

USER GUIDE

Interactive Health Care System



CSE 360: Intro to Software Engineering

Spring 2015

Group 4

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1. GENERAL INFORMATION

1.1 System Overview

Interactive Patient Care System is a new revolutionary system in the field of health care which will streamline the healthcare processing system and will enable the management of the patients, doctors, nurses and receptionists in a more efficient way. This interactive patient care system is a Graphical User Interface where the patients can register themselves, create appointments, enter health condition and the receptionist and doctors can manage those information and efficiently manage the health care process. The system can be used by the patients, doctors, nurses and receptionists. The GUI has been created using JAVA and uses MySQL database to store all information. All the information stored in the database are accessed using the GUI. The GUI can be run in any Windows, Linux or IOS operating system. It can be used by any health care provider across the world to make their management process more efficient. Its main features include to enable the patient to access their health care information securely and submit a health report by submitting symptoms which will determine the health severity level of the patient and also make appointments easily. The nurses can view patient's symptoms and make care suggestions. The receptionists can schedule and modify appointments. The doctors can view all of their patient information and make further appointments.

1.2 Project References

The system contains information about vital health care symptoms. We have used information from www.health.gov , www.healthcare.gov and www.hhs.gov to make our system easily predict the severity of the symptoms of the patients. We have used Oracle JAVA for creating the GUI and we are using MySQL database to store all the information.

1.3 Authorized Use Permission

Unauthorized use of the interactive health care system is forbidden and such cases will subject to law suits. The system is subjected to copy right acts and no part of the system should be copied or used without authorization from the creators of the system.

1.4 Point of Contacts

This software has been created as a part of the CSE 360: Intro to Software Engineering at Arizona State University. Please contact Arpan Chatterjee (achatt14@asu.edu) for authorized to use the system and more information about how to use the health care system or to report some problem about the system. Alternatively one can also contact Arizona State University's School of computing, informatics, decision systems engineering at cidse@asu.edu for authorization to use the system.

1.5 Organization of the User Guide

The user guide is divided into 4 sections – General Information, System Summary, Getting Started and Using the System. The guide has been organized in such a manner so that the user can become easily comprehend how to use the system after going through the guide. Even non users can gain valuable insight about our system by reading this guide.

2. SYSTEM INFORMATION

2.1 SYSTEM OVERVIEW

Interactive Health Care System is a system that helps healthcare providers to receive the information on the conditions/symptoms of patients in real-time and take care of health issues securely and efficiently. This may prevent unnecessary emergency visits at the same time providing quick treatments for patients who need immediate attention.

Initially the patient registers with the healthcare provider, who determines the applicability of the system to the patient. Initial patient data is entered by the healthcare provider based on the input of the patient. The system basically has two main groups of functionalities: one group for patients and one group for healthcare providers. Each patient enters his/her updated health conditions/concerns based on well-defined symptoms, such as nausea, headache, chest pain using this system. Health condition severity of each patient will be determined by the software system based on the healthcare provider's inputs, and real-time input from the patient and necessary action will take place.

2.2 SYSTEM CONFIGURATION

The system uses a graphical user interface as the front end and a database as the backend. All the information are stored in the databases and is accessed using the GUI. The GUI is used by all the users (patients, doctors, receptionist, and nurses). The GUI is used to enter and retrieve all information and the users do not have to worry about the database being used in the backend.

2.3 USER ACCESS

The different users that can access the system are the patients, the doctors, the receptionists and the nurses. Each user has different level of access to the system which has been described in more details in the using the system part. All information are made secure by using a combination of user name and password to prevent unauthorized access to sensitive health care information of patients. The passwords are hashed in order to provide an added layer of security.

2.4 REQUIREMENTS

The basic requirement for using the health care system is a computing device with a Windows or IOS operating system. The computing device should have at least 2 GB of free space and 1 GB of RAM and 1.5 GHz processor for the health care system to work efficiently.

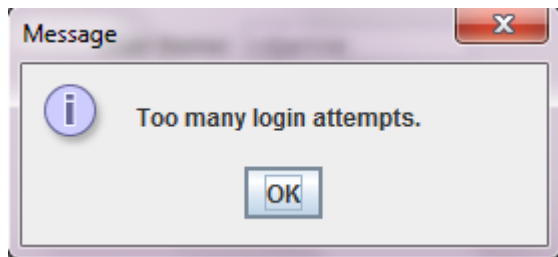
3.0 GETTING STARTED

3.1 Logging On

A screenshot of a login window titled "Login". The window has a standard Windows-style title bar with minimize, maximize, and close buttons. The main content area is light gray and contains the text "Please enter your name and password:" in a bold font. Below this text are two input fields: "User Name:" followed by a text box, and "Password:" followed by a text box. At the bottom of the form are two buttons: "Login" and "Exit".

