

**FIRE ALARM MONITORING SYSTEM**

**DS-Assignment 2**

**Year 3 Semester 1 | Group 9.2**

**Rest API**

**Report**

**Submitted by:**

|  |  |
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**Table of contents**

1. **Introduction………………………………………………………………………………………………………….03**
2. **High level Architecture………………………………………………………………………………………….04**
3. **Workflow diagram…………………………………………………………………………………………………**
4. **Appendix**
   1. **Web Client**
   2. **Navigation Bar**
   3. **App.js**
   4. **Desktop Application**
   5. **Login GUI**
   6. **Desktop Application Update Sensor**
   7. **Room Details Model Class**
   8. **Desktop Application Delete Sensor**
   9. **Fire Login**
   10. **Login Impl**
   11. **LoginInter**
   12. **Login Server**
   13. **Fire AlarmFire alarm**
   14. **Screenshots**

**1 Introduction**

This report is about developing a fire alarm monitoring system. This system contains a web application where users can view the information of the fire alarms sensors. The information includes the status, the location, the smoke level (1-10), and CO2 level(1-10) of the fire alarm. If the smoke level or CO2 level is above 5, system displays that information in red color. In web application sensor details get updated every 40 seconds.

This system also contains a desktop client application. This is designed for the administrators. Administrators must go through the login process at first line in the desktop client application. New administrators can also be registered by signup process. Once they have logged in they can see the same information which is displayed in the web client application. But inhere sensor details get updated every 30 seconds. Administrators can add new fire alarms by providing the needed information. In desktop client application, an alert will get displayed when CO2 level or Smoke level moves to a value greater than 5 for any sensor.

**1.Website**

We have used ReactJs for frontend. Axios library to send HTTP requests to the REST service.

**2.REST API**

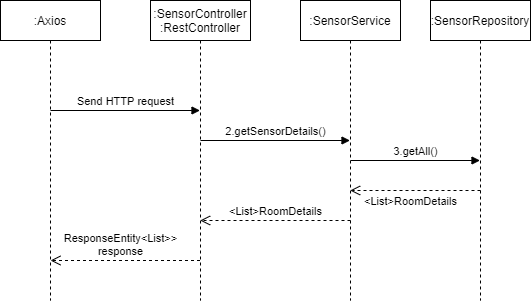
This implementation done using Spring boot framework with Java.

**3.Database**

We have used MySQL for database.

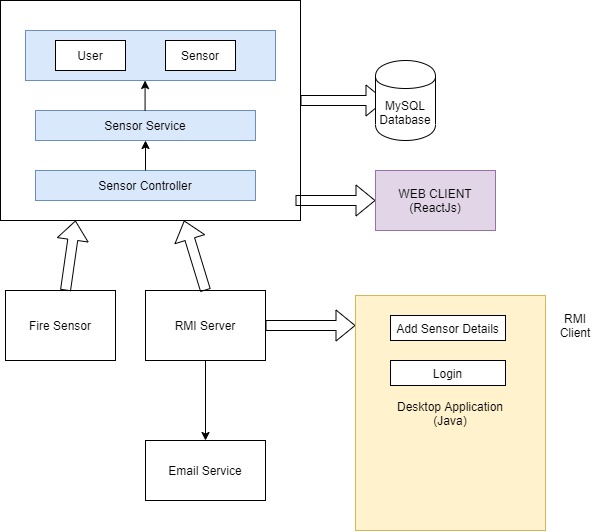
**4. Desktop Application**

Implemented GUI using Java Netbeans platform.

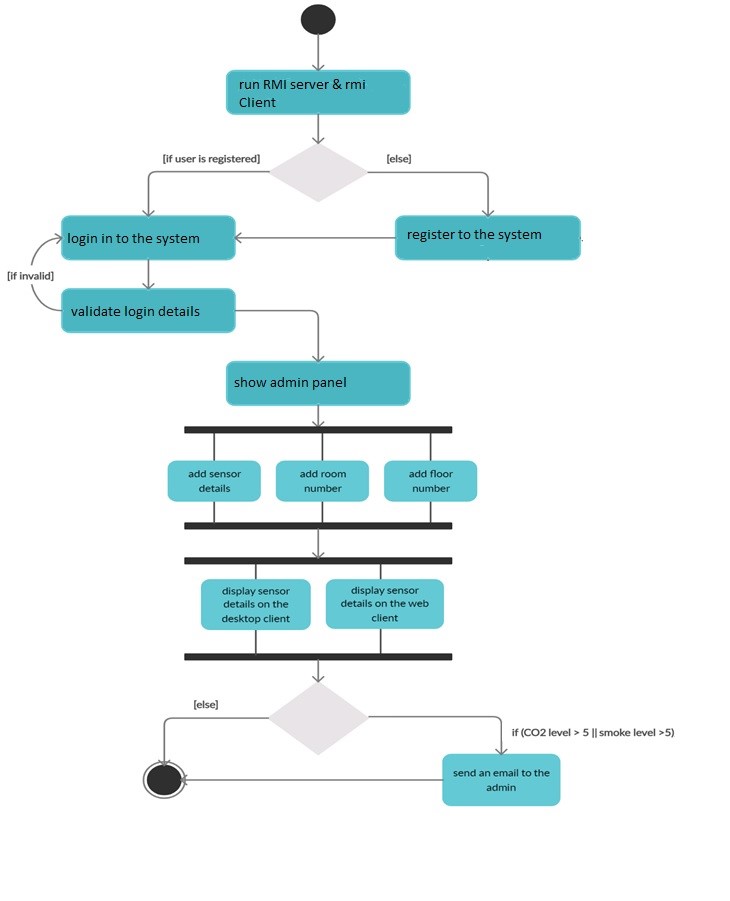


**2.Architecture**

All of the functionality is provided as a set of a API requests/responses. This allows us to modify the internal mechanisms without changing the frontend too much.



