

**CS102****Spring 2020/21**Project  
Group**G1A**

Assistant:

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# ~ PATIENT MANAGEMENT SYSTEM FOR HOSPITALS ~

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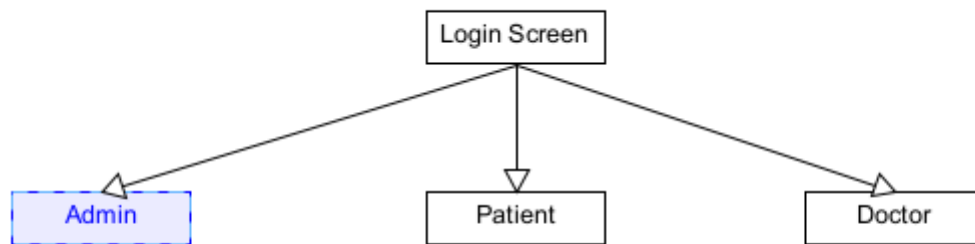
## User Interface Stage

**(version 1.0.0)****24 March 2021**

## 1. Introduction

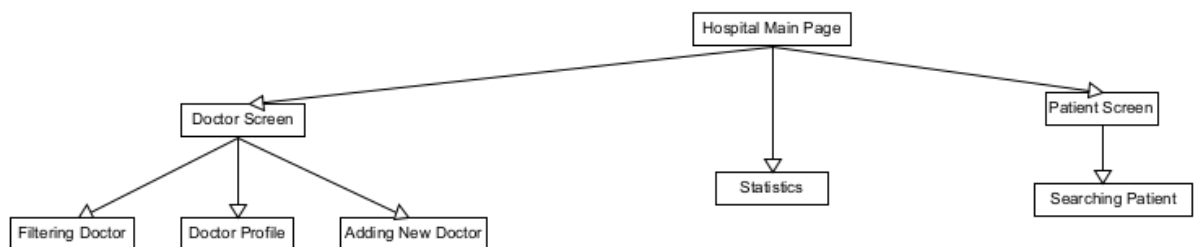
For our patient management system, we have created three different interfaces for three different types of users: patients, doctors and hospital admins. After logging in, a user will be directed to the main page of their own user type. From there, they will be able to choose various options; these options are determined based on what they may access and what may be most suitable to them. In addition, while some users may have access to same kind of data, their way of viewing it is tailored to their needs.

## 2. Storyboard

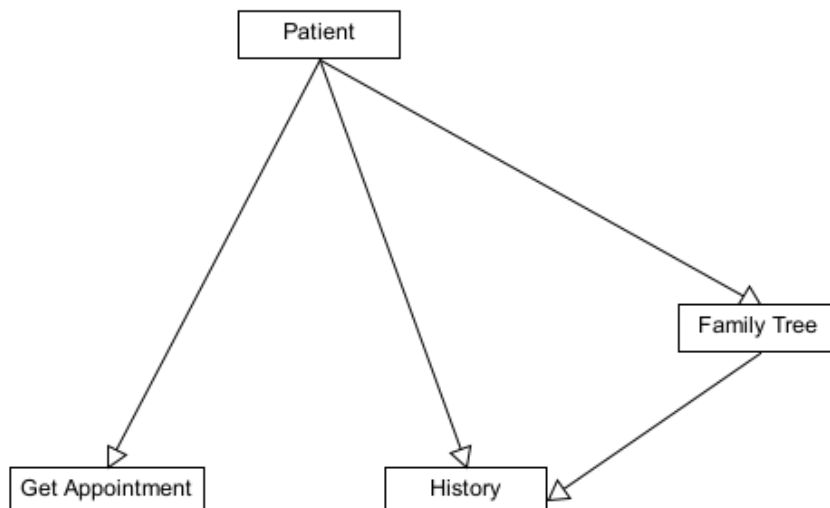


After the log-in screen, each user type has access to different pages. These pages are detailed in the third section.

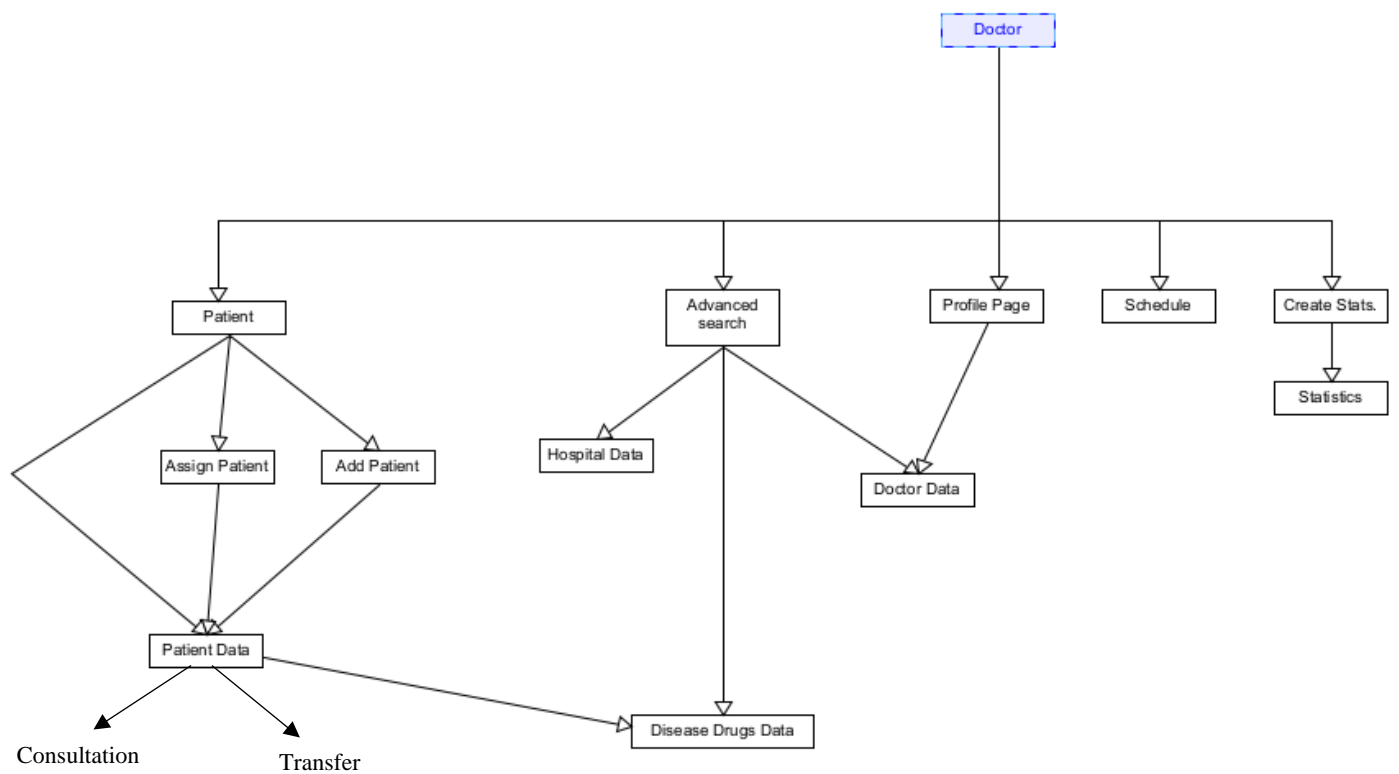
### Admin:



### Patient:



### Doctor:



### 3. Details

#### 3.1 Log-In

## Login Interface

☐ Admin

☐ Doctor

☐ Patient

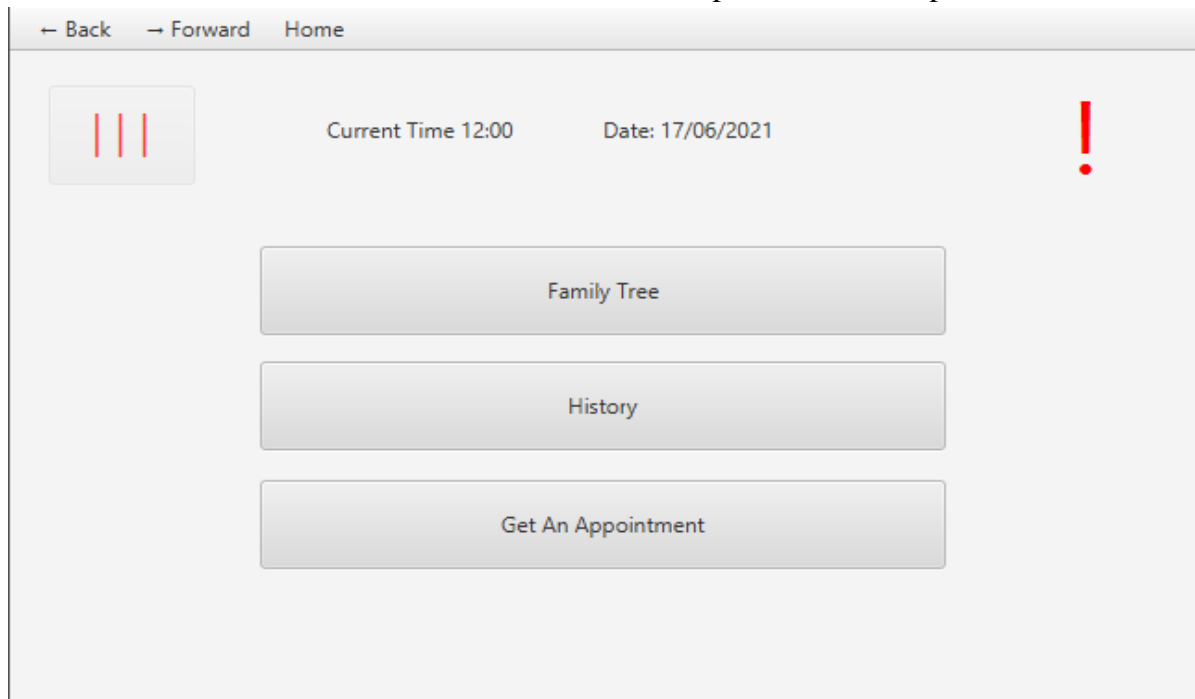
version 1.0

In this page, user may choose what type of user they are from the left and then enter their email and password.

