RAJALAKSHMI
ENGINEERING COLLEGE
An AUTONOMOUS Institution
Affiliated to ANNA UNIVERSITY, Chennai

LOGIN AND SIGNUP PAGE USING JAVA

A MINI PROJECT REPORT

Submitted by

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BACHELOR OF TECHNOLOGY IN

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RAJALAKSHMI ENGINEERING COLLEGE

(AUTONOMOUS) THANDALAM

CHENNAI-602105

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RAJALAKSHMI
ENGINEERING COLLEGE

BONAFIDE CERTIFICATE

Certified that this project report **"LOGIN AND SIGNUP PAGE USING JAVA**" is the Bonafide work of **"GIRIDHAR U (231501047)"** who carried out the project work under my supervision.

Submitted for the Practical Examination held on_____.

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INTERNAL EXAMINER **EXTERNAL EXAMINER**

ABSTRACT

The **Login and Sign-Up page using Java** is a Java-based application designed to provide secure access to a centralized platform for managing resources within educational institutions. Developed using NetBeans and XAMPP, this system enables authenticated users to log in and access resource management functionalities, while ensuring that only authorized personnel can interact with sensitive features. By utilizing Java Database Connectivity (JDBC) for seamless interaction with a MySQL database, the system securely stores user credentials, including hashed passwords, to protect user data and maintain the integrity of the login process.

This project is an educational tool for developers, offering hands-on experience in core areas of software development, such as user authentication, data validation, GUI design, and database management. The NetBeans IDE facilitates intuitive GUI creation through Java Swing components, resulting in a user-friendly interface that enhances the user experience. Security practices are prioritized throughout the project, emphasizing encryption, error handling, and secure database interactions to safeguard sensitive information.

With practical applications in resource allocation and user management, the **Login and Sign-Up Page** highlights best practices in secure software development, while laying a foundation for more advanced features such as multi-factor authentication and role-based access control. This project not only equips developers with essential programming skills but also underscores the importance of security and data protection in today's digital landscape.

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1.INTRODUCTION

1.1 INTRODUCTION TO PROJECT

The Login and Sign-Up page using Java is a Java-based project developed using NetBeans and XAMPP, aimed at providing secure access to a centralized platform for managing college or university resources. This system includes essential login and registration features, allowing verified users to log in and access resource management functionalities while ensuring that only authorized individuals have access to sensitive features.

Leveraging the NetBeans IDE for streamlined GUI design and XAMPP for managing the MySQL database, this project provides an interactive user interface where users can register with unique credentials and log in securely. With the help of Java Database Connectivity (JDBC), the application seamlessly communicates with the database, storing usernames and securely encrypted passwords to maintain data security. By focusing on fundamental principles like input validation, error handling, and data protection, this project offers a strong introduction to developing secure login systems within resource management applications.

This project not only introduces core Java and database concepts but also provides a practical foundation in user authentication, security practices, and GUI development, making it a valuable hands-on learning experience for budding developers.

1.2 OBJECTIVES:

- Implement Secure Authentication Protocols:
  To design a login and signup system that applies secure authentication techniques, such as password hashing and verification, ensuring that only verified users can access the resource management platform.

- Create an Intuitive, User-Friendly Interface
  To leverage NetBeans' GUI design tools to create a clear, intuitive user interface that allows users to easily navigate, register, and log in without confusion. The interface aims to minimize manual errors by guiding users with helpful labels, prompts, and notifications.

- Enable Robust Database Connectivity with Java JDBC:
  To use Java Database Connectivity (JDBC) for seamless integration with the MySQL database, enabling efficient storage, retrieval, and management of user credentials. The objective is to create a secure, reliable connection that facilitates smooth interactions between the application and the database.

- Store User Data Securely Using Password Hashing
  To enhance security, the project should incorporate hashing techniques (e.g., SHA-256 or bcrypt) to securely store user passwords. This objective is critical in preventing unauthorized access, as hashed passwords are harder to reverse-engineer if the database is compromised.

- Implement Comprehensive Error Handling and Validation
  To include error-handling mechanisms that prevent crashes and other failures due to incorrect input or technical issues. Input validation ensures that users submit correctly formatted data (e.g., strong passwords, valid usernames) and receive instant feedback on errors, enhancing both security and user experience.

- Encourage Modular and Scalable Design
  To develop the project using a modular approach that enables easy expansion in the future. For instance, the system could later incorporate additional features, such as account recovery options, multi-factor authentication, and role-based access control.

- Enhance Data Integrity and Protection
  To ensure data integrity by protecting user data from unauthorized modification or deletion. The system should limit access to database operations and allow only authorized users to manage resources. This objective also emphasizes compliance with best practices in data protection and privacy.

- Promote Reusability and Maintainability of Code
  To write clean, well-documented code that follows standard coding practices, making it easy to maintain and update. This objective ensures that the code can be reused for other projects or easily modified as new features are added, reducing development time and promoting efficiency.

- Build Foundational Knowledge for Real-World Application Development
  To provide developers with practical experience in building a secure login system from scratch, equipping them with skills applicable to a variety of applications. This includes gaining familiarity with tools and technologies like NetBeans, JDBC, and XAMPP, which are commonly used in real-world projects.

- Prepare for Future Enhancements in Security and Functionality
  To lay a strong foundation that can be expanded to include more advanced security features, such as session management, account lockouts after repeated failed login attempts, and data encryption for sensitive information. These future enhancements will increase the system's robustness in real-world scenarios.

2. STUDY OF TECHNOLOGIES

2.1 SOFTWARE DESCRIPTION AND FEATURES:

The Login and Sign-Up page using Java is a Java-based application developed with NetBeans and XAMPP, designed to provide a secure and user-friendly interface for managing college or university resources. This standalone application features essential login and signup functionalities that restrict access to verified users, ensuring that only authorized individuals can interact with the resource management platform. The project highlights the integration of a Java GUI with a MySQL database through Java Database Connectivity (JDBC), demonstrating how secure authentication and data management can be effectively implemented.

This project's design emphasizes simplicity, security, and modularity. By incorporating fundamental data protection practices, such as password hashing, the system provides a foundation in secure software development, introducing developers to core concepts that are widely applicable to various applications in modern software environments.

