Republic of the Philippines
BATANGAS STATE UNIVERSITY
BATSTATEU ALANGILAN, Alangilan, Batangas City
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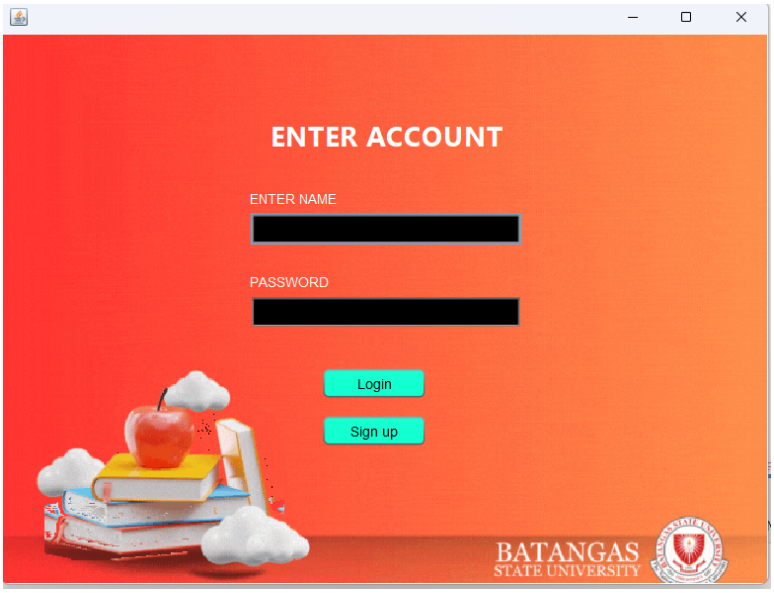
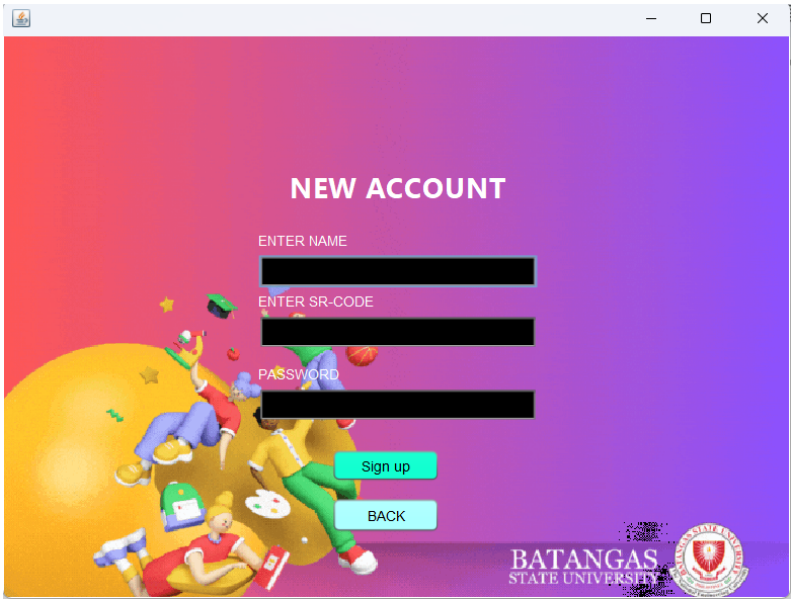
FINAL PROJECT

