

Final Project

Hospital Database

Group 20

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Main functionality

The main functionality of the app is to maintain records of the appointments and visits of each of the patients in a hospital by keeping them in a database.

The following are the tables and example values written in MySQL.

Tables

Create Table Doctor(-- Creates table for Doctor

```
ID INT UNSIGNED UNIQUE AUTO_INCREMENT NOT NULL,  
FirstName VARCHAR(20) DEFAULT 'Doctor',  
LastName VARCHAR(50) NOT NULL,  
Specialization VARCHAR(50) NOT NULL,  
BirthDate DATE,  
Phone VARCHAR(14),  
Username VARCHAR(20) UNIQUE,  
Password VARCHAR(20),  
PRIMARY KEY(ID)  
);
```

CREATE TABLE Patient(-- Creates table for patient

```
ID INT UNSIGNED UNIQUE AUTO_INCREMENT NOT NULL,  
FirstName VARCHAR(20),  
LastName VARCHAR(50) NOT NULL,  
BirthDate DATE,  
Username VARCHAR(20) UNIQUE,  
Password VARCHAR(20),  
InsuranceID INT UNSIGNED,  
DoctorID INT UNSIGNED,  
Phone VARCHAR(14),  
PRIMARY KEY (ID),  
Foreign Key (DoctorID) REFERENCES Doctor(ID) on DELETE SET NULL,
```

```
Foreign Key (InsuranceID) REFERENCES InsuranceProvider(InsuranceID) ON DELETE SET NULL  
);
```

```
CREATE TABLE Administrator(  
    Username VARCHAR(20) UNIQUE,  
    Password VARCHAR(20)  
);
```

```
CREATE TABLE InsuranceProvider(  
    InsuranceID INT UNSIGNED AUTO_INCREMENT,  
    PRIMARY KEY (InsuranceID),  
    ProviderName VARCHAR(30),  
    Coverage DECIMAL(6,2)  
);
```

```
CREATE TABLE Appointment(  
    AppointmentID INT UNSIGNED AUTO_INCREMENT,  
    PatientID INT UNSIGNED NOT NULL,  
    DoctorID INT UNSIGNED NOT NULL,  
    AppointmentDateTime DATETIME,  
    AdditionalInformation VARCHAR(300),  
    PRIMARY KEY (AppointmentID),  
    FOREIGN KEY (DoctorID) REFERENCES Doctor(ID),  
    FOREIGN KEY (PatientID) REFERENCES Patient(ID)  
);
```

```
CREATE TABLE Visit(  
    VisitID INT UNSIGNED AUTO_INCREMENT,  
    PatientID INT UNSIGNED NOT NULL,
```

```

DoctorID INT UNSIGNED NOT NULL,
VisitDateTime DATETIME,
Observations VARCHAR(300),
Perscription VARCHAR(300),
Treatment VARCHAR(300),
AdditionalComments VARCHAR(500),
PRIMARY KEY(VisitID),
FOREIGN KEY (DoctorID) REFERENCES Doctor(ID),
FOREIGN KEY (PatientID) REFERENCES Patient(ID)
);

```

```

CREATE TABLE Bill(
BillID INT UNSIGNED AUTO_INCREMENT,
PatientID INT UNSIGNED NOT NULL,
InsuranceID INT UNSIGNED,
BilledAmount DECIMAL(6,2),
TotalAmountOwed DECIMAL(6,2),
AmountPaid DECIMAL(6,2),
PRIMARY KEY(BillID),
FOREIGN KEY (PatientID) REFERENCES Patient(ID) ON DELETE CASCADE,
FOREIGN KEY (InsuranceID) REFERENCES InsuranceProvider(InsuranceID) ON DELETE SET NULL
);

```

Example Values

```

INSERT INTO administrator(Username,Password) VALUES('Admin','adminpassword');
INSERT INTO insuranceprovider(`InsuranceID`,`ProviderName`,`Coverage`) VALUES(101013,'Example Insurance',5200), (101011,'NO INSURANCE',0);

