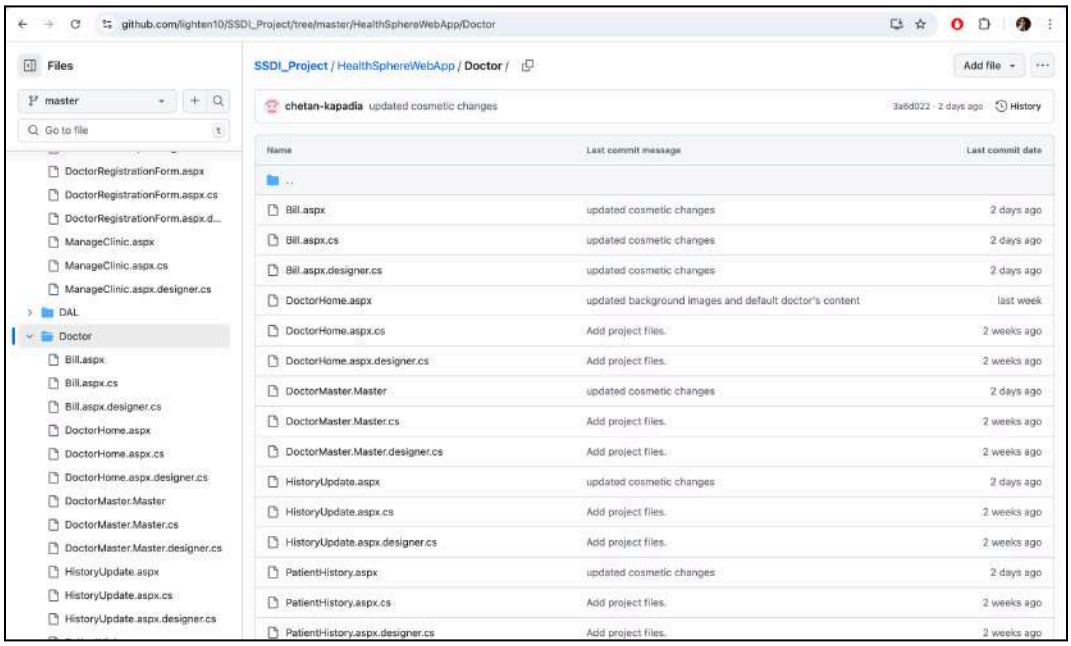
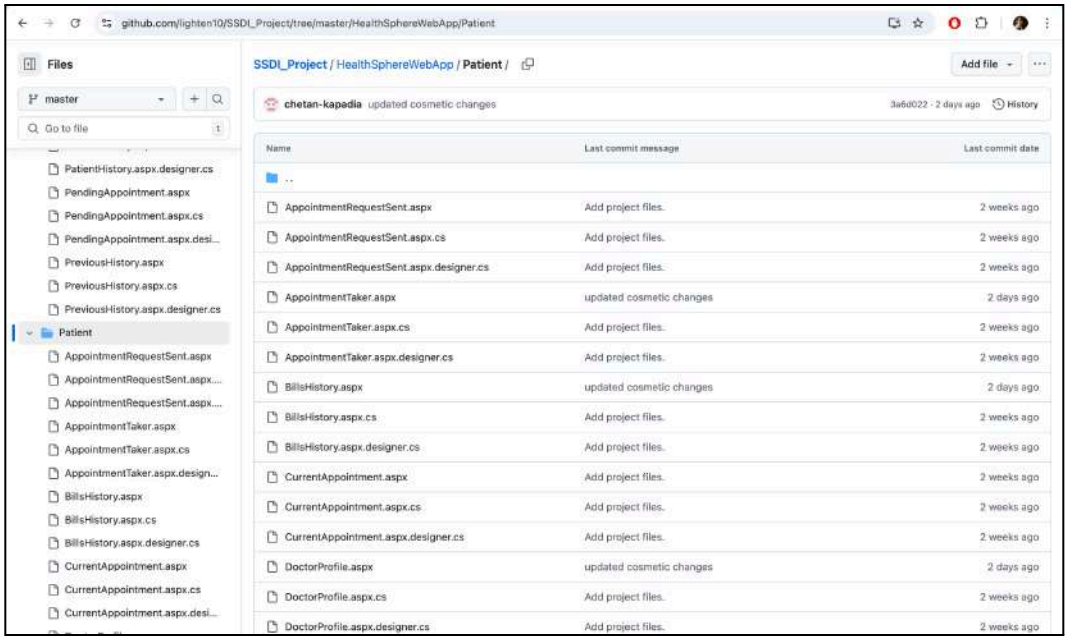
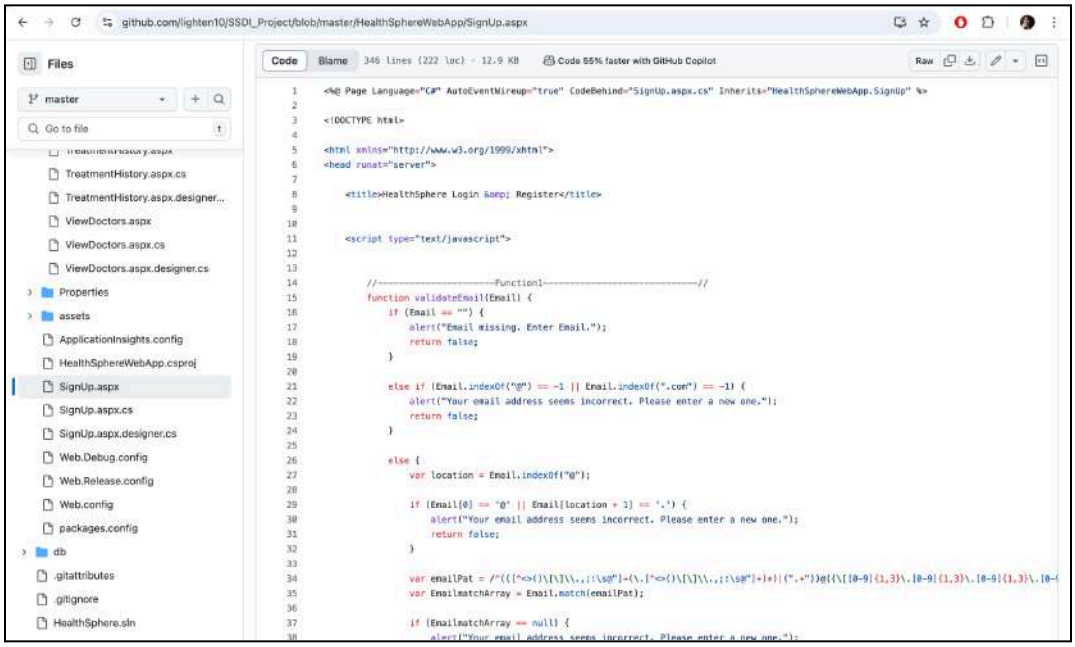
DoctorRegistrationForm.aspx.designer.cs Add project files. 2 weeks ago


github.com/lighten10/SSDI_Project/tree/master/HealthSphereWebApp/Doctor
Files
master
Go to file
DoctorRegistrationForm.aspx
DoctorRegistrationForm.aspx.cs
DoctorRegistrationForm.aspx.d...
ManageClinic.aspx
ManageClinic.aspx.cs
ManageClinic.aspx.designer.cs
DAL
Doctor
Bill.aspx
Bill.aspx.cs
Bill.aspx.designer.cs
DoctorHome.aspx
DoctorHome.aspx.cs
DoctorHome.aspx.designer.cs
DoctorMaster.Master
DoctorMaster.Master.cs
DoctorMaster.Master.designer.cs
HistoryUpdate.aspx
HistoryUpdate.aspx.cs
HistoryUpdate.aspx.designer.cs
SSDI_Project / HealthSphereWebApp / Doctor /
Add file
chetan-kapadia updated cosmetic changes
3a6d022 · 2 days ago
History
Name
Last commit message
Last commit date
Bill.aspx updated cosmetic changes 2 days ago
Bill.aspx.cs updated cosmetic changes 2 days ago
Bill.aspx.designer.cs updated cosmetic changes 2 days ago
DoctorHome.aspx updated background images and default doctor's content last week
DoctorHome.aspx.cs Add project files. 2 weeks ago
DoctorHome.aspx.designer.cs Add project files. 2 weeks ago
DoctorMaster.Master updated cosmetic changes 2 days ago
DoctorMaster.Master.cs Add project files. 2 weeks ago
DoctorMaster.Master.designer.cs Add project files. 2 weeks ago
HistoryUpdate.aspx updated cosmetic changes 2 days ago
HistoryUpdate.aspx.cs Add project files. 2 weeks ago
HistoryUpdate.aspx.designer.cs Add project files. 2 weeks ago
PatientHistory.aspx updated cosmetic changes 2 days ago
PatientHistory.aspx.cs Add project files. 2 weeks ago
PatientHistory.aspx.designer.cs Add project files. 2 weeks ago



- The application starts from SignUp.aspx.



🔑 Sample Login Credentials (Test Users)

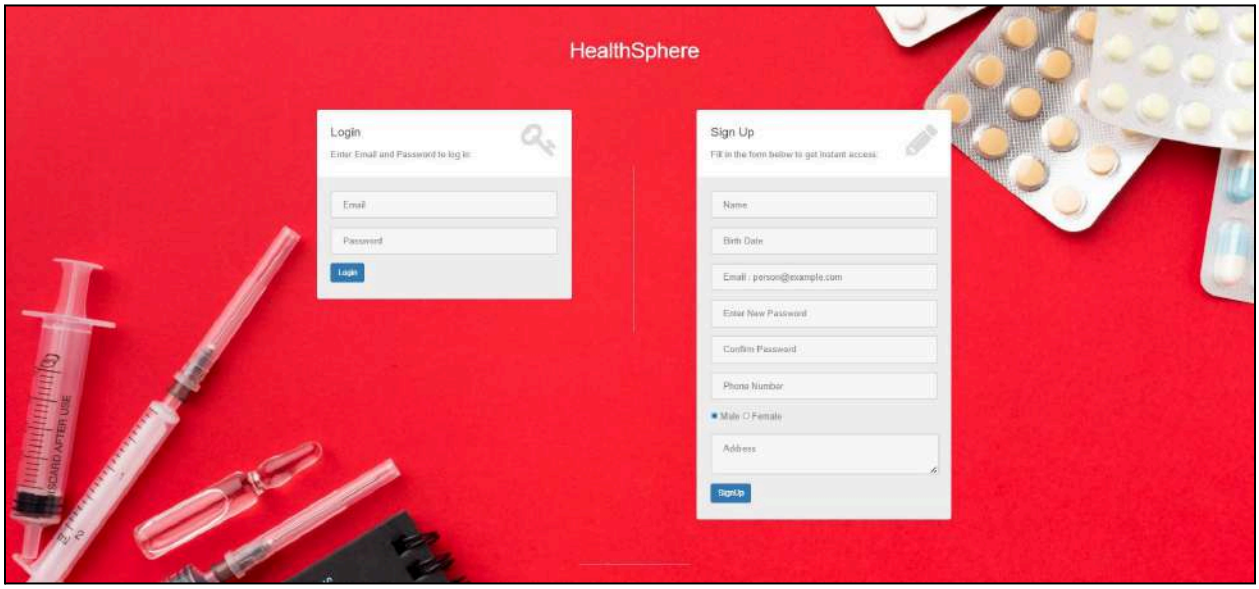
These are located in populate.sql, including credentials for:

- **Admin**
- **Doctors**
- **Patients**

These can be used to test role-based functionalities such as login, dashboard access, and other features.

🚀 Running the Application

- Open HealthSphereWebApp in Visual Studio.
- Set **SignUp.aspx** as the startup page.



- Click the **IIS Express** (Run) button.
- The application will launch in your default browser.

Main Features of the System

Health Sphere is an integrated digital healthcare management system developed to improve communication and coordination among patients, healthcare providers, and administrative personnel. The platform offers a secure and user-friendly interface that supports efficient user management, seamless appointment scheduling, and comprehensive access to medical history and billing information. By centralizing these essential healthcare functions, Health Sphere enhances the overall quality of care, simplifies administrative tasks, and contributes to more effective and streamlined healthcare delivery.

The **patient portal** offers a range of features designed to enhance user experience and streamline medical interactions. Upon logging in, patients can access the *Patient Home*, which displays their personal profile. In the *Current Appointment* section, patients can check for any pending or approved appointments with doctors. The *Bills History* tab provides a record of bills related to completed appointments, while the *Treatment History* section allows patients to view detailed information about past treatments. To schedule a new visit, patients can navigate to the *Take Appointment* section, where they can browse all available departments, select a specific department to view the associated doctors, and then choose a doctor to view their profile. From there, they can click the "Take Appointment" button to see the doctor's available time slots, select a preferred slot, and send a request to the doctor, who can then approve or reject the appointment. Notifications regarding the status of appointment requests are displayed under the *Notifications* tab. After a consultation is completed, patients are encouraged to provide feedback by rating their experience from 1 to 5 in the *Feedback* section. Importantly, the system allows patients to request only one appointment at a time; additional appointments cannot be scheduled until the current one has been completed.

