

# RENEWABLE ENERGY TRACKING SYSTEM

## DATABASE MANAGEMENT MINI-PROJECT

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[YouTube Video Link: Renewable Energy Tracking System Implementation and Presentation](#)

ADMIN - Inserting a new user

```
package swingex;
import java.awt.EventQueue;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.sql.Statement;

import javax.swing.JButton;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JOptionPane;
import javax.swing.JPanel;
import javax.swing.JPasswordField;
import javax.swing.JScrollPane;
import javax.swing.JTable;
import javax.swing.JTextArea;
import javax.swing.JTextField;
import javax.swing.border.EmptyBorder;
import javax.swing.table.DefaultTableModel;
//import java.awt.EventQueue;
```

```

public class admin extends JFrame {

    String drivename="com.mysql.jdbc.Driver";
    static final String DB_URL ="jdbc:mysql://localhost/miniproject2";
    static final String USER = "root";
    static final String PASS="Ng02@MySQL!";

    private JPanel contentPane;

    /**
     * Launch the application.
     */
    public static void main(String[] args) {
        EventQueue.invokeLater(new Runnable() {
            public void run() {
                try {
                    admin frame = new admin();
                    frame.setVisible(true);
                } catch (Exception e) {
                    e.printStackTrace();
                }
            }
        });
    }

    /**
     * Create the frame.
     */
    public admin() {
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setBounds(100, 100, 450, 300);
        contentPane = new JPanel();
        contentPane.setBorder(new EmptyBorder(5, 5, 5, 5));

        setContentPane(contentPane);
        contentPane.setLayout(null);

        JLabel lblNewLabel = new JLabel("Fullname");
        lblNewLabel.setBounds(10, 51, 65, 14);
        contentPane.add(lblNewLabel);

        JLabel lblNewLabel_1 = new JLabel("User Registration");
    }
}

```

```
lblNewLabel_1.setBounds(175, 11, 86, 14);  
contentPane.add(lblNewLabel_1);
```

```
JTextArea textAreaFullName = new JTextArea();  
textAreaFullName.setBounds(85, 46, 86, 19);  
contentPane.add(textAreaFullName);
```

```
JLabel lblNewLabel_2 = new JLabel("Username");  
lblNewLabel_2.setBounds(10, 96, 65, 14);  
contentPane.add(lblNewLabel_2);
```

```
JLabel lblNewLabel_3 = new JLabel("Password");  
lblNewLabel_3.setBounds(10, 151, 65, 14);  
contentPane.add(lblNewLabel_3);
```

```
JLabel lblNewLabel_4 = new JLabel("Email");  
lblNewLabel_4.setBounds(205, 51, 74, 14);  
contentPane.add(lblNewLabel_4);
```

```
JLabel lblNewLabel_5 = new JLabel("Phone Number");  
lblNewLabel_5.setBounds(191, 96, 88, 14);  
contentPane.add(lblNewLabel_5);
```

```
JLabel lblNewLabel_6 = new JLabel("Address");  
lblNewLabel_6.setBounds(205, 151, 74, 14);  
contentPane.add(lblNewLabel_6);
```

```
JTextArea textArea_username = new JTextArea();  
textArea_username.setBounds(85, 91, 86, 19);  
contentPane.add(textArea_username);
```

```
JTextArea textArea_password = new JTextArea();  
textArea_password.setBounds(85, 146, 86, 19);  
contentPane.add(textArea_password);
```

```
JTextArea textArea_email = new JTextArea();  
textArea_email.setBounds(309, 46, 86, 19);  
contentPane.add(textArea_email);
```

```
JTextArea textArea_phonenumber = new JTextArea();  
textArea_phonenumber.setBounds(309, 91, 86, 19);  
contentPane.add(textArea_phonenumber);
```

```
JTextArea textArea_address = new JTextArea();
```

```

        textArea_address.setBounds(309, 146, 86, 19);
        contentPane.add(textArea_address);

        JButton btnNewButton = new JButton("Submit");
        btnNewButton.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                String full_name = textAreaFullName.getText();
                String user_name = textArea_username.getText();
                String password = textArea_password.getText();
                String phone_number = textArea_phonenumber.getText();
                String email = textArea_email.getText();
                String address = textArea_address.getText();

                try {
                    Statement stmt = null;
                    Connection conn = null;

                    System.out.println("connecting to the database");
                    conn=DriverManager.getConnection(DB_URL,USER,PASS);
                    String query1 = " insert into
User(full_name,user_name,password,phone_number,email,address)
values('"+full_name+"','"+user_name+"','"+password+"','"+phone_number+"','"+email+"','"+address+"') ";

                    stmt = conn.createStatement();
                    stmt.executeUpdate(query1);

                    JOptionPane.showMessageDialog(btnNewButton, "Data
for '"+full_name+"' added sucessfully");

                    conn.close();

                }
                catch(Exception ex)
                {
                    ex.printStackTrace();
                }
            }
        });
        btnNewButton.setBounds(31, 198, 100, 23);
        contentPane.add(btnNewButton);

        JButton btnNewButton_1 = new JButton("Clear");
        btnNewButton_1.addActionListener(new ActionListener() {

