PAT Task

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Technical Document

MediSeek Hospital Management System

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## Code Sourced Externally

### Loading Page (START)

public static void main(String args[]) {

START start = new START();

start.setVisible(true);

try{

for(int i =0; i<100;i++){

Thread.sleep(100);

start.LoadingValue.setText(i+"%");

if(i==10){

start.LoadingLabel.setText("Loading...");

}

if(i==20){

start.LoadingLabel.setText("Configuring Program...");

}

if(i==40){

start.LoadingLabel.setText("Connecting to Databases...");

}

if(i==60){

start.LoadingLabel.setText("Collecting Files...");

}

if(i==80){

start.LoadingLabel.setText("Connection Successful...");

}

if(i==90){

start.LoadingLabel.setText("Launching Application...");

}

start.pbLoading.setValue(i);

}

} catch(Exception e){

JOptionPane.showMessageDialog(null, e);

}

LoginGUI log = new LoginGUI();

log.setVisible(true);

start.setVisible(false);

}

**Source :** Sky Tech (2021). *how to make loading screen in java netbeans | how to make splash screen using java netbeans | eclips*. *YouTube*. Available at: https://www.youtube.com/watch?v=Gm1Jrj2vjkM [Accessed 30 Aug. 2021].

## Critical Algorithms

### ForConnecting – Connection to Database

The one algorithm within this project that is the most critical for its function is the method that collects data and fills an array of objects from a database within Access.

Create an array of objects(Usually titled *object*Directory) of size 500 of type “object” (type dependent on class)

Integer size

Create a new object joining ForConnecting Class

+ class fromTblObjName a String statement is received and returns the array of objects

Statement “stmt” created connecting to ForConnecting class

size 🡸 0

ResultSet rs 🡸all data received from the access when statement is executed

Declare every variable that will represent each value from every column in access

While rs has another record

Fill each variable with its corresponding column heading data value fom access database

Instantiate array of type “object” at position of size, filled with all the variables required

size 🡸 size + 1

End While

Close statement

This algorithm is critical to the function of the application as it is the method that retrieves all the data stored within the access database and allows for this data to be manipulated within the Graphical User Interface in Java. The versatility of this algorithm is evident in its use in multiple scenarios within this project. It is key in allowing for the User to handle all the data stored in Access smoothly and manipulate and retrieve it in real time.

SOURCED: D, Vythilingam, 2021

### Insert Element Algorithm

If fields for Name, Surname, Gender, Specialty Code, Symptoms, Prescription and Patient ID are filled.

If fields for Name, Surname, Gender and Specialty Code contain any numbers

Receive SQL statement formatted to add a new element to the database and to the array as parameters for the called UpdateTable method.

Else display error

Else display error

Switch to the “View Patients” Tab

Refresh the table

This algorithm allows for a new array element to be added to the database. It also checks that there are no errors so that insertion can be executed within Access seamlessly.

### Delete Element Algorithm

If element has been selected

Receive SQL statement formatted to delete an old element to the database and to the array as parameters for the called UpdateTable method

Refresh the display

Else display error

This algorithm allows for the deletion of entire patient records from the database. It also checks to ensure that elements have been selected.

### Fill Array Algorithm

If fields for Name, Surname, Gender, Specialty Code, Symptoms, Prescription and Patient ID are filled.

### Update Array Algorithm

If fields for Name, Surname, Gender, Specialty Code, Symptoms, Prescription and Patient ID are filled.

If list element is selected

Display error

Else if fields for Name, Surname, Gender and Specialty Code contain any numbers

Receive SQL statement formatted to update an old element to the database and to the array as parameters for the called UpdateTable method

Else display error

Switch to the “View Patients” Tab

Refresh the table

This algorithm allows for a new array element to be updated to the database. It also checks that there are no errors so that insertion of new information can be executed within Access seamlessly.

### Display Array Algorithm

Insert the collected array elements taken from the Database into an array calling the fromTable method.

For loop from 0 to the size of the array

Add element at I to the list from the Array

End For

This algorithm allows for the display and view of the array elements within list components.

## Sophisticated Techniques

### Opening a Word Document

This is used throughout the GUI in the menu Bar. Pressing Help or About with lead to drop downs that, when clicked, will open the documents to the information of MediSeek as well as the navigation information for the programme. It takes the path of the file as input and searches the computer for the document using the path. It then opens the file. A relevant error will be displayed if the path is not found.

public void openWord(String docName) {

try {

Desktop desktop = Desktop.getDesktop();

desktop.open(new File(docName));

} catch (IOException ex) {

Logger.getLogger(Methods.class.getName()).log(Level.SEVERE, null, ex);

}

}

### Loading Screen

Upon starting the program, the user is introduced to a loading page comprised of the logo and a progress bar which loads through and then opens the program. As the bar reaches certain values it changes the value within a text field to indicate the progress gained within the booting of the program.

SEE ABOVE FOR CODE

### Opening a Google Search

In the doctor page in the patients tab, once a patient record has been selected, the doctor may click the Search Patient’s Symptoms button which will take all the information within the symptoms field and search it within google. The method itself creates an object of type URI and opens the given URL. If it is not found then the user with be notified with an indication of its absence.[rarely will occur as it is an entry placed right into a search engine rather than searching for specific sites]

public void OpenSite(String site) {

try {

Desktop desktop = Desktop.getDesktop();

String x = (site.trim());

try {

desktop.browse(new URI("http://google.com/search?q=" + x.replace(" ", "+")));

} catch (IOException ex) {

Logger.getLogger(Methods.class.getName()).log(Level.SEVERE, null, ex);

}

} catch (URISyntaxException ex) {

Logger.getLogger(Methods.class.getName()).log(Level.SEVERE, null, ex);

}

}