```

INSERT INTO

```
doctor(`ID`,`FirstName`,`LastName`,`Specialization`,`BirthDate`,`Phone`,`Password`,`Username`)  
VALUES(101010,'Doctor','Example','Cardiologist','2007-12-02','(000)-000-  
0000','doctorPassword','ExampleDoc');
```

INSERT INTO

```
patient(`ID`,`FirstName`,`LastName`,`BirthDate`,`Username`,`Password`,`InsuranceID`,`DoctorID`,`Phone`  
) VALUES(101012,'Example ','Patient','1989-11-  
13','ExamplePatient','PatientPassword',101011,101010,'(111)-111-1111');
```

Explanation of the Design

Login page

Allows user to “Log In” in 3 different types of users: Doctor, Patient or Administrator. Each type of user has different accessibility.

LOGIN

HospitalDB

USERNAME

PASSWORD

Login as:

☐ Doctor

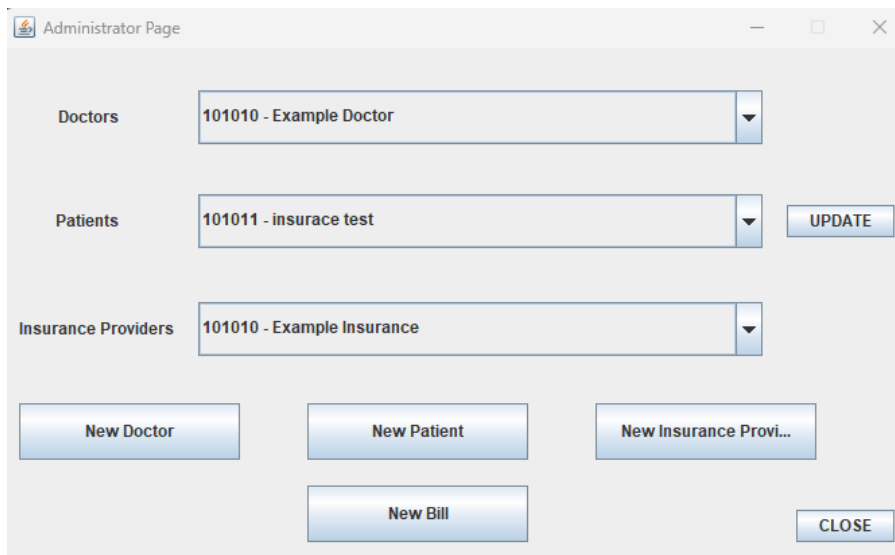
☐ Patient

☐ Administrator

RESET LOGIN

Administrator Page

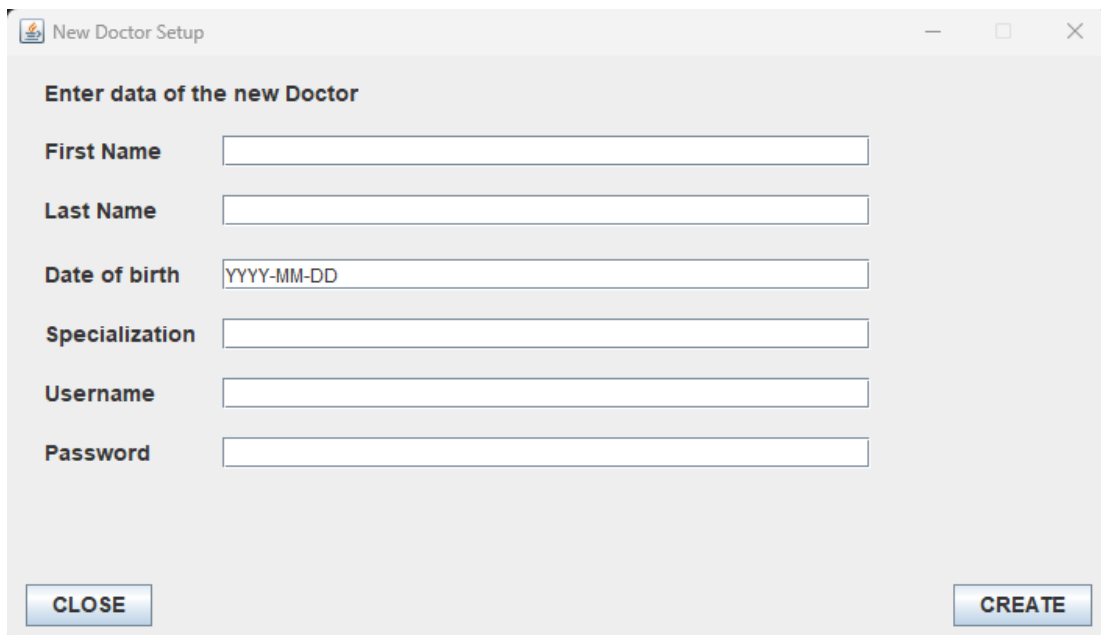
Is the main page of Administrator users, in here the user can see three lists each containing the all the created users in that category. The administrator also has the power to create new patients, doctors, insurance providers and bills.



