# HealthySense

## Software Development And Architecture

**Course Instructor:** Dr.Uzair Ullah

**Submitted by:**


| Moiz Akhtar | Muhammad Musa Haroon Satti | Muhammad Abdullah |
|---|---|---|
| **21-1104** | **21i-1206** | **21i-1215** |


**Section:** P (BS-SE)

**Date:** 06/07/2023

Spring 2023

**Department of Software Engineering**

FAST – National University of Computer & Emerging Sciences

Islamabad Campus

# Table of Contents


**Table of Contents** ..... **1**
**Version History** ..... **3**
**Project Scope** ..... **4**
**Actor Goal List** ..... **4**
**High Level Use Cases** ..... **5**
UC-001 ..... 5
UC-002 ..... 5
UC-003 ..... 5
UC-004 ..... 5
UC-005 ..... 5
UC-006 ..... 6
UC-007 ..... 6
UC-008 ..... 6
UC-009 ..... 6
UC-010 ..... 6
UC-011 ..... 6
UC-012 ..... 7
UC-013 ..... 7
**Use Case Diagram** ..... **8**
**Expanded Use Cases** ..... **9**
UC-001 Book Appointment ..... 9
UC-002 Manage Appointment ..... 11
UC-003 Search Doctor ..... 14
UC-004 View Doctor Details ..... 15
UC-005 Write Review ..... 16
UC-007 Make Payment ..... 17
UC-008 Update Profile Patient ..... 18
UC-009 Update Profile Doctor ..... 20
UC-011 View Patient Record ..... 21
UC-013 Report Patient ..... 22
**System Sequence Diagrams** ..... **23**
UC-001 Book Appointment ..... 23
UC-002 Manage Appointment ..... 23
UC-003 Search Doctor ..... 24
UC-004 View Doctor Details ..... 24
UC-005 Write Review ..... 25
UC-007 Make Payment ..... 25
UC-008 Update Patient Profile ..... 26
UC-009 Update Doctor Profile ..... 26
UC-011 View Patient Record ..... 27
UC-013 Report Patient ..... 27
Session Management ..... 28
**1. Sequence Diagrams** ..... **29**
**1.1. UC-001 Book Appointment** ..... **29**
1.1.1. SD-001 Book Slot ..... 29
1.1.2. SD-002 Get Schedule ..... 29
**1.2. UC-002 Manage Appointment** ..... **29**
1.2.1. SD-001 Appointment List ..... 29
1.2.2. SD-002 Cancel Appointment ..... 30
1.2.3. SD-003 Reschedule Appointment ..... 30
1.2.4. SD-004 Appointment Details ..... 30
**1.3. UC–003 Search Doctor** ..... **31**
1.3.1. SD-001 Search Doctor ..... 31
1.3.2. SD-002 Filter Doctor ..... 31
**1.4. UC-004 View Doctor Details** ..... **32**
1.4.1. SD-001 Doctor Details ..... 32
1.4.2. SD-002 Doctor Reviews ..... 32
**1.5. UC-005 Write Review** ..... **32**
1.5.1. SD-001 Write Review ..... 32
**1.6. UC-007 Make Payment** ..... **33**
1.6.1. SD-001 MakePayment ..... 33
**1.7. UC-008 Update Profile (Patient)** ..... **33**
1.7.1. SD-001 Edit Details ..... 33

1.7.2. SD-002 Add Illness..... 33
**1.8. UC-009 Update Profile (Doctor)..... 34**
1.8.1. SD-001 Add Certification..... 34
**1.9. UC-011 View Patient Record..... 34**
1.9.1. SD-001 Get Patient Details..... 34
**1.10. UC-013 Report Patient..... 35**
1.10.1. SD-001 Report Patient..... 35
**1.11. Session Management SD..... 36**
**2. Domain Model..... 37**
**3. Class Diagram..... 38**
**4. JAVAFX Screens..... 39**
4.1. Start..... 39
4.2. Login..... 39
4.3. Signup..... 40
4.4. Patient Search Doctors..... 41
4.5. Patient View Doctor Details..... 42
4.6. Patient Book Appointment..... 43
4.7. Patient Payment..... 44
4.8. Patient Appointments List..... 45
4.9. Patient Pending Appointment..... 46
4.10. Patient Completed Appointment..... 47
4.11. Patient Reschedule Appointment..... 48
4.12. Patient Cancel Appointment..... 49
4.13. Patient Write Review..... 50
4.14. Patient Update Profile..... 51
4.15. Patient Add Medical Record..... 52
4.16. Certificates in Doctor Details..... 53
4.17. Reviews in Doctor Details..... 54
4.18. Settings..... 55
4.19. Doctor Manage Consultation..... 56
4.20. Doctor Consultation Details..... 57
4.21. Doctor View Patient History..... 58
4.22. Doctor View Patient Appointment..... 59
4.23. Doctor Update Profile..... 60
4.24. Doctor Add Certification..... 61
4.25. Doctor Report Patient..... 62

# Version History

| Version Number | Artifact(s) Updated |
|---|---|
| **V1.0** | ● Creation of Actor Goal List<br>● Added Use case Diagram<br>● Added High level use case descriptions of use cases identified in use case diagram |
| **v2.0** | ● Added Expanded Use Cases of High level use cases identified in previous version, 9 out of 12.<br>● Fixed Inheritance error in use case diagram.<br>● Added Wireframes for expanded use cases. |
| **v3.0** | ● Added System Sequence Diagrams for expanded use cases.<br>● Added JavaFx Screens.<br>● Added Domain Model for the whole system.<br>● Updated Expanded Use cases:<br>Added pre,post conditions.<br>● Updated UC-0010:<br>Removed patient from actor |
| **v4.0** | ● Added Sequence diagrams for System Sequence Diagrams<br>● Updated Use Case Diagram.<br>● Updated System sequence diagram for Search Doctor,Update Patient profile,Make payment, Book appointment. |
| **v5.0** | ● Added Class Diagram<br>● Updated Domain Model<br>● Addition of design patterns in Sequence Diagrams<br>● Minor Changes in Extended Use Cases, SSD |

# Project Scope

This app currently caters doctors within Pakistan; however, it can easily be expanded and taken international in the near future. Main purpose of our app is to bridge the gap between patients and doctors of different areas so more specialized and qualified doctors are available to the patients. Patients can reach out to more doctors without hesitation as they can see the reviews and the ratings of the doctors on our application. Moreover, initial data will be needed for the app to be properly used, as customers will have to leave reviews on the app for other customers to view. To make an online reservation or appointment, patients will have to pay some amount beforehand, to reduce the risk of fake appointments and precious time to be wasted. Also all doctors will be verified and provide reports to patients after appointment to know prescribed medicine, recommended tests, and treatment plans.

# Actor Goal List

| Actor | Goal |
|---|---|
| **Patient** | 1. Get diagnosis<br>2. Schedule new appointments<br>3. Update appointments<br>4. View appointment history<br>5. Manage appointment<br>6. View doctor details<br>7. Write doctor reviews<br>8. Filter doctors<br>9. Search doctor<br>10. Manage favorites<br>11. View prescribed medicines<br>12. View recommended tests<br>13. Send test reports<br>14. Message doctor<br>15. Check results<br>16. Make payment<br>17. Get support<br>18. Manage account<br>19. Manage profile<br>20. Get notifications |
| **Doctor** | 1. Diagnose patient<br>2. Generate report<br>3. View past history of patient<br>4. Prescribe medicine<br>5. Update patient's tests<br>6. View consultations<br>7. Add consultation<br>8. Update consultation<br>9. Manage consultation<br>10. View consultation history<br>11. Report patient<br>12. Message patient<br>13. Manage account<br>14. Update profile<br>15. Get support<br>16. Get notifications |
| **Admin** | 1. Verify doctor<br>2. Ban patient<br>3. Ban doctor<br>4. Monitor activity |
| **Billing System** | 1. Generate bill |

# High Level Use Cases

## UC-001

| | |
|---|---|
| **Use Case:** | Book appointment |
| **Actor(s):** | Patient |
| **Type:** | Primary |
| **Description:** | The Patient selects a date and time and then chooses a slot from the available slots of the doctor, and then makes payment. Upon successful booking an appointment is booked.. |

## UC-002

| | |
|---|---|
| **Use Case:** | Manage Appointment |
| **Actor(s):** | Patient |
| **Type:** | Primary |
| **Description:** | The Patient selects the appointment they wish to manage and chooses to either cancel or reschedule. If the Patient cancels the appointment, the time slot becomes available for other Patients. If the Patient chooses to reschedule, they select a new slot from the available slots. Upon success, The system updates the appointment record. The Patient can view pending and completed appointments as well. |

## UC-003

| | |
|---|---|
| **Use Case:** | Search Doctor |
| **Actor(s):** | Patient |
| **Type:** | Primary |
| **Description:** | The Patient can search and filter available Doctors based on specialties, location, and ratings. The Patient types search terms and selects filters, and the system presents a list of matching Doctors. If needed, the Patient can refine their search. The Patient can then select a Doctor. |

## UC-004

| | |
|---|---|
| **Use Case:** | View Doctor Details |
| **Actor(s):** | Patient, Doctor |
| **Type:** | Primary |
| **Description:** | The Patient can access the Doctor's profile from the search results. The Patient views the details of a Doctor's profile, including their education, specialties, experience,certifications,reviews, location, and ratings. The Patient can then book an appointment. Similarly the doctor can view all his details. |

## UC-005

| | |
|---|---|
| **Use Case:** | Write Reviews |
| **Actor(s):** | Patient |
| **Type:** | Primary |
| **Description:** | The Patient rates and writes a review about a Doctor they had an appointment with. After review is successfully entered, it is visible to all Patients viewing details for that Doctor. |

## UC-006

| | |
|---|---|
| **Use Case:** | Generate report |
| **Actor(s):** | Doctor |
| **Type:** | Primary |
| **Description:** | The Doctor selects the relevant diagnosis details and can attach additional notes or files to make a report. The report provides a comprehensive summary of the diagnosis, treatment plan, recommended tests, and medication prescribed. |

## UC-007

| | |
|---|---|
| **Use Case:** | Make Payment |
| **Actor(s):** | Patient |
| **Type:** | Primary |
| **Description:** | The Patient selects the payment option, selects the appropriate payment method, enters the required payment information, and submits it. The system confirms it and updates the Patient's appointment record with the payment details. |

## UC-008

| | |
|---|---|
| **Use Case:** | Update Profile Patient |
| **Actor(s):** | Patient |
| **Type:** | Primary |
| **Description:** | The Patient  views and updates their personal and medical history. The Patient can edit their name, address, contact details,  and other information. By doing so the profile is updated. |

## UC-009

| | |
|---|---|
| **Use Case:** | Update Profile Doctor |
| **Actor(s):** | Doctor |
| **Type:** | Primary |
| **Description:** | The Doctor can update his profile, by adding their certifications and experiences. |

## UC-010

| | |
|---|---|
| **Use Case:** | Manage Consultation |
| **Actor(s):** | Doctor |
| **Type:** | Primary |
| **Description:** | The Doctor can view, add, cancel or reschedule a consultation. The Doctor can manually add Patient by searching, and selecting an available time slot to adjust Patient. Also the Doctor can cancel a consultation, or reschedule to a later date. Once done, appointment records are updated. |

## UC-011

| | |
|---|---|
| **Use Case:** | View Patient History |
| **Actor(s):** | Doctor |
| **Type:** | Primary |
| **Description:** | The Doctor can access and view Patient’s medical information to know more details about the Patient, their illnesses and also their previous appointments. |

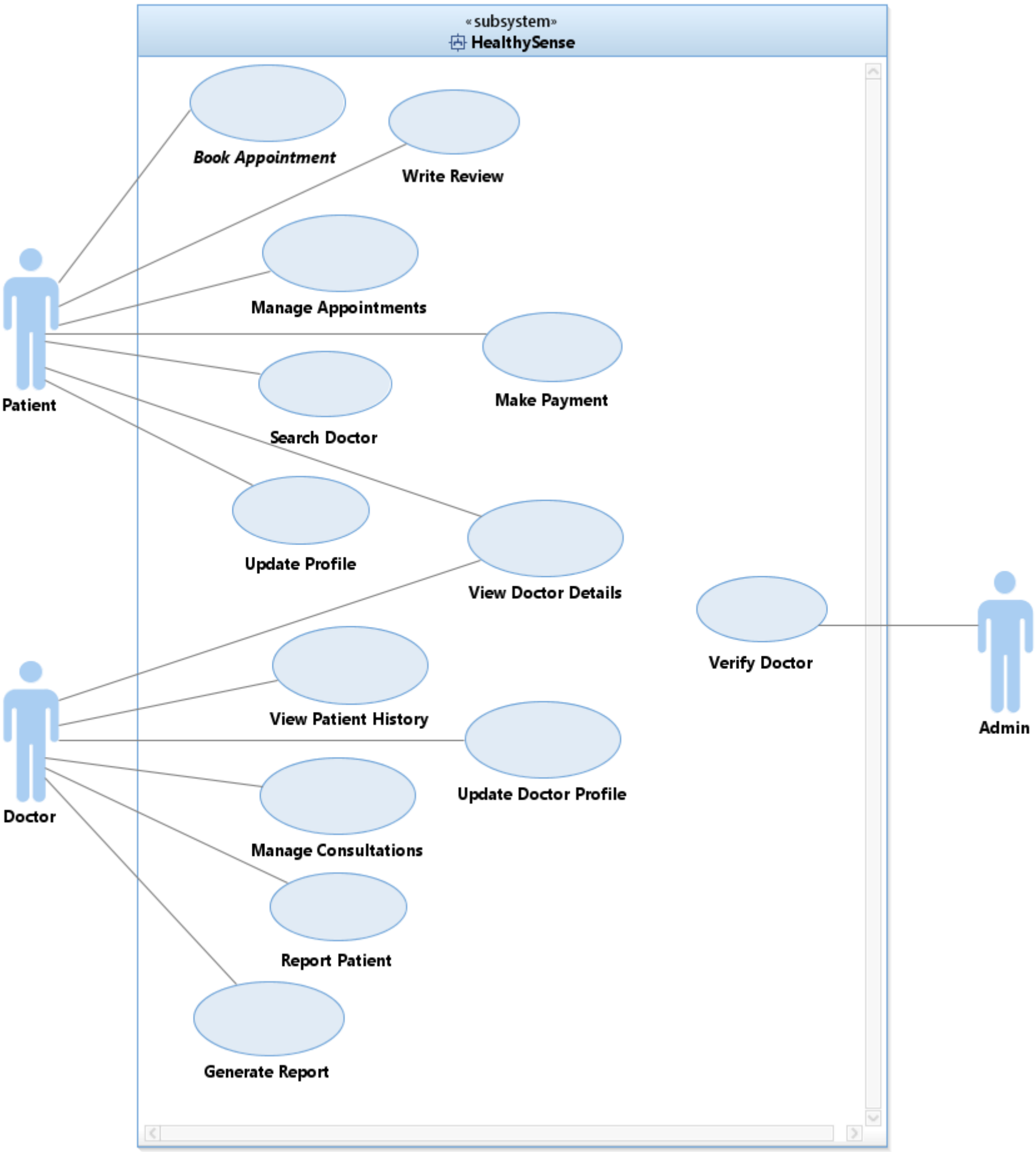
## UC-012

| | |
|---|---|
| **Use Case:** | Verify doctor |
| **Actor(s):** | Admin |
| **Type:** | Secondary |
| **Description:** | Administrator verifies the credentials and qualifications of a Doctor who has applied to join the system. The Administrator accesses the verification feature and reviews the Doctor's application and supporting documents, such as medical licenses and degrees. The Administrator may also conduct background checks to ensure the Doctor meets the system's requirements. Once the verification is complete, the Administrator approves or rejects the Doctor's application. |

## UC-013

| | |
|---|---|
| **Use Case:** | Report Patient |
| **Actor(s):** | Doctor |
| **Type:** | Primary |
| **Description:** | The Doctor can make a report against the Patient if the Patient has inappropriate behavior during the appointment session. Once a report is generated, it is sent to Admin for evaluation. |

# Use Case Diagram



# Expanded Use Cases

## UC-001 Book Appointment

| | |
|---|---|
| Use Case Name: | Book Appointment |
| Scope: | HealthySense |
| Level: | User Goal |
| Primary Actor: | Patient |
| Stakeholders and Interests: | **Patient** |
| Pre-conditions: | Patient logged in. |
| Post-conditions | Redirected to Payment Page. |
| Main Scenario: | |

| User Action | System Response |
|---|---|
| 1. The user clicks on the desired doctor. | |
| | 2. The system displays doctor and fee information and time slots along with a text field to enter a patient's problem. |
| 3. The user clicks the calendar icon. | |
| | 4. The system displays a popup of the calendar. |
| 5. The user navigates through the calendar and clicks on the desired date. | |
| 6. The user clicks away from the calendar popup. | |
| | 7. The system closes the calendar popup. |
| 8. The user clicks the “Morning” toggle. | |
| | 9. The system displays respective appointment slots under the toggle buttons, with the unavailable slots turned red. |
| 10. The user clicks “9:30 am”. | |
| 11. The user enters their problem in the text field. | |
| 12. The user clicks the “Book Appointment” button. | |
| | 13. The system checks if valid date and time are selected. |
| | 14. If valid, The system displays a reconfirmation popup “Confirm Booking”. |

| | |
|---|---|
| | 15. The user clicks on “Yes”. \| |
| | 16. If confirmed, then the system proceeds to Make Payment use case. |
| Extensions: | 1- Cancellation: The user can click “back” at any time and cancel the process.<br>a. User taps the “Back” label.<br><br>5- Invalid Date: The user selects invalid Date.<br>a. The user selects a past date and time.<br>b. The user enters the problem in the text field.<br>c. The user clicks the “Book Appointment” button.<br>d. The system displays the “Invalid Error”.<br>e. The system prompts the User to re-enter the invalid information.<br>f. The User re-enters the information and the system re-validates it.<br>g. If invalid information is entered, the Entered Information “Invalid Date” alternative flow is executed again.This continues until the User enters valid information, or chooses Cancellation flow (see “Cancellation” under Book appointment alternative flow).<br><br>10- Invalid Time: The user does not select a time slot<br>a. The user does not select a time.<br>b. The user enters the problem in the text field.<br>c. The user clicks the “Book Appointment” button.<br>d. The system displays the “Invalid Error”.<br>e. The system prompts the User to enter the missing information.<br>f. The User enters the information and the system re-validates it.<br>g. If invalid information is entered, the Entered Information “Invalid Date” alternative flow is executed again.This continues until the User enters valid information, or chooses Cancellation flow (see “Cancellation” under Book appointment alternative flow). |

# UC-002 Manage Appointment

<table>
<tr><td>Use Case Name:</td><td>Manage Appointment</td></tr>
<tr><td>Scope:</td><td>HealthySense</td></tr>
<tr><td>Level:</td><td>User Goal</td></tr>
<tr><td>Primary Actor:</td><td>Patient</td></tr>
<tr><td>Stakeholders and Interests:</td><td>Patient</td></tr>
<tr><td>Pre-conditions:</td><td>Patient logged in.<br>Booked Appointment.</td></tr>
<tr><td>Post-conditions</td><td>Cancel Appointment<br>Selected pending Appointment deleted.<br><br>Reschedule Appointment:<br>Selected pending Appointment details changed.<br><br>View Completed Appointment: (main scenario)<br>Redirected to the Write Review page.</td></tr>
<tr><td>Main Scenario:</td><td>
<table>
<tr><th>User Action</th><th>System Response</th></tr>
<tr><td colspan="2">A) Cancel Appointment</td></tr>
<tr><td>1. The user clicks the “Appointments” icon in the navigation bar.</td><td></td></tr>
<tr><td></td><td>2. The system displays all the pending and completed appointments of the user.</td></tr>
<tr><td>3. The user clicks on a pending appointment.</td><td></td></tr>
<tr><td></td><td>4. The system displays the appointment information along with “Reschedule Appointment” and “Cancel Appointment” buttons.</td></tr>
<tr><td>5. The user clicks the “Cancel Appointment” button.</td><td></td></tr>
<tr><td></td><td>6. The system displays a list of reasons to select from along with a textfield.</td></tr>
<tr><td>7. The user clicks on the reason they want to cancel the appointment.</td><td></td></tr>
<tr><td>8. The user enters “I am not available” in the textfield.</td><td></td></tr>
<tr><td>9. The user clicks the “Cancel Appointment” button.</td><td></td></tr>
<tr><td></td><td>10. The system checks if a reason is selected.</td></tr>
<tr><td colspan="2">B) Reschedule Appointment</td></tr>
<tr><td>1. The user clicks the “Appointments” icon in the navigation bar.</td><td></td></tr>
</table>
</td></tr>
</table>

| | |
|---|---|
| | 2. The system displays all the pending and completed appointments of the user. |
| 3. The user clicks on the appointment. | |
| | 4. The system displays the appointment information along with “Reschedule Appointment” and “Cancel Appointment” buttons. |
| 5. The user clicks the “Reschedule Appointment” button. | |
| | 6. The system displays a list of reasons to select from along with a textfield and date and time options. |
| 7. The user clicks on the “I want to change Doctor” toggle. | |
| 8. The user enters “I am not available” in the textfield. | |
| 9. The user clicks the calendar icon. | |
| | 10. The system displays a popup of the calendar. |
| 11. The user navigates through the calendar and clicks on the desired date. | |
| 12. The user clicks away from the calendar popup. | |
| | 13. The system closes the calendar popup. |
| 14. The user clicks the “Morning” toggle. | |
| | 15. The system displays respective appointment slots under the toggle buttons, with the unavailable slots turned red. |
| 16. The user clicks “9:30 am”. | |
| 17. The user clicks the “Reschedule Appointment” button. | |
| | 18. The system checks if a time and reason is selected. |
| **C) View Completed Appointment** | |
| 1. The user clicks the “Appointments” icon in the navigation bar. | |
| | 2. The system displays all the pending and completed appointments of the user. |

| | |
|---|---|
| | <table><tr><td>3. The user selects appointments from the completed appointment list.</td><td></td></tr><tr><td></td><td>4. The system displays the appointment details with the “Write Review” button.</td></tr><tr><td>5. User clicks “Write Review”.</td><td></td></tr><tr><td></td><td>6. The system runs the Write Review use case.</td></tr></table> |
| Extensions: | 1- Cancellation: The user can click “back” at any time and cancel the process.<br>a. User taps the “Back” label.<br><br>A7- Invalid Reason: The user did not select a reason.<br>a. The user enters the problem in the text field.<br>b. The user clicks the “Reschedule Appointment” button.<br>c. The system displays the “Invalid Error”.<br>d. The system prompts the User to enter the missing information.<br>e. The User enters the information and the system re-validates it.<br>f. If invalid information is entered, the Entered Information “Invalid Date” alternative flow is executed again.This continues until the User enters valid information, or chooses Cancellation flow (see “Cancellation” under Manage appointment alternative flow).<br><br>B11- Invalid Date: The user selects invalid Date.<br>a. The user selects a past date and time.<br>b. The user enters the problem in the text field.<br>c. The user clicks the “Reschedule Appointment” button.<br>d. The system displays the “Invalid Error”.<br>e. The system prompts the User to re-enter the invalid information.<br>f. The User re-enters the information and the system re-validates it.<br>g. If invalid information is entered, the Entered Information “Invalid Date” alternative flow is executed again.This continues until the User enters valid information, or chooses Cancellation flow (see “Cancellation” under Manage appointment alternative flow). |

## UC-003 Search Doctor

| | |
|---|---|
| Use Case Name: | Search Doctor |
| Scope: | HealthySense |
| Level: | User Goal |
| Primary Actor: | Patient |
| Stakeholders and Interests: | **Patient** |
| Pre-conditions: | Patient logged in. |
| Post-conditions | A sorted and filtered list of doctors matching the search keywords. |
| Main Scenario: | <table><tr><th>User Action</th><th>System Response</th></tr><tr><td>1. The user clicks on the “Search” icon from the navigation bar.</td><td></td></tr><tr><td></td><td>2. The system displays a</td></tr></table> |

| | |
|---|---|
| | <table><tr><td></td><td>search bar and a list of top doctors sorted by popularity.</td></tr><tr><td>3. The user types doctor in the search bar.</td><td></td></tr><tr><td>4. The user clicks on the filter icon.</td><td></td></tr><tr><td></td><td>5. The system displays a popup containing a drop down menu for speciality and toggles for ratings.</td></tr><tr><td>6. The user clicks on “Dermatologist” from the dropdown menu.</td><td></td></tr><tr><td>7. The user toggles “All” ratings.</td><td></td></tr><tr><td>8. The user clicks on the “Apply” button.</td><td></td></tr><tr><td></td><td>9. The system closes the popup.</td></tr><tr><td></td><td>10. The system displays filtered search.</td></tr><tr><td>11. The user toggles “A-Z”.</td><td></td></tr><tr><td></td><td>12. The system sorts the results alphabetically.</td></tr><tr><td>13. The user clicks on the doctor.</td><td></td></tr></table> |
| Extensions: | 1- Cancellation: The user can click “back” at any time and cancel the process.<br>a. User taps the “Back” label.<br><br>3- The user can skip step 3.<br><br>4- The user can skip the filter and jump to step 11. |

## UC-004 View Doctor Details

| | |
|---|---|
| Use Case Name: | View Doctor Details |
| Scope: | HealthySense |
| Level: | User Goal |
| Primary Actor: | Patient |
| Stakeholders:: | **Patient** |
| Pre-conditions: | Patient logged in. |
| Post-conditions | Redirected to the Book Appointment page. (main scenario) |
| Main Scenario: | <table><tr><th>User Action</th><th>System Response</th></tr><tr><td>1. The user clicks on the doctor.</td><td></td></tr><tr><td></td><td>2. The system displays the Doctors details, including doctor ratings, satisfied</td></tr></table> |

| | |
|---|---|
| | <table><tr><td></td><td>patients chart, experience, services, working hours, clinic/hospital location and fee information.</td></tr><tr><td></td><td>3. The system displays a write review icon along with a “Book Appointment” button.</td></tr><tr><td>4. The user clicks on the book appointment button.</td><td></td></tr><tr><td></td><td>5. The system runs the Book Appointment” use case.</td></tr></table> |
| Extensions: | 1- Cancellation: The user can press the back label at any moment.<br>a. The user presses the back label.<br><br>4- Choosing Reviews Button<br>a. The user clicks the “Reviews” button.<br>b. The system shows all reviews.<br><br>5- Choosing Certificates Button<br>a. The user clicks the “Certificates” button.<br>b. The system shows all certificates. |

## UC-005 Write Review

| | |
|---|---|
| Use Case Name: | Write Review |
| Scope: | HealthySense |
| Level: | User Goal |
| Primary Actor: | Patient |
| Stakeholders and Interests: | **Patient** |
| Pre-conditions: | Patient logged in. |
| Post-conditions | Review submitted. |
| Main Scenario: | <table><tr><th>User Action</th><th>System Response</th></tr><tr><td>1. The user clicks on the write review icon from doctor details.</td><td></td></tr><tr><td></td><td>2. The system displays the</td></tr></table> |

| | |
|---|---|
| | review page containing doctor information along with rating bars and a text field. |
| 3. The user gives a 4 star rating in the “Overall Experience” rating bar. | |
| 4. The user types, “Very good experience” in the text field. | |
| 5. The user gives a 4 star rating in the “Rate the Checkup” rating bar. | |
| 6. The user gives a 4 star rating in the “Clinic Environment” rating bar. | |
| 7. The user gives a 4 star rating in the “Staff Behaviour” rating bar. | |
| 8. The user clicks “yes” under “Would you recommend them to your friend” | |
| 9. The user clicks the “Submit” button. | |
| | 10. The system checks if all rating bars are filled. |

| | |
|---|---|
| Extensions: | 1- Cancellation: The user can click “back” at any time and cancel the process.<br>a. User taps the “Back” label.<br><br>3- Invalid Rating: The user does not fill rating bars<br>a. The user enters the review in the text field.<br>b. The user clicks the “Submit” button.<br>c. The system displays the “Invalid Error”.<br>d. The system prompts the User to enter the missing information.<br>e. The User selects the ratings by clicking the rating bars and the system re-validates it.<br>f. If invalid information is entered, the “Invalid Rating” alternative flow is executed again.This continues until the User enters valid information, or chooses Cancellation flow (see “Cancellation” under Write Review alternative flow).<br><br>4- The user can skip step 4 and jump to step 5. |

