IN PARTNERSHIP WITH PLYMOUTH UNIVERSITY

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Module Code: SOFT255SL	Module Name: Software Engineering for the Internet using Java
Coursework Title: SOFT255SL T1 C1	
Deadline Date: Tuesday, 1 December 2020	Member of staff responsible for coursework: Ms. Sulari Fernando
Programme: BSc (Hons) Software Engineering	

Please note that University Academic Regulations are available under Rules and Regulations on the University website www.plymouth.ac.uk/studenthandbook.

Group work: please list all names of all participants formally associated with this work and state whether the work was undertaken alone or as part of a team. Please note you may be required to identify individual responsibility for component parts.

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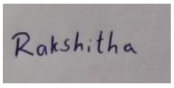
We confirm that we have read and understood the Plymouth University regulations relating to Assessment Offences and that we are aware of the possible penalties for any breach of these regulations. We confirm that this is the independent work of the group.

Signed on behalf of the group: 

Individual assignment: ***I confirm that I have read and understood the Plymouth University regulations relating to Assessment Offences and that I am aware of the possible penalties for any breach of these regulations. I confirm that this is my own independent work.***
Signed :

Use of translation software: failure to declare that translation software or a similar writing aid has been used will be treated as an assessment offence.

I have not used translation software.

If used, please state name of software……

Overall mark _____% Assessors Initials _____ Date_____

SOFT255SL

Software Engineering for the Internet using Java

Coursework - T1 C1

Security Logs System

Group No: 31

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Introduction

I would like to point out some situations that any of us as students of NSBM University may face in our day today life at NSBM. And also how we deal with those situations.

First one is forgetting to bring your Student ID card. The normal procedure is that the security personnel at the entrance checks your Student ID and lets you in. But if you forgot to bring it, they ask you to write your details in the logbook at the entrance. It could be difficult as well as time wasting task for everyone especially when it is a busy morning at the entrance.

Another situation is you lost something valuable inside the university premises. What we normally do is put a message about the lost item informing others in our WhatsApp chat groups. But the security personnel are the ones who could look out for the lost item and most probably the ones who may find it. But they are not members of your chat group. So they don't know to whom it belongs to when they found something.

Some of us travel to the university by our own vehicles. But we have no proper parking facility and we have to park our vehicles roadside beside the university without proper security.

Considering situations like that we came up with a better solution to replace the current system. It is to have a security logs program to keep records of some situations like above and also to manage some processes in a better way. Both the security staff and the students could be benefited by this solution. As an example, if the university could arrange a proper space to park the vehicles and assign a security guard to the place, they can easily record the necessary details and manage the car park properly using this program. It is a great relief to the vehicle owners and also the university can charge a parking fee for their trouble since the program records all the necessary details of the vehicles in and out. So the main objective of our Security Logs Program is to manage some day today processes at university in a better way than they are right now and by that, to increase the productivity.

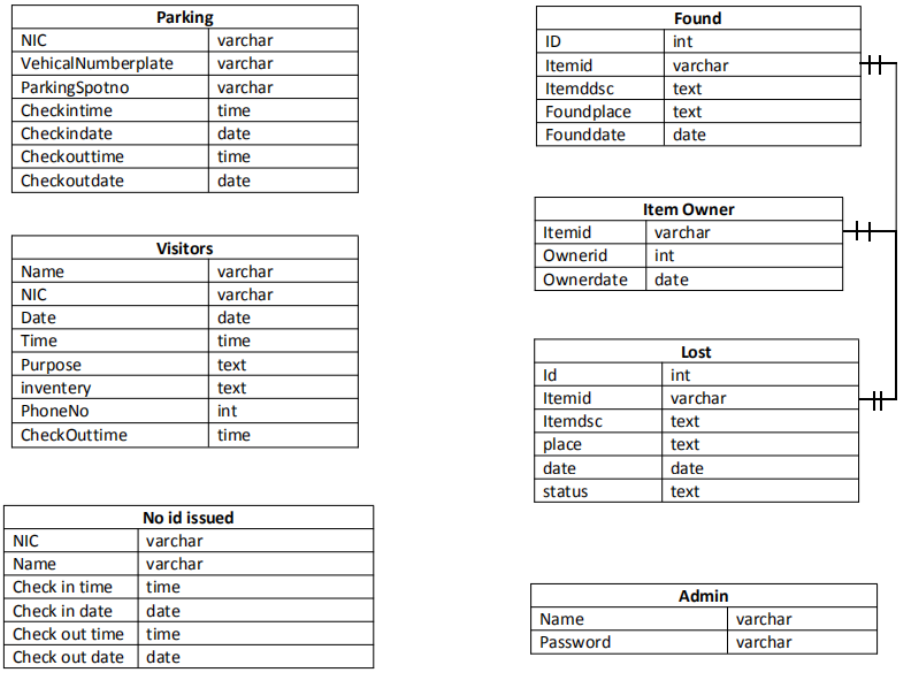
Analysis

Requirements

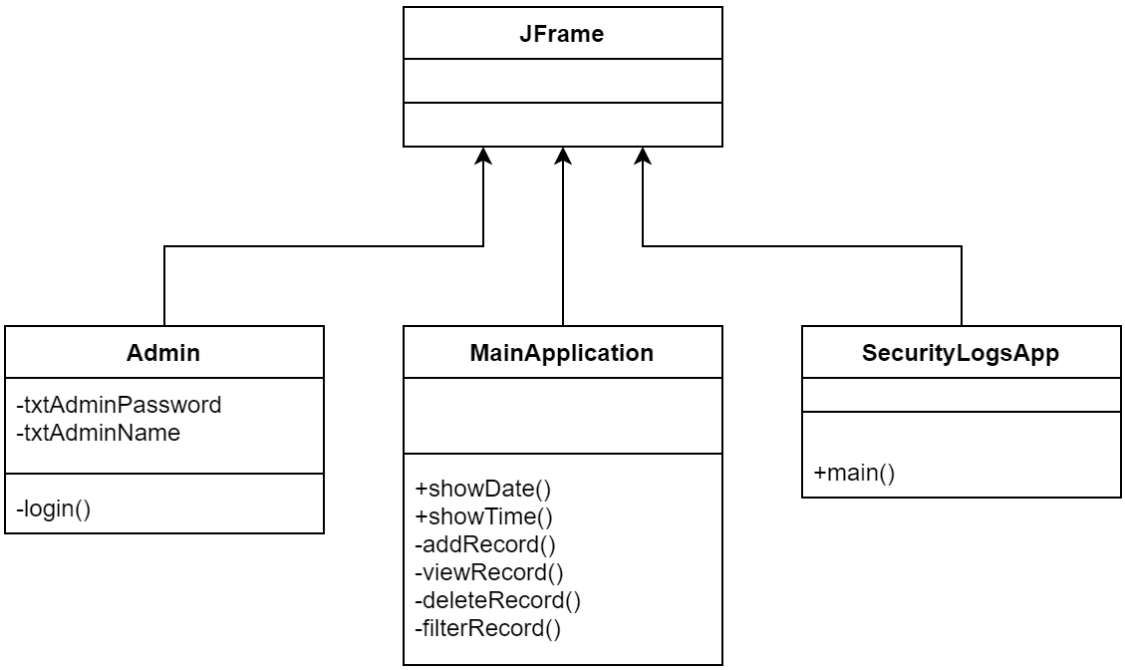
- Functional Requirements
    1. Ability to add records of visitors, parking, lost and found items and people who doesn't have their University ID.
    2. Ability to view all the records in a detailed form.
    3. Ability to sort and filter records.
    4. Ability to delete mistaken records.
    5. Ability to keep track of time of all entries.
    6. Only the security personal with credentials should be able to login to the system.
- Non-functional Requirements
    1. Security
    2. Simple and Functional GUI
    3. Stability of the software