## 3.2 Patient Interface

### 3.2.1 Main Screen

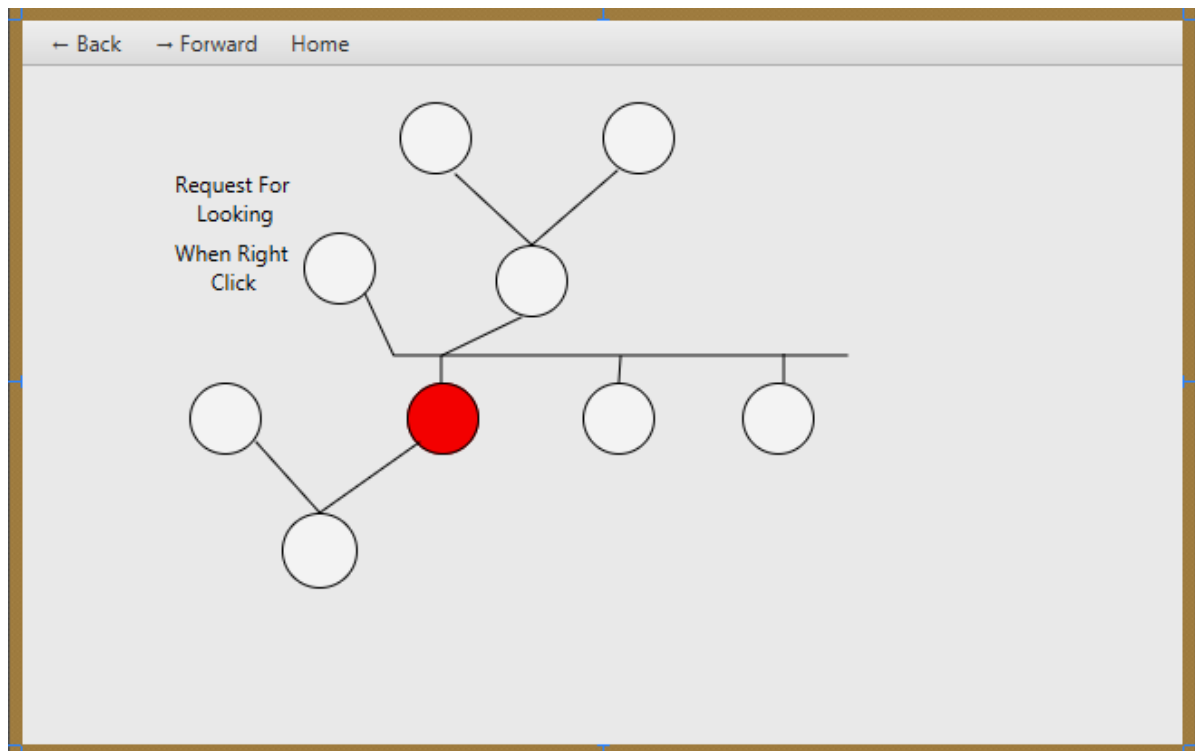
Main Screen is the first screen when the patient first opens his interface



In the app we are not decided what color and images we are going to use. So, for that all the colors and images just used for representing the basic structure of the interface.

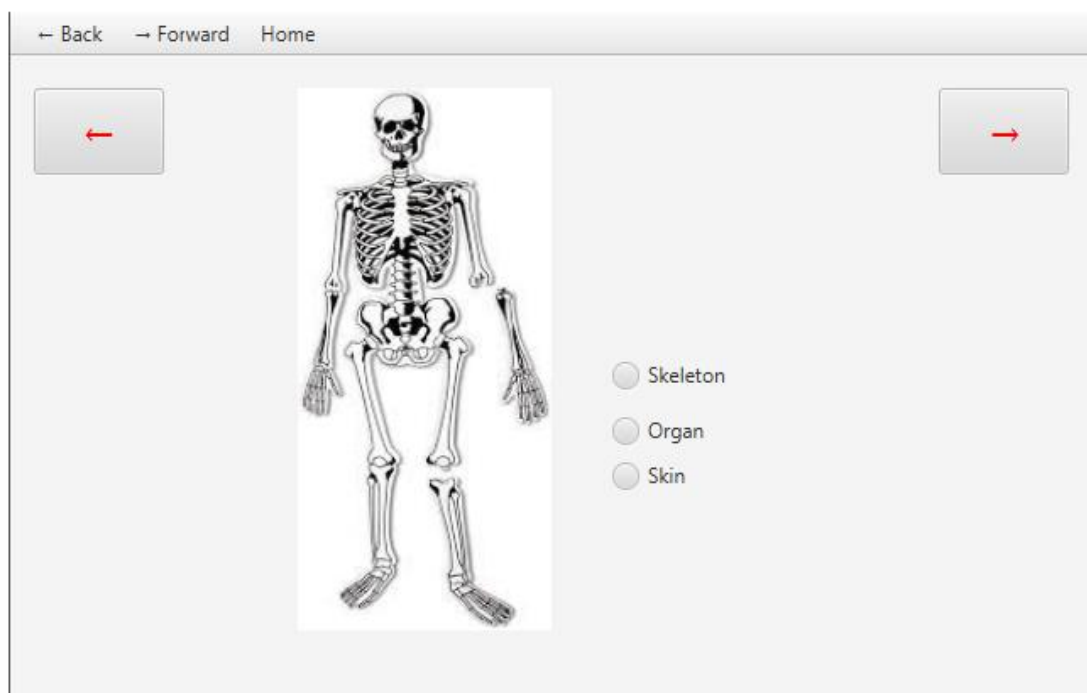
As we can see, there are several buttons and marks in the main page. Main three button is; Family Tree, History, Get an appointment. We can go these pages by clicking onto them. Further information about these buttons will be covered. At the upper-middle side there is info about the date and the clock for better navigation in the app. Upper-left side we have button with 3 vertical lines. When we click this three vertical line button, we will see options like settings, profile, preferences which are not the part of the main application but the part of how this application will be looked to user. At the upper-right side, there is an exclamation mark (!) button for looking at notifications.

### 3.2.2 Family Tree



Family Tree is the place which we can navigate through our relatives. As we mention in the requirements stage, we can navigate only through allowed relatives. Children and people who are allowed for us to looking after, is allowed to going through by default. On the other hand, we can request for looking to our relatives if we want. All we had to do is, right clicking and sending a request to person we want. This request will be shown in the notification section we will mentioned earlier.

### 3.2.3 History



← Back   → Forward   Home			
Year	Hospital	Drugs	Problem
No content in table			

There are basically 2 sub-pages of the history page we can navigate through. First one is the body representation of the patient. It is a general representation and it will be used for navigating the patient's problems visually. There will be marks for each patient's body in the visualization and they can go to for further information of the problem.

At the second page, problem will be shown more systematically like a excel table. Patient can easily navigate through problems in this table. Also, they click the tabs and get filtered list in the app.

### 3.2.4 Get Appointment

This page is created for getting an appointment from doctor. There are multiple sup-pages for getting appointment such as Date, Time, Field, and Location.

← Back

→ Forward

Home

DateTimeFieldLocation

Start Time

End Time

Day

Mo...

Year

Day

Mo...

Year

Calender

Search

☐ Date

☐ Location

☐ Field

☐ Time

← Back

→ Forward

Home

DateTimeFieldLocation

Start Time

End Time

Hour

Minute

Hour

Minute

Clock

Search

☐ Date

☐ Time

☐ Field

☐ Location

This screenshot shows a web application interface with a navigation bar at the top containing links for Back, Forward, and Home. Below the navigation bar is a tabbed interface with four tabs: Date, Time, Field, and Location. The Date tab is currently selected. The main content area contains four input fields for location information: Country, Region, Street, and City. To the right of these fields are two buttons: 'Use Default' and 'Current Position'. A large 'Search' button is located in the bottom right corner. At the bottom of the interface is a footer with four checkboxes labeled Date, Time, Field, and Location.

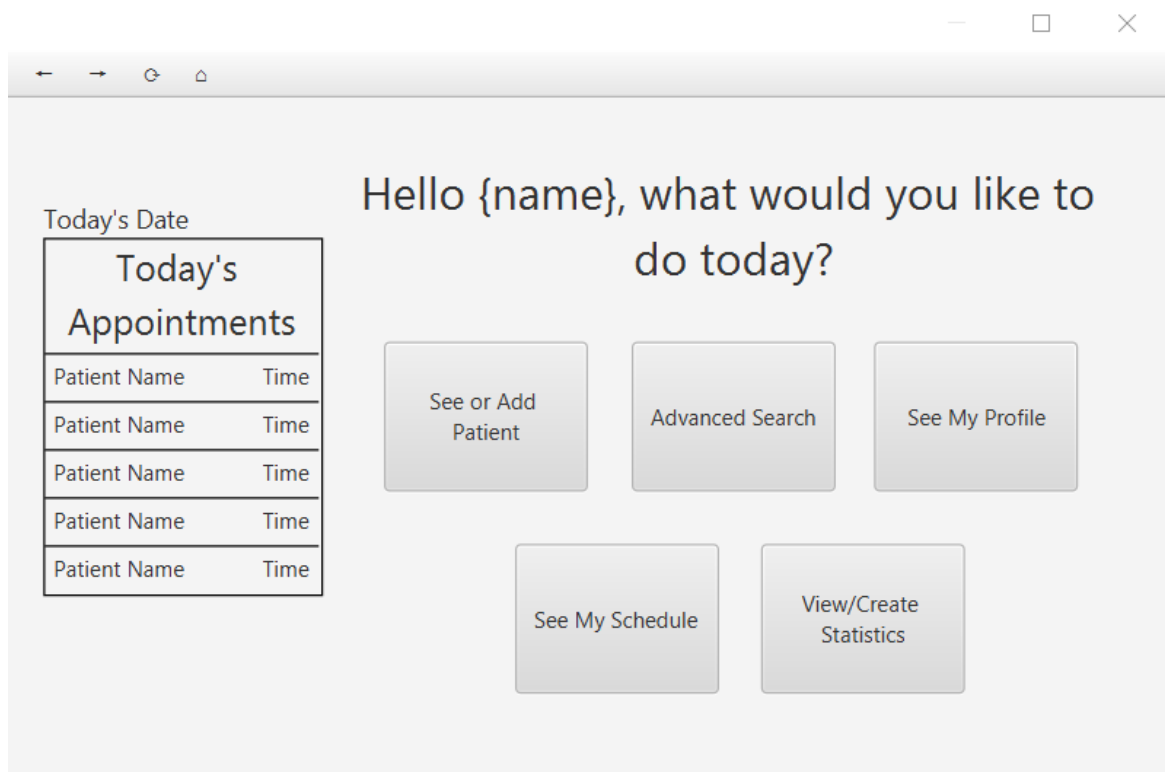
This screenshot shows the same web application interface as the first screenshot, but with the 'Time' tab selected. The main content area now features a search filter input field labeled 'AddTagsAboutDisease' and a dropdown menu labeled 'TagsList'. Below these elements is a large, solid blue rectangular placeholder. The 'Search' button remains in the bottom right corner, and the footer with checkboxes is still present at the bottom.