## UC-007 Make Payment

| | |
|---|---|
| Use Case Name: | Make Payment |
| Scope: | HealthySense |
| Level: | User Goal |
| Primary Actor: | Patient |
| Stakeholders and Interests: | 1. **Patient**<br>The Patient wants to pay for the appointment.<br><br>2. **Doctor**<br>The Doctor wants to get money for consulting the patient. |
| Pre-conditions: | 1. Patient has successfully logged in.<br>2. Patient has successfully booked an appointment. |
| Post-conditions | 1. Patient has successfully made payment for his/her appointment and is added to doctor’s consultations. |
| Main Scenario: | |

<table>
<tr><td></td><td>
<table>
<tr><th>User Action</th><th>System Response</th></tr>
<tr><td></td><td>1. The system grants user access to the payment page after successful appointment booking.</td></tr>
<tr><td></td><td>2. The system displays time, package, duration and amount details.</td></tr>
<tr><td>3. The user selects a payment type.</td><td></td></tr>
<tr><td></td><td>4. The system prompts for any required payment details depending on the payment type selected.</td></tr>
<tr><td>5. The user enters all required details correctly.</td><td></td></tr>
<tr><td>6. The user selects the make payment option.</td><td></td></tr>
</table>
</td></tr>
<tr><td>Extensions:</td><td>1- Cancellation: at any time, the User may choose to cancel the payment.<br>a. The user selects the cancel option.<br>b. The user is redirected back to the book screen.</td></tr>
</table>

## UC-008 Update Profile Patient

<table>
<tr><td>Use Case Name:</td><td>Update Profile</td></tr>
<tr><td>Scope:</td><td>HealthySense</td></tr>
<tr><td>Level:</td><td>User Goal</td></tr>
<tr><td>Primary Actor:</td><td>Patient</td></tr>
<tr><td>Stakeholders and Interests:</td><td>1. Patient<br>The Patient wants to keep his profile up to date.</td></tr>
<tr><td>Pre-conditions:</td><td>➢ Patient has successfully logged in, for Patient.</td></tr>
<tr><td>Post-conditions</td><td>➢ Patient has updated details in profile, for Patient.</td></tr>
<tr><td>Main Scenario:</td><td>
<table>
<tr><th>User Action</th><th>System Response</th></tr>
<tr><td>1. The user selects the profile option in settings.</td><td></td></tr>
</table>
</td></tr>
</table>

| | |
|---|---|
| | 2. The system displays the following fields: photo, name, email, dob, country phone number and gender. |
| | 3. Along with medical history(description and type). |
| 4. The user can add a new medical record by choosing the add option in medical history. | |
| | 5. The system prompts the user to add type from dropdown and write description. |
| 6. The user adds type and description and selects add. | |
| | 7. The system adds new medical records to the patient's medical history. |
| 8. The user can view updated medical history in profile. | |
| **If the patient wants to modify profile details. (from step 3 onwards)** | |
| 4. The user can modify information of any field. | |
| 5. The user selects the update profile option. | |
| | 6. The system validates the entered information and updates the patient's record. |
| 7. The user can view the updated profile. | |

| | |
|---|---|
| Extensions: | 1- Back: At any time when there is no popup, the user may choose to back.<br>a. The user selects the back option.<br><br>2- Change page: At any time when there is no popup, the user may choose to navigate to another page.<br>a. The user selects another icon from the navigation bar.<br>b. The user is directed to the selected page.<br><br>5- Invalid Credentials, while entering details, if the system determines that the user entered invalid details upon selecting the update profile option.<br>a. The error is displayed.<br>b. The system prompts the user to re enter the invalid information.<br>c. The Patient re-enters information and selects the update profile option until it is valid. |

## UC-009 Update Profile Doctor

| | |
|---|---|
| Use Case Name: | Update Profile |
| Scope: | HealthySense |
| Level: | User Goal |
| Primary Actor: | Patient, Doctor |
| Stakeholders and Interests: | 1. **Doctor**<br>The Doctor wants to keep his profile up to date.<br><br>2. **Admin**<br>The Admin wants to keep an updated and verified record of doctors. |
| Pre-conditions: | ➢ Doctor has successfully logged in, for **Doctor**. |
| Post-conditions | ➢ Doctor has updated details in profile, for **Doctor**. |
| Main Scenario: | **User Action** \| **System Response** |

<table>
<tr><td></td><td>
<table>
<tr><td>1. The user selects the profile option from settings.</td><td></td></tr>
<tr><td></td><td>2. The system displays the following fields: photo, name, email, dob, country phone number and gender.</td></tr>
<tr><td></td><td>3. Along with medical certificates.</td></tr>
<tr><td>4. The user can add a new medical certificate by selecting the add option in medical certificates.</td><td></td></tr>
<tr><td></td><td>5. The system prompts the user to add certificate name, issue date, expiration date and photo of certificate for approval.</td></tr>
<tr><td>6. The user enters data and selects the send for approval option.</td><td></td></tr>
<tr><td></td><td>7. The system sends an added certificate to the admin for approval.</td></tr>
<tr><td>8. The user can view the added certificate in profile once approved by admin.</td><td></td></tr>
</table>
</td></tr>
<tr><td>Extensions:</td><td>1- Back: At any time when there is no popup, the user may choose to back.<br>a. The user selects the back option.<br><br>2- Change page: At any time when there is no popup, the user may choose to navigate to another page.<br>a. The user selects another icon from the navigation bar.<br>b. The user is directed to the selected page.<br><br>4- Cancel add medical certificate, for Doctor.<br>a. The Doctor selects the cross option.<br>b. The Doctor can view the update profile page.</td></tr>
</table>

## UC-011 View Patient Record

| Use Case Name: | View Patient Record |
|---|---|
| Scope: | HealthySense |
| Level: | User Goal |
| Primary Actor: | Doctor |
| Stakeholders and Interests: | 1. **Doctor**<br>The doctor wants to get more information about the patient he/she is consulting. |
| Pre-conditions: | 1. Doctor has successfully logged in.<br>2. Patient is booked for consultation under the doctor. |
| Post-conditions | 1. Doctor has detailed information of Patient he/she is consulting. |
| Main Scenario: | |

| User Action | System Response |
|---|---|
| 1. The user selects a patient in consultations. | |

| | |
|---|---|
| | <table><tr><td></td><td>2. The system displays the patient's photo, name, blood group, gender, dob, country and medical history.</td></tr><tr><td></td><td>3. Along with the patient's previous appointments.</td></tr><tr><td>4. The user can select an appointment from previous appointments.</td><td></td></tr><tr><td></td><td>5. The system displays appointment timings, patient data, and view report option.</td></tr><tr><td>6. The user selects back.</td><td></td></tr><tr><td></td><td>7. The system redirects the user to the patient details page.</td></tr><tr><td>8. The user can keep repeating steps 4-7.</td><td></td></tr></table> |
| Extensions: | 1- Back, at any time, the user may choose to go back.<br>a. The user selects the back option.<br><br>2- Change page, At any time, the user may choose to navigate to another page.<br>a. The user selects another icon from the navigation bar.<br>b. The user is directed to the selected page. |

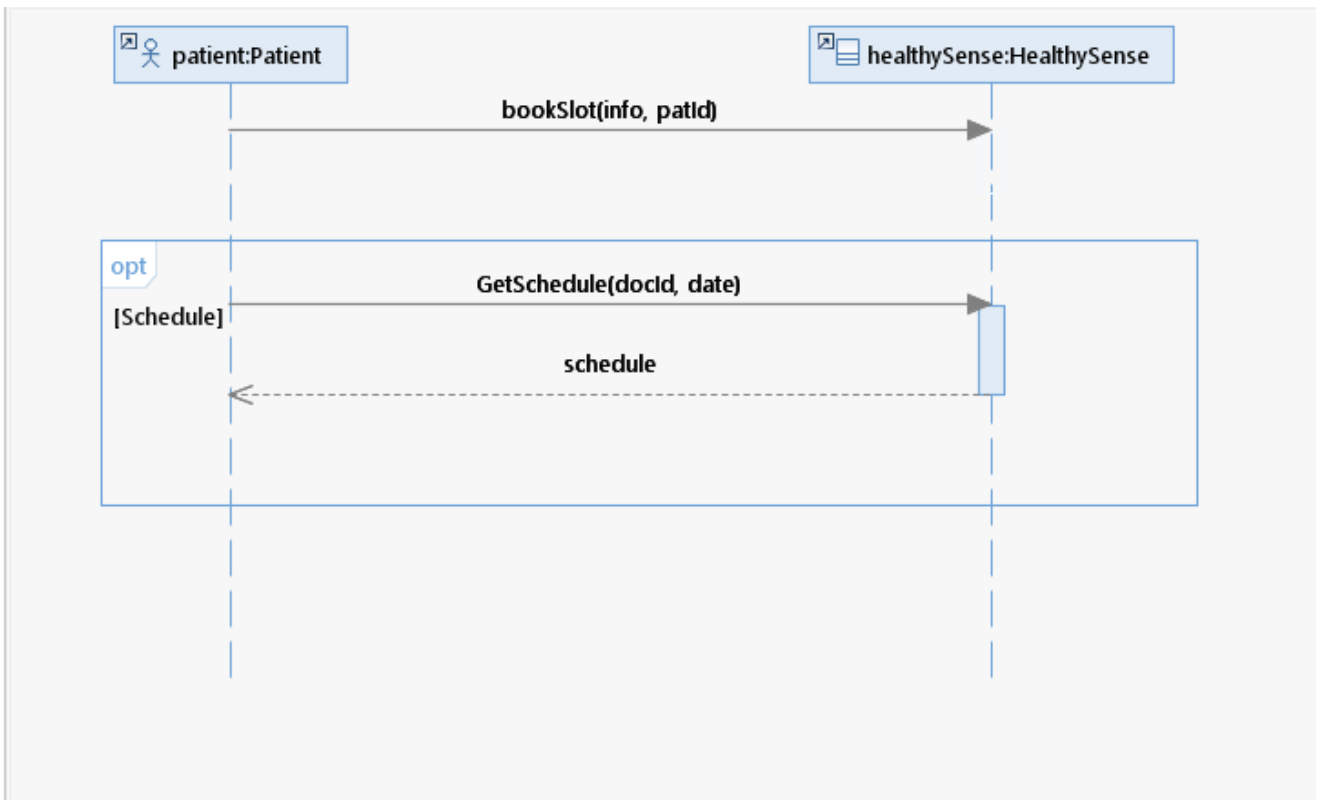
## UC-013 Report Patient

| | |
|---|---|
| Use Case Name: | Verify Doctor |
| Scope: | HealthySense |
| Level: | User Goal |
| Primary Actor: | Doctor |
| Stakeholders and Interests: | 1. **Doctor**<br>The doctor wants to report patients that may cause problems. |
| Pre-conditions: | 1. Doctor has successfully logged in.<br>2. Patient is booked for consultation under the doctor. |
| Post-conditions | 1. Patient is flagged under the admin's list. |
| Main Scenario: | <table><tr><th>User Action</th><th>System Response</th></tr><tr><td>1. The user selects the report patient option against the patient in consultations.</td><td></td></tr></table> |

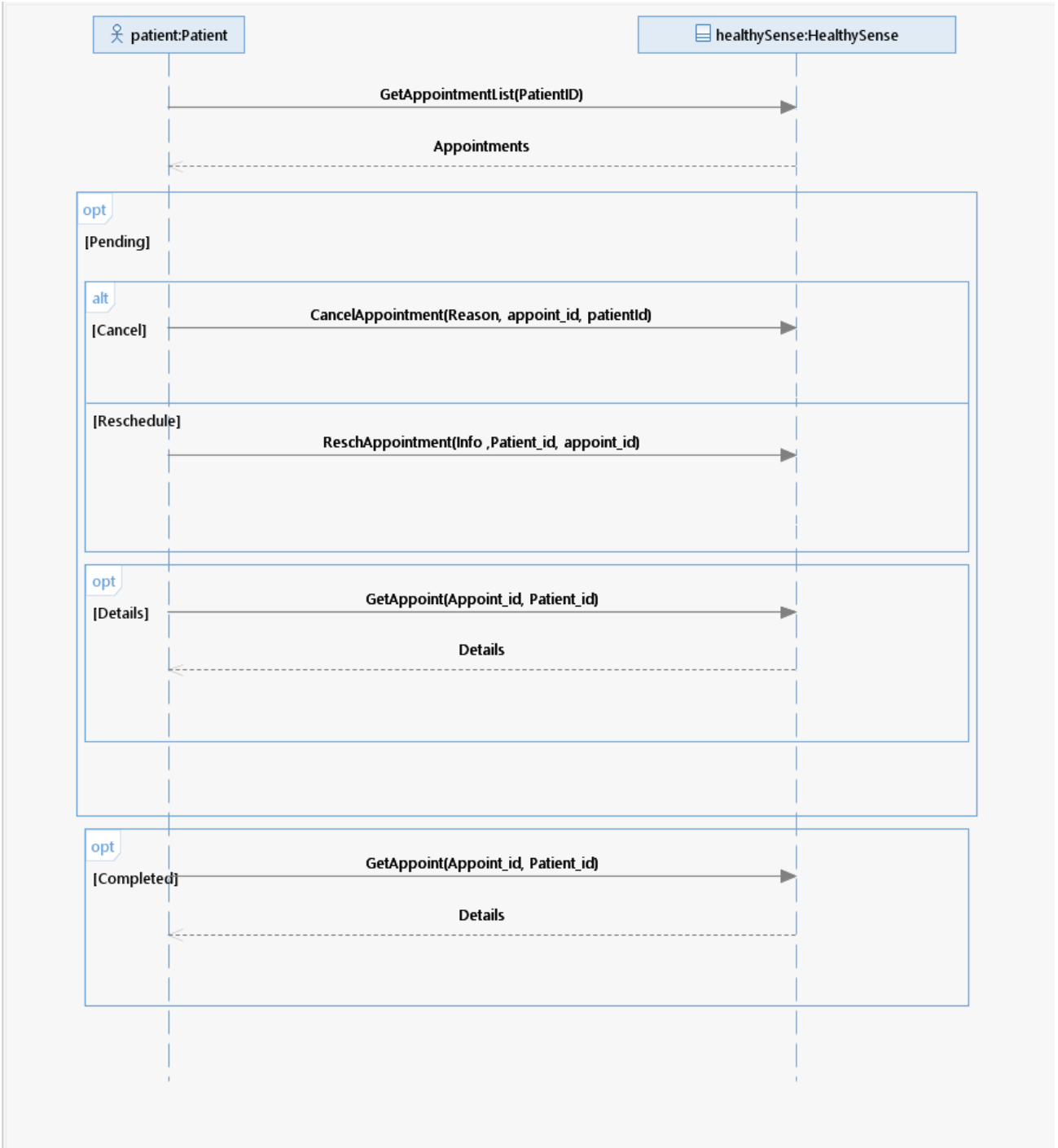
| | |
|---|---|
| | 2. The system displays patient, checkboxes for reasons, and text box to add details.<br>3. The user selects the appropriate check boxes and adds details.<br>4. The user selects the report patient option.<br>5. The system flags the patient in the admin record. |
| Extensions: | 1- Back: at any time when there is no popup, the user may choose to back.<br>a. The user selects the back option.<br><br>2- Change page: at any time, the user may choose to navigate to another page.<br>a. The user selects another icon from the navigation bar.<br>b. The user is directed to the selected page. |