Features

1. **User Registration and Account Creation**
    - Allows new users to create an account by entering a unique username, a secure password, and optional personal information.
    - Validates entries to ensure proper formatting, and checks that the chosen username is not already in use, reducing potential conflicts.
    - Stores passwords securely by hashing them before saving to the database, preventing unauthorized access to sensitive data.
2. **Secure User Login**
    - Authenticates users by verifying their entered credentials (username and password) against the stored, hashed credentials in the database.
    - Grants access to the resource management system only to verified users, enhancing security and ensuring only authorized personnel can view or manage resources.
    - Provides feedback for incorrect login attempts, helping users identify login errors.
3. **Graphical User Interface (GUI) with NetBeans**
    - Utilizes NetBeans' GUI builder to design an intuitive and visually organized interface, making navigation and usage straightforward.
    - Incorporates standard GUI components (e.g., input fields, buttons, labels, alerts) to create a familiar and accessible environment for users.

- Adapts the interface to handle validation messages, login errors, and registration success notifications seamlessly.

4. **Database Management with MySQL**
   - XAMPP serves as the local MySQL database server, storing user credentials securely and facilitating real-time access to data.
   - JDBC enables smooth data interactions between the Java application and the MySQL database, allowing for real-time registration and login.
   - The database is organized to store user credentials in an encrypted format, helping ensure data integrity and security.
5. **Password Security via Hashing**
   - Implements password hashing techniques (e.g., SHA-256 or bcrypt) to protect stored user passwords from unauthorized access.
   - Ensures that passwords are securely hashed before storage, meaning even if database access is compromised, passwords remain protected.
   - Demonstrates best practices in data security, emphasizing the importance of encryption in user authentication systems.
6. **Input Validation and Error Handling**
   - Validates user input to ensure all fields are completed and meet security criteria, such as requiring strong passwords and valid usernames.
   - Provides real-time feedback for errors (e.g., missing fields, weak passwords, or existing usernames), helping users correct their entries.
   - Handles unexpected errors gracefully to prevent system crashes and enhance the stability of the software.
7. **Modular Code Structure for Scalability**
   - Designed with modularity in mind, allowing developers to expand the system by adding new features, such as password recovery options or multi-factor authentication.
   - Follows clean coding practices with documentation, making the software maintainable, understandable, and reusable in future projects.
   - Modular architecture supports easy debugging, updating, and the addition of features, making it adaptable for larger-scale applications.

8. **Interactive Learning Platform**
    - Serves as a practical learning project for beginners and intermediate developers, covering the essential skills in Java, database management, and secure authentication.
    - Provides hands-on experience with NetBeans, XAMPP, and JDBC, building familiarity with tools and frameworks commonly used in software development.
    - Reinforces key principles such as secure data handling, user-friendly design, error management, and coding best practices, creating a strong foundation for more advanced projects.

2.2 Programming Languages

1. **Java**
    - **Core Programming Language**: Java is used for building the application's logic, handling user input, managing database interactions, and implementing secure authentication processes.
    - **Java Swing for GUI**: Java Swing is utilized to create the graphical user interface (GUI), enabling an interactive and user-friendly experience.
2. **SQL (Structured Query Language)**
    - **Database Management**: SQL is used for managing the MySQL database, including creating tables, inserting user data, retrieving records for login authentication, and performing other database operations.
3. **Java Database Connectivity (JDBC)**
    - **Database Connectivity**: JDBC enables seamless communication between the Java application and the MySQL database, allowing the system to perform SQL queries and updates within the Java environment.
4. **XML (Extensible Markup Language)**
    - **Configuration Files**: XML may be used in certain configurations, such as setting up JDBC connections or configuring database properties, to define parameters that the Java application can reference.

3. REQUIREMENTS AND ANALYSIS

3.1 REQUIREMENTS SPECIFICATION

The Login and Sign-Up page using Java is a Java-based application that enables secure authentication for managing college or university resources. This requirement specification outlines both functional and non-functional requirements to ensure the system meets its intended objectives of security, usability, and reliability.

3.2 Functional Requirements

1.1 User Registration

- The system must allow new users to create accounts by providing a unique username, a password, and optional personal details (e.g., email).
- The system must validate that all required fields are completed and formatted correctly.
- The system should ensure that the username is unique and display an error if the username is already in use.
- Passwords must be hashed before being stored in the database for enhanced security.
- The system must confirm successful registration with a notification to the user.

1.2 User Login

- The system must allow registered users to log in by entering their username and password.
- The system must validate the credentials against the stored data in the MySQL database.
- If login credentials are incorrect, the system should display an error message to the user.
- Upon successful login, the user should be granted access to the resource management system.

1.3 Graphical User Interface (GUI)

- The system must provide an interactive GUI that includes login and registration forms with clear input fields and labels.
- The GUI should include buttons for form submission (e.g., "Register" and "Login") and display messages for errors or successful actions.
- The GUI must guide users with clear prompts and provide feedback for missing or invalid inputs.

1.4 Database Management

- The system must use MySQL as the database to store user credentials securely.
- Java Database Connectivity (JDBC) must be used to connect the Java application to the MySQL database.

- The database must store passwords in hashed format to ensure secure storage and prevent unauthorized access.
- The system should have a reliable mechanism to retrieve, insert, update, and validate user credentials.

1.5 Error Handling and Validation

- The system must validate inputs (e.g., ensure username uniqueness, enforce strong password requirements) to prevent errors.
- The system should provide error messages when inputs are missing or formatted incorrectly, such as when the password is too weak.
- The system should handle unexpected errors gracefully, displaying a user-friendly message and logging technical details for debugging.

3.3 Non-Functional Requirements

2.1 Security

The system must use password hashing (e.g., SHA-256 or bcrypt) to securely store passwords in the database.

- The system should protect against SQL injection by using prepared statements in all database queries.
- User data (especially passwords) must be securely transmitted and stored to prevent data breaches.

2.2 Usability

- The GUI should be intuitive, with clear labels and simple navigation to ensure ease of use for beginners.
- The system should provide informative error messages and notifications for successful actions, guiding users through the login and registration processes.

2.3 Reliability

- The system must reliably store and retrieve user credentials, ensuring data integrity.
- The system should handle a high volume of registration and login requests without crashing.

2.4 Performance

- The system should process login and registration requests quickly, with minimal delay between form submission and response.
- The database and application should be optimized for efficient queries to handle large amounts of data if the user base grows.

2.5 Maintainability

- The codebase should be modular, well-documented, and adhere to coding standards, allowing for easy updates, debugging, and feature expansion.

- The system should be easy to modify to support additional features, such as multi-factor authentication, account recovery, or role-based access control.