These are the tabs we can navigate around. If we want to include a filter in the search, all we want to do is, writing the info we need and clicking the checkbox. With these checkboxes we can easily filter the hospitals which are appropriate for our usage.



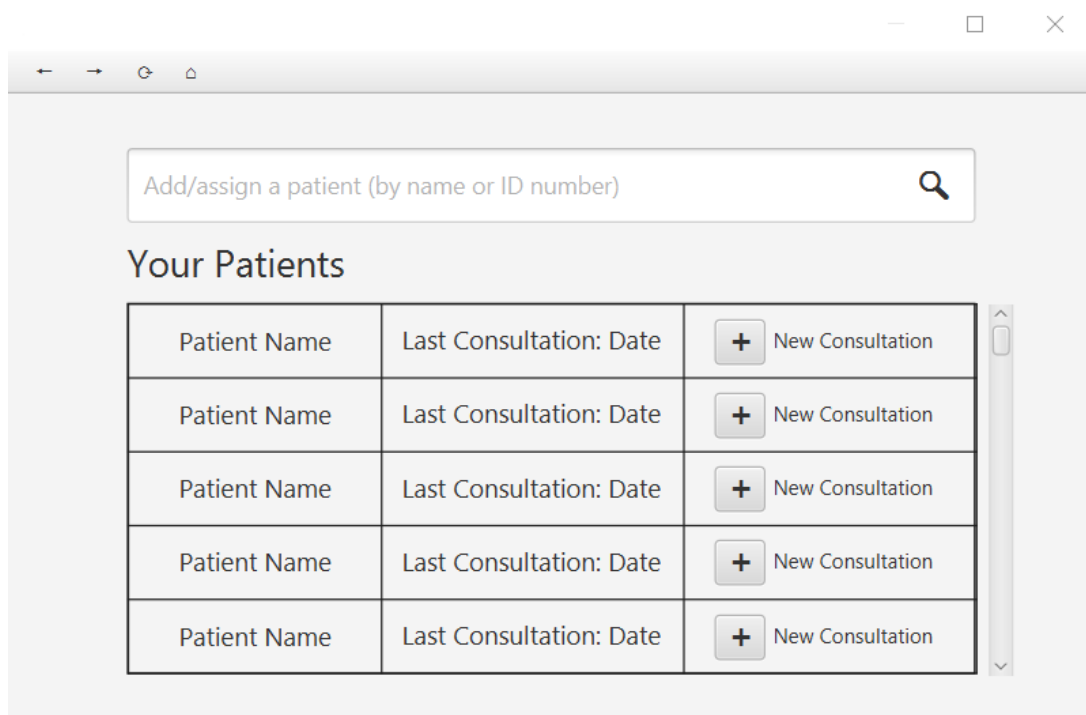
### 3.3 Doctor Interface

#### 3.3.1 Doctor Main Page



This is the screen that the doctor will see after logging in. Many choices are presented: Doctor may see their own patient and add a patient, search through all the databases (hospitals, other doctors, diseases and drugs), view or create statistics, see their schedule and profile page. Moreover, today's appointments are listed on the left. When clicked, the appropriate schedule page opens up. Buttons for going back, going forward, refreshing the page and going to the main screen are present on the upper left corner.

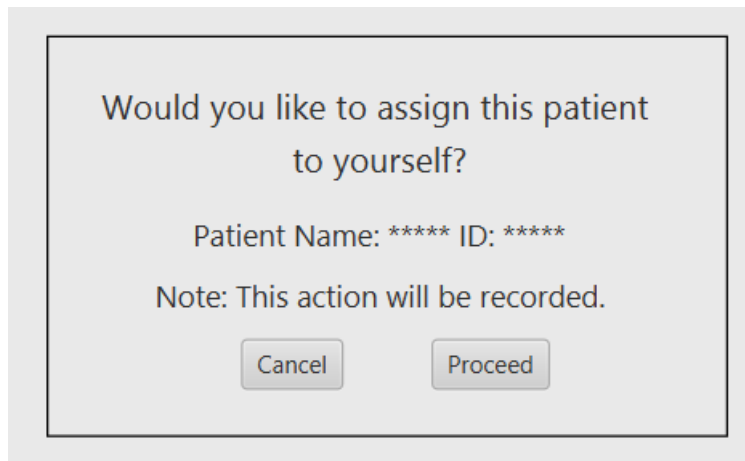
#### 3.3.2 Patient Search



From this page, doctor will be able to see all their patients by scrolling down. All patients in the list are clickable, they direct to the patient file. The “+” button is to easily create a new consultation. If the search bar above is used, there are three possibilities:

1. The patient is registered and assigned to the doctor  
User is directed to that patient’s file.
2. The patient is registered to the system but not assigned to the doctor:

When the patient is selected, a popup appears:



Would you like to assign this patient  
to yourself?

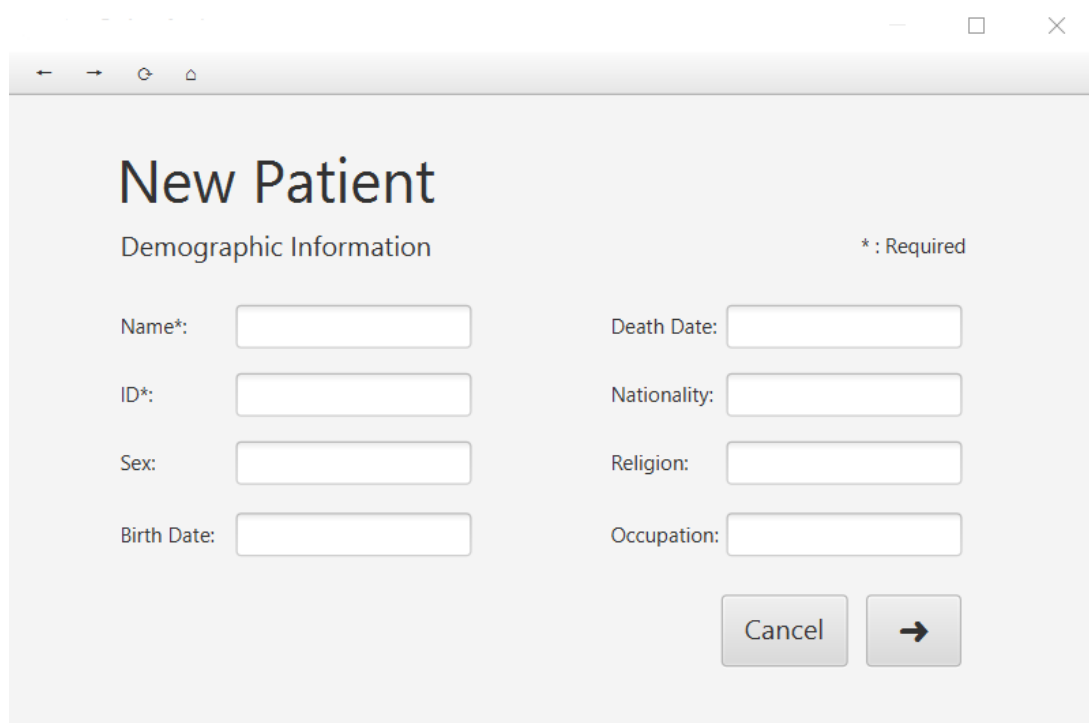
Patient Name: \*\*\*\*\* ID: \*\*\*\*\*

Note: This action will be recorded.

If the user proceeds, the patient will be assigned to them and the patient’s file comes to the screen.

3. Patient isn’t registered to the system.

A new page for the new patient opens up.



New Patient

Demographic Information \*: Required

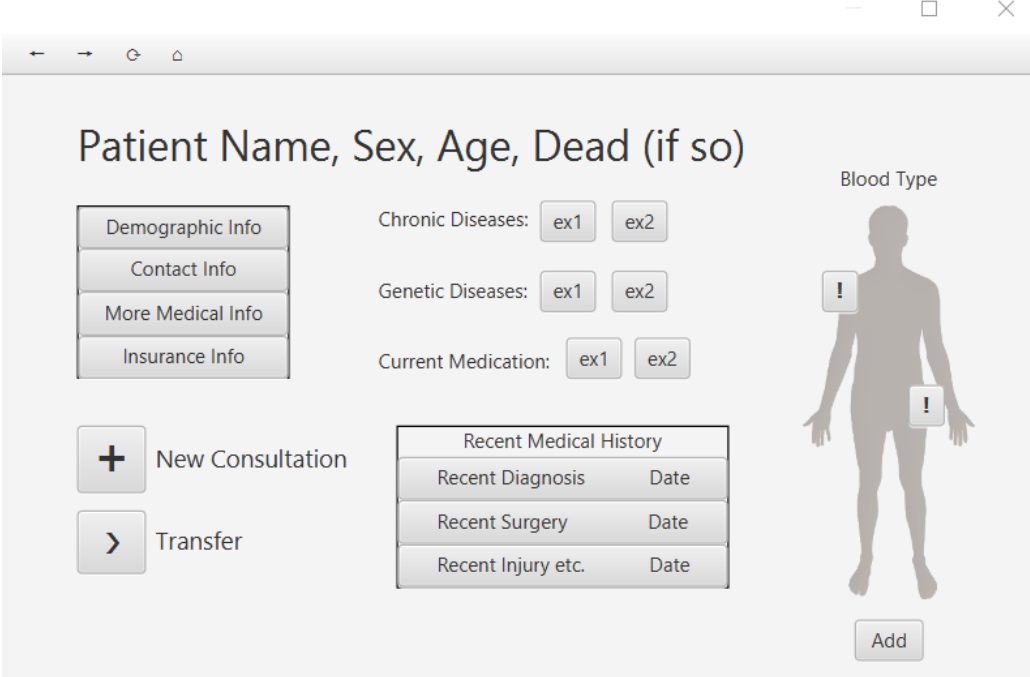
Name*:	<input type="text"/>	Death Date:	<input type="text"/>
ID*:	<input type="text"/>	Nationality:	<input type="text"/>
Sex:	<input type="text"/>	Religion:	<input type="text"/>
Birth Date:	<input type="text"/>	Occupation:	<input type="text"/>

There are four pages like this where patient’s demographic information, contact information, medical information and insurance information is asked for and entered. Fields except name and ID may be left blank.