# System Sequence Diagrams

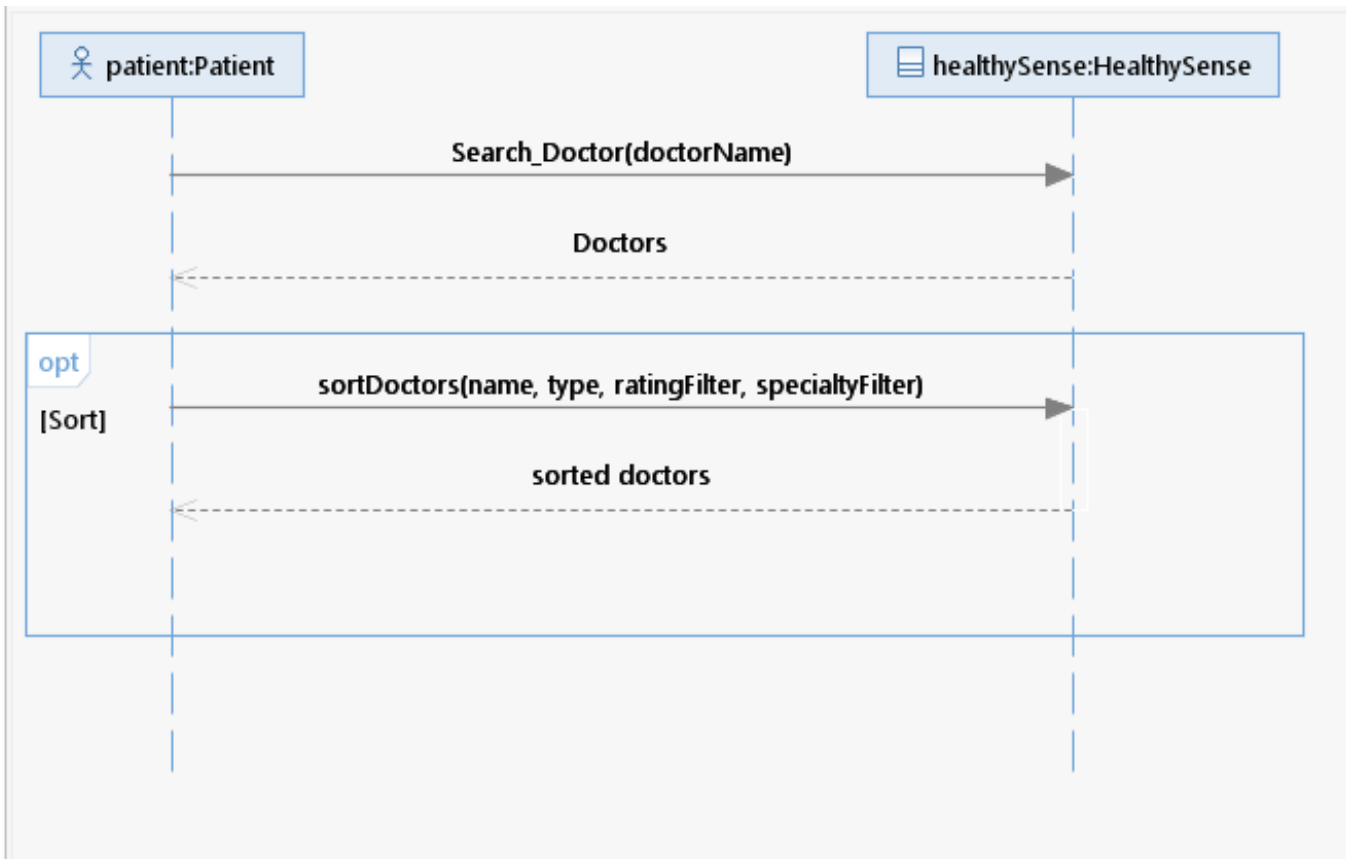
## UC-001 Book Appointment



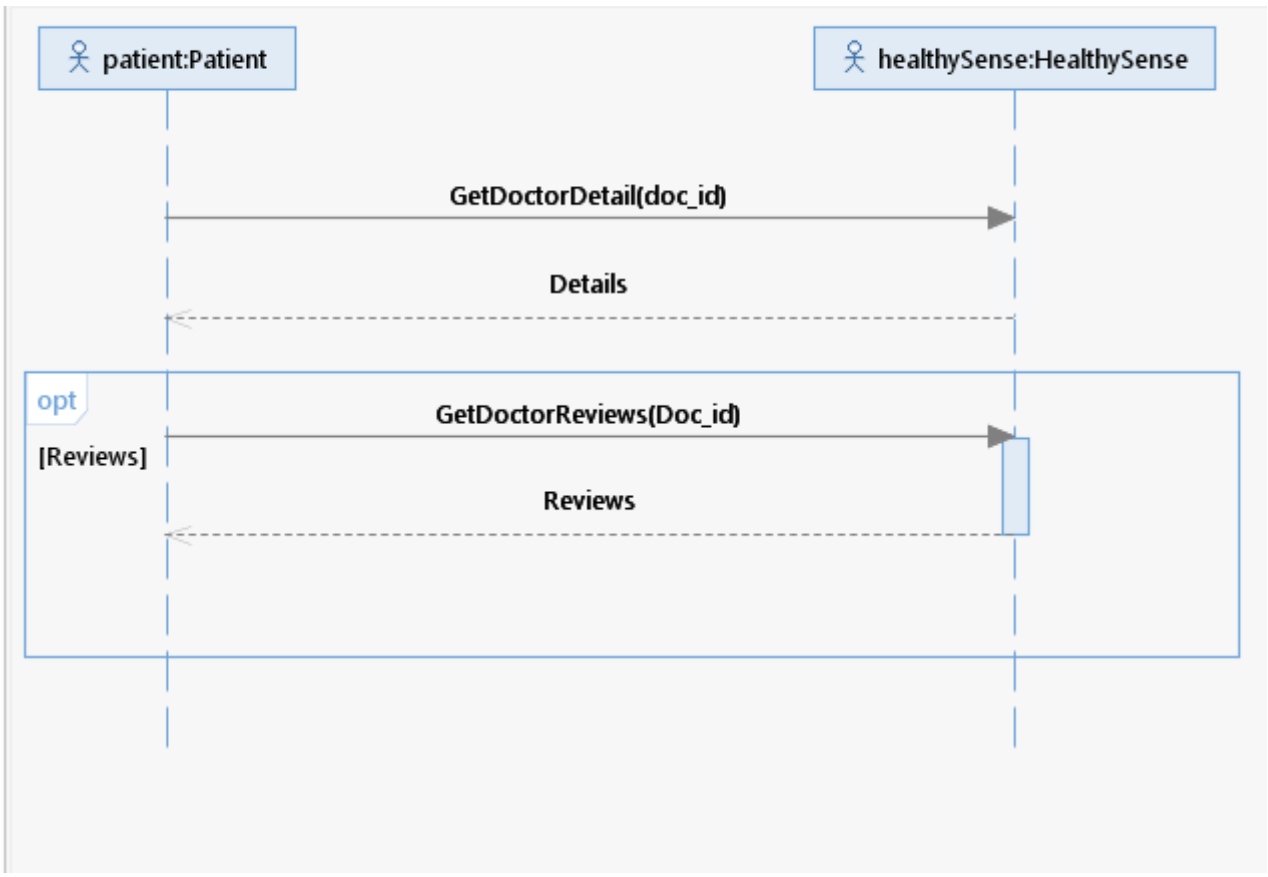
# UC-002 Manage Appointment



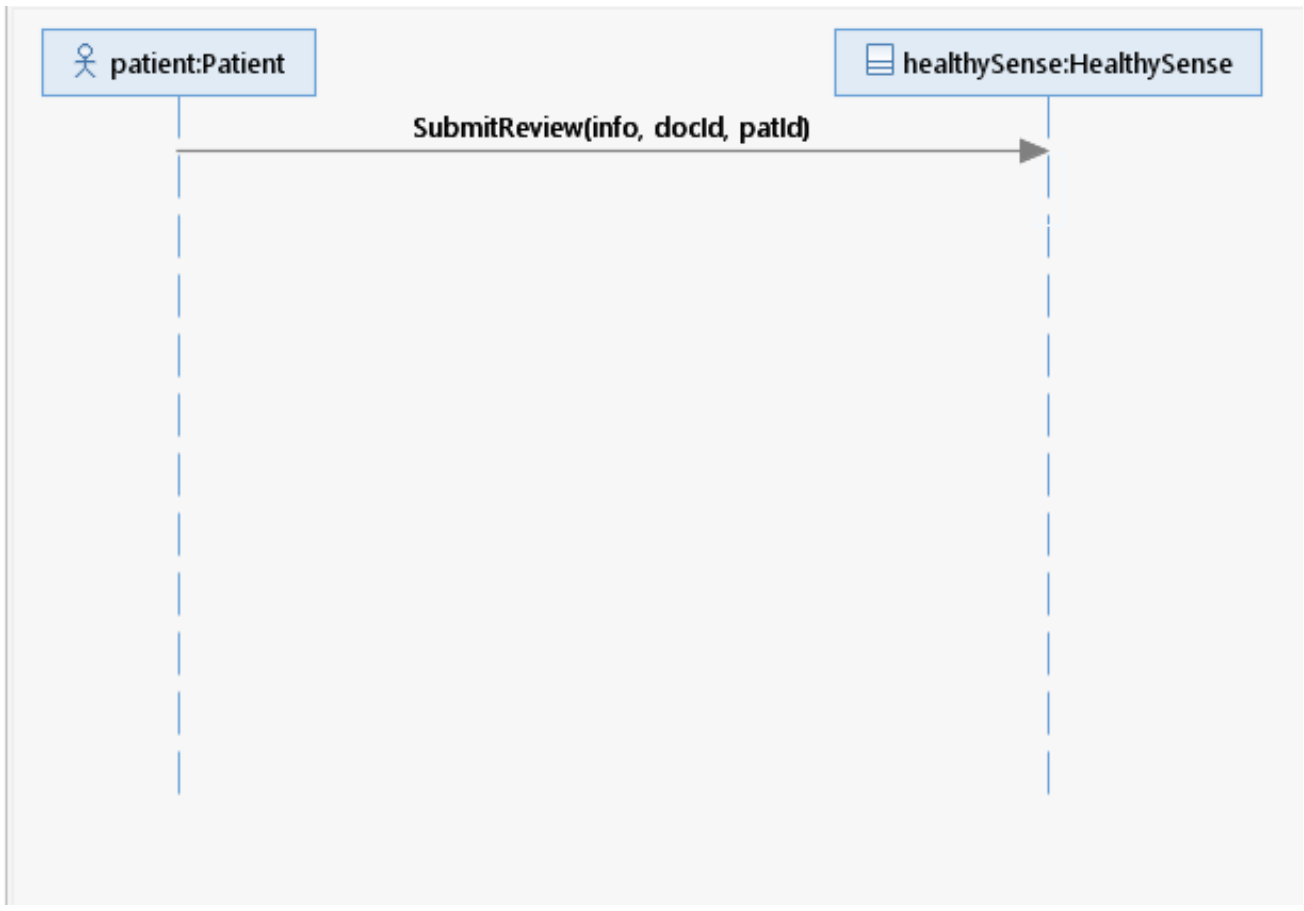
## UC-003 Search Doctor



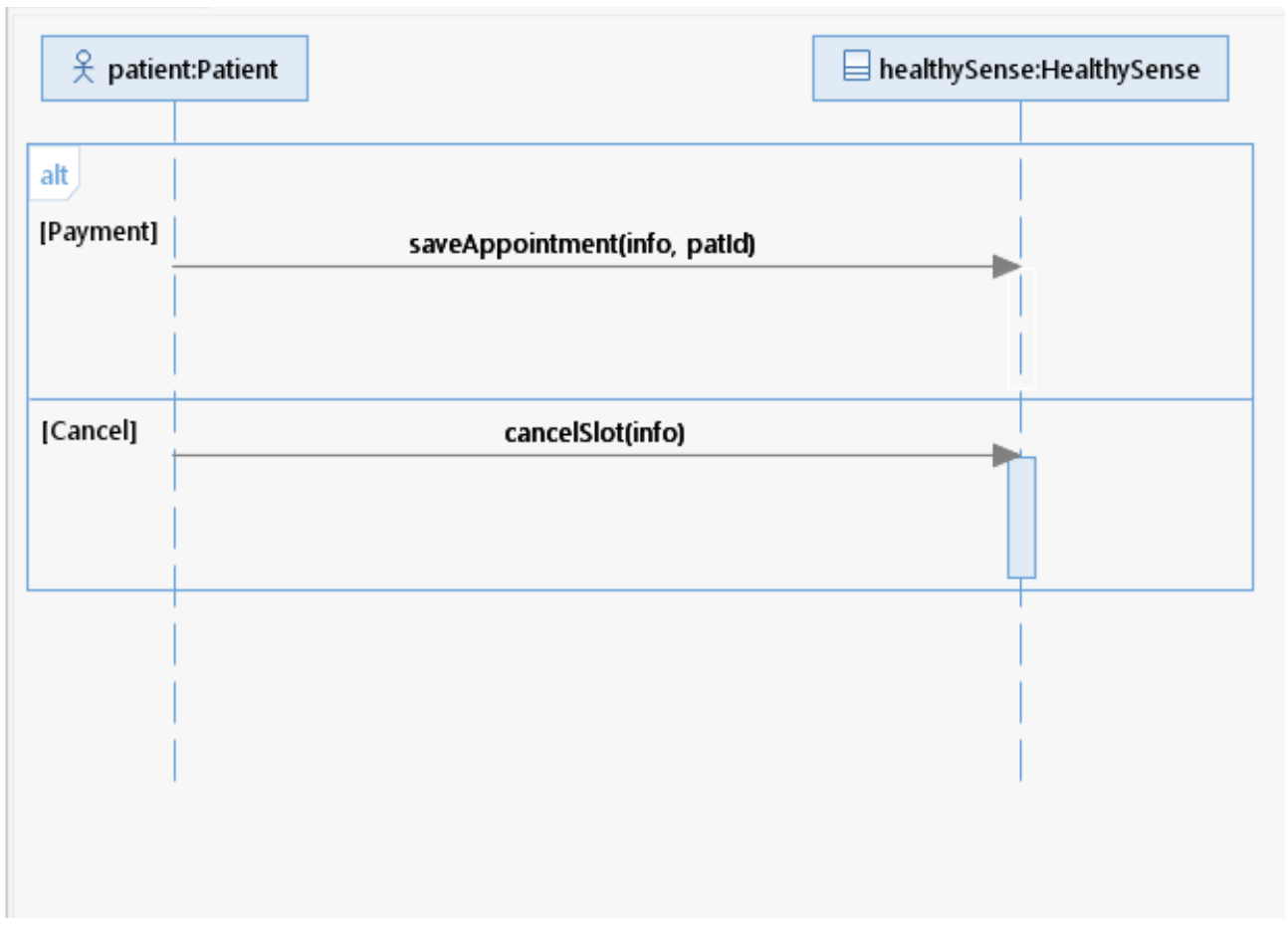

## UC-004 View Doctor Details



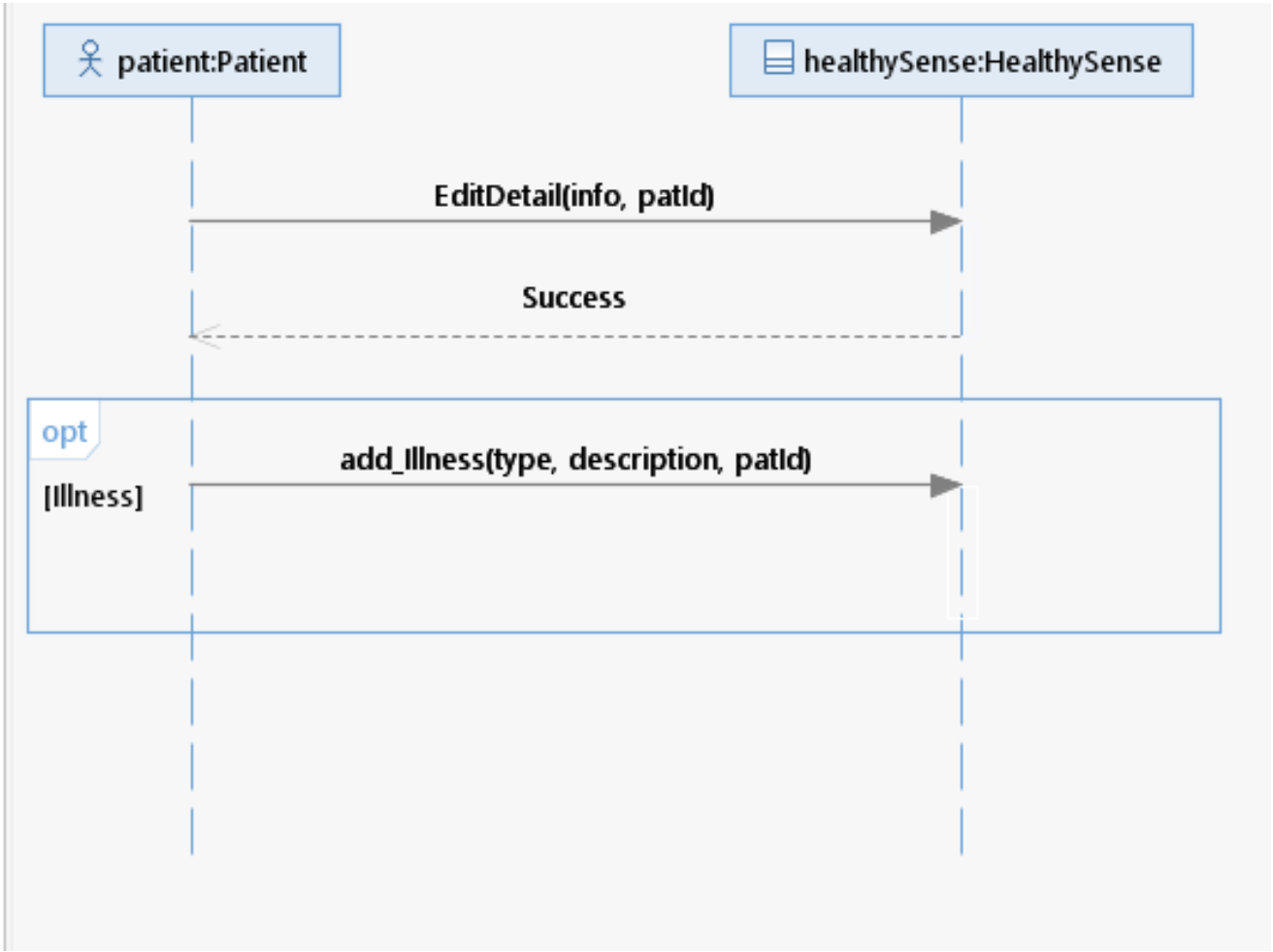
## UC-005 Write Review




## UC-007 Make Payment



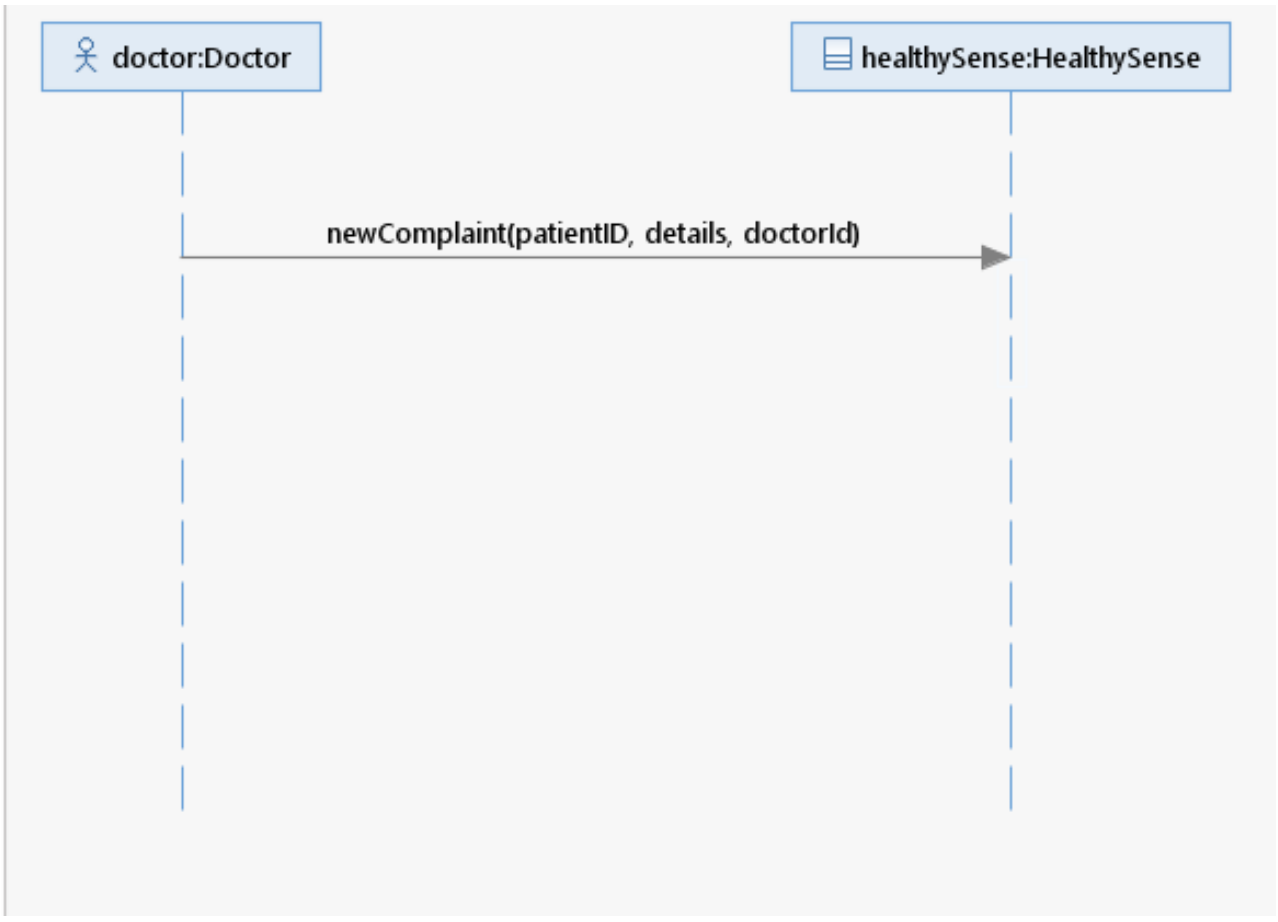
## UC-008 Update Patient Profile



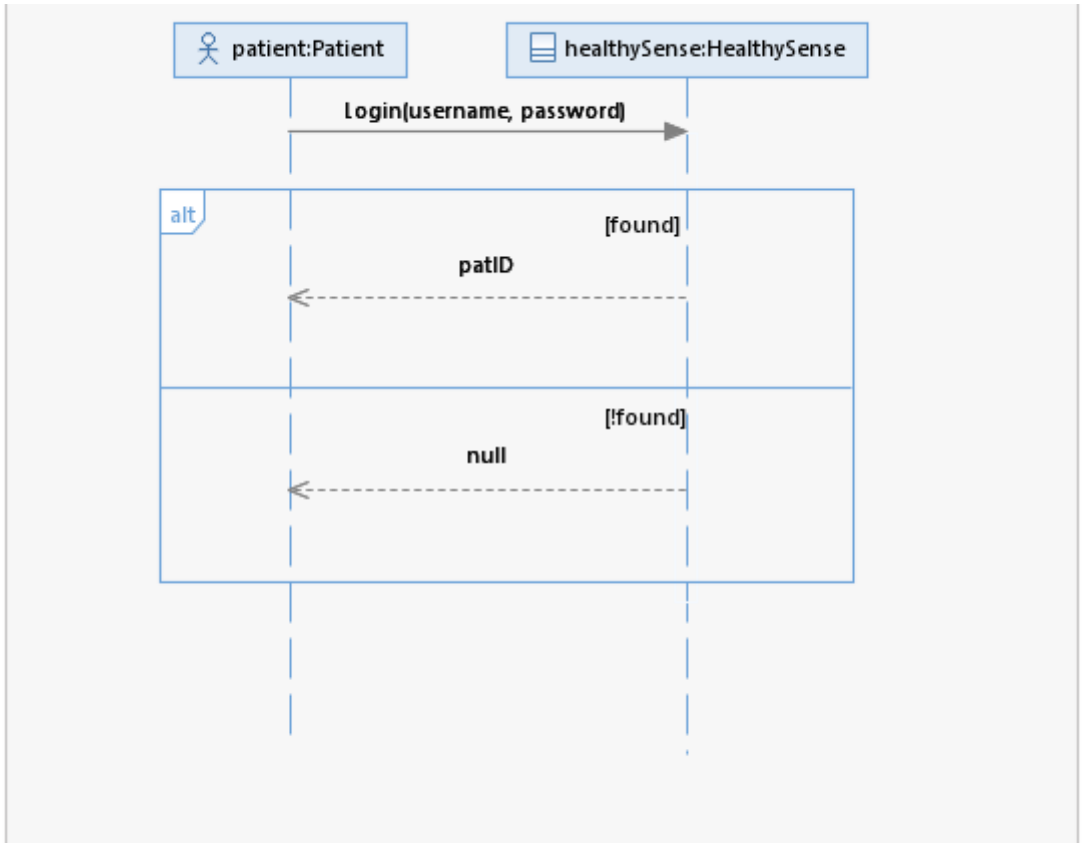

## UC-009 Update Doctor Profile

## UC-011 View Patient Record

## UC-013 Report Patient



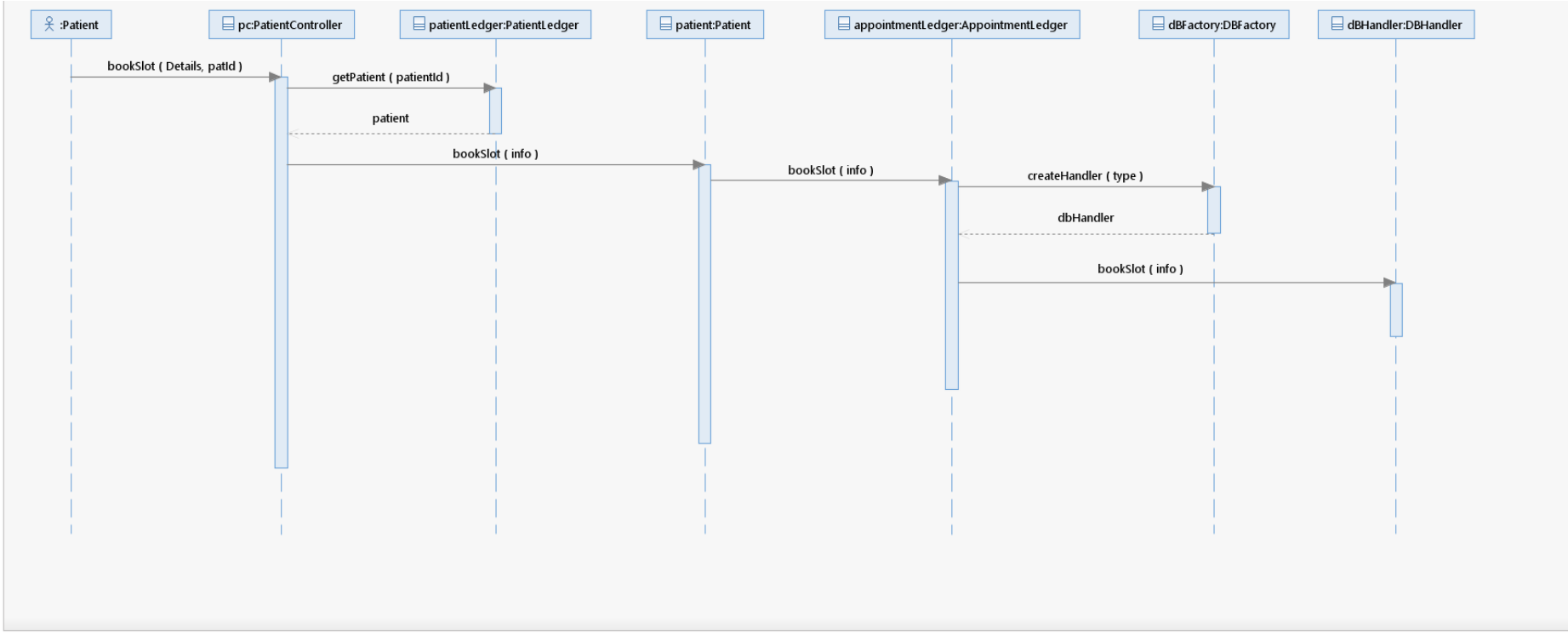
## Session Management



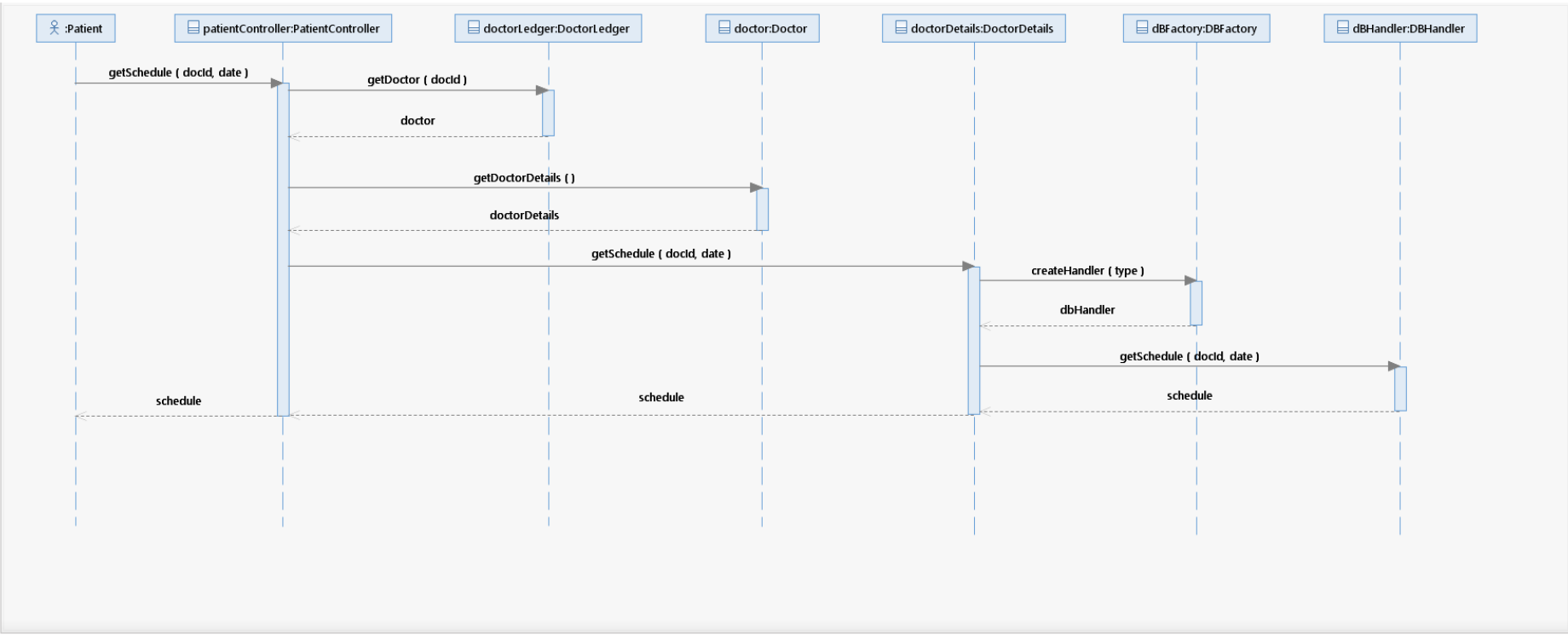
# 1. Sequence Diagrams

## 1.1. UC-001 Book Appointment

### 1.1.1. SD-001 Book Slot

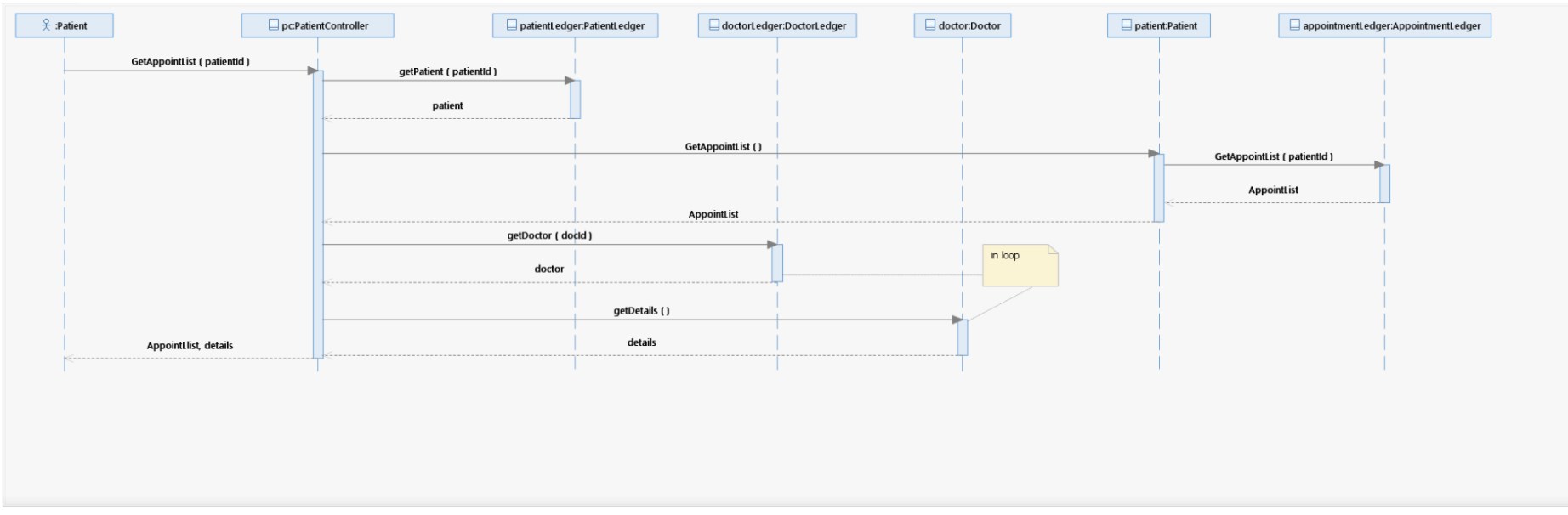



### 1.1.2. SD-002 Get Schedule

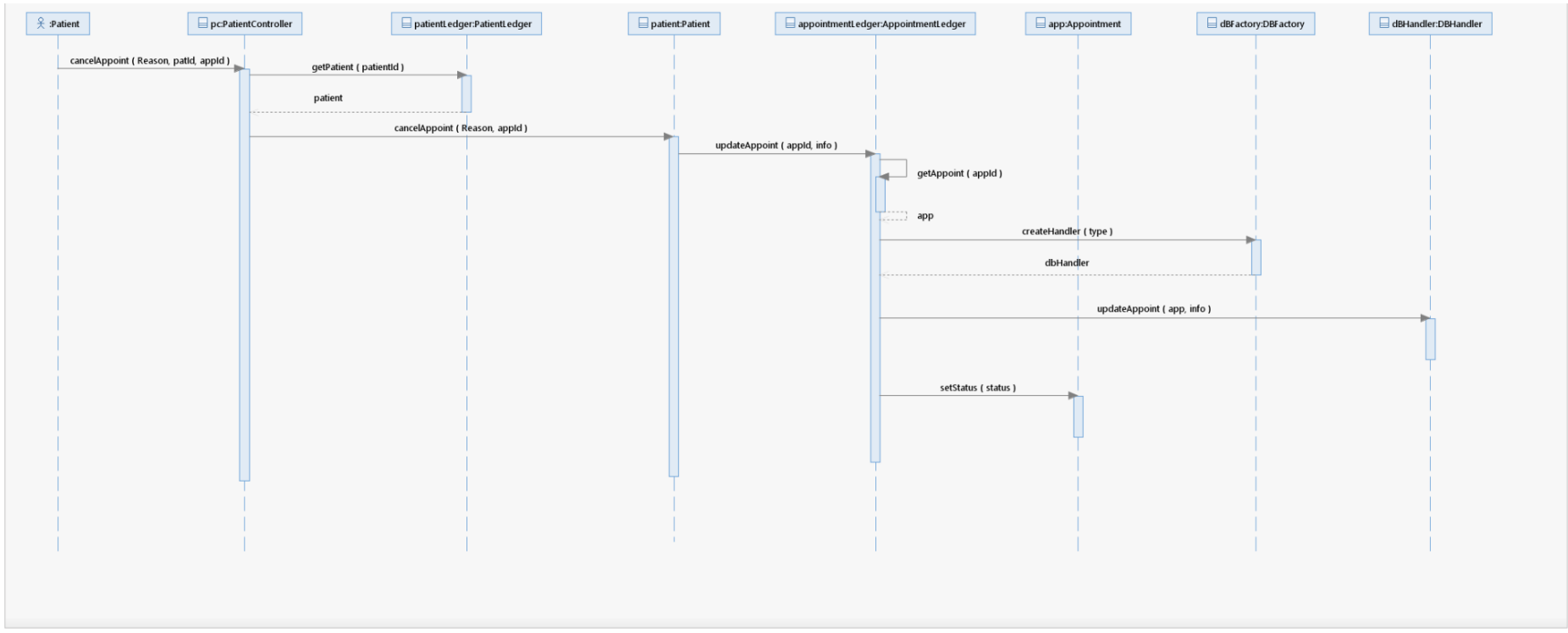



## 1.2. UC-002 Manage Appointment

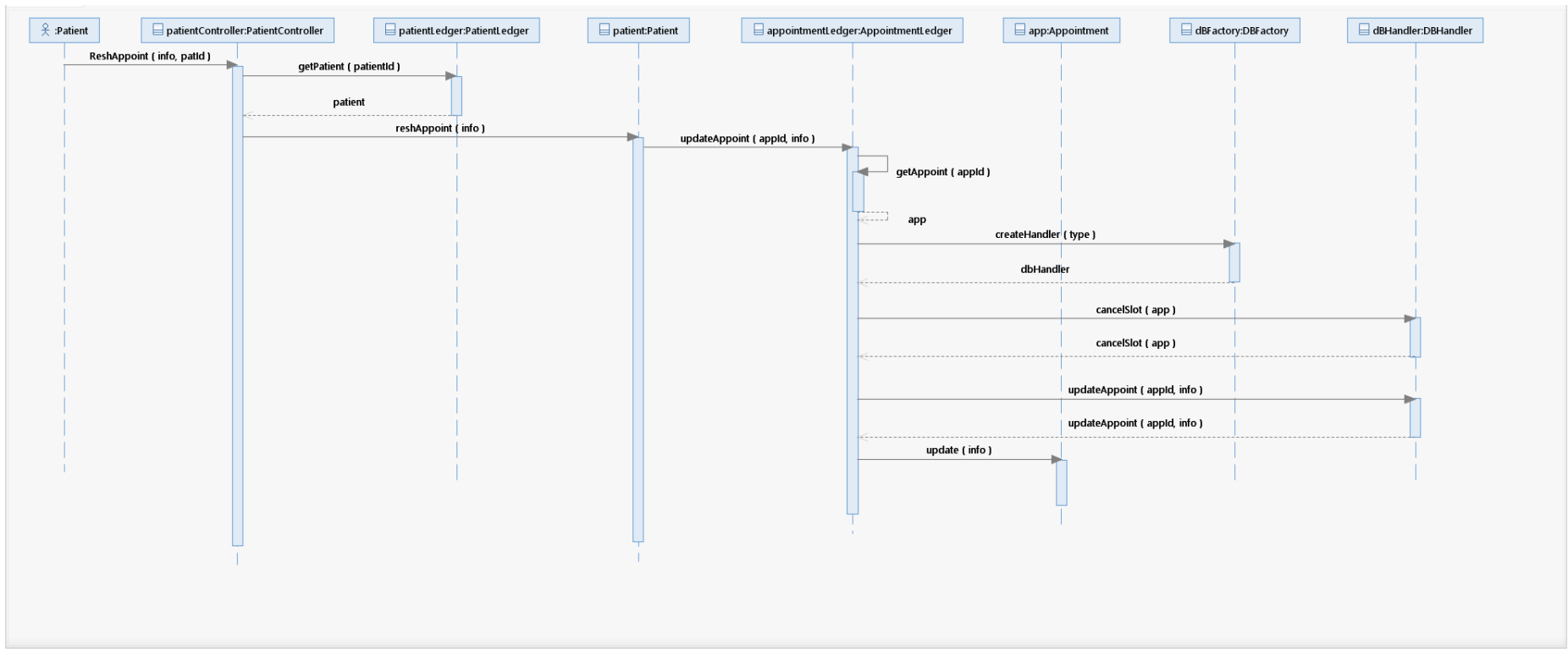
### 1.2.1. SD-001 Appointment List



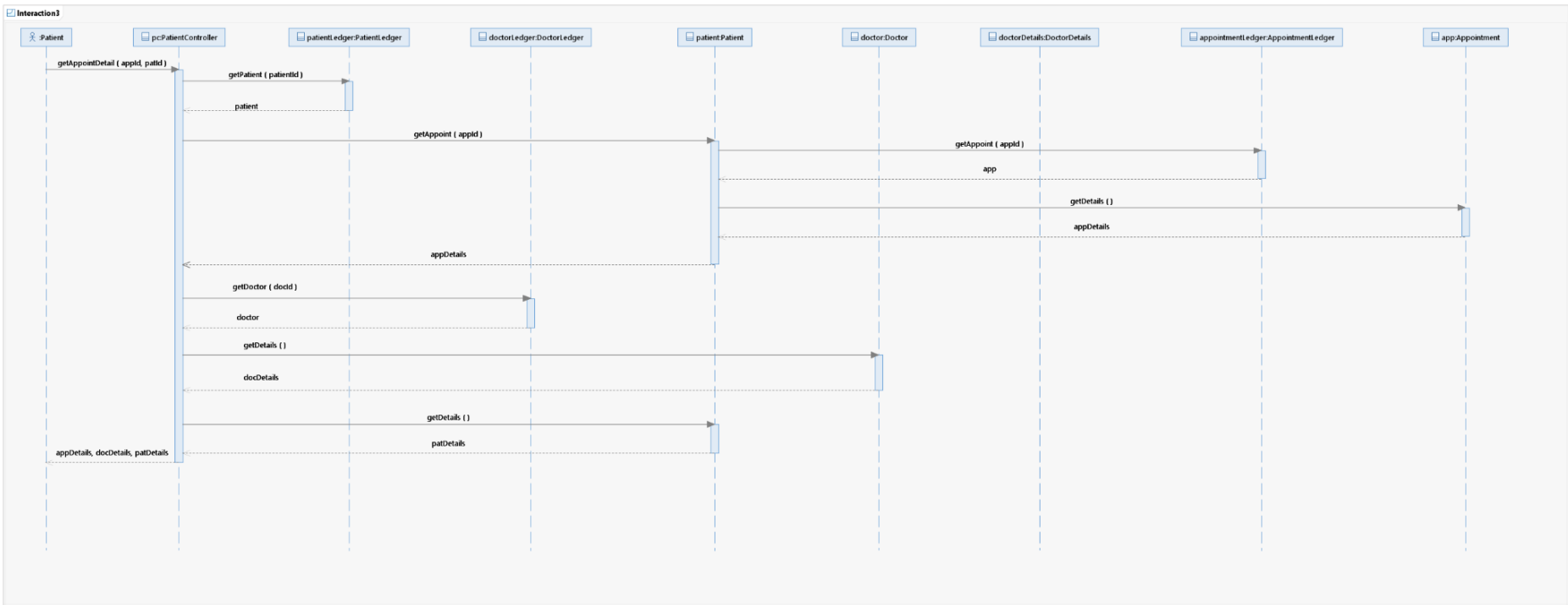
