Project Write Up

CSCIE-10B

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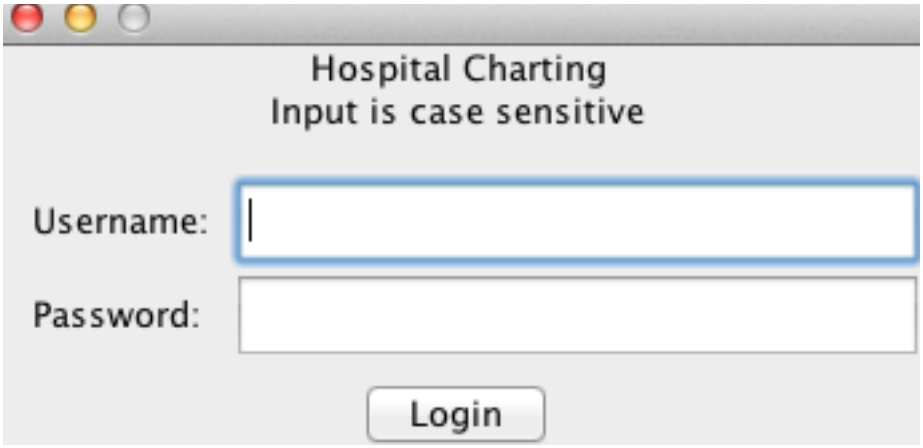
Hospital Charting Program

Medical service facilities, such as a hospital, are a fast paced work environment that requires its personnel, which include nurses and other healthcare providers, to perform their assigned jobs in a speedy but precise manner. Detailed charting about patients is a must in order for appropriate clinical protocols to be applied and executed properly. However, charting consumes much of the precious time that nurses (as well as other applicable members of the healthcare team) could have used in tending patients or in taking brief breaks from their straining job routines. My online charting program allows nurses to chart quickly and precisely.

The program is a Graphical User Interface (GUI) that will redirect users to different frames based on their decisions of what they need to chart. The information they input are inserted into readable text files that could be subsequently printed. Because this program runs linearly, I will explain the program sequentially.

Nurses (or users in the context of the CSCIE-10B class) will first compile the program unto the compiler by typing in "javac Charting.java". To start the program, nurses will type in "java Charting". The frame will appear as follows:

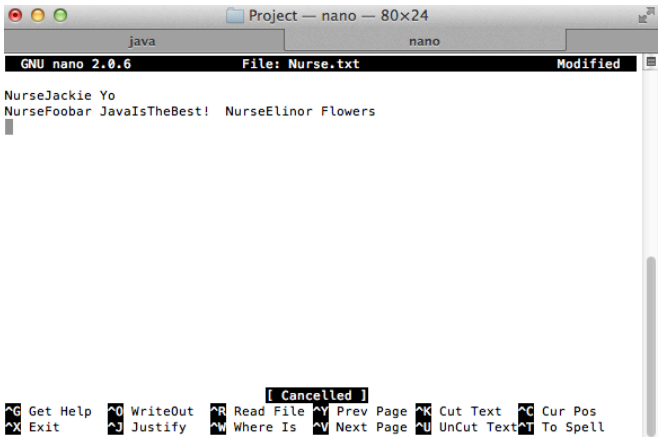


This is the login frame that asks a user for his/her specifically assigned username and password. There are three "trial nurses" that come with this program. Their usernames and passwords are located in the "Nurse.txt" file. The trial nurses' usernames and corresponding passwords are the following:

Username	Password
• NurseElinor	Flowers
• NurseJackie	Yo
• NurseFoobar	JavaIsTheBest!