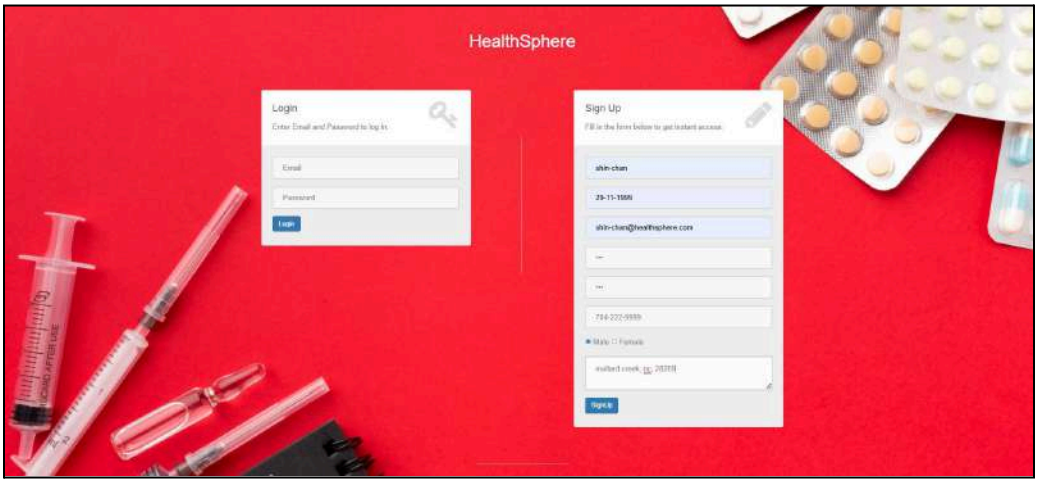
The **doctor's portal** is designed to facilitate efficient management of appointments and patient records. Through the *Doctor Profile* section, doctors can view their personal and professional information. In the *Pending Appointments* tab, they can access a list of all appointment requests awaiting their approval, filtered by their doctor ID. The *Today's Appointments* section displays all appointments scheduled for the current day, allowing the doctor to either accept or reject each appointment as needed. After a consultation, the *History Update* feature enables the doctor to record key details such as prescriptions, diagnosed diseases, and the patient's progress. Following this, the doctor can use the *Generate Bill* section to create and issue the bill for the completed appointment. Additionally, the *Patient History* tab provides access to the full treatment history of all patients the doctor has previously treated, ensuring continuity of care and easy reference.

The **admin portal** provides a comprehensive interface for managing HealthSphere operations and overseeing all registered users. On the *Admin Home* page, the administrator can view key health center statistics, including the number of weekly appointments, overall income of the health center, the total number of registered patients and doctors, as well as a list of all medical departments. The *View Doctors* section displays a list of all currently registered doctors along with their associated departments and other relevant details; clicking on a doctor's name reveals their full profile. Similarly, the *View Patients* tab allows the admin to browse through the list of registered patients, including their phone numbers and IDs, with full profile access upon selection. The *View Other Staff* section lists all non-medical personnel along with their respective designations. To streamline navigation, a *Search Box* is available, enabling the admin

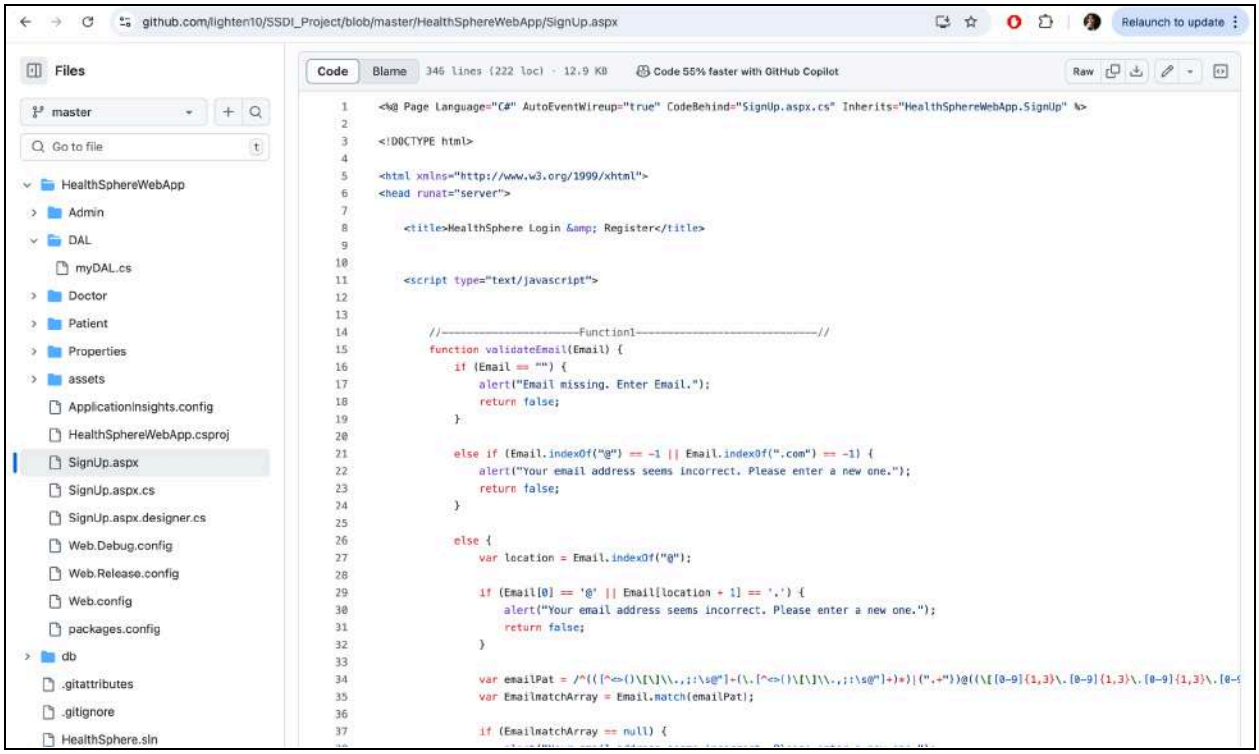
to quickly locate any employee by name. Additionally, the *Add/Remove* feature allows the admin to manage Health Center personnel by adding or removing doctors, patients, or staff members as needed.

Walkthrough for the main scenarios

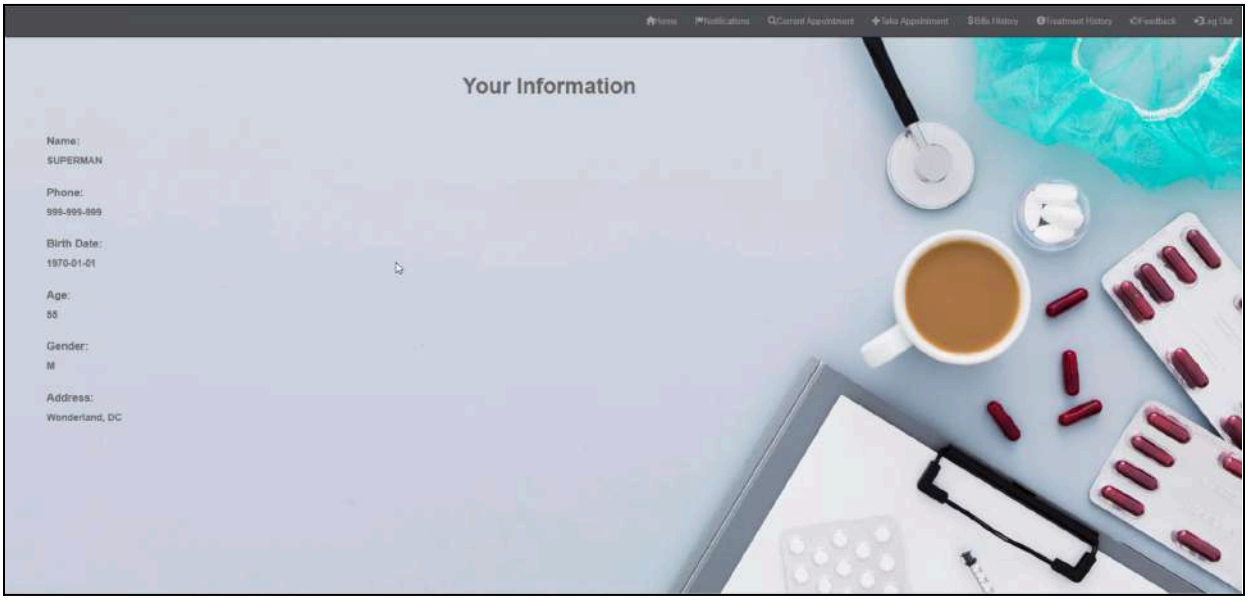
- To access Health Sphere, the first page is the **HealthSphere signUp page** as shown below. Doctors, Patients or Administrative personnel can use this page accordingly for either sign up or login to HealthSphere.



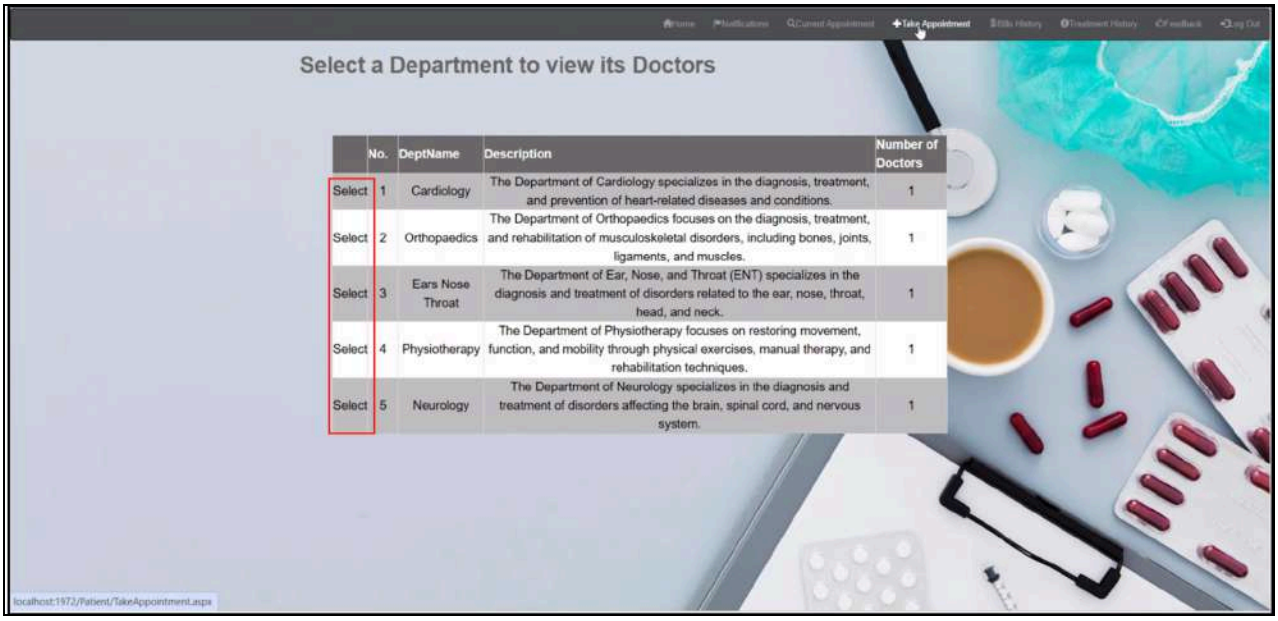
Below is the written code for it:



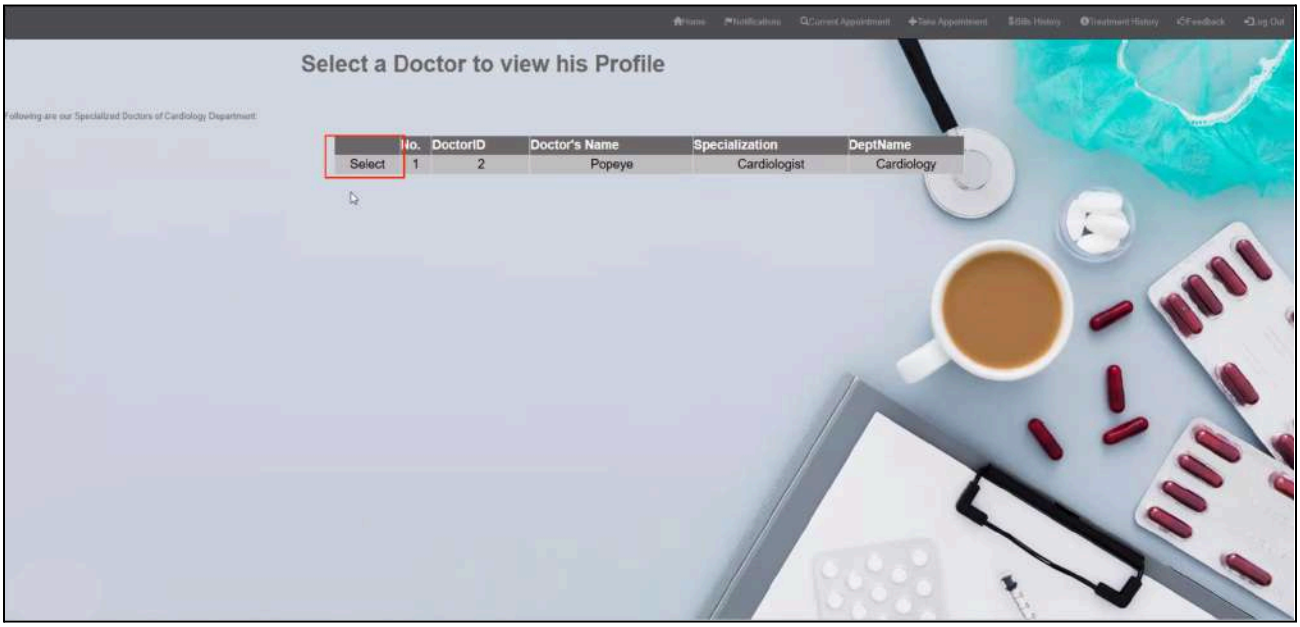
- **Patients** gain access to multiple facilities upon registering on the HealthSphere website. Below is the landing page of a patient named “SUPERMAN” after he logs into the HealthSphere website.