### 1.2.2. SD-002 Cancel Appointment




### 1.2.3. SD-003 Reschedule Appointment

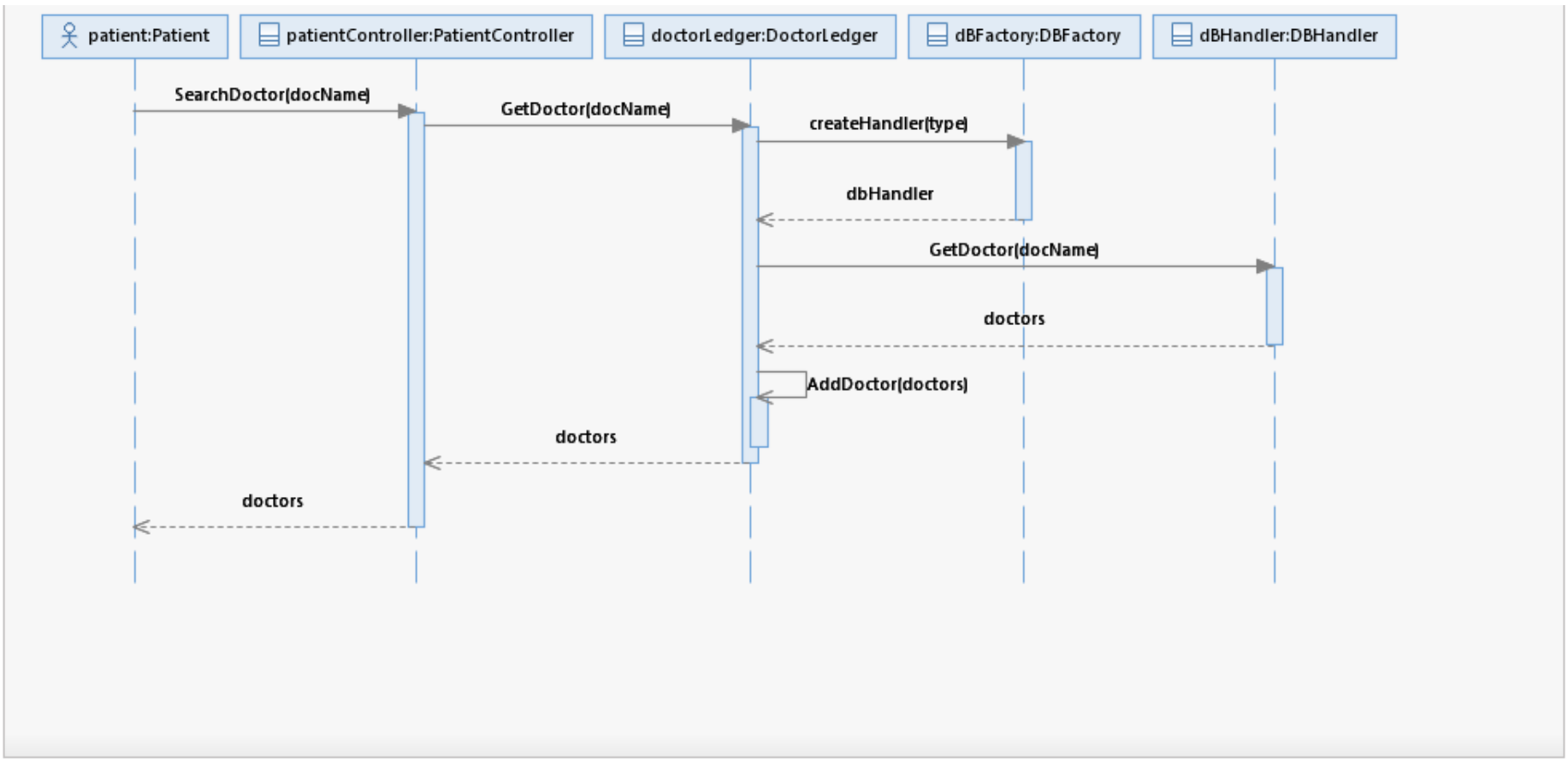



### 1.2.4. SD-004 Appointment Details

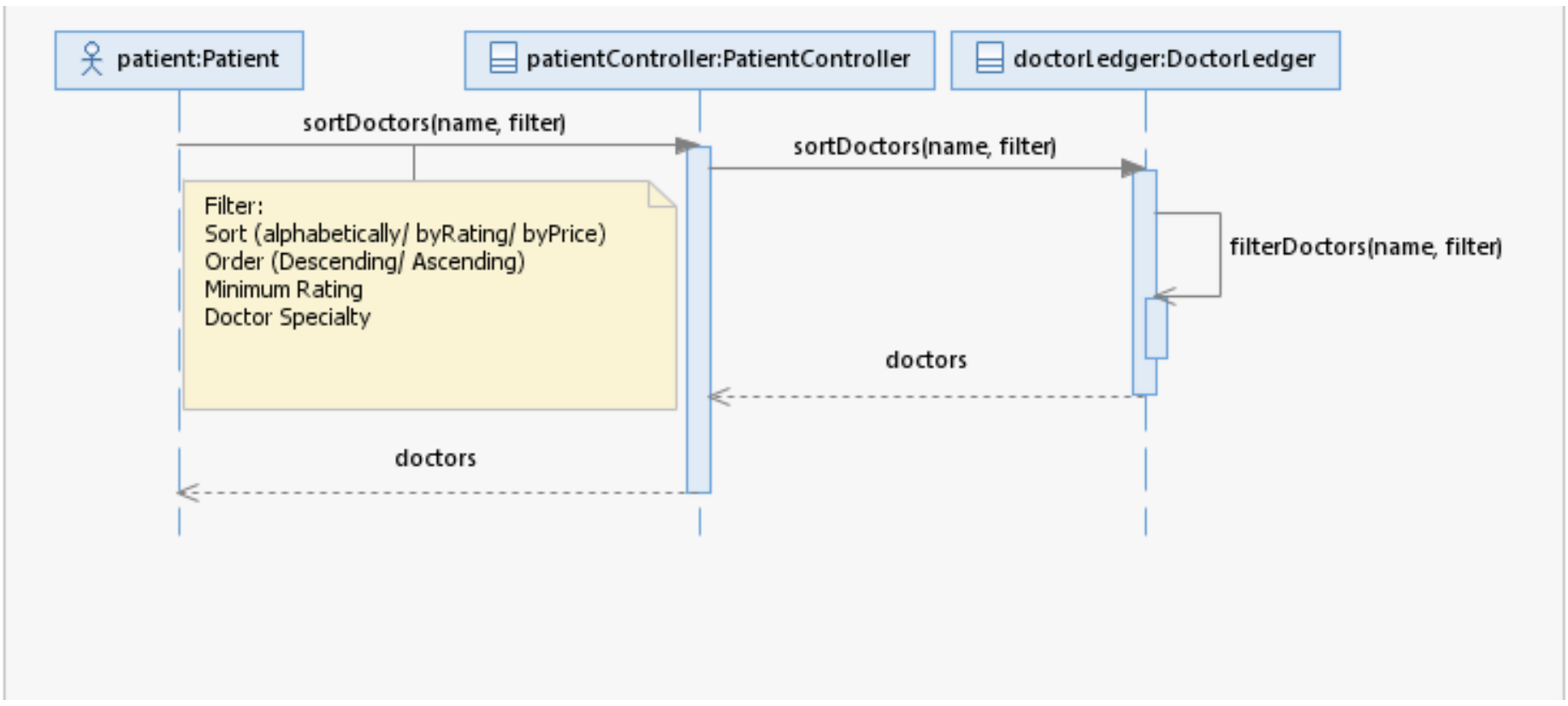


## 1.3. UC–003 Search Doctor

### 1.3.1. SD-001 Search Doctor

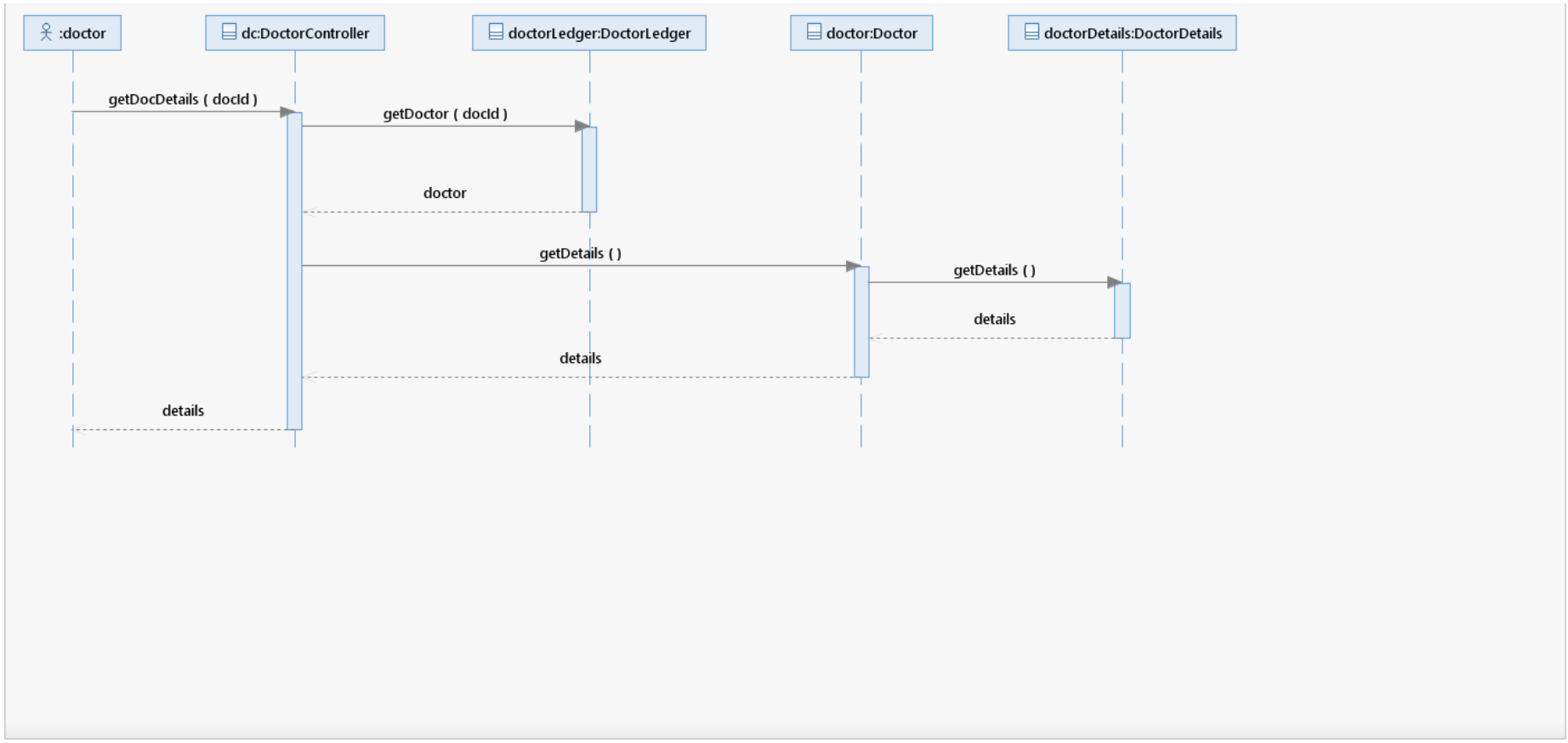



### 1.3.2. SD-002 Filter Doctor

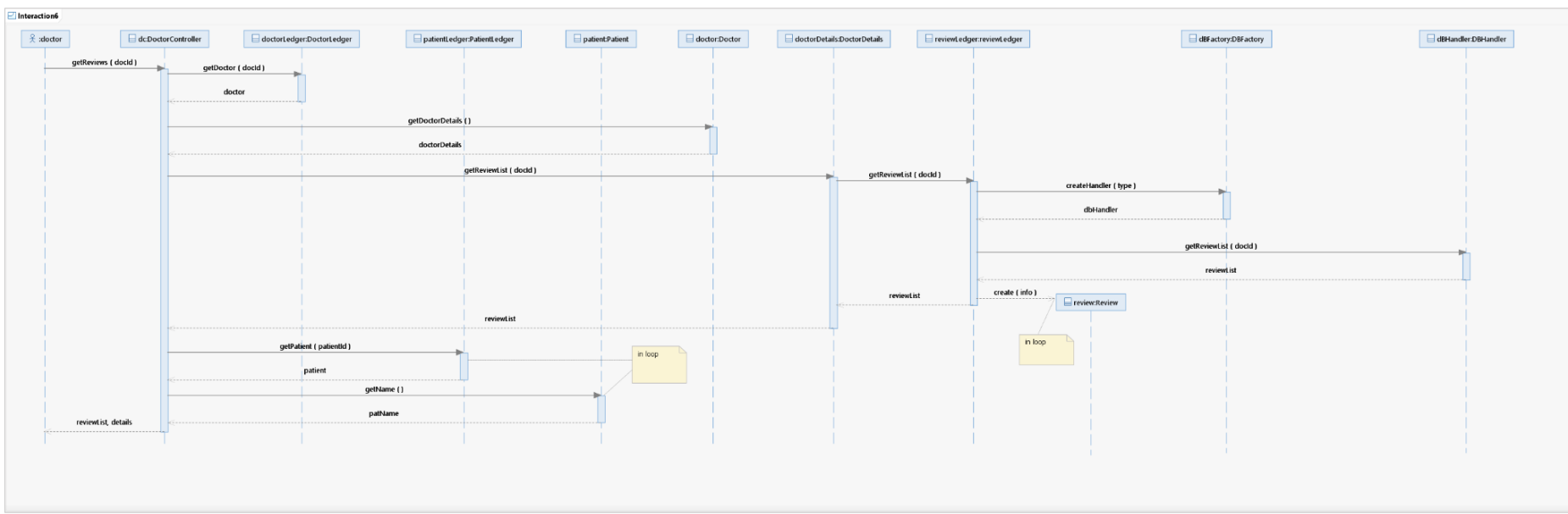


## 1.4. UC-004 View Doctor Details

### 1.4.1. SD-001 Doctor Details

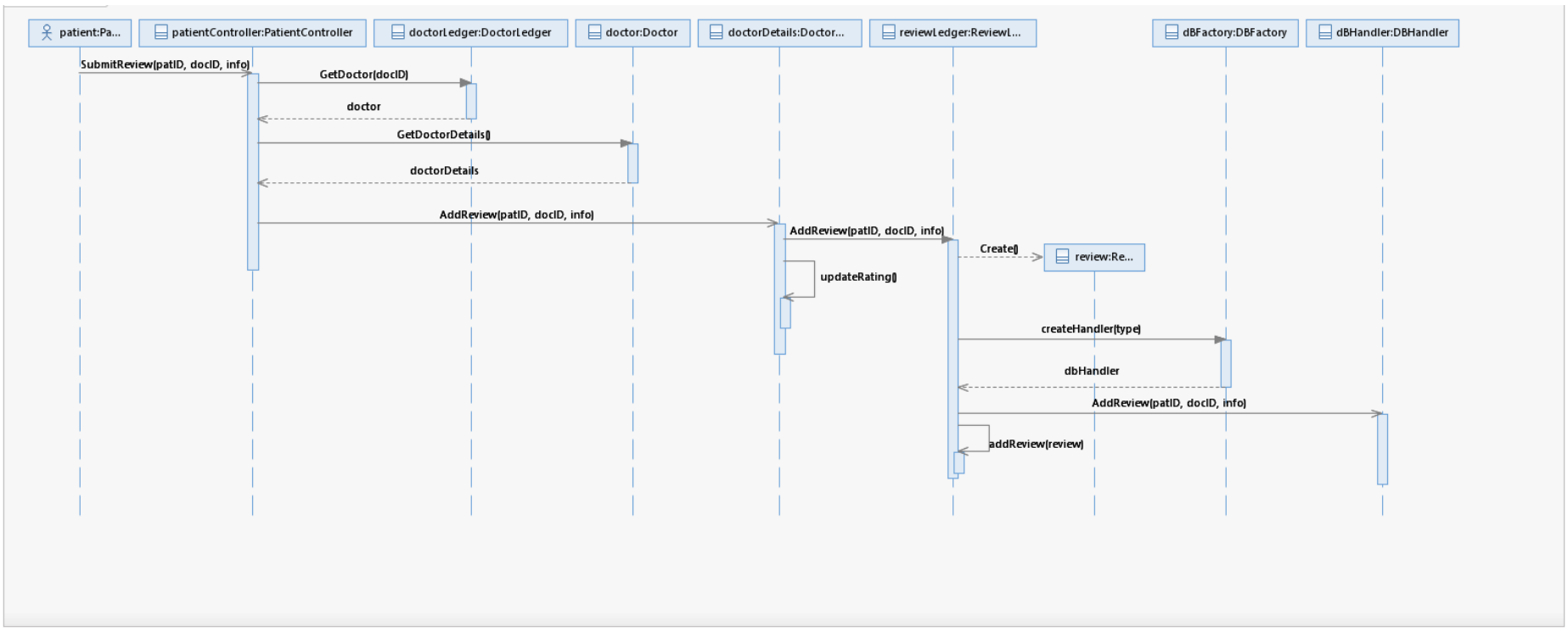



### 1.4.2. SD-002 Doctor Reviews



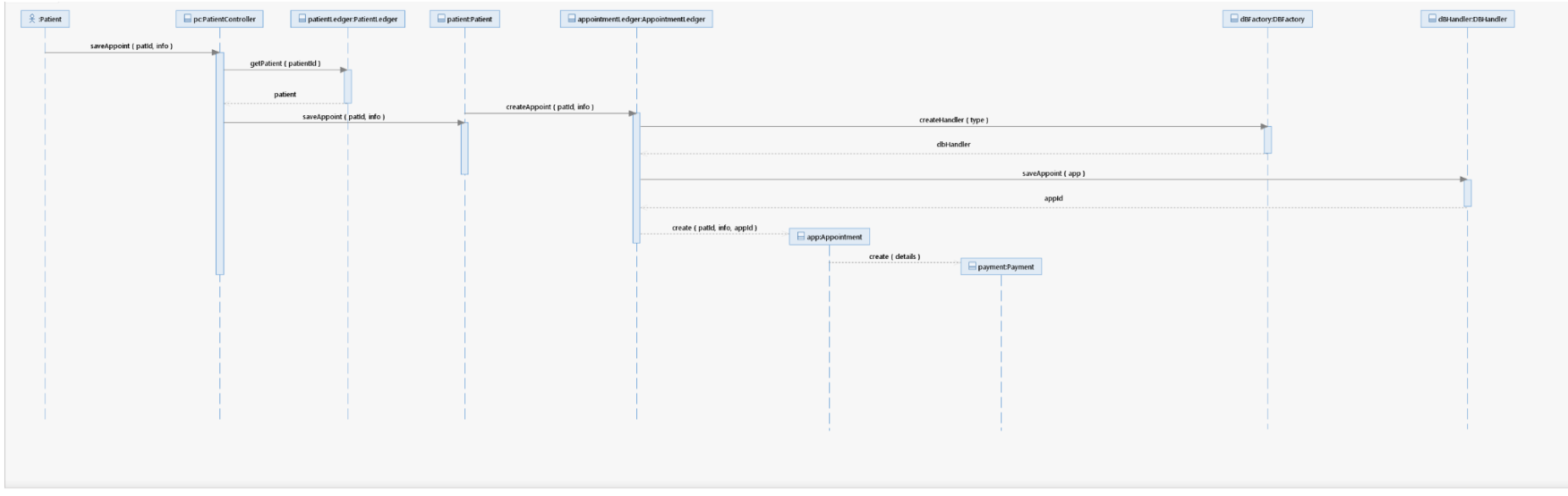

## 1.5. UC-005 Write Review

### 1.5.1. SD-001 Write Review



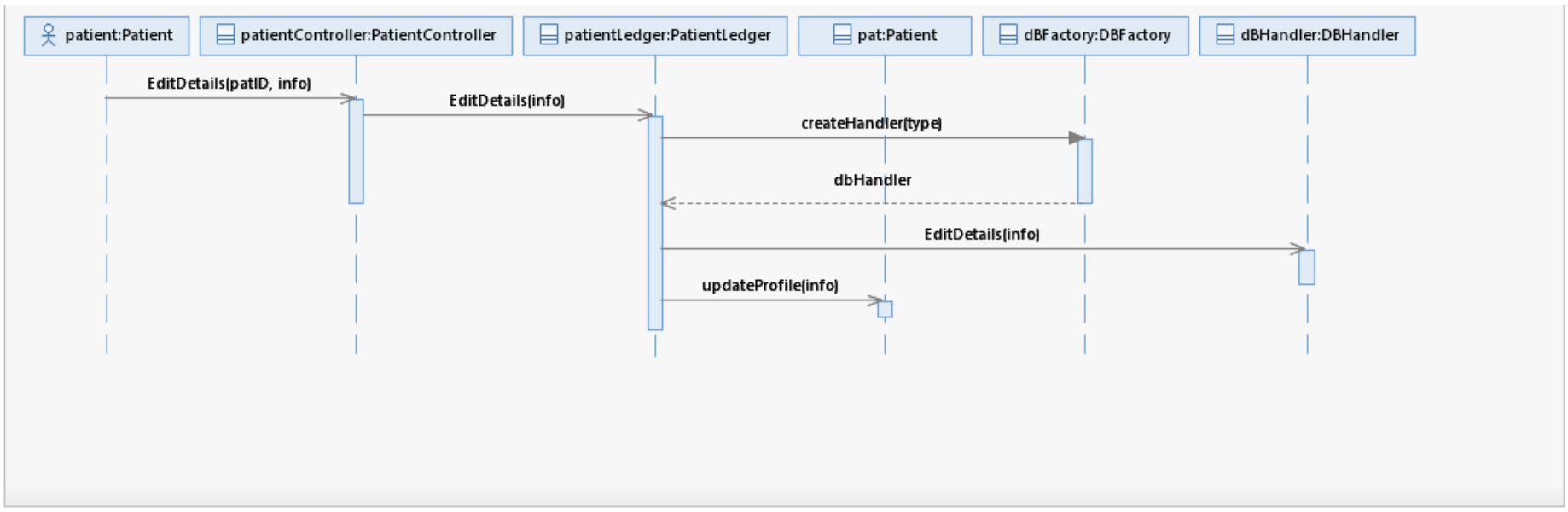
## 1.6. UC-007 Make Payment

### 1.6.1. SD-001 MakePayment

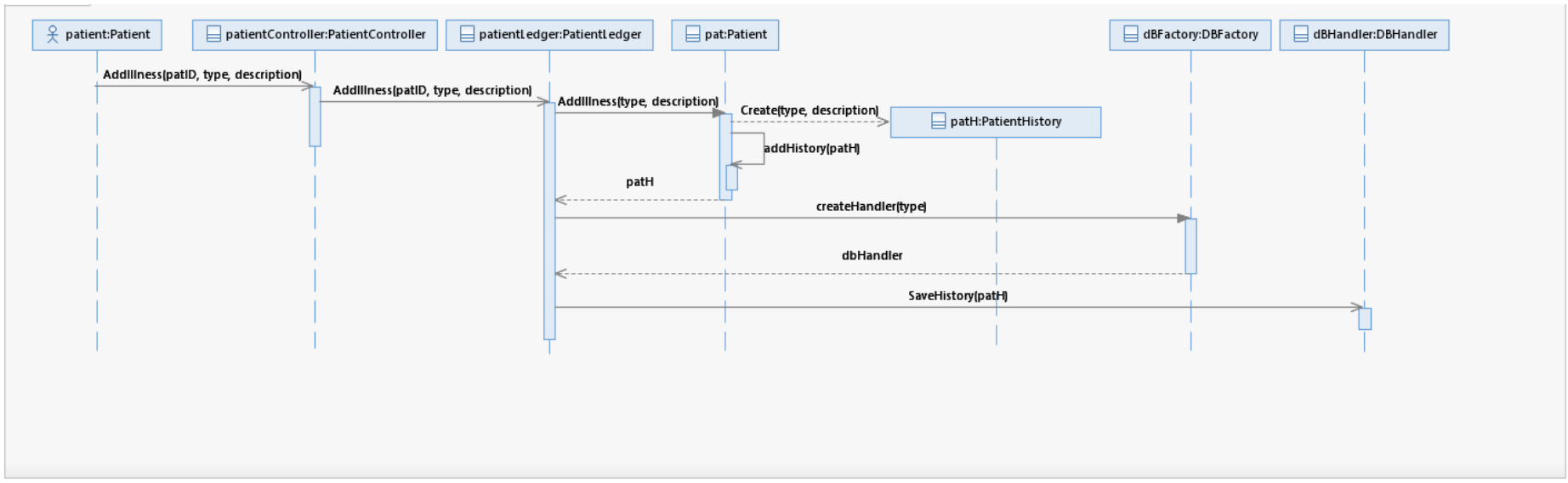



## 1.7. UC-008 Update Profile (Patient)

### 1.7.1. SD-001 Edit Details

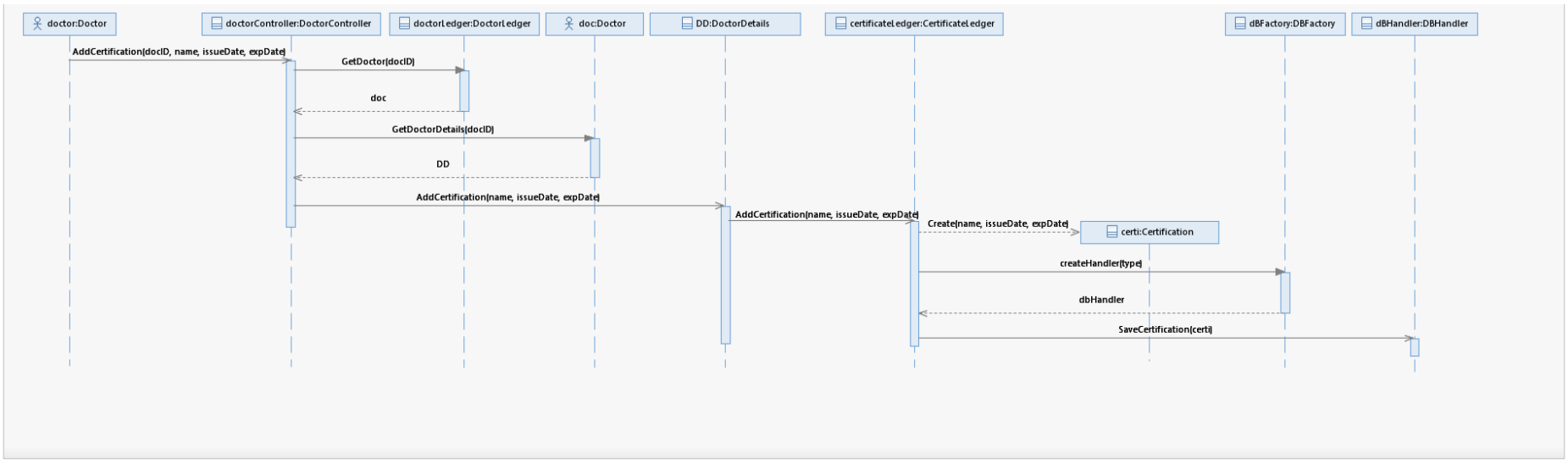



### 1.7.2. SD-002 Add Illness



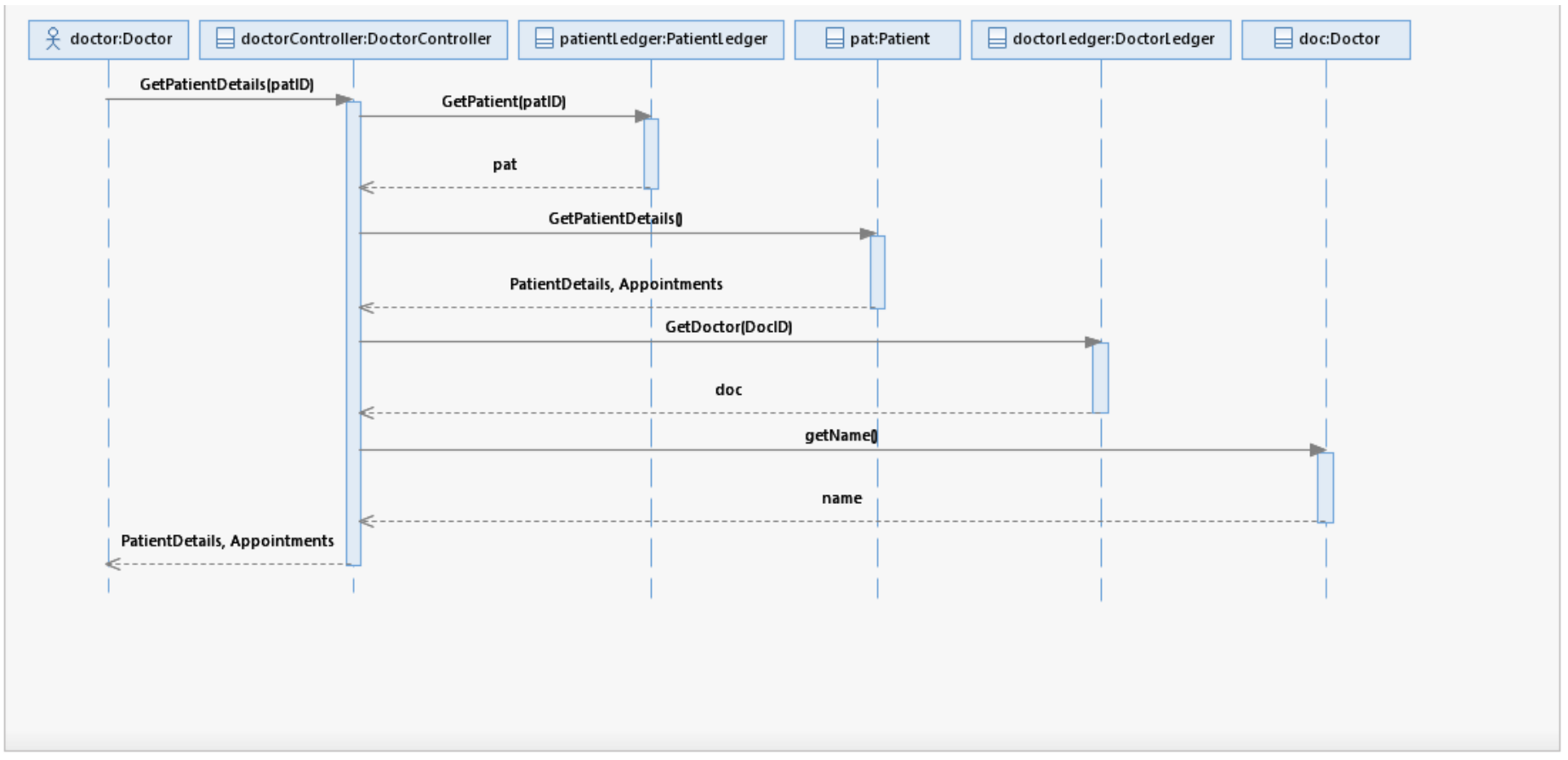
## 1.8. UC-009 Update Profile (Doctor)

