SRI LANKA INSTITUTE OF INFORMATION TECHNOLOGY

DISTRIBUTED SYSTEM

(SE3020)

YEAR 3 SEMESTER 1 | WE_14

FIRE ALARM SENSOR MONITORING SYSTEM

REPORT

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Content

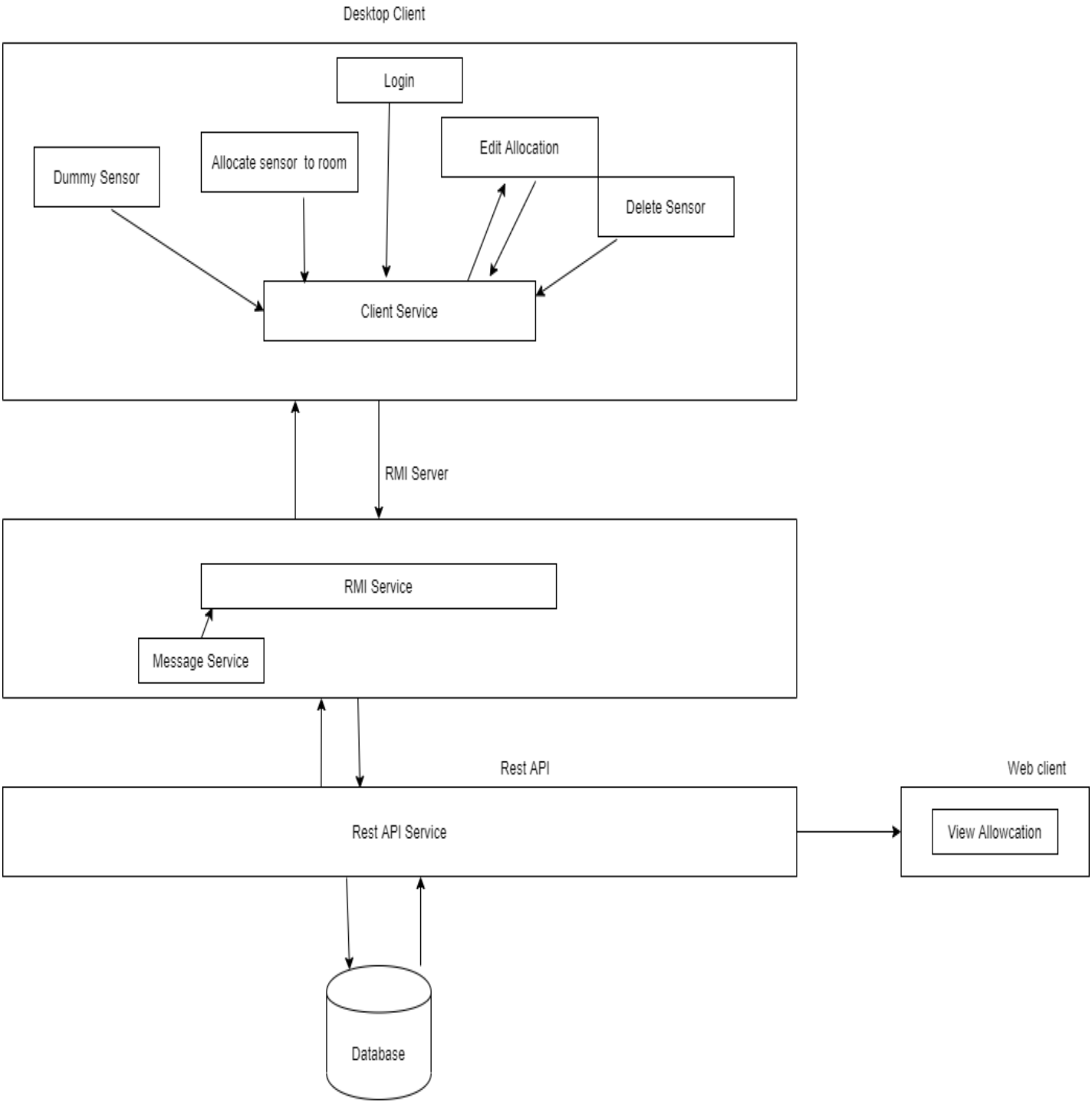
Introduction

This report is about Ds module 2nd assignment which is about develop a fire alarm monitoring system. administrator can login to the system and add new fire alarm sensors . Client can view the status of all fire alarm sensors. An alert can be displayed to the client , when the CO2 level or Smoke level is moves to a value greater than 5, of any sensor.

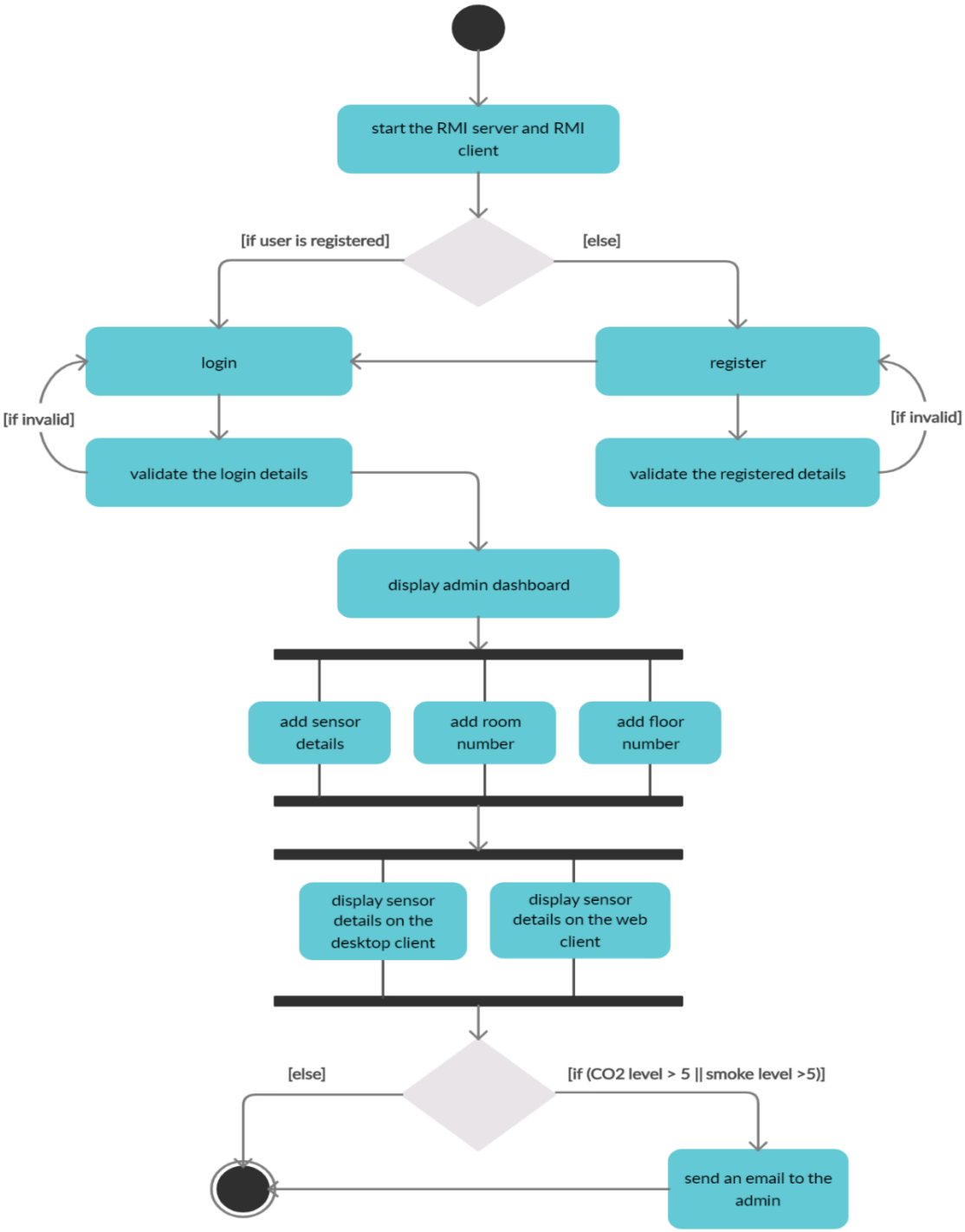
This fire alarm monitoring system is implemented using REST API, web client, dummy sensor application, RMI server and client. the technologies which are used to implement the system as follows;