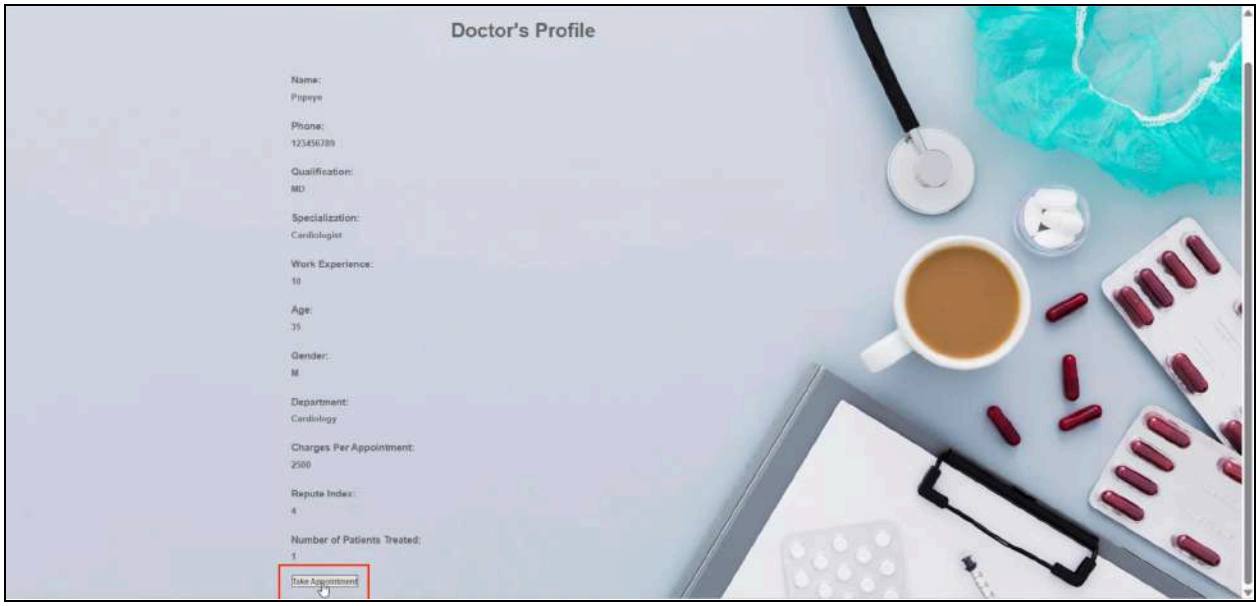


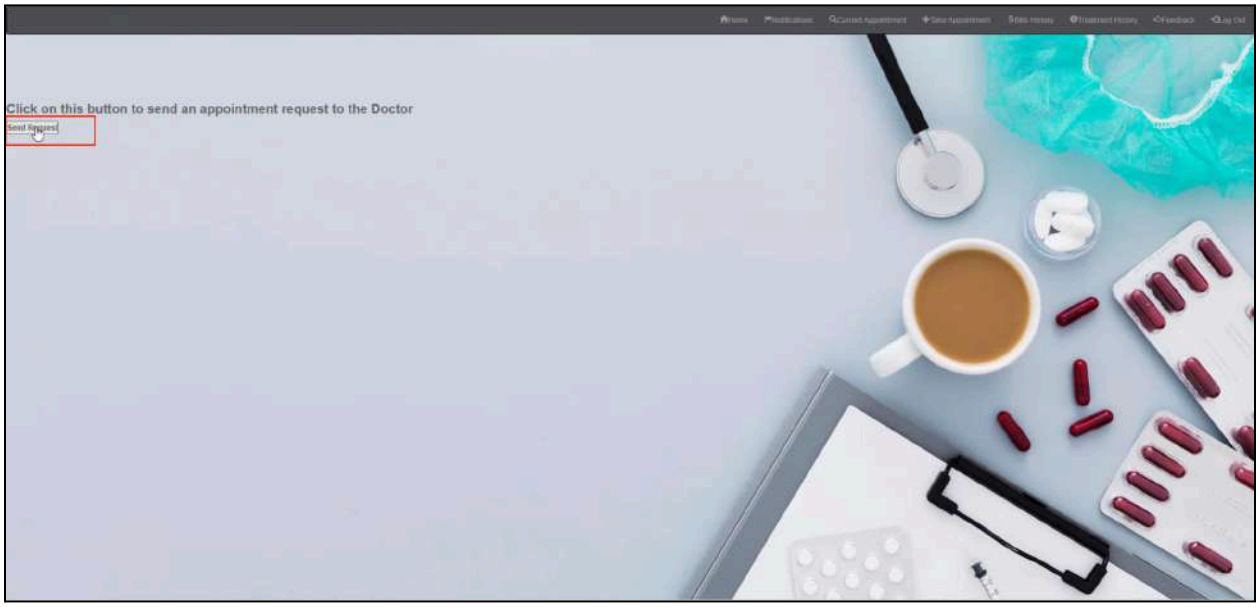
- **Patients** can take appointments as per their need by clicking on the “**Take Appointment**” button. A list of departments are then displayed after which the patient is allowed to select a particular department with the help of the “**Select**” option.

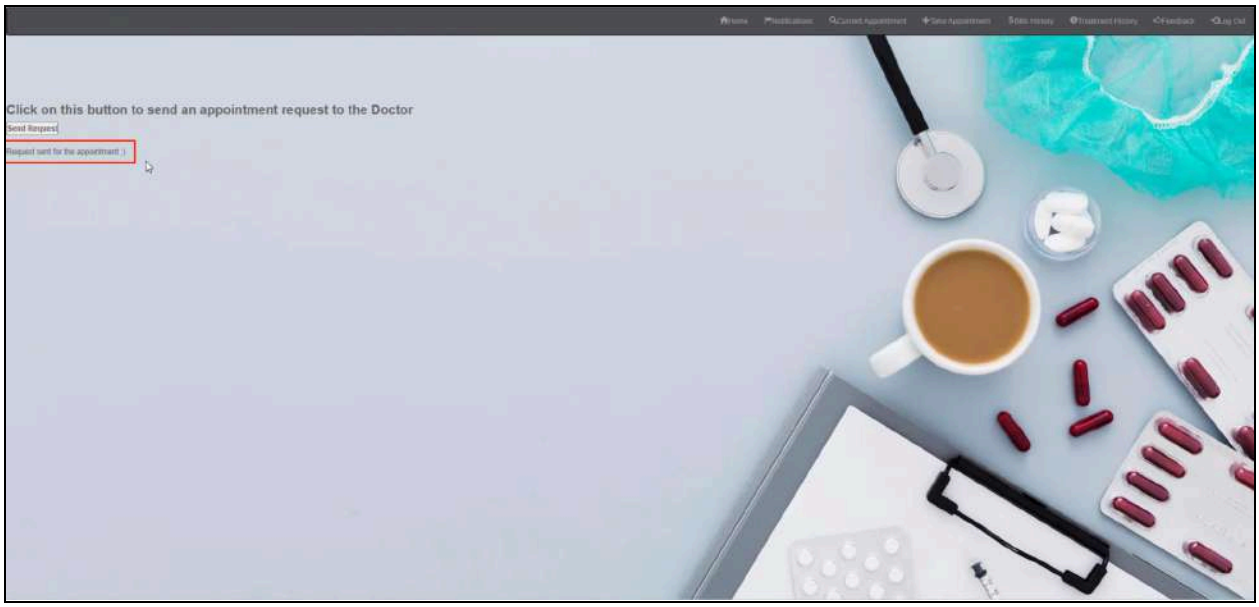


- **Patients** will be able to see the doctor for the department he/she has chosen and also his profile as shown below. Once the patient is sure about the doctor, the patient can then select a free time according to the doctor's schedule and send an appointment request to the doctor.

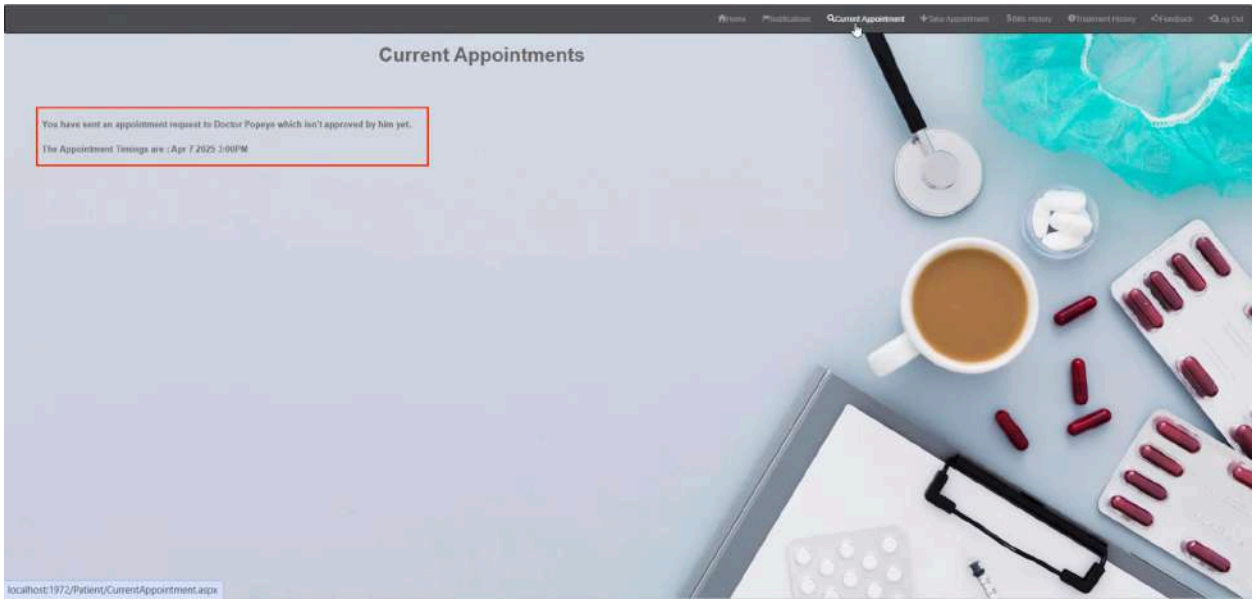



Doctor's Profile
Name:
Popeye
Phone:
123456789
Qualification:
MD
Specialization:
Cardiologist
Work Experience:
10
Age:
35
Gender:
M
Department:
Cardiology
Charges Per Appointment:
2500
Repute Index:
4
Number of Patients Treated:
1
Take Appointment


Click on this button to send an appointment request to the Doctor
Send Request

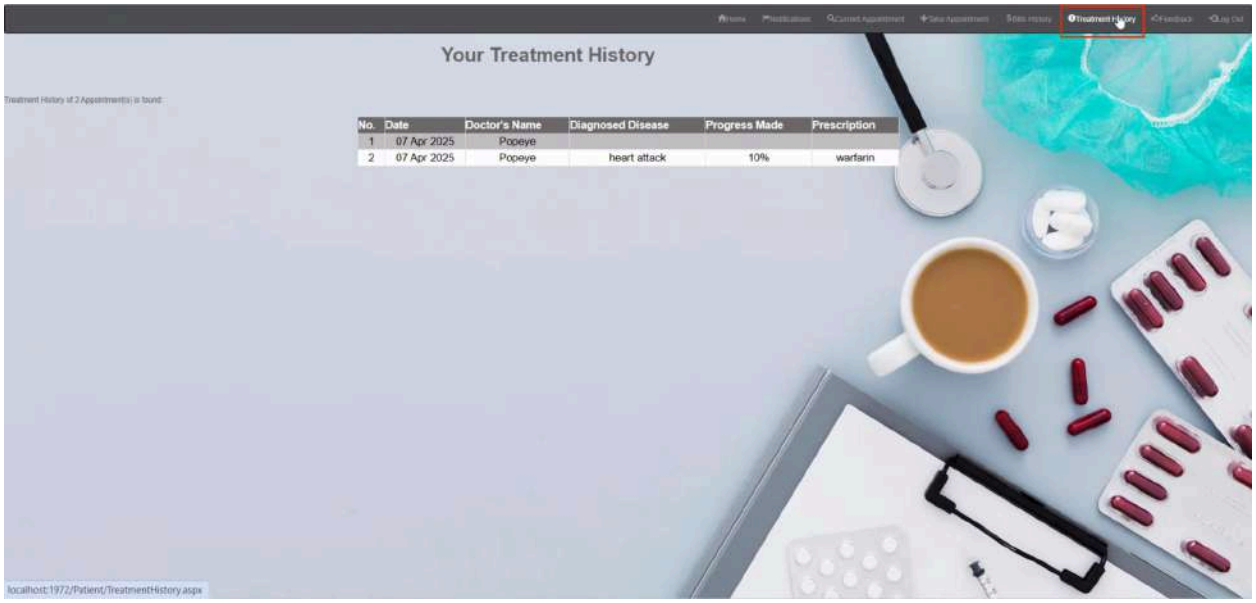


- **Patients** will be able to check their current appointments with any of the doctors.