The patient, doctor, nurse and receptionists have the same login page. After they login they get different view of the system according to their privileges and functionalities. In order to access the system, the user must enter their user ID and password. The patients are initially registered by the health care provider and are

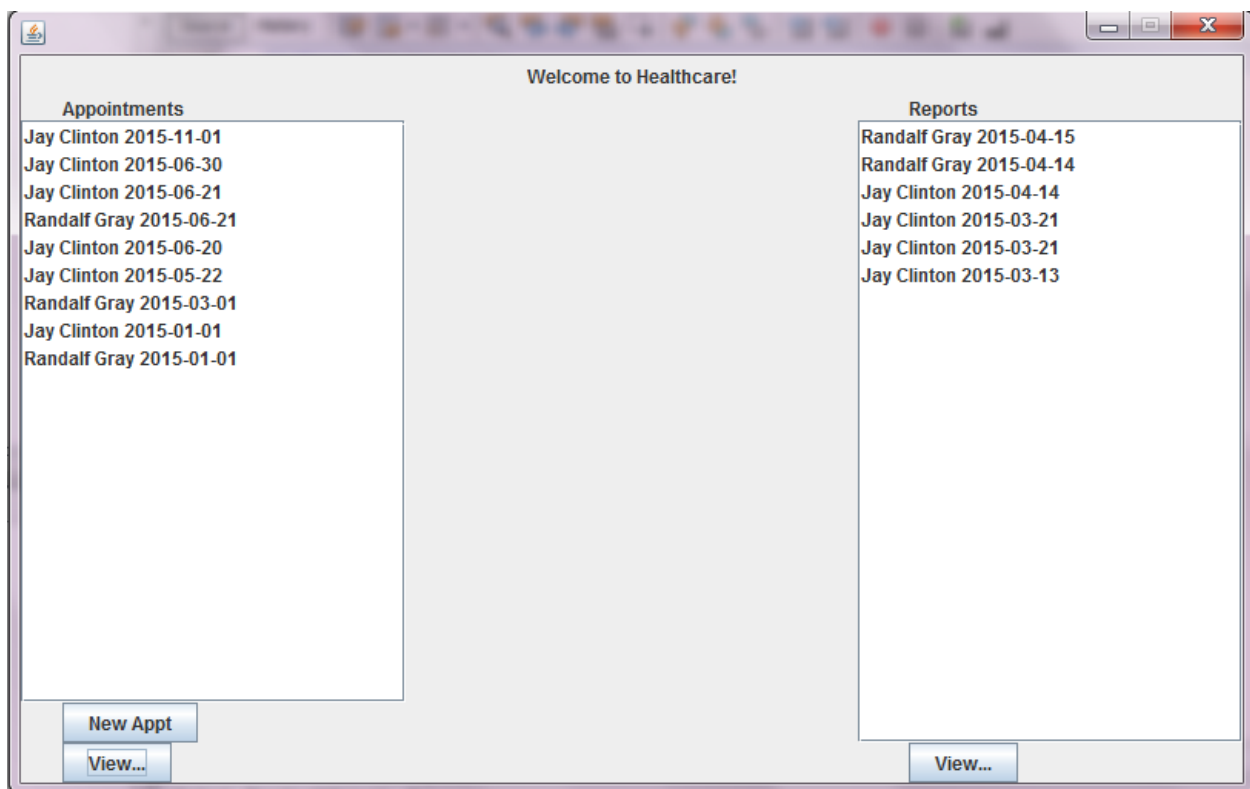
given a user name and password. If a user enter an incorrect password multiple times the system will prompt an error message.



3.2 System Menu

Once the user has logged in, there will be a display of a menu containing multiple sections.

When the doctor logs into the system, they will get the following view.