The screenshot shows a window titled "Administrator Page". It contains three dropdown menus: "Doctors" with the value "101010 - Example Doctor", "Patients" with the value "101011 - insurance test", and "Insurance Providers" with the value "101010 - Example Insurance". To the right of the "Patients" dropdown is an "UPDATE" button. Below these dropdowns are four buttons: "New Doctor", "New Patient", "New Insurance Provi...", and "New Bill". A "CLOSE" button is located at the bottom right of the window.

New Doctor Setup page

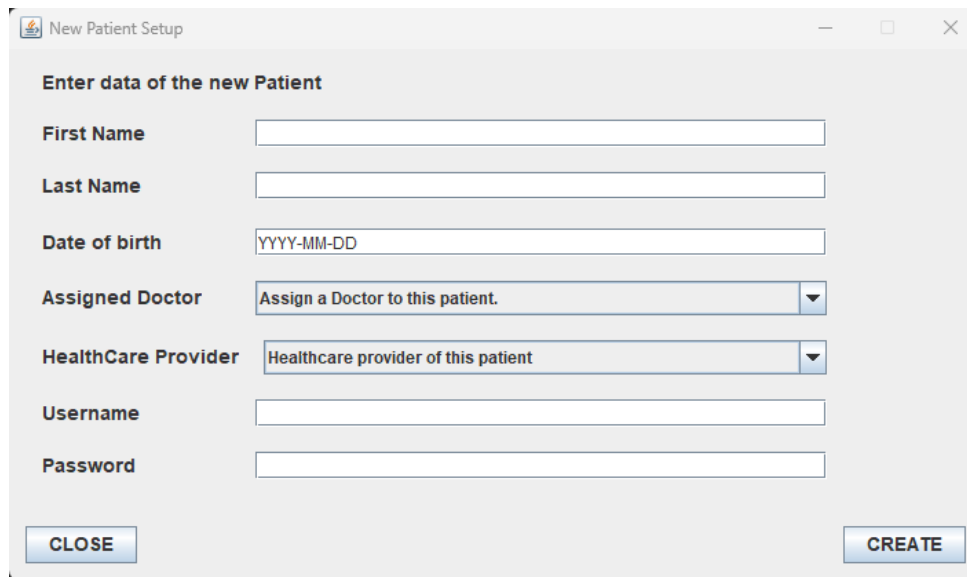
Here is where the administrator user inputs the information required to create a new doctor that will be added into the database.



The screenshot shows a window titled "New Doctor Setup". It contains a section titled "Enter data of the new Doctor" with six input fields: "First Name", "Last Name", "Date of birth" (with a placeholder "YYYY-MM-DD"), "Specialization", "Username", and "Password". At the bottom left is a "CLOSE" button and at the bottom right is a "CREATE" button.