- Web REST API – Spring boot
- RMI Desktop Client/Server – JAVA
- Web Client – ReactJS
- Database - MYSQL

High level architectural diagram



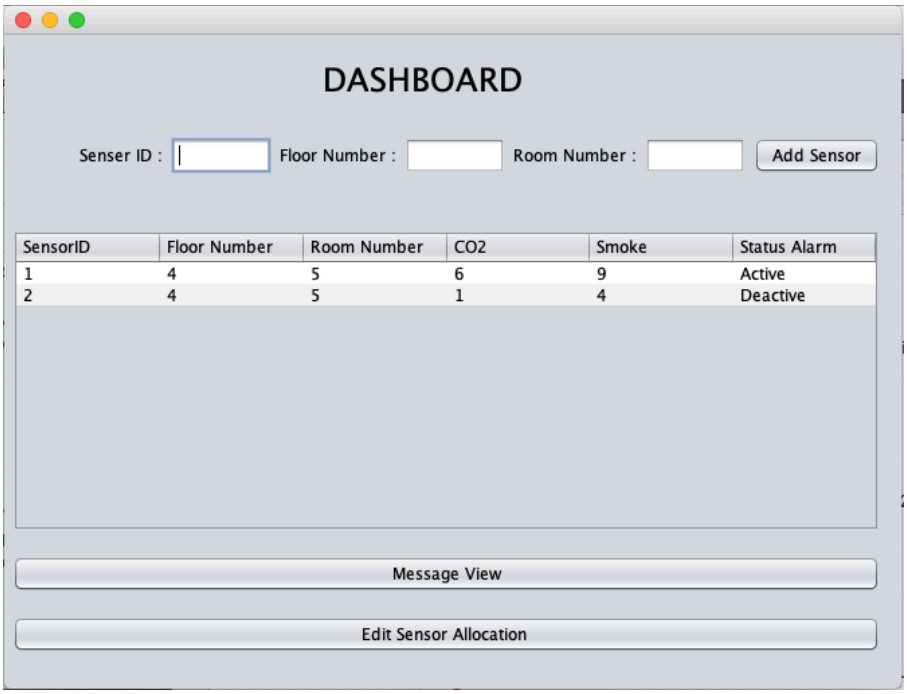
Work Flow diagram



System workflow scenario execution

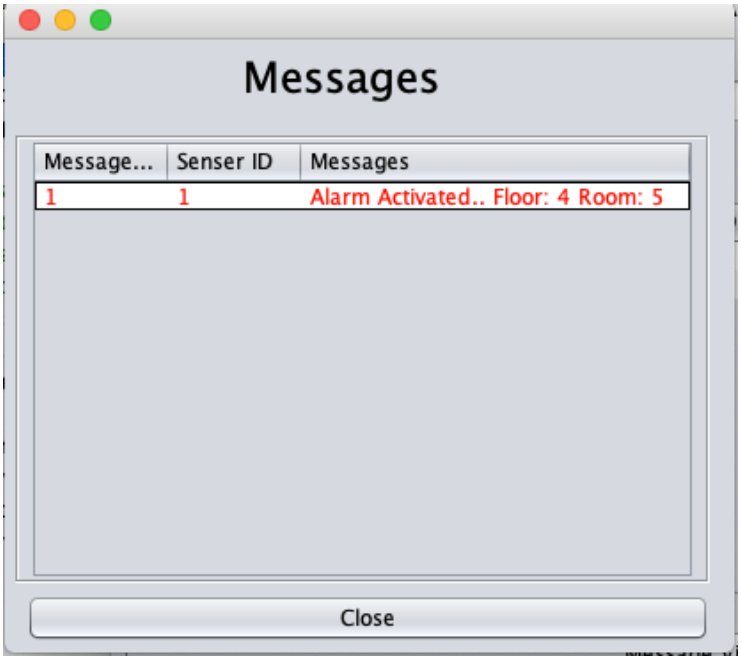
Administrator login

Add a new sensor and Admin can view and edit all the registered sensor details

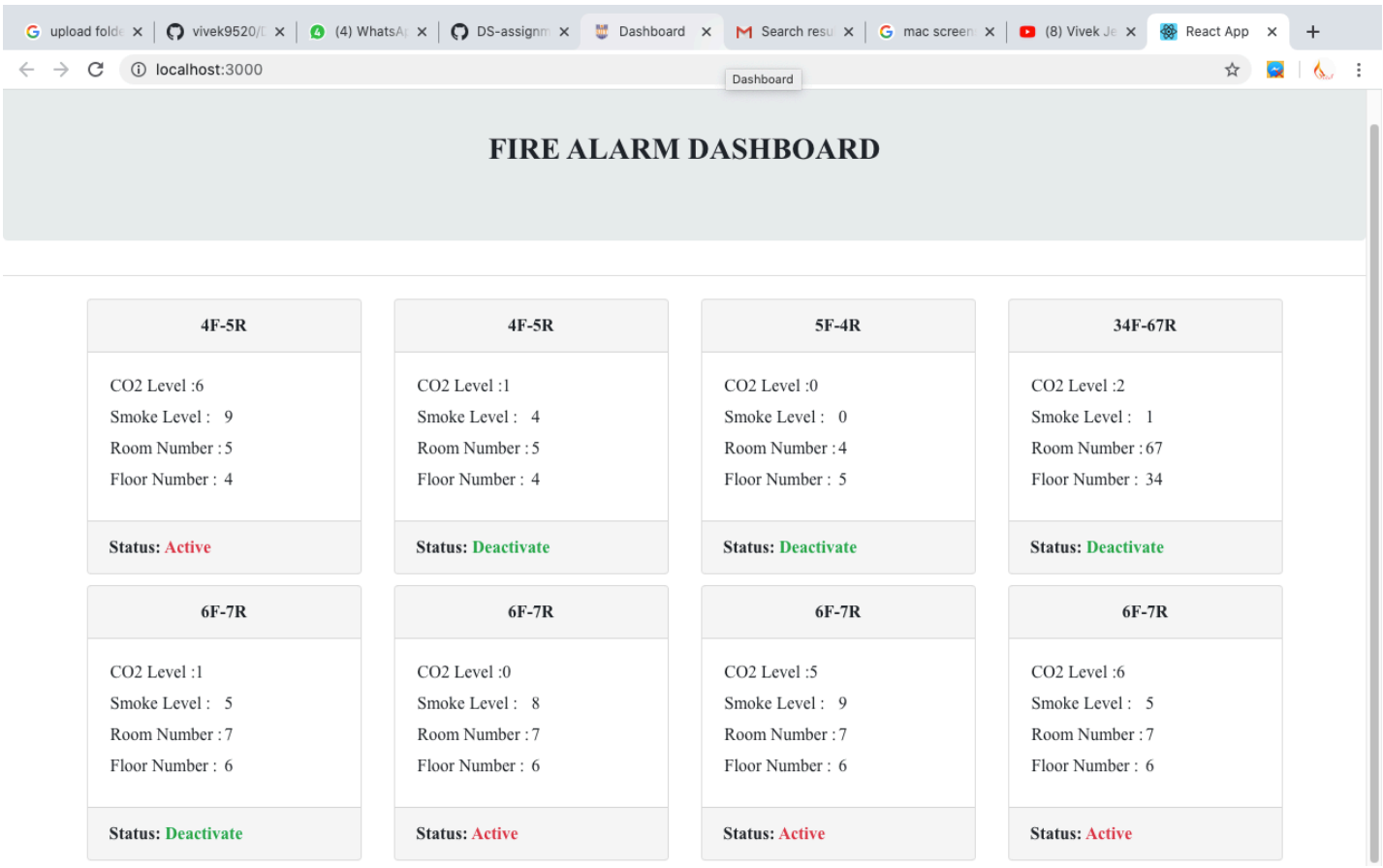


CO2 level or smoke level is greater than 5, it displays a danger alert in red on the dashboard of admin.

When the sensor is activate user will get an message



Fire Alarm DashBoard


Dashboard
localhost:3000
Dashboard
FIRE ALARM DASHBOARD
4F-5R
CO2 Level :6
Smoke Level : 9
Room Number : 5
Floor Number : 4
Status: Active
4F-5R
CO2 Level :1
Smoke Level : 4
Room Number : 5
Floor Number : 4
Status: Deactivate
5F-4R
CO2 Level :0
Smoke Level : 0
Room Number : 4
Floor Number : 5
Status: Deactivate
34F-67R
CO2 Level :2
Smoke Level : 1
Room Number : 67
Floor Number : 34
Status: Deactivate
6F-7R
CO2 Level :1
Smoke Level : 5
Room Number : 7
Floor Number : 6
Status: Deactivate
6F-7R
CO2 Level :0
Smoke Level : 8
Room Number : 7
Floor Number : 6
Status: Active
6F-7R
CO2 Level :5
Smoke Level : 9
Room Number : 7
Floor Number : 6
Status: Active
6F-7R
CO2 Level :6
Smoke Level : 5
Room Number : 7
Floor Number : 6
Status: Active

Appendix

RMI Desktop Client

DesktopClientLogin.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 desktopclient;

import firealaramserver.FireRemoteInterface;
import java.rmi.Naming;
import java.rmi.registry.LocateRegistry;
import java.rmi.registry.Registry;
import javax.swing.JOptionPane;

/**
 *
 * @author mac
 */
public class DesktopClientLogin extends javax.swing.JFrame {



    /**
     * Creates new form DesktopClientLogin
     */
```

```
public DesktopClientLogin() {
    initComponents();
}

/**
 * This method is called from within the constructor to  the form.
 * WARNING: Do NOT modify this code. The content of this method is always
 * regenerated by the Form Editor.
 */
@SuppressWarnings("unchecked")
// <editor-fold defaultstate="collapsed" desc="Generated Code">
private void initComponents() {

    jLabel1 = new javax.swing.JLabel();
    jLabel2 = new javax.swing.JLabel();
    user_id = new javax.swing.JTextField();
    password = new javax.swing.JPasswordField();
    jLabel3 = new javax.swing.JLabel();
    login_btn = new javax.swing.JButton();

    setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

    jLabel1.setText("User ID");

    jLabel2.setText("Password");

    user_id.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            user_idActionPerformed(evt);
```

```
    }
});

jLabel3.setText("Login");

login_btn.setText("Login");
login_btn.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        login_btnActionPerformed(evt);
    }
});

javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
getContentPane().setLayout(layout);
layout.setHorizontalGroup(
    layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
    .addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()
        .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
        .addComponent(jLabel3)
        .addGap(154, 154, 154))
    .addGroup(layout.createSequentialGroup()
        .addGap(46, 46, 46)
        .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addComponent(jLabel2)
            .addComponent(jLabel1))
        .addGap(18, 18, 18)
        .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)
            .addComponent(user_id, javax.swing.GroupLayout.DEFAULT_SIZE, 212, Short.MAX_VALUE)
            .addComponent(password)
```

```
                .addGroup(layout.createSequentialGroup()
                    .addGap(11, 11, 11)
                    .addComponent(login_btn)))