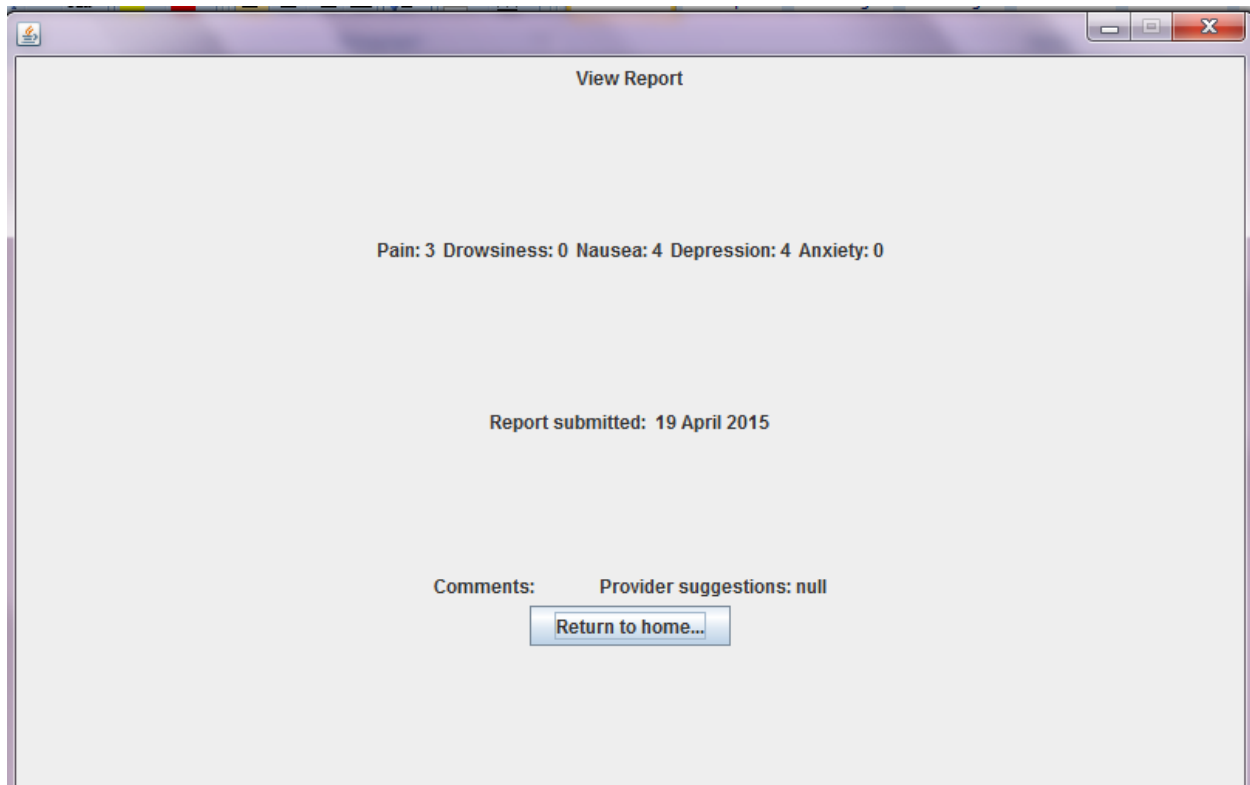


For a patient, the menu will consist of a report history, appointments, and prescriptions.

3.2.1 View Reports

The patient will be allowed to access their past reports as well as create a new one.

The doctors and nurses can also view reports of the patients which they are taking care of. The following the view of the reports that the patients will get:



3.2.2 View Appointments

The patient will be allowed to view their appointments as well as schedule one.

The receptionists, nurses and doctors can view appointments of the patients they are taking care of.

3.2.3 View Suggested Treatments

This patient will be allowed to view the recommended treatment provided by their healthcare provider.

The doctors and nurses can suggest treatments to their patients.

On the other hand, when a nurse logs in, the nurse will have access to a different homepage. The menu that will be displayed will consist of upcoming appointments.

3.2.4 View Reports

A nurse will be allowed to view all reports listed in descending chronological order.

If the user is a receptionist, the user's homepage will contain the list of appointments and the next pane will contain a list of unfulfilled appointment request.

The doctor can view the reports of their patient.

3.2.5 Appointments

The receptionist will be able to view all appointments for the patients in descending chronological order as well as a button to schedule additional appointments.

The receptionists and the doctor can create appointments.

The patients also have an option of booking an appointment.

3.2.6 Appointment Request

This pane will show a receptionist a list of unfulfilled appointment request submitted by patients.

Once the doctor logs in, the doctor will be presented with a menu containing all appointments for his patients in descending chronological order and the other option would be to view reports from the patients.

3.2.7 Appointments

This pane contains the list of patients for the doctor in descending chronological order and the pane also contains a button to schedule a new appointment.

3.2.8 Patient Reports

Doctors can also view reports from their patients. New reports will be highlighted at the top. The nurse can also view the reports of the patients.

3.3 Changing User ID and Password

A user can change their user ID under the change User ID option. This option will request the user to enter their user ID and password as well as their desired user ID.

Under the change password option, the user can change their password by entering their previous password and by entering their desired password twice.