**3.Workflow diagram**



**4.Appendix**

**4.1 Web Client**

**import** React **from 'react'**;  
**import** {Button, Card, Table} **from 'react-bootstrap'**;  
  
  
**import** axios **from 'axios'**;  
**class** SensorStatusList **extends** React.Component{  
 constructor(props){  
 **super**(props);  
 **this**.**state**={  
 **sensorstatuses**:[],  
 };  
 }  
  
  
  
  
 componentDidMount(){  
 **this**.getinfo();  
  
  
 }  
getinfo(){  
 axios.get(**"http://localhost:8080/rest/firealarm/all"**)  
 .then(response => response.data)  
 .then((data) => {  
 **this**.setState({sensorstatuses : data});  
 });  
}  
  
  
 render() {  
 **return**(  
 <**Card className="border border-dark bg-dark text-white"**>  
 <**Card.Header**>  
 FIRE ALARM CURRENT STATUS  
 </**Card.Header**>  
 <**Card.Body**>  
 <**Table striped bordered hover variant="dark" aria-colspan="3"**>  
 <**thead**>  
 <**tr**>  
 <**th colSpan="1"**>ID</**th**>  
 <**th colSpan="1"**>Floor</**th**>  
 <**th colSpan="1"**>Room</**th**>  
 <**th colSpan="1"**>CO2</**th**>  
 <**th colSpan="1"**>Smoke</**th**>  
 <**th colSpan="1"**>Status</**th**>  
 </**tr**>  
 </**thead**>  
 <**tbody**>{  
 **this**.state.sensorstatuses.map((sensorstatus)=>  
 <**tr key=**{sensorstatus.id}>  
 <**td colSpan="1"**>{sensorstatus.id}</**td**>  
 <**td colSpan="1"**>{sensorstatus.floor}</**td**>  
 <**td colSpan="1"**>{sensorstatus.room}</**td**>  
 <**td colSpan="1"**><**Button variant="primary" className=**{sensorstatus.co2 >5 ?**"btn btn-block btn-danger mt-3"**:**"btn btn-block btn-warning mt-3"**}>{sensorstatus.co2}</**Button**></**td**>  
 <**td colSpan="1"**><**Button variant="primary" className=**{sensorstatus.smoke >5 ?**"btn btn-block btn-danger mt-3"**:**"btn btn-block btn-warning mt-3"**}>{sensorstatus.smoke}</**Button**></**td**>  
 <**td colSpan="1"**>{sensorstatus.status}</**td**>  
 </**tr**>  
 )  
  
 }  
 </**tbody**>  
 </**Table**>  
 </**Card.Body**>  
  
 </**Card**>  
 ) }  
}  
**export default** SensorStatusList;

**4.2 Navigation bar**

**import** React **from 'react'  
import** {Navbar,Nav} **from 'react-bootstrap'**;  
  
**class** Navigationbar **extends** React.Component{  
 render() {**return**(  
 <**Navbar bg="dark" variant="dark"**>  
  
  
 <**h3 className="text-white"**> SENSOR STATUS</**h3**>  
  
  
 </**Navbar**>  
 ) }  
  
}  
  
**export default** Navigationbar;

**4.3 App.js**

**import** React **from 'react'**;  
**import** logo **from './logo.svg'**;  
**import './App.css'**;  
**import** SensorStatusList **from "./List/SensorStatusList"**;  
**import** Navigationbar **from "./List/Navbar"**;  
  
**function** *App*() {  
 **return** (  
 <**div className="App"**>  
 <**Navigationbar**></**Navigationbar**>  
 <**SensorStatusList**></**SensorStatusList**>  
  
 </**div**>  
 );  
}  
  
**export default** *App*;

**4.4 Desktop Client**

/\*

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\* and open the template in the editor.

\*/

package desktopclient;

/\*\*

\*

\* @author Microsoft

\*/

public class DesktopClient {

/\*\*

\* @param args the command line arguments

\*/

public static void main(String[] args) {

// TODO code application logic here

}

}

**4.5 Login GUI**

/\*

/\*

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\* and open the template in the editor.

\*/

package desktopclient;

import ClientHome.Home;

import java.rmi.Naming;

import java.rmi.registry.LocateRegistry;

import java.rmi.registry.Registry;

import firelogin.LoginInter;

import javax.swing.JOptionPane;

/\*\*

\*

\* @author Microsoft

\*/

public class LogClient extends javax.swing.JFrame {

/\*\*

\* Creates new form LogClient

\*/

public LogClient() {

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">//GEN-BEGIN:initComponents

private void initComponents() {

jLabel1 = new javax.swing.JLabel();

jLabel2 = new javax.swing.JLabel();

jLabel3 = new javax.swing.JLabel();

jTextField1 = new javax.swing.JTextField();

jPasswordField1 = new javax.swing.JPasswordField();

jButton1 = new javax.swing.JButton();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT\_ON\_CLOSE);

jLabel1.setText("LOGIN FORM");

jLabel2.setText("Username");

jLabel3.setText("Password");

jTextField1.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

jTextField1ActionPerformed(evt);

}

});

jButton1.setText("LOG IN");

jButton1.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

jButton1ActionPerformed(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(138, 138, 138)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)

.addComponent(jLabel3)

.addComponent(jLabel2))

.addGap(98, 98, 98)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)

.addComponent(jLabel1)

.addComponent(jTextField1, javax.swing.GroupLayout.DEFAULT\_SIZE, 107, Short.MAX\_VALUE)

.addComponent(jPasswordField1))

.addContainerGap(183, Short.MAX\_VALUE))

.addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()

.addContainerGap(javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(jButton1)

.addGap(80, 80, 80))

);

layout.setVerticalGroup(

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

.addGroup(layout.createSequentialGroup()

.addGap(33, 33, 33)

.addComponent(jLabel1)

.addGap(33, 33, 33)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

.addComponent(jLabel2)

.addComponent(jTextField1, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addGap(28, 28, 28)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

.addComponent(jLabel3)

.addComponent(jPasswordField1, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 47, Short.MAX\_VALUE)