```

```

        public void actionPerformed(ActionEvent e) {
            // Clear all text fields
            textAreaFullName.setText("");
            textArea_username.setText("");
            textArea_password.setText("");
            textArea_phonenumber.setText("");
            textArea_email.setText("");
            textArea_address.setText("");
        }
    });

    btnNewButton_1.setBounds(156, 198, 89, 23);
    contentPane.add(btnNewButton_1);

    // UPDATE
    JButton button = new JButton("Update");
    //JButton button = new JButton("Open new window");
    button.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            // Create a new window
            JFrame newFrame = new JFrame("New Window");
            newFrame.setSize(400, 300);
            newFrame.setVisible(true);

            // Add content pane to the new frame
            JPanel contentPane = new JPanel();
            newFrame.setContentPane(contentPane);

            contentPane.setLayout(null);
            newFrame.setVisible(true);

            // Add components to the new window as necessary
            JLabel lblNewLabel = new JLabel("Fullname");
            lblNewLabel.setBounds(10, 51, 65, 14);
            contentPane.add(lblNewLabel);

            JLabel lblNewLabel_1 = new JLabel("Update User");
            lblNewLabel_1.setBounds(175, 11, 86, 14);
            contentPane.add(lblNewLabel_1);

            JTextArea textAreaFullName = new JTextArea();
            textAreaFullName.setBounds(85, 46, 86, 19);
            contentPane.add(textAreaFullName);