LORELEI T. ROBLES
CPE-2203

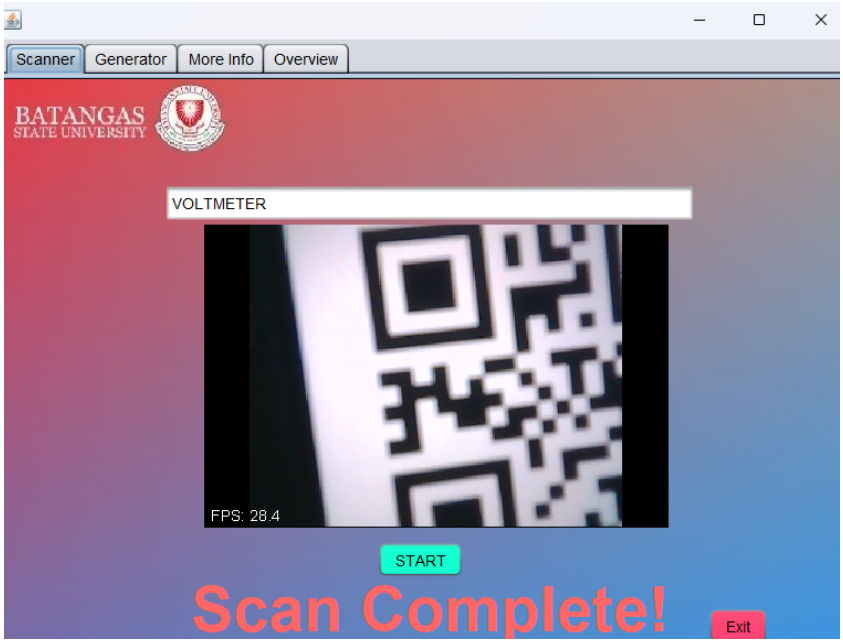
OUTPUT SCREEN SHOT



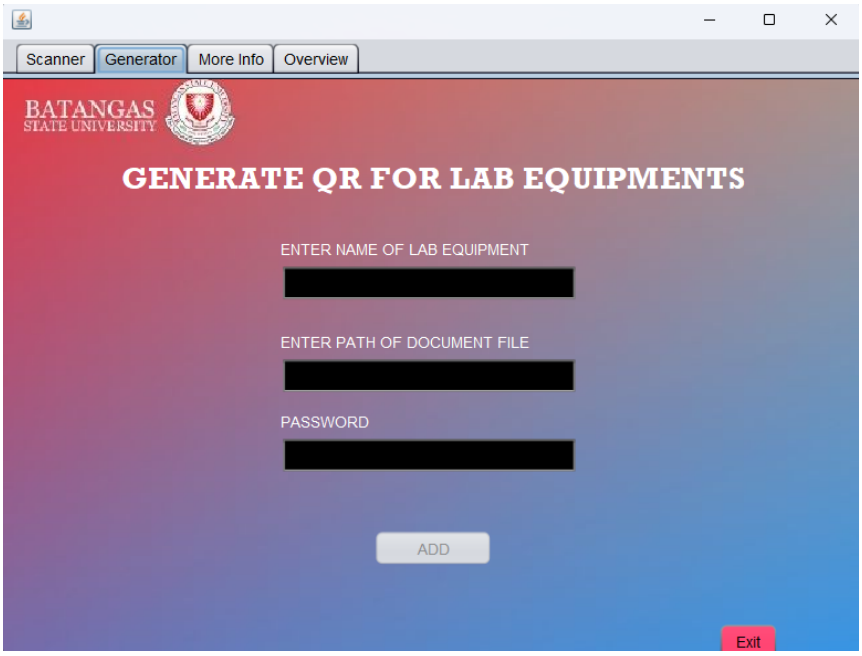
Log In Window



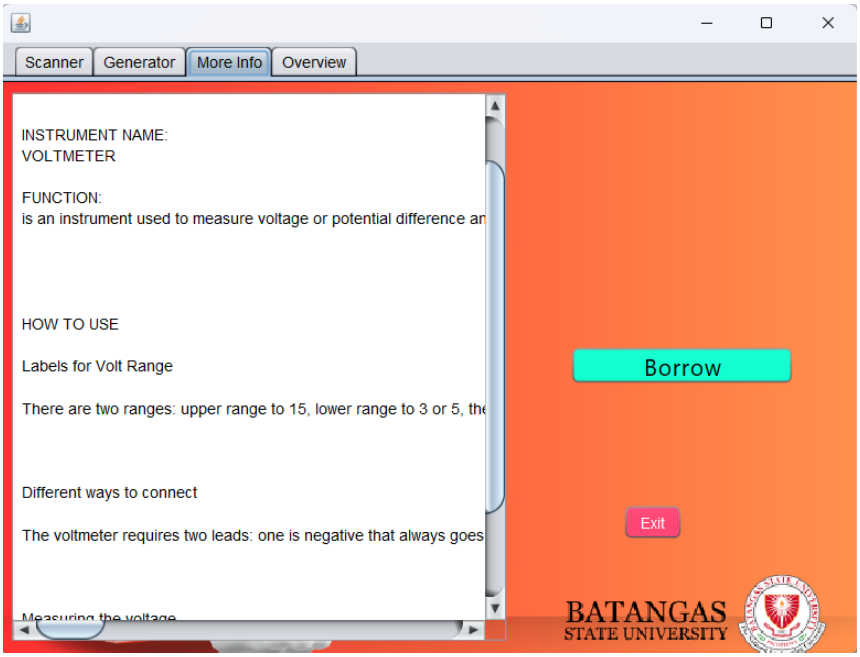
Sign Up Window



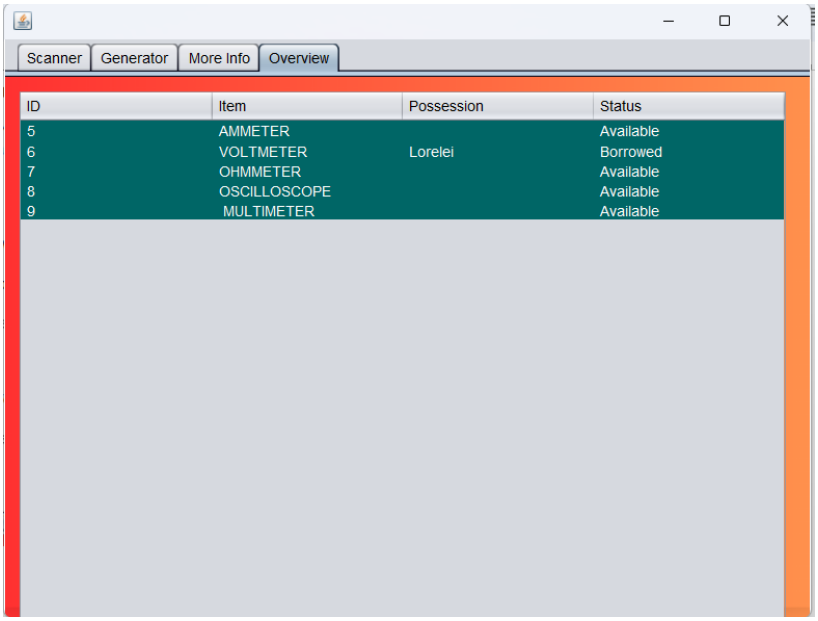
App - Scanning Tab where the QR code scanning happen if students want to borrow an equipment



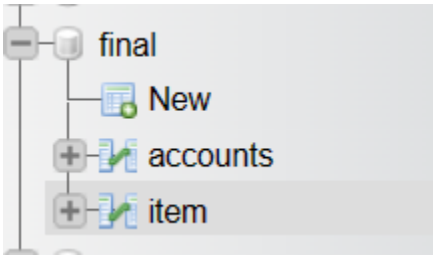
This is where Lab Managers generate QR codes by filling up all the information needed



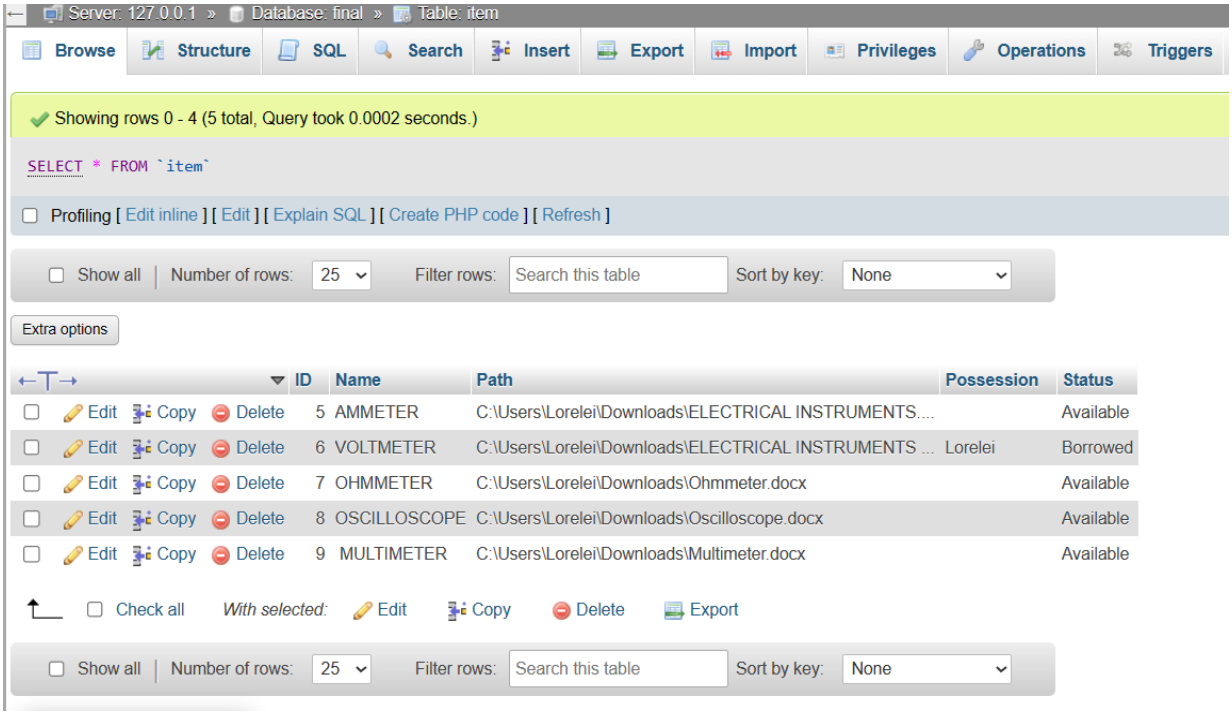
This is where students borrow and the information of the equipment