Use Case Diagram

ER Diagram



Class Diagram

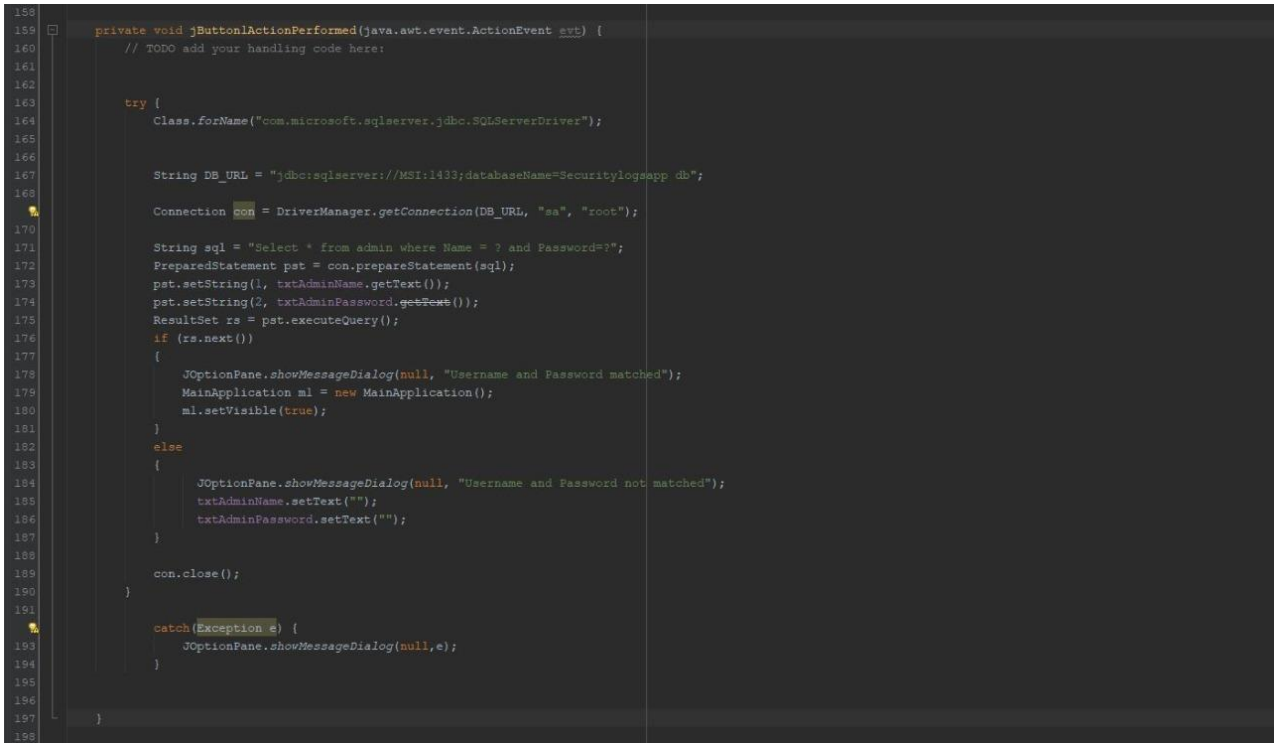


Implementation

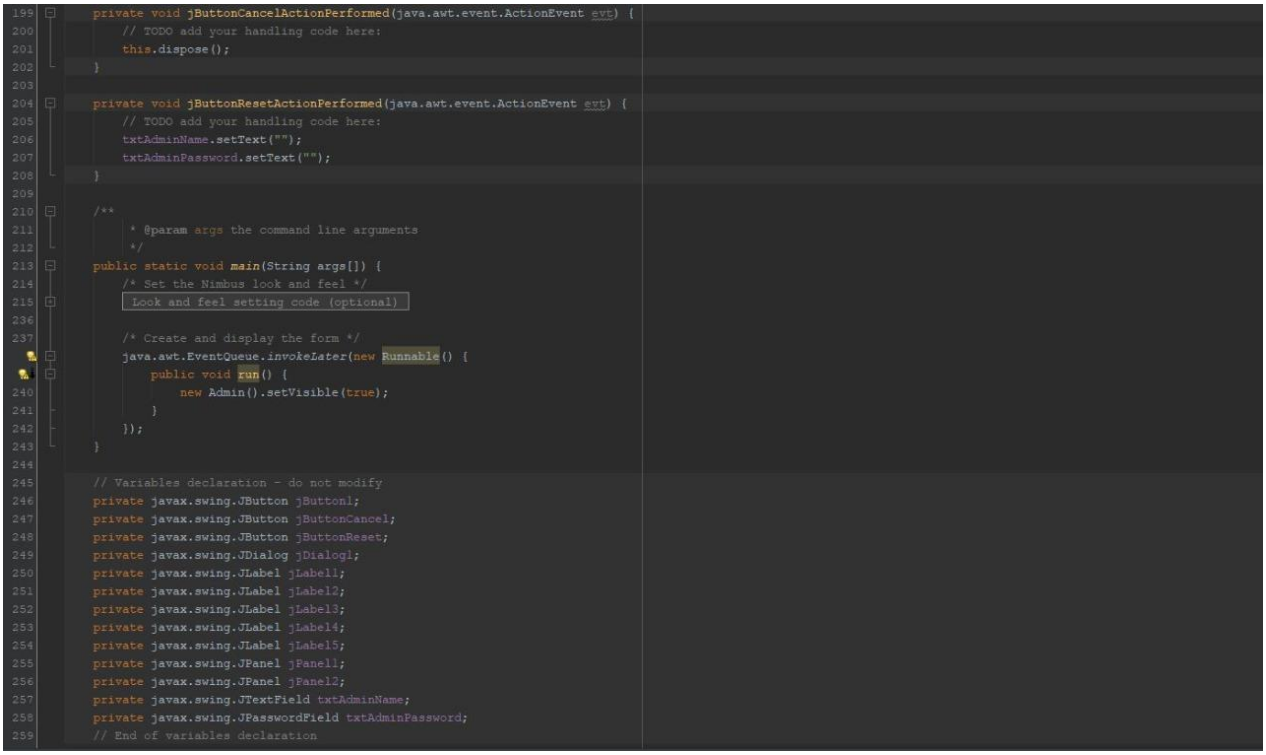
Code

In here we have used coding concepts like encapsulation, inheritance, exception handling to build our program. We have used a tabbed pane and buttons linked to tabs for easy transition between the sections of the software.