2.6 Compatibility

- The system must be compatible with the NetBeans IDE and work on systems with XAMPP installed for MySQL database management.
- The application should function smoothly on major operating systems, including Windows, macOS, and Linux, provided the Java runtime environment is available.

4. PROGRAM CODE

LOGIN CODE:

```
package resource.managment;

import java.awt.HeadlessException;
import java.sql.Connection;
import java.sql.ResultSet;
import java.sql.PreparedStatement;
import java.sql.SQLException;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.swing.JOptionPane;

public class Login extends javax.swing.JFrame {

    Connection con=null;
    ResultSet rs=null;
    PreparedStatement ps=null;
    public Login() throws SQLException {
        initComponents();
        con=db.mycon();
    }


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

        jLabel2 = new javax.swing.JLabel();
        jLabel3 = new javax.swing.JLabel();
        jLabel4 = new javax.swing.JLabel();
        jpassword = new javax.swing.JPasswordField();
        jname = new javax.swing.JTextField();
        jPanel3 = new javax.swing.JPanel();
        jLabel7 = new javax.swing.JLabel();
        jPanel2 = new javax.swing.JPanel();
        jLabel6 = new javax.swing.JLabel();
        jLabel1 = new javax.swing.JLabel();
        jPanel1 = new javax.swing.JPanel();
        jLabel5 = new javax.swing.JLabel();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
```

```
        getContentPane().setLayout(new org.netbeans.lib.awtextra.AbsoluteLayout());

        jLabel2.setFont(new java.awt.Font("Papyrus", 3, 48)); // NOI18N
        jLabel2.setForeground(new java.awt.Color(255, 255, 0));
        jLabel2.setText("LOGIN");
        getContentPane().add(jLabel2, new
org.netbeans.lib.awtextra.AbsoluteConstraints(670, 60, 160, -1));

        jLabel3.setFont(new java.awt.Font("Hiragino Sans", 0, 24)); // NOI18N
        jLabel3.setText("Username:");
        getContentPane().add(jLabel3, new
org.netbeans.lib.awtextra.AbsoluteConstraints(540, 210, 160, -1));

        jLabel4.setFont(new java.awt.Font("Hiragino Maru Gothic ProN", 0, 24)); //
NOI18N
        jLabel4.setText("Password:");
        getContentPane().add(jLabel4,  new
org.netbeans.lib.awtextra.AbsoluteConstraints(540, 330, 140, -1));
        getContentPane().add(jpassword, new
org.netbeans.lib.awtextra.AbsoluteConstraints(710, 330, 230, -1));
        getContentPane().add(jname, new
org.netbeans.lib.awtextra.AbsoluteConstraints(710, 210, 230, -1));

        jPanel3.setBackground(new java.awt.Color(153, 0, 0));
        jPanel3.addMouseListener(new  java.awt.event.MouseAdapter()  {
            public void mouseClicked(java.awt.event.MouseEvent evt) {
                jPanel3MouseClicked(evt);
            }
        });

        jLabel7.setFont(new java.awt.Font("Helvetica Neue", 0, 18)); // NOI18N
        jLabel7.setForeground(new java.awt.Color(255, 255, 255));
        jLabel7.setText("Sign Up");

        javax.swing.GroupLayout jPanel3Layout = new javax.swing.GroupLayout(jPanel3);
        jPanel3.setLayout(jPanel3Layout);
        jPanel3Layout.setHorizontalGroup(

jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel3Layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(jLabel7)
                .addContainerGap(9, Short.MAX_VALUE))
```

```
        );
        jPanel3Layout.setVerticalGroup(

jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addComponent(jLabel7, javax.swing.GroupLayout.DEFAULT_SIZE, 30,
Short.MAX_VALUE)
        );

        getContentPane().add(jPanel3, new
org.netbeans.lib.awtextra.AbsoluteConstraints(560, 430, 80, 30));

        jPanel2.setBackground(new java.awt.Color(153, 0, 0));
        jPanel2.addMouseListener(new  java.awt.event.MouseAdapter()  {
            public void mouseClicked(java.awt.event.MouseEvent evt) {
                jPanel2MouseClicked(evt);
            }
        });

        jLabel6.setFont(new java.awt.Font("Helvetica Neue", 0, 18)); // NOI18N
        jLabel6.setForeground(new java.awt.Color(255, 255, 255));
        jLabel6.setText("Login");

        javax.swing.GroupLayout jPanel2Layout = new javax.swing.GroupLayout(jPanel2);
        jPanel2.setLayout(jPanel2Layout);
        jPanel2Layout.setHorizontalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel2Layout.createSequentialGroup()
                .addContainerGap(20, Short.MAX_VALUE)
                .addComponent(jLabel6)
                .addGap(16, 16, 16))
        );
        jPanel2Layout.setVerticalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel2Layout.createSequentialGroup()
                .addGap(0, 0, Short.MAX_VALUE)
                .addComponent(jLabel6, javax.swing.GroupLayout.PREFERRED_SIZE, 30,
javax.swing.GroupLayout.PREFERRED_SIZE))
        );
```

```
        getContentPane().add(jPanel2, new
org.netbeans.lib.awtextra.AbsoluteConstraints(890, 430, 80, 30));

        jLabel1.setIcon(new javax.swing.ImageIcon("/Users/girivasanthvm/Documents/java
projects/wallpapersden.com_line-light-background_2560x1600.jpg")); // NOI18N
        getContentPane().add(jLabel1, new
org.netbeans.lib.awtextra.AbsoluteConstraints(500, 0, 500, 600));

        jLabel5.setIcon(new javax.swing.ImageIcon("/Users/girivasanthvm/Documents/java
projects/image-915x611.jpeg")); // NOI18N

        javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
        jPanel1.setLayout(jPanel1Layout);
        jPanel1Layout.setHorizontalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addComponent(jLabel5, javax.swing.GroupLayout.PREFERRED_SIZE, 500,
Short.MAX_VALUE)
        );
        jPanel1Layout.setVerticalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addComponent(jLabel5)
                .addGap(0, 0, Short.MAX_VALUE))
        );

        getContentPane().add(jPanel1, new
org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 500, 600));

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

    private void jPanel3MouseClicked(java.awt.event.MouseEvent evt) {

        Signup p=new Signup();
        p.setVisible(true);
        p.pack();
        p.setLocationRelativeTo(null);
    }

    private void jPanel2MouseClicked(java.awt.event.MouseEvent evt) {
        // TODO add your handling code here:
```

```
        String un=jname.getText();
        String pas=jpassword.getText();
        try
        {
            String sql="select * from login_id where Username=? and Password=?";
            ps=con.prepareCall(sql);
            ps.setString(1,un);
            ps.setString(2,pas);
            rs=ps.executeQuery();
            if(rs.next()){
                JOptionPane.showMessageDialog(rootPane,"Successfully login");
                Home h=new Home();
                h.setVisible(true);
                h.pack();
                h.setLocationRelativeTo(null);
                this.dispose();
            }
            else
            {
                JOptionPane.showMessageDialog(rootPane,"Login Failed");
            }


        }
        catch(HeadlessException | SQLException e)
        {
            System.out.println("Error occur");
        }
    }


    public static void main(String args[]) {

        java.awt.EventQueue.invokeLater(() -> {
            try {
                new Login().setVisible(true);
            } catch (SQLException ex) {
                Logger.getLogger(Login.class.getName()).log(Level.SEVERE, null, ex);
            }
        });
    }

    // Variables declaration - do not modify
```

```
    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.JPanel jPanel1;
    private javax.swing.JPanel jPanel2;
    private javax.swing.JPanel jPanel3;
    private javax.swing.JTextField jname;
    private javax.swing.JPasswordField jpassword;
    // End of variables declaration
}
```