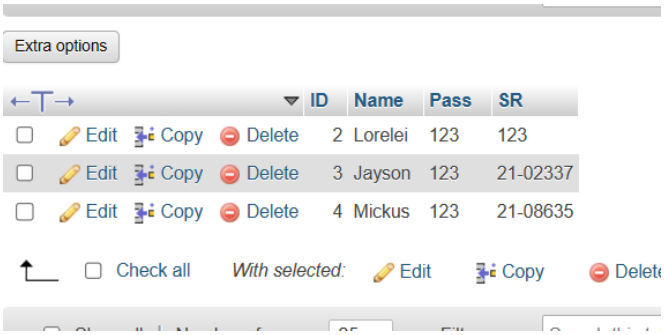
This is the overview of the borrower and the equipments remaining and yet to be borrowed



PhpMyAdmin



The items section



Accounts section

CODE

App.Java

```
/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this
license
 * Click nbfs://nbhost/SystemFileSystem/Templates/GUIForms/JFrame.java to edit this
template
 */
package electrical;

import org.apache.poi.xwpf.usermodel.XWPFDocument;
import com.github.sarxos.webcam.Webcam;
import com.github.sarxos.webcam.WebcamPanel;
import com.github.sarxos.webcam.WebcamResolution;
import com.google.zxing.BarcodeFormat;
import com.google.zxing.BinaryBitmap;
import com.google.zxing.LuminanceSource;
import com.google.zxing.MultiFormatReader;
import com.google.zxing.NotFoundException;
import com.google.zxing.Result;
import com.google.zxing.WriterException;
import com.google.zxing.client.j2se.BufferedImageLuminanceSource;
import com.google.zxing.client.j2se.MatrixToImageWriter;
import com.google.zxing.common.BitMatrix;
import com.google.zxing.common.HybridBinarizer;
import com.google.zxing.qrcode.QRCodeWriter;
import java.awt.Dimension;
import java.awt.image.BufferedImage;
import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.io.IOException;
import java.nio.file.FileSystems;
import java.nio.file.Path;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.ResultSetMetaData;
import java.sql.SQLException;
import java.util.ArrayList;
import java.util.Arrays;
import java.util.HashMap;
import java.util.List;
```

```
import java.util.Vector;
import java.util.concurrent.Executor;
import java.util.concurrent.Executors;
import java.util.concurrent.ThreadFactory;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.swing.JOptionPane;
import javax.swing.SwingUtilities;
import javax.swing.event.DocumentEvent;
import javax.swing.event.DocumentListener;
import javax.swing.table.DefaultTableModel;
import org.apache.poi.xwpf.usermodel.XWPFParagraph;
/**
 *
 * @author Lorelei
 */
public class App extends javax.swing.JFrame implements Runnable,ThreadFactory{
    private WebcamPanel panel = null;
    private Webcam webcam = null;
    private Executor executor = Executors.newSingleThreadExecutor(this);

    Result result = null;
    BufferedImage image = null;

    String txtstatus = "Scanning...";
    String status = "Unknown";
    int B_R = 0;
    private static final String DB_URL = "jdbc:mysql://localhost:3306/final";
    private static final String DB_USERNAME = "root";
    private static final String DB_PASSWORD = "";

    // Define a connection object
    private Connection conn;
    private HashMap<String, ArrayList<String>> optionsMap;
    // Establish the database connection
    public void ctd() {
        try {
            conn = DriverManager.getConnection(DB_URL, DB_USERNAME, DB_PASSWORD);
            System.out.println("Connected to the database.");
        } catch (SQLException e) {
            System.out.println("Failed to connect to the database.");
            e.printStackTrace();
        }
    }
    /**
     * Creates new form App
     */
```

```
public App() {
    ctd();
    initComponents();
    initWebcam();
    table_update();
}

private void table_update(){


    try {
        PreparedStatement pst = conn.prepareStatement("SELECT * FROM item");
        ResultSet stcRs = pst.executeQuery();


        ResultSetMetaData stcRSMD = stcRs.getMetaData();
        int stcCC = stcRSMD.getColumnCount();
        DefaultTableModel stcDFT = (DefaultTableModel) Check.getModel();
        stcDFT.setRowCount(0);

        while (stcRs.next()){
            Vector stcV2 = new Vector();

            for(int ii = 1; ii <= stcCC; ii++){
                stcV2.add(stcRs.getString("ID"));
                stcV2.add(stcRs.getString("Name"));
                stcV2.add(stcRs.getString("Possession"));
                stcV2.add(stcRs.getString("Status"));
            }
            stcDFT.addRow(stcV2);


        }
    } catch (SQLException ex) {
        Logger.getLogger(App.class.getName()).log(Level.SEVERE, null, ex);
    }
}
/**
 * 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() {

    jTabbedPane5 = new javax.swing.JTabbedPane();
```

```
        jPanel1 = new javax.swing.JPanel();
        camera = new javax.swing.JPanel();
        start = new javax.swing.JButton();
        qr = new javax.swing.JTextField();
        lbStart = new javax.swing.JLabel();
        Exit2 = new javax.swing.JButton();
        jLabel1 = new javax.swing.JLabel();
        jPanel2 = new javax.swing.JPanel();
        Exit1 = new javax.swing.JButton();
        jLabel4 = new javax.swing.JLabel();
        pathDIR = new javax.swing.JTextField();
        jLabel3 = new javax.swing.JLabel();
        eqNAME = new javax.swing.JTextField();
        jLabel2 = new javax.swing.JLabel();
        add = new javax.swing.JButton();
        passIN = new javax.swing.JPasswordField();
        jLabel6 = new javax.swing.JLabel();
        jLabel7 = new javax.swing.JLabel();
        jPanel3 = new javax.swing.JPanel();
        requestbtn = new javax.swing.JButton();
        Exit = new javax.swing.JButton();
        jScrollPane1 = new javax.swing.JScrollPane();
        documentArea = new javax.swing.JTextArea();
        jLabel5 = new javax.swing.JLabel();
        jPanel4 = new javax.swing.JPanel();
        jScrollPane2 = new javax.swing.JScrollPane();
        Check = new javax.swing.JTable();
        jLabel8 = new javax.swing.JLabel();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
        setBackground(new java.awt.Color(0, 0, 0));
        getContentPane().setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

        jTabbedPane5.setBackground(new java.awt.Color(0, 255, 204));

        jPanel1.setBackground(new java.awt.Color(0, 102, 102));
        jPanel1.setForeground(new java.awt.Color(255, 255, 255));
        jPanel1.setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

        camera.setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());
        jPanel1.add(camera, new org.netbeans.lib.awtextra.AbsoluteConstraints(160, 110, 350,
230));

        start.setBackground(new java.awt.Color(0, 255, 204));
        start.setText("START");
        start.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
```

```
            startActionPerformed(evt);
        }
    });
    jPanel1.add(start, new org.netbeans.lib.awtextra.AbsoluteConstraints(290, 350, -1, -1));
    jPanel1.add(qr, new org.netbeans.lib.awtextra.AbsoluteConstraints(130, 80, 400, -1));

    lbStart.setFont(new java.awt.Font("Tekton Pro Cond", 1, 48)); // NOI18N