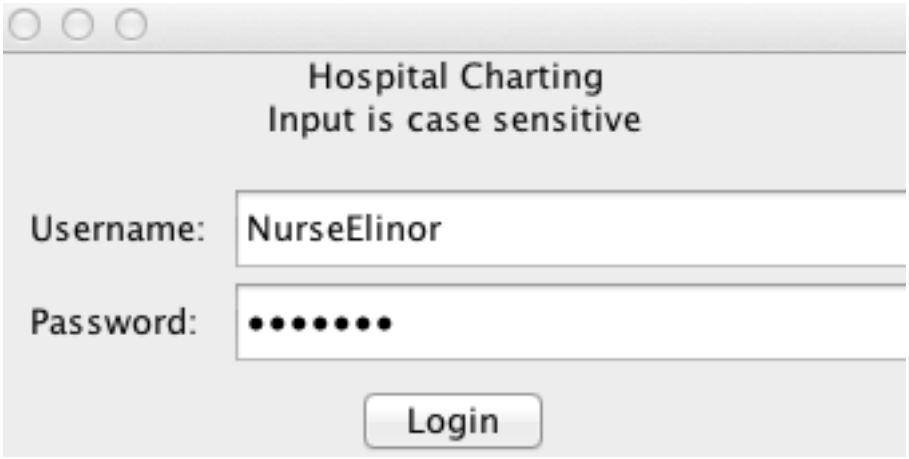
One is able to add a nurse onto the system by adding the username of the nurse followed by a space and the corresponding password of the nurse on a new line of the Nurse.txt file. Please note that only one line can contain a username and a password. Moreover, there are no empty lines between nurses' usernames and passwords.

Not Allowed:



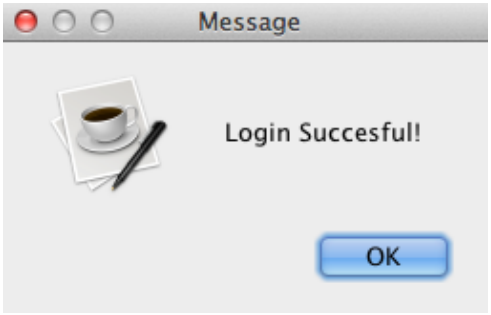
Allowed:

We will be using the trial nurse NurseElinor for this write up. Here is a picture of the frame after the user has typed in the username, NurseElinor, as well as the corresponding password, Flowers. The login frame should look as follows:



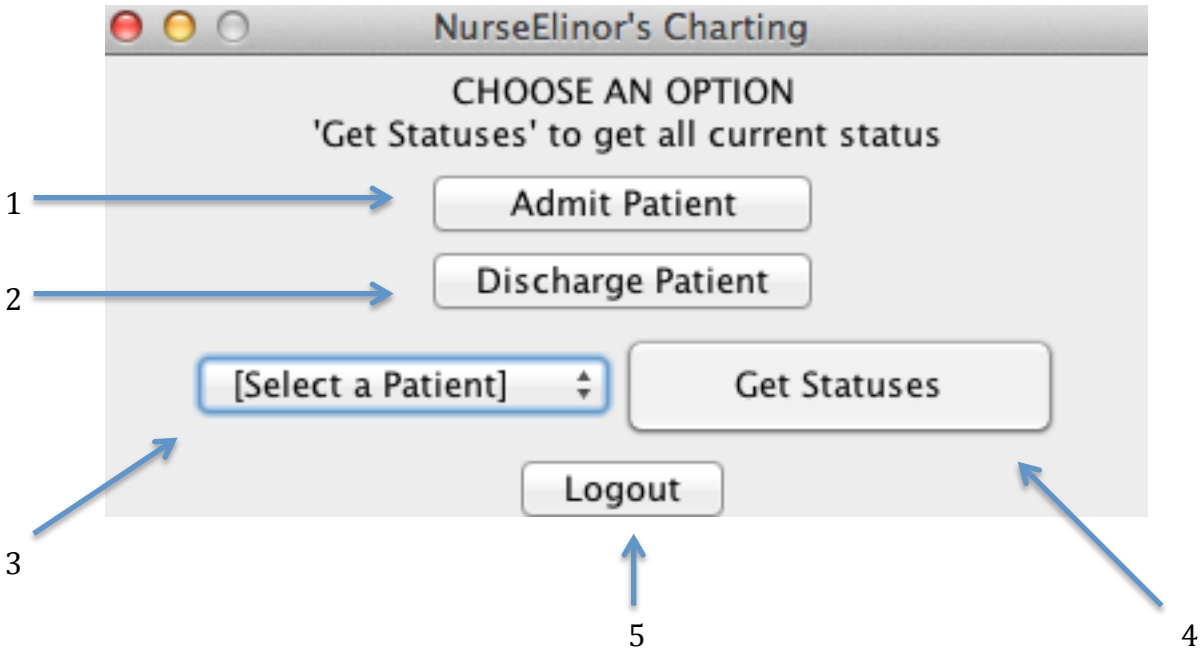
Please note that input is case sensitive. The password field (where the password is entered) is a JPasswordField that hides the text of the password. After pressing the login button, the program will validate these fields. The following messages will appear if the inputs are valid or not:

Successful Login:



Unsuccessful Login:

If the login is successful, the nurse will be taken to a frame that has several options of what they would like to do next. The "option frame" is shown below.