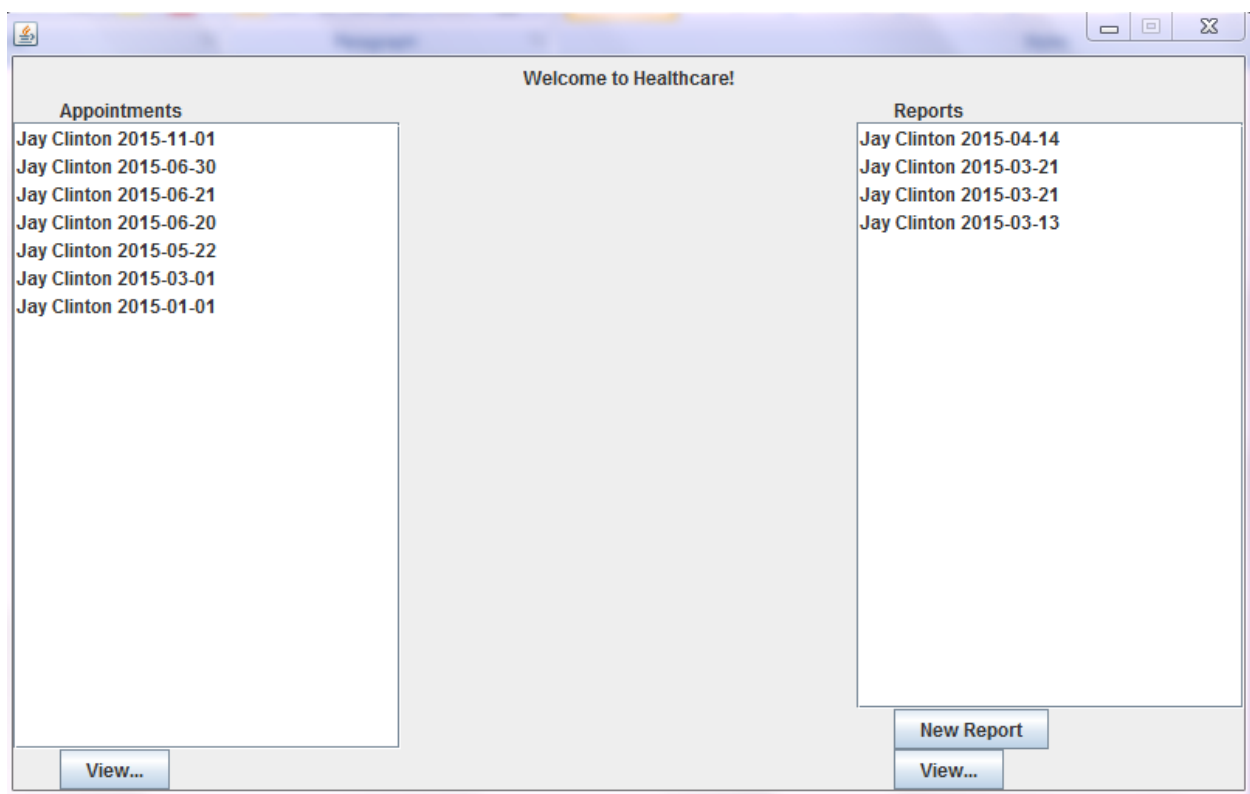
3.4 Exit System

The user can exit the system by going to the top hand corner and by clicking the log out option. This will successfully log the user out of the system.