    lbStart.setForeground(new java.awt.Color(255, 102, 102));
    lbStart.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
    lbStart.setText(txtstatus);
    jPanel1.add(lbStart, new org.netbeans.lib.awtextra.AbsoluteConstraints(130, 350, 400,
101));

    Exit2.setBackground(new java.awt.Color(255, 51, 102));
    Exit2.setText("Exit");
    Exit2.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            Exit2ActionPerformed(evt);
        }
    });
    jPanel1.add(Exit2, new org.netbeans.lib.awtextra.AbsoluteConstraints(540, 400, -1, -1));

    jLabel1.setIcon(new
javax.swing.ImageIcon(getClass().getResource("/electrical/1aaaA.jpg"))); // NOI18N
    jPanel1.add(jLabel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 650, 470));

    jTabbedPane5.addTab("Scanner", jPanel1);

    jPanel2.setBackground(new java.awt.Color(0, 102, 102));
    jPanel2.setForeground(new java.awt.Color(255, 255, 255));
    jPanel2.setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

    Exit1.setBackground(new java.awt.Color(255, 51, 102));
    Exit1.setText("Exit");
    Exit1.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            Exit1ActionPerformed(evt);
        }
    });
    jPanel2.add(Exit1, new org.netbeans.lib.awtextra.AbsoluteConstraints(540, 410, -1, -1));

    jLabel4.setForeground(new java.awt.Color(255, 255, 255));
    jLabel4.setText("PASSWORD");
    jPanel2.add(jLabel4, new org.netbeans.lib.awtextra.AbsoluteConstraints(210, 250, 218,
-1));

    pathDIR.setBackground(new java.awt.Color(0, 0, 0));
```

```
        pathDIR.setForeground(new java.awt.Color(255, 255, 255));
        // Add a document listener to the text field
        pathDIR.getDocument().addDocumentListener(new DocumentListener() {
            @Override
            public void insertUpdate(DocumentEvent e) {
                updateButtonState();
            }

            @Override
            public void removeUpdate(DocumentEvent e) {
                updateButtonState();
            }

            @Override
            public void changedUpdate(DocumentEvent e) {
                updateButtonState();
            }

            private void updateButtonState() {
                // Check if all three text fields have at least one character
                boolean enableButton = !eqNAME.getText().isEmpty() &&
                !pathDIR.getText().isEmpty() &&
                passIN.getPassword().length > 0;
                add.setEnabled(enableButton);
            }
        });
        jPanel2.add(pathDIR, new org.netbeans.lib.awtextra.AbsoluteConstraints(210, 210, 224,
-1));

        jLabel3.setForeground(new java.awt.Color(255, 255, 255));
        jLabel3.setText("ENTER PATH OF DOCUMENT FILE");
        jPanel2.add(jLabel3, new org.netbeans.lib.awtextra.AbsoluteConstraints(210, 190, 218,
-1));

        eqNAME.setBackground(new java.awt.Color(0, 0, 0));
        eqNAME.setForeground(new java.awt.Color(255, 255, 255));
        // Add a document listener to the text field
        eqNAME.getDocument().addDocumentListener(new DocumentListener() {
            @Override
            public void insertUpdate(DocumentEvent e) {
                updateButtonState();
            }

            @Override
            public void removeUpdate(DocumentEvent e) {
                updateButtonState();
            }
```

```
        @Override
        public void changedUpdate(DocumentEvent e) {
            updateButtonState();
        }

        private void updateButtonState() {
            // Check if all three text fields have at least one character
            boolean enableButton = !eqNAME.getText().isEmpty() &&
            !pathDIR.getText().isEmpty() &&
            passIN.getPassword().length > 0;
            add.setEnabled(enableButton);
        }
    });
    jPanel2.add(eqNAME, new org.netbeans.lib.awtextra.AbsoluteConstraints(210, 140,
224, -1));

    jLabel2.setForeground(new java.awt.Color(255, 255, 255));
    jLabel2.setText("ENTER NAME OF LAB EQUIPMENT");
    jPanel2.add(jLabel2, new org.netbeans.lib.awtextra.AbsoluteConstraints(210, 120, 215,
-1));

    add.setBackground(new java.awt.Color(0, 255, 204));
    add.setText("ADD");
    add.setEnabled(false); // Initially disable the button
    add.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            addActionPerformed(evt);
        }
    });
    jPanel2.add(add, new org.netbeans.lib.awtextra.AbsoluteConstraints(280, 340, 90, -1));

    passIN.setBackground(new java.awt.Color(0, 0, 0));
    passIN.setForeground(new java.awt.Color(255, 255, 255));
    // Add a document listener to the text field
    passIN.getDocument().addDocumentListener(new DocumentListener() {
        @Override
        public void insertUpdate(DocumentEvent e) {
            updateButtonState();
        }

        @Override
        public void removeUpdate(DocumentEvent e) {
            updateButtonState();
        }

        @Override
```

```
        public void changedUpdate(DocumentEvent e) {
            updateButtonState();
        }

        private void updateButtonState() {
            // Check if all three text fields have at least one character
            boolean enableButton = !eqNAME.getText().isEmpty() &&
            !pathDIR.getText().isEmpty() &&
            passIN.getPassword().length > 0;
            add.setEnabled(enableButton);
        }
    });
    jPanel2.add(passIN, new org.netbeans.lib.awtextra.AbsoluteConstraints(210, 270, 224,
-1));

    jLabel6.setFont(new java.awt.Font("Rockwell", 1, 24)); // NOI18N
    jLabel6.setForeground(new java.awt.Color(255, 255, 255));
    jLabel6.setText("GENERATE QR FOR LAB EQUIPMENTS ");
    jPanel2.add(jLabel6, new org.netbeans.lib.awtextra.AbsoluteConstraints(90, 60, -1, -1));

    jLabel7.setIcon(new
javax.swing.ImageIcon("C:\\Users\\Lorelei\\Downloads\\1aaaA.jpg")); // NOI18N
    jPanel2.add(jLabel7, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 650, 460));

    jTabbedPane5.addTab("Generator", jPanel2);

    jPanel3.setBackground(new java.awt.Color(0, 102, 102));
    jPanel3.setForeground(new java.awt.Color(255, 255, 255));
    jPanel3.setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

    requestbtn.setBackground(new java.awt.Color(0, 255, 204));
    requestbtn.setFont(new java.awt.Font("Segoe UI", 0, 18)); // NOI18N
    requestbtn.setText(status);
    requestbtn.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            requestbtnActionPerformed(evt);
        }
    });
    jPanel3.add(requestbtn, new org.netbeans.lib.awtextra.AbsoluteConstraints(430, 200,