SIGN UP CODE:

```
package resource.managment;

import java.sql.SQLException;
import  java.sql.Statement;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.swing.JOptionPane;
public class Signup extends javax.swing.JFrame {


    public Signup() {
        initComponents();

    }

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

        jLabel3 = new javax.swing.JLabel();
        jLabel4 = new javax.swing.JLabel();
        jLabel5 = new javax.swing.JLabel();
        jpassword = new javax.swing.JPasswordField();
        jname = new javax.swing.JTextField();
```

```
        jPanel2 = new javax.swing.JPanel();
        jLabel6 = new javax.swing.JLabel();
        jLabel2 = new javax.swing.JLabel();
        jPanel1 = new javax.swing.JPanel();
        jLabel1 = new javax.swing.JLabel();

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

        jLabel3.setFont(new java.awt.Font("Papyrus", 3, 48)); // NOI18N
        jLabel3.setForeground(new java.awt.Color(255, 255, 0));
        jLabel3.setText("SIGN UP");
        getContentPane().add(jLabel3, new
org.netbeans.lib.awtextra.AbsoluteConstraints(670, 80, 200, -1));

        jLabel4.setFont(new java.awt.Font("Hiragino Maru Gothic ProN", 0, 24)); //
NOI18N
        jLabel4.setText("Username:");
        getContentPane().add(jLabel4,  new
org.netbeans.lib.awtextra.AbsoluteConstraints(590, 210, -1, -1));

        jLabel5.setFont(new java.awt.Font("Hiragino Maru Gothic ProN", 0, 24)); //
NOI18N
        jLabel5.setText("Password:");
        getContentPane().add(jLabel5,  new
org.netbeans.lib.awtextra.AbsoluteConstraints(590, 320, -1, -1));
        getContentPane().add(jpassword, new
org.netbeans.lib.awtextra.AbsoluteConstraints(760, 320, 190, -1));

        jname.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jnameActionPerformed(evt);
            }
        });
        getContentPane().add(jname, new
org.netbeans.lib.awtextra.AbsoluteConstraints(760, 210, 190, -1));

        jPanel2.setBackground(new java.awt.Color(153, 0, 0));
        jPanel2.addMouseListener(new  java.awt.event.MouseAdapter()  {
            public void mouseClicked(java.awt.event.MouseEvent evt) {
                jPanel2MouseClicked(evt);
            }
        });
```

```
        jLabel6.setBackground(new java.awt.Color(255, 255, 255));
        jLabel6.setFont(new java.awt.Font("Helvetica Neue", 0, 18)); // NOI18N
        jLabel6.setForeground(new java.awt.Color(255, 255, 255));
        jLabel6.setText("Sign In");

        javax.swing.GroupLayout jPanel2Layout = new javax.swing.GroupLayout(jPanel2);
        jPanel2.setLayout(jPanel2Layout);
        jPanel2Layout.setHorizontalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel2Layout.createSequentialGroup()
                .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE)
                .addComponent(jLabel6)
                .addGap(14, 14, 14))
        );
        jPanel2Layout.setVerticalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel2Layout.createSequentialGroup()
                .addComponent(jLabel6, javax.swing.GroupLayout.PREFERRED_SIZE, 29,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(0, 1, Short.MAX_VALUE))
        );

        getContentPane().add(jPanel2, new
org.netbeans.lib.awtextra.AbsoluteConstraints(740, 410, 70, 30));

        jLabel2.setIcon(new javax.swing.ImageIcon("/Users/girivasanthvm/Documents/java
projects/wallpapersden.com_line-light-background_2560x1600.jpg")); // NOI18N
        getContentPane().add(jLabel2, new
org.netbeans.lib.awtextra.AbsoluteConstraints(500, 0, 500, 600));

        jLabel1.setIcon(new javax.swing.ImageIcon("/Users/girivasanthvm/Documents/java
projects/image-915x611.jpeg")); // NOI18N

        javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
        jPanel1.setLayout(jPanel1Layout);
        jPanel1Layout.setHorizontalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
```

```
            .addComponent(jLabel1, javax.swing.GroupLayout.Alignment.TRAILING,
javax.swing.GroupLayout.PREFERRED_SIZE, 500, Short.MAX_VALUE)
        );
        jPanel1Layout.setVerticalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addComponent(jLabel1, javax.swing.GroupLayout.PREFERRED_SIZE, 600,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(0, 88, Short.MAX_VALUE))
        );

        getContentPane().add(jPanel1, new
org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 500, -1));

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

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

    }

    private void jPanel2MouseClicked(java.awt.event.MouseEvent evt) {
        String un=jname.getText();
        String pas=jpassword.getText();
        try
        {
            Statement s=db.mycon().createStatement();
            s.executeUpdate("insert into login_id (Username,Password)"
                  +"values('"+un+"','"+pas+"')");
            JOptionPane.showMessageDialog(rootPane,"Successfully signup");
            Login l=new Login();
            l.setVisible(true);
            l.pack();
            l.setLocationRelativeTo(null);
            this.dispose();
        } catch (SQLException ex) {
            Logger.getLogger(Signup.class.getName()).log(Level.SEVERE, null, ex);
        }
    }
```