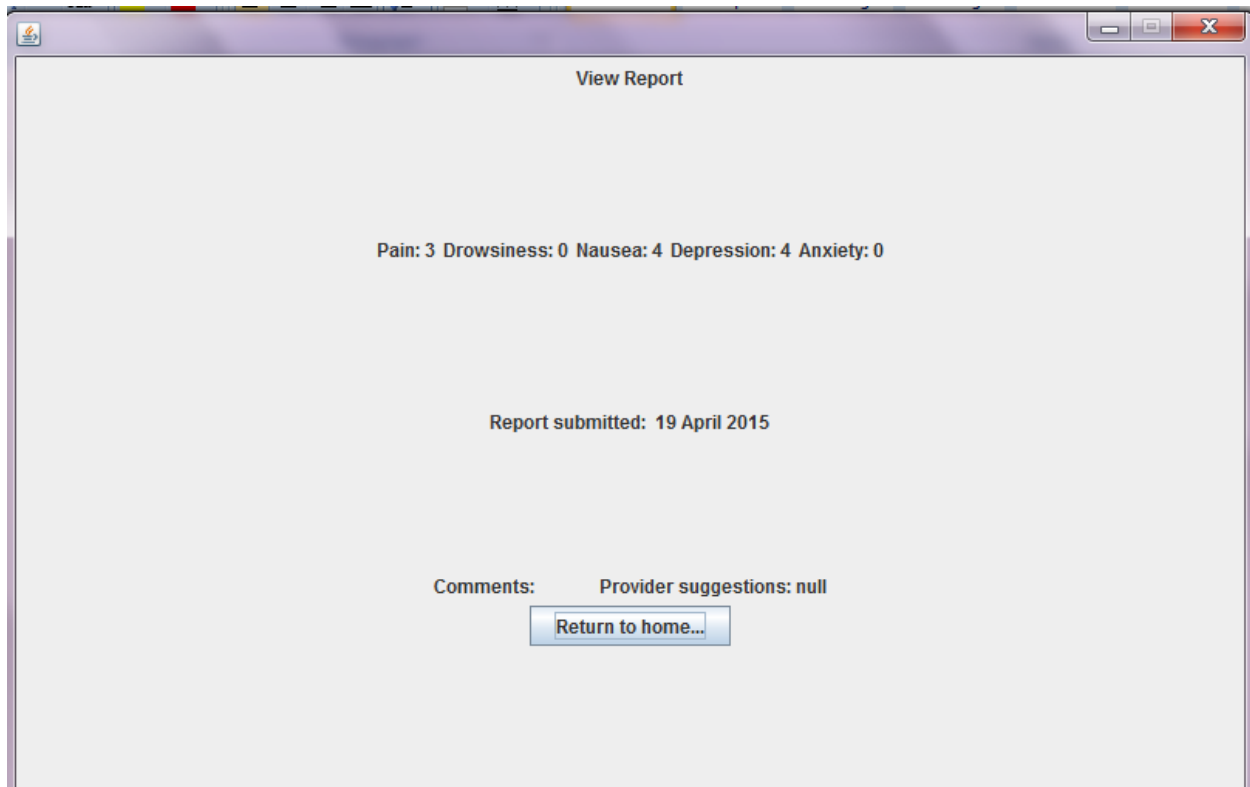
4.0 USING THE SYSTEM

4.1 Healthcare User - Patients

After the patients are logged into the system successfully they get the following view:



For the patients, the view report option will show the patients a list of the patients past reports in chronological order.



4.1.1 Report Submission

This page allows patients to submit a report of their current symptoms for the use of the healthcare practitioners.

In order to submit a response:

1. The patient selects the symptoms that they are currently experiencing.
2. The patient rates the severity of those symptoms from 1 through 10 with 10 being the most severe.
3. If the situation is severe, the patient is advised to seek emergency care.
4. The patient then chooses to request an appointment. This option sends an automated email to the receptionist and doctor.

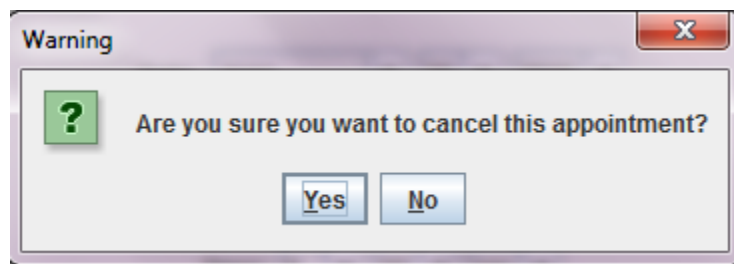
4.1.2 View Appointments

The patient can view their appointments in descending order with upcoming appointments highlighted at the top.

The screenshot shows a window titled "View Appointment". At the top, it displays the text "Appointment made: 01 April 2015 Patient: Jay Clinton Doctor: Clinton Jarboe". Below this, there are two sets of dropdown menus. The first set is labeled "Date:" and contains three dropdowns with the values "June", "30", and "2015". The second set is labeled "Time:" and contains three dropdowns with the values "6", "15", and "pm". At the bottom of the window, there are three buttons: "Return to home...", "Cancel Appointment", and "Submit".