New Patient Setup page

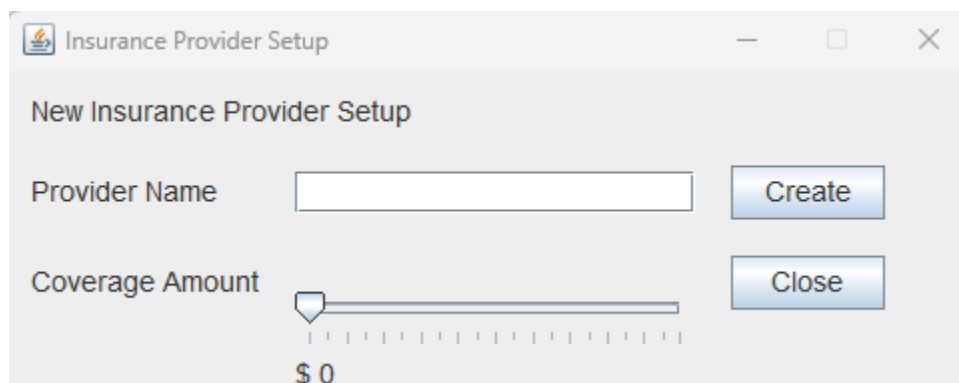
Here is where the administrator user inputs the information required to create a new patient that will be added into the database.



A screenshot of a 'New Patient Setup' window. The window has a title bar with a small icon, the text 'New Patient Setup', and standard window controls (minimize, maximize, close). The main area is titled 'Enter data of the new Patient'. It contains several input fields: 'First Name' and 'Last Name' are text boxes; 'Date of birth' is a text box with the placeholder 'YYYY-MM-DD'; 'Assigned Doctor' and 'HealthCare Provider' are dropdown menus with placeholder text; 'Username' and 'Password' are text boxes. At the bottom, there are two buttons: 'CLOSE' on the left and 'CREATE' on the right.

Insurance Provider Setup page

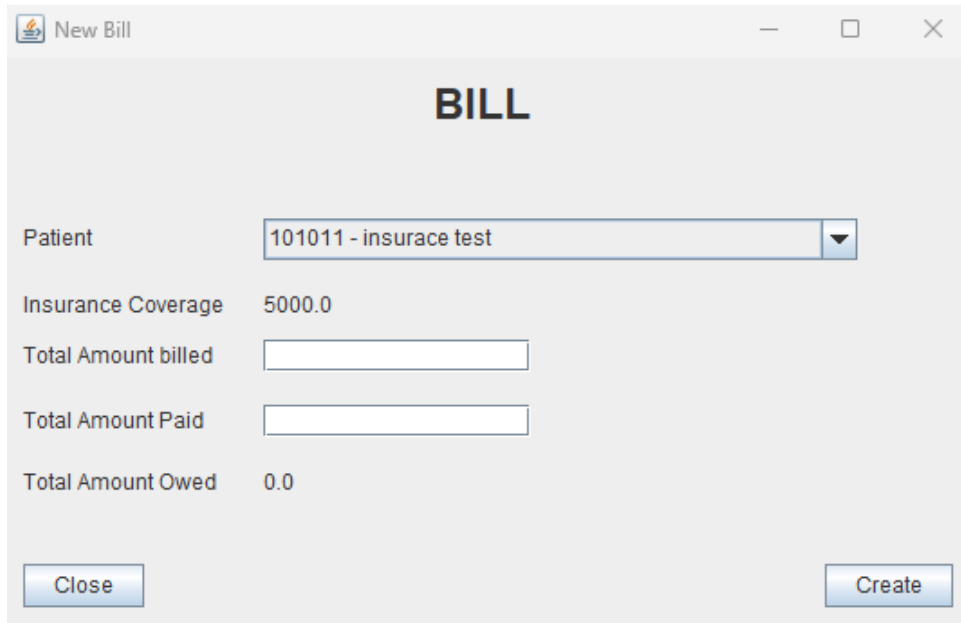
The page allows the user to input the name and the coverage amount for a new Insurance Provider, then when the create button is clicked the information is store in the database.