            .addContainerGap(17, Short.MAX_VALUE))
        );
        layout.setVerticalGroup(
           layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(jLabel3)
                .addGap(23, 23, 23)
                .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                    .addComponent(user_id, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(jLabel1))
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
                .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                    .addComponent(password, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(jLabel2))
                .addGap(18, 18, 18)
                .addComponent(login_btn)
                .addContainerGap(10, Short.MAX_VALUE))
        );

        pack();
    }// </editor-fold>

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

```
    // TODO add your handling code here:
  }

  private void login_btnActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    try {
      System.setProperty("java.security.policy", "file:allowall.policy");

      Registry reg = LocateRegistry.getRegistry("localhost", 1099);
     FireRemoteInterface  fireRemoteInterface = (FireRemoteInterface)
Naming.lookup("AlaramServer");
     int userid = Integer.parseInt(user_id.getText());
     int pas = Integer.parseInt(password.getText());

      boolean checkLogin = fireRemoteInterface.login(userid,pas);


      if (checkLogin) {
        JOptionPane.showMessageDialog(null, "Successed Login");

        ClientHome clientHome = new ClientHome();
        clientHome.setVisible(true);
        dispose();

      }
      else{
        JOptionPane.showMessageDialog(null, "Failed Login");
      }
```

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

    /**
     * @param args the command line arguments
     */
    public static void main(String args[]) {
        /* Set the Nimbus look and feel */
        //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional) ">
        /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look and feel.
         * For details see http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
         */
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(DesktopClientLogin.class.getName()).log(java.util.logging.Level.SEVER
E, null, ex);
        } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(DesktopClientLogin.class.getName()).log(java.util.logging.Level.SEVER
E, null, ex);
```

```
        } catch (IllegalAccessException ex) {
java.util.logging.Logger.getLogger(DesktopClientLogin.class.getName()).log(java.util.logging.Level.SEVER
E, null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {
java.util.logging.Logger.getLogger(DesktopClientLogin.class.getName()).log(java.util.logging.Level.SEVER
E, null, ex);
        }
        //</editor-fold>

        /* Create and display the form */
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new DesktopClientLogin().setVisible(true);
            }
        });
    }

    // Variables declaration - do not modify
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel3;
    private javax.swing.JButton login_btn;
    private javax.swing.JPasswordField password;
    private javax.swing.JTextField user_id;
    // End of variables declaration
}
```

ClientHome.java

```
package desktopclient;

import MailService.MailService;
import firealaramserver.FireRemoteInterface;
import java.rmi.Naming;
import java.rmi.registry.LocateRegistry;
import java.rmi.registry.Registry;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.sql.Statement;
import java.util.List;
import java.util.ArrayList;
import java.util.Timer;
import java.util.TimerTask;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.swing.JOptionPane;

import javax.swing.table.DefaultTableModel;