170, 30));

    Exit.setBackground(new java.awt.Color(255, 51, 102));
    Exit.setForeground(new java.awt.Color(255, 255, 255));
    Exit.setText("Exit");
    Exit.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            ExitActionPerformed(evt);
```

```
        }
    });
    jPanel3.add(Exit, new org.netbeans.lib.awtextra.AbsoluteConstraints(470, 320, -1, -1));

    documentArea.setColumns(20);
    documentArea.setRows(5);
    jScrollPane1.setViewportView(documentArea);

    jPanel3.add(jScrollPane1, new org.netbeans.lib.awtextra.AbsoluteConstraints(6, 6, 378,
420));

    jLabel5.setIcon(new javax.swing.ImageIcon(getClass().getResource("/electrical/1aaa
A1.png"))); // NOI18N
    jPanel3.add(jLabel5, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, -20, 650,
470));

    jTabbedPane5.addTab("More Info", jPanel3);

    jPanel4.setBackground(new java.awt.Color(0, 102, 102));
    jPanel4.setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

    Check.setBackground(new java.awt.Color(0, 102, 102));
    Check.setForeground(new java.awt.Color(255, 255, 255));
    Check.setModel(new javax.swing.table.DefaultTableModel(
        new Object [][] {
            {null, null, null, null},
            {null, null, null, null},
            {null, null, null, null},
            {null, null, null, null}
        },
        new String [] {
            "ID", "Item", "Possession", "Status"
        }
    ));
    jScrollPane2.setViewportView(Check);

    jPanel4.add(jScrollPane2, new org.netbeans.lib.awtextra.AbsoluteConstraints(10, 10,
620, 457));

    jLabel8.setIcon(new javax.swing.ImageIcon(getClass().getResource("/electrical/1aaa
C.png"))); // NOI18N
    jPanel4.add(jLabel8, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 650, 470));

    jTabbedPane5.addTab("Overview", jPanel4);

    getContentPane().add(jTabbedPane5, new
org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 650, 520));
```

```
        setSize(new java.awt.Dimension(664, 502));
        setLocationRelativeTo(null);
    }// </editor-fold>

    private void addActionPerformed(java.awt.event.ActionEvent evt) {
        String pass = "Shared Password";

        if (pass.equals(new String(passIN.getPassword()))) {

            try {
                generateQRcode(eqNAME.getText(), 1250,1250, outputQr);       // TODO add your
handling code here:
            } catch (WriterException ex) {
                Logger.getLogger(App.class.getName()).log(Level.SEVERE, null, ex);
            }

            try {
                String selectSql = "SELECT * FROM item WHERE name = ?";
                PreparedStatement selectStatement = conn.prepareStatement(selectSql);
                selectStatement.setString(1, eqNAME.getText());
                ResultSet resultSet = selectStatement.executeQuery();

                if (resultSet.next()) {
                    // Item already exists, perform the update
                    JOptionPane.showMessageDialog(null, "Item already entered");


                } else {
                    String insertSql = "INSERT INTO item (name, path, possession, status) VALUES
(?, ?, ?, ?)";
                    PreparedStatement preparedStatement = conn.prepareStatement(insertSql);
                    preparedStatement.setString(1, eqNAME.getText());
                    preparedStatement.setString(2, pathDIR.getText());
                    preparedStatement.setString(3, "");
                    preparedStatement.setString(4, "Available");
                    preparedStatement.executeUpdate();
                }} catch (NumberFormatException ex) {
                    JOptionPane.showMessageDialog(null, "Please enter entries");
                } catch (SQLException ex) {
                    Logger.getLogger(App.class.getName()).log(Level.SEVERE, null, ex);
                }
            System.out.println("done");

        table_update();
        } else {
```

```
    }
    eqNAME.setText("");
    pathDIR.setText("");
    passIN.setText("");
}

private void startActionPerformed(java.awt.event.ActionEvent evt) {
webcam.close();
    SwingUtilities.invokeLater(new Runnable() {
    @Override
    public void run() {
        // Create a new instance of your JFrame form
        App newForm = new App();
        newForm.setVisible(true);

        // Dispose the existing form
        dispose();
    }
});   // TODO add your handling code here:
}

private void requestbtnActionPerformed(java.awt.event.ActionEvent evt) {
if (B_R == 0) {

} else if (B_R == 1) {

    String Name = JOptionPane.showInputDialog(null, "Enter Borrower's name:");
    if (Name != null && !Name.isEmpty()) {

    try {
        String updateSql = "UPDATE item SET status = ?, possession = ? WHERE name = ?";
        PreparedStatement updateStatement = conn.prepareStatement(updateSql);
        updateStatement.setString(1, "Borrowed");
        updateStatement.setString(2, Name);
        updateStatement.setString(3, result.getText());
        updateStatement.executeUpdate();
    } catch (SQLException ex) {
        Logger.getLogger(App.class.getName()).log(Level.SEVERE, null, ex);
    }
    status = "Return";
    requestbtn.setText(status);
    B_R = 2;
    } else {
        JOptionPane.showMessageDialog(null, "You didn't enter a name.");
    }
} else if (B_R == 2) {
    String namedb = getname(result.getText());
```

```
    String Name = JOptionPane.showInputDialog(null, "Enter Borrower's name:");
    if (namedb.equals(Name)) {
    try {
        String updateSql = "UPDATE item SET status = ?, possession = ? WHERE name = ?";
        PreparedStatement updateStatement = conn.prepareStatement(updateSql);
        updateStatement.setString(1, "Available");
        updateStatement.setString(2, "");
        updateStatement.setString(3, result.getText());
        updateStatement.executeUpdate();
    } catch (SQLException ex) {
        Logger.getLogger(App.class.getName()).log(Level.SEVERE, null, ex);
    }
    status = "Borrow";
    requestbtn.setText(status);
    B_R = 1;

}
}
table_update();    // TODO add your handling code here:
}

private void ExitActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    System.exit(0);

}

private void Exit1ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    System.exit(0);
}

private void Exit2ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    System.exit(0);
}

/**
 * @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(App.class.getName()).log(java.util.logging.Level.SEVERE,
null, ex);
        } catch (InstantiationException ex) {