.addComponent(jButton1)

.addGap(38, 38, 38))

);

pack();

}// </editor-fold>//GEN-END:initComponents

private void jTextField1ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event\_jTextField1ActionPerformed

// TODO add your handling code here:

}//GEN-LAST:event\_jTextField1ActionPerformed

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event\_jButton1ActionPerformed

// TODO add your handling code here:

try{

System.setProperty("java.security.policy", "file:allowall.policy");

Registry reg=LocateRegistry.getRegistry("127.0.0.1",1099);

LoginInter li=(LoginInter)Naming.lookup("login");

int username=Integer.parseInt(jTextField1.getText());

int password=Integer.parseInt(jPasswordField1.getText());

boolean result =li.getlogin(username, password);

if(result){

JOptionPane.showMessageDialog(null, "Success");

Home home = new Home();

home.setVisible(true);

dispose();

} else{

JOptionPane.showMessageDialog(null, "Failed ");

}

}catch(Exception e){

e.printStackTrace();

}

}//GEN-LAST:event\_jButton1ActionPerformed

/\*\*

\* @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(LogClient.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (InstantiationException ex) {

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

} catch (IllegalAccessException ex) {

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

} catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(LogClient.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 LogClient().setVisible(true);

}

});

}

// Variables declaration - do not modify//GEN-BEGIN:variables

private javax.swing.JButton jButton1;

private javax.swing.JLabel jLabel1;

private javax.swing.JLabel jLabel2;

private javax.swing.JLabel jLabel3;

private javax.swing.JPasswordField jPasswordField1;

private javax.swing.JTextField jTextField1;

// End of variables declaration//GEN-END:variables

}

**4.5 Desktop Application Home**

/\*

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\* and open the template in the editor.

\*/

package ClientHome;

import static java.lang.Thread.sleep;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.ResultSet;

import java.sql.Statement;

import java.util.ArrayList;

import java.util.TimerTask;

import javax.swing.JOptionPane;

import javax.swing.Timer;

import javax.swing.table.DefaultTableModel;

/\*\*

\*

\* @author Microsoft

\*/

public class Home extends javax.swing.JFrame {

/\*\*

\* Creates new form Home

\*/

public Home() {

initComponents();

showdetails();

send();

automated();

}

public void automated(){

java.util.Timer timer = new java.util.Timer();

TimerTask task = new AutoSensor()

timer.schedule(new TimerTask(){

int counter=0;

@Override

public void run(){

status();

counter++;

}

},0,4000);

}

public ArrayList<RoomDetails> ShowDetailsofsensors(){

ArrayList<RoomDetails> roomlist=new ArrayList<>();

try{

Class.forName("com.mysql.jdbc.Driver");

Connection conn=DriverManager.getConnection("jdbc:mysql://localhost:3307/vithu","root","Vithu719@");

String query="SELECT \* FROM roomdetails";

Statement st=conn.createStatement();

ResultSet rs=st.executeQuery(query);

RoomDetails rd;

while(rs.next()){

rd=new RoomDetails(rs.getInt("id"),rs.getInt("floor"),rs.getInt("room"),rs.getInt("co2"),rs.getInt("smoke"),rs.getString("status"));

roomlist.add(rd);

}

}catch(Exception e){

JOptionPane.showMessageDialog(null,e);

}

return roomlist;

}

public void showdetails(){

ArrayList <RoomDetails> details =ShowDetailsofsensors();

DefaultTableModel model=(DefaultTableModel)jTable\_display.getModel();

Object[] row=new Object[6];

for(int i =0;i<details.size();i++){

row[0]=details.get(i).getid();

row[1]=details.get(i).getfloor();

row[2]=details.get(i).getroom();

row[3]=details.get(i).getco2();

row[4]=details.get(i).getsmoke();

row[5]=details.get(i).getstatus();

model.addRow(row);

}

}

public void send(){

for(int i=0;i<ShowDetailsofsensors().size();i++){

float x=ShowDetailsofsensors().get(i).getco2();

int y=ShowDetailsofsensors().get(i).getsmoke();

if(x>5){

JOptionPane.showMessageDialog(null,"CO2 exceeded the value send Email or message");

}

if(y>5){

JOptionPane.showMessageDialog(null,"SMOKE exceeded the value send Email or message");

}

}

}

int x=1;

int y=7;

int z=6;

public void status(){

x++;

if(x==4){

x=1;

}

y++;

if(y==6){

y=4;

}

try{

String xx="not active";

Class.forName("com.mysql.jdbc.Driver");

Connection conn=DriverManager.getConnection("jdbc:mysql://localhost:3307/vithu","root","Vithu719@");

String query="UPDATE `roomdetails` SET `smoke`='"+y+"' WHERE `id`='"+x+"'";

Statement st=conn.createStatement();

st.executeUpdate(query);

}catch(Exception e){

JOptionPane.showMessageDialog(null, e);

}

}

@SuppressWarnings("unchecked")

// <editor-fold defaultstate="collapsed" desc="Generated Code">//GEN-BEGIN:initComponents

private void initComponents() {

jLabel1 = new javax.swing.JLabel();

jButton1 = new javax.swing.JButton();

jButton2 = new javax.swing.JButton();

jButton3 = new javax.swing.JButton();

jScrollPane1 = new javax.swing.JScrollPane();

jTable\_display = new javax.swing.JTable();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT\_ON\_CLOSE);

jLabel1.setText("FIRE ALARM SYSTEM");

jButton1.setText("ADD SENSOR");

jButton1.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

jButton1ActionPerformed(evt);

}

});

jButton2.setText("UPDATE SENSOR");

jButton2.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

jButton2ActionPerformed(evt);

}

});

jButton3.setText("DELETE SENSOR");

jButton3.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

jButton3ActionPerformed(evt);

}

});

jTable\_display.setModel(new javax.swing.table.DefaultTableModel(

new Object [][] {

},

new String [] {

"id", "floor", "room", "co2", "smoke", "status"