/*
 * 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.
 */

/**
 *
 * @author mac
 */
public class ClientHome extends javax.swing.JFrame {

   /**
    * Creates new form ClientHome
    */



   public ClientHome() {

      initComponents();

       Timer timer = new Timer();
         int begin = 0;
         int timeInterval = 3000;
         timer.schedule(new TimerTask() {
            int counter = 0;
                @Override
               public void run() {
                   //call the method
                    display();
                      showTable();
```

```
            counter++;

        }
    }, begin, timeInterval);



}

/**
 * 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")
// <editor-fold defaultstate="collapsed" desc="Generated Code">
private void initComponents() {

    add_senser_btn = new javax.swing.JButton();
    jLabel1 = new javax.swing.JLabel();
    sensor_ID = new javax.swing.JTextField();
    jLabel2 = new javax.swing.JLabel();
    floor_number = new javax.swing.JTextField();
    jLabel3 = new javax.swing.JLabel();
    room_number = new javax.swing.JTextField();
    jLabel4 = new javax.swing.JLabel();
    jScrollPane2 = new javax.swing.JScrollPane();
```

```
Display = new javax.swing.JTable();
message_view_btn = new javax.swing.JButton();
edit_btn = new javax.swing.JButton();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

add_senser_btn.setText("Add Sensor");
add_senser_btn.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        add_senser_btnActionPerformed(evt);
    }
});

jLabel1.setText("Senser ID :");

jLabel2.setText("Floor Number :");

floor_number.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        floor_numberActionPerformed(evt);
    }
});

jLabel3.setText("Room Number :");

jLabel4.setFont(new java.awt.Font("Lucida Grande", 0, 24)); // NOI18N
jLabel4.setText("DASHBOARD");

Display.setModel(new javax.swing.table.DefaultTableModel(
```

```
    new Object [][] {

    },
    new String [] {
        "SensorID", "Floor Number", "Room Number", "CO2", "Smoke", "Status Alarm"
    }
));
jScrollPane2.setViewportView(Display);

message_view_btn.setText("Message View");
message_view_btn.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        message_view_btnActionPerformed(evt);
    }
});

edit_btn.setText("Edit Sensor Allocation ");
edit_btn.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        edit_btnActionPerformed(evt);
    }
});

javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
getContentPane().setLayout(layout);
layout.setHorizontalGroup(
    layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
    .addGroup(layout.createSequentialGroup()
        .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
```

```
            .addGroup(layout.createSequentialGroup()
                .addContainerGap()
                .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)
                    .addComponent(jScrollPane2, javax.swing.GroupLayout.PREFERRED_SIZE, 646, javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addGroup(layout.createSequentialGroup()
                        .addComponent(jLabel1)
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent(sensor_ID, javax.swing.GroupLayout.PREFERRED_SIZE, 75, javax.swing.GroupLayout.PREFERRED_SIZE)
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent(jLabel2)
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent(floor_number, javax.swing.GroupLayout.PREFERRED_SIZE, 75, javax.swing.GroupLayout.PREFERRED_SIZE)
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent(jLabel3)
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent(room_number, javax.swing.GroupLayout.PREFERRED_SIZE, 75, javax.swing.GroupLayout.PREFERRED_SIZE)
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent(add_senser_btn))))
            .addGroup(layout.createSequentialGroup()
                .addGap(237, 237, 237)
                .addComponent(jLabel4))
            .addGroup(layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(message_view_btn, javax.swing.GroupLayout.PREFERRED_SIZE, 646, javax.swing.GroupLayout.PREFERRED_SIZE))
            .addGroup(layout.createSequentialGroup()
```

```
                .addContainerGap()
                .addComponent(edit_btn, javax.swing.GroupLayout.PREFERRED_SIZE, 646,
javax.swing.GroupLayout.PREFERRED_SIZE)))
            .addContainerGap(16, Short.MAX_VALUE))
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()
                .addGap(18, 18, 18)
                .addComponent(jLabel4)
                .addGap(28, 28, 28)
                .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                    .addComponent(jLabel1)
                    .addComponent(sensor_ID, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(jLabel2)
                    .addComponent(floor_number, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(jLabel3)
                    .addComponent(room_number, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addComponent(add_senser_btn))
                .addGap(42, 42, 42)
                .addComponent(jScrollPane2, javax.swing.GroupLayout.PREFERRED_SIZE, 224,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(18, 18, 18)
                .addComponent(message_view_btn)
                .addGap(18, 18, 18)
                .addComponent(edit_btn)
                .addContainerGap(27, Short.MAX_VALUE))
```

```
        );


        pack();
    }// </editor-fold>
    List<SenserAssignModal> senserList = new ArrayList<>();
    private void add_senser_btnActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        int i = 0;
        int Al_Status;
        SenserDummy senserDummy = new SenserDummy();


        int SensorID = Integer.parseInt(sensor_ID.getText());
        int RoomNumber = Integer.parseInt(room_number.getText());
        int FloorNumber = Integer.parseInt(floor_number.getText());
        int CO2 = senserDummy.co2Level;
        int Smoke = senserDummy.smokeLevel;







        senserDummy.setSensorID(SensorID);
        Al_Status = senserDummy.getAlarmStatus();
        SenserAssignModal m = new SenserAssignModal(SensorID, RoomNumber, FloorNumber, CO2,
Smoke,Al_Status);
        senserList.add(m);
        DatabaseConnection(m);
```

```
    i++;



        for(SenserAssignModal s : senserList){
            System.out.println(s.AlarmStatus);
        }



    senserDummy.setVisible(true);
}

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

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

    MessageWindow messageWindow = new MessageWindow();
    messageWindow.setVisible(true);

}

private void edit_btnActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    EditWindow editWindow = new EditWindow();
    editWindow.setVisible(true);
}
```

```
public void display(){
   int len = getSen().size();
   ArrayList<SenserAssignModal> s = new ArrayList<>();
   s = getSen();

   for(SenserAssignModal k: getSen()){
      System.out.println(k.getCO2());
   }



}
public ArrayList<SenserAssignModal> getSen(){

   ArrayList<SenserAssignModal> sensorList = new ArrayList<>();
    Connection con = null;

   try {
      con = DriverManager.getConnection("jdbc:mysql://localhost/DBNEW", "root","root1234");
      Statement st = con.createStatement();




      String q = "SELECT * FROM alarm ";

      ResultSet res =st.executeQuery(q);

      SenserAssignModal modal;

      while(res.next()){
```

```
            modal = new SenserAssignModal(res.getInt("SensorID"), res.getInt("Room_Number"),
res.getInt("Floor_Number"), res.getInt("CO2"), res.getInt("Smoke"), res.getInt("Alarm_Status"));
            sensorList.add(modal);
        }

    } catch (SQLException ex) {
        Logger.getLogger(ClientHome.class.getName()).log(Level.SEVERE, null, ex);
    }
    return sensorList;
  }

  public void showTable(){
    ArrayList list = getSen();
    DefaultTableModel ms =(DefaultTableModel) Display.getModel();
    ms.setRowCount(0);
    Object row[] = new Object[6];
    String sta ;
    for(SenserAssignModal l : getSen()){
        if(l.getAlarmStatus()==0){
            sta="Deactive";
        }else{
            sta="Active";
        }

         row[0]=l.getSensorID();
        row[1]=l.getFloorNumber();
        row[2]=l.getRoomNumber();
        row[3]= l.getCO2();
        row[4]=l.getSmoke();
```