Admin



```
158
159     private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
160         // TODO add your handling code here:
161
162
163         try {
164             Class.forName("com.microsoft.sqlserver.jdbc.SQLServerDriver");
165
166
167             String DB_URL = "jdbc:sqlserver://MSI:1433;databaseName=Securitylogsapp db";
168
169             Connection con = DriverManager.getConnection(DB_URL, "sa", "root");
170
171             String sql = "Select * from admin where Name = ? and Password=?";
172             PreparedStatement pst = con.prepareStatement(sql);
173             pst.setString(1, txtAdminName.getText());
174             pst.setString(2, txtAdminPassword.getText());
175             ResultSet rs = pst.executeQuery();
176             if (rs.next())
177             {
178                 JOptionPane.showMessageDialog(null, "Username and Password matched");
179                 MainApplication ml = new MainApplication();
180                 ml.setVisible(true);
181             }
182             else
183             {
184                  JOptionPane.showMessageDialog(null, "Username and Password not matched");
185                  txtAdminName.setText("");
186                  txtAdminPassword.setText("");
187             }
188
189             con.close();
190         }
191
192             catch(Exception e) {
193                 JOptionPane.showMessageDialog(null,e);
194             }
195
196
197     }
198
```



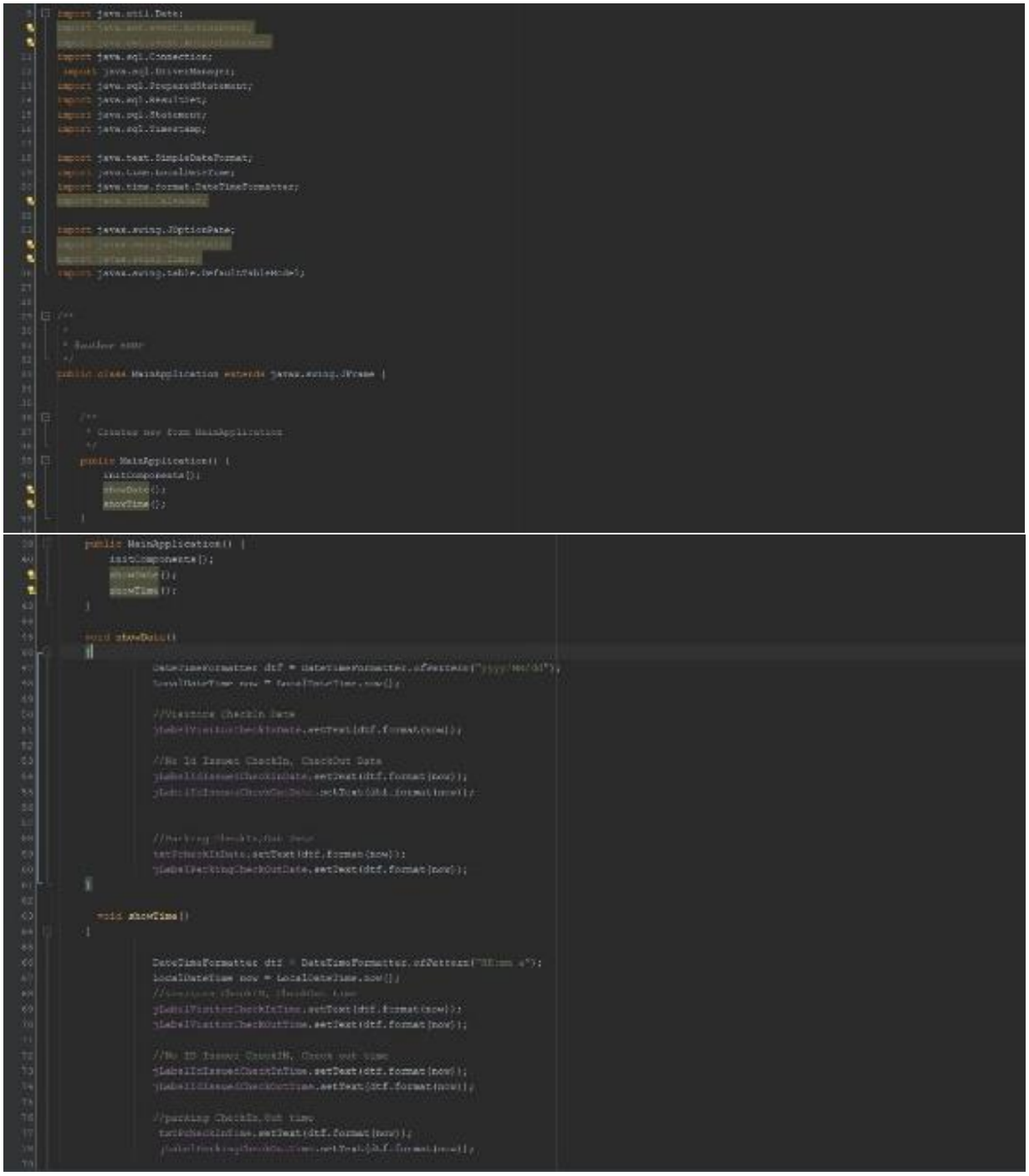
```
199     private void jButtonCancelActionPerformed(java.awt.event.ActionEvent evt) {
200         // TODO add your handling code here:
201         this.dispose();
202     }
203
204     private void jButtonResetActionPerformed(java.awt.event.ActionEvent evt) {
205         // TODO add your handling code here:
206         txtAdminName.setText("");
207         txtAdminPassword.setText("");
208     }
209
210     /**
211          * @param args the command line arguments
212          */
213     public static void main(String args[]) {
214         /* Set the Nimbus look and feel */
215         Look and feel setting code (optional)
236
237         /* Create and display the form */
238         java.awt.EventQueue.invokeLater(new Runnable() {
239             public void run() {
240                 new Admin().setVisible(true);
241             }
242         });
243     }
244
245     // Variables declaration - do not modify
246     private javax.swing.JButton jButton1;
247     private javax.swing.JButton jButtonCancel;
248     private javax.swing.JButton jButtonReset;
249     private javax.swing.JDialog jDialog1;
250     private javax.swing.JLabel jLabel1;
251     private javax.swing.JLabel jLabel2;
252     private javax.swing.JLabel jLabel3;
253     private javax.swing.JLabel jLabel4;
254     private javax.swing.JLabel jLabel5;
255     private javax.swing.JPanel jPanel1;
256     private javax.swing.JPanel jPanel2;
257     private javax.swing.JTextField txtAdminName;
258     private javax.swing.JPasswordField txtAdminPassword;
259     // End of variables declaration
```