At the end this message appears:

Patient file successfully created! Please inform  
the patient of their password:  
{Random Password}

### 3.3.3 Patient Data

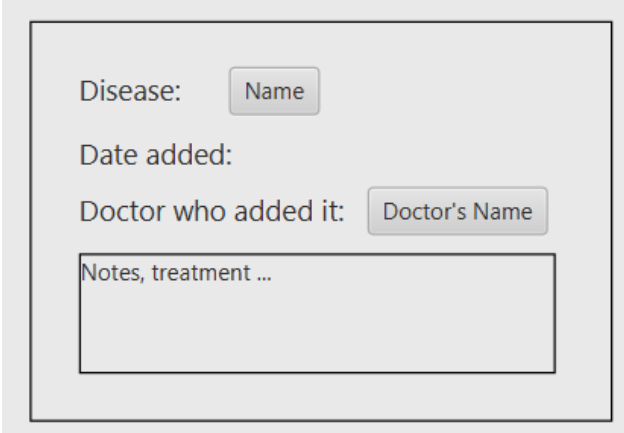


The screenshot shows a web application window titled "Patient Data". The main heading is "Patient Name, Sex, Age, Dead (if so)". Below this, there are several sections:

- Demographic Info:** A vertical stack of buttons: "Demographic Info", "Contact Info", "More Medical Info", and "Insurance Info".
- Chronic Diseases:** Two buttons labeled "ex1" and "ex2".
- Genetic Diseases:** Two buttons labeled "ex1" and "ex2".
- Current Medication:** Two buttons labeled "ex1" and "ex2".
- Recent Medical History:** A table with three rows: "Recent Diagnosis", "Recent Surgery", and "Recent Injury etc.", each with a "Date" column.
- Body Representation:** A silhouette of a human body with two exclamation mark (!) icons placed on the chest and lower right leg. Above the silhouette is the label "Blood Type". Below it is an "Add" button.
- Actions:** Two buttons: "+ New Consultation" and "> Transfer".

From this page, lots of information can be seen about the patient. More information can be viewed by clicking the options under the patient's name. "+" button creates a new consultation. ">" opens up the transfer page. All of the diseases, medication and diagnoses are clickable and they open pop-ups with more details. From the body representation, important info can be seen by the "!" marks. Upon clicking them, related diagnosis page is opened. Other marks may also be added manually; the exclamation marks can be created and dragged to the appropriate place on the body.

When a disease is clicked:

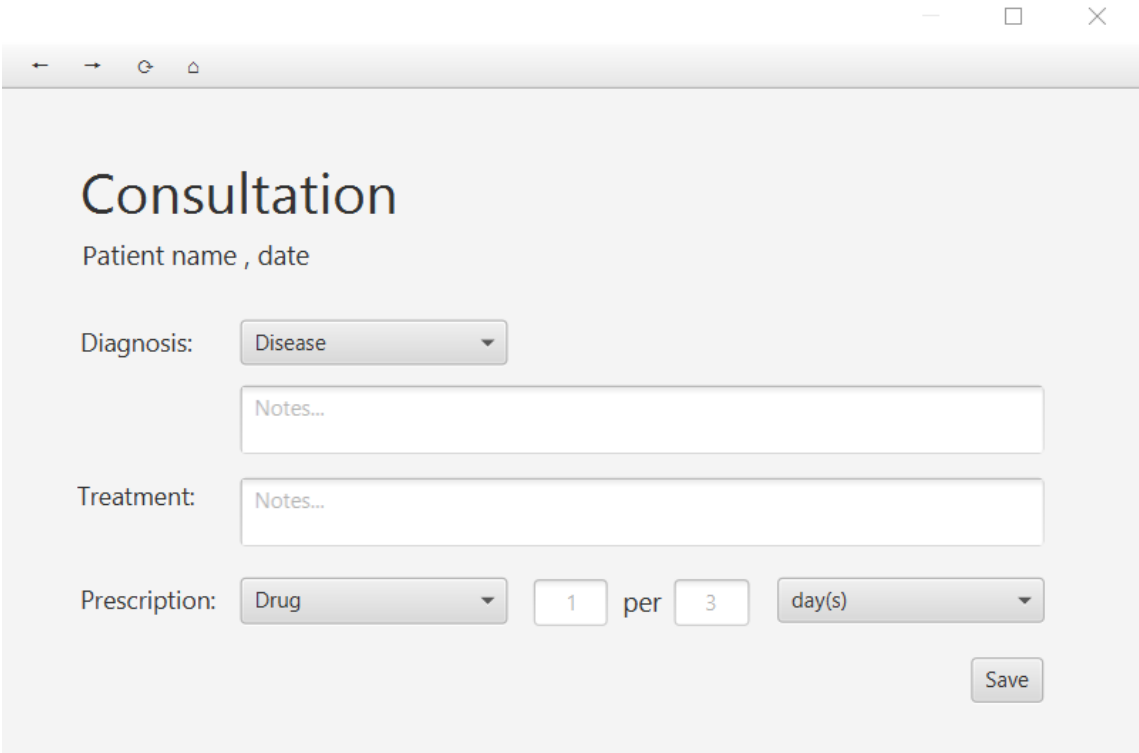


The screenshot shows a pop-up window for disease details. It contains the following fields:

- Disease:** A button labeled "Name".
- Date added:** A text input field.
- Doctor who added it:** A button labeled "Doctor's Name".
- Notes, treatment ...** A large text area for notes and treatment details.

If the name field is clicked, user may access generic info about the disease (similarly for the medication in the previous screen). Clicking on the doctor's name opens up that doctor's page.

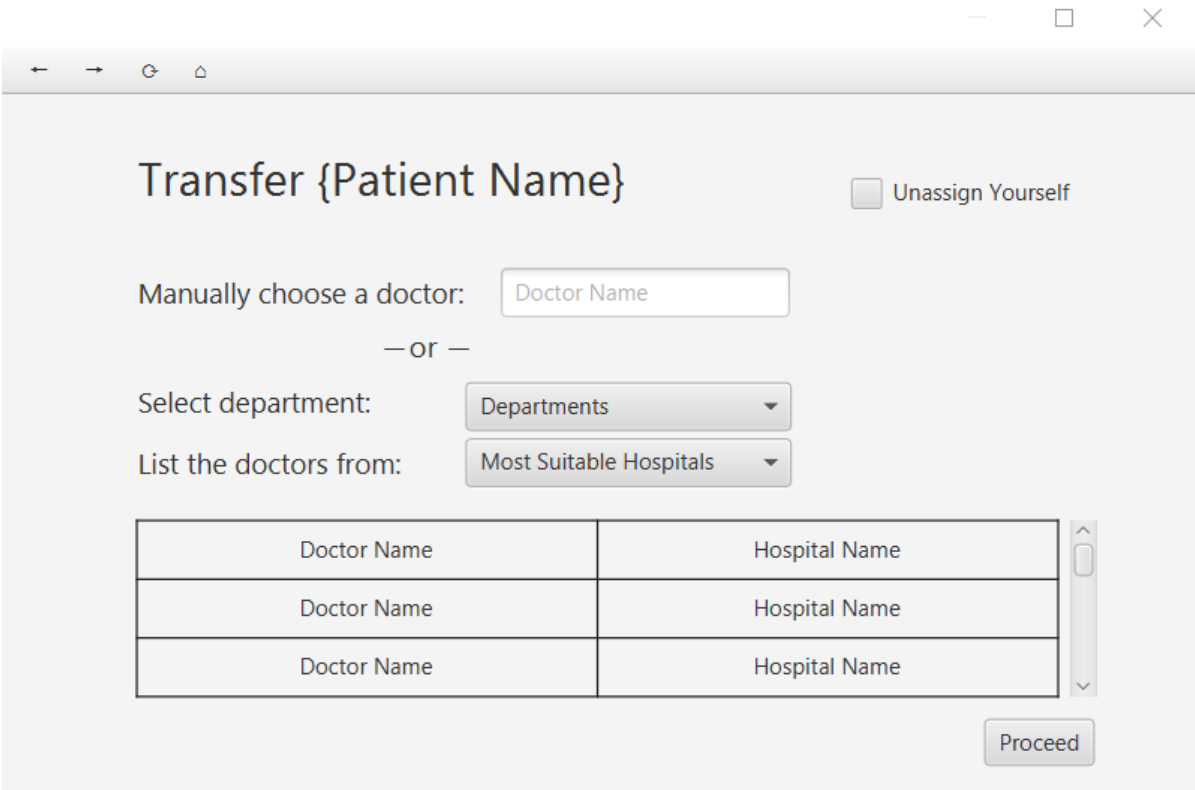
### 3.3.4 Consultation



A screenshot of a web application window titled "Consultation". The window has a standard browser-like header with back, forward, and home icons. The main content area has a title "Consultation" and a subtitle "Patient name , date". Below this, there are three sections: "Diagnosis:" with a dropdown menu showing "Disease" and a text input field labeled "Notes..."; "Treatment:" with a text input field labeled "Notes..."; and "Prescription:" with a dropdown menu showing "Drug", two input fields with values "1" and "3", the word "per" between them, and a dropdown menu showing "day(s)". A "Save" button is located at the bottom right of the form.

In this screen, diseases and medication from the database may be added, along with notes.

### 3.3.5 Transfer



A screenshot of a web application window titled "Transfer {Patient Name}". The window has a standard browser-like header with back, forward, and home icons. The main content area has a title "Transfer {Patient Name}" and a checkbox labeled "Unassign Yourself". Below this, there are three sections: "Manually choose a doctor:" with a text input field labeled "Doctor Name"; "— or —"; "Select department:" with a dropdown menu showing "Departments"; and "List the doctors from:" with a dropdown menu showing "Most Suitable Hospitals". Below these sections is a table with three rows and two columns. The first column is labeled "Doctor Name" and the second column is labeled "Hospital Name". The table has a scrollbar on the right side. A "Proceed" button is located at the bottom right of the form.

Doctor Name	Hospital Name
Doctor Name	Hospital Name
Doctor Name	Hospital Name
Doctor Name	Hospital Name

From this page, the patient may be transferred to another doctor. User may choose to unassign this patient from themselves in the upper right corner. A doctor may be searched for by name or may be selected from a list.