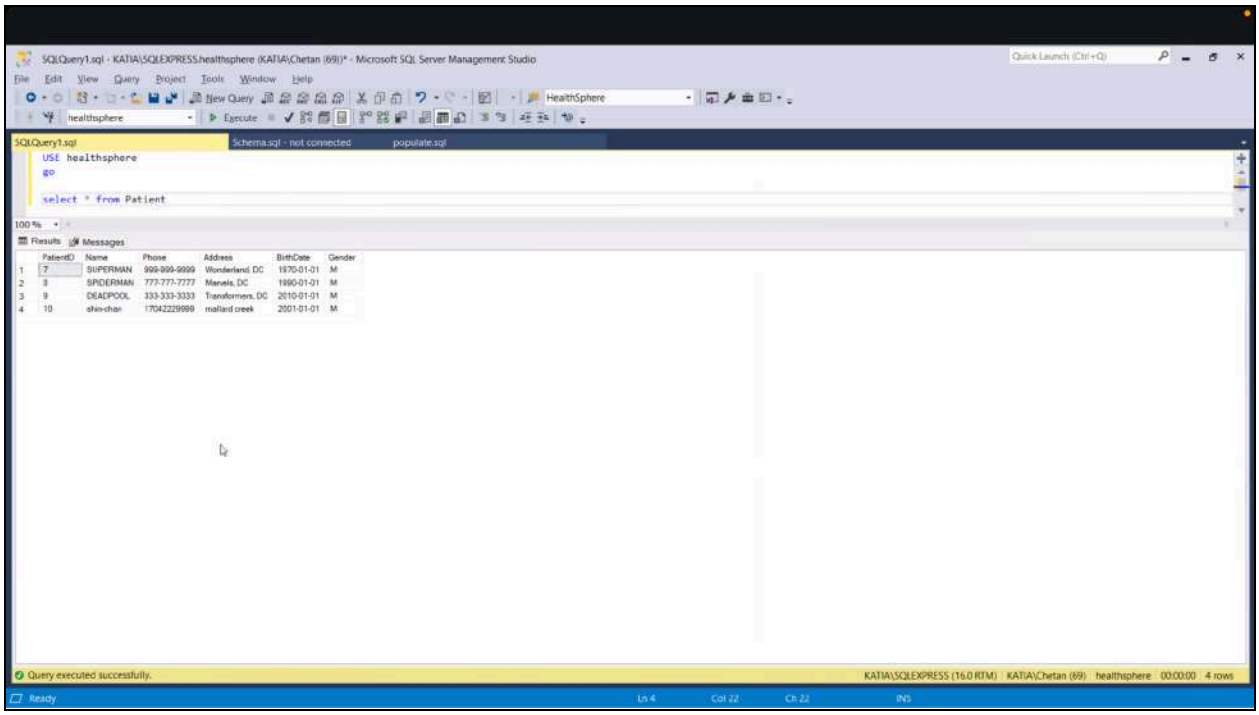


- **Patients** will be able to check the Bills generated on their name by clicking the "**Bills History"** button. The bills are generated based on the treatment they have requested for and also the prior treatments they have undergone.

- **Patients** will be able to check their treatment history from their respective doctors by clicking on the "**Treatment history**" button. Patients will be aware of the medicines prescribed by the doctor, the progress rate of the patient's case, as well as the diagnosed disease.

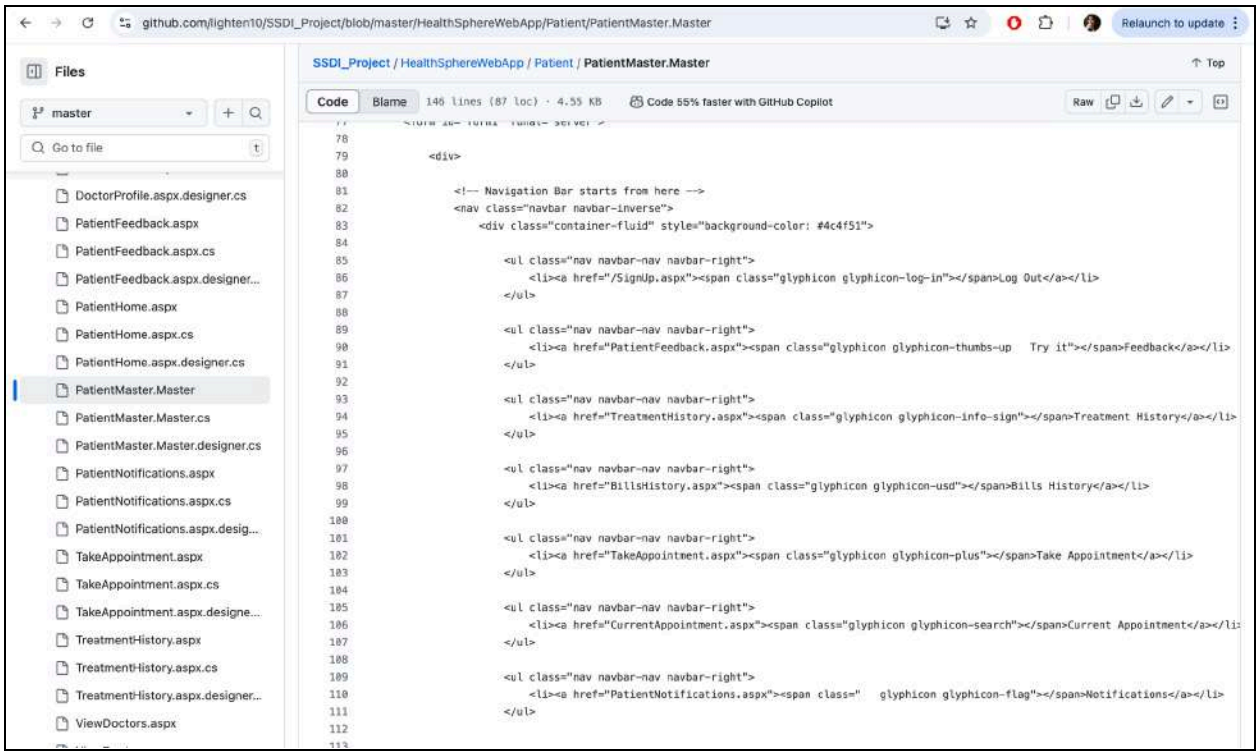


Database Schema for the Patient record:

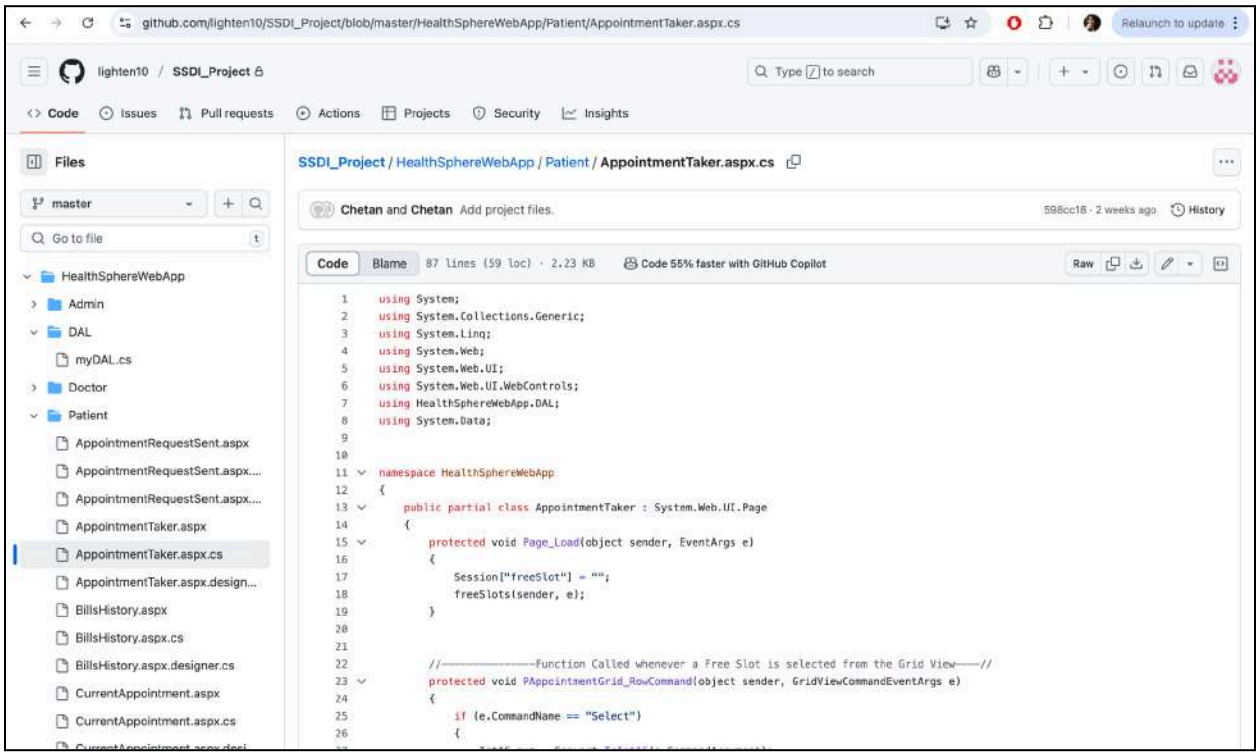


The shown screenshots depict a few of the code fragments of the main scenarios of the **Patient's** facilities.