### 1.8.1. SD-001 Add Certification



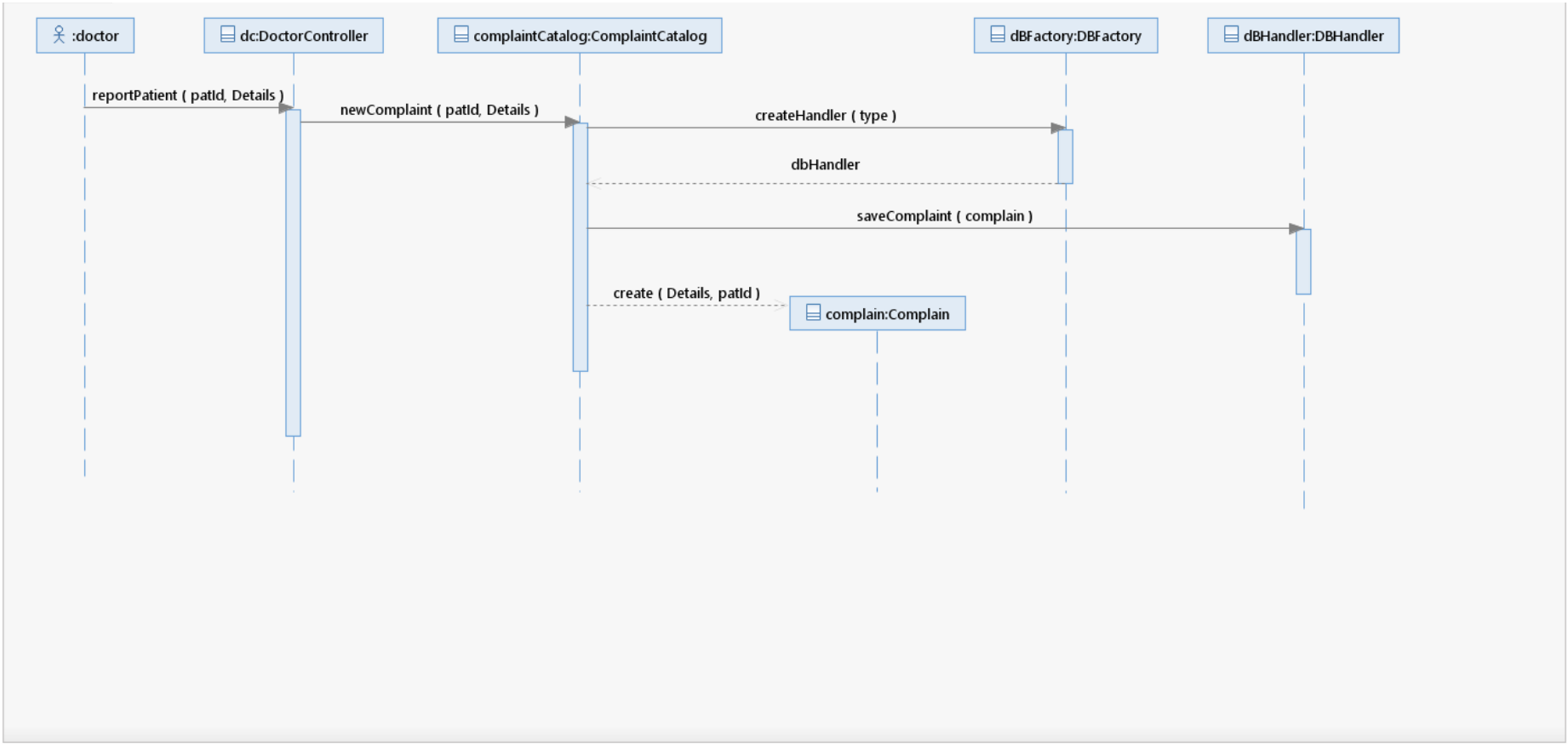

## 1.9. UC-011 View Patient Record

### 1.9.1. SD-001 Get Patient Details

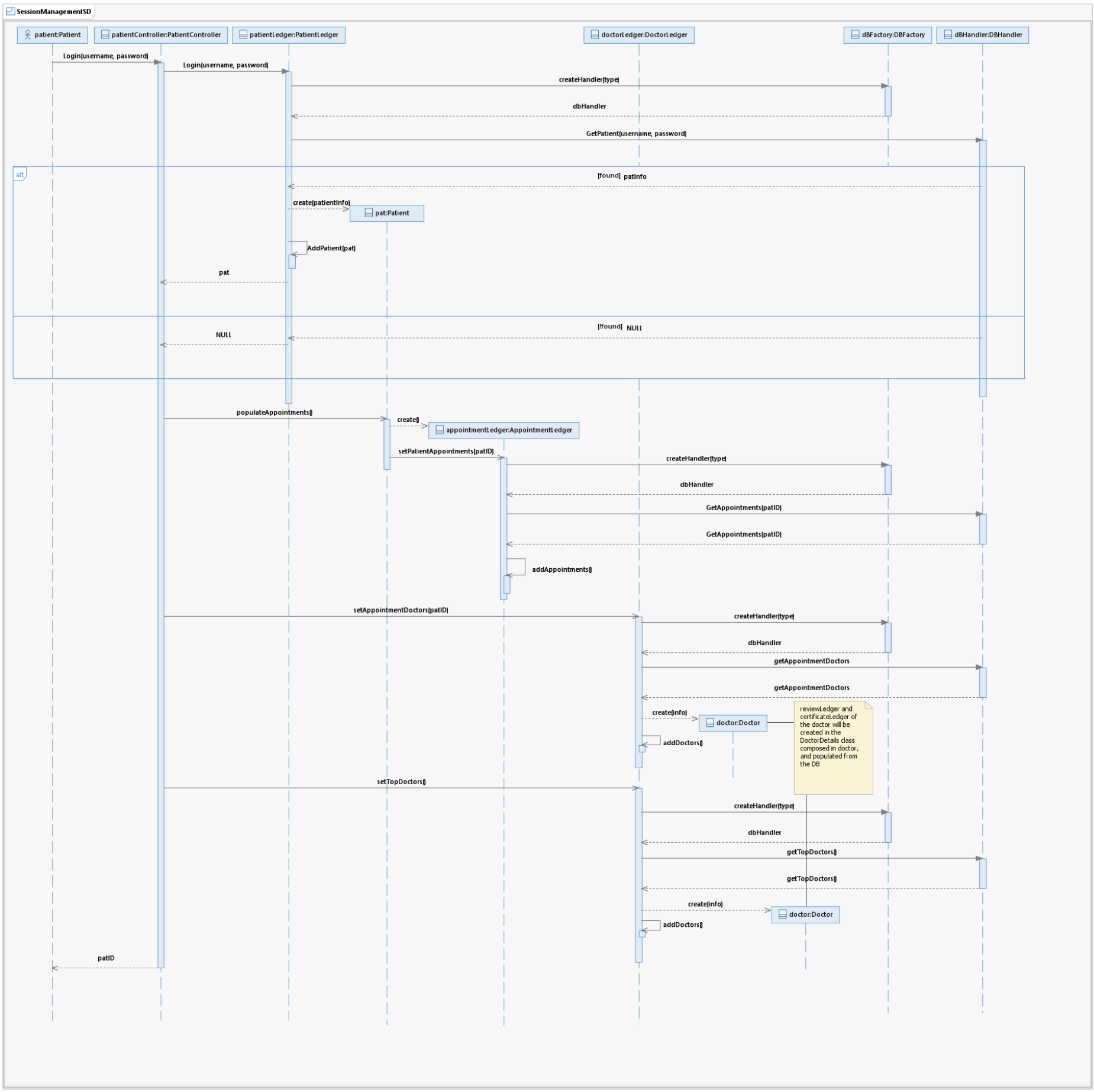


## 1.10. UC-013 Report Patient

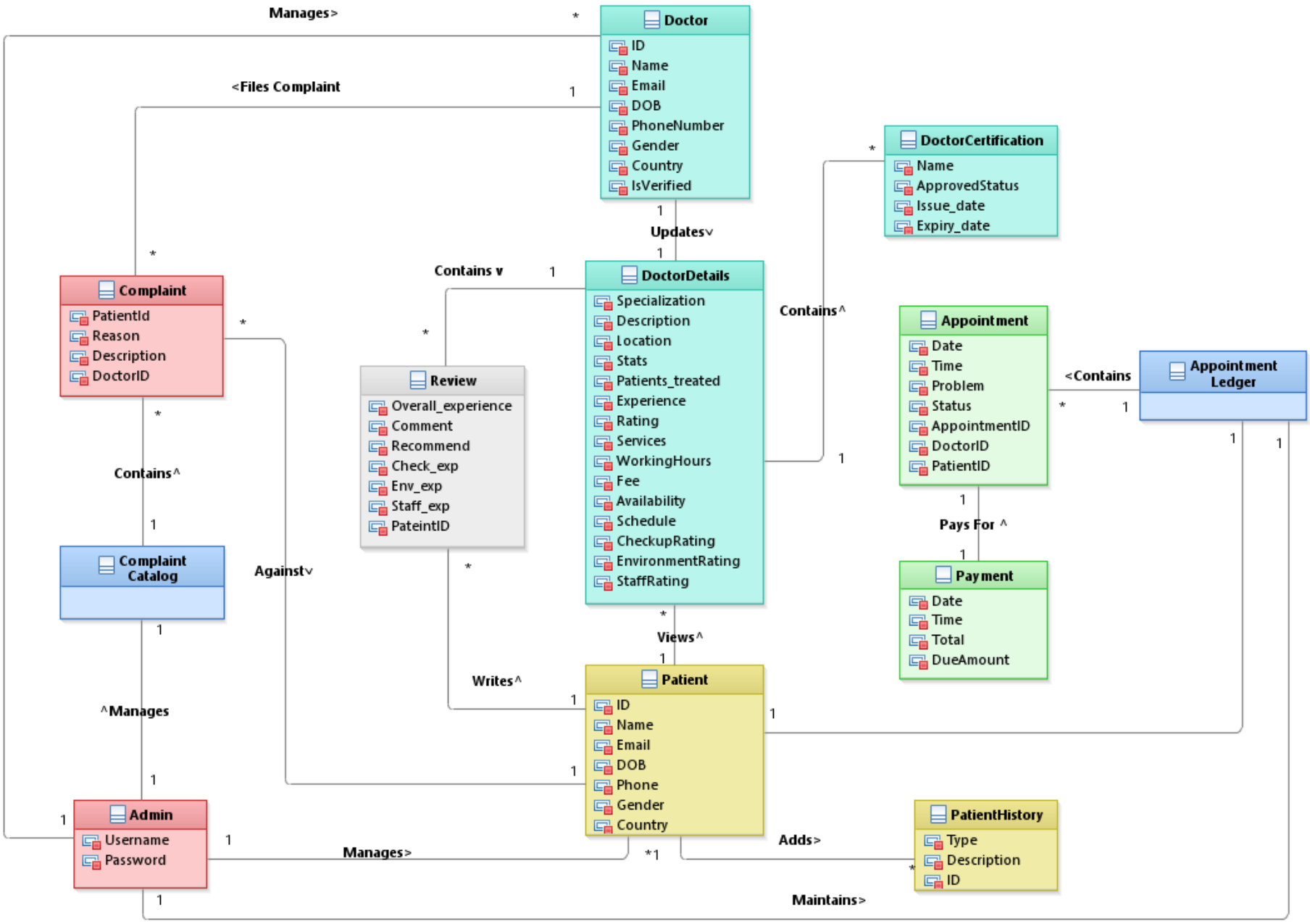
### 1.10.1. SD-001 Report Patient



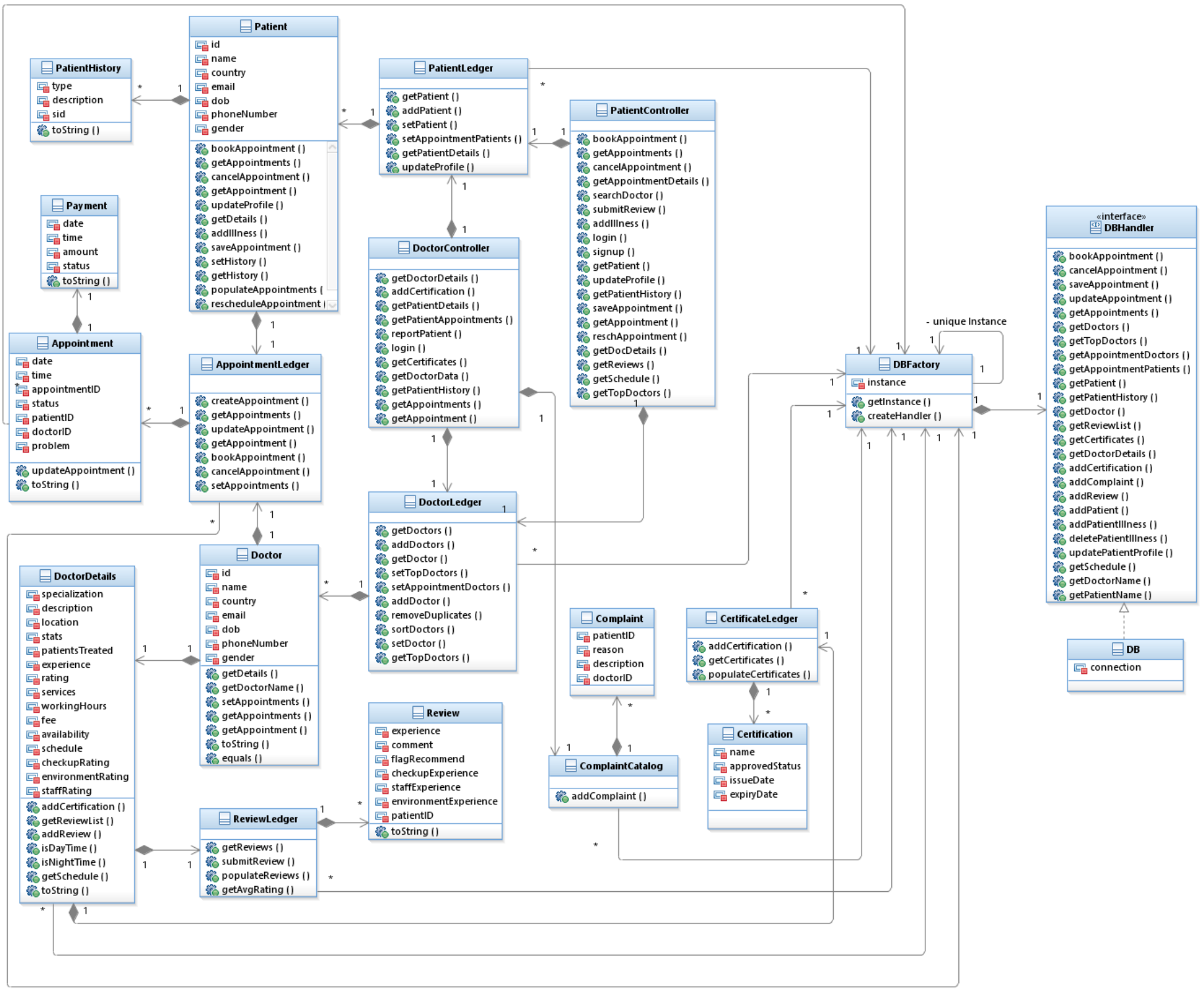
## 1.11. Session Management SD



# 2. Domain Model

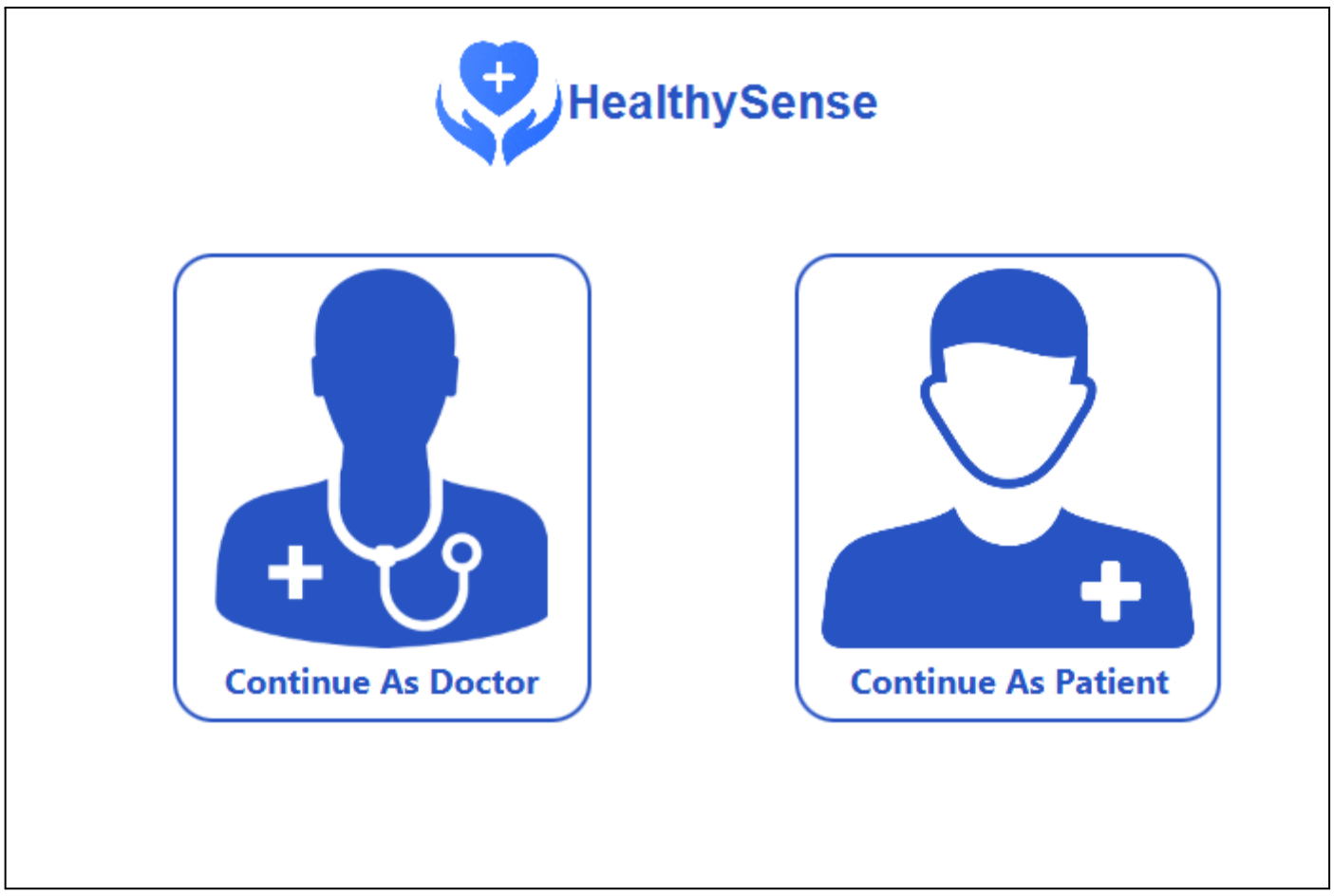


# 3. Class Diagram

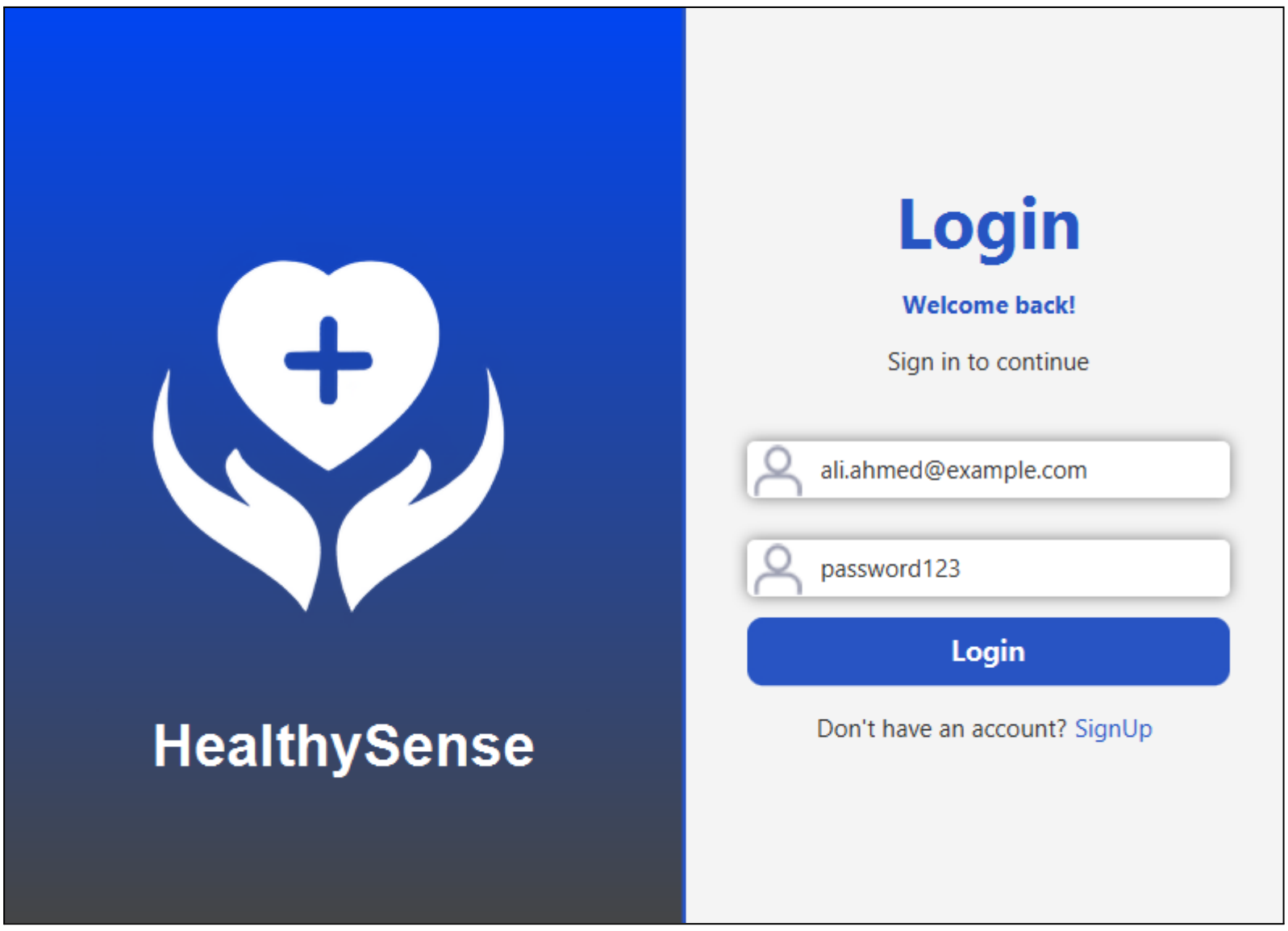


# 4. JAVAFX Screens

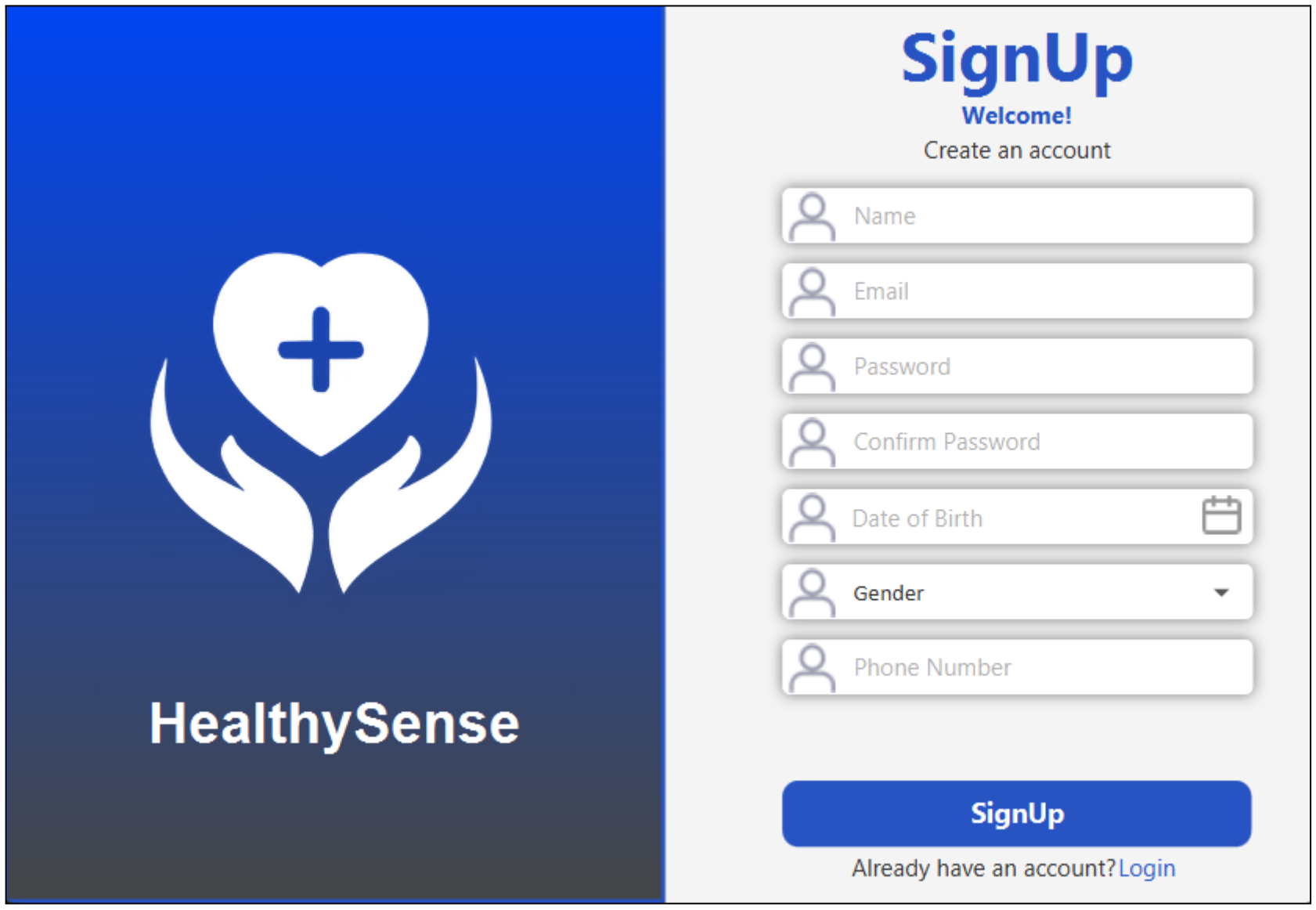
## 4.1. Start



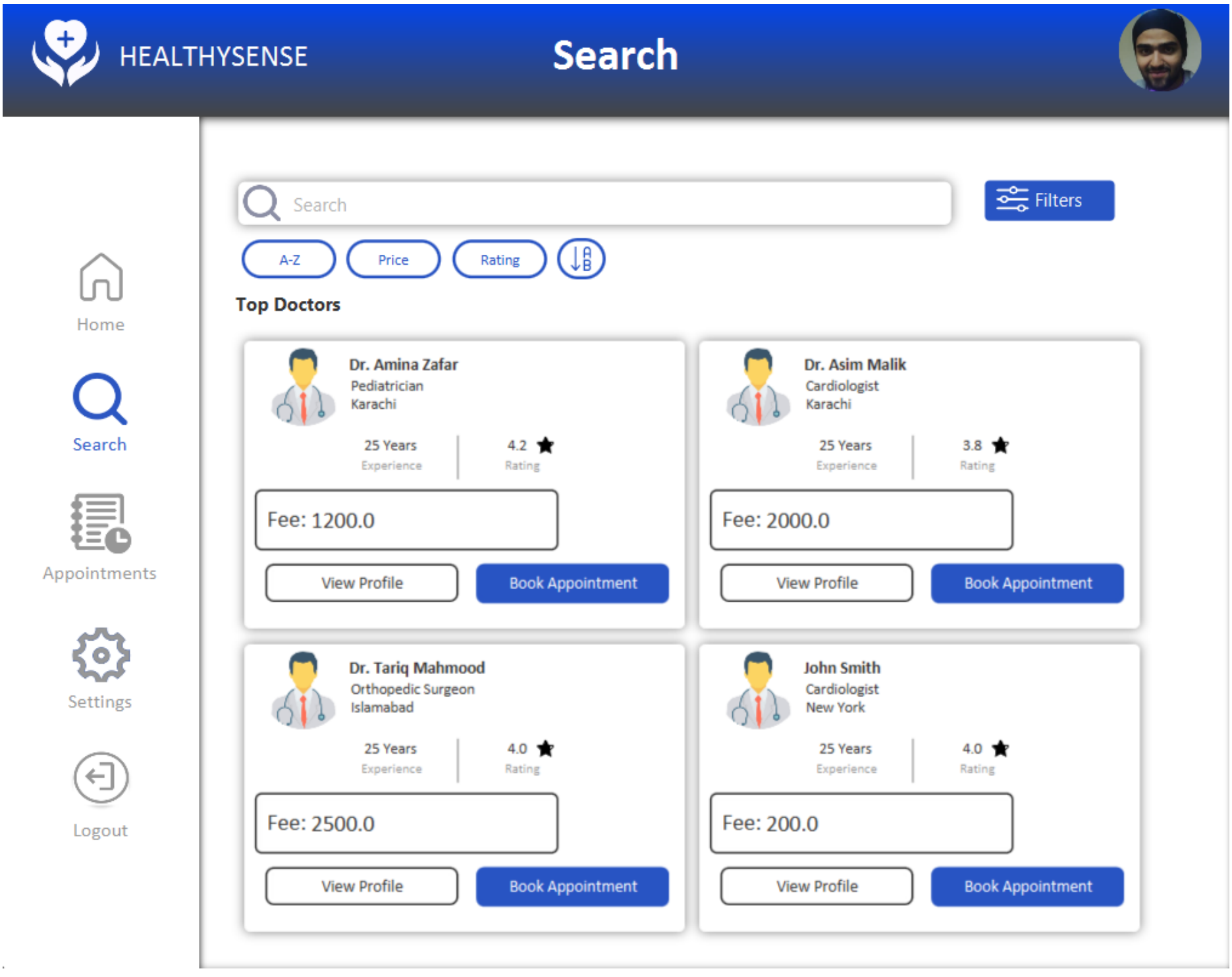

## 4.2. Login



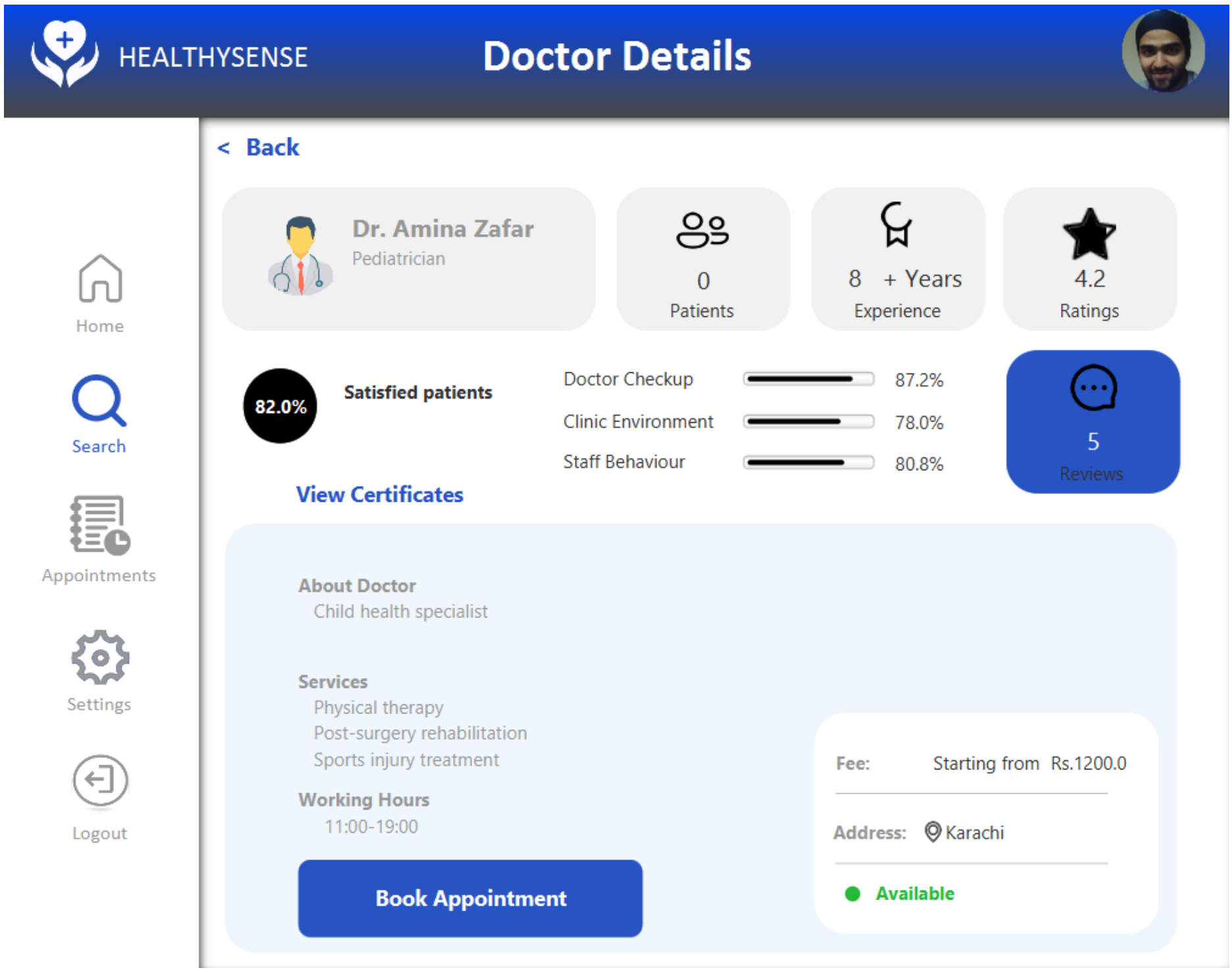
## 4.3. Signup


HealthySense
SignUp
Welcome!
Create an account
Name
Email
Password
Confirm Password
Date of Birth
Gender
Phone Number
SignUp
Already have an account? Login