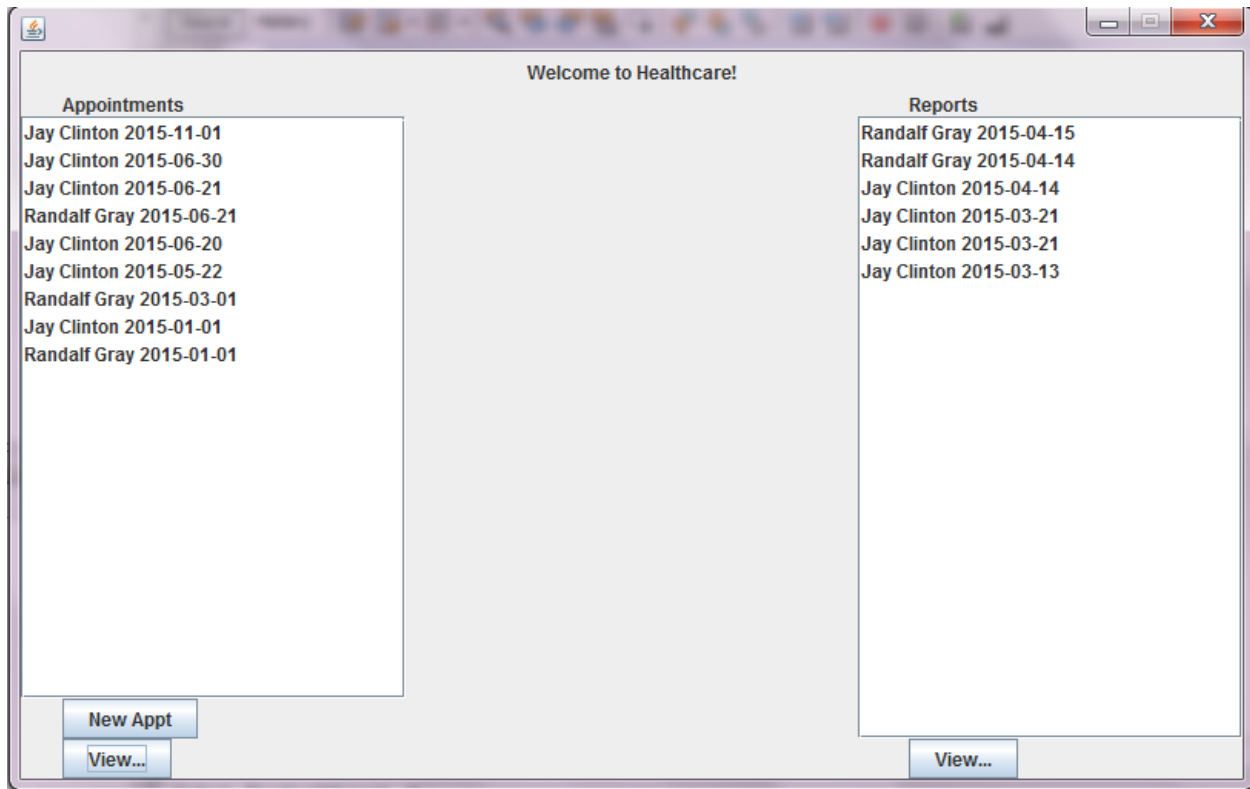
4.1.3 Cancel Appointments

The patients also has an option of cancelling appointments



4.2 HealthCare Providers – Doctors, Nurses, Receptionists.

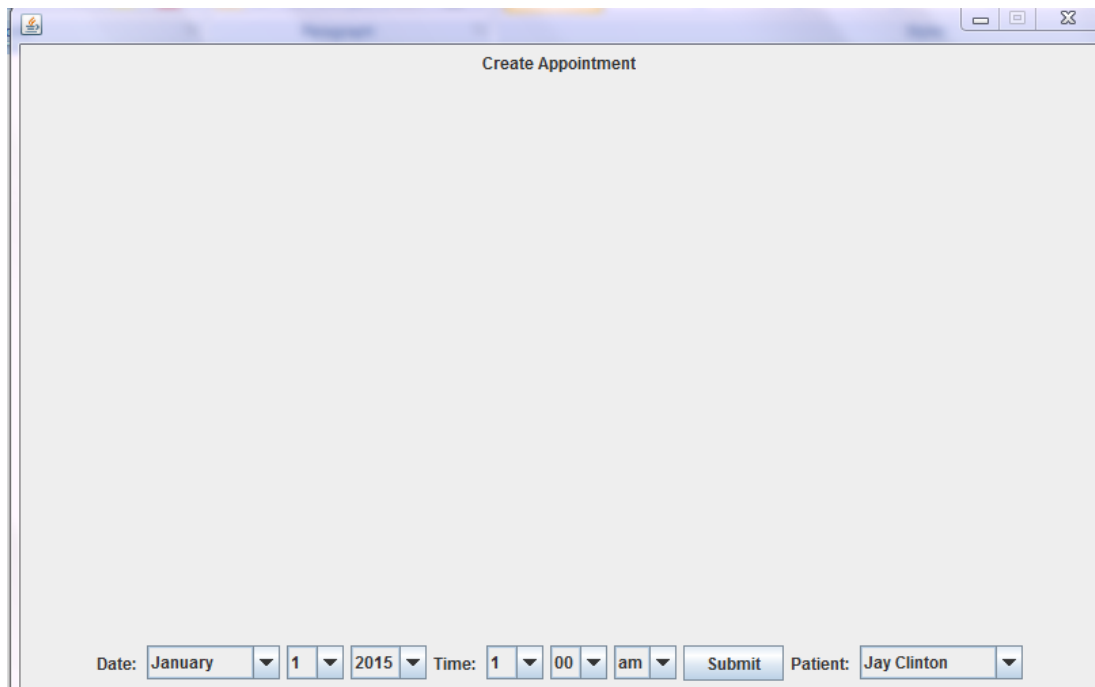
The healthcare providers get the following view of the system once they are logged in:



The doctors, nurses and receptionists have different level of access as stated above.