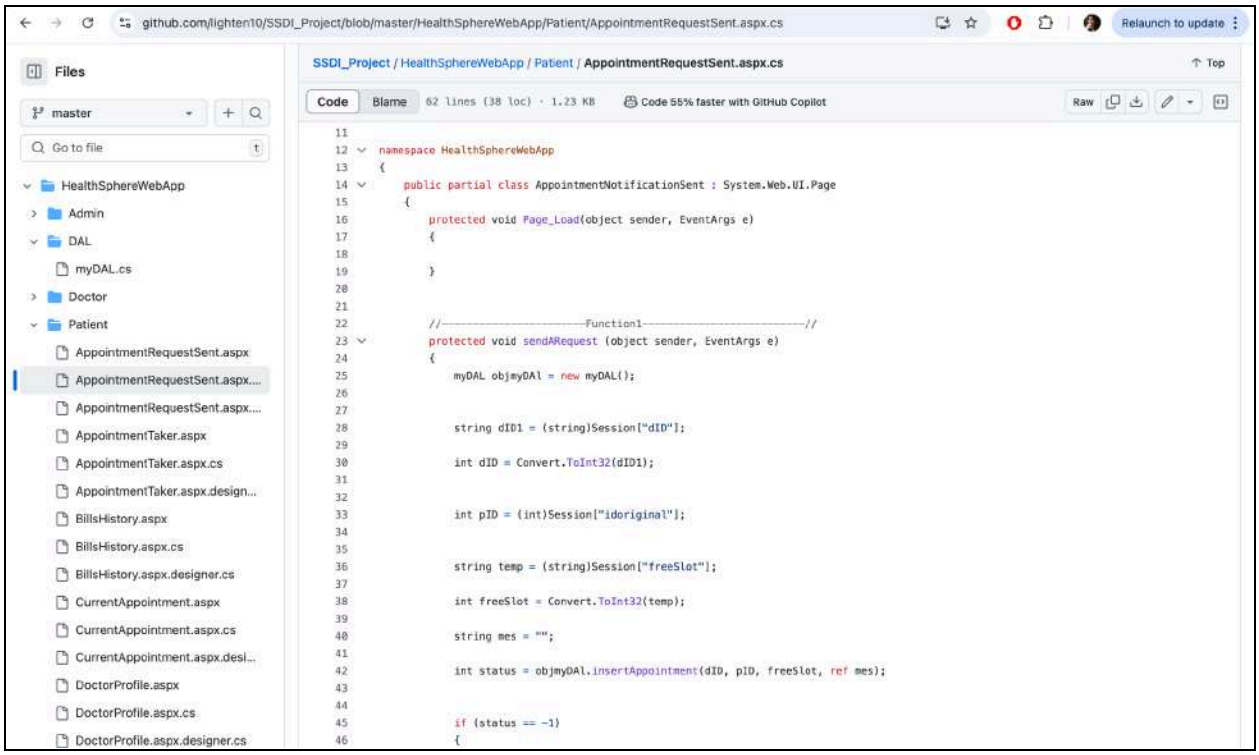
PatientMaster



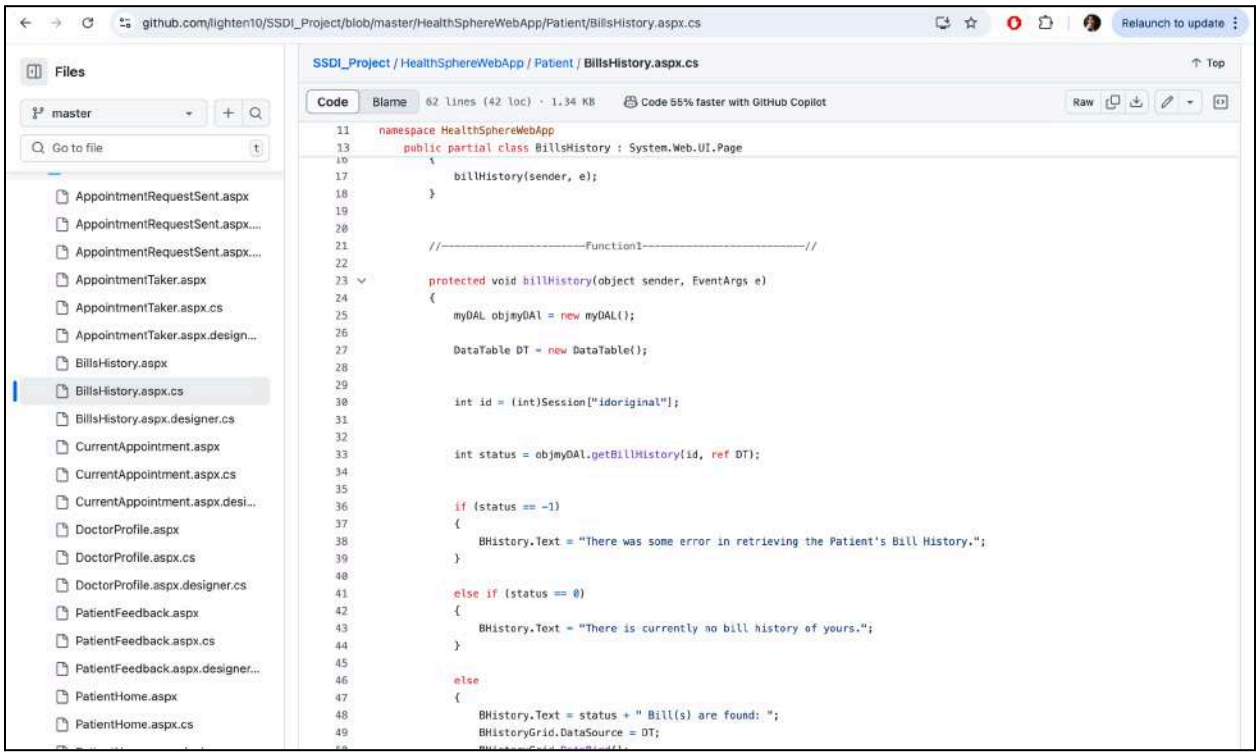
AppointmentTaker.aspx



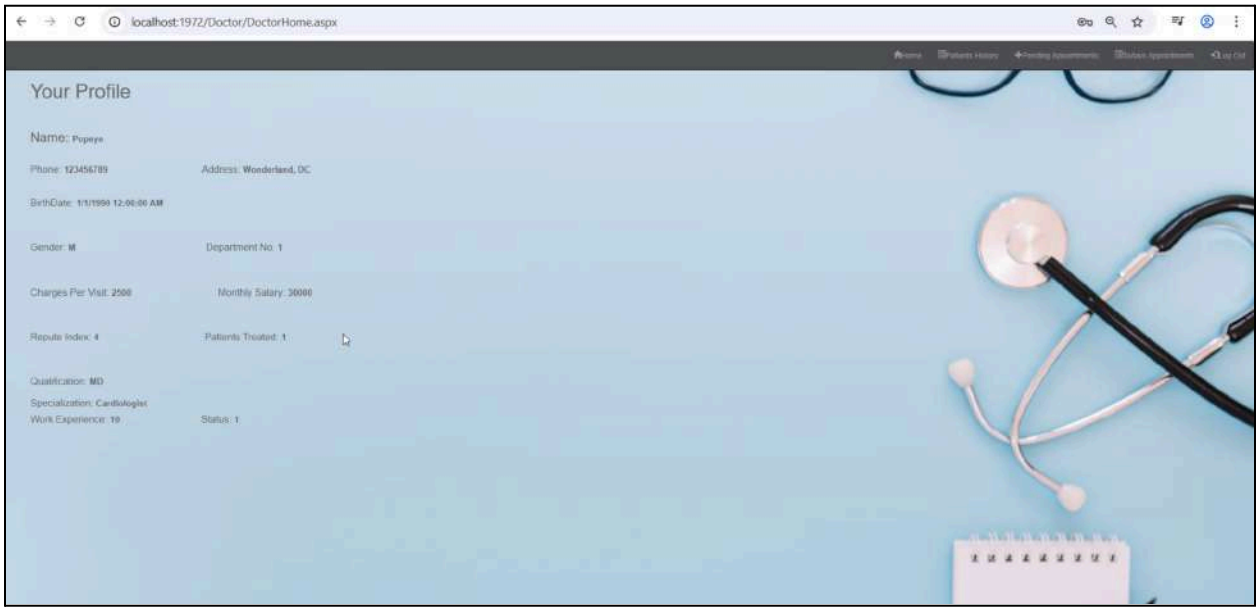
AppointmentRequestSent.aspx



BillsHistory.aspx



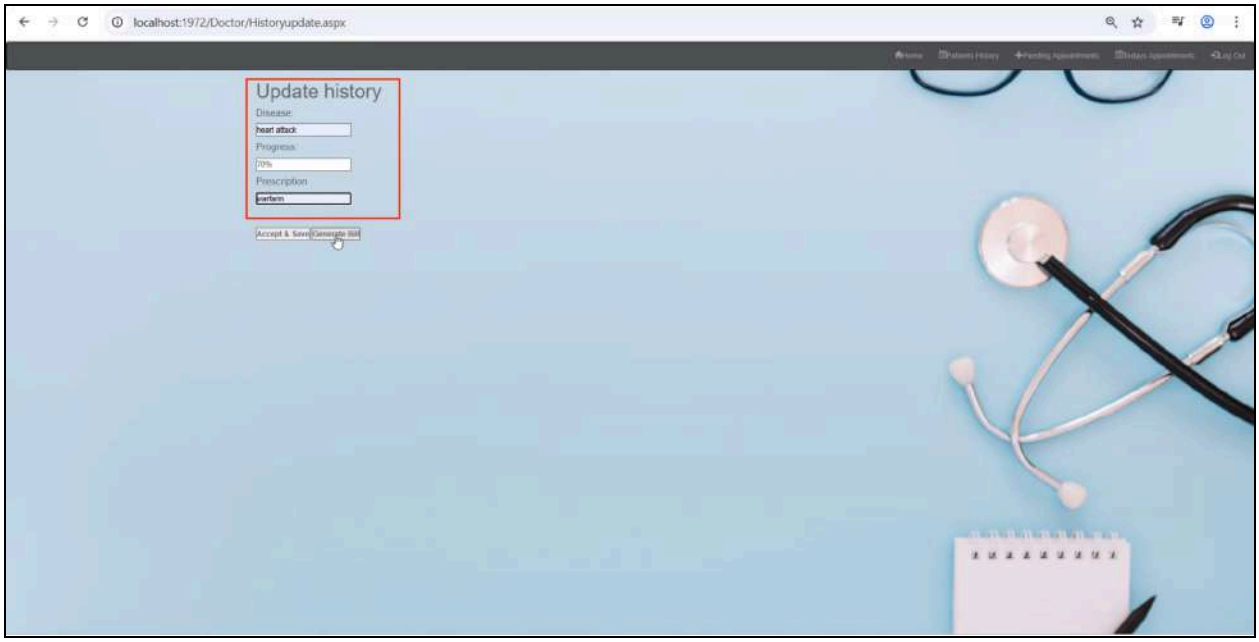
- **After logging in, Doctor's** landing page will be his/her own profile page that can be viewed as below:



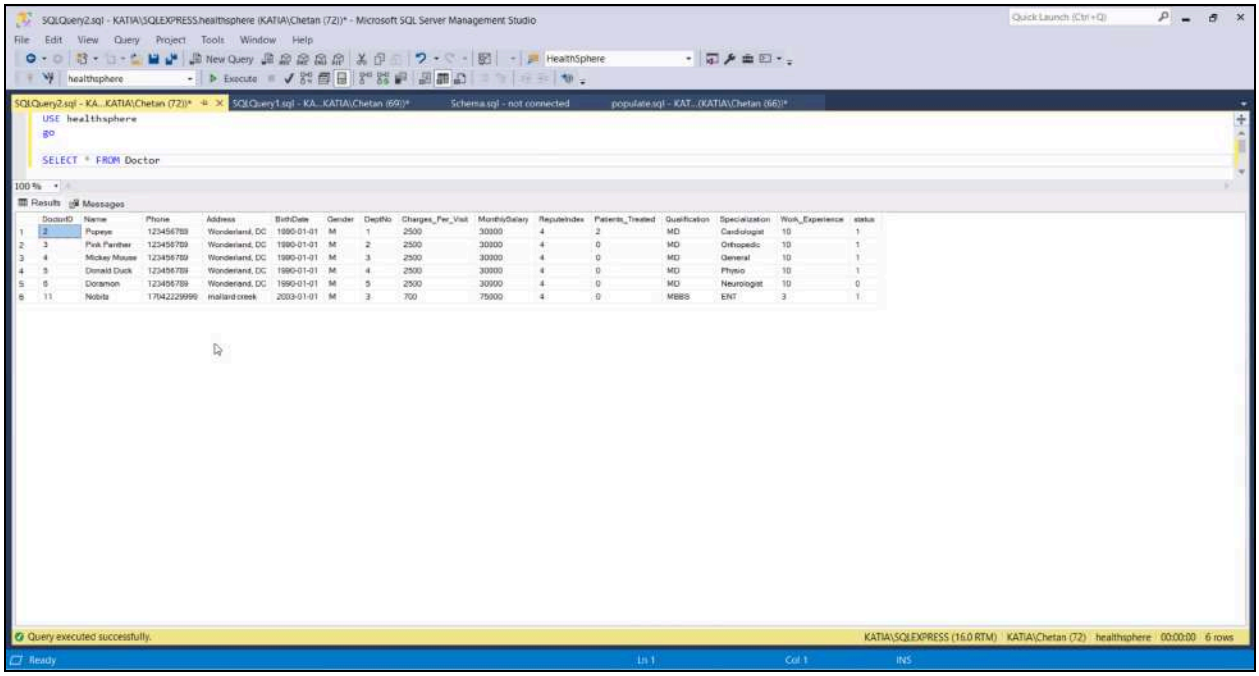
- **The doctor** will be able to see the pending appointments by clicking on the "Pending Appointments" button.

- **Doctors** will be able to see the patient's case history before beginning with the patient's treatment.

- **Doctors** will be able to update the case history of a patient that the doctor is treating by clicking on **"Today's appointments".** The doctor can update the status of the progress of the treatment for the patient.