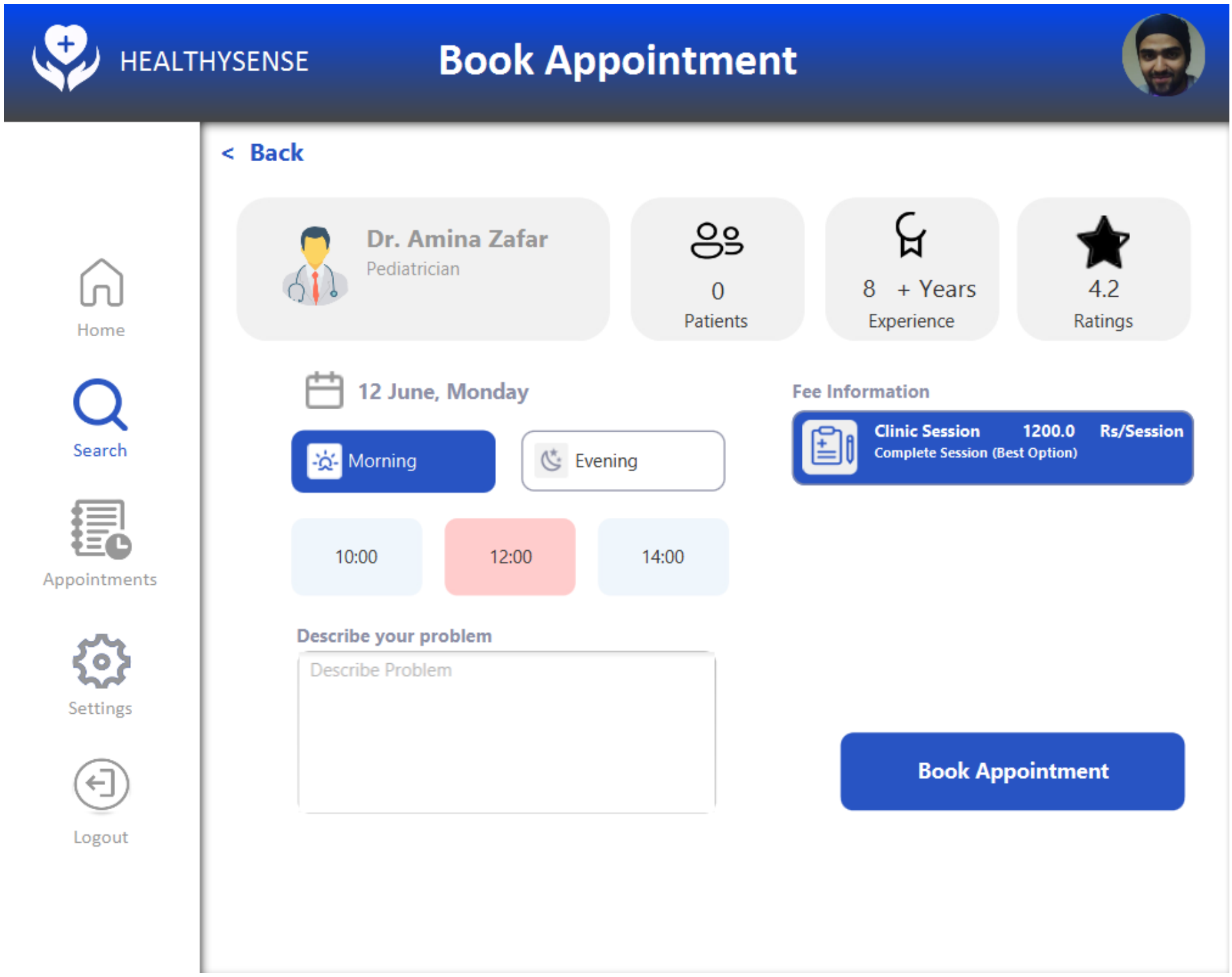
## 4.4. Patient Search Doctors



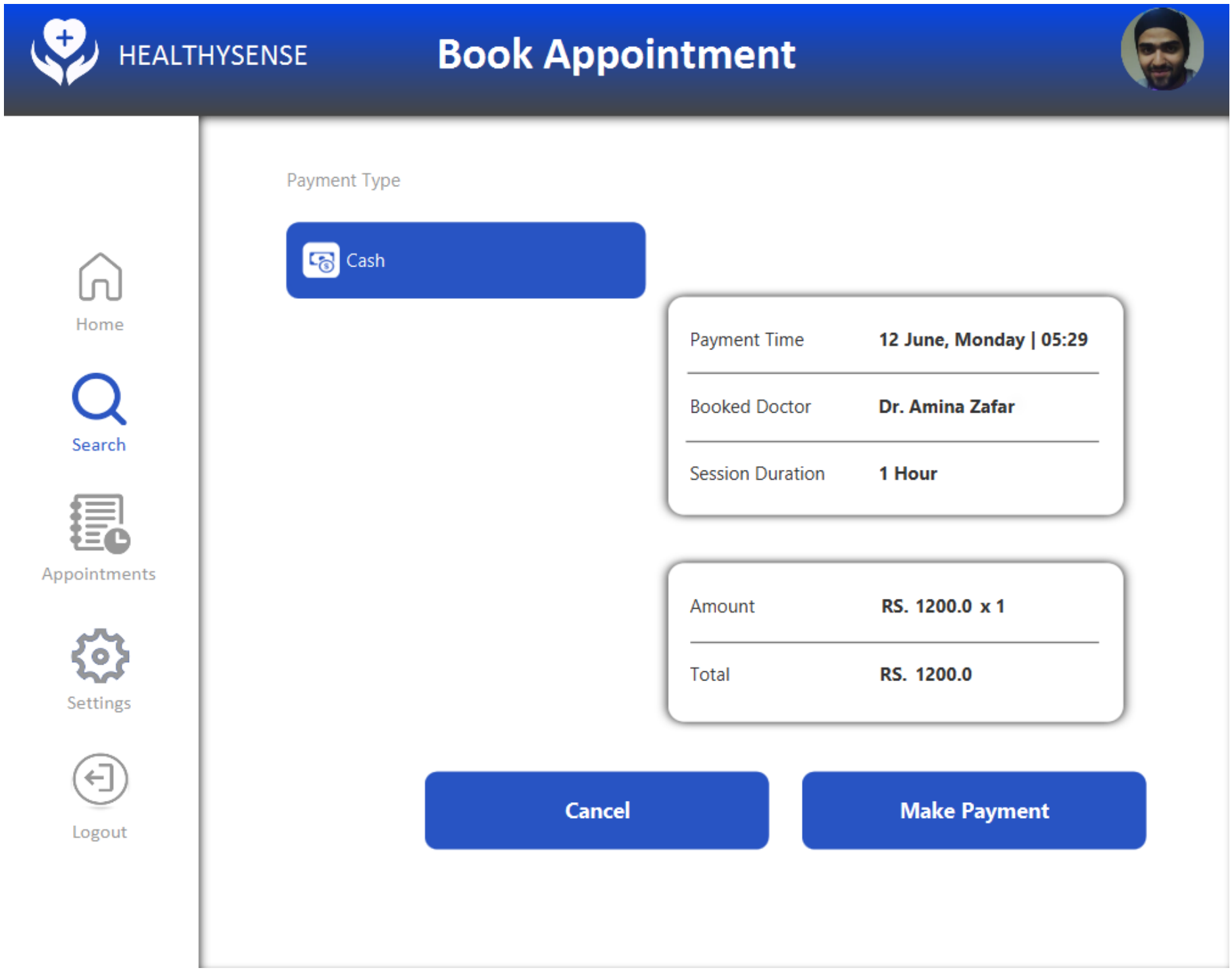
## 4.5. Patient View Doctor Details



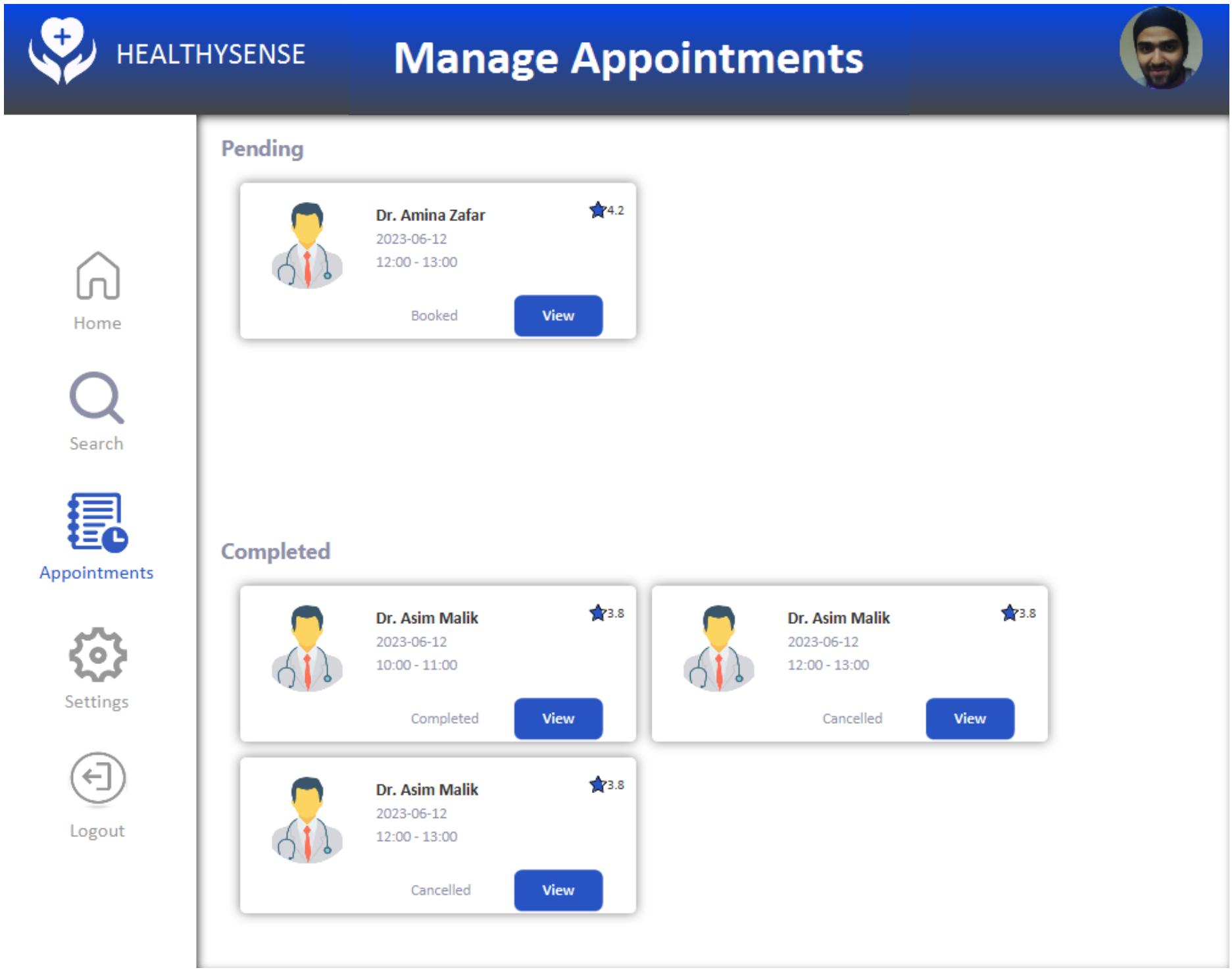
## 4.6. Patient Book Appointment



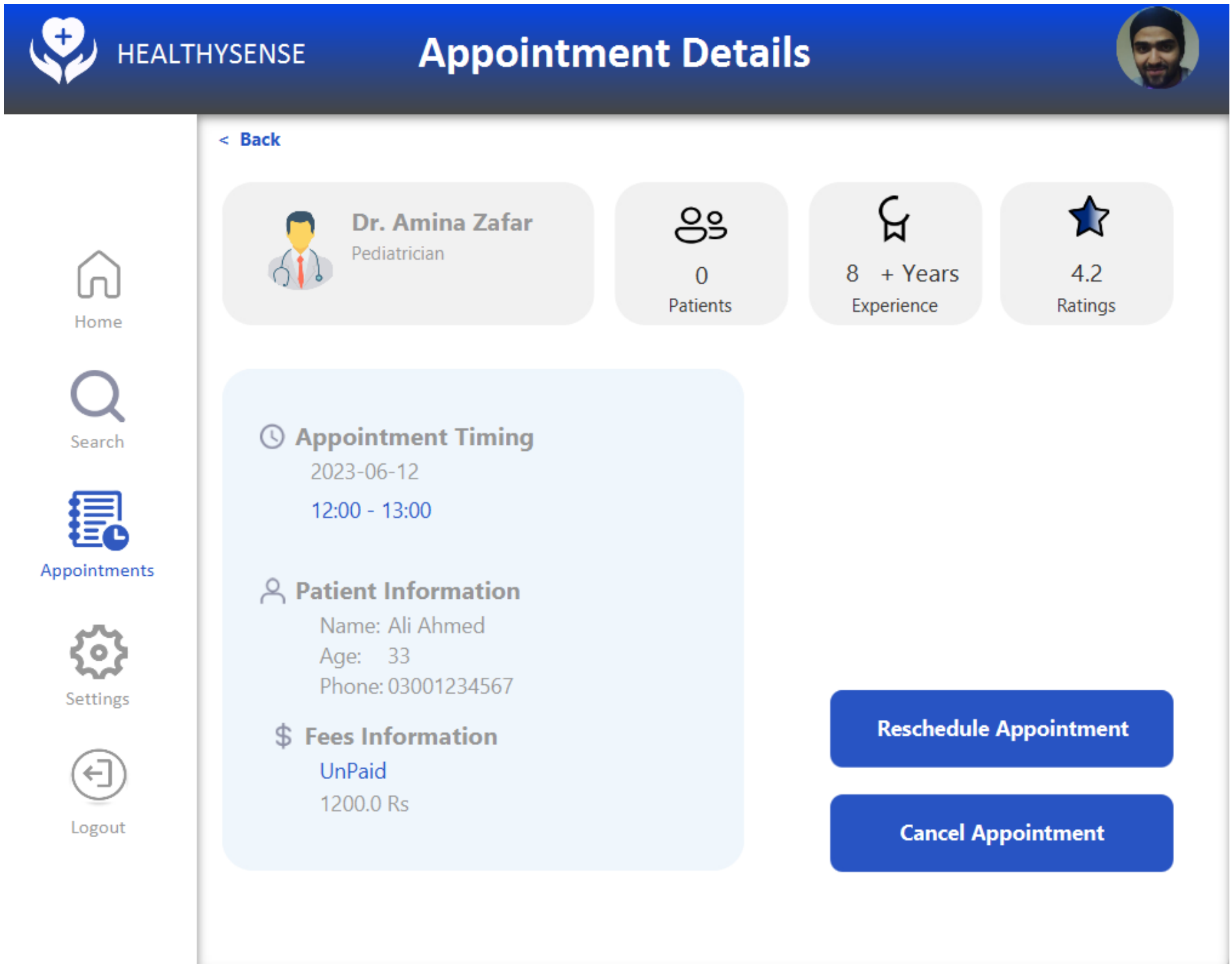
## 4.7. Patient Payment



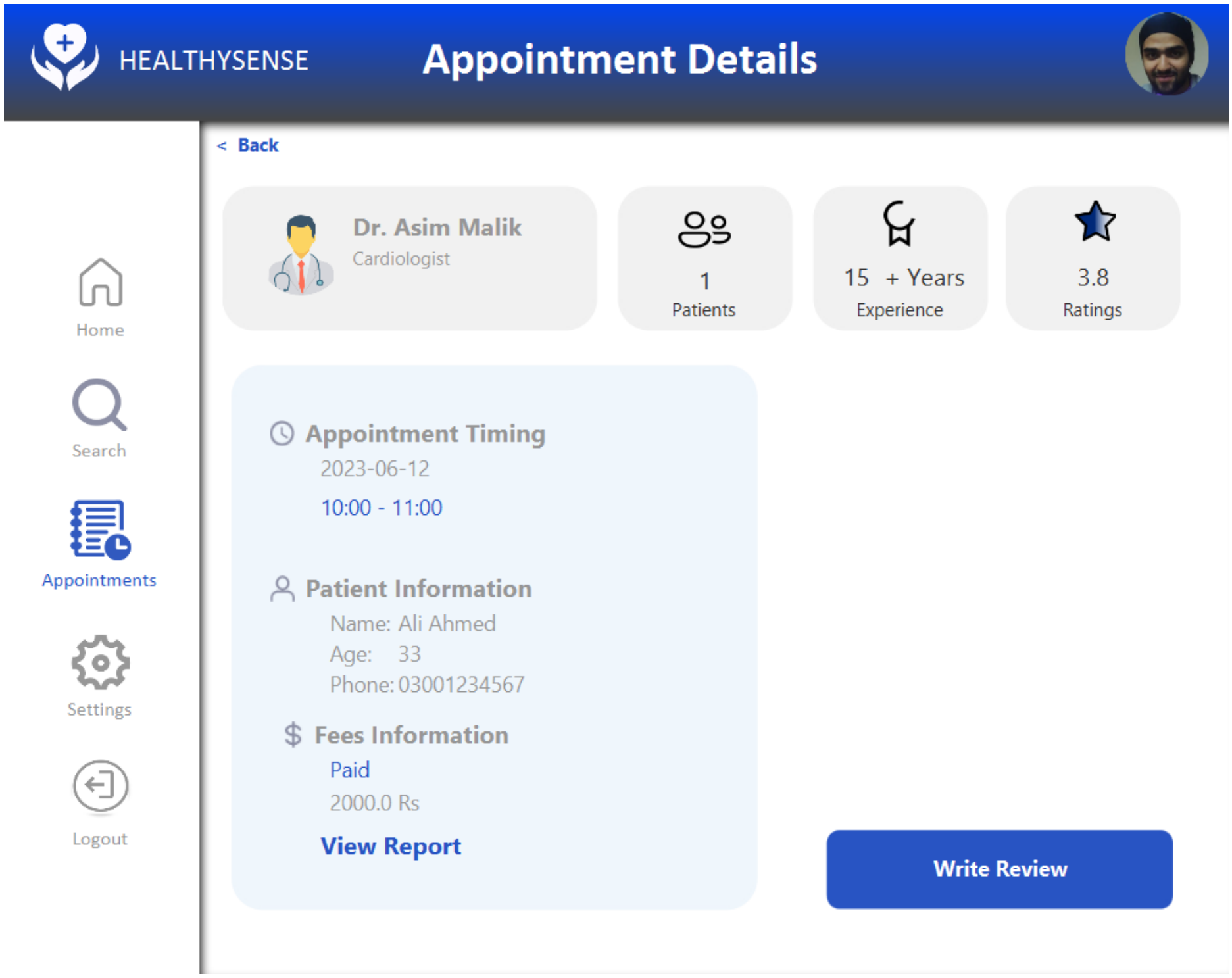
## 4.8. Patient Appointments List



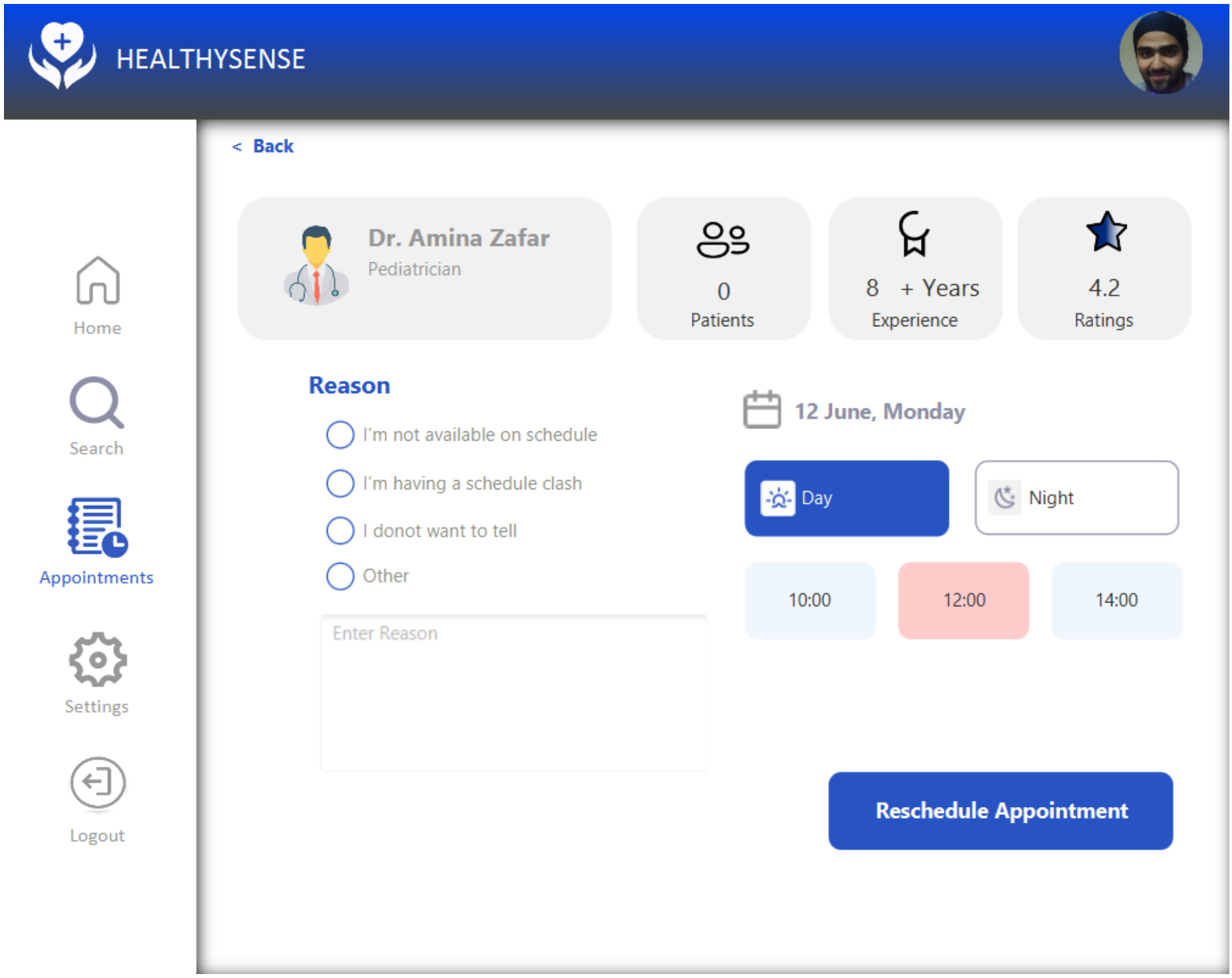
## 4.9. Patient Pending Appointment



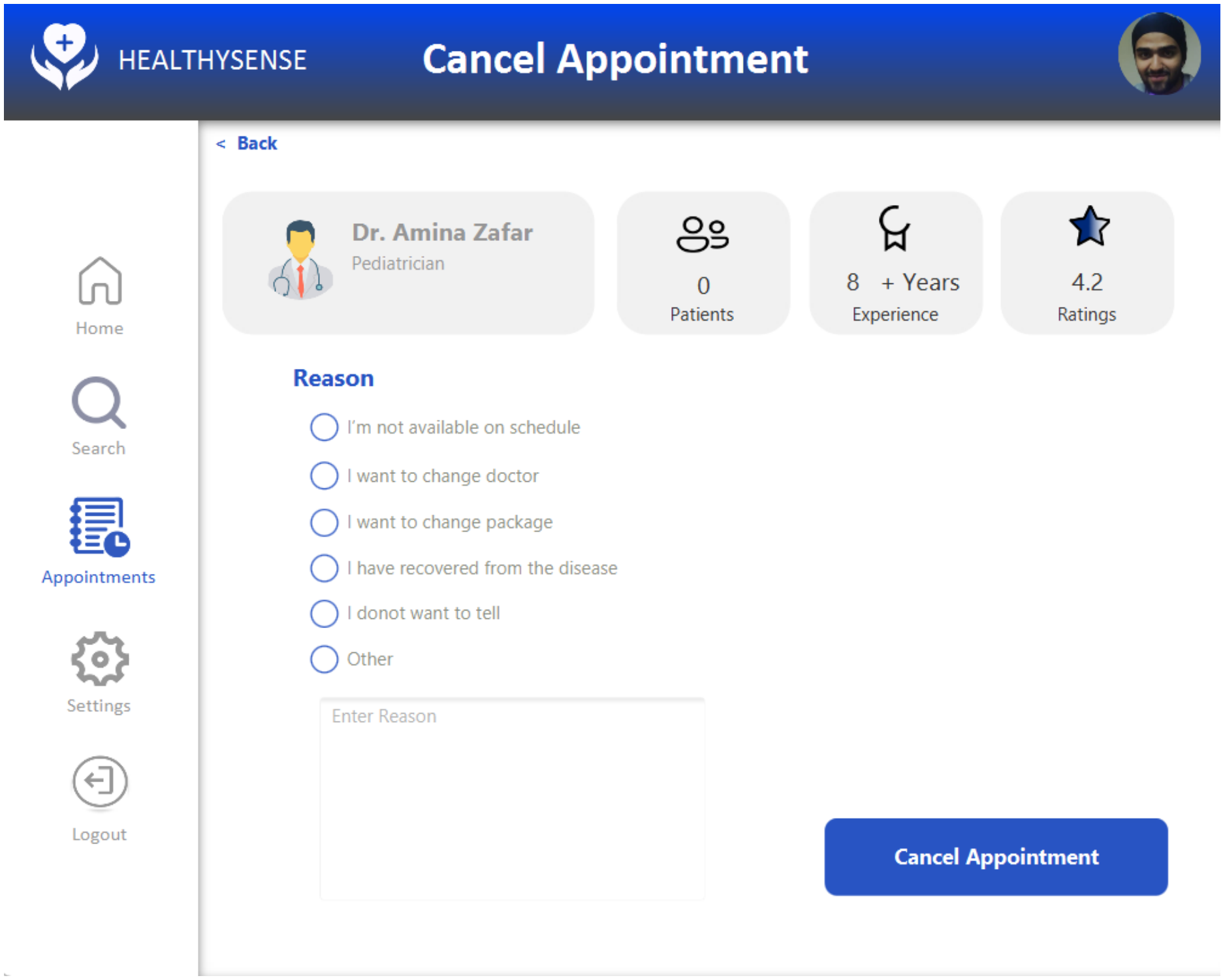
## 4.10. Patient Completed Appointment



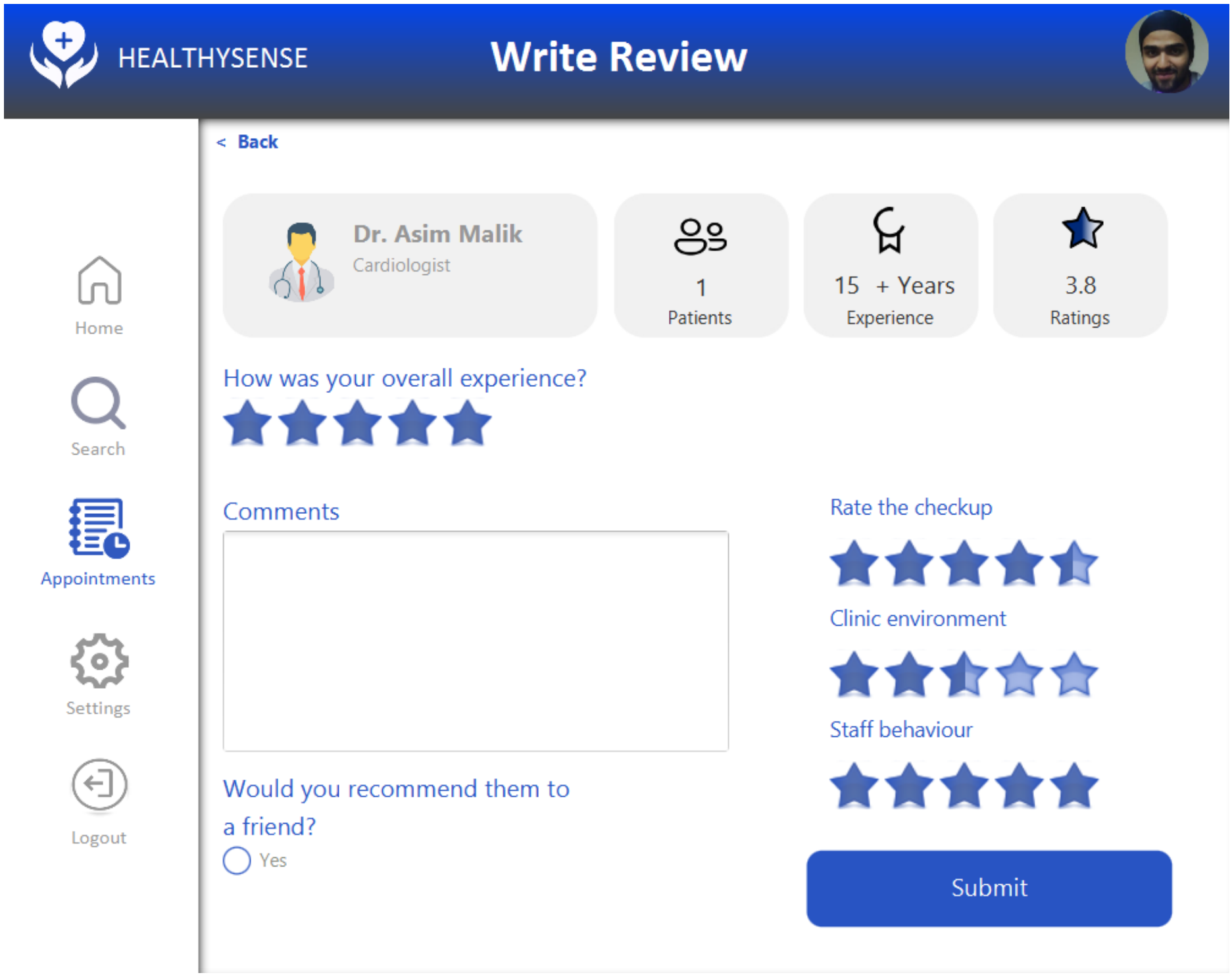