```
            row[5] = sta;
            ms.addRow(row);
        }









    }

    public void DatabaseConnection(SenserAssignModal m){
        Connection con = null;

        try {
            con = DriverManager.getConnection("jdbc:mysql://localhost/DBNEW", "root","root1234");
            Statement st = con.createStatement();

            String Insert = "INSERT INTO alarm"+
                    "(SensorID, Room_Number, Floor_Number, CO2, Smoke, Alarm_Status)"+

"values('"+m.SensorID+"','"+m.RoomNumber+"','"+m.FloorNumber+"','"+m.CO2+"','"+m.Smoke+"','"+m.
AlarmStatus+"')";
            st.execute(Insert);
            System.err.println("Insert Completed");
        } catch (SQLException ex) {
            Logger.getLogger(ClientHome.class.getName()).log(Level.SEVERE, null, ex);
        }
    }
```

```
    /**
     * @param args the command line arguments
     */
    public static void main(String args[]) {
        /* Set the Nimbus look and feel */
        //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional) ">
        /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look and feel.
         * For details see http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
         */


        //Connecting With Server Please add the external jar file first


        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(ClientHome.class.getName()).log(java.util.logging.Level.SEVERE, null,
ex);
        } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(ClientHome.class.getName()).log(java.util.logging.Level.SEVERE, null,
ex);
```

```
        } catch (IllegalAccessException ex) {
java.util.logging.Logger.getLogger(ClientHome.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {
java.util.logging.Logger.getLogger(ClientHome.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        }
        //</editor-fold>

        /* Create and display the form */
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {

                new ClientHome().setVisible(true);
            }
        });
    }

    // Variables declaration - do not modify
    private javax.swing.JTable Display;
    private javax.swing.JButton add_senser_btn;
    private javax.swing.JButton edit_btn;
    private javax.swing.JTextField floor_number;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel3;
```

```
    private javax.swing.JLabel jLabel4;
    private javax.swing.JScrollPane jScrollPane2;
    private javax.swing.JButton message_view_btn;
    private javax.swing.JTextField room_number;
    private javax.swing.JTextField sensor_ID;
    // End of variables declaration
}
```

EditWindow.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 desktopclient;

import java.sql.Connection;
import java.sql.DriverManager;
```

```
import java.sql.SQLException;
import java.sql.Statement;
import javax.swing.JOptionPane;

/**
 *
 * @author mac
 */
public class EditWindow extends javax.swing.JFrame {

    /**
     * Creates new form EditWindow
     */
    public EditWindow() {
        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")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void initComponents() {

        jPanel1 = new javax.swing.JPanel();
        jLabel1 = new javax.swing.JLabel();
        sensorI = new javax.swing.JTextField();
```

```
        jLabel2 = new javax.swing.JLabel();
        jLabel3 = new javax.swing.JLabel();
        room_num = new javax.swing.JTextField();
        jLabel4 = new javax.swing.JLabel();
        floor_nu = new javax.swing.JTextField();
        edit_btn = new javax.swing.JButton();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

        jPanel1.setBorder(javax.swing.BorderFactory.createEtchedBorder());

        jLabel1.setFont(new java.awt.Font("Lucida Grande", 1, 24)); // NOI18N
        jLabel1.setText("EDIT WINDOW");

        javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
        jPanel1.setLayout(jPanel1Layout);
        jPanel1Layout.setHorizontalGroup(
            jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel1Layout.createSequentialGroup()
                .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                .addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED_SIZE, 186,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(152, 152, 152))
        );
        jPanel1Layout.setVerticalGroup(
            jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addGap(16, 16, 16)
```

```
            .addComponent(jLabel1)
            .addContainerGap(34, Short.MAX_VALUE))
        );

        jLabel2.setText("Sensor ID :");

        jLabel3.setText("Room Number :");

        jLabel4.setText("Floor Number :");

        edit_btn.setText("Edit");
        edit_btn.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                edit_btnActionPerformed(evt);
            }
        });

        javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)
            .addGroup(layout.createSequentialGroup()
                .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addGroup(layout.createSequentialGroup()
                        .addGap(17, 17, 17)
                        .addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
                    .addGroup(layout.createSequentialGroup()
                        .addGap(18, 18, 18)
```

```
                .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addComponent(edit_btn, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                    .addGroup(layout.createSequentialGroup()
                        .addComponent(jLabel2, javax.swing.GroupLayout.PREFERRED_SIZE, 78,
javax.swing.GroupLayout.PREFERRED_SIZE)
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent(sensorI, javax.swing.GroupLayout.PREFERRED_SIZE, 70,
javax.swing.GroupLayout.PREFERRED_SIZE)
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent(jLabel3)
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
                        .addComponent(room_num, javax.swing.GroupLayout.PREFERRED_SIZE, 70,
javax.swing.GroupLayout.PREFERRED_SIZE)
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent(jLabel4)
                        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                        .addComponent(floor_nu, javax.swing.GroupLayout.PREFERRED_SIZE, 70,
javax.swing.GroupLayout.PREFERRED_SIZE)
                        .addGap(0, 15, Short.MAX_VALUE)))))
            .addContainerGap())
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(18, 18, 18)
                .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
```

```
                .addComponent(sensorI, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(jLabel2)
                .addComponent(jLabel3)
                .addComponent(room_num, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(jLabel4)
                .addComponent(floor_nu, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 30,
Short.MAX_VALUE)
            .addComponent(edit_btn)
            .addGap(22, 22, 22))
        );

        pack();
    }// </editor-fold>

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

        edit(Integer.parseInt(sensorI.getText()));
        JOptionPane.showMessageDialog(null, "Successed Updated");
        dispose();
    }

     public void edit(int senID){

        int room = Integer.parseInt(room_num.getText());
```

```
    int floor = Integer.parseInt(floor_nu.getText());
     String jdbcUrl = "jdbc:mysql://localhost:3306/DBNEW";
   String username = "root";
   String password = "root1234";

   String sql = "UPDATE  alarm SET Room_Number='"+room+"',Floor_Number ='"+floor+"' where
SensorID ='"+senID+"'";

   try (Connection conn = DriverManager.getConnection(jdbcUrl, username, password);
     Statement stmt = conn.createStatement();) {

    stmt.executeUpdate(sql);
    System.out.println("Record Updated successfully");
   } catch (SQLException e) {
    e.printStackTrace();
   }
    }
   /**
    * @param args the command line arguments
    */
   public static void main(String args[]) {
     /* Set the Nimbus look and feel */
     //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional) ">
     /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look and feel.
      * For details see http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
      */
     try {
```

```
        for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
            if ("Nimbus".equals(info.getName())) {
                javax.swing.UIManager.setLookAndFeel(info.getClassName());
                break;
            }
        }
    } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(EditWindow.class.getName()).log(java.util.logging.Level.SEVERE, null,
ex);
    } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(EditWindow.class.getName()).log(java.util.logging.Level.SEVERE, null,
ex);
    } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(EditWindow.class.getName()).log(java.util.logging.Level.SEVERE, null,
ex);
    } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(EditWindow.class.getName()).log(java.util.logging.Level.SEVERE, null,
ex);
    }
    //</editor-fold>

    /* Create and display the form */
    java.awt.EventQueue.invokeLater(new Runnable() {
        public void run() {
            new EditWindow().setVisible(true);
        }
    });
```

```
    }

    // Variables declaration - do not modify
    private javax.swing.JButton edit_btn;
    private javax.swing.JTextField floor_nu;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel3;
    private javax.swing.JLabel jLabel4;
    private javax.swing.JPanel jPanel1;
    private javax.swing.JTextField room_num;
    private javax.swing.JTextField sensorI;
    // End of variables declaration
}
```