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

        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new Signup().setVisible(true);
            }
        });
    }

    // Variables declaration - do not modify
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel3;
    private javax.swing.JLabel jLabel4;
    private javax.swing.JLabel jLabel5;
    private javax.swing.JLabel jLabel6;
    private javax.swing.JPanel jPanel1;
    private javax.swing.JPanel jPanel2;
    private javax.swing.JTextField jname;
    private javax.swing.JPasswordField jpassword;
    // End of variables declaration
}
```

Home page code:

```
package resource.managment;


public class Home extends javax.swing.JFrame {


    public Home() {
        initComponents();
    }


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

        jPanel1 = new javax.swing.JPanel();
```

```
        jLabel2 = new javax.swing.JLabel();
        jLabel3 = new javax.swing.JLabel();
        jPanel2 = new javax.swing.JPanel();
        jLabel4 = new javax.swing.JLabel();
        jLabel5 = new javax.swing.JLabel();
        jLabel6 = new javax.swing.JLabel();
        jPanel3 = new javax.swing.JPanel();
        jLabel7 = new javax.swing.JLabel();
        jTextField1 = new javax.swing.JTextField();
        jLabel8 = new javax.swing.JLabel();
        jTextField2 = new javax.swing.JTextField();
        jLabel9 = new javax.swing.JLabel();
        jTextField3 = new javax.swing.JTextField();
        jLabel10 = new javax.swing.JLabel();
        jTextField4 = new javax.swing.JTextField();
        jPanel4 = new javax.swing.JPanel();
        jLabel11 = new javax.swing.JLabel();
        jPanel5 = new javax.swing.JPanel();
        jLabel12 = new javax.swing.JLabel();
        jPanel6 = new javax.swing.JPanel();
        jPanel10 = new javax.swing.JPanel();
        jPanel7 = new javax.swing.JPanel();
        jPanel8 = new javax.swing.JPanel();
        jPanel9 = new javax.swing.JPanel();
        jLabel13 = new javax.swing.JLabel();
        jLabel1 = 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, 102, 102));

        jLabel2.setIcon(new javax.swing.ImageIcon("/Users/girivasanthvm/Documents/java
projects/user5.png")); // NOI18N

        jLabel3.setFont(new java.awt.Font("Helvetica Neue", 0, 36)); // NOI18N
        jLabel3.setForeground(new java.awt.Color(255, 255, 0));
        jLabel3.setText("Resource Managment System");

        javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
        jPanel1.setLayout(jPanel1Layout);
        jPanel1Layout.setHorizontalGroup(
```

```
jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(jLabel2)
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                .addComponent(jLabel3, javax.swing.GroupLayout.PREFERRED_SIZE, 522,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap(372, Short.MAX_VALUE))
        );
        jPanel1Layout.setVerticalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addContainerGap()

.addGroup(jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                    .addComponent(jLabel2, javax.swing.GroupLayout.PREFERRED_SIZE, 0,
Short.MAX_VALUE)
                    .addComponent(jLabel3, javax.swing.GroupLayout.DEFAULT_SIZE, 48,
Short.MAX_VALUE))
                .addContainerGap())
        );

        getContentPane().add(jPanel1, new
org.netbeans.lib.awtextra.AbsoluteConstraints(0, 0, 970, 60));

        jPanel2.setBackground(new java.awt.Color(255, 255, 255));

        jLabel4.setIcon(new
javax.swing.ImageIcon("/Users/girivasanthvm/Downloads/cogwheel (2).png")); //
NOI18N

        jLabel5.setIcon(new
javax.swing.ImageIcon("/Users/girivasanthvm/Downloads/list.png")); // NOI18N

        javax.swing.GroupLayout jPanel2Layout = new javax.swing.GroupLayout(jPanel2);
        jPanel2.setLayout(jPanel2Layout);
        jPanel2Layout.setHorizontalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel2Layout.createSequentialGroup()
```

```
            .addGap(14, 14, 14)

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                .addComponent(jLabel5)
                .addComponent(jLabel4))
            .addContainerGap(14, Short.MAX_VALUE))
        );
        jPanel2Layout.setVerticalGroup(

jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel2Layout.createSequentialGroup()
            .addGap(21, 21, 21)
            .addComponent(jLabel5)
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
418, Short.MAX_VALUE)
            .addComponent(jLabel4, javax.swing.GroupLayout.PREFERRED_SIZE, 53,
javax.swing.GroupLayout.PREFERRED_SIZE)
            .addGap(16, 16, 16))
        );

        getContentPane().add(jPanel2, new
org.netbeans.lib.awtextra.AbsoluteConstraints(0, 50, 60, 540));

        jLabel6.setFont(new java.awt.Font("Hiragino Maru Gothic ProN", 2, 24)); //
NOI18N
        jLabel6.setText("Resource Request:");
        getContentPane().add(jLabel6, new
org.netbeans.lib.awtextra.AbsoluteConstraints(100, 80, 240, 30));

        jPanel3.setBackground(new java.awt.Color(0, 102, 51));

        jLabel7.setFont(new java.awt.Font("Helvetica Neue", 0, 14)); // NOI18N
        jLabel7.setForeground(new java.awt.Color(255, 255, 255));
        jLabel7.setText("Resource Name:");

        jTextField1.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jTextField1ActionPerformed(evt);
            }
        });
```

```
        jLabel8.setBackground(new java.awt.Color(255, 255, 255));
        jLabel8.setFont(new java.awt.Font("Helvetica Neue", 0, 14)); // NOI18N
        jLabel8.setForeground(new java.awt.Color(255, 255, 255));
        jLabel8.setText("Required Date:");

        jLabel9.setFont(new java.awt.Font("Helvetica Neue", 0, 14)); // NOI18N
        jLabel9.setForeground(new java.awt.Color(255, 255, 255));
        jLabel9.setText("Return Date:");

        jLabel10.setFont(new java.awt.Font("Helvetica Neue", 0, 14)); // NOI18N
        jLabel10.setForeground(new java.awt.Color(255, 255, 255));
        jLabel10.setText("Quantity:");

        jPanel4.setBackground(new java.awt.Color(153, 0, 0));

        jLabel11.setBackground(new java.awt.Color(153, 0, 0));
        jLabel11.setForeground(new java.awt.Color(255, 255, 255));
        jLabel11.setText("Submit");

        javax.swing.GroupLayout jPanel4Layout = new javax.swing.GroupLayout(jPanel4);
        jPanel4.setLayout(jPanel4Layout);
        jPanel4Layout.setHorizontalGroup(

jPanel4Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel4Layout.createSequentialGroup()
                .addGap(21, 21, 21)
                .addComponent(jLabel11)
                .addContainerGap(25, Short.MAX_VALUE))
        );
        jPanel4Layout.setVerticalGroup(

jPanel4Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel4Layout.createSequentialGroup()
                .addGap(0, 0, Short.MAX_VALUE)
                .addComponent(jLabel11))
        );

        jPanel5.setBackground(new java.awt.Color(51, 51, 51));

        javax.swing.GroupLayout jPanel5Layout = new javax.swing.GroupLayout(jPanel5);
        jPanel5.setLayout(jPanel5Layout);
        jPanel5Layout.setHorizontalGroup(
```