## 4.11. Patient Reschedule Appointment



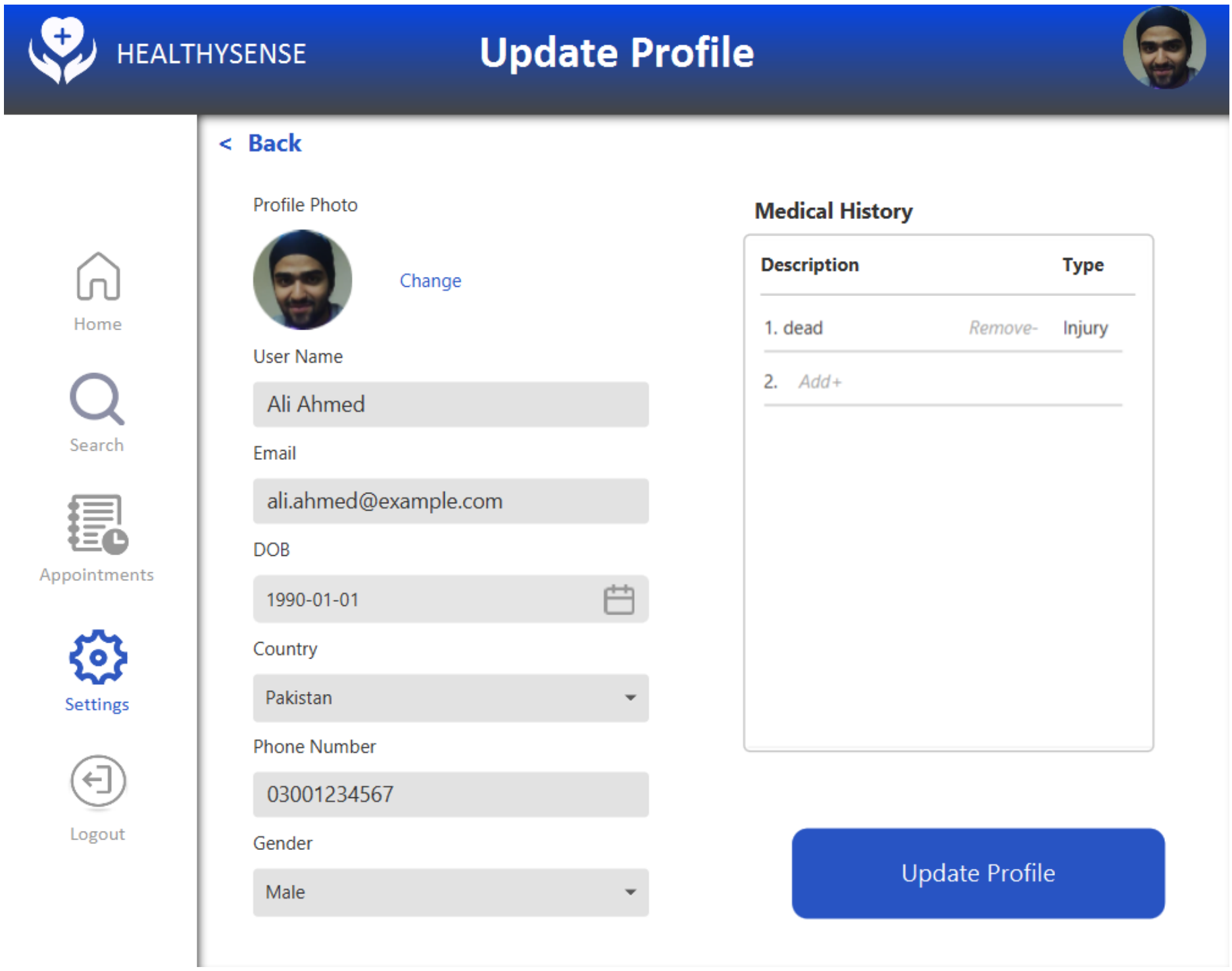
## 4.12. Patient Cancel Appointment



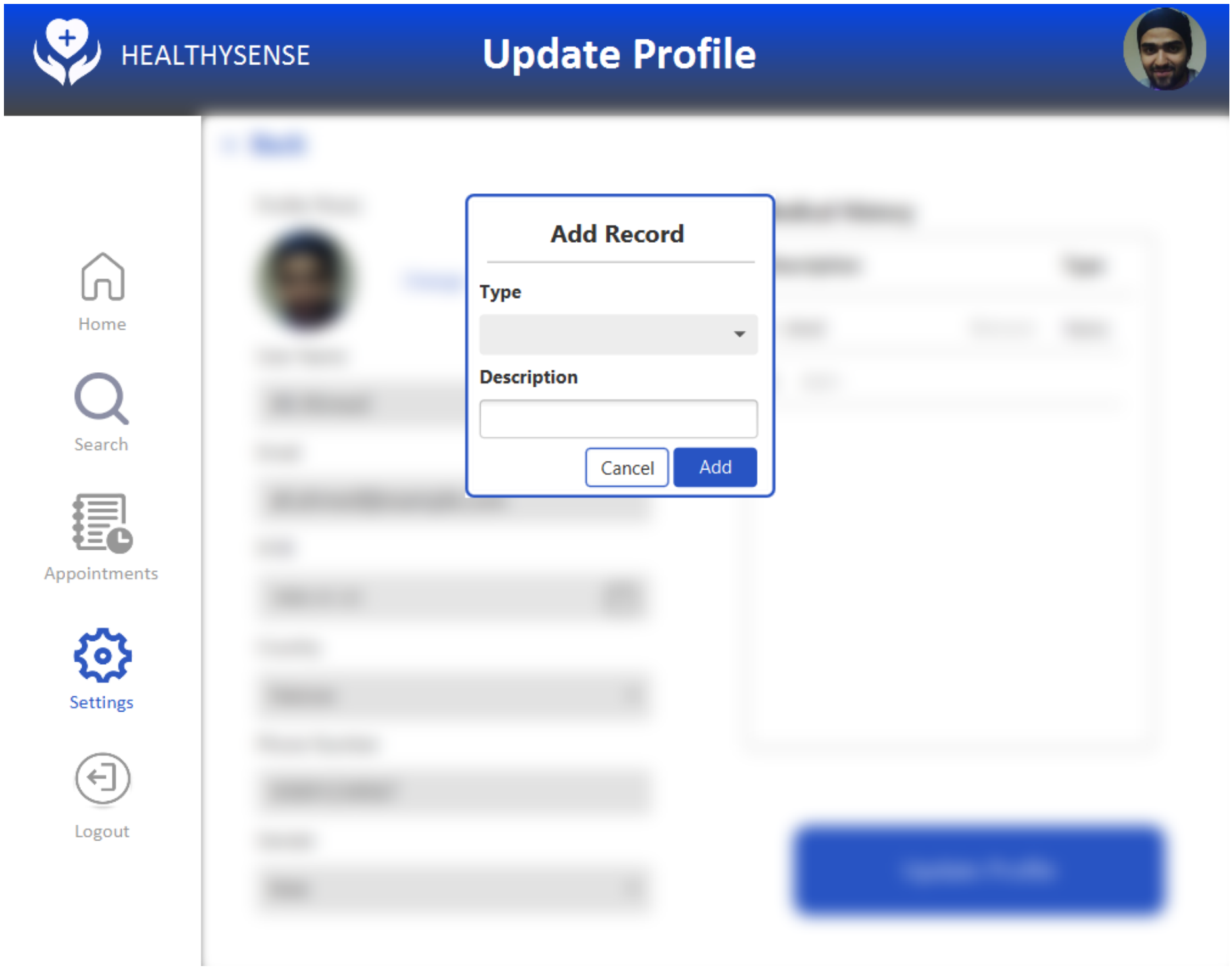
## 4.13. Patient Write Review



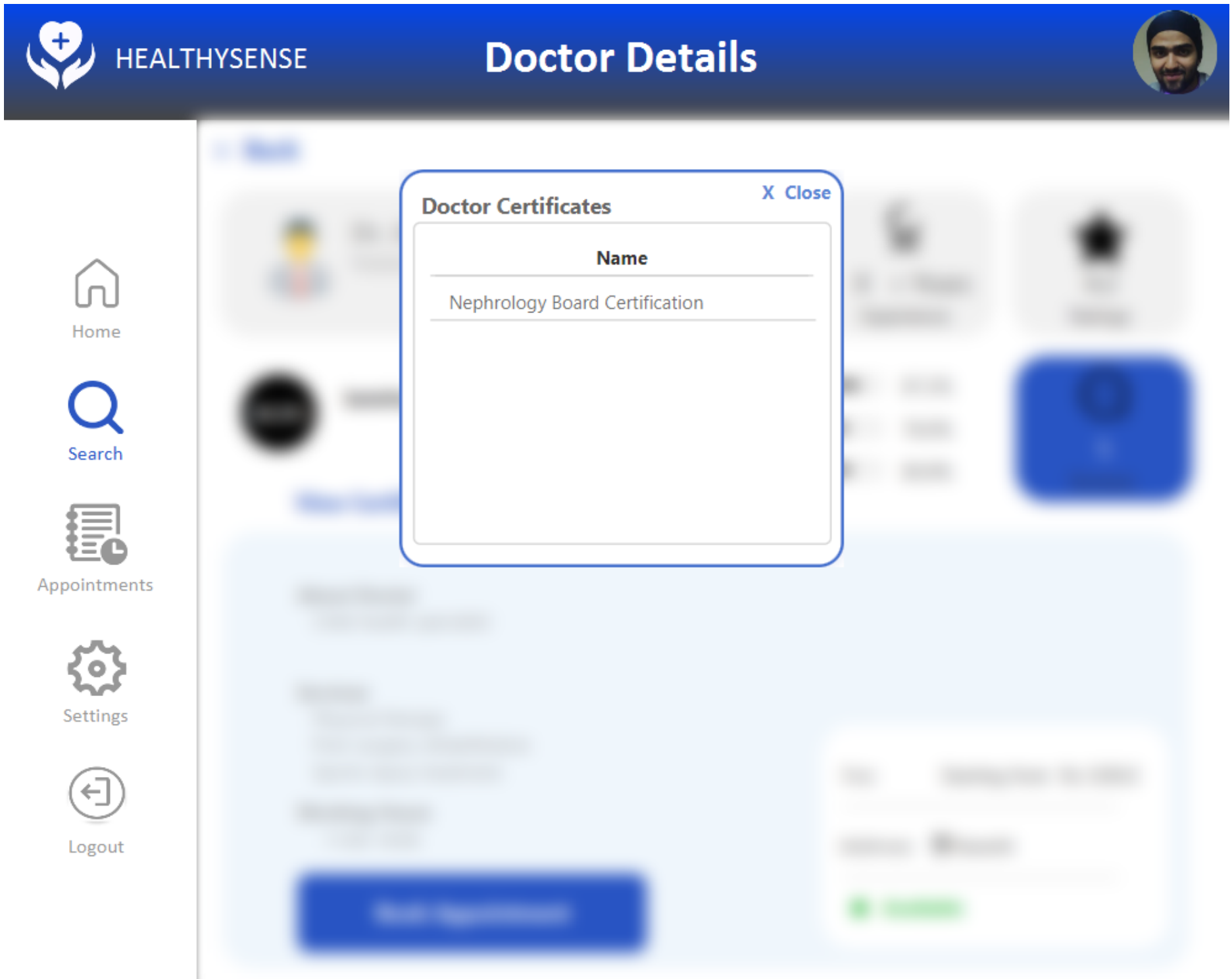
## 4.14. Patient Update Profile



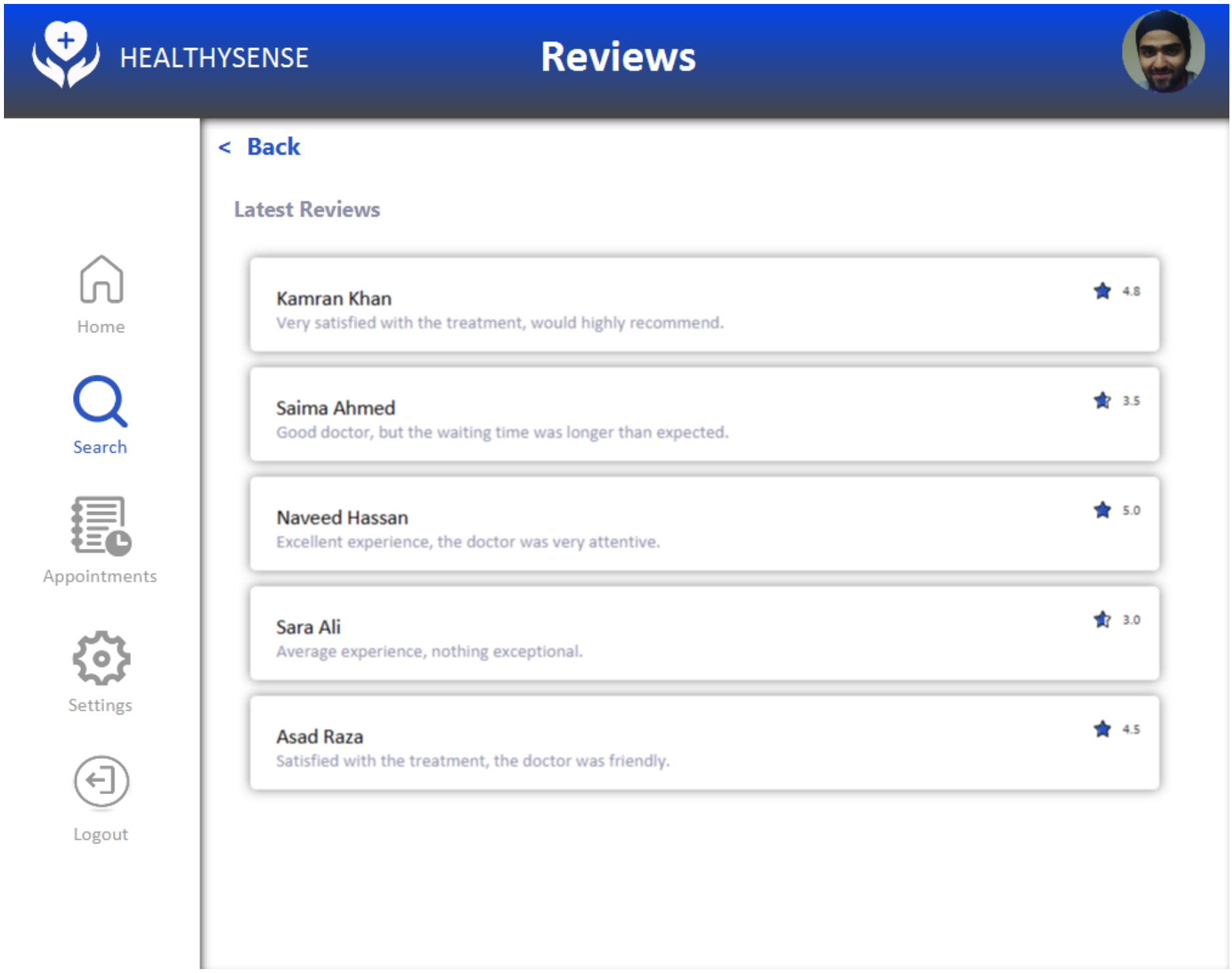
## 4.15. Patient Add Medical Record



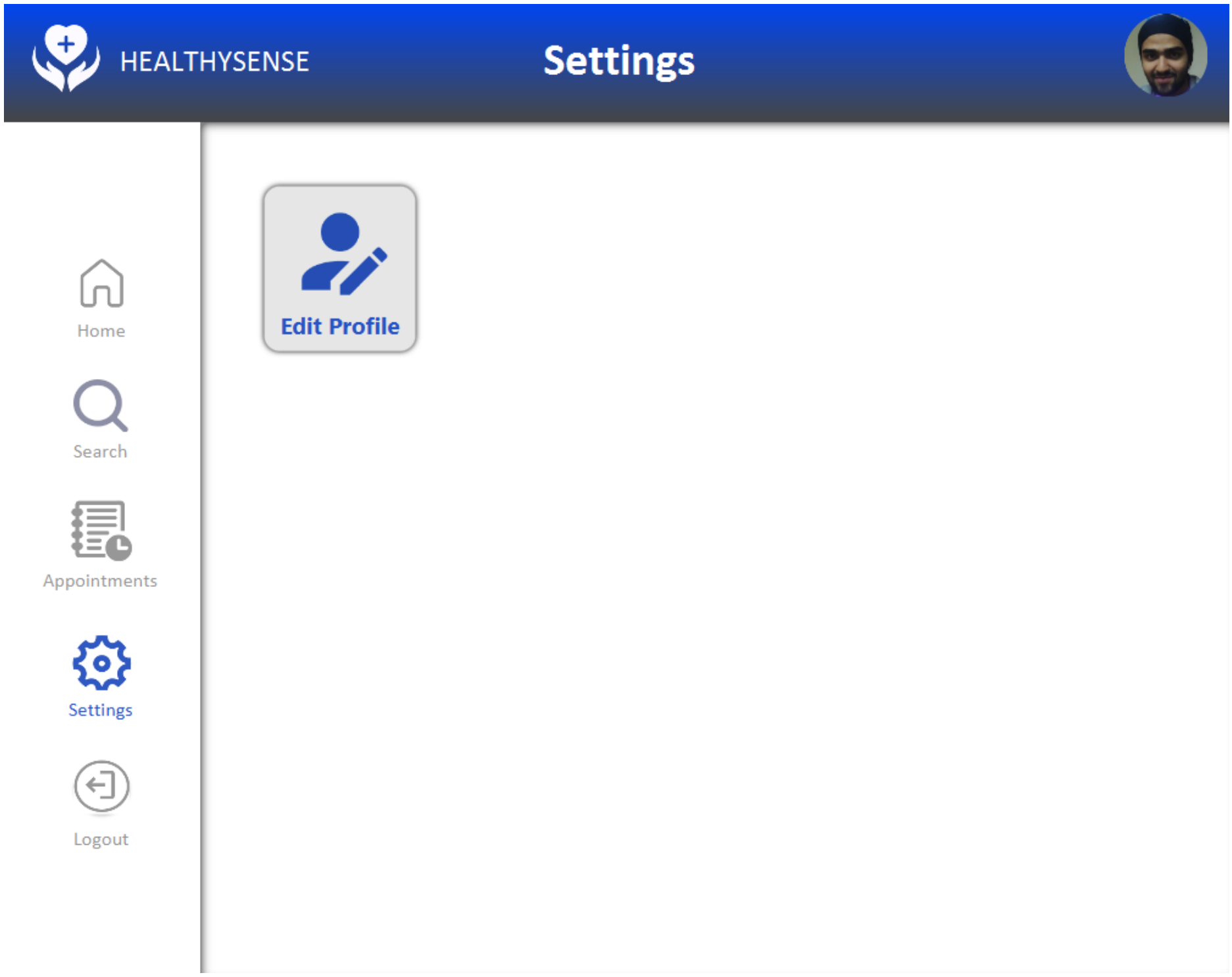
## 4.16. Certificates in Doctor Details



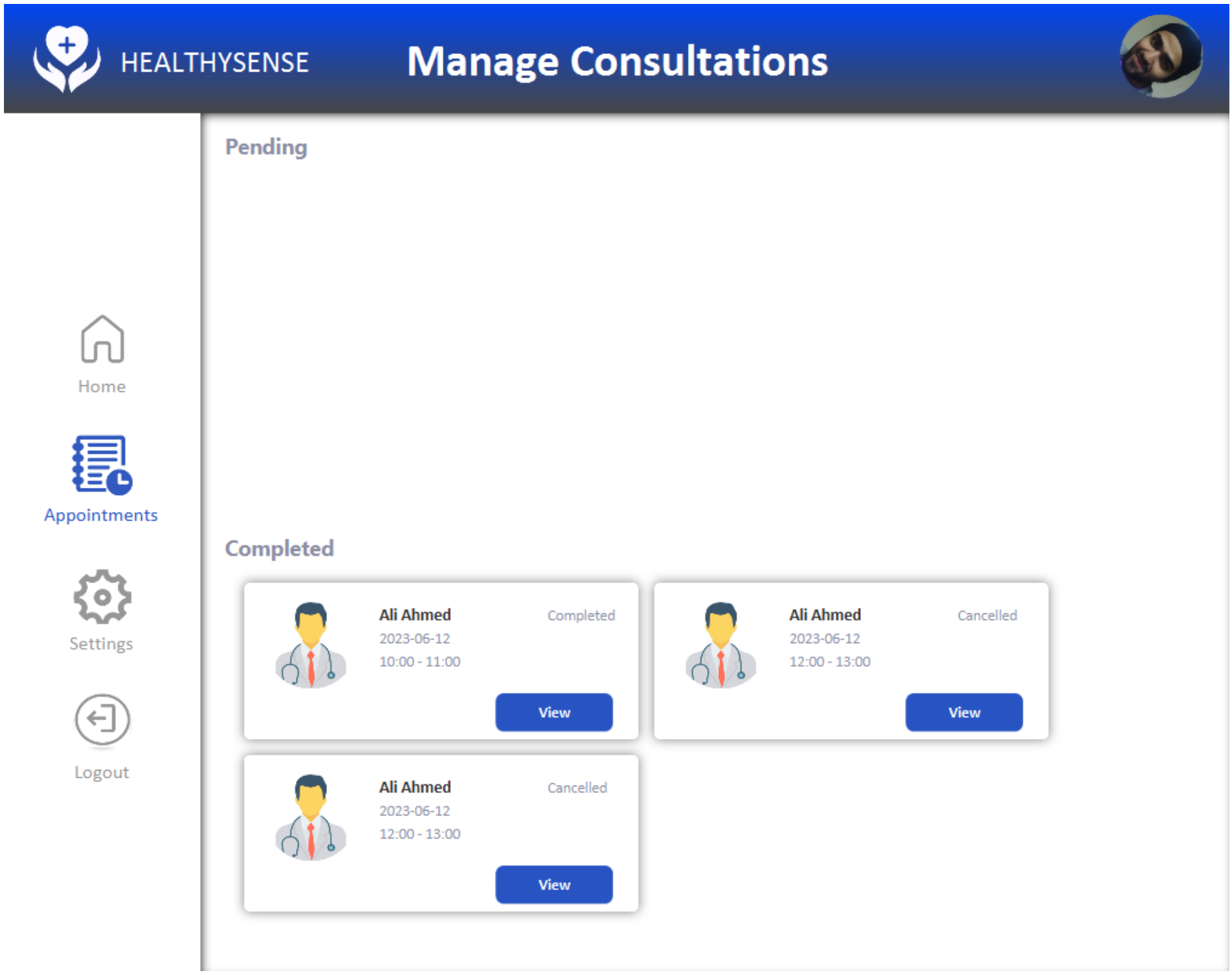