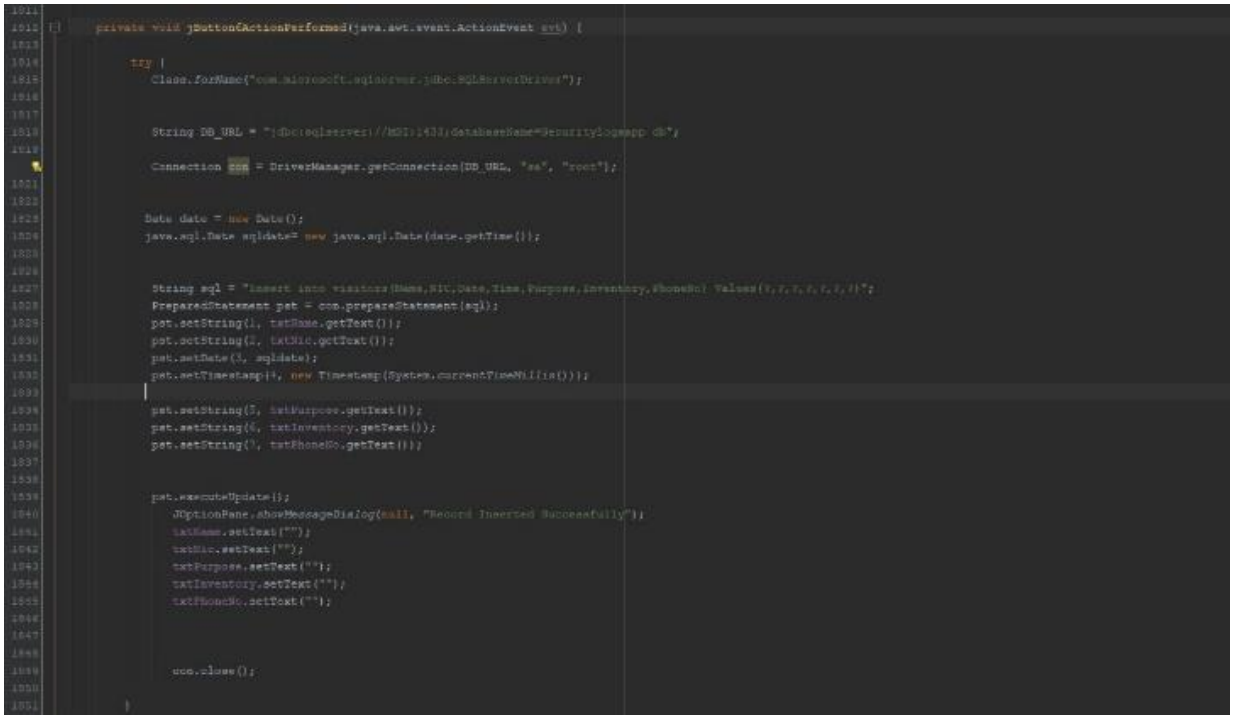
```java
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package securitylogsapp;

import java.sql.*;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.swing.JOptionPane;

/**
 *
 * @author PC
 */
public class Admin extends javax.swing.JFrame {

    /**
     * Creates new form Admin
     */
    public Admin() {
        initComponents();
    }

    /**
     * This method is called from within the constructor to initialize the form.
     * WARNING: Do NOT modify this code. The content of this method is always
     * regenerated by the Form Editor.
     */
    @SuppressWarnings("unchecked")
    Generated Code
```

Main Application

```java
    private void jButton26ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        try {
            Class.forName("com.microsoft.sqlserver.jdbc.SQLServerDriver");


            String DB_URL = "jdbc:sqlserver://MSI:1433;databaseName=Securitylogsapp db";

            Connection con = DriverManager.getConnection(DB_URL, "sa", "root");

            Statement st = con.createStatement();
            String sql = "SELECT f.id,f.itemid,f.itemdesc,f.place,f.date,f.foundplace,f.founddate,o.ownerid,o.ownerdate From lost f INNER JOIN found o ON f.itemid=o.itemid INNER
            ResultSet rs = st.executeQuery(sql);
            while(rs.next())
            {
                String id = rs.getString("id");
                String itemid = rs.getString("itemid");
                String itemdsc = rs.getString("itemdsc");
                String lplace = rs.getString("place");
                String ldate = rs.getString("date");

                String fplace = rs.getString("foundplace");
                String fdate = rs.getString("foundDate");
                String ownerid=rs.getString("ownerid");
                String owndate"rs.getString("owndate");



                String tbData[]=  {id,itemid,itemdsc,lplace,ldate,fplace,fdate,ownerid,owndate};
                DefaultTableModel tblModel = (DefaultTableModel)jLostsFoundTable1.getModel();

                tblModel.addRow(tbData);
            }

              con.close();
        }

        catch(Exception e) {
            JOptionPane.showMessageDialog(null,e);
        }
    }
```

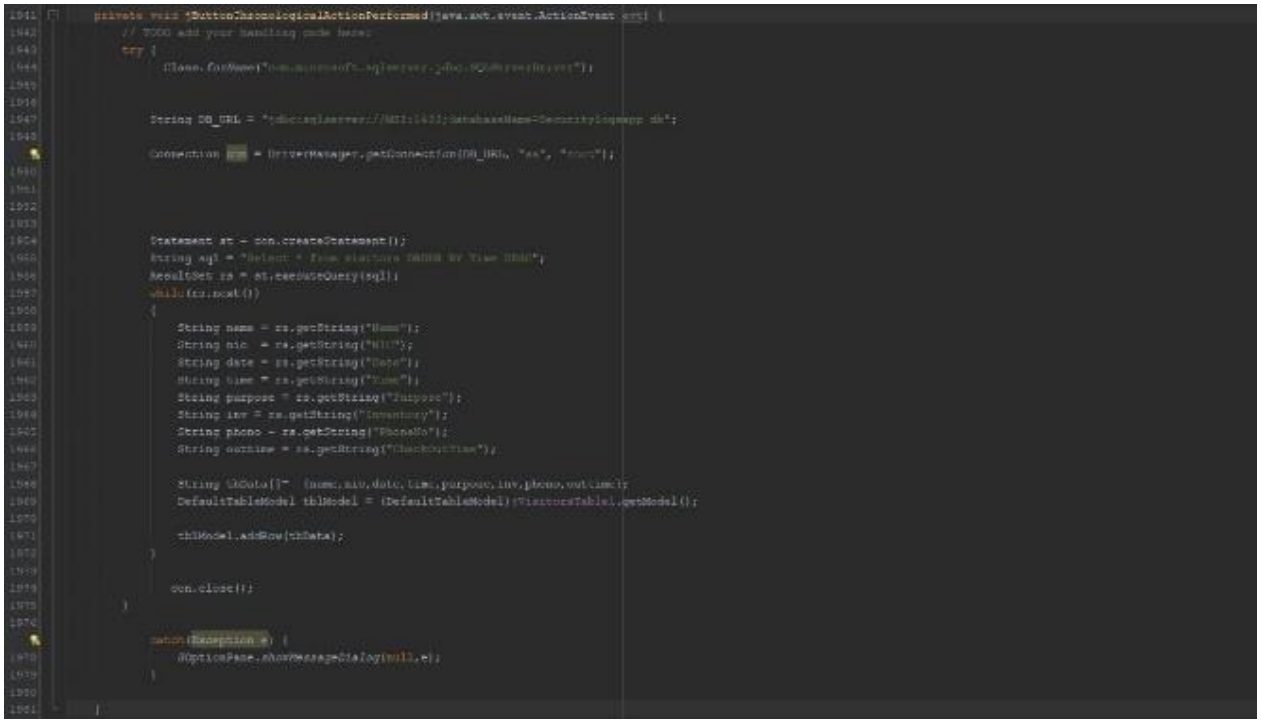
```java
    private void jButton26ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        try {
            Class.forName("com.microsoft.sqlserver.jdbc.SQLServerDriver");


            String DB_URL = "jdbc:sqlserver://MSI:1433;databaseName=Securitylogsapp db";

            Connection con = DriverManager.getConnection(DB_URL, "sa", "root");


            String sql = "DELETE from noidissued WHERE NIC=?";
            PreparedStatement pst = con.prepareStatement(sql);
            pst.setString(1, txtiddeleteitenic.getText());


            pst.executeUpdate();
               JOptionPane.showMessageDialog(null, "Record Deleted Successfully");
               txtiddeleteitenic.setText("");


               con.close();
        }

            catch(Exception e) {
                JOptionPane.showMessageDialog(null,e);
            }


    }
```