```
jPanel5Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGap(0, 8, Short.MAX_VALUE)
        );
        jPanel5Layout.setVerticalGroup(

jPanel5Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGap(0, 0, Short.MAX_VALUE)
        );

        jLabel12.setFont(new java.awt.Font("Helvetica Neue", 0, 14)); // NOI18N
        jLabel12.setForeground(new java.awt.Color(255, 255, 255));
        jLabel12.setText("My Request:");

        javax.swing.GroupLayout jPanel6Layout = new javax.swing.GroupLayout(jPanel6);
        jPanel6.setLayout(jPanel6Layout);
        jPanel6Layout.setHorizontalGroup(

jPanel6Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGap(0, 313, Short.MAX_VALUE)
        );
        jPanel6Layout.setVerticalGroup(

jPanel6Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGap(0, 138, Short.MAX_VALUE)
        );

        javax.swing.GroupLayout jPanel10Layout = new
javax.swing.GroupLayout(jPanel10);
        jPanel10.setLayout(jPanel10Layout);
        jPanel10Layout.setHorizontalGroup(

jPanel10Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGap(0, 0, Short.MAX_VALUE)
        );
        jPanel10Layout.setVerticalGroup(

jPanel10Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGap(0, 17, Short.MAX_VALUE)
        );

        javax.swing.GroupLayout jPanel3Layout = new javax.swing.GroupLayout(jPanel3);
        jPanel3.setLayout(jPanel3Layout);
```

```
        jPanel3Layout.setHorizontalGroup(

jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel3Layout.createSequentialGroup()

.addGroup(jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                    .addGroup(jPanel3Layout.createSequentialGroup()
                        .addGap(39, 39, 39)

.addGroup(jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING, false)
                            .addComponent(jLabel10, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                            .addComponent(jLabel9, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                            .addComponent(jLabel8, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                            .addComponent(jLabel7, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))

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

.addGroup(jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING, false)
                            .addComponent(jTextField1)
                            .addComponent(jTextField2)
                            .addComponent(jTextField3)
                            .addComponent(jTextField4,
javax.swing.GroupLayout.DEFAULT_SIZE, 262,  Short.MAX_VALUE)))
                    .addGroup(jPanel3Layout.createSequentialGroup()
                        .addGap(31, 31, 31)
                        .addComponent(jPanel4, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
                .addComponent(jPanel5, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(39, 39, 39)
```

```
.addGroup(jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING, false)
                .addComponent(jLabel12, javax.swing.GroupLayout.PREFERRED_SIZE,
93, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(jPanel6, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                .addComponent(jPanel10, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
            .addContainerGap(17, Short.MAX_VALUE))
        );
        jPanel3Layout.setVerticalGroup(

jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addComponent(jPanel5, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
            .addGroup(jPanel3Layout.createSequentialGroup()
                .addGap(23, 23, 23)

.addGroup(jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)
                .addComponent(jLabel7)
                .addComponent(jTextField1,
javax.swing.GroupLayout.PREFERRED_SIZE, 17,
javax.swing.GroupLayout.PREFERRED_SIZE))
            .addGap(18, 18, 18)

.addGroup(jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                .addComponent(jTextField2,
javax.swing.GroupLayout.PREFERRED_SIZE, 17,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(jLabel8))
            .addGap(18, 18, 18)

.addGroup(jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)
                .addComponent(jLabel9)
                .addComponent(jTextField3,
javax.swing.GroupLayout.PREFERRED_SIZE, 17,
javax.swing.GroupLayout.PREFERRED_SIZE))
            .addGap(18, 18, 18)
```

```
.addGroup(jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                .addComponent(jTextField4,
javax.swing.GroupLayout.PREFERRED_SIZE, 17,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addComponent(jLabel10))
            .addGap(18, 18, 18)
            .addComponent(jPanel4, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
            .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE))
        .addGroup(jPanel3Layout.createSequentialGroup()
            .addGap(20, 20, 20)
            .addComponent(jLabel12)
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
            .addComponent(jPanel10, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
            .addComponent(jPanel6, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
            .addGap(45, 45, 45))
    );

    getContentPane().add(jPanel3, new
org.netbeans.lib.awtextra.AbsoluteConstraints(100, 130, 810, 230));

    jPanel7.setBackground(new java.awt.Color(0, 102, 0));

    javax.swing.GroupLayout jPanel8Layout = new javax.swing.GroupLayout(jPanel8);
    jPanel8.setLayout(jPanel8Layout);
    jPanel8Layout.setHorizontalGroup(

jPanel8Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGap(0, 808, Short.MAX_VALUE)
    );
    jPanel8Layout.setVerticalGroup(

jPanel8Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
```

```
            .addGap(0, 20, Short.MAX_VALUE)
        );

        javax.swing.GroupLayout jPanel9Layout = new javax.swing.GroupLayout(jPanel9);
        jPanel9.setLayout(jPanel9Layout);
        jPanel9Layout.setHorizontalGroup(

jPanel9Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGap(0, 0, Short.MAX_VALUE)
        );
        jPanel9Layout.setVerticalGroup(

jPanel9Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGap(0, 102, Short.MAX_VALUE)
        );

        javax.swing.GroupLayout jPanel7Layout = new javax.swing.GroupLayout(jPanel7);
        jPanel7.setLayout(jPanel7Layout);
        jPanel7Layout.setHorizontalGroup(

jPanel7Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel7Layout.createSequentialGroup()
                .addContainerGap()