A screenshot of an 'Insurance Provider Setup' window. The window has a title bar with a small icon, the text 'Insurance Provider Setup', and standard window controls (minimize, maximize, close). The main area is titled 'New Insurance Provider Setup'. It contains two input fields: 'Provider Name' is a text box, and 'Coverage Amount' is a slider control with a dollar sign and '0' at the bottom. To the right of the 'Provider Name' field is a 'Create' button, and to the right of the 'Coverage Amount' field is a 'Close' button.

New Bill

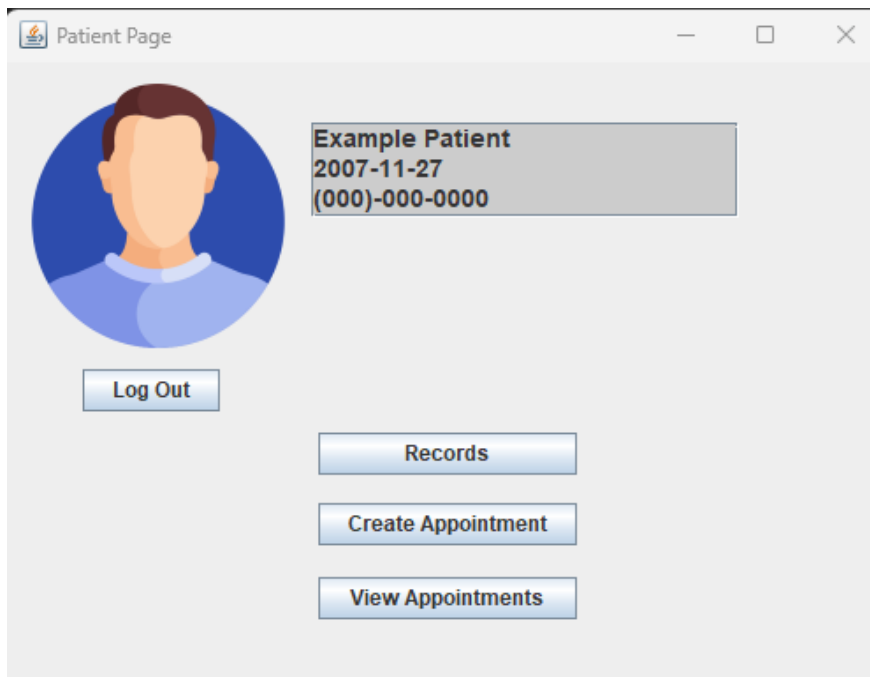
Allows the administrator to create a bill to a patient, the app automatically subtracts the insurance coverage amount from the total billed amount, then the administrator can also input of the amount the patient has already paid, and it also shows the remaining amount that is owed. This bill is stored in the database.



The screenshot shows a window titled "New Bill" with a standard Windows title bar. The main content area has a large heading "BILL" in bold. Below the heading, there are several input fields and labels: "Patient" with a dropdown menu showing "101011 - insurace test"; "Insurance Coverage" with a text input field containing "5000.0"; "Total Amount billed" with an empty text input field; "Total Amount Paid" with an empty text input field; and "Total Amount Owed" with a text input field containing "0.0". At the bottom left is a "Close" button, and at the bottom right is a "Create" button.