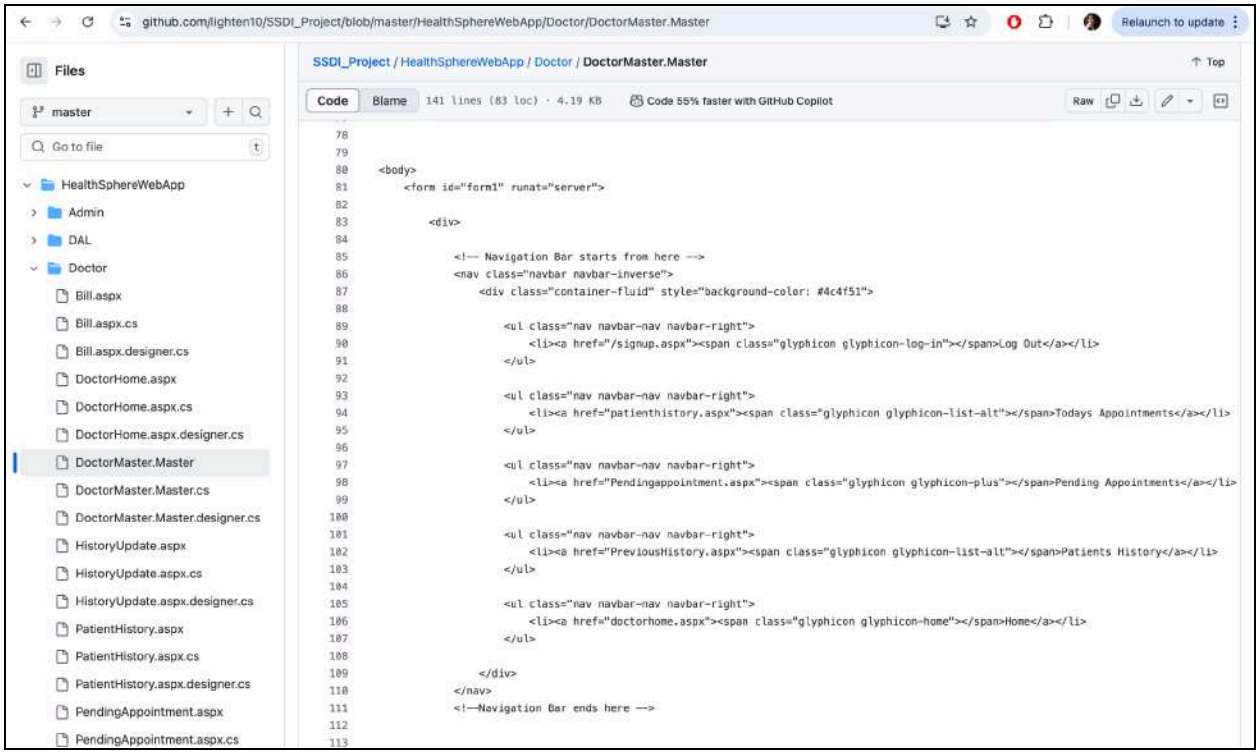


Database Schema for the Doctor's details:

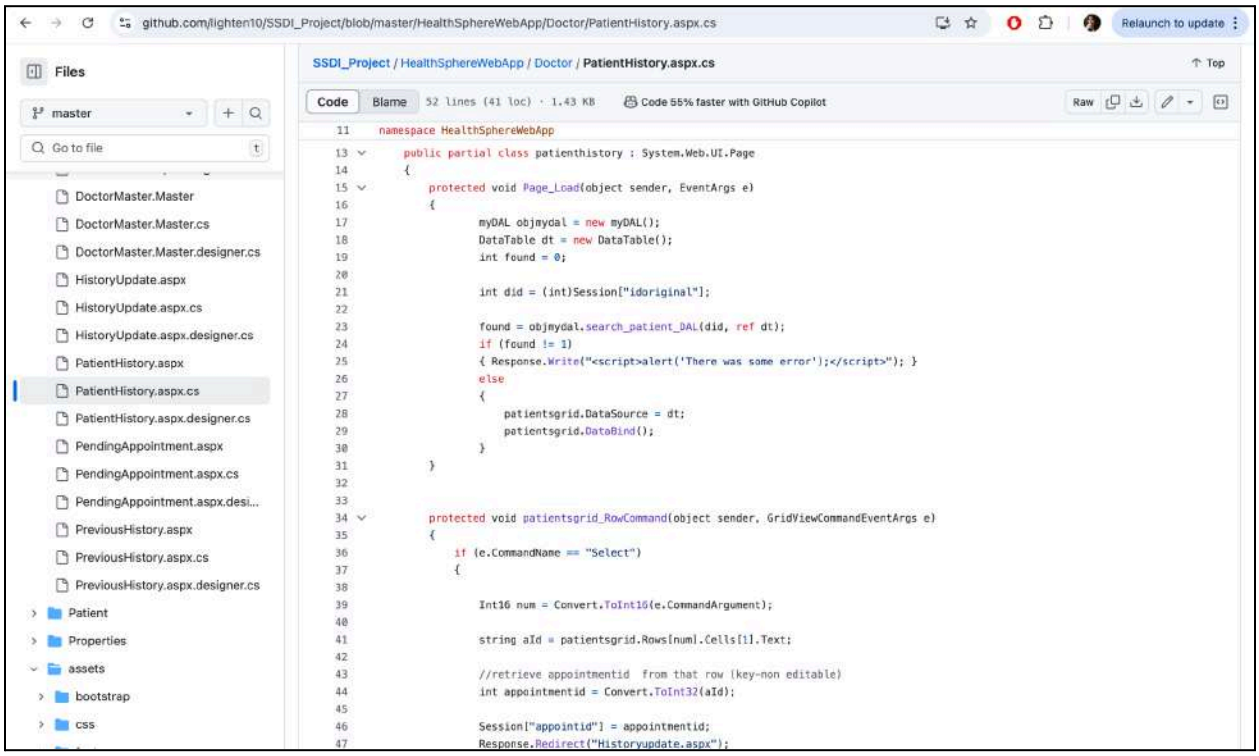


The screenshots shown below depict a few of the code fragments of the main scenarios of the **Doctor's** facilities.