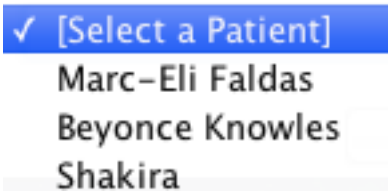
Before delving into the individual components of this frame, notice the frame's title: "NurseElinor's Charting". Throughout NurseElinor's charting process, the program will present frames with the title "NurseElinor's Charting" to indicate that NurseElinor is the one who is currently logged on. Nurses may not be mindful of the charting process, especially when they must act quickly to take care of their patients. They could use someone else's charting—that is if the charting is left open—to enter their data. The frame's title will indicate to other nurses (or users) that this is NurseElinor's charting, not theirs or someone else's. This process will prevent such a mistake from happening.

These are the options of the option frame:

1. The "Admit Patient" button will direct the nurse to an "Admit Frame", where the nurse can admit a new patient.

2. The "Discharge Patient" button will direct the nurse to a "Discharge Frame", where the nurse can discharge a patient.

3. The "[Select a Patient]" combo box will allow the nurse to make an update on a patient. The nurse will choose from a current list of patients like as shown below:



Once a patient is selected, the nurse will be taken to a "Stats Frame", where the nurse will make an update on the patient. If the [Select a Patient] option is chosen, nothing will happen.

4. If the "Get Statuses" button is chosen, the program will get the current status of all the patients and insert them to a text file. More about this function will be discussed later.

5. The logout button will redirect the nurse back the login frame, where both the username and password fields are empty.

The following features of each frame and button will be discussed in detail with pictures and examples.

The Admit Frame

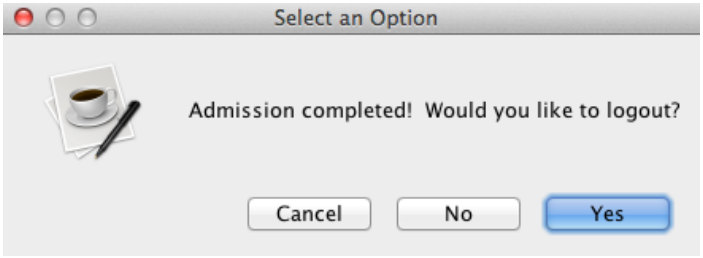
After choosing the "Admit Patient Button", the admit frame, which is shown below, will appear.

Default Admit Frame

Admit Frame with input

The nurse is able to type the name, date of birth and reason of admission onto this frame. The nurse will then press the admit button to admit the patient. The program will then create a text file for the patient. The name of text file will be the name of the patient. For example, NurseElinor inputted the new patient "Gwen Stefani". Therefore, the text file name will be "GwenStefani.txt". The text file will be located in the directory. The text file of the newly admitted Gwen Stefani patient will look as the following:

Note the areas that require comments do not wrap the text. The nurse is responsible to wrap the text. After pressing the admit button, the following message will be shown:

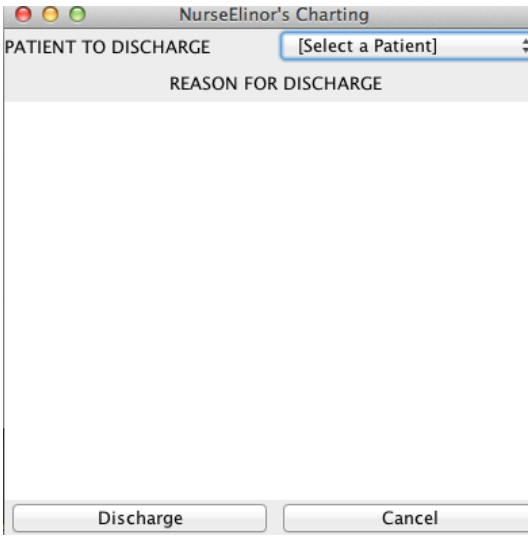


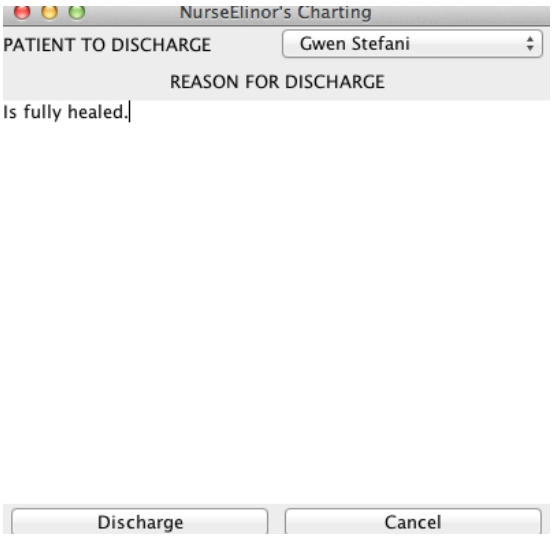
If the nurse chooses the Yes button, they will be directed back to the login frame. If the nurse chooses the No button, they will be directed back to the option frame. If the nurse presses the Cancel button on this message panel, they will be left in the admission frame. However, all the data that was inputted into the frame will be cleared. Though these options seem redundant, they are, in fact, helpful for nurses. This is so because if they must complete their charting quickly, the program needs to offer them quick options that will redirect them to the necessary option. This will allow nurses to use their time effectively.

If the nurse does not input any information for the patient's name as well as the reason for admission and presses the admit button, the program will show error messages insisting that the nurse must do so. If the user does not want to cancel out of the frame, he/she can press the cancel button on the admit frame. The nurse will be redirected back to the option frame. Any input from the admit button will be cleared out.

The Discharge Frame

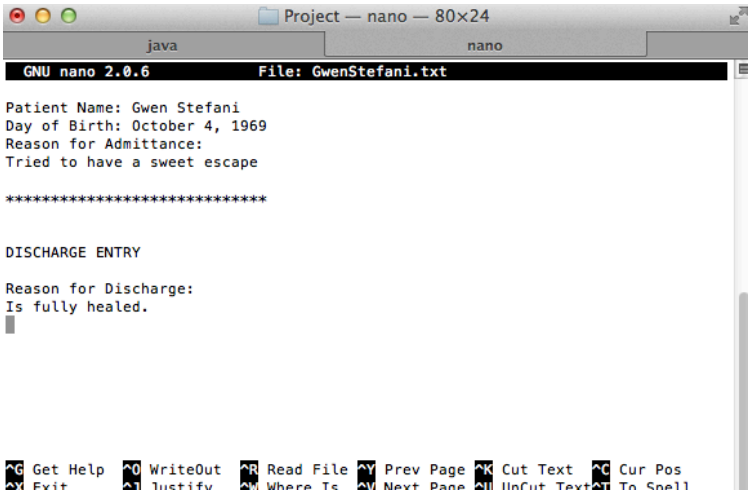
After choosing the "Discharge Patient Button", the discharge frame, which is shown below, will appear as:



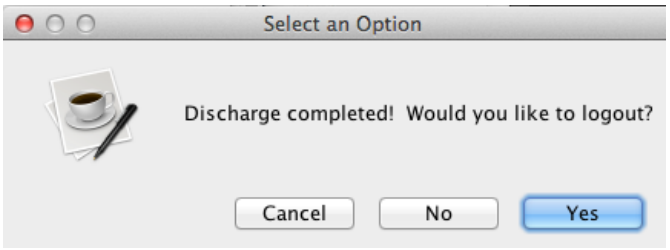


Default Discharge Frame *Discharge Frame with Input*

The discharge frame has similar features to the admit frame. Like the admit frame, the discharge frame inputs information about the patient onto the patients file. An example is shown below:



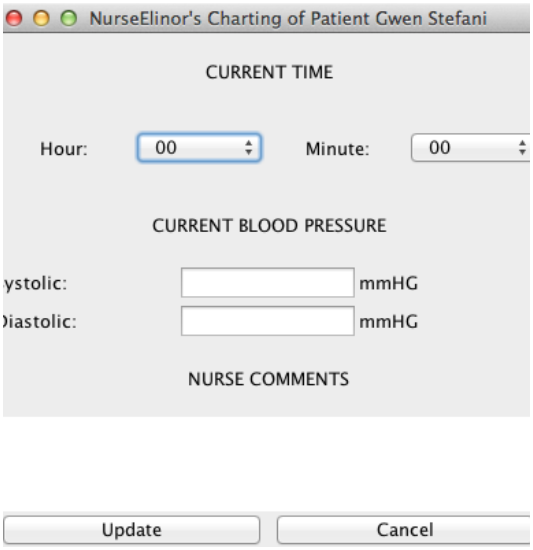
The discharge frame ensures that the nurse selects a patient as well writes a reason for discharge. The nurse can cancel out of the discharge frame by pressing the cancel button and return back to the option frame with all the input cleared from the frame. Similarly, after pressing the discharge button, the program will present the same options that the admit frame presented when the admit button was pressed. The message is shown below:

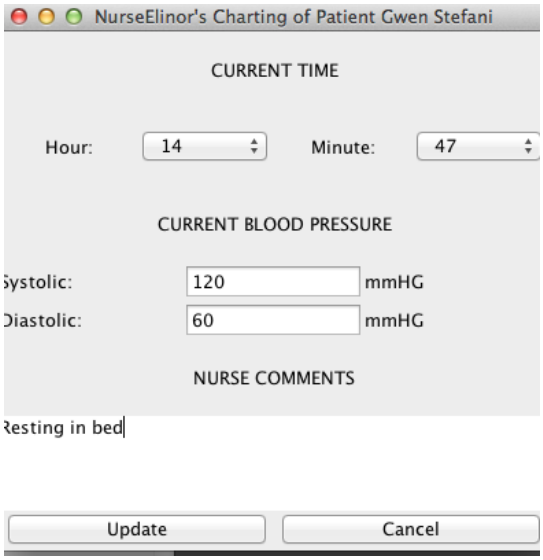


Moreover, the program will remove the patient from the list.

The Status Frame

After choosing a patient, the status frame, which is shown below, will appear.