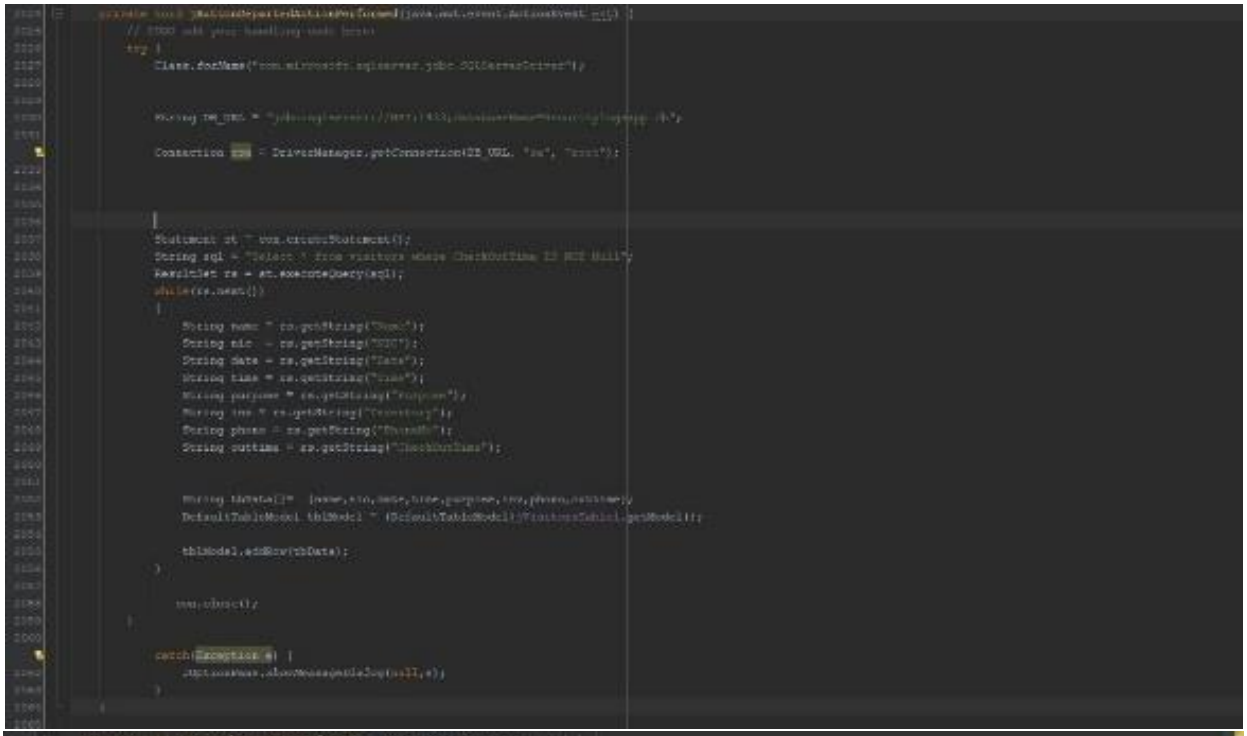
```
    private void jButton6ActionPerformed(java.awt.event.ActionEvent evt) {

        try {
            Class.forName("com.microsoft.sqlserver.jdbc.SQLServerDriver");


            String DB_URL = "jdbc:sqlserver://MSI:1433;DatabaseName=Securitylogapp db";

            Connection con = DriverManager.getConnection(DB_URL, "sa", "root");


           Date date = new Date();
           java.sql.Date sqldate= new java.sql.Date(date.getTime());


            String sql = "insert into visitors(Name,Nic,Date,Time,Purpose,Inventory,PhoneNo) Values(?,?,?,?,?,?,?)";
            PreparedStatement pst = con.prepareStatement(sql);
            pst.setString(1, txtName.getText());
            pst.setString(2, txtNic.getText());
            pst.setDate(3, sqldate);
            pst.setTimestamp(4, new Timestamp(System.currentTimeMillis()));

            pst.setString(5, txtPurpose.getText());
            pst.setString(6, txtInventory.getText());
            pst.setString(7, txtPhoneNo.getText());


            pst.executeUpdate();
               JOptionPane.showMessageDialog(null, "Record Inserted Successfully");
               txtName.setText("");
               txtNic.setText("");
               txtPurpose.setText("");
               txtInventory.setText("");
               txtPhoneNo.setText("");



               con.close();

        }
```

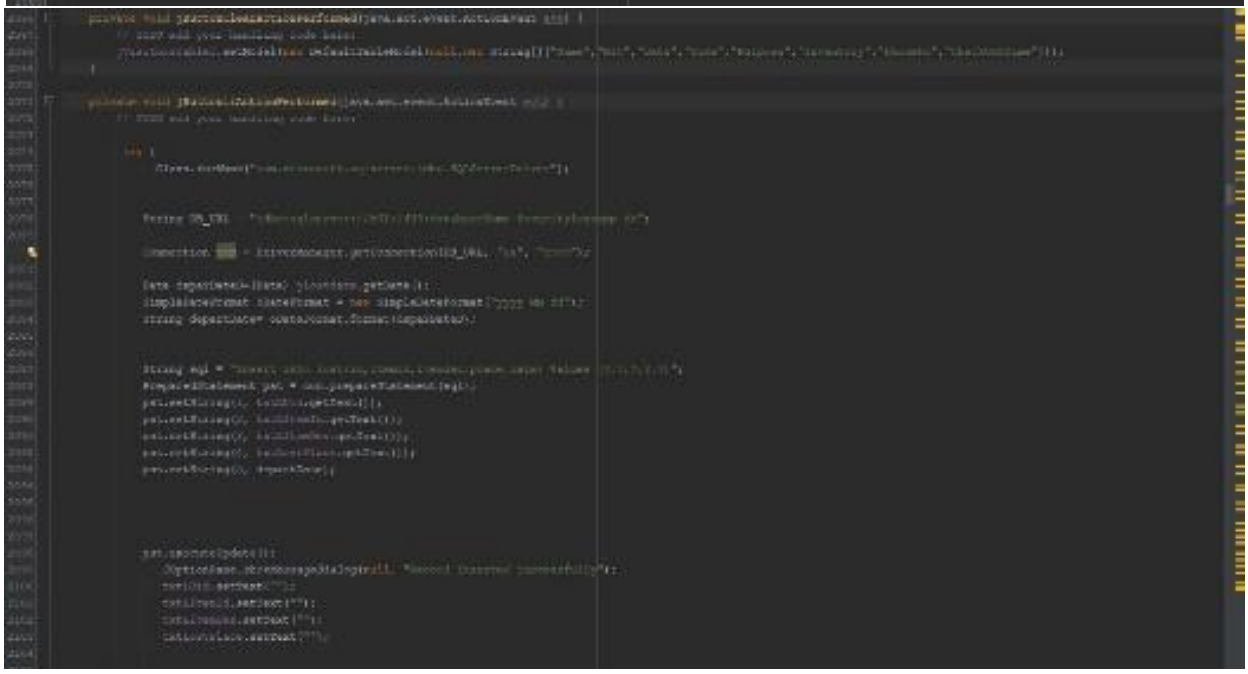
```
    private void jButton7ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:

         try {
             Class.forName("com.microsoft.sqlserver.jdbc.SQLServerDriver");


            String DB_URL = "jdbc:sqlserver://MSI:1433;databaseName=Securitylogapp db";

            Connection con = DriverManager.getConnection(DB_URL, "sa", "root");




            Statement st = con.createStatement();
            String sql = "Select * from visitors";
            ResultSet rs = st.executeQuery(sql);
            while(rs.next())
            {
                String name = rs.getString("Name");
                String nic  = rs.getString("NIC");
                String date = rs.getString("Date");
                String time = rs.getString("Time");
                String purpose = rs.getString("Purpose");
                String inv = rs.getString("Inventory");
                String phono = rs.getString("PhoneNo");
                String outtime = rs.getString("CheckOutTime");

                String tbData[]=  {name,nic,date,time,purpose,inv,phono,outtime};
                DefaultTableModel tblModel = (DefaultTableModel)visitorsTable1.getModel();

                tblModel.addRow(tbData);
            }

               con.close();
        }

            catch(Exception e) {
                JOptionPane.showMessageDialog(null,e);
            }
```