4.3.1 Create Appointments

The HealthCare providers can create new appointment by clicking on New Appointment and entering the date, time and name of the patient.



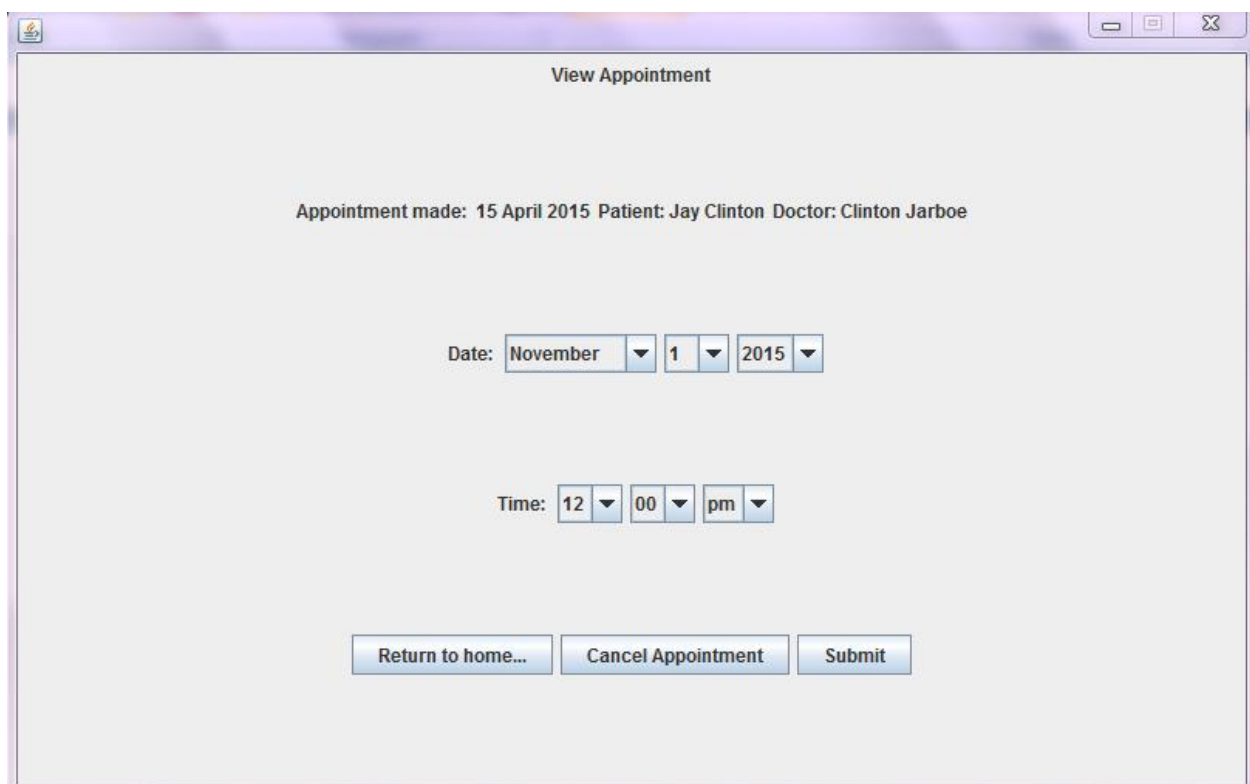
A screenshot of a web application window titled "Create Appointment". The window has a light gray background and a standard browser window frame with minimize, maximize, and close buttons in the top right corner. At the bottom of the window, there is a form with the following elements: a "Date:" label followed by three dropdown menus for month (January), day (1), and year (2015); a "Time:" label followed by three dropdown menus for hour (1), minute (00), and period (am); a "Submit" button; and a "Patient:" label followed by a dropdown menu showing "Jay Clinton".

Create Appointment

Date: January 1 2015 Time: 1 00 am Submit Patient: Jay Clinton

4.3.2 View Appointment

Click on an existing appointment and Click view to view an appointment.