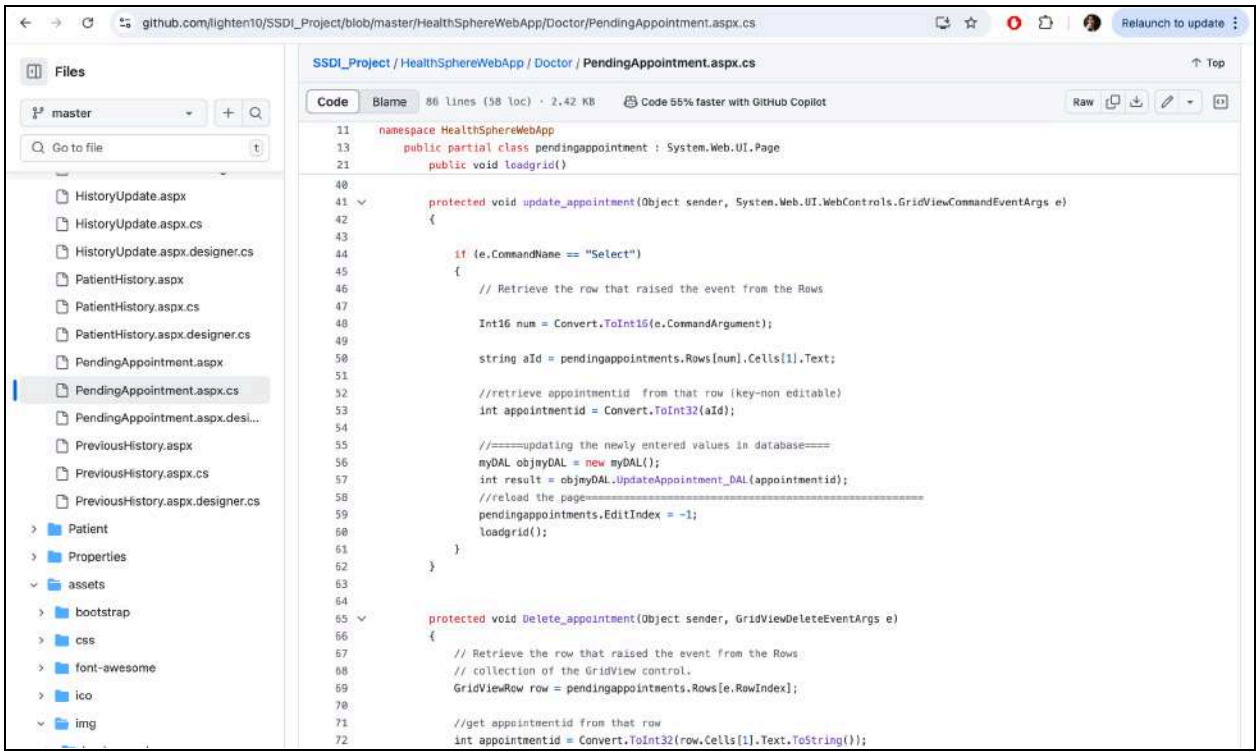
DoctorMaster



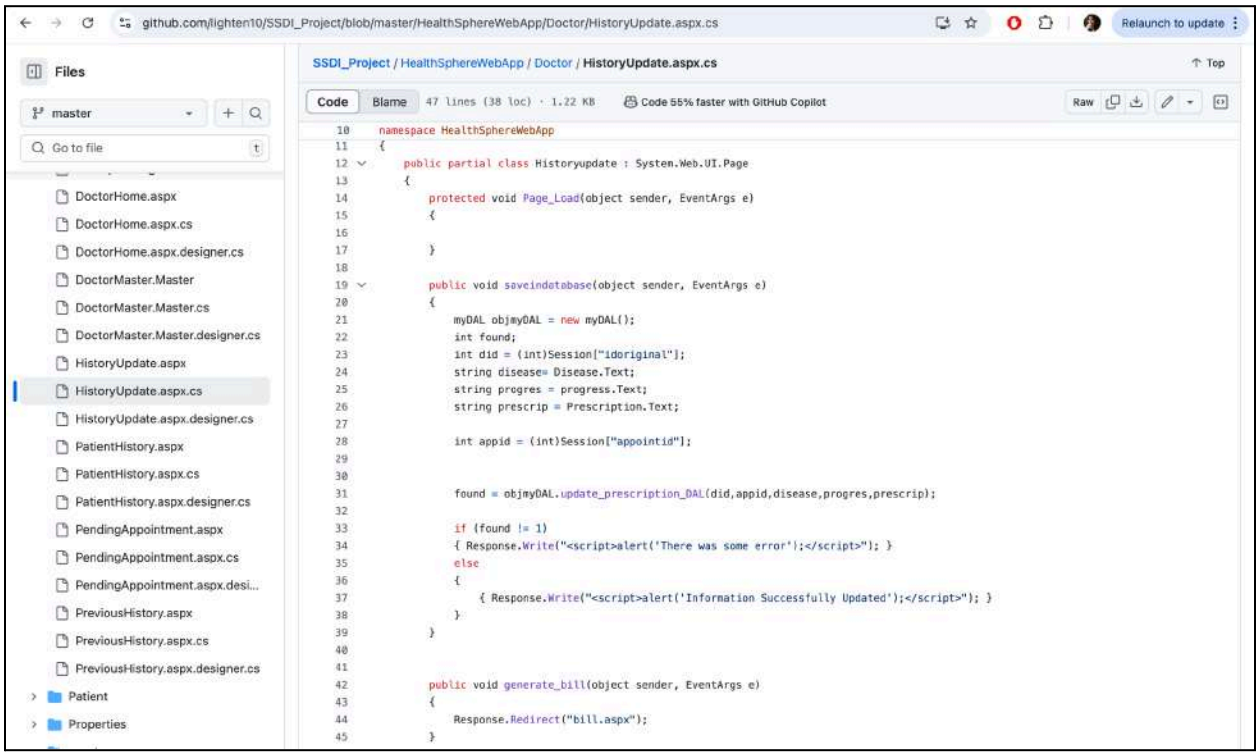
PatientHistory.aspx



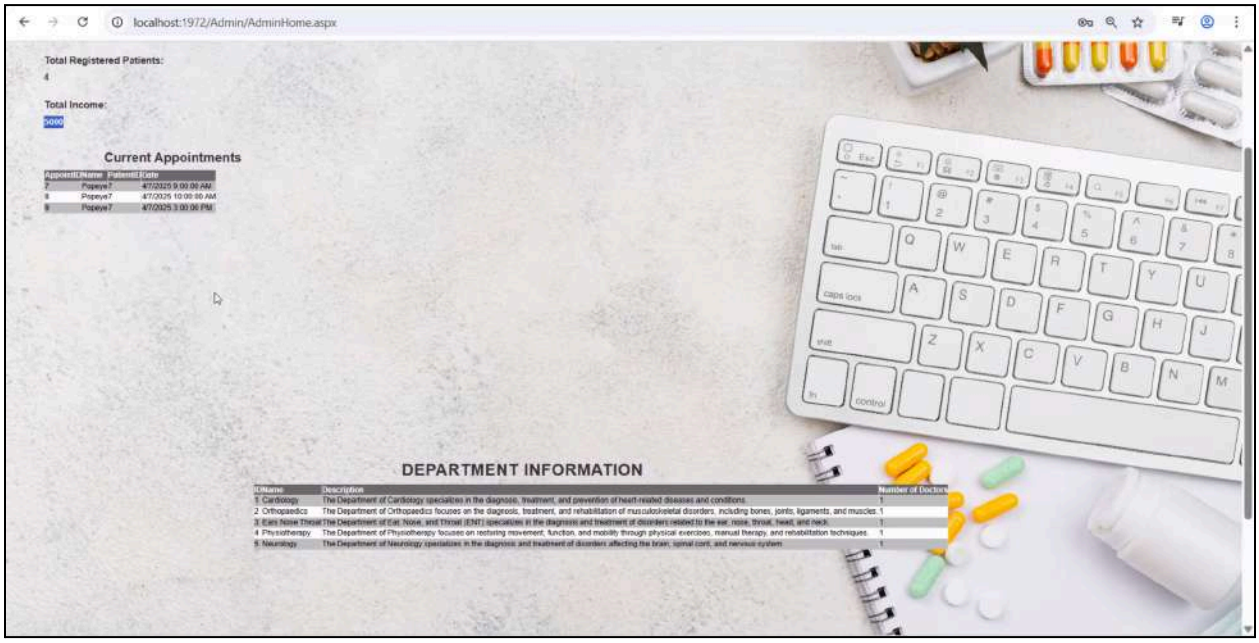
PendingAppointment.axpx



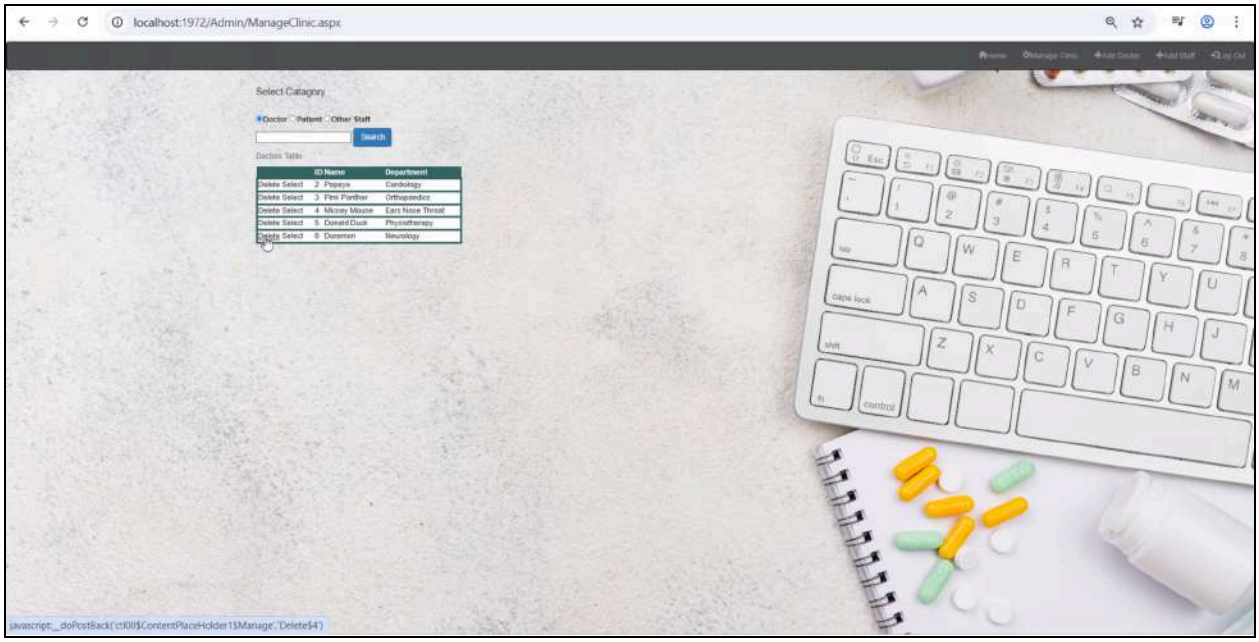
HistoryUpdate.axpx

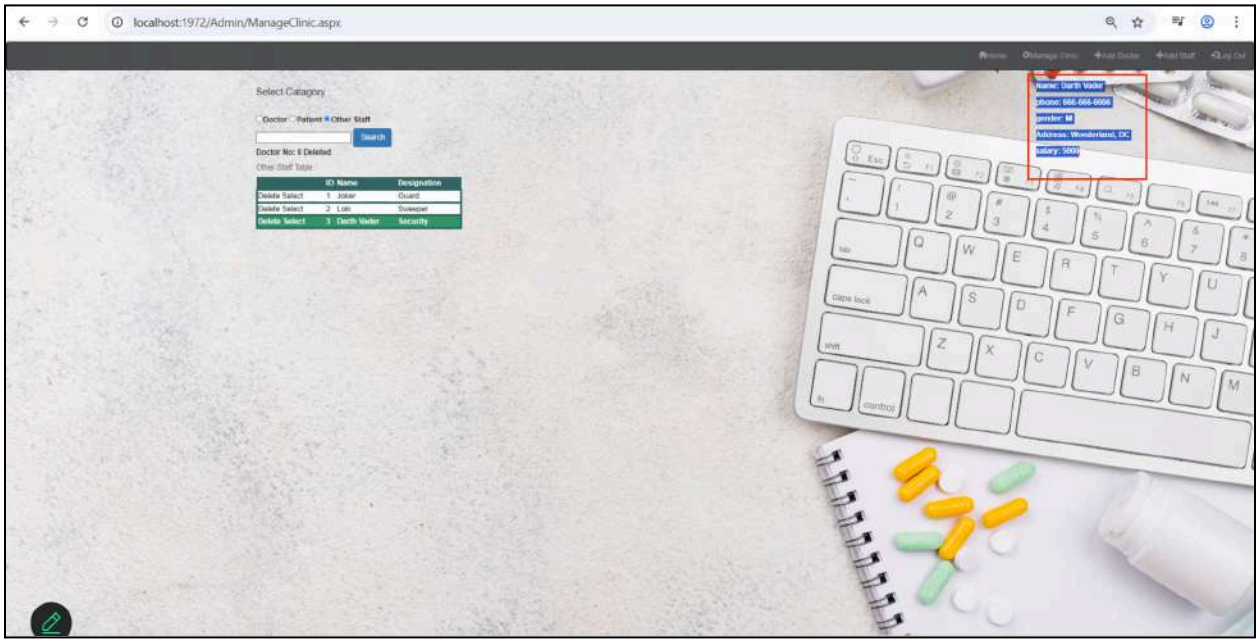


- **After logging in, the administrator personnel's** landing page will be as per shown in the screenshot below. The administrator will be able to see the number of doctors in each department, total number of patients, total income generated and number of weekly appointments.

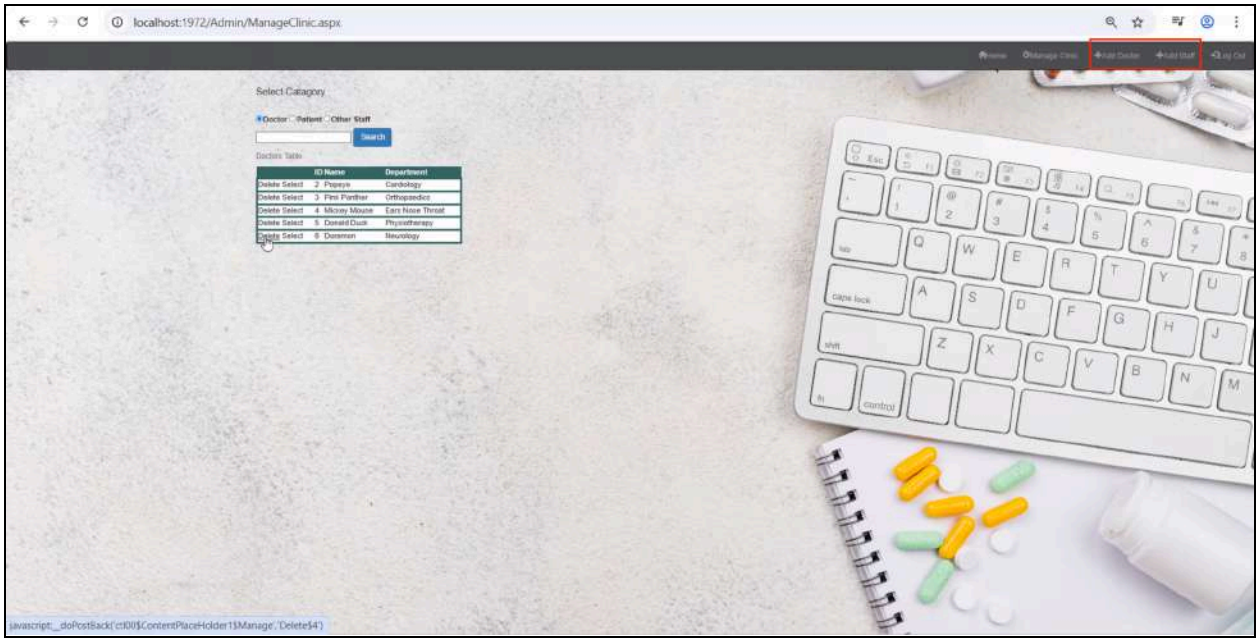


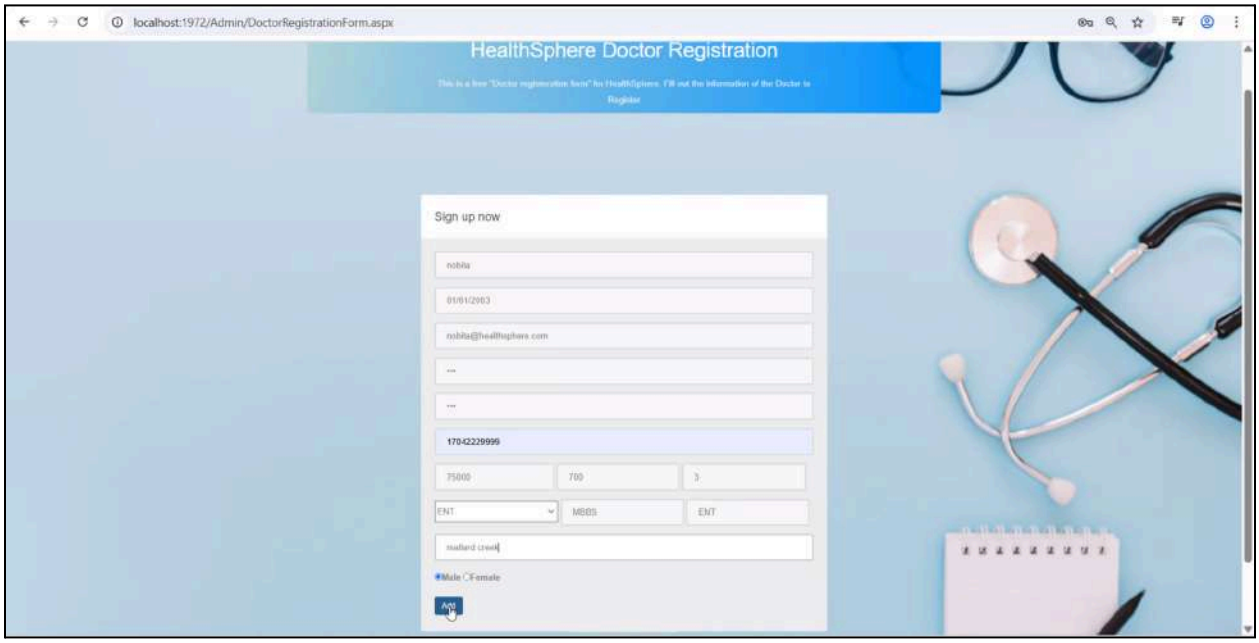
- **The Administrator** will be able to see the details of all doctors, patients and other staff by clicking on **"Manage Clinic"**. The administrator will be able to add/delete any doctor/patient/staff.





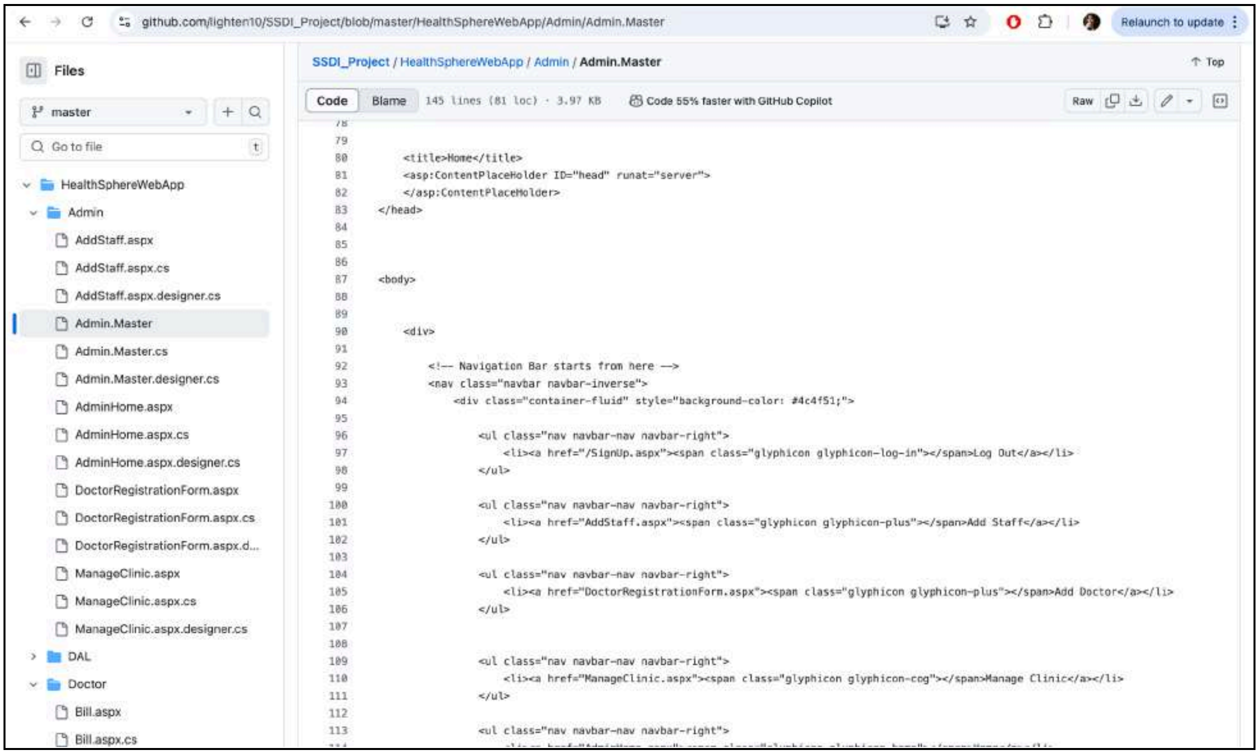
- The administrator will be able to add a new doctor/staff by clicking on the Add **doctor/staff button.**