MessageWindow.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 desktopclient;

import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
```

```
import java.sql.SQLException;
import java.sql.Statement;
import java.util.ArrayList;
import java.util.Timer;
import java.util.TimerTask;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.swing.table.DefaultTableModel;

/**
 *
 * @author mac
 */
public class MessageWindow extends javax.swing.JFrame {

    /**
     * Creates new form MessageWindow
     */
    public MessageWindow() {
        initComponents();

        Timer timer = new Timer();
            int begin = 0;
            int timeInterval = 3000;
            timer.schedule(new TimerTask() {
                int counter = 0;
                    @Override
                    public void run() {
                        //call the method
```

```
                showTableMessage();



            counter++;

        }
    }, begin, timeInterval);
}


 public ArrayList<SenserAssignModal> getSenMessage(){

   ArrayList<SenserAssignModal> SenMessageArrayList = new ArrayList<>();
    Connection con = null;

   try {
      con = DriverManager.getConnection("jdbc:mysql://localhost/DBNEW", "root","root1234");
      Statement st = con.createStatement();



      String q = "SELECT * FROM alarm ";

      ResultSet res =st.executeQuery(q);

      SenserAssignModal modal;
```

```
        while(res.next()){
            modal = new SenserAssignModal(res.getInt("SensorID"), res.getInt("Room_Number"),
res.getInt("Floor_Number"), res.getInt("CO2"), res.getInt("Smoke"), res.getInt("Alarm_Status"));
            if(res.getInt("Alarm_Status") == 1){
            SenMessageArrayList.add(modal);
            }
        }

    } catch (SQLException ex) {
        Logger.getLogger(ClientHome.class.getName()).log(Level.SEVERE, null, ex);
    }
    return SenMessageArrayList;
  }

   public void showTableMessage(){
    ArrayList list = getSenMessage();
    DefaultTableModel ms =(DefaultTableModel) MessageDisplay.getModel();
    ms.setRowCount(0);
    Object row[] = new Object[3];
    String sta ;
    int i =1;
    for(SenserAssignModal l : getSenMessage()){

        row[0]= i;
        row[1]=l.getSensorID();
       row[2]="Alarm Activated.. Floor: "+l.getFloorNumber()+" Room: "+l.getRoomNumber();

       ms.addRow(row);
       i++;
```

```
    }
    }


    /**
     * 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")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void initComponents() {

        jLabel1 = new javax.swing.JLabel();
        jPanel1 = new javax.swing.JPanel();
        jScrollPane1 = new javax.swing.JScrollPane();
        MessageDisplay = new javax.swing.JTable();
        close_btn = new javax.swing.JButton();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

        jLabel1.setFont(new java.awt.Font("Lucida Grande", 0, 24)); // NOI18N
        jLabel1.setText("Messages");

        jPanel1.setBorder(javax.swing.BorderFactory.createEtchedBorder());

        MessageDisplay.setBorder(javax.swing.BorderFactory.createLineBorder(new java.awt.Color(0, 0,
0)));
        MessageDisplay.setForeground(new java.awt.Color(255, 0, 0));
```

```
        MessageDisplay.setModel(new javax.swing.table.DefaultTableModel(
            new Object [][] {

            },
            new String [] {
                "Message ID", "Senser ID", "Messages"
            }
        ) {
            boolean[] canEdit = new boolean [] {
                false, true, true
            };

            public boolean isCellEditable(int rowIndex, int columnIndex) {
                return canEdit [columnIndex];
            }
        });
        jScrollPane1.setViewportView(MessageDisplay);
        if (MessageDisplay.getColumnModel().getColumnCount() > 0) {
            MessageDisplay.getColumnModel().getColumn(0).setMaxWidth(80);
            MessageDisplay.getColumnModel().getColumn(1).setMaxWidth(80);
        }

        javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
        jPanel1.setLayout(jPanel1Layout);
        jPanel1Layout.setHorizontalGroup(
            jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel1Layout.createSequentialGroup()
                .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
```

```
            .addComponent(jScrollPane1, javax.swing.GroupLayout.PREFERRED_SIZE, 375,
javax.swing.GroupLayout.PREFERRED_SIZE)
            .addContainerGap())
        );
        jPanel1Layout.setVerticalGroup(
            jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addComponent(jScrollPane1, javax.swing.GroupLayout.PREFERRED_SIZE, 248,
javax.swing.GroupLayout.PREFERRED_SIZE)
        );

        close_btn.setText("Close");
        close_btn.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                close_btnActionPerformed(evt);
            }
        });

        javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addGap(134, 134, 134)
                .addComponent(jLabel1)
                .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()
                .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)
                    .addGroup(layout.createSequentialGroup()
```

```
                .addGap(6, 6, 6)
                .addComponent(close_btn, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
            .addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
            .addGap(14, 14, 14))
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(jLabel1)
                .addGap(18, 18, 18)
                .addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                .addComponent(close_btn)
                .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
        );

        pack();
    }// </editor-fold>

    private void close_btnActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        dispose();
    }

    /**
     * @param args the command line arguments
```

```
    */
    public static void main(String args[]) {
        /* Set the Nimbus look and feel */
        //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional) ">
        /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look and feel.
         * For details see http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
         */
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(MessageWindow.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
        } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(MessageWindow.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
        } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(MessageWindow.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(MessageWindow.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
        }
```

```
        //</editor-fold>

        /* Create and display the form */
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new MessageWindow().setVisible(true);
            }
        });
    }

    // Variables declaration - do not modify
    private javax.swing.JTable MessageDisplay;
    private javax.swing.JButton close_btn;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JPanel jPanel1;
    private javax.swing.JScrollPane jScrollPane1;
    // End of variables declaration
}
```

SenserAssignModal.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 desktopclient;
```

```
/**
 *
 * @author mac
 */
public class SenserAssignModal {

    public int SensorID;
    public int RoomNumber;
    public int FloorNumber;
    public int CO2;
    public int Smoke;
    public int AlarmStatus;

    public SenserAssignModal(int SensorID, int RoomNumber, int FloorNumber, int CO2, int Smoke, int
AlarmStatus) {
        this.SensorID = SensorID;
        this.RoomNumber = RoomNumber;
        this.FloorNumber = FloorNumber;
        this.CO2 = CO2;
        this.Smoke = Smoke;
        this.AlarmStatus = AlarmStatus;
    }

    public int getAlarmStatus() {
        return AlarmStatus;
    }

    public void setAlarmStatus(int AlarmStatus) {
```

```
    this.AlarmStatus = AlarmStatus;
}



public int getSensorID() {
    return SensorID;
}

public void setSensorID(int SensorID) {
    this.SensorID = SensorID;
}

public int getRoomNumber() {
    return RoomNumber;
}

public void setRoomNumber(int RoomNumber) {
    this.RoomNumber = RoomNumber;
}

public int getFloorNumber() {
    return FloorNumber;
}

public void setFloorNumber(int FloorNumber) {
    this.FloorNumber = FloorNumber;
}
```

```
    public int getCO2() {
        return CO2;
    }

    public void setCO2(int CO2) {
        this.CO2 = CO2;
    }

    public int getSmoke() {
        return Smoke;
    }

    public void setSmoke(int Smoke) {
        this.Smoke = Smoke;
    }


}
```