Patient Page

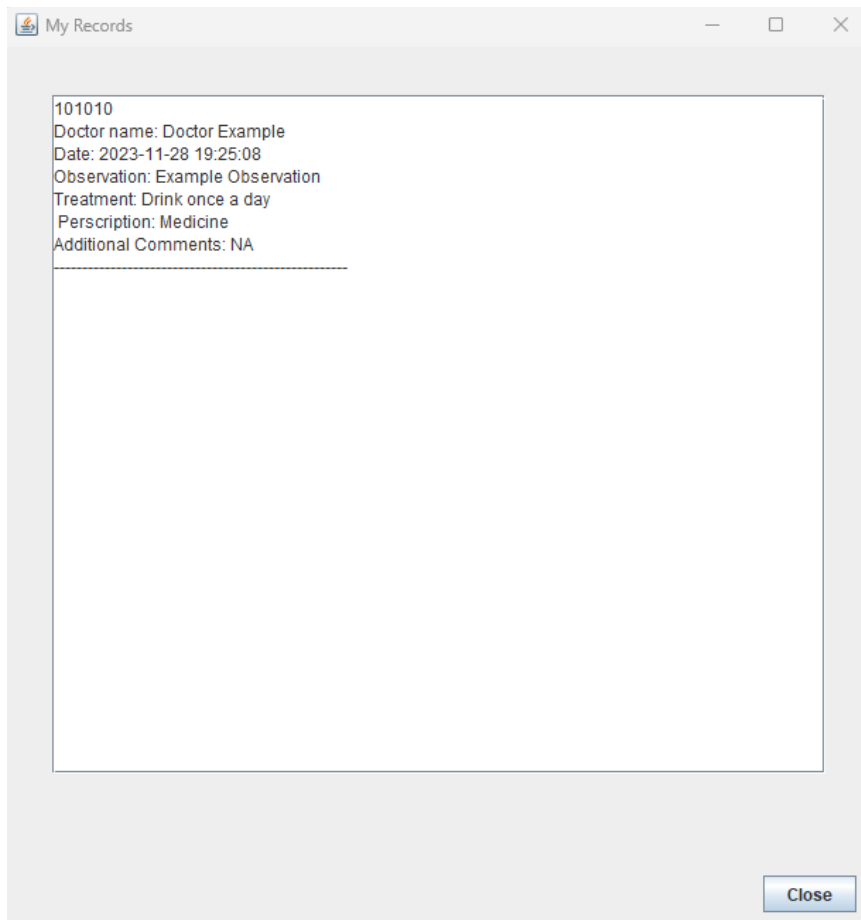
This is the main page of a patient user. The user can check its records, create appointments, or view upcoming appointments.



The screenshot shows a window titled "Patient Page" with a standard Windows title bar. The main content area features a circular profile picture of a person with brown hair and a blue shirt. To the right of the profile picture is a grey rectangular box containing the text "Example Patient", "2007-11-27", and "(000)-000-0000". Below the profile picture is a "Log Out" button. To the right of the "Log Out" button are three stacked buttons: "Records", "Create Appointment", and "View Appointments".

My Records page

This is the page where all the previous visits of a patients are shown.

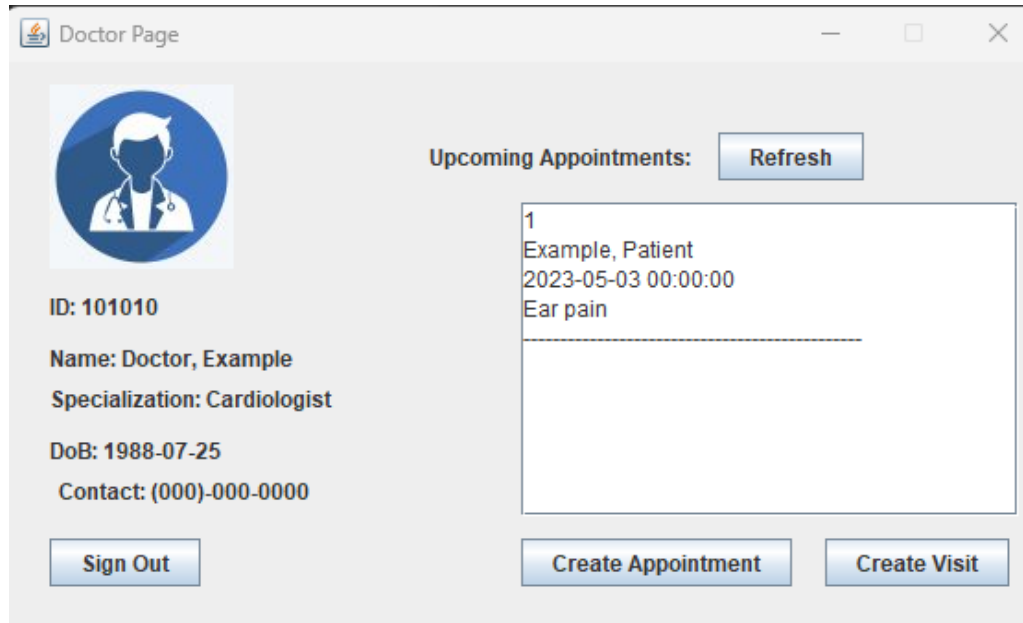


View Appointments page

Same as the records page, but instead of visits it shows the upcoming appointments for the given user.