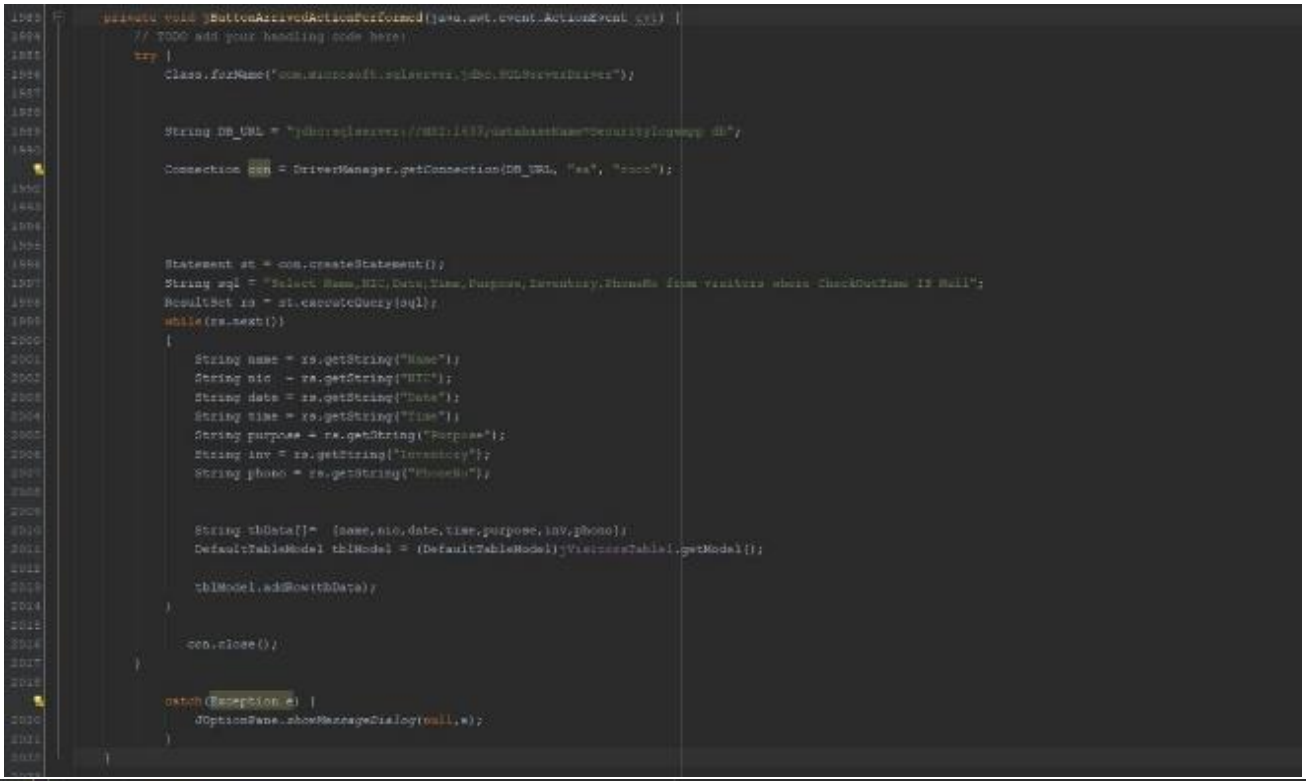


```
    private void tButtonChronologicalActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        try {
            Class.forName("com.microsoft.sqlserver.jdbc.SQLServerDriver");


            String DB_URL = "jdbc:sqlserver://MSI:1433;DatabaseName=Securitylogapp db";

            Connection con = DriverManager.getConnection(DB_URL, "sa", "root");




            Statement st = con.createStatement();
            String sql = "Select * from visitors ORDER BY Time DESC";
            ResultSet rs = st.executeQuery(sql);
            while(rs.next())
            {
                String name = rs.getString("Name");
                String nic  = rs.getString("NIC");
                String date = rs.getString("Date");
                String time = rs.getString("Time");
                String purpose = rs.getString("Purpose");
                String inv = rs.getString("Inventory");
                String phono = rs.getString("PhoneNo");
                String outtime = rs.getString("CheckOutTime");

                String tbData[]=  {name,nic,date,time,purpose,inv,phono,outtime};
                DefaultTableModel tblModel = (DefaultTableModel)VisitorsTable1.getModel();

                tblModel.addRow(tbData);
            }

              con.close();
        }

        catch(Exception e) {
            JOptionPane.showMessageDialog(null,e);
        }

    }
```

```
    private void SubmitActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:


        try {
            Class.forName("com.microsoft.sqlserver.jdbc.SQLServerDriver");


            String DB_URL = "jdbc:sqlserver://MSI:1433;databaseName=Securitylogapp db";

            Connection con = DriverManager.getConnection(DB_URL, "sa", "root");


            String sql = "UPDATE visitors SET CheckOutTime=? WHERE NIC=?";
            PreparedStatement pst = con.prepareStatement(sql);
            pst.setTimestamp(1, new Timestamp(System.currentTimeMillis()));
            pst.setString(2, txtCheckOutNIC.getText());


            pst.executeUpdate();
               JOptionPane.showMessageDialog(null, "Record Inserted Successfully");
               txtCheckOutNIC.setText("");


               con.close();
        }

        catch(Exception e) {
            JOptionPane.showMessageDialog(null,e);
        }



    }
```







```
    private void jButtonArrivedActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        try {
            Class.forName("com.microsoft.sqlserver.jdbc.SQLServerDriver");


            String DB_URL = "jdbc:sqlserver://MSI:1433;databaseName=Securitylogapp db";

            Connection con = DriverManager.getConnection(DB_URL, "sa", "root");




            Statement st = con.createStatement();
            String sql = "Select Name,NIC,Date,Time,Purpose,Inventory,PhoneNo from visitors where CheckOutTime IS Null";
            ResultSet rs = st.executeQuery(sql);
            while(rs.next())
            {
                String name = rs.getString("Name");
                String nic  = rs.getString("NIC");
                String date = rs.getString("Date");
                String time = rs.getString("Time");
                String purpose = rs.getString("Purpose");
                String inv = rs.getString("Inventory");
                String phono = rs.getString("PhoneNo");


                String tbData[]=  {name,nic,date,time,purpose,inv,phono};
                DefaultTableModel tblModel = (DefaultTableModel)jVisitorsTable1.getModel();

                tblModel.addRow(tbData);
            }

              con.close();
        }

            catch(Exception e) {
                JOptionPane.showMessageDialog(null,e);
            }
    }
```

```
            catch(Exception e) {
                JOptionPane.showMessageDialog(null,e);
            }

    }

    private void jButton13ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        try {
          Class.forName("com.microsoft.sqlserver.jdbc.SQLServerDriver");


            String DB_URL = "jdbc:sqlserver://MSI:1433;databaseName=Securitylogapp db";

            Connection con = DriverManager.getConnection(DB_URL, "sa", "root");

            Date departDateD=(Date) jvendate.getDate();
            SimpleDateFormat cDateFormat = new SimpleDateFormat("yyyy-MM-dd");
            String departDate= cDateFormat.format(departDateD);


            String sql = "Insert into itemowner(itemid,ownerid,vendate) Values (?,?,?)";
            PreparedStatement pst = con.prepareStatement(sql);
            pst.setString(1, txtownitemid.getText());
            pst.setString(2, txtownerid.getText());
            pst.setString(3, departDate);




            pst.executeUpdate();
               JOptionPane.showMessageDialog(null, "Record Inserted Successfully");
               txtownitemid.setText("");
               txtownerid.setText("");




              con.close();
```

```
    private void jButtonClearActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:

        jTableFoundTable1.setModel(new DefaultTableModel(null,new String[]{"SID","ItemID","ItemDescription","LostPlace","LostDate","FoundPlace","FoundDate","OwnerID","
    }

    private void jButtonFoundActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
         try {
           Class.forName("com.microsoft.sqlserver.jdbc.SQLServerDriver");


            String DB_URL = "jdbc:sqlserver://MSI:1433;databaseName=Securitylogsapp db";

            Connection con = DriverManager.getConnection(DB_URL, "sa", "root");



            Statement st = con.createStatement();
            String sql = "Select l.id,l.itemid,l.itemdsc,l.place,l.date,f.foundplace,f.founddate from lost l,found f where l.itemid=f.itemid;";
            ResultSet rs = st.executeQuery(sql);
            while(rs.next())
            {
                String id = rs.getString("id");
                String itemid  = rs.getString("itemid");
                String itemdsc = rs.getString("itemdsc");
                String place = rs.getString("place");
                String date = rs.getString("date");
                String fplace = rs.getString("foundplace");
                String fdate = rs.getString("founddate");


                String tbData[]=  {id,itemid,itemdsc,place,date,fplace,fdate};
                DefaultTableModel tblModel = (DefaultTableModel)jTableFoundTable1.getModel();

                tblModel.addRow(tbData);
            }

              con.close();
        }
```