}

));

jScrollPane1.setViewportView(jTable\_display);

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(18, 18, 18)

.addComponent(jButton1, javax.swing.GroupLayout.PREFERRED\_SIZE, 117, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addGap(78, 78, 78)

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

.addGroup(layout.createSequentialGroup()

.addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED\_SIZE, 122, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addContainerGap(javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE))

.addGroup(layout.createSequentialGroup()

.addComponent(jButton3, javax.swing.GroupLayout.PREFERRED\_SIZE, 117, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(jButton2, javax.swing.GroupLayout.PREFERRED\_SIZE, 117, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addGap(47, 47, 47))))

.addGroup(layout.createSequentialGroup()

.addGap(59, 59, 59)

.addComponent(jScrollPane1, javax.swing.GroupLayout.PREFERRED\_SIZE, 452, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addGap(0, 58, Short.MAX\_VALUE))

);

layout.setVerticalGroup(

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

.addGroup(layout.createSequentialGroup()

.addContainerGap()

.addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED\_SIZE, 35, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addGap(23, 23, 23)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

.addComponent(jButton1)

.addComponent(jButton2)

.addComponent(jButton3))

.addGap(18, 18, 18)

.addComponent(jScrollPane1, javax.swing.GroupLayout.PREFERRED\_SIZE, 90, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addContainerGap(93, Short.MAX\_VALUE))

);

pack();

}// </editor-fold>//GEN-END:initComponents

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event\_jButton1ActionPerformed

// TODO add your handling code here:

InsertDetails insert = new InsertDetails();

insert.setVisible(true);

dispose();

}//GEN-LAST:event\_jButton1ActionPerformed

private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event\_jButton3ActionPerformed

// TODO add your handling code here:

DeleteSensor ds = new DeleteSensor();

ds.setVisible(true);

dispose();

}//GEN-LAST:event\_jButton3ActionPerformed

private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event\_jButton2ActionPerformed

// TODO add your handling code here:

UpdateSensor us=new UpdateSensor();

us.setVisible(true);

dispose();

}//GEN-LAST:event\_jButton2ActionPerformed

/\*\*

\* @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(Home.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (InstantiationException ex) {

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

} catch (IllegalAccessException ex) {

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

} catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(Home.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 Home().setVisible(true);

}

});

}

// Variables declaration - do not modify//GEN-BEGIN:variables

private javax.swing.JButton jButton1;

private javax.swing.JButton jButton2;

private javax.swing.JButton jButton3;

private javax.swing.JLabel jLabel1;

private javax.swing.JScrollPane jScrollPane1;

private javax.swing.JTable jTable\_display;

// End of variables declaration//GEN-END:variables

}

5.6 Desktop Application insert sensor

/\*

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\* and open the template in the editor.

\*/

package ClientHome;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.ResultSet;

import java.sql.Statement;

import javax.swing.JOptionPane;

/\*\*

\*

\* @author Microsoft

\*/

public class InsertDetails extends javax.swing.JFrame {

/\*\*

\* Creates new form InsertDetails

\*/

public InsertDetails() {

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">//GEN-BEGIN:initComponents

private void initComponents() {

jLabel1 = new javax.swing.JLabel();

jLabel2 = new javax.swing.JLabel();

jLabel3 = new javax.swing.JLabel();

jTextField1 = new javax.swing.JTextField();

jTextField2 = new javax.swing.JTextField();

jButton1 = new javax.swing.JButton();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT\_ON\_CLOSE);

jLabel1.setText("ADD NEW SENSOR DETAILS");

jLabel2.setText("FLOOR NO");

jLabel3.setText("ROOM NO");

jTextField1.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

jTextField1ActionPerformed(evt);

}

});

jButton1.setText("ADD");

jButton1.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

jButton1ActionPerformed(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(60, 60, 60)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)

.addComponent(jLabel3)

.addComponent(jLabel2))

.addGap(48, 48, 48)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)

.addComponent(jTextField2, javax.swing.GroupLayout.DEFAULT\_SIZE, 136, Short.MAX\_VALUE)

.addComponent(jTextField1))

.addGap(0, 0, Short.MAX\_VALUE))

.addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()

.addContainerGap(124, Short.MAX\_VALUE)

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

.addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()

.addComponent(jButton1)

.addGap(42, 42, 42))

.addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()

.addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED\_SIZE, 196, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addGap(84, 84, 84))))

);

layout.setVerticalGroup(

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

.addGroup(layout.createSequentialGroup()

.addContainerGap()

.addComponent(jLabel1)

.addGap(39, 39, 39)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

.addComponent(jLabel2)

.addComponent(jTextField1, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addGap(32, 32, 32)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

.addComponent(jLabel3)

.addComponent(jTextField2, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addGap(36, 36, 36)

.addComponent(jButton1)

.addContainerGap(105, Short.MAX\_VALUE))

);

pack();

}// </editor-fold>//GEN-END:initComponents

private void jTextField1ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event\_jTextField1ActionPerformed

// TODO add your handling code here:

}//GEN-LAST:event\_jTextField1ActionPerformed

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event\_jButton1ActionPerformed

// TODO add your handling code here:

try{

Class.forName("com.mysql.jdbc.Driver");

Connection conn=DriverManager.getConnection("jdbc:mysql://localhost:3307/vithu","root","Vithu719@");

String query="INSERT INTO roomdetails(`floor`,`room`,`co2`,`smoke`,`status`) VALUES('"+jTextField1.getText()+"','"+jTextField2.getText()+"',4,4,'Active')";

Statement st=conn.createStatement();

st.executeUpdate(query);

Home home=new Home();

home.setVisible(true);

dispose();

}catch(Exception e ){

JOptionPane.showMessageDialog(null,e);

}

}//GEN-LAST:event\_jButton1ActionPerformed

/\*\*

\* @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(InsertDetails.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (InstantiationException ex) {

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

} catch (IllegalAccessException ex) {

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

} catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(InsertDetails.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 InsertDetails().setVisible(true);