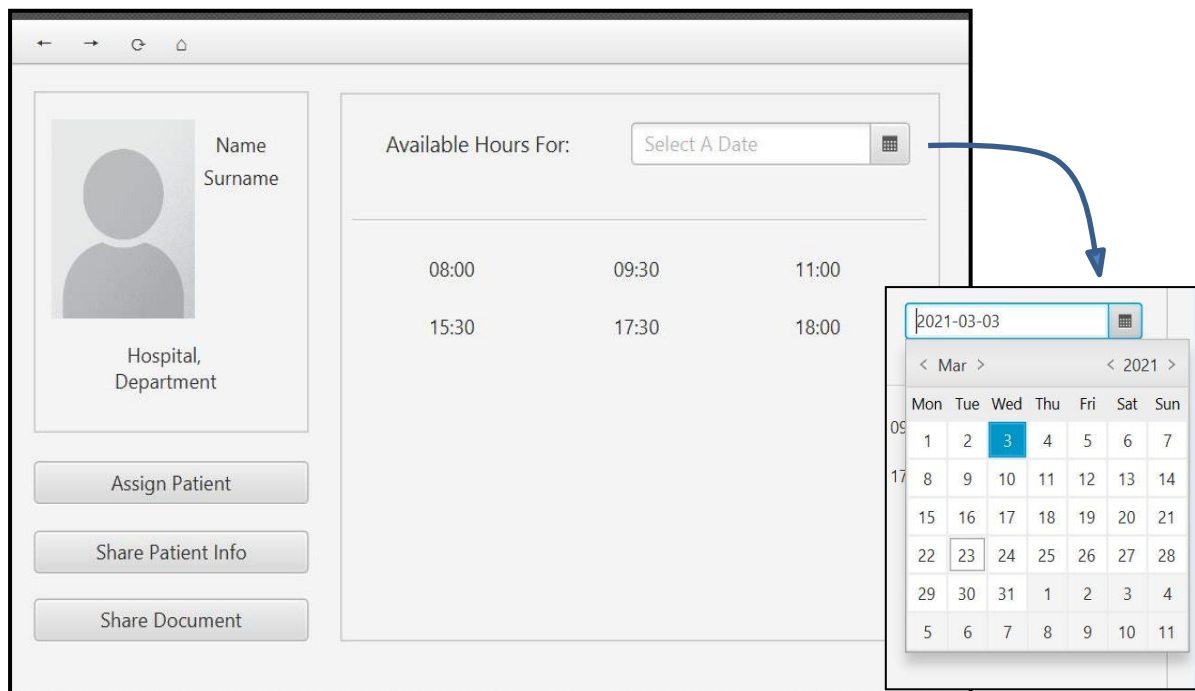
### 3.3.6 Advanced Search Page



The Advanced Search form is titled "Advanced Search". It contains four checkboxes: "Hospital", "Disease", "Doctor", and "Medication". Below these is a text input field labeled "Search By Name" with a search icon. Below the input field is the word "or". Below "or" are three dropdown menus labeled "City", "County", and "Department", followed by a search icon. At the bottom, there is a note: "( Only Usable For Hospital/Doctor )".

This is a popup for the doctor to do advanced search for a hospital, doctor, disease or medication; which is accessible by a button on the main page. If doctors' aim is to find a certain disease, a certain medication, a certain hospital or a certain doctor then they should search it by writing the disease's/medication's name. If doctors' aim is to find hospitals with a certain department or a doctor who works in that department, then they should choose the department (and location if wanted) from the list after selecting the wanted check-box. By Advanced Search, the doctor may view restricted information about any hospital or any doctor, and learn about a disease or a medication that he/she does not know about.

### 3.3.7 Doctor Data



The Doctor Data form is a web application interface. It features a sidebar on the left with a profile picture placeholder, a "Name Surname" label, and a "Hospital, Department" label. Below the sidebar are three buttons: "Assign Patient", "Share Patient Info", and "Share Document". The main area is titled "Available Hours For:" and contains a date selector labeled "Select A Date". A blue arrow points from the date selector to a calendar popup. The calendar popup shows the date "2021-03-03" and a calendar grid for March 2021. The calendar grid has columns for days of the week (Mon, Tue, Wed, Thu, Fri, Sat, Sun) and rows for dates. The date "3" is highlighted in blue.

Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4
5	6	7	8	9	10	11

This screen is for the doctor to view restricted information about a colleague and accessible from the Advanced Search popup. Doctor can assign their patients to the colleague, share a patient's information or document with the colleague. It is also possible to view the doctor's

available hours for any chosen day. Buttons for going back, going forward, refreshing the page and going to the main screen are present on the upper left corner.

### 3.3.8 Hospital Data

Hospital's Name

Assign Patient

Address

Phone Number

Intensive Care Unit Bed Capacity: 100

Occupancy: 42

Departments

Department1

Equipment Info

- Doctor1
- Doctor2

Department2

Equipment Info

- Doctor3
- Doctor4
- Doctor5

Department3

Equipment Info

- Doctor6

This screen is for the doctor to view restricted information about a hospital and accessible from the Advanced Search popup. These restricted information include the hospital’s address, phone number, intensive care unit bed capacity, occupancy of the intensive care unit, departments the hospital has, equipment information for these departments and doctors who work in these departments. The doctor also can assign a patient to the hospital from this screen. Buttons for going back, going forward, refreshing the page and going to the main screen are present on the upper left corner.

### 3.3.9 Disease-medication data:

Disease Name

Related field:

Info about the disease

Related body part(s): (may be blank)

Medication Name

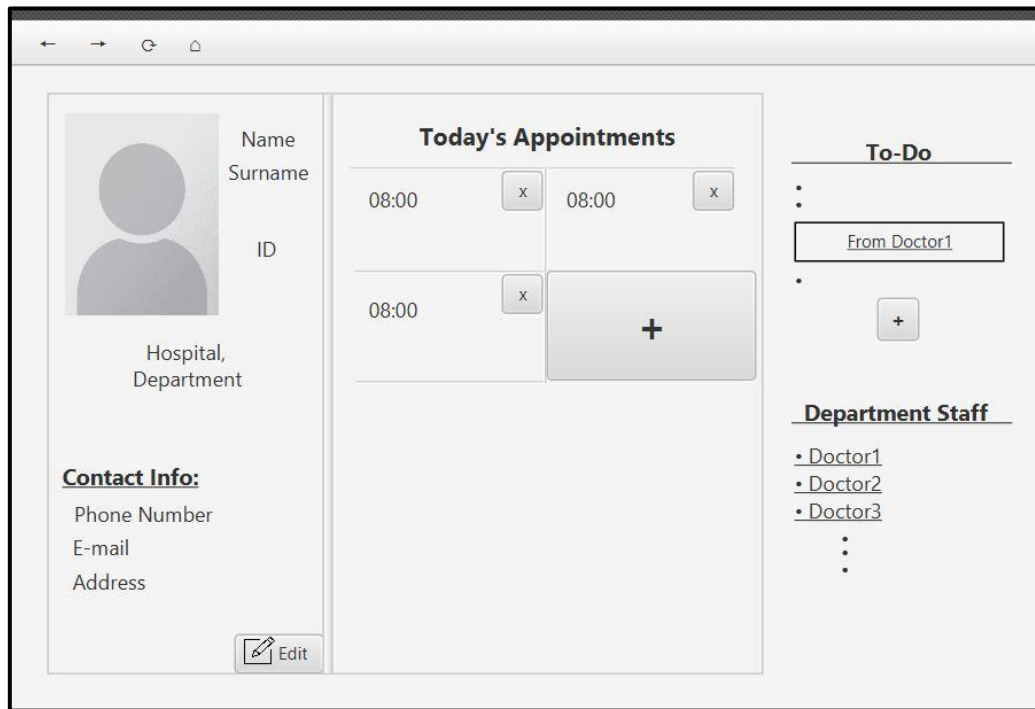
Related field:

Info

Side effects, clashes

These may be accessed any time a disease or medication name is clicked or searched from the advanced search page.

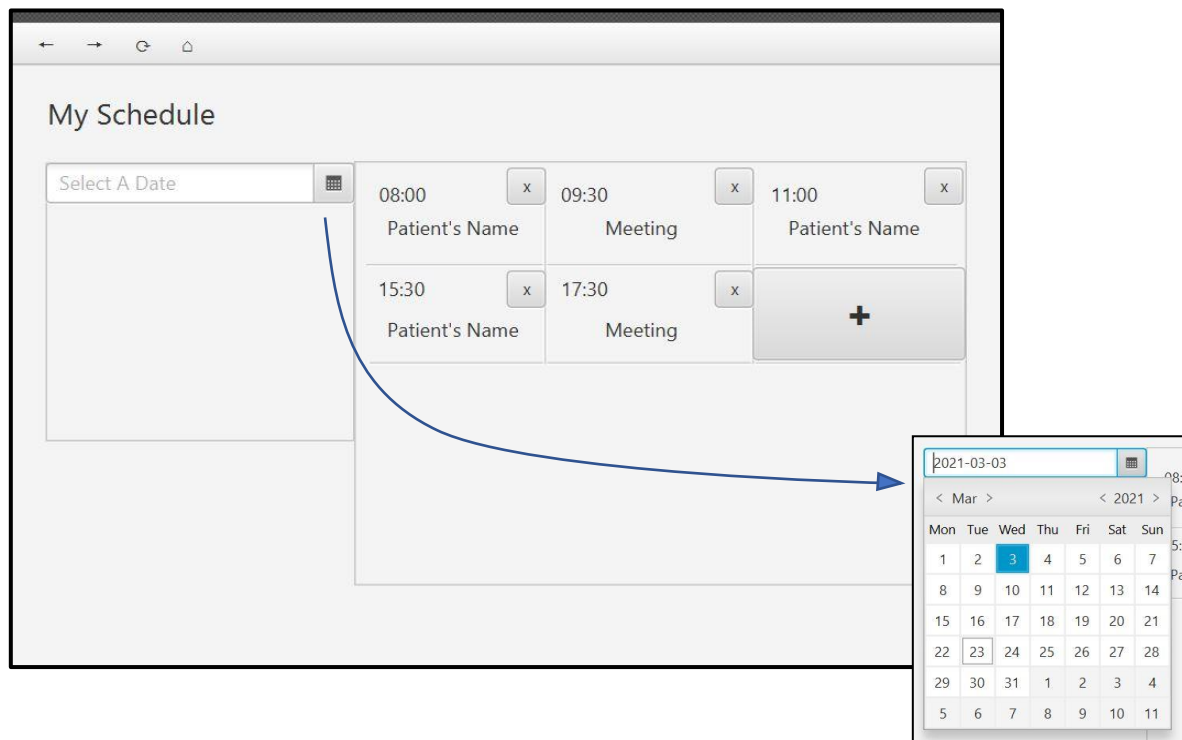
### 3.3.10 Doctor Profile



The image shows a mobile application screen for a doctor's profile. At the top left, there are navigation icons: a back arrow, a forward arrow, a refresh icon, and a home icon. The screen is divided into three main sections. The left section contains a profile card with a circular placeholder for a photo, fields for 'Name' and 'Surname', an 'ID' field, and a 'Hospital, Department' field. Below this is a 'Contact Info:' section with fields for 'Phone Number', 'E-mail', and 'Address'. An 'Edit' button with a pencil icon is at the bottom of this section. The middle section is titled 'Today's Appointments' and displays a grid of appointment slots. The top row has two slots, each with '08:00' and a cancel button 'x'. The bottom row has one slot with '08:00' and a cancel button 'x', followed by a large button with a plus sign '+'. The right section is titled 'To-Do' and shows a list of tasks, with one task 'From Doctor1' visible. Below this is a 'Department Staff' section with a list of staff members: 'Doctor1', 'Doctor2', and 'Doctor3', each preceded by a bullet point. There are also vertical ellipsis icons in the 'To-Do' and 'Department Staff' sections.