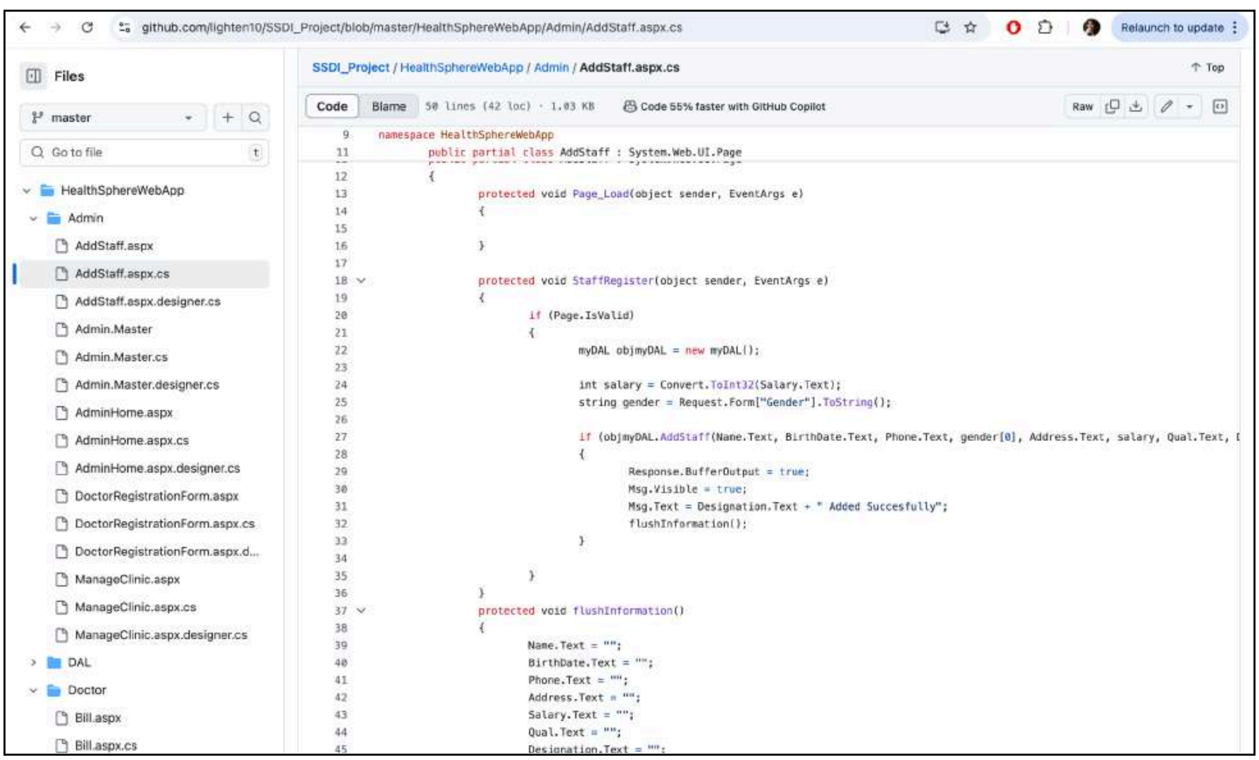


The screenshots shown below depict a few of the code fragments of the main scenarios of the **Administrator's** facilities.

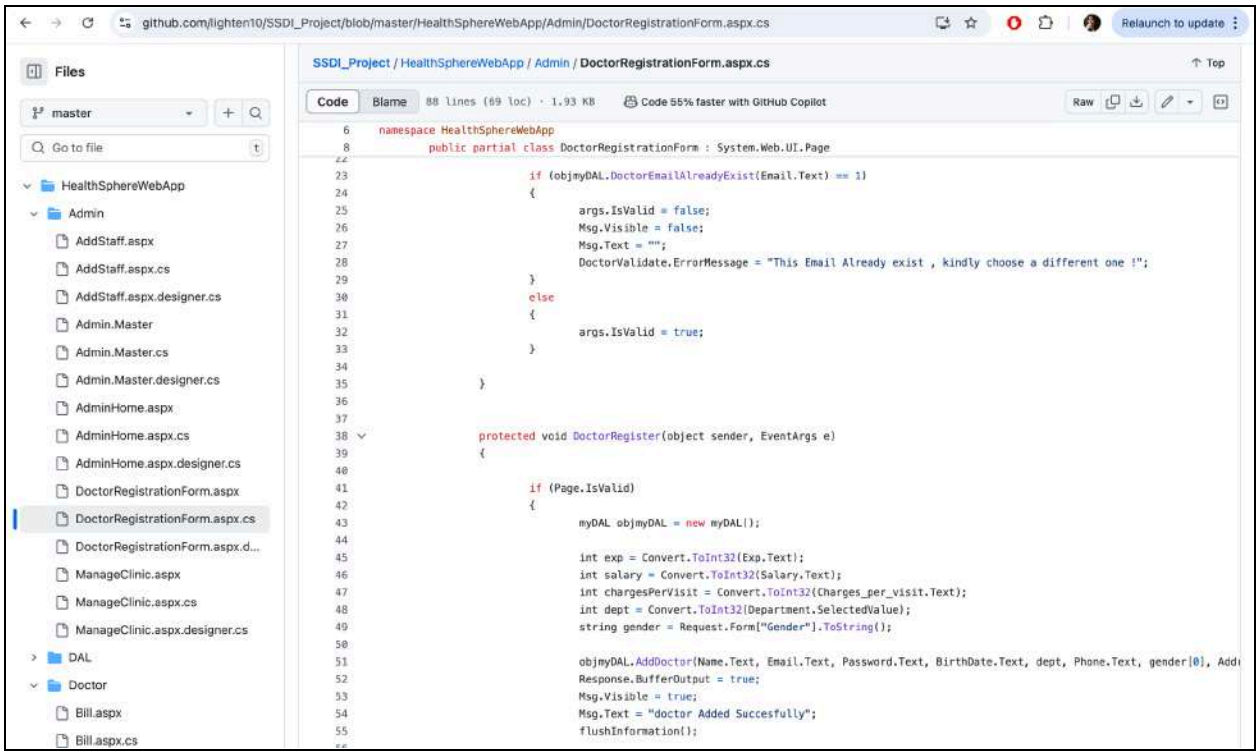
AdminMaster:



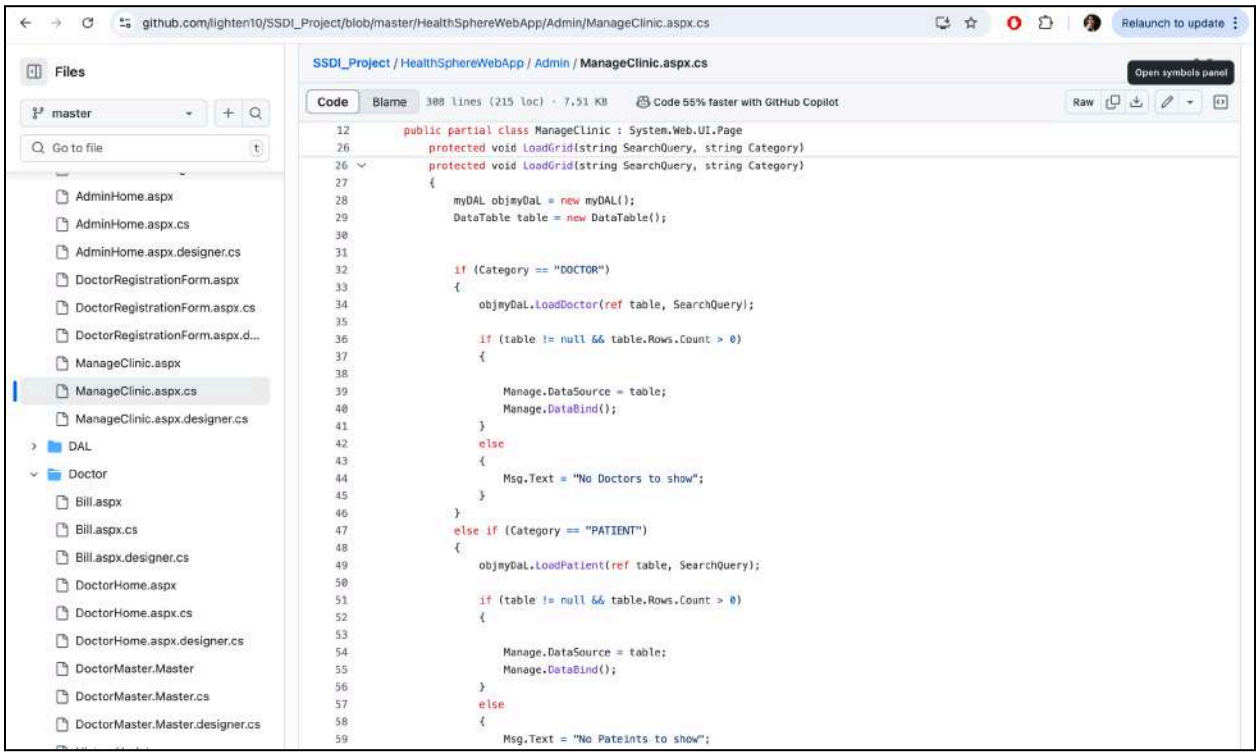
AddStaff.axpx



DoctorRegistrationForm.axpx



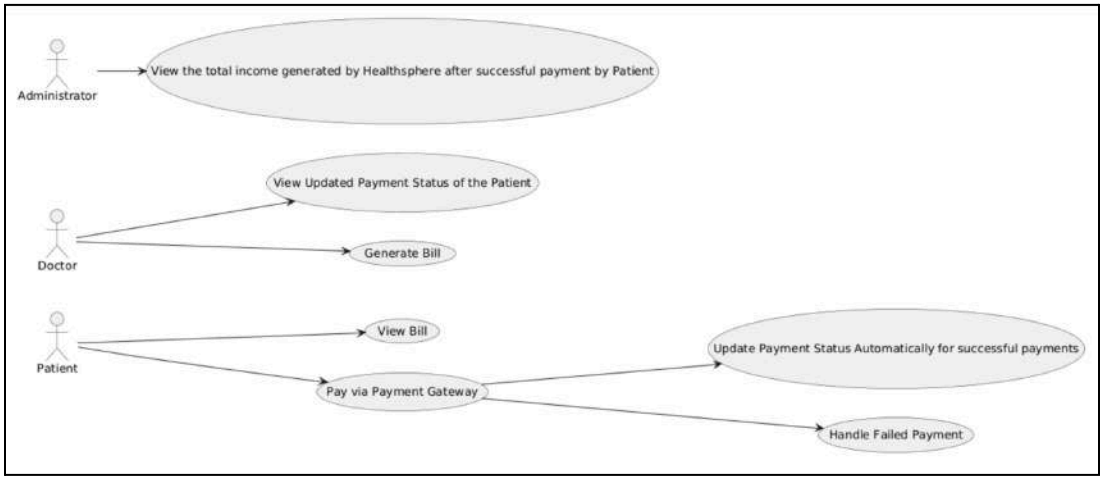
ManageClinic.axpx



Walkthrough of 2 additional scenarios (can be implemented in future scope)

- **Payment gateway** can be included as a part of the Health sphere in future scope, which would be accessible by the Administrator and Patients. Now, payment is done manually with cash/debit/credit cards, but there is no such provision on the website. With the help of a payment gateway, the process then starts with the treatment bill that pops up in the patient portal, the patient can pay the amount through online credit/debit card mode, and the payment status of the treatment updates to "paid" automatically in case of successful payments. Now, the doctor manually updates the status as paid or unpaid after the patient pays offline. Also, once the patient successfully pays the bill, the administrator can see the updated total income generated by Healthsphere.

  Small use case diagram to demonstrate the scenario:



- Now, the Doctor has the provision to update the case history of the patient,which can include the necessary vitals of the patient as well. But, in future scope, t**he latest vitals of the patient can be demonstrated in the form of a visual representation, say bar graph/pie chart** showing how well the patient has progressed from earlier or has deteriorated. The visual representation should be accessible in both the patient's portal and the doctor's portal treating the patient.