```

```
JLabel lblNewLabel_2 = new JLabel("Username");  
lblNewLabel_2.setBounds(10, 96, 65, 14);  
contentPane.add(lblNewLabel_2);
```

```
JLabel lblNewLabel_3 = new JLabel("Password");  
lblNewLabel_3.setBounds(10, 151, 65, 14);  
contentPane.add(lblNewLabel_3);
```

```
JLabel lblNewLabel_4 = new JLabel("Email");  
lblNewLabel_4.setBounds(205, 51, 74, 14);  
contentPane.add(lblNewLabel_4);
```

```
JLabel lblNewLabel_5 = new JLabel("Phone Number");  
lblNewLabel_5.setBounds(191, 96, 88, 14);  
contentPane.add(lblNewLabel_5);
```

```
JLabel lblNewLabel_6 = new JLabel("Address");  
lblNewLabel_6.setBounds(205, 151, 74, 14);  
contentPane.add(lblNewLabel_6);
```

```
JLabel lblNewLabel_7 = new JLabel("User_id");  
lblNewLabel_7.setBounds(205, 200, 74, 14);  
contentPane.add(lblNewLabel_7);
```

```
JTextArea textArea_username = new JTextArea();  
textArea_username.setBounds(85, 91, 86, 19);  
contentPane.add(textArea_username);
```

```
JTextArea textArea_password = new JTextArea();  
textArea_password.setBounds(85, 146, 86, 19);  
contentPane.add(textArea_password);
```

```
JTextArea textArea_email = new JTextArea();  
textArea_email.setBounds(309, 46, 86, 19);  
contentPane.add(textArea_email);
```

```
JTextArea textArea_phonenumber = new JTextArea();  
textArea_phonenumber.setBounds(309, 91, 86, 19);  
contentPane.add(textArea_phonenumber);
```

```
JTextArea textArea_address = new JTextArea();  
textArea_address.setBounds(309, 146, 86, 19);  
contentPane.add(textArea_address);
```

```

        JTextArea textArea_user_id = new JTextArea();
        textArea_user_id.setBounds(309, 200, 86, 19);
        contentPane.add(textArea_user_id);
        Connection conn=null;
        PreparedStatement pstmt=null;

        JButton btnUpdate = new JButton("Update");
        btnUpdate.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                try {
                    // 1. Connect to MySQL database
                    Connection conn = DriverManager.getConnection(DB_URL, USER,
PASS);

                    // 2. Prepare a statement object and execute UPDATE query
                    String query = "UPDATE User SET full_name=?, user_name=?,
password=?, phone_number=?, email=?, address=? WHERE user_id=?";
                    PreparedStatement pstmt = conn.prepareStatement(query);
                    pstmt.setString(1, textAreaFullName.getText());
                    pstmt.setString(2, textArea_username.getText());
                    pstmt.setString(3, textArea_password.getText());
                    pstmt.setString(4, textArea_phonenumber.getText());
                    pstmt.setString(5, textArea_email.getText());
                    pstmt.setString(6, textArea_address.getText());
                    pstmt.setInt(7, Integer.parseInt(textArea_user_id.getText()));
                    pstmt.executeUpdate();
                    JOptionPane.showMessageDialog(null, "User updated
successfully.");

                    // 3. Close the PreparedStatement and Connection objects
                    pstmt.close();
                    conn.close();
                }
                catch (SQLException ex) {
                    JOptionPane.showMessageDialog(null, "Error deleting
user: " + ex.getMessage());
                } finally {
                    try {
                        if (pstmt != null) pstmt.close();
                        if (conn != null) conn.close();
                    }
                    catch (SQLException ex) {
                        ex.printStackTrace();
                    }
                }
            }
        });

```

```

    }

    });
    btnUpdate.setBounds(150, 240, 89, 23);
    contentPane.add(btnUpdate);

    // Create and add a button to the new window
    JButton closeButton = new JButton("Close");
    closeButton.setBounds(75, 240, 100, 23);
    closeButton.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            // Close the new window
            newFrame.dispose();
        }
    });
    newFrame.getContentPane().add(closeButton);
    // Make the new window visible
    newFrame.getContentPane().setLayout(null);
    newFrame.setVisible(true);

    }
    });

    button.setBounds(105, 240, 89, 23);
    contentPane.add(button);

    JButton btnNewButton_3 = new JButton("Delete");
    btnNewButton_3.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            // Create a new window
            JFrame newFrame = new JFrame("New Window");
            newFrame.setSize(400, 300);
            newFrame.setVisible(true);

            JTextField user_name = new JTextField();
            JPasswordField password = new JPasswordField();

            JLabel lblNewLabel = new JLabel("Username");
            lblNewLabel.setBounds(10, 51, 65, 14);
            newFrame.getContentPane().add(lblNewLabel);

            JTextArea textAreaUserName = new JTextArea();