}

});

}

// Variables declaration - do not modify//GEN-BEGIN:variables

private javax.swing.JButton jButton1;

private javax.swing.JLabel jLabel1;

private javax.swing.JLabel jLabel2;

private javax.swing.JLabel jLabel3;

private javax.swing.JTextField jTextField1;

private javax.swing.JTextField jTextField2;

// End of variables declaration//GEN-END:variables

}

**4.6 Screenshots.**

**4.7 Desktop Application Update Sensor**

/\*

\* 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 ClientHome;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.ResultSet;

import java.sql.Statement;

import javax.swing.JOptionPane;

/\*\*

\*

\* @author Microsoft

\*/

public class UpdateSensor extends javax.swing.JFrame {

/\*\*

\* Creates new form UpdateSensor

\*/

public UpdateSensor() {

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">//GEN-BEGIN:initComponents

private void initComponents() {

jLabel1 = new javax.swing.JLabel();

jLabel2 = new javax.swing.JLabel();

jLabel3 = new javax.swing.JLabel();

jTextField1 = new javax.swing.JTextField();

jTextField2 = new javax.swing.JTextField();

jButton1 = new javax.swing.JButton();

jLabel4 = new javax.swing.JLabel();

jTextField3 = new javax.swing.JTextField();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT\_ON\_CLOSE);

jLabel1.setText("UPDATE SENSOR");

jLabel2.setText("FLOOR NO");

jLabel3.setText("ROOM NO");

jTextField1.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

jTextField1ActionPerformed(evt);

}

});

jButton1.setText("UPDATE");

jButton1.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

jButton1ActionPerformed(evt);

}

});

jLabel4.setText("ENTER ID TO UPDATE");

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()

.addGap(152, 152, 152)

.addComponent(jLabel1))

.addGroup(layout.createSequentialGroup()

.addGap(76, 76, 76)

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

.addComponent(jLabel2)

.addComponent(jLabel3)

.addComponent(jLabel4))

.addGap(77, 77, 77)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING, false)

.addComponent(jTextField3, javax.swing.GroupLayout.DEFAULT\_SIZE, 48, Short.MAX\_VALUE)

.addComponent(jTextField1)

.addComponent(jTextField2))))

.addContainerGap(94, Short.MAX\_VALUE))

.addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()

.addGap(0, 0, Short.MAX\_VALUE)

.addComponent(jButton1)

.addGap(56, 56, 56))

);

layout.setVerticalGroup(

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

.addGroup(layout.createSequentialGroup()

.addGap(38, 38, 38)

.addComponent(jLabel1)

.addGap(15, 15, 15)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)

.addComponent(jLabel4)

.addComponent(jTextField3, 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.TRAILING)

.addComponent(jLabel2)

.addComponent(jTextField1, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE))

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

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

.addComponent(jLabel3)

.addComponent(jTextField2, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addGap(28, 28, 28)

.addComponent(jButton1)

.addContainerGap(98, Short.MAX\_VALUE))

);

pack();

}// </editor-fold>//GEN-END:initComponents

private void jTextField1ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event\_jTextField1ActionPerformed

// TODO add your handling code here:

}//GEN-LAST:event\_jTextField1ActionPerformed

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event\_jButton1ActionPerformed

// TODO add your handling code here:

try{

Class.forName("com.mysql.jdbc.Driver");

Connection conn=DriverManager.getConnection("jdbc:mysql://localhost:3307/vithu","root","Vithu719@");

String query="UPDATE `roomdetails` SET `floor`='"+jTextField1.getText()+"',`room`='"+jTextField2.getText()+"' WHERE `id`='"+jTextField3.getText()+"'";

Statement st=conn.createStatement();

st.executeUpdate(query);

Home h=new Home();

h.setVisible(true);

dispose();

}catch(Exception e){

JOptionPane.showMessageDialog(null, e);

}

}//GEN-LAST:event\_jButton1ActionPerformed

/\*\*

\* @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(UpdateSensor.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (InstantiationException ex) {

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

} catch (IllegalAccessException ex) {

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

} catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(UpdateSensor.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 UpdateSensor().setVisible(true);

}

});

}

// Variables declaration - do not modify//GEN-BEGIN:variables

private javax.swing.JButton jButton1;

private javax.swing.JLabel jLabel1;

private javax.swing.JLabel jLabel2;

private javax.swing.JLabel jLabel3;

private javax.swing.JLabel jLabel4;

private javax.swing.JTextField jTextField1;

private javax.swing.JTextField jTextField2;

private javax.swing.JTextField jTextField3;

// End of variables declaration//GEN-END:variables

}

**4.8 Room Details Model Class**

/\*

\* 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 ClientHome;

/\*\*

\*

\* @author Microsoft

\*/

public class RoomDetails {

private int floor, id;

private int room;

private int co2;

private int smoke;

private String status;

public RoomDetails(int id,int floor ,int room,int co2,int smoke,String status){

this.id=id;

this.floor=floor;

this.room=room;

this.co2=co2;

this.smoke=smoke;

this.status=status;

}

public int getid(){

return id;

}

public int getfloor(){

return floor;

}

public int getroom(){

return room;

}

public int getco2(){

return co2;

}

public int getsmoke(){

return smoke;

}

public String getstatus(){

return status;

}

}

**4.9 Desktop Application Delete Sensor**

/\*

\* 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 ClientHome;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.ResultSet;

import java.sql.Statement;

import javax.swing.JOptionPane;

/\*\*

\*

\* @author Microsoft

\*/

public class DeleteSensor extends javax.swing.JFrame {

/\*\*

\* Creates new form DeleteSensor

\*/

public DeleteSensor() {

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">//GEN-BEGIN:initComponents

private void initComponents() {

jLabel1 = new javax.swing.JLabel();

jLabel2 = new javax.swing.JLabel();

jTextField1 = new javax.swing.JTextField();

jButton1 = new javax.swing.JButton();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT\_ON\_CLOSE);

jLabel1.setText("DELETE SENSOR");

jLabel2.setText("ENTER ID TO DELETE");

jButton1.setText("DELETE");

jButton1.addActionListener(new java.awt.event.ActionListener() {

public void actionPerformed(java.awt.event.ActionEvent evt) {

jButton1ActionPerformed(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(172, 172, 172)