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

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

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

        /* Create and display the form */
        java.awt.EventQueue.invokeLater(() -> {
            new App().setVisible(true);
        });
    }
    private void initWebcam(){
        Dimension size = WebcamResolution.QVGA.getSize();
        webcam = Webcam.getDefault();
        webcam.setViewSize(size);

        panel = new WebcamPanel(webcam);
        panel.setPreferredSize(size);
        panel.setFPSDisplayed(true);

        camera.add(panel, new org.netbeans.lib.awtextra.AbsoluteConstraints(0,0,350,230));

        executor.execute(this);

    }
```

```
// Variables declaration - do not modify
private javax.swing.JTable Check;
private javax.swing.JButton Exit;
private javax.swing.JButton Exit1;
private javax.swing.JButton Exit2;
private javax.swing.JButton add;
private javax.swing.JPanel camera;
private javax.swing.JTextArea documentArea;
private javax.swing.JTextField eqNAME;
private javax.swing.JLabel jLabel1;
private javax.swing.JLabel jLabel2;
private javax.swing.JLabel jLabel3;
private javax.swing.JLabel jLabel4;
private javax.swing.JLabel jLabel5;
private javax.swing.JLabel jLabel6;
private javax.swing.JLabel jLabel7;
private javax.swing.JLabel jLabel8;
private javax.swing.JPanel jPanel1;
private javax.swing.JPanel jPanel2;
private javax.swing.JPanel jPanel3;
private javax.swing.JPanel jPanel4;
private javax.swing.JScrollPane jScrollPane1;
private javax.swing.JScrollPane jScrollPane2;
private javax.swing.JTabbedPane jTabbedPane5;
private javax.swing.JLabel lbStart;
private javax.swing.JPasswordField passIN;
private javax.swing.JTextField pathDIR;
private javax.swing.JTextField qr;
private javax.swing.JButton requestbtn;
private javax.swing.JButton start;
// End of variables declaration

@Override
public void run() {
    start.setEnabled(false);
    do{
        txtstatus = "Scanning...";
        try {
            Thread.sleep(100);
        } catch (InterruptedException ex) {
            Logger.getLogger(App.class.getName()).log(Level.SEVERE, null, ex);
        }
```

```
        if(webcam.isOpen()){
            if((image =webcam.getImage()) == null){
                continue;
            }
        }

        LuminanceSource source = new BufferedImageLuminanceSource(image);
        BinaryBitmap bitmap = new BinaryBitmap(new HybridBinarizer(source));

        try {
            result = new MultiFormatReader().decode(bitmap);
        } catch (NotFoundException ex) {

        }

        if(result != null){
            qr.setText(result.getText());
            txtstatus = "Scan Complete!";
            lbStart.setText(txtstatus);
            start.setEnabled(true);


            String filePath = getfile(result.getText());
            XWPFDocument document;
        try {
            FileInputStream fis = new FileInputStream(filePath);
            document = new XWPFDocument(fis);

            String docs = "";
            // Extract the content from the document
            List<XWPFParagraph> paragraphList = document.getParagraphs();
            for (XWPFParagraph paragraph: paragraphList) {
                docs = docs + "\n" + paragraph.getText();
            }
            documentArea.setText(docs);


        } catch (FileNotFoundException e){
            System.out.println(filePath);
        } catch (IOException e) {
            JOptionPane.showMessageDialog(this, "Failed to load the document.", "Error",
JOptionPane.ERROR_MESSAGE);
            e.printStackTrace();
```

```
            return;
        }
        if (filePath.isEmpty()) {
            JOptionPane.showMessageDialog(this, "Please enter a file path.", "Error",
JOptionPane.ERROR_MESSAGE);
        }
        String stats = getstats(result.getText());

        if  ("Available".equals(stats)) {
            status = "Borrow";
            requestbtn.setText(status);
            B_R = 1;
        } else {
            status = "Return";
            requestbtn.setText(status);
            B_R = 2;
        }


            break;
        }
    }while(true);

  }
  public static final String outputQr= "C:\\Users\\Lorelei\\Downloads\\outputqr.png";
//placeholder file path
  public static void generateQRcode(String text, int width, int height, String filepath) throws
WriterException{
    QRCodeWriter qc = new QRCodeWriter();
    BitMatrix bm = qc.encode(text,BarcodeFormat.QR_CODE,width, height);
    Path pobj = FileSystems.getDefault().getPath(filepath);
    try {
        MatrixToImageWriter.writeToPath(bm, "PNG", pobj);
    } catch (IOException ex) {
        Logger.getLogger(App.class.getName()).log(Level.SEVERE, null, ex);
    }

  }
  private String getname(String selectedItem) {
    String file = null;

    try {
        String query = "SELECT possession FROM item WHERE name = ?";
        PreparedStatement statement = conn.prepareStatement(query);
        statement.setString(1, selectedItem);
        ResultSet resultSet = statement.executeQuery();
```

```
        if (resultSet.next()) {
            file = resultSet.getString("Possession");
        }

        resultSet.close();
        statement.close();
    } catch (SQLException e) {
        e.printStackTrace();
    }
    return file;
}
private String getstats(String selectedItem) {
    String file = null;

    try {
        String query = "SELECT status FROM item WHERE name = ?";
        PreparedStatement statement = conn.prepareStatement(query);
        statement.setString(1, selectedItem);
        ResultSet resultSet = statement.executeQuery();

        if (resultSet.next()) {
            file = resultSet.getString("Status");
        }

        resultSet.close();
        statement.close();
    } catch (SQLException e) {
        e.printStackTrace();
    }
    return file;
}
private String getfile(String selectedItem) {
    String file = null;

    try {
        String query = "SELECT path FROM item WHERE name = ?";
        PreparedStatement statement = conn.prepareStatement(query);
        statement.setString(1, selectedItem);
        ResultSet resultSet = statement.executeQuery();

        if (resultSet.next()) {
            file = resultSet.getString("Path");
        }

        resultSet.close();
        statement.close();
    } catch (SQLException e) {
```

```
            e.printStackTrace();
        }
        return file;
    }

    @Override
    public Thread newThread(Runnable r){
        Thread t = new Thread(r, "My Thread");
        t.setDaemon(true);
        return t;
    }



}
```