```



```

        textAreaUserName.setBounds(85, 51, 86, 19);
        newFrame.getContentPane().add(textAreaUserName);

        JLabel lblNewLabel1 = new JLabel("Password");
        lblNewLabel1.setBounds(10, 100, 65, 14);
        newFrame.getContentPane().add(lblNewLabel1);

        JTextArea textAreaPassword = new JTextArea();
        textAreaPassword.setBounds(85, 100, 86, 19);
        newFrame.getContentPane().add(textAreaPassword);

        JButton deleteButton = new JButton("Delete User");
        deleteButton.setBounds(250, 100, 200, 30);

        deleteButton.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                String username = textAreaUserName.getText();
                String password_ = textAreaPassword.getText();

                Connection conn = null;
                Statement stmt = null;

                try {
                    conn =
DriverManager.getConnection("jdbc:mysql://localhost/miniproject2", "root", "Ng02@MySQL!");
                    stmt = conn.createStatement();
                    String sql = "DELETE FROM User WHERE user_name="
+ username + " AND password=" + password_ + "";
                    stmt.executeUpdate(sql);
                    JOptionPane.showMessageDialog(null, "User deleted
successfully.");
                } catch (SQLException ex) {
                    JOptionPane.showMessageDialog(null, "Error deleting
user: " + ex.getMessage());
                } finally {
                    try {
                        if (stmt != null) stmt.close();
                        if (conn != null) conn.close();
                    } catch (SQLException ex) {
                        JOptionPane.showMessageDialog(null, "Error closing
database connection: " + ex.getMessage());
                    }
                }
            }
        });

```

```

        }
    });
    newFrame.getContentPane().add(deleteButton);
    // Make the new window visible
    newFrame.getContentPane().setLayout(null);
    newFrame.setVisible(true);
    //contentPane.add(deleteButton);

    // Create and add a button to the new window
    JButton closeButton = new JButton("Close");
    closeButton.setBounds(250, 50, 100, 30);
    closeButton.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            // Close the new window
            newFrame.dispose();
        }
    });
    newFrame.getContentPane().add(closeButton);
    // Make the new window visible
    newFrame.getContentPane().setLayout(null);
    newFrame.setVisible(true);

    }
    });

    btnNewButton_3.setBounds(222, 240, 89, 23);
    contentPane.add(btnNewButton_3);

    ///DISPLAY
    JButton btnNewButton_2 = new JButton("Display");
    btnNewButton_2.setActionCommand("display");
    btnNewButton_2.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            try {
                JFrame newFrame = new JFrame("User Table");
                newFrame.setSize(800, 600);
                newFrame.setVisible(true);
                newFrame.setDefaultCloseOperation(JFrame.DISPOSE_ON_CLOSE);

                // 1. Connect to MySQL database
                Connection conn = DriverManager.getConnection(DB_URL, USER,
PASS);

```

```

// 2. Create a Statement object and execute SELECT query
Statement stmt = conn.createStatement();
ResultSet rs = stmt.executeQuery("SELECT * FROM User");

// 3. Create a DefaultTableModel and add rows to it
DefaultTableModel model = new DefaultTableModel();
model.addColumn("user_id");
model.addColumn("full_name");
model.addColumn("user_name");
model.addColumn("password");
model.addColumn("phone_number");
model.addColumn("email");
model.addColumn("address");

while (rs.next()) {
    int user_id = rs.getInt("user_id");
    String full_name = rs.getString("full_name");
    String user_name = rs.getString("user_name");
    String password = rs.getString("password");
    String phone_number = rs.getString("phone_number");
    String email = rs.getString("email");
    String address = rs.getString("address");

    model.addRow(new Object[] {user_id, full_name, user_name,
password, phone_number, email, address});
}

// 4. Create a JTable using the DefaultTableModel and add it to a
JScrollPane

JTable table = new JTable(model);
JScrollPane scrollPane = new JScrollPane(table);
newFrame.getContentPane().add(scrollPane);

// 5. Close the ResultSet, Statement and Connection objects
rs.close();
stmt.close();
conn.close();
} catch (SQLException ex) {
    ex.printStackTrace();
}
});
btnNewButton_2.setBounds(266, 198, 89, 23);
contentPane.add(btnNewButton_2);

```

} }