Main Method

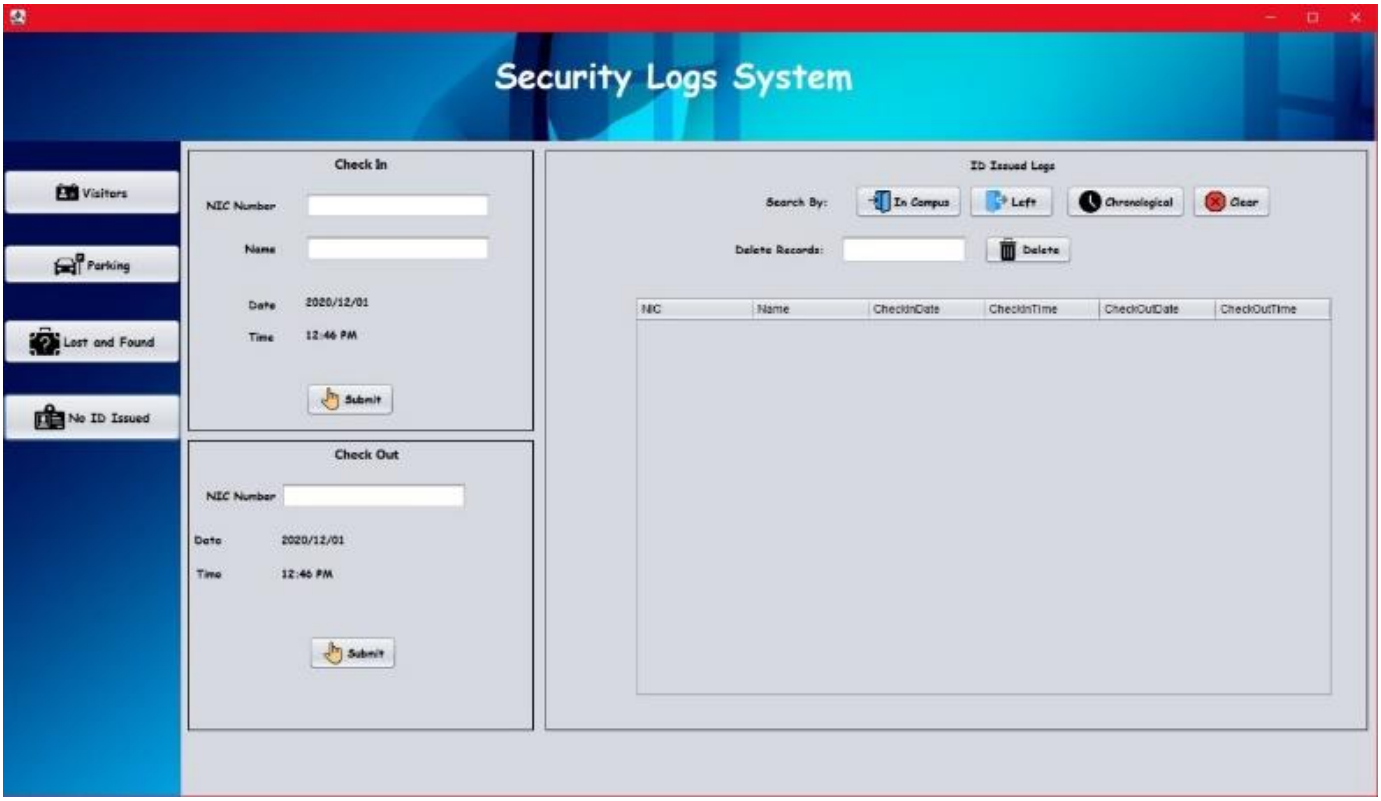
```
    private void jButtonLostActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        try {
             Class.forName("com.microsoft.sqlserver.jdbc.SQLServerDriver");


            String DB_URL = "jdbc:sqlserver://MSI:1433;databaseName=Securitylogsapp db";

            Connection con = DriverManager.getConnection(DB_URL, "sa", "root");



            Statement st = con.createStatement();
            String sql = "Select * from lost";
            ResultSet rs = st.executeQuery(sql);
            while(rs.next())
            {
                String id = rs.getString("id");
                String itemid  = rs.getString("itemid");
                String itemdsc = rs.getString("itemdsc");
                String place = rs.getString("place");
                String date = rs.getString("date");


                String tbData[]=  {id,itemid,itemdsc,place,date};
                DefaultTableModel tblModel = (DefaultTableModel)jTableFoundTable1.getModel();

                tblModel.addRow(tbData);
            }

              con.close();
        }

            catch(Exception e) {
                JOptionPane.showMessageDialog(null,e);
            }
    }
```