Doctor Page

This is the main page for all Doctor users, the page consists of a complete profile information, a small reminder list of the upcoming next 5 appointments, and the ability to create new appointments or create a record of a visit.

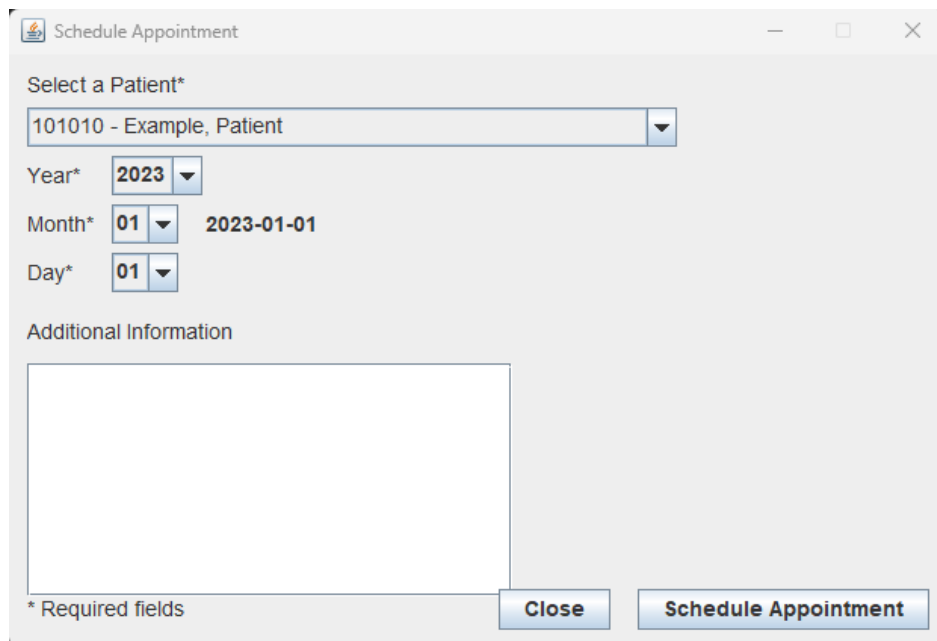


The screenshot shows a web application window titled "Doctor Page". On the left, there is a circular profile picture of a doctor. Below it, the following information is displayed: ID: 101010, Name: Doctor, Example, Specialization: Cardiologist, DoB: 1988-07-25, and Contact: (000)-000-0000. At the bottom left is a "Sign Out" button. On the right, under the heading "Upcoming Appointments:", there is a "Refresh" button and a list of appointments. The first appointment is numbered "1" and includes the text "Example, Patient", the date and time "2023-05-03 00:00:00", and the reason "Ear pain". Below the list are two buttons: "Create Appointment" and "Create Visit".

Upcoming Appointments:
1 Example, Patient 2023-05-03 00:00:00 Ear pain

Schedule Appointment page

This page can be accessed by both Doctor users and Patient users to create an appointment. drop down contains a list of all the doctors.



The screenshot shows a web application window titled "Schedule Appointment". It features a "Select a Patient*" dropdown menu with the selected value "101010 - Example, Patient". Below this are three required date fields: "Year*" set to "2023", "Month*" set to "01", and "Day*" set to "01". To the right of the month and day fields, the date "2023-01-01" is displayed. Below these fields is a section labeled "Additional Information" with a large empty text area. At the bottom left, there is a note "* Required fields". At the bottom right are two buttons: "Close" and "Schedule Appointment".

Select a Patient*

101010 - Example, Patient

Year* 2023

Month* 01 2023-01-01

Day* 01

Additional Information

* Required fields

Close Schedule Appointment