.addComponent(jLabel1)

.addContainerGap(javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE))

.addGroup(layout.createSequentialGroup()

.addGap(57, 57, 57)

.addComponent(jLabel2)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 101, Short.MAX\_VALUE)

.addComponent(jTextField1, javax.swing.GroupLayout.PREFERRED\_SIZE, 71, javax.swing.GroupLayout.PREFERRED\_SIZE)

.addGap(69, 69, 69))

.addGroup(javax.swing.GroupLayout.Alignment.TRAILING, layout.createSequentialGroup()

.addContainerGap(javax.swing.GroupLayout.DEFAULT\_SIZE, Short.MAX\_VALUE)

.addComponent(jButton1)

.addGap(26, 26, 26))

);

layout.setVerticalGroup(

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

.addGroup(layout.createSequentialGroup()

.addGap(19, 19, 19)

.addComponent(jLabel1)

.addGap(18, 18, 18)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

.addComponent(jLabel2)

.addComponent(jTextField1, javax.swing.GroupLayout.PREFERRED\_SIZE, javax.swing.GroupLayout.DEFAULT\_SIZE, javax.swing.GroupLayout.PREFERRED\_SIZE))

.addGap(53, 53, 53)

.addComponent(jButton1)

.addContainerGap(153, Short.MAX\_VALUE))

);

pack();

}// </editor-fold>//GEN-END:initComponents

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {//GEN-FIRST:event\_jButton1ActionPerformed

// TODO add your handling code here:

try{

Class.forName("com.mysql.jdbc.Driver");

Connection conn=DriverManager.getConnection("jdbc:mysql://localhost:3307/vithu","root","Vithu719@");

String query="DELETE FROM roomdetails where id='"+jTextField1.getText()+"'";

Statement st=conn.createStatement();

st.executeUpdate(query);

Home h=new Home();

h.setVisible(true);

dispose();

}catch(Exception e)

{

JOptionPane.showMessageDialog(null,e);

}

}//GEN-LAST:event\_jButton1ActionPerformed

/\*\*

\* @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(DeleteSensor.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);

} catch (InstantiationException ex) {

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

} catch (IllegalAccessException ex) {

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

} catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(DeleteSensor.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 DeleteSensor().setVisible(true);

}

});

}

// Variables declaration - do not modify//GEN-BEGIN:variables

private javax.swing.JButton jButton1;

private javax.swing.JLabel jLabel1;

private javax.swing.JLabel jLabel2;

private javax.swing.JTextField jTextField1;

// End of variables declaration//GEN-END:variables

}

**4.10 Fire Login**

**/\***

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**\* and open the template in the editor.**

**\*/**

**package firelogin;**

**/\*\***

**\***

**\* @author Microsoft**

**\*/**

**public class FireLogin {**

**/\*\***

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

**\*/**

**public static void main(String[] args) {**

**// TODO code application logic here**

**}**

**}**

**4.11 Login Impl**

/\*

\* 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 firelogin;

import java.rmi.RemoteException;

import java.rmi.server.UnicastRemoteObject;

/\*\*

\*

\* @author Microsoft

\*/

public class LoginImpl extends UnicastRemoteObject implements LoginInter {

public LoginImpl()throws RemoteException {

super();

}

@Override

public boolean getlogin(int username, int password) throws RemoteException {

try {

if (username == 1234 && password == 1234) {

return true;

}

} catch (Exception e) {

System.out.println(e);

}

return false;

}

}

**4.12 LoginInter**

/\*

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\* To change this template file, choose Tools | Templates

\* and open the template in the editor.

\*/

package firelogin;

import java.rmi.Remote;

import java.rmi.RemoteException;

/\*\*

\*

\* @author Microsoft

\*/

public interface LoginInter extends Remote {

public boolean getlogin(int username,int password) throws RemoteException;

}

**4.13 Login Server**

/\*

\* 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 firelogin;

import java.rmi.registry.LocateRegistry;

import java.rmi.registry.Registry;

/\*\*

\*

\* @author Microsoft

\*/

public class LoginServer {

public static void main (String args[]){

try{

Registry reg=LocateRegistry.createRegistry(1099);

reg.rebind("login", new LoginImpl());

System.out.println("Server is ready");

}

catch(Exception e){

e.printStackTrace();

}

}

}

**4.14 Fire alarm**

**A.Model**

**RoomDetails.java**

package com.example.firealarm.model;

import javax.persistence.Entity;

import javax.persistence.GeneratedValue;

import javax.persistence.Id;

@Entity

public class Roomdetails {

@Id

@GeneratedValue

private int id;

private int floor;

private int room;

private int co2;

private int smoke;

private String status;

public int getid(){return id;}

public int getFloor() {

return floor;

}

public int getRoom() {

return room;

}

public int getCo2() {

return co2;

}

public int getSmoke() {

return smoke;

}

public String getStatus() {

return status;

}

}

**B.Repository**

**FirealarmRepo.java**

package com.example.firealarm.Repository;

import com.example.firealarm.model.Roomdetails;

import org.springframework.data.jpa.repository.JpaRepository;

public interface FireAlarmRepo extends JpaRepository<Roomdetails,Integer> {

}

**C.Resource**

**FireAlarmResource.java**

package com.example.firealarm.Resource;

import com.example.firealarm.Repository.FireAlarmRepo;

import com.example.firealarm.model.Roomdetails;

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.RequestMapping;

import org.springframework.web.bind.annotation.RestController;

import java.util.List;

@RestController

@RequestMapping(value="/rest/firealarm")

@CrossOrigin(origins = "http://localhost:3000")

public class FireAlarmResource {

@Autowired

FireAlarmRepo fireAlarmRepo;