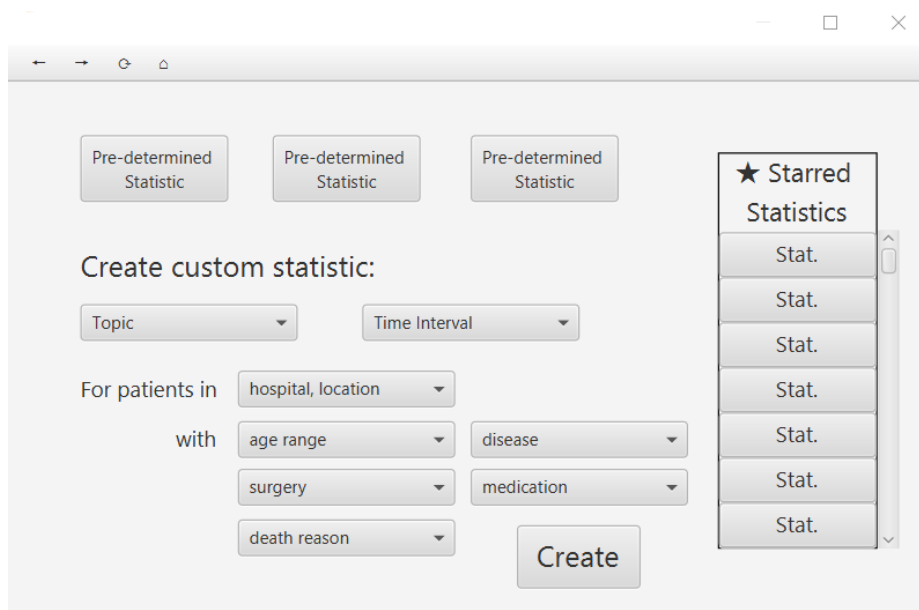
This screen is the profile screen for the doctor, which is accessible by a button on the main page. The doctor can edit their personal data, cancel/add appointments for the day, see their To-Do list, see the doctors of the department where they are located and add tasks for themselves to remember later. The To-Do list may include documents sent to the doctor from another colleague for the doctor to examine, along with the doctor's own added tasks. The Department Staff is the list of other doctors in the hospital and department where the doctor is located. As the doctor will share documents more often with doctors they work with, this list allows doctors to find these doctors more easily, without the need to use Advanced Search\*. Buttons for going back, going forward, refreshing the page and going to the main screen are present on the upper left corner.

### 3.3.11 Schedule Page



This screen is the schedule screen for the doctor, which is accessible by a button on the main page. The doctors can view their schedule for any wanted day (chosen from the calendar) and cancel/add activities for the day. Buttons for going back, going forward, refreshing the page and going to the main screen are present on the upper left corner.

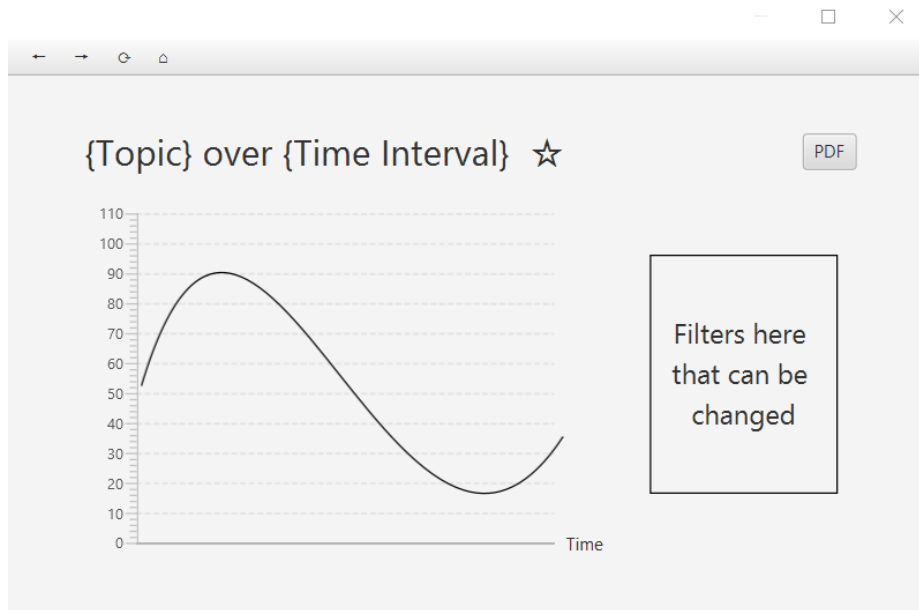
### 3.3.12 Create Statistics



From this screen, the user may either choose a pre-determined statistic by the system, the statistics that the user starred beforehand, or create a custom statistic according to different filters.



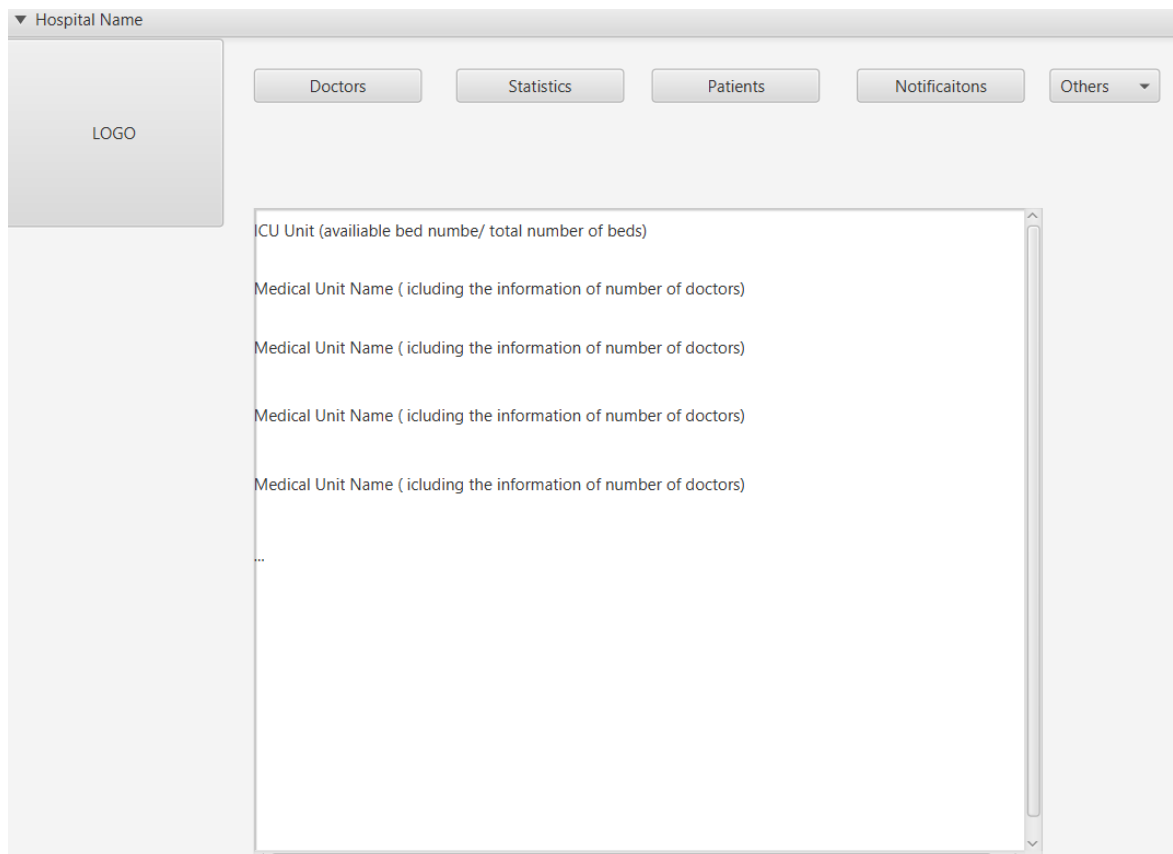
### 3.3.13 Statistics



This is an example statistics screen. The user may “star” this statistic to access it later (with updated data). Filters may be changed in the page. Additionally, the page may be downloaded in the pdf format.

## 3.4 Hospital Interface

### 3.4.1 Hospital Main page



Hospital main screen, only admin will be accessible to hospital interface. Admin can view the doctors at hospital and any patient independent from which hospital. Admin also will be able

to see notifications (any action or update by doctors). What is more there is a statistic button will show various statistic about hospital. Other button will open some other options, which are settings, drug and disease, log out.