## 4.17. Reviews in Doctor Details



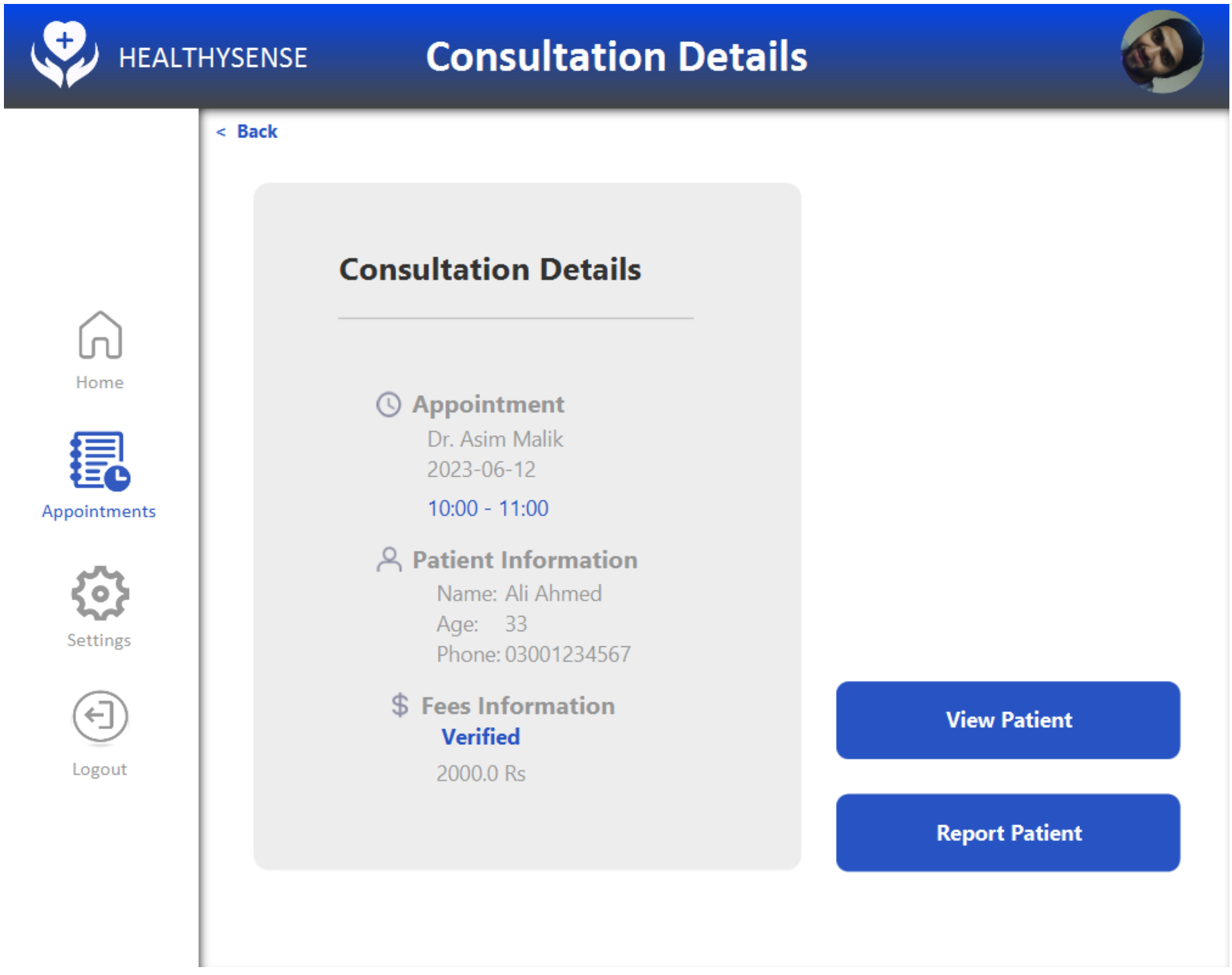
## 4.18. Settings



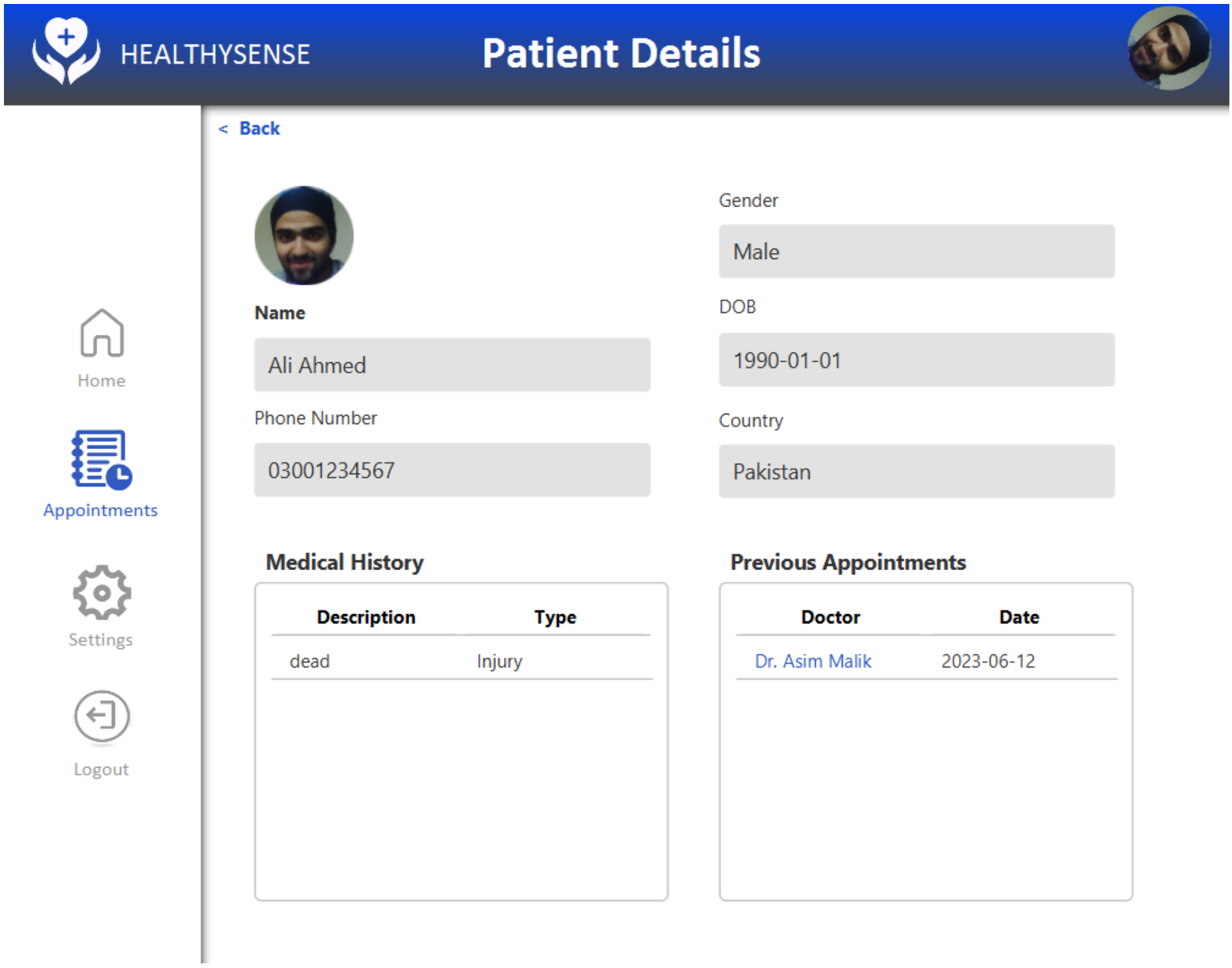
## 4.19. Doctor Manage Consultation



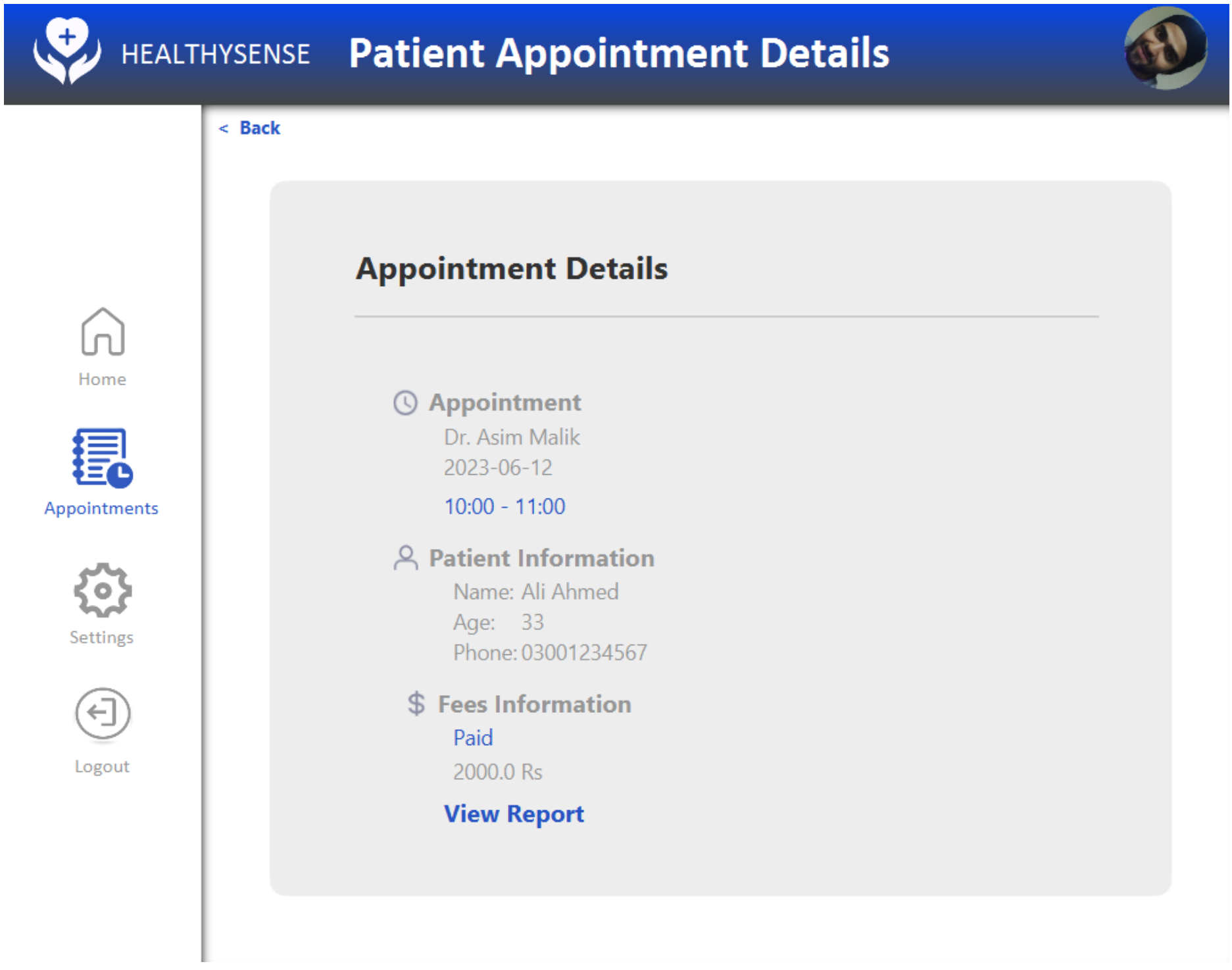
## 4.20. Doctor Consultation Details



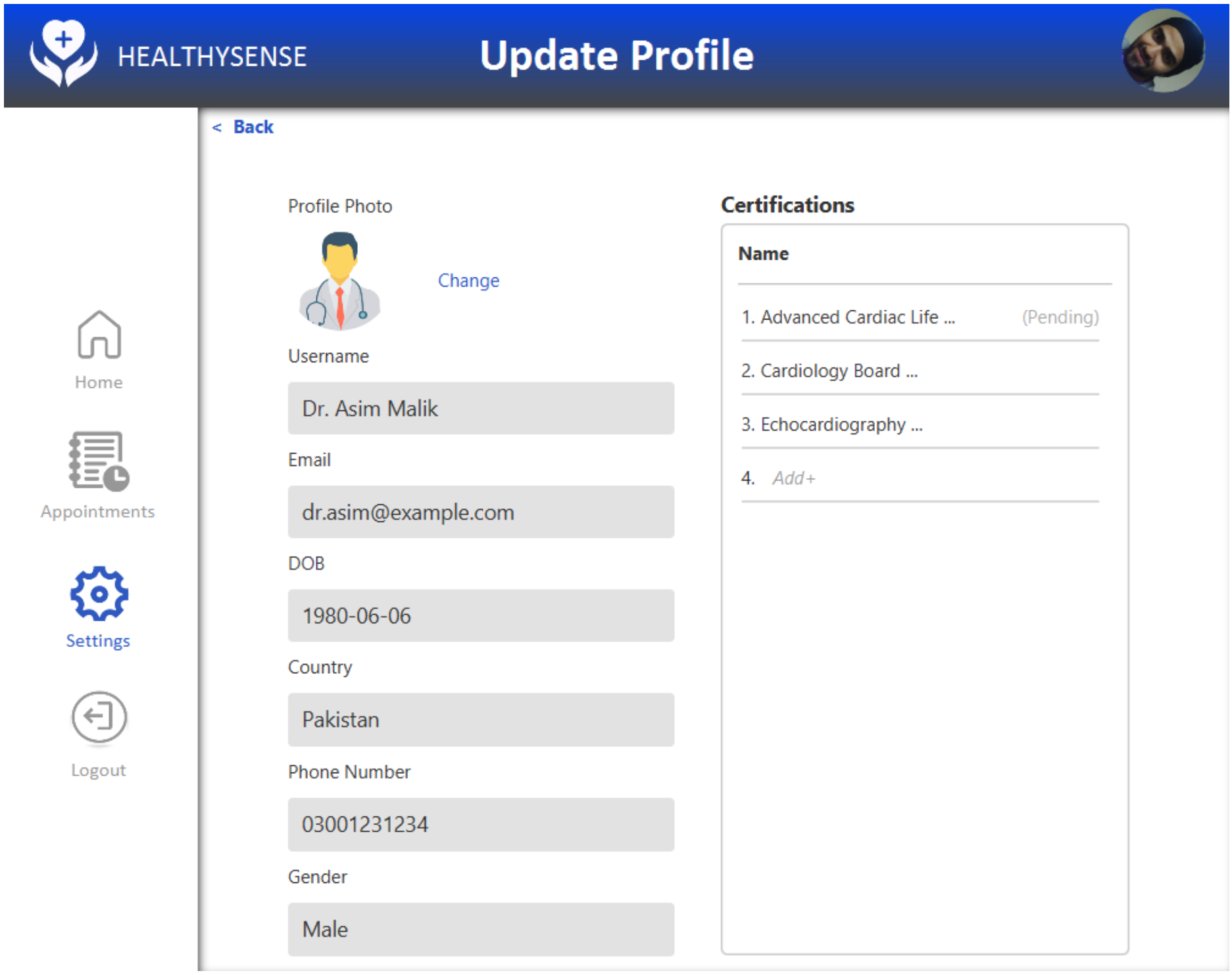
## 4.21. Doctor View Patient History



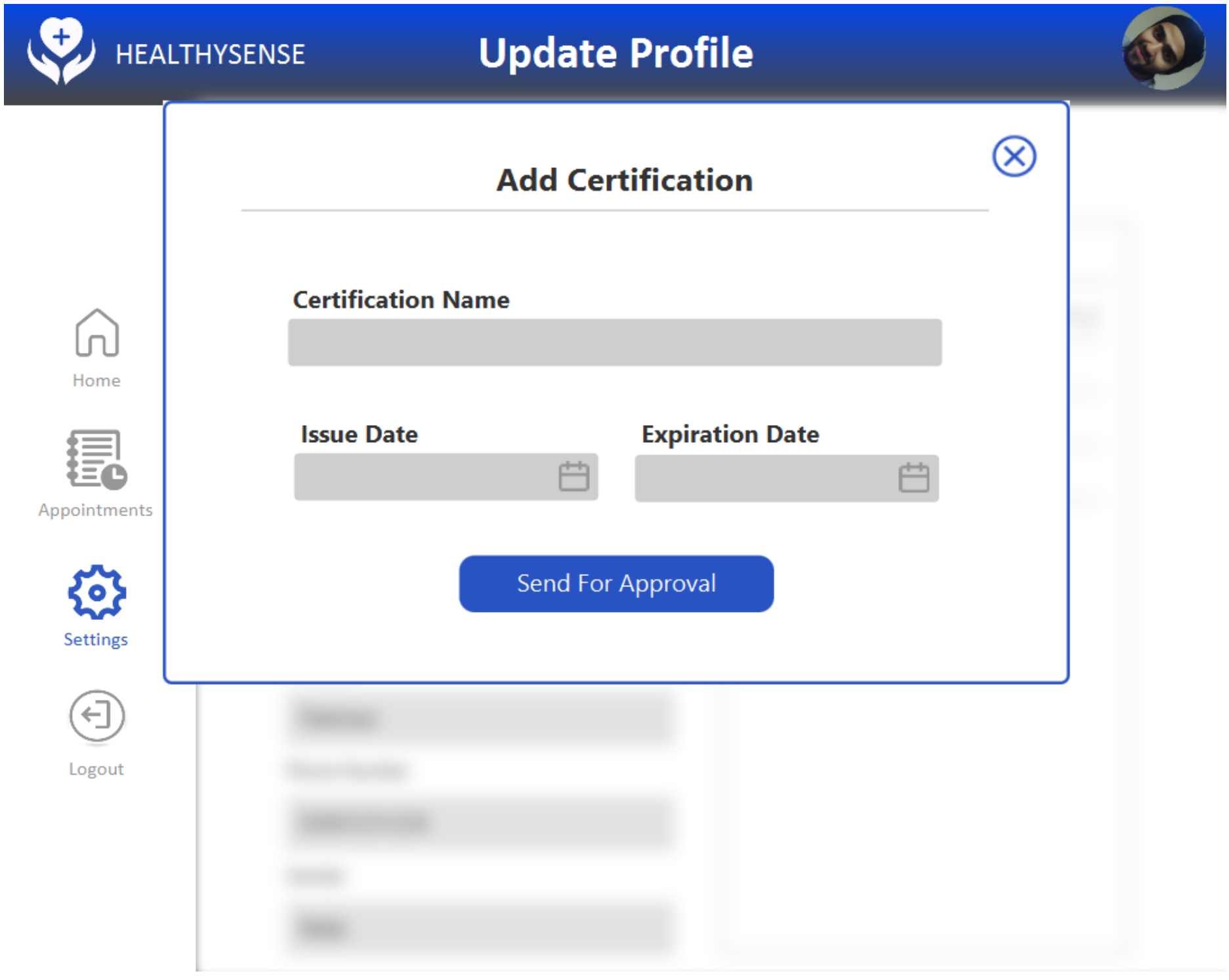
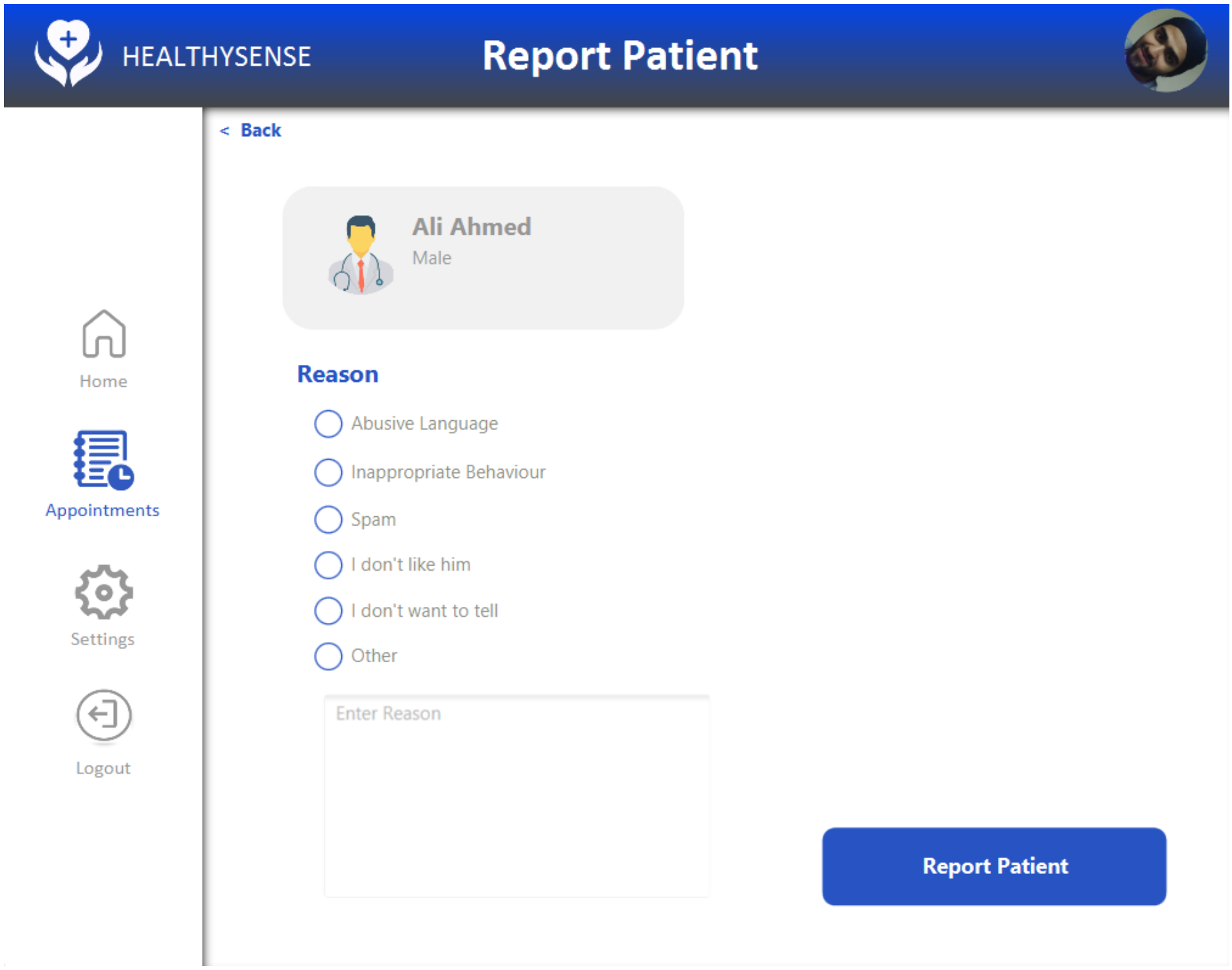
## 4.22. Doctor View Patient Appointment



## 4.23. Doctor Update Profile



## 4.24. Doctor Add Certification



## 4.25. Doctor Report Patient