.addGroup(jPanel7Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                    .addComponent(jPanel8, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                    .addComponent(jPanel9, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
                .addContainerGap())
        );
        jPanel7Layout.setVerticalGroup(

jPanel7Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel7Layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(jPanel8, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
                .addComponent(jPanel9, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
```

```
                .addContainerGap())
        );

        getContentPane().add(jPanel7, new
org.netbeans.lib.awtextra.AbsoluteConstraints(100, 430, 820, 140));

        jLabel13.setFont(new java.awt.Font("Hiragino Maru Gothic ProN", 2, 24)); //
NOI18N
        jLabel13.setText("Allocated Request:");
        getContentPane().add(jLabel13, new
org.netbeans.lib.awtextra.AbsoluteConstraints(100, 380, -1, -1));

        jLabel1.setIcon(new javax.swing.ImageIcon("/Users/girivasanthvm/Documents/java
projects/image-915x611.jpeg")); // NOI18N
        getContentPane().add(jLabel1, new
org.netbeans.lib.awtextra.AbsoluteConstraints(50, 50, -1, 530));

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

    private void jTextField1ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
    }


    public static void main(String args[]) {

        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new Home().setVisible(true);
            }
        });
    }

    // Variables declaration - do not modify
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel10;
    private javax.swing.JLabel jLabel11;
    private javax.swing.JLabel jLabel12;
    private javax.swing.JLabel jLabel13;
    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.JLabel jLabel9;
    private javax.swing.JPanel jPanel1;
    private javax.swing.JPanel jPanel10;
    private javax.swing.JPanel jPanel2;
    private javax.swing.JPanel jPanel3;
    private javax.swing.JPanel jPanel4;
    private javax.swing.JPanel jPanel5;
    private javax.swing.JPanel jPanel6;
    private javax.swing.JPanel jPanel7;
    private javax.swing.JPanel jPanel8;
    private javax.swing.JPanel jPanel9;
    private javax.swing.JTextField jTextField1;
    private javax.swing.JTextField jTextField2;
    private javax.swing.JTextField jTextField3;
    private  javax.swing.JTextField  jTextField4;
    // End of variables declaration
}
```

DATABASE CONNECTIVITY CODE:

```
package resource.managment;

import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException;
public class db {
    public static Connection mycon() throws SQLException
    {
        Connection con=null;
        try
        {
            Class.forName("com.mysql.jdbc.Driver");
            con =
DriverManager.getConnection("jdbc:mysql://127.0.0.1:3307/login","root","");
        }
        catch(ClassNotFoundException |SQLException e)
        {
```

```
            System.out.println(e);

        }
        return con;
    }
}
```

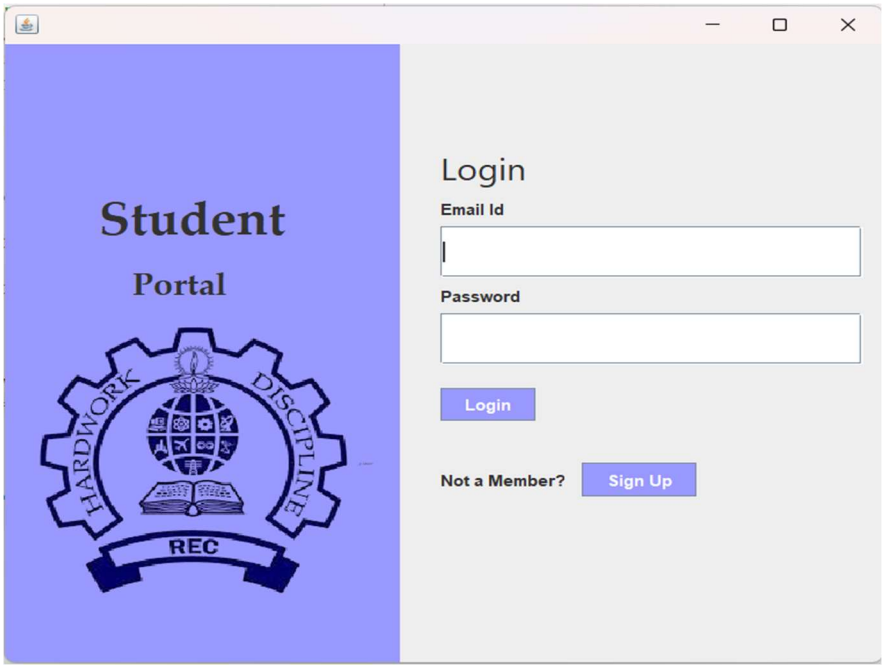
MAIN CLASS:

```
package resource.managment;

import java.sql.SQLException;


public class ResourceManagment {


    public static void main(String[] args) throws SQLException {
        // TODO code application logic here
        Login l=new Login();
        l.setVisible(true);
        l.pack();
        l.setLocationRelativeTo(null);