3.4.2 Doctor Screen

Filter

Doctor name

Doctor name

Doctor name

o

o

o

Add Doctor

From this page, Admin will be able to see all doctors at this hospital, can add new doctor and filter the doctors to find easily

3.4.3 Filtering the Doctor

Branch

Name

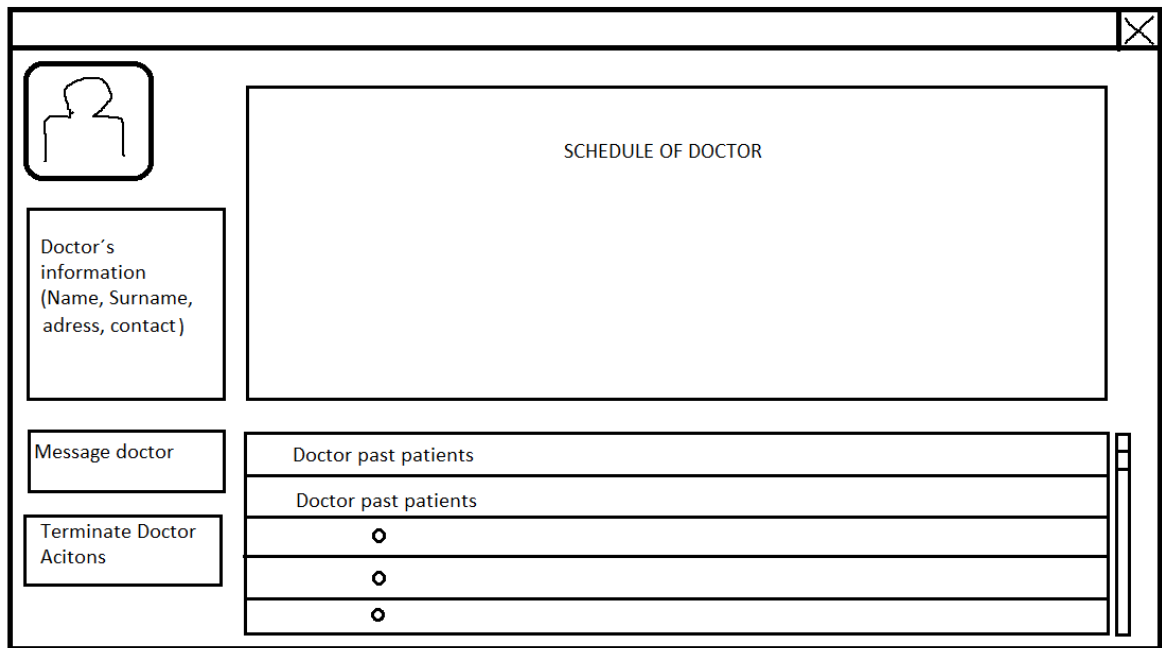
Surname

Filter

Doctor List

The admin can choose to filter doctors at hospital to find them easily. He/she can filter by name, surname or branch.

### 3.4.4 Doctor Profile

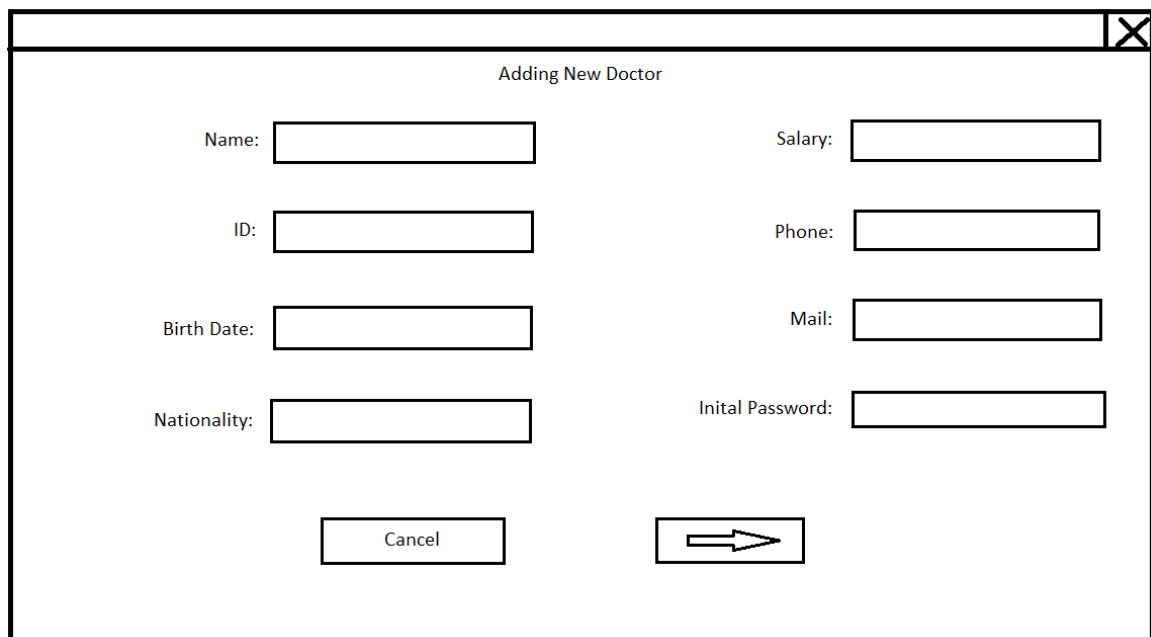


The interface for viewing a doctor's profile is shown within a window frame. It features a sidebar on the left with a profile icon, a text box for 'Doctor's information (Name, Surname, adress, contact)', and two buttons: 'Message doctor' and 'Terminate Doctor Acitons'. The main area is titled 'SCHEDULE OF DOCTOR' and contains a table of past patients.

SCHEDULE OF DOCTOR	
Doctor past patients	
Doctor past patients	
	○
	○
	○

Admin will be able to view doctor profile, admin will have access to doctor's personal information, the patients that the doctor dealt and the schedule of the doctor. Also admin can message to doctor or delete the doctor

### 3.4.5 Adding New Doctor



The 'Adding New Doctor' form is presented in a window. It contains eight input fields arranged in two columns: Name, ID, Birth Date, Nationality on the left, and Salary, Phone, Mail, Initial Password on the right. At the bottom, there are 'Cancel' and 'Next' buttons (represented by a right-pointing arrow).

Name:	<input type="text"/>	Salary:	<input type="text"/>
ID:	<input type="text"/>	Phone:	<input type="text"/>
Birth Date:	<input type="text"/>	Mail:	<input type="text"/>
Nationality:	<input type="text"/>	Initial Password:	<input type="text"/>

By having this data admin can add new doctor to hospital database.

### 3.4.6 Searching Patient

The screenshot shows a window titled "PATIENTS" with a close button (X) in the top right corner. Below the title bar is a search bar with the placeholder text "Search by name" and a magnifying glass icon on the right. Underneath the search bar is a table with three rows, each containing the text "Patient name". Below the table is a large rectangular area containing three small circles arranged vertically, representing a list of search results.

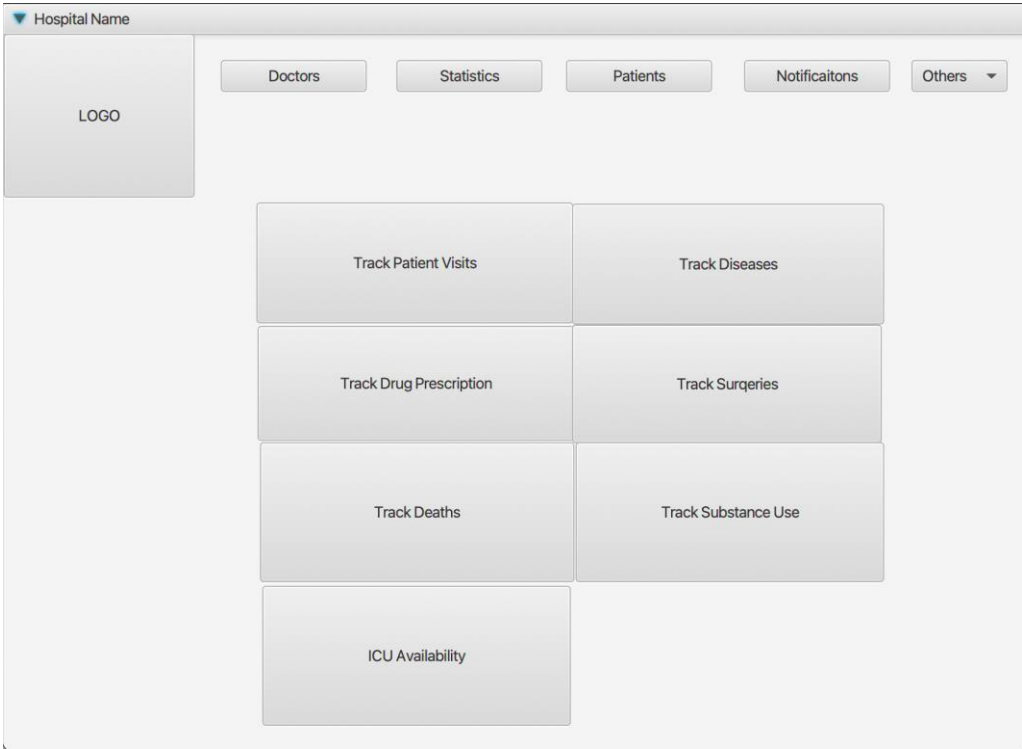
The admin can search any patient in database but before searching the patient name on the screen patients will appear according their last appointment(patient that get appointment today will appear on the list)

### 3.4.7 Patient Screen

The screenshot shows a window titled "Patient profile" with a close button (X) in the top right corner. The main content area is divided into two columns. The left column contains a placeholder for a patient profile picture (a circle above a rounded rectangle), followed by a label "Patient name" above a text input field, and then a label "Patient info such as tel, adress, age etc." above a larger text input area. The right column contains a large rectangular area labeled "Patient upcoming and past actions".