A screenshot of a web application window titled "View Appointment". The window has a light gray background and a standard browser window frame with minimize, maximize, and close buttons in the top right corner. The main content area displays the text "Appointment made: 15 April 2015 Patient: Jay Clinton Doctor: Clinton Jarboe". Below this text, there is a form with the following elements: a "Date:" label followed by three dropdown menus for month (November), day (1), and year (2015); a "Time:" label followed by three dropdown menus for hour (12), minute (00), and period (pm). At the bottom of the window, there are three buttons: "Return to home...", "Cancel Appointment", and "Submit".

View Appointment

Appointment made: 15 April 2015 Patient: Jay Clinton Doctor: Clinton Jarboe

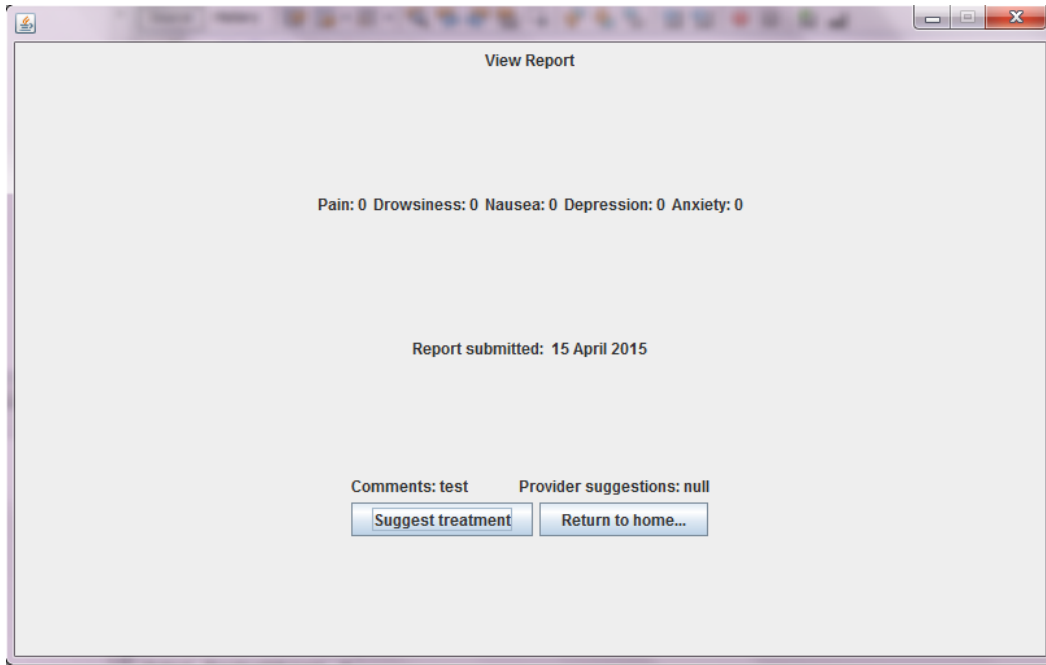
Date: November 1 2015

Time: 12 00 pm

Return to home... Cancel Appointment Submit

4.3.3 View Report

Click on an existing report and click view to view the report



The screenshot shows a window titled "View Report". Inside the window, the following text is displayed:

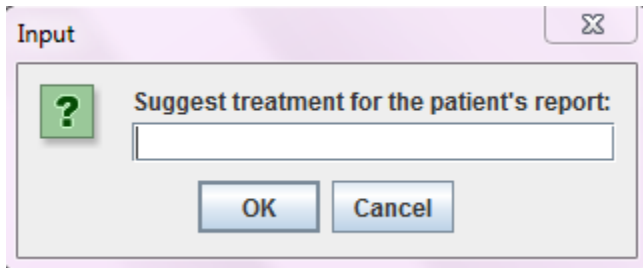
Pain: 0 Drowsiness: 0 Nausea: 0 Depression: 0 Anxiety: 0

Report submitted: 15 April 2015

Comments: test Provider suggestions: null

At the bottom, there are two buttons: "Suggest treatment" and "Return to home..."

4.3.4 Suggest Care



The screenshot shows a dialog box titled "Input". Inside the dialog box, there is a green square icon with a white question mark. To the right of the icon, the text "Suggest treatment for the patient's report:" is displayed. Below this text is a text input field. At the bottom of the dialog box, there are two buttons: "OK" and "Cancel".

The suggest care option allows for the doctor and nurses to care for the patients symptoms. The doctor must be viewing a patient's report in order to view the suggest care option. The doctor may write a note to the patient suggesting care (ext. ice, rest, schedule an appointment).