@GetMapping("/all")

public List<Roomdetails> showall(){

return fireAlarmRepo.findAll();

}

}

**D.FirealarmApplication.java**

package com.example.firealarm;

import org.springframework.boot.SpringApplication;

import org.springframework.boot.autoconfigure.SpringBootApplication;

@SpringBootApplication

public class FirealarmApplication {

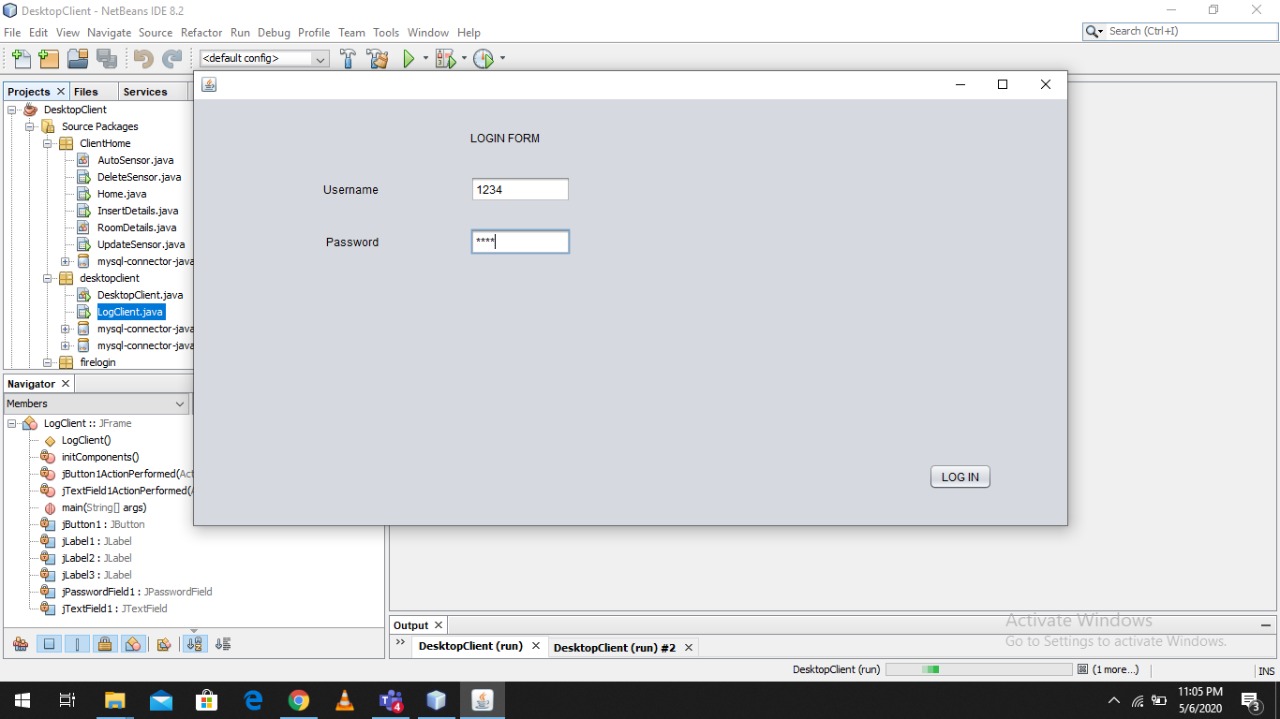
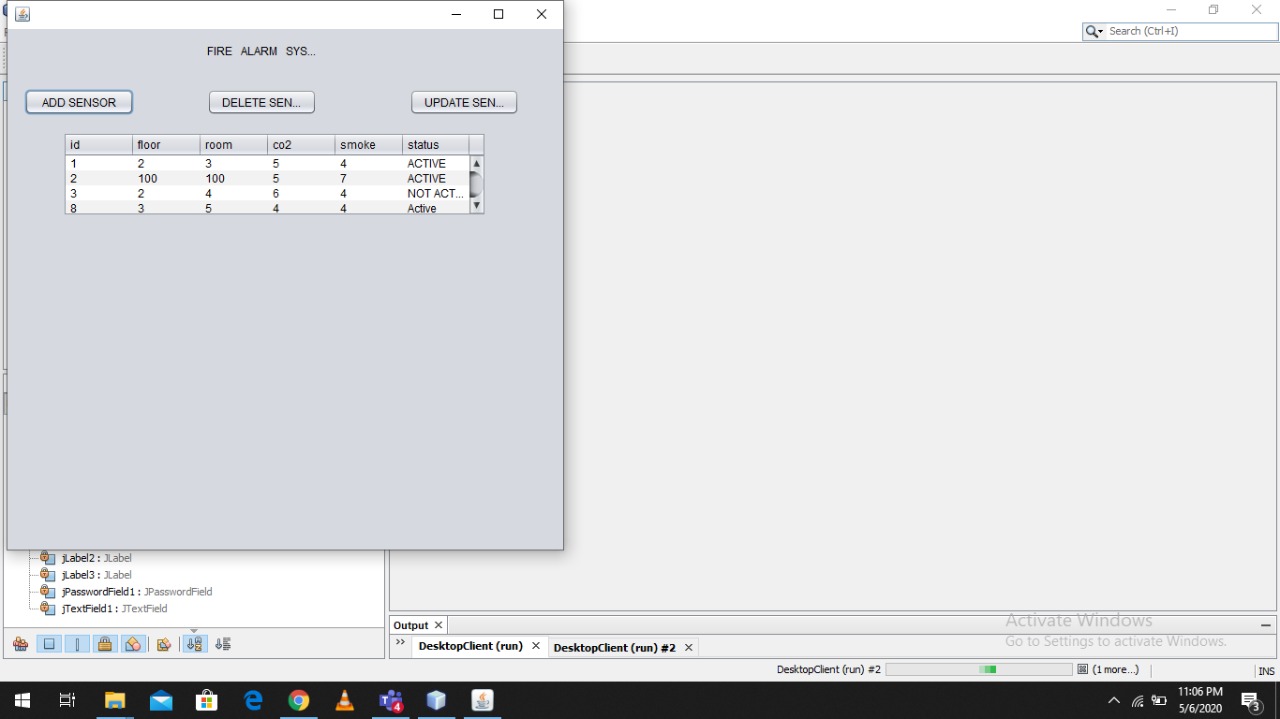
public static void main(String[] args) {