GUI


Welcome to Security Logs System
ADMIN LOGIN
Name:
Password:
Login
Reset
Cancel

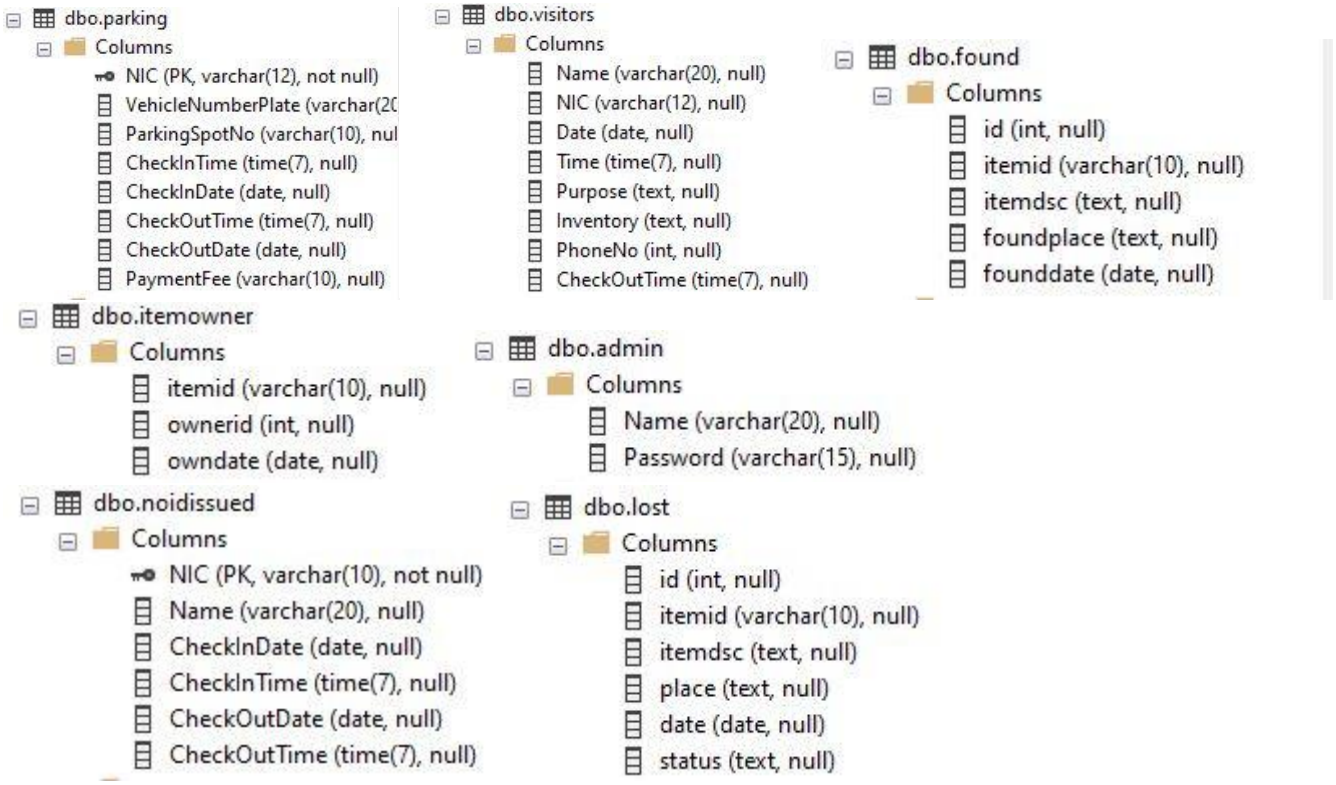

Security Logs System
Visitors
Parking
Lost and Found
No ID Issued
Check In
NIC
Vehicle Number PLate
Parking Spot No
Time 12:46 PM
Date 2020/12/01
Park
Pay and Depart
NIC
Time 12:46 PM
Date 2020/12/01
Parking Fee Rs. 50
Pay
Parking Log
Search By:
Parked
By Spot Number
Took off
Clear
Delete Records:
Delete
NIC
VehicleNumb...
ParkingSpotNo
CheckInTime
CheckInDate
CheckOutTime
CheckOutDate
PaymentFee


Security Logs System
Visitors
Parking
Lost and Found
No ID Issued
Check In
Name
NIC Number
Date
2020/12/01
Time
12:46 PM
Purpose
Inventory
Phone No
Submit
Check Out
NIC Number
Time
12:46 PM
Submit
Entries
Search by :
All Entries
Arrived
Departed
Chronological
Clear
Delete Records:
Delete
Name
NIC
Date
Time
Purpose
Inventory
PhoneNo
CheckOutTime


Security Logs System
Visitors
Parking
Lost and Found
No ID Issued
Check In
NIC Number
Name
Date
2020/12/01
Time
12:46 PM
Submit
Check Out
NIC Number
Date
2020/12/01
Time
12:46 PM
Submit
ID Issued Logs
Search By:
In Campus
Left
Chronological
Clear
Delete Records:
Delete
NIC
Name
CheckInDate
CheckInTime
CheckOutDate
CheckOutTime


Security Logs System
Visitors
Parking
Lost and Found
No ID Issued
Report lost item
UID
Lost Date
Item ID
Item Description
lost place
Add lost item
Found Items
UID
Found Date
Item ID
Item Description
Found Place
Report found item
Owner found
Item ID
Return Date
Owner UID
Found owner
Lost and Found logs
Search By:
Lost
Found
Resolved
Clear
Delete Records:
Delete
UID
ItemID
ItemDesc...
LostPlace
LostDate
FoundPla...
FoundDate
OwnerID
OwnDate

Database


dbo.parking
Columns
NIC (PK, varchar(12), not null)
VehicleNumberPlate (varchar(20
ParkingSpotNo (varchar(10), nul
CheckInTime (time(7), null)
CheckInDate (date, null)
CheckOutTime (time(7), null)
CheckOutDate (date, null)
PaymentFee (varchar(10), null)
dbo.visitors
Columns
Name (varchar(20), null)
NIC (varchar(12), null)
Date (date, null)
Time (time(7), null)
Purpose (text, null)
Inventory (text, null)
PhoneNo (int, null)
CheckOutTime (time(7), null)
dbo.found
Columns
id (int, null)
itemid (varchar(10), null)
itemdsc (text, null)
foundplace (text, null)
founddate (date, null)
dbo.itemowner
Columns
itemid (varchar(10), null)
ownerid (int, null)
owndate (date, null)
dbo.admin
Columns
Name (varchar(20), null)
Password (varchar(15), null)
dbo.noidissued
Columns
NIC (PK, varchar(10), not null)
Name (varchar(20), null)
CheckInDate (date, null)
CheckInTime (time(7), null)
CheckOutDate (date, null)
CheckOutTime (time(7), null)
dbo.lost
Columns
id (int, null)
itemid (varchar(10), null)
itemdsc (text, null)
place (text, null)
date (date, null)
status (text, null)

Conclusion

The users are able to easily keep track of the records of the visitors, parking details, lost and found and people who visits the university without a ID card. Unlike the traditional system, they can filter records and sort records when they need. Users must be given credentials to login the system by a higher position.

Future Improvements,

- The software can be connected to the NSBM main database so that the relevant student and staff information can be viewed through our system.
- Include and alert system for lost and found section to notify people about lost and found items.
- Include a card payment integration for the parking section.