SenserDummy.java

```
package desktopclient;



import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;
import java.sql.Statement;
import java.util.Random;
import java.util.Timer;
import java.util.TimerTask;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.swing.JOptionPane;

/*
 * 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.
 */

/**
 *
 * @author mac
 */
public class SenserDummy extends javax.swing.JFrame {

    /**
     * Creates new form SenserDummy
```

```
 */
public SenserDummy() {
   initComponents();



      Timer timer = new Timer();
      int begin = 0;
      int timeInterval = 5000;
      timer.schedule(new TimerTask() {
         int counter = 0;
            @Override
            public void run() {
               //call the method
               co2.setText(String.valueOf(GetRandamNumberCO2()));
               smoke.setText(String.valueOf(GetRandamNumberSmoke()));


            counter++;


         }
      }, begin, timeInterval);
}


/**
 * 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")
// <editor-fold defaultstate="collapsed" desc="Generated Code">
```

```
private void initComponents() {

    lebal1 = new javax.swing.JLabel();
    jLabel2 = new javax.swing.JLabel();
    jLabel1 = new javax.swing.JLabel();
    smoke = new javax.swing.JLabel();
    co2 = new javax.swing.JLabel();
    connect_btn = new javax.swing.JButton();
    check = new javax.swing.JButton();

    setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

    lebal1.setFont(new java.awt.Font("Lucida Grande", 0, 18)); // NOI18N
    lebal1.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
    lebal1.setText("Smoke Level :");

    jLabel2.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
    jLabel2.setText("Dummy Senser");

    jLabel1.setFont(new java.awt.Font("Lucida Grande", 0, 18)); // NOI18N
    jLabel1.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
    jLabel1.setText("CO2 Level:");

    smoke.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
    smoke.setText("00");

    co2.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
    co2.setText("00");
```

```
        connect_btn.setText("Connect");
        connect_btn.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                connect_btnActionPerformed(evt);
            }
        });

        check.setForeground(new java.awt.Color(255, 51, 51));
        check.setText("Close");
        check.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                checkActionPerformed(evt);
            }
        });

        javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addComponent(lebal1, javax.swing.GroupLayout.DEFAULT_SIZE, 236, Short.MAX_VALUE)
                    .addComponent(jLabel1, javax.swing.GroupLayout.Alignment.TRAILING,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                    .addComponent(smoke, javax.swing.GroupLayout.Alignment.TRAILING,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                    .addGroup(layout.createSequentialGroup()
                        .addContainerGap()
                        .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
```

```
                .addComponent(jLabel2, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

                .addComponent(co2, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

                .addComponent(connect_btn, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

                .addComponent(check, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))))

            .addContainerGap())

        );

        layout.setVerticalGroup(

           layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

           .addGroup(layout.createSequentialGroup()

              .addGap(40, 40, 40)

              .addComponent(jLabel2)

              .addGap(18, 18, 18)

              .addComponent(lebal1, javax.swing.GroupLayout.PREFERRED_SIZE, 48,
javax.swing.GroupLayout.PREFERRED_SIZE)

              .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)

              .addComponent(smoke)

              .addGap(12, 12, 12)

              .addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED_SIZE, 40,
javax.swing.GroupLayout.PREFERRED_SIZE)

              .addGap(18, 18, 18)

              .addComponent(co2)

              .addGap(18, 18, 18)

              .addComponent(connect_btn)

              .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)

              .addComponent(check)

              .addContainerGap(57, Short.MAX_VALUE))

        );
```

```
    pack();
}// </editor-fold>

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

    JOptionPane.showMessageDialog(null, "Connected");
     //Sensers s = Sensers.getInstenceSenser();
    Timer timer = new Timer();
        int begin = 0;
        int timeInterval = 2000;
        timer.schedule(new TimerTask() {
            int counter = 0;
                @Override
                public void run() {
                    //call the method
                //  SenserModal senserModal = new SenserModal(11, co2Level, smokeLevel);
                  UpdateSenser(sensorID);
                   // s.setSenser(senserModal);
                   // s.printSenser();
                counter++;

            }
        }, begin, timeInterval);



}
```

```
private void checkActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    System.err.println(sensorID);
    delete(sensorID);
    dispose();
}

/**
 * @param args the command line arguments
 *
 *
 */

int smokeLevel ;
int co2Level ;
int sensorID;
int Alarm_Stat;

public int GetRandamNumberSmoke(){
    Random rand = new Random();
    smokeLevel =rand.nextInt(10);

    return smokeLevel;
}

 public int GetRandamNumberCO2(){
    Random rand = new Random();
```

```
    co2Level = rand.nextInt(10);
    return co2Level;
  }

  public void setSensorID(int id){
     this.sensorID = id;
  }

  public int getCO2(){
     return co2Level;
  }

  public int getSmoke(){
     return smokeLevel;
  }

  public int getSenserID(){
     return sensorID;
  }

  public int getAlarmStatus(){
     if(co2Level>5 || smokeLevel>5){
        Alarm_Stat = 1;
     }
     else{
        Alarm_Stat = 0;
     }
     return Alarm_Stat;
  }
```

```
    public void UpdateSenser(int id){
        Connection con = null;

       try {
          con = DriverManager.getConnection("jdbc:mysql://localhost/DBNEW", "root","root1234");
          Statement st = con.createStatement();




          String Update = "UPDATE  alarm SET CO2='"+co2Level+"',Smoke ='"+smokeLevel+"',Alarm_Status
='"+getAlarmStatus()+"' where SensorID ='"+id+"'";


          st.execute(Update);
          System.err.println("Update Completed");
       } catch (SQLException ex) {
          Logger.getLogger(ClientHome.class.getName()).log(Level.SEVERE, null, ex);
       }
    }


    public void delete(int senID){
        String jdbcUrl = "jdbc:mysql://localhost:3306/DBNEW";
   String username = "root";
   String password = "root1234";
   String sql = "delete from alarm where SensorID='"+senID+"'";

   try (Connection conn = DriverManager.getConnection(jdbcUrl, username, password);
       Statement stmt = conn.createStatement();) {
```

```
     stmt.executeUpdate(sql);
     System.out.println("Record deleted successfully");
    } catch (SQLException e) {
     e.printStackTrace();
    }
     }

    public static void main(String args[]) {
       /* Set the Nimbus look and feel */
       //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional) ">
       /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look and feel.
        * For details see http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
        */

       try {
          for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
             if ("Nimbus".equals(info.getName())) {
                javax.swing.UIManager.setLookAndFeel(info.getClassName());
                break;
             }
          }
       } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(SenserDummy.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
       } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(SenserDummy.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
```

```
        } catch (IllegalAccessException ex) {
java.util.logging.Logger.getLogger(SenserDummy.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {
java.util.logging.Logger.getLogger(SenserDummy.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
        }
        //</editor-fold>

        /* Create and display the form */
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new SenserDummy().setVisible(true);


            }
        });
    }

    // Variables declaration - do not modify
    private javax.swing.JButton check;
    private javax.swing.JLabel co2;
    private javax.swing.JButton connect_btn;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel lebal1;
    private javax.swing.JLabel smoke;
    // End of variables declaration
```

}

RMI Fire Alarm Server

FireAlaramServer.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 firealaramserver;




import java.rmi.RemoteException;
import java.rmi.registry.LocateRegistry;
import java.rmi.registry.Registry;
import java.util.List;
import java.util.Timer;
import java.util.TimerTask;



/**
 *
```

```
 * @author mac
 */
public class FireAlaramServer {

    /**
     * @param args the command line arguments
     */
    public static void main(String[] args) {
        try {
            // TODO code application logic here