Login.Java

```
/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this
license
 * Click nbfs://nbhost/SystemFileSystem/Templates/GUIForms/JFrame.java to edit this
template
 */
package electrical;

import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.SQLException;
import javax.swing.JOptionPane;

/**
 *
 * @author Lorelei
 */
public class Login extends javax.swing.JFrame {
    private static final String DB_URL = "jdbc:mysql://localhost:3306/final";
    private static final String DB_USERNAME = "root";
    private static final String DB_PASSWORD = "";
    String result = null;
```

```
public void ctd() {
    try {
        conn = DriverManager.getConnection(DB_URL, DB_USERNAME, DB_PASSWORD);
        System.out.println("Connected to the database.");
    } catch (SQLException e) {
        System.out.println("Failed to connect to the database.");
        e.printStackTrace();
    }
}
// Define a connection object
private Connection conn;
/**
 * Creates new form Login
 */
public Login() {
    ctd();
    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();
    jLabel2 = new javax.swing.JLabel();
    jLabel4 = new javax.swing.JLabel();
    passIN = new javax.swing.JTextField();
    nameIN = new javax.swing.JTextField();
    jButton1 = new javax.swing.JButton();
    jButton2 = new javax.swing.JButton();
    jLabel5 = new javax.swing.JLabel();

    setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
    setBackground(new java.awt.Color(0, 0, 0));
    getContentPane().setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

    jPanel1.setBackground(new java.awt.Color(0, 0, 0));
    jPanel1.setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

    jLabel1.setFont(new java.awt.Font("Segoe UI", 1, 24)); // NOI18N
    jLabel1.setForeground(new java.awt.Color(255, 255, 255));
```

```
        jLabel1.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
        jLabel1.setText("ENTER ACCOUNT");
        jPanel1.add(jLabel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(210, 440, 230,
49));

        jLabel2.setForeground(new java.awt.Color(255, 255, 255));
        jLabel2.setText("ENTER NAME");
        jPanel1.add(jLabel2, new org.netbeans.lib.awtextra.AbsoluteConstraints(210, 510, 201,
-1));

        jLabel4.setForeground(new java.awt.Color(255, 255, 255));
        jLabel4.setText("PASSWORD");
        jPanel1.add(jLabel4, new org.netbeans.lib.awtextra.AbsoluteConstraints(210, 580, 224,
-1));

        passIN.setBackground(new java.awt.Color(0, 0, 0));
        passIN.setForeground(new java.awt.Color(255, 255, 255));
        jPanel1.add(passIN, new org.netbeans.lib.awtextra.AbsoluteConstraints(210, 600, 230,
-1));

        nameIN.setBackground(new java.awt.Color(0, 0, 0));
        nameIN.setForeground(new java.awt.Color(255, 255, 255));
        jPanel1.add(nameIN, new org.netbeans.lib.awtextra.AbsoluteConstraints(210, 530, 230,
-1));

        jButton1.setBackground(new java.awt.Color(0, 255, 204));
        jButton1.setText("Login");
        jButton1.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton1ActionPerformed(evt);
            }
        });
        jPanel1.add(jButton1, new org.netbeans.lib.awtextra.AbsoluteConstraints(270, 660, 90,
-1));

        jButton2.setBackground(new java.awt.Color(0, 255, 204));
        jButton2.setText("Sign up");
        jButton2.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton2ActionPerformed(evt);
            }
        });
        jPanel1.add(jButton2, new org.netbeans.lib.awtextra.AbsoluteConstraints(270, 700, 90,
-1));

        jLabel5.setForeground(new java.awt.Color(255, 255, 255));
        jLabel5.setIcon(new javax.swing.ImageIcon(getClass().getResource("/electrical/Blue 3D
```

```
English Parts of Speech Noun Educational Presentation.gif"))); // NOI18N
        jPanel1.add(jLabel5, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, 370, 650,
510));

        getContentPane().add(jPanel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(0,
-380, 650, 880));

        setSize(new java.awt.Dimension(664, 501));
        setLocationRelativeTo(null);
    }// </editor-fold>

    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
        String pass = getpass(nameIN.getText());

        if (pass.equals(passIN.getText())){
            App newForm = new App();
            newForm.setVisible(true);

            // Dispose the existing form
            dispose();
        } else {
            JOptionPane.showMessageDialog(null, "Please enter the correct Name and
Password");
            nameIN.setText("");
            passIN.setText("");
        }

        // TODO add your handling code here:
    }

    private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
    Signup newForm = new Signup();
    newForm.setVisible(true);

    // Dispose the existing form
    dispose();    // TODO add your handling code here:
    }

    /**
     * @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(Login.class.getName()).log(java.util.logging.Level.SEVERE
, null, ex);
        } catch (InstantiationException ex) {

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

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

java.util.logging.Logger.getLogger(Login.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 Login().setVisible(true);
            }
        });
    }

    // Variables declaration - do not modify
    private javax.swing.JButton jButton1;
    private javax.swing.JButton jButton2;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel4;
    private javax.swing.JLabel jLabel5;
    private javax.swing.JPanel jPanel1;
    private javax.swing.JTextField nameIN;
    private javax.swing.JTextField passIN;
    // End of variables declaration
```

```
    private String getpass(String selectedItem) {
        String file = null;

        try {
            String query = "SELECT pass FROM accounts WHERE name = ?";
            PreparedStatement statement = conn.prepareStatement(query);
            statement.setString(1, selectedItem);
            ResultSet resultSet = statement.executeQuery();

            if (resultSet.next()) {
                file = resultSet.getString("Pass");
            }

            resultSet.close();
            statement.close();
        } catch (SQLException e) {
            e.printStackTrace();
        }
        return file;
    }

}
```