The admin can view patient profile. Admin can see the patient personal info (name, mail, phone, address), upcoming and past actions

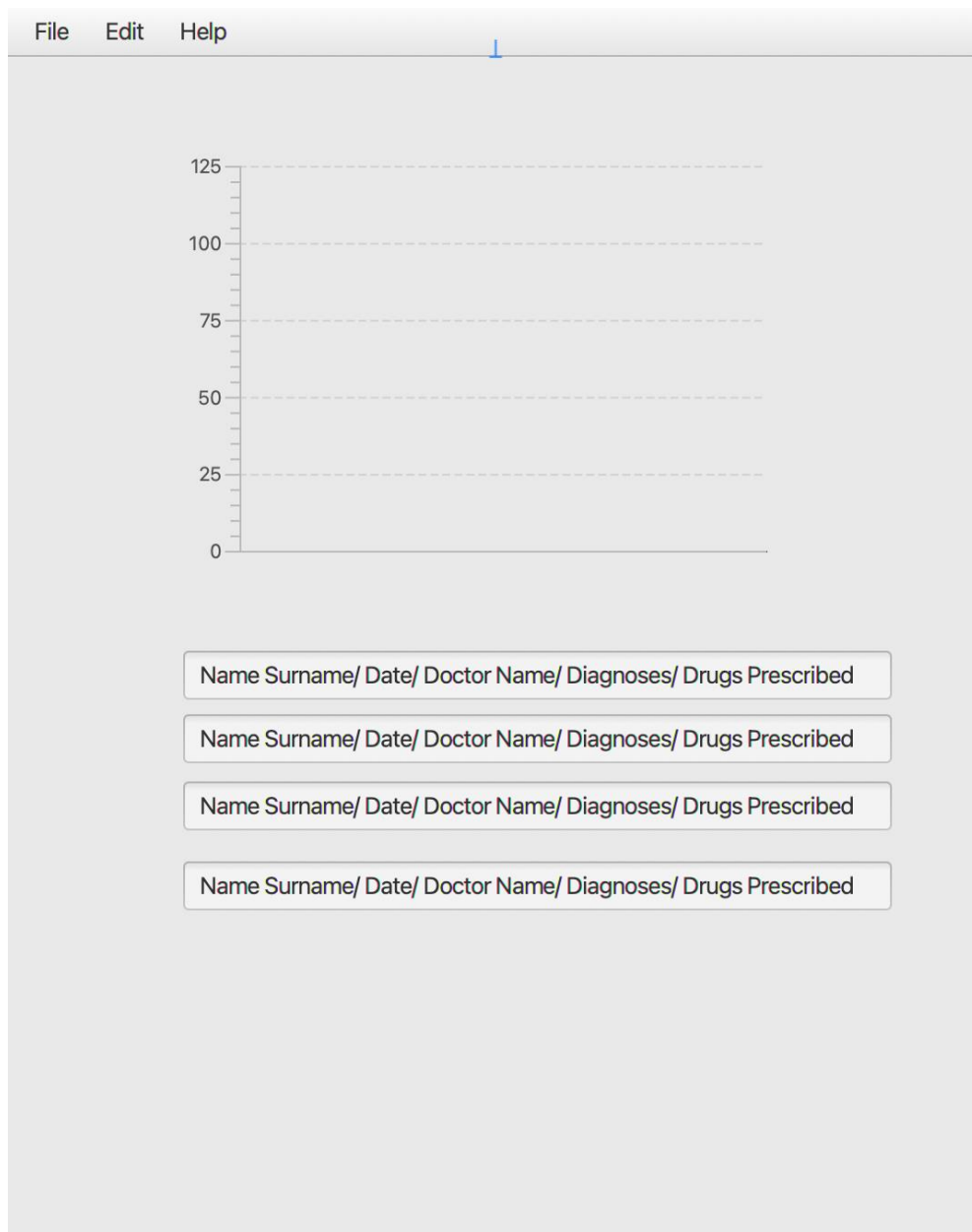
# 3.4.8 Statistics



Once pressed to the *Statistics* button, the program will direct the user to a screen where different types of Hospital statistics can be chosen.

## Track patient visits:

A screenshot of the same web application interface, but with the "Statistics" button highlighted in the navigation bar. The main content area now displays a form for tracking patient visits. The form is enclosed in a rectangular box and contains the following elements: two date input fields labeled "Starting Date" and "End Date" with calendar icons; a checkbox labeled "Include Patient visits as a list"; a text input field labeled "Filters"; a "Filter Age from" field followed by a "to" field; and two checkboxes labeled "Filter for a disease" and "Filter for an alergy" (note the typo), each followed by a text input field.



Once the form on the left has filled the program will give the stats on a pop-up window with the specified filters

### **Track Diagnosed Diseases:**

Hospital Name

Doctors

Statistics

Patients

Notificaitons

Others

LOGO

Choose a disease

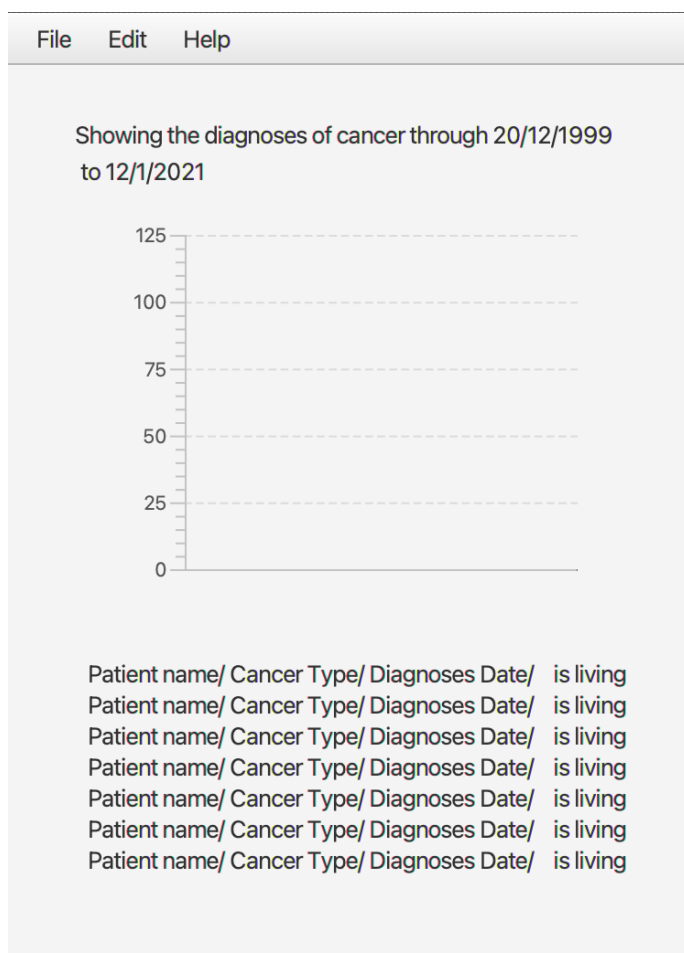
Starting Date

End Date

☐ Include as a list

Filters

Filter Age from
to



**Available ICU units & Track ICU availability over time:**

Hospital Name

LOGO

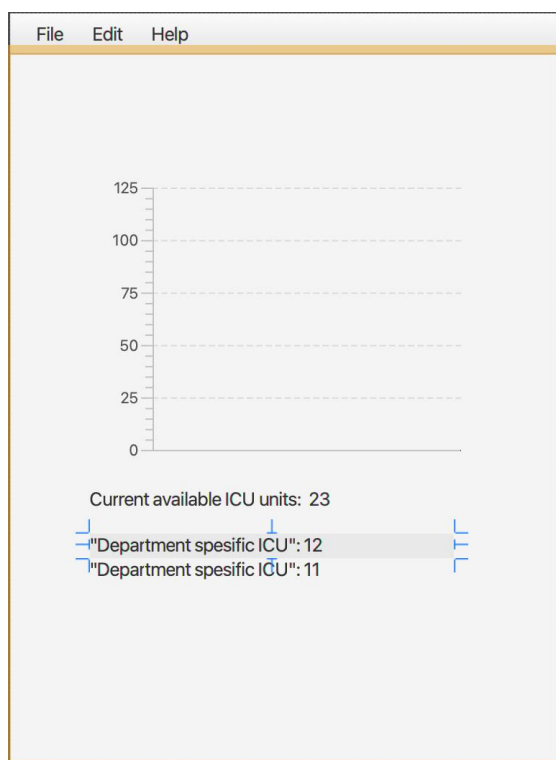
Doctors
Statistics
Patients
Notificaitons
Others

☐ Filter for a department

Starting Date

End Date

☐ Include as a list



### 3.4.9 Notifications:

Once pressed to the notifications icon user will see a brief overlay of the notifications:

User can view the details of the notification by pressing the details button which will open a pop-up window with the details.



Hospital Name

LOGO

Doctors

Statistics

Patients

Notificaitons

Others

Brief description of the notification

Details

Brief description of the notification

Details

Brief description of the notification

Details

Brief description of the notification

Details

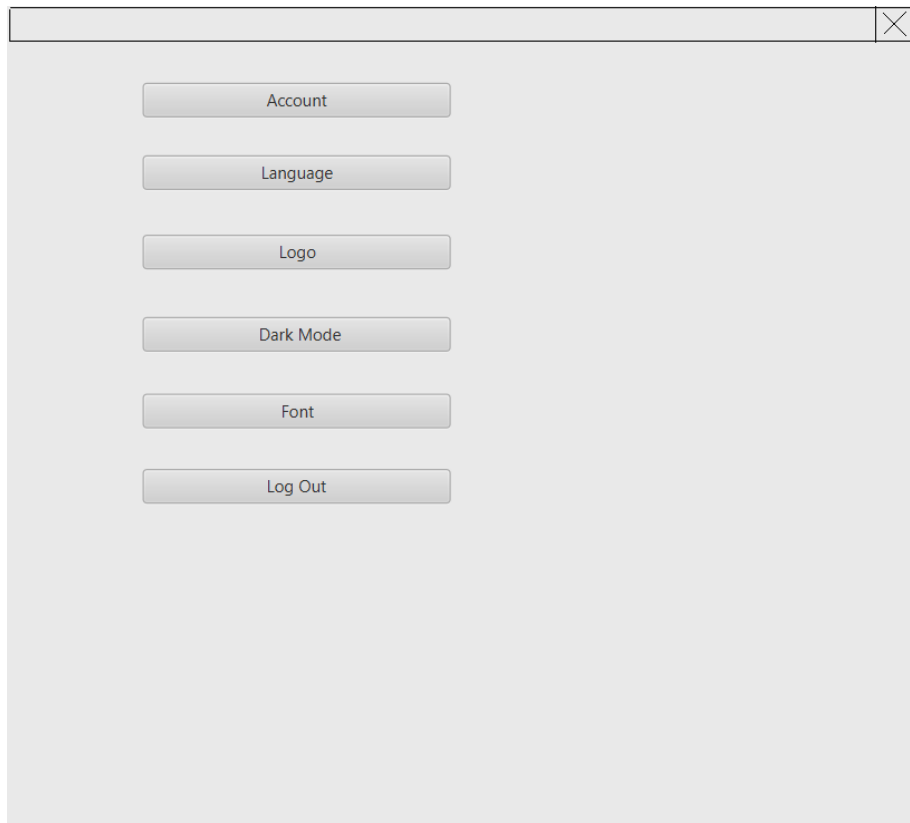
Brief description of the notification

Details

File Edit Help

Detailed description of the notification -----  
-----  
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### 3.4.10 Settings



Admin will be able to do some basic change on settings.

## Summary & Conclusions

In conclusion, each of the three different types of users will experience the application differently due to the difference in the level of knowledge and authority they need to access. When the application is used mutually by user types in interaction; the application becomes a tool to provide easier access to health services and personal health data for patients, strengthen and facilitate communication between colleagues for doctors, make management and tracking easier by aggregating management into a single application for hospital managers.