Task 3: Design the Login Page Using NetBeans IDE (Design Window)

Steps to Implement in NetBeans:

1. **Create a new Java Application Project** in NetBeans (LoginApp).

2. **Create a new JFrame Form** (LoginForm).

3. **Replace the generated code with the following**

Full Code for LoginForm.java

```java
import javax.swing.*;

import java.awt.*;

import java.awt.event.ActionEvent;

import java.awt.event.ActionListener;


public class LoginForm extends JFrame {


    // Declaring components

    private JLabel titleLabel, usernameLabel, passwordLabel;

    private JTextField usernameField;

    private JPasswordField passwordField;

    private JButton loginButton;


    // Constructor

    public LoginForm() {

        // Set title of the window

        setTitle("Login Page");
```

```java
// Set size and center the window
setSize(400, 300);

setLocationRelativeTo(null);

setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);


// Create panel for layout
JPanel panel = new JPanel();

panel.setLayout(new GridBagLayout()); // Using GridBagLayout

GridBagConstraints gbc = new GridBagConstraints();

gbc.insets = new Insets(10, 10, 10, 10);


// Title Label
titleLabel = new JLabel("Login Page");

titleLabel.setFont(new Font("Arial", Font.BOLD, 24));

gbc.gridx = 0;

gbc.gridy = 0;

gbc.gridwidth = 2;

panel.add(titleLabel, gbc);


// Username Label & Field
gbc.gridwidth = 1;

gbc.gridx = 0;

gbc.gridy = 1;

usernameLabel = new JLabel("Username:");

panel.add(usernameLabel, gbc);


gbc.gridx = 1;

usernameField = new JTextField(15);
```

```java
usernameField.setToolTipText("Enter Username");

panel.add(usernameField, gbc);


// Password Label & Field

gbc.gridx = 0;

gbc.gridy = 2;

passwordLabel = new JLabel("Password:");

panel.add(passwordLabel, gbc);


gbc.gridx = 1;

passwordField = new JPasswordField(15);

passwordField.setToolTipText("Enter Password");

panel.add(passwordField, gbc);


// Login Button

gbc.gridx = 0;

gbc.gridy = 3;

gbc.gridwidth = 2;

loginButton = new JButton("Login");

panel.add(loginButton, gbc);


// Add Action Listener to Login Button

loginButton.addActionListener(new ActionListener() {

    public void actionPerformed(ActionEvent evt) {

        loginAction();

    }

});
```

```java
        // Add panel to frame
        add(panel);
    }


    // Method to handle login action
    private void loginAction() {
        String username = usernameField.getText();
        String password = new String(passwordField.getPassword());


        if (username.equals("admin") && password.equals("password123")) {
            JOptionPane.showMessageDialog(this, "Login Successful!");
        } else {
            JOptionPane.showMessageDialog(this, "Invalid Username or Password");
        }
    }


    // Main method to launch the application
    public static void main(String[] args) {
        SwingUtilities.invokeLater(new Runnable() {
            public void run() {
                new LoginForm().setVisible(true);
            }
        });
    }
}
```

Breakdown of Code:

1. **Created JFrame Form (Task 1)**
   - o   Used JFrame and initialized the form in the constructor.
2. **Designed the Interface (Task 2)**
   - o   Used JLabel, JTextField, JPasswordField, and JButton.
   - o   Applied GridBagLayout for proper alignment.
3. **Customized Layout & Alignment (Task 3)**
   - o   Used GridBagConstraints for spacing and layout.
4. **Set Component Properties (Task 4)**
   - o   Set tooltips for username and password fields.
5. **Tested the Design (Task 5)**
   - o   Can run directly using main().
6. **Finalized and Saved (Task 6)**
   - o   Used setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE); for proper closing.