Signup.Java

```
/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this
license
 * Click nbfs://nbhost/SystemFileSystem/Templates/GUIForms/JFrame.java to edit this
template
 */
package electrical;

import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.swing.JOptionPane;
import javax.swing.event.DocumentEvent;
import javax.swing.event.DocumentListener;

/**
```

```
 *
 * @author Lorelei
 */
public class Signup extends javax.swing.JFrame {
    private static final String DB_URL = "jdbc:mysql://localhost:3306/final";
    private static final String DB_USERNAME = "root";
    private static final String DB_PASSWORD = "";
    String result = null;
    public void ctd() {
        try {
            conn = DriverManager.getConnection(DB_URL, DB_USERNAME, DB_PASSWORD);
            System.out.println("Connected to the database.");
        } catch (SQLException e) {
            System.out.println("Failed to connect to the database.");
            e.printStackTrace();
        }
    }
    // Define a connection object
    private Connection conn;
    /**
     * Creates new form Signup
     */
    public Signup() {
        ctd();
        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();
        jLabel2 = new javax.swing.JLabel();
        jLabel3 = new javax.swing.JLabel();
        srIN = new javax.swing.JTextField();
        jLabel4 = new javax.swing.JLabel();
        nameIN = new javax.swing.JTextField();
        Sign = new javax.swing.JButton();
        passIN = new javax.swing.JPasswordField();
        jButton1 = new javax.swing.JButton();
        jLabel5 = new javax.swing.JLabel();
```

```
        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
        getContentPane().setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

        jPanel1.setBackground(new java.awt.Color(0, 0, 0));
        jPanel1.setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

        jLabel1.setFont(new java.awt.Font("Segoe UI", 1, 24)); // NOI18N
        jLabel1.setForeground(new java.awt.Color(255, 255, 255));
        jLabel1.setHorizontalAlignment(javax.swing.SwingConstants.CENTER);
        jLabel1.setText("NEW ACCOUNT");
        jPanel1.add(jLabel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(210, 100, 230,
49));

        jLabel2.setForeground(new java.awt.Color(255, 255, 255));
        jLabel2.setText("ENTER NAME");
        jPanel1.add(jLabel2, new org.netbeans.lib.awtextra.AbsoluteConstraints(210, 160, 201,
-1));

        jLabel3.setForeground(new java.awt.Color(255, 255, 255));
        jLabel3.setText("ENTER SR-CODE");
        jPanel1.add(jLabel3, new org.netbeans.lib.awtextra.AbsoluteConstraints(210, 210, 224,
-1));

        srIN.setBackground(new java.awt.Color(0, 0, 0));
        srIN.setForeground(new java.awt.Color(255, 255, 255));
        srIN.getDocument().addDocumentListener(new DocumentListener() {
            @Override
            public void insertUpdate(DocumentEvent e) {
                updateButtonState();
            }

            @Override
            public void removeUpdate(DocumentEvent e) {
                updateButtonState();
            }

            @Override
            public void changedUpdate(DocumentEvent e) {
                updateButtonState();
            }

            private void updateButtonState() {
                // Check if all three text fields have at least one character
                boolean enableButton = !nameIN.getText().isEmpty() &&
                !srIN.getText().isEmpty() &&
                passIN.getPassword().length > 0;
```

```
            Sign.setEnabled(enableButton);
        }
    });
    jPanel1.add(srIN, new org.netbeans.lib.awtextra.AbsoluteConstraints(210, 230, 230, -1));

    jLabel4.setForeground(new java.awt.Color(255, 255, 255));
    jLabel4.setText("PASSWORD");
    jPanel1.add(jLabel4, new org.netbeans.lib.awtextra.AbsoluteConstraints(210, 270, 224,
-1));

    nameIN.setBackground(new java.awt.Color(0, 0, 0));
    nameIN.setForeground(new java.awt.Color(255, 255, 255));
    nameIN.getDocument().addDocumentListener(new DocumentListener() {
        @Override
        public void insertUpdate(DocumentEvent e) {
            updateButtonState();
        }

        @Override
        public void removeUpdate(DocumentEvent e) {
            updateButtonState();
        }

        @Override
        public void changedUpdate(DocumentEvent e) {
            updateButtonState();
        }

        private void updateButtonState() {
            // Check if all three text fields have at least one character
            boolean enableButton = !nameIN.getText().isEmpty() &&
            !srIN.getText().isEmpty() &&
            passIN.getPassword().length > 0;
            Sign.setEnabled(enableButton);
        }
    });
    jPanel1.add(nameIN, new org.netbeans.lib.awtextra.AbsoluteConstraints(210, 180, 230,
-1));

    Sign.setBackground(new java.awt.Color(0, 255, 204));
    Sign.setText("Sign up");
    Sign.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            SignActionPerformed(evt);
        }
    });
    jPanel1.add(Sign, new org.netbeans.lib.awtextra.AbsoluteConstraints(270, 340, 90, -1));
```

```
        passIN.setBackground(new java.awt.Color(0, 0, 0));
        passIN.setForeground(new java.awt.Color(255, 255, 255));
        passIN.getDocument().addDocumentListener(new DocumentListener() {
            @Override
            public void insertUpdate(DocumentEvent e) {
                updateButtonState();
            }

            @Override
            public void removeUpdate(DocumentEvent e) {
                updateButtonState();
            }

            @Override
            public void changedUpdate(DocumentEvent e) {
                updateButtonState();
            }

            private void updateButtonState() {
                // Check if all three text fields have at least one character
                boolean enableButton = !nameIN.getText().isEmpty() &&
                !srIN.getText().isEmpty() &&
                passIN.getPassword().length > 0;
                Sign.setEnabled(enableButton);
            }
        });
        jPanel1.add(passIN, new org.netbeans.lib.awtextra.AbsoluteConstraints(210, 290, 230,
-1));

        jButton1.setBackground(new java.awt.Color(153, 255, 255));
        jButton1.setText("BACK");
        jButton1.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton1ActionPerformed(evt);
            }
        });
        jPanel1.add(jButton1, new org.netbeans.lib.awtextra.AbsoluteConstraints(270, 380, 90,
30));

        jLabel5.setForeground(new java.awt.Color(255, 255, 255));
        jLabel5.setIcon(new
javax.swing.ImageIcon(getClass().getResource("/electrical/1aaa.gif"))); // NOI18N
        jPanel1.add(jLabel5, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, -10, 650,
500));

        getContentPane().add(jPanel1, new org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0,
```

```
660, 480));

        setSize(new java.awt.Dimension(664, 501));
        setLocationRelativeTo(null);
    }// </editor-fold>

    private void SignActionPerformed(java.awt.event.ActionEvent evt) {

            try {
                String selectSql = "SELECT * FROM accounts WHERE name = ?";
                PreparedStatement selectStatement = conn.prepareStatement(selectSql);
                selectStatement.setString(1, nameIN.getText());
                ResultSet resultSet = selectStatement.executeQuery();

                if (resultSet.next()) {
                    // Item already exists, perform the update
                    JOptionPane.showMessageDialog(null, "Item already entered");


                } else {
                    String insertSql = "INSERT INTO accounts (name, pass, sr) VALUES (?, ?, ?)";
                    PreparedStatement preparedStatement = conn.prepareStatement(insertSql);
                    preparedStatement.setString(1, nameIN.getText());
                    preparedStatement.setString(2, new String(passIN.getPassword()));
                    preparedStatement.setString(3, srIN.getText());
                    preparedStatement.executeUpdate();
                }} catch (NumberFormatException ex) {
                    JOptionPane.showMessageDialog(null, "Please enter entries");
                } catch (SQLException ex) {
                    Logger.getLogger(App.class.getName()).log(Level.SEVERE, null, ex);
                }
            App newForm = new App();
            newForm.setVisible(true);

            // Dispose the existing form
            dispose();
    // TODO add your handling code here:
    }

    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        Login newForm = new Login();
    newForm.setVisible(true);

    // Dispose the existing form
    dispose();    // TODO add your handling
    }
```

```
    /**
     * @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(Signup.class.getName()).log(java.util.logging.Level.SEVER
E, null, ex);
        } catch (InstantiationException ex) {

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

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

java.util.logging.Logger.getLogger(Signup.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 Signup().setVisible(true);
            }
        });
    }

    // Variables declaration - do not modify
    private javax.swing.JButton Sign;
```

```
    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.JLabel jLabel5;
    private javax.swing.JPanel jPanel1;
    private javax.swing.JTextField nameIN;
    private javax.swing.JPasswordField passIN;
    private javax.swing.JTextField srIN;
    // End of variables declaration
}
```