            FireRemoteImplememts implememts = new FireRemoteImplememts();
            Registry reg = LocateRegistry.createRegistry(1099);
            reg.rebind("AlaramServer", new FireRemoteImplememts());
            System.out.println("Alaram Server ready");




            Timer timer = new Timer();
            int begin = 0;
            int timeInterval = 1000;
            timer.schedule(new TimerTask() {
                int counter = 0;
                    @Override
                    public void run() {
                        //call the method
```

```
                System.out.println(implememts.getSenList());

            counter++;

          }
        }, begin, timeInterval);

      } catch (RemoteException ex) {
        System.out.println(ex);
      }
  }

}
```

FireRemoteInterface.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 firealaramserver;

import java.rmi.Remote;
import java.rmi.RemoteException;
import java.util.ArrayList;
import java.util.List;
```

```
/**
 *
 * @author mac
 */
public interface FireRemoteInterface extends Remote{

   public boolean login(int userID , int password) throws RemoteException;
   public void setSenseorArray(ArrayList list) throws RemoteException;

}
```

FireRemoteImplememts.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 firealaramserver;

import java.rmi.RemoteException;
import java.rmi.server.UnicastRemoteObject;
import java.util.ArrayList;
import java.util.List;

/**
 *
 * @author mac
```

```
 */
public class FireRemoteImplememts extends UnicastRemoteObject implements FireRemoteInterface{

   ArrayList<Object> senList = new ArrayList<>();

   public FireRemoteImplememts() throws RemoteException{
      super();
   }

   @Override
   public boolean login(int userID, int password) {
      try {
         if (userID == 1234 && password == 1234) {

         return true;
      }

      } catch (Exception e) {
         System.out.println(e);
      }

      return false;

   }

   @Override
   public void setSenseorArray(ArrayList list) throws RemoteException {
         senList = list;
   }
```

```
    public List getSenList(){
        return  senList;
    }


}
```

RESTAPI

SensorModal.java

```
import javax.persistence.Entity;
import javax.persistence.Id;
import javax.persistence.Table;

@Entity
@Table(name = "alarm")
public class SensorModal {
    @Id
    private int SensorID;
    private int Room_Number;
    private int Floor_Number;
    private int CO2;
    private int Smoke;
```

```
    private int Alarm_Status;



    public SensorModal() {
    }

    public SensorModal(int SensorID, int Room_Number,int Floor_Number,int CO2,int Smoke,int
Alarm_Status) {
        this.SensorID =SensorID;
        this.Room_Number =Room_Number;
        this.Floor_Number =Floor_Number;
        this.CO2 =CO2;
        this.Smoke =Smoke;
        this.Alarm_Status =Alarm_Status;
    }

    public int getSensorID() {
        return SensorID;
    }

    public void setSensorID(int sensorID) {
        SensorID = sensorID;
    }

    public int getRoom_Number() {
        return Room_Number;
    }

    public void setRoom_Number(int room_Number) {
```

```
    Room_Number = room_Number;
}

public int getFloor_Number() {
    return Floor_Number;
}

public void setFloor_Number(int floor_Number) {
    Floor_Number = floor_Number;
}

public int getCO2() {
    return CO2;
}

public void setCO2(int CO2) {
    this.CO2 = CO2;
}

public int getSmoke() {
    return Smoke;
}

public void setSmoke(int smoke) {
    Smoke = smoke;
}

public int getAlarm_Status() {
    return Alarm_Status;
```

```
    }

    public void setAlarm_Status(int alarm_Status) {
        Alarm_Status = alarm_Status;
    }

    @Override
    public String toString() {
        return "SensorModal{" +
                "SensorID=" + SensorID +
                ", Room_Number=" + Room_Number +
                ", Floor_Number=" + Floor_Number +
                ", CO2=" + CO2 +
                ", Smoke=" + Smoke +
                ", Alarm_Status=" + Alarm_Status +
                '}';
    }
}
```

SensorCountroller.java

```
package com.ds.api;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.web.bind.annotation.CrossOrigin;
import org.springframework.web.bind.annotation.GetMapping;
import org.springframework.web.bind.annotation.RestController;
```

```
import java.util.ArrayList;
import java.util.List;

@CrossOrigin

@RestController
public class SensorController {

    @Autowired
    SensorRepository sensorRepository;

    @GetMapping("rest/api/AllDetails")
    public List getAllDetails(){
        List<SensorModal> s = new ArrayList<>();
        return sensorRepository.findAll();
    }


}
```

SensorRepositry.java

```
package com.ds.api;


import org.springframework.data.jpa.repository.JpaRepository;
import org.springframework.data.repository.CrudRepository;
import org.springframework.stereotype.Repository;

@Repository
public interface SensorRepository extends JpaRepository<SensorModal, Integer> {

}
```

FireAlaramWeb

DashBoard.js

```
import React, {Component} from 'react';
import '../CSS/DashBoard.css'
import Card from "./Card";

class DashBoard extends Component {
   constructor(props) {
      super(props);
      this.state ={
            sensors : [],
            isLoaded: false
```

```
    }
}
componentDidMount() {
    try {
        setInterval(async () =>{
            fetch('http://localhost:8080/rest/api/AllDetails')
                .then(res => res.json())
                .then(json =>{
                    this.setState({

                        sensors : json,

                    })
                })
        },3000)

    }
    catch (e) {

    }
}

render() {

    var { sensors} = this.state;
        return (
            <div>
                <div className='jumbotron '>
                    <div className="heading">FIRE ALARM DASHBOARD</div>
```

```
            </div>
            <hr/>
            <div className="container">
              <div className="row">

                {console.log(sensors)}
                {sensors.map(s =>(

                  <div className="col-3 cardGap">
                    <Card CO2 ={s.co2}
                      Smoke ={s.smoke}
                      k ={s.alarm_Status}
                      key ={s.sensorID}
                      roomNumber ={s.room_Number}
                      floorNumber ={s.floor_Number}

                    ></Card>
                  </div>
                ))}

              </div>
            </div>
          </div>
        );
      }
}

export default DashBoard;
```

Card.js

```
import React, {Component} from 'react';
import '../CSS/Card.css'

class Card extends Component {

  constructor() {
    super();
    this.state ={
      status : true,
      co :0
    }
  }

  componentDidMount() {
    this.setState({
      // eslint-disable-next-line no-undef
      status:this.props.k,
    })
  }
  render() {
```

```
    return (
      <div>
        <div className='card cardText'>
          <div className='card-header cardheader'>{this.props.floorNumber}F-
{this.props.roomNumber}R</div>
          <div className='card-body '>
            <table>
              <tbody>
              <tr><td><h6>CO2 Level :{this.props.CO2}</h6></td>
              </tr>
              <tr><td> <h6>Smoke Level :</h6></td>
                <td><h6>{this.props.Smoke}</h6></td>
              </tr>
              <tr><td><h6>Room Number :</h6></td>
                <td><h6>{this.props.roomNumber}</h6></td>
              </tr>
              <tr><td><h6>Floor Number :</h6></td>
                <td><h6>{this.props.floorNumber}</h6></td>
              </tr>
              </tbody>
            </table>
          </div>
          <div className="card-footer footerText">
Status:<span className={this.props.k ? "text-danger":"text-success"} >{this.props.k ? " Active":"
Deactivate"}</span>
          </div>

        </div>
```

```
            </div>
        );
    }



}

export default Card;
```