    }
```

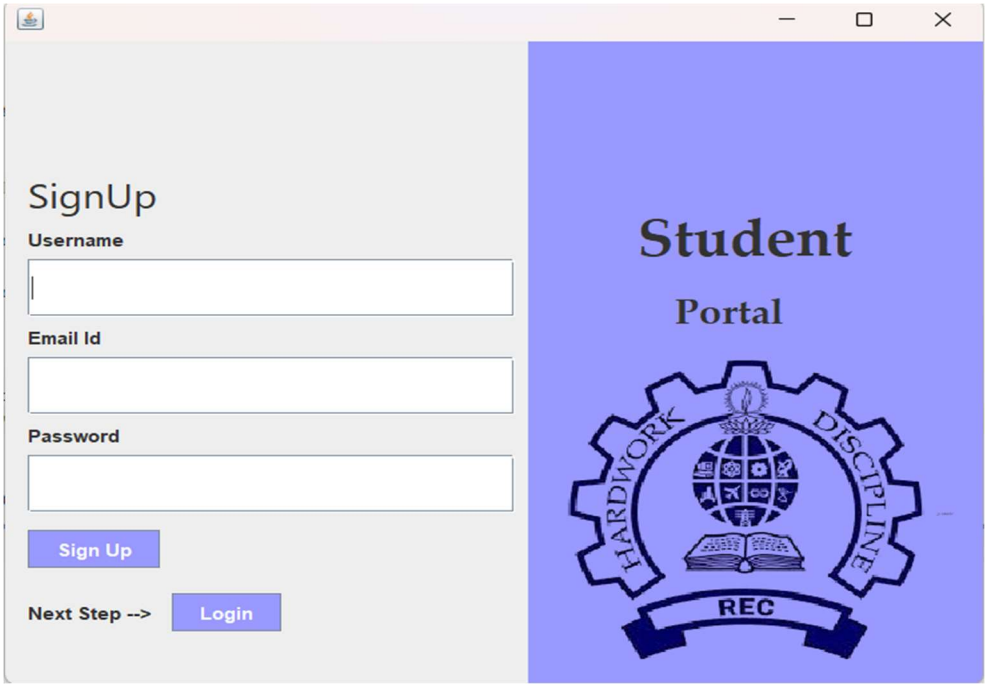
5. RESULTS AND DISCUSSIONS

RESULTS:

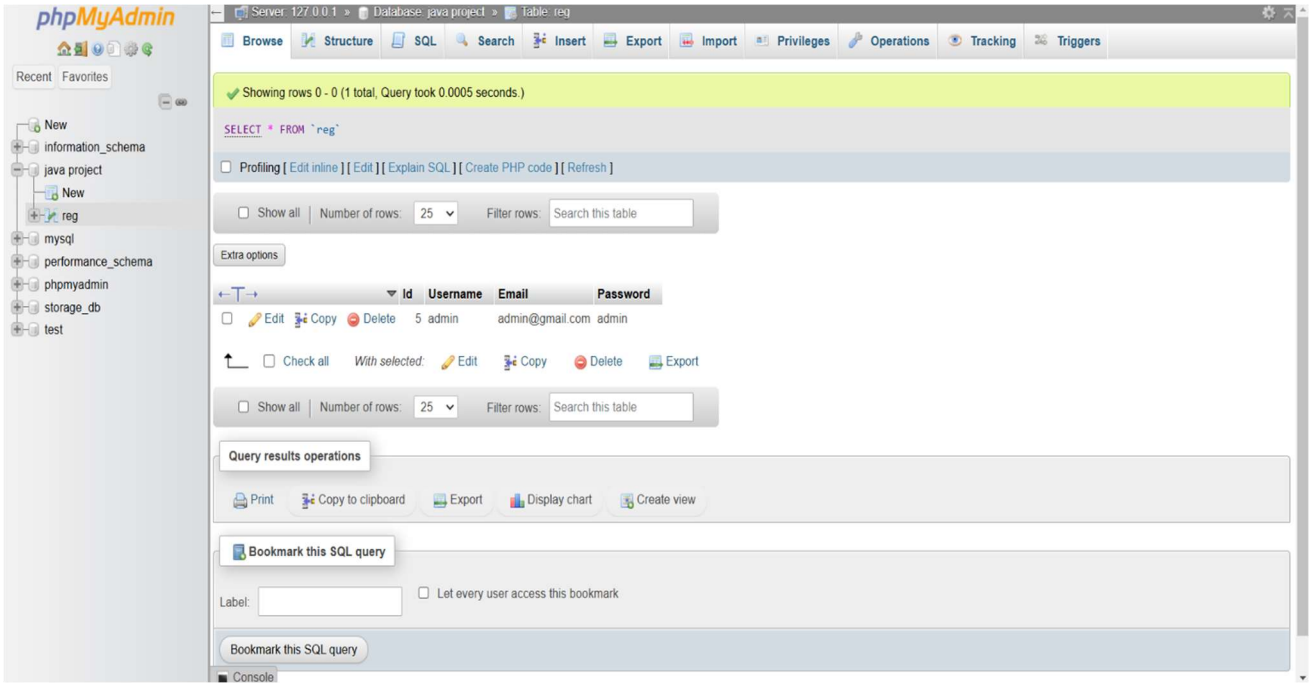
Login Page of the Software



Sign up Page of the Software



SQL Database with User Credentials



DISCUSSIONS:
The **Login Page and Sign-Up Page using Java** is an educational project with practical applications, especially for beginner to intermediate Java developers who wish to learn about secure user authentication, database integration, and graphical user interface (GUI) design. Below are key discussion points that highlight the significance, challenges, learning outcomes, and potential for further development within this project.

Project Significance

This project addresses a common need for secure authentication in resource management systems used by educational institutions. Colleges and universities often require a controlled system that ensures only authorized individuals can access, request, and manage shared resources (e.g., classrooms, equipment, study materials). Implementing a login and signup system with a secure database backend ensures that sensitive information is protected, providing a first layer of security that restricts unauthorized access. Moreover, by developing this project in Java, it becomes versatile and widely applicable, as Java is commonly used in enterprise-level applications.
This project serves as a practical learning experience for developers, giving them insight into core software development concepts like user authentication, data security, error handling, and database management.

6. CONCLUSION

- The **Login Page and Sign-Up page using Java** is an excellent project for Java developers who are looking to enhance their skills in various core areas of software development, including user authentication, database management, and GUI design. By focusing on a real-world application such as resource management for educational institutions, this project demonstrates how secure and efficient login systems can be implemented to ensure that only authorized users can access sensitive data.

- Throughout the development of this system, key programming concepts are introduced, including password hashing, database interactions using JDBC, and effective error handling. These are all vital skills for building secure and reliable applications. The project's integration with MySQL via XAMPP also gives developers practical experience with managing databases, handling SQL queries, and ensuring the security of stored data, which is essential for creating applications that involve user data and resource management.

- The modular structure of this project emphasizes best practices in software development, such as maintaining a clean codebase, error-free logic, and scalability. The application's GUI, developed using Java Swing, offers an intuitive interface that aligns with real-world standards for user experience. This allows developers to understand the significance of building software that is not only functional but also user-friendly, with clear feedback for users.

- However, the project also brings to light several challenges that developers must overcome, including ensuring data security, handling input validation, and creating a seamless user experience. By addressing these challenges, developers gain a deeper understanding of the complexities of building production-ready systems and learn the importance of robust testing, user input handling, and protecting sensitive information.

- The **Login Page and Sign-Up Page using Java** also lays a strong foundation for further enhancements, such as implementing role-based access control (RBAC), multi- factor authentication (MFA), and advanced logging mechanisms. These features not only increase the functionality and security of the system but also introduce developers to more advanced concepts in authentication and user management.

- In summary, the **Login Page and Sign-Up Page using Java** is more than just a learning project; it is a stepping stone toward mastering Java development, security best practices, and creating applications that meet real-world needs. Whether it's adding new functionalities, improving security, or preparing for enterprise-level applications, this project sets the stage for a rewarding career in software development.

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Github-Link:
https://github.com/Ezhil-Adhithya-P/OOPS