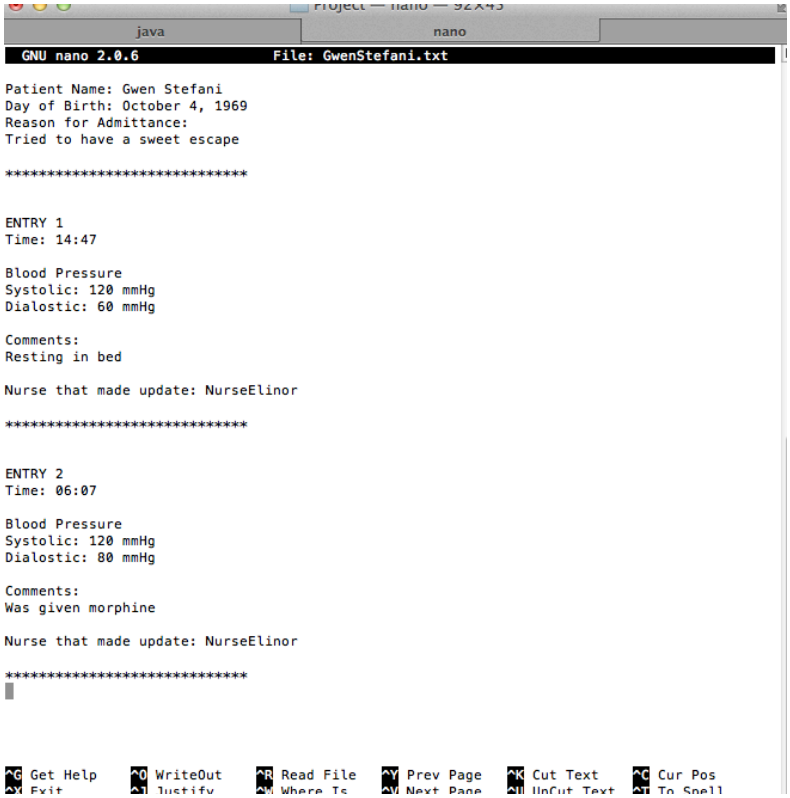


Default Status Frame *Status Frame with input*

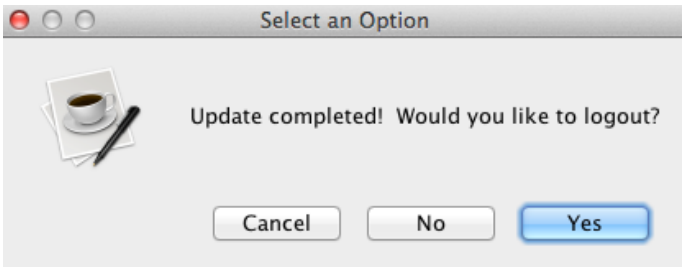
Again, the status frame shares similar qualities to the two other frames. The frame ensures that all the fields have been appropriate filled out; the hour of the input must not be "00" and the Systolic and Diastolic blood pressure inputs are numbers. Moreover, the nurse makes comments. Note that the time is in military format, which is the standard for hospital charting.

Notice that the title of the frame is still title "NurseElinor's Charting". However, the title of the frame includes "of Patient Gwen Stefani". This will help the nurse indicate which patient he/she is making an update about. If the nurse needs to leave the computer for some reason and comes back forgetting which patient he/she was updating, they can refer to the title of the status frame. This will help nurses greatly since they take care of multiple patients and can be fallible to inputting information about one patient to another patient's chart.

After pressing the discharge button, the program will print the information that was inputted into the frame, as well as the nurse who made the update, onto the patient's corresponding text file as shown below.

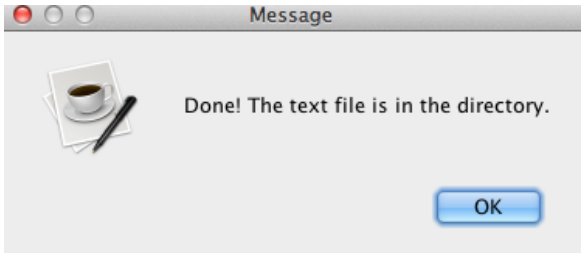


Moreover, when the update button is pressed, the program will show similar options when the discharge button and the admit button are pressed.



Get Statuses

If this button is pressed, the program will print all the current statuses of the patients; the last update of each patient will be printed onto a file named "statusOfAll.txt". If no update was made on the patient, the entry will be labeled as N/A. A message confirming the statuses is as shown below:



An example of the statusOfAll.txt file:

```
Patient: Marc-Eli Faldas
Time: 03:05

Blood Pressure
Systolic: 120 mmHg
Dialostic: 60 mmHg

Comments:
Currently in bed.

Nurse that made update: NurseJackie

*****************************


Patient: Beyonce Knowles
Time: 15:16

Blood Pressure
Systolic: 123 mmHg
Dialostic: 40 mmHg

Comments:
Going crazy!

Nurse that made update: NurseElinor

*****************************


Patient: Shakira
Time: 17:18

Blood Pressure
Systolic: 23 mmHg
Dialostic: 15 mmHg

Comments:
Trying to show her hips don't life.

Nurse that made update: NurseElinor

*****************************
```

```
Patient: Gwen Stefani
Time: 06:03

Blood Pressure
Systolic: 120 mmHg
Dialostic: 70 mmHg

Comments:
Is slowly becoming healthy.

Nurse that made update: NurseElinor

*******************************


Patient: Brian Ackwood
Time: N/A

Blood Pressure
Systolic: N/A mmHg
Dialostic: N/A mmHg

Comments:
N/A

Nurse that made update: N/A

*******************************
```

Due to the length of the file, the file has been divided into two images.

Though the present project is just a simple one and does not have all the components like those programs that are currently available in the market, I made this project an expandable one. The patient class has getter and setter methods that can change the information about the patient, such as the name of the patient and date of birth of the patient, just in case the nurse made mistakes about the patient's basic information.

Moreover, the patient class can include the room number where the patient resides in and the type of meal diet they may need. The room where patients reside in is an essential component that should be added. This is because in situations where there are patients with the same name, the room number will distinguish between the two patients. However, that added component would create much more complexity than what this project requires.

I thoroughly enjoyed doing this project. I did not find difficulties in creating the code for this project because previous homework assignments have prepared me for the challenging tasks involved. I did not experience the same problems that I had had with previous homework assignments in doing this project because I already have ideas on how to fix them. The difficult part of this project, however, was constructing the GUI. I had to compromise much about the looks of the frames in order to create a GUI that would be presented in a much organized fashion. But, the goal of the project, which is to help nurses in charting quickly and precisely, was kept intact nevertheless.