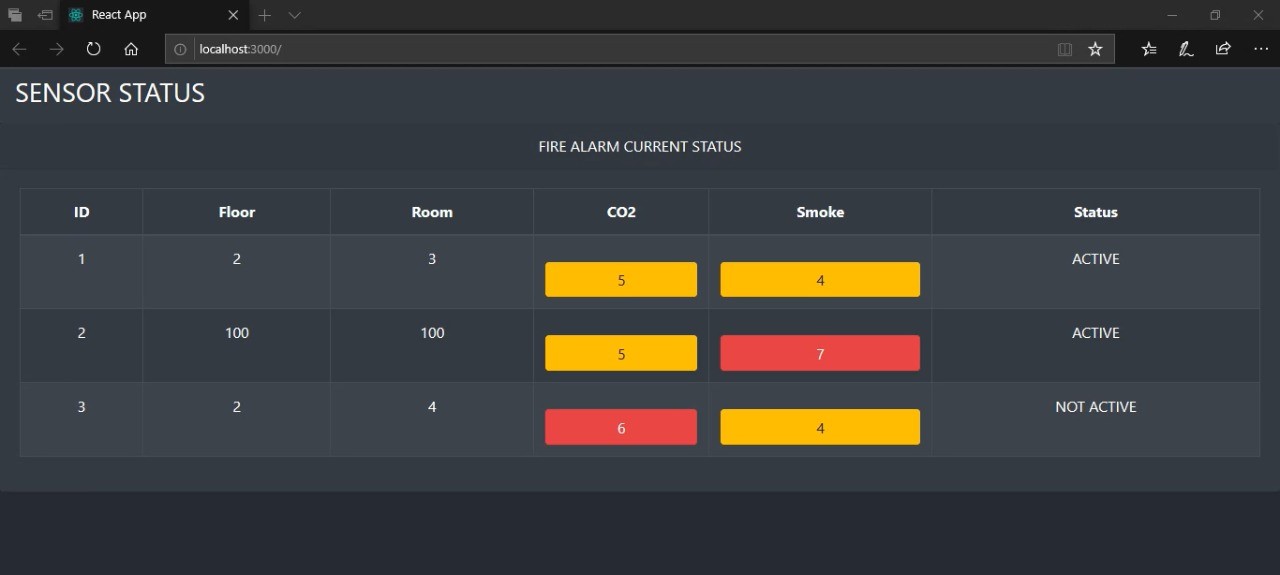
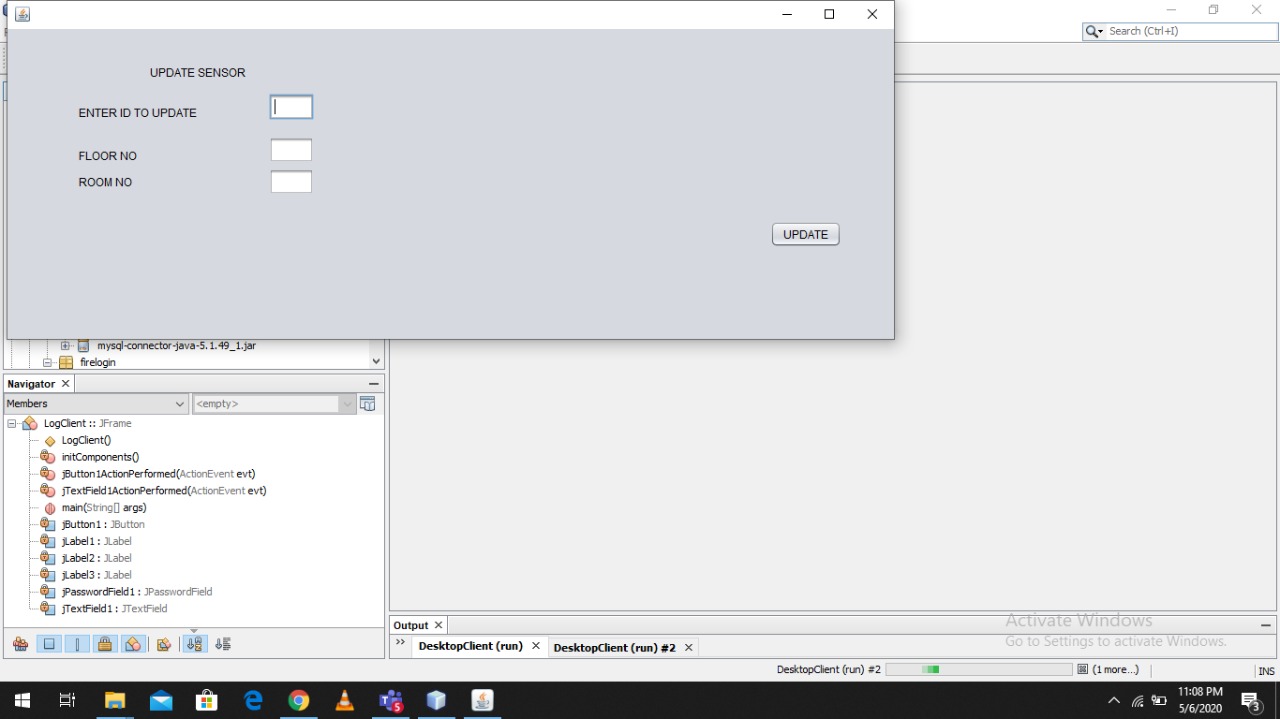
SpringApplication.run(FirealarmApplication.class, args);

}

}

**Screen Shots**

****

****