

Practical no. 1

Aim: Design User Login application using swing components

Code:

```
import javax.swing.*;
import java.awt.event.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;

public class UserLoginForm{
    // declaration of components
    JFrame mainFrame;
    JLabel heading;
    JLabel usernameLabel;
    JLabel passwordLabel;
    JTextField usernameField;
    JPasswordField passwordField;
    JButton loginButton;
    JLabel statusBar;

    // creating constructor coz it is a good practice
    UserLoginForm(){
        // initialization
        mainFrame = new JFrame("User login form");
        heading = new JLabel("USER LOGIN FORM");
        usernameLabel = new JLabel("Username: ");
        passwordLabel = new JLabel("Password: ");
        usernameField = new JTextField("Username");
        passwordField = new JPasswordField("");
        loginButton = new JButton("Login");
        statusBar = new JLabel("Status.. ");

        // setting bounds for each coz using layout as "null"
        heading.setBounds(80,10,150,30);
        usernameLabel.setBounds(50,50,100,20);
        passwordLabel.setBounds(50,90,100,20);
        usernameField.setBounds(120,50,100,25);
        passwordField.setBounds(120,90,100,25);
        loginButton.setBounds(50,130,170,30);
        statusBar.setBounds(70,170,150,30);

        mainFrame.add(heading);
```

```

mainFrame.add(usernameLabel);
mainFrame.add(passwordLabel);
mainFrame.add(usernameField);
mainFrame.add(passwordField);
mainFrame.add(loginButton);
mainFrame.add(statusBar);

// imp things to be added before anything
// frame properties
mainFrame.setSize(300,250);
mainFrame.setLayout(null);
mainFrame.setVisible(true);

// if frame closes then terminate the program
mainFrame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

// adding actionlistener for loginButton
loginButton.addActionListener(new ActionListener(){
    public void actionPerformed(ActionEvent e){
        performLogin();
    }
});
}

// method to be perform after login button click
public void performLogin(){
    String username = usernameField.getText();
    char[] passwordChar = passwordField.getPassword();
    String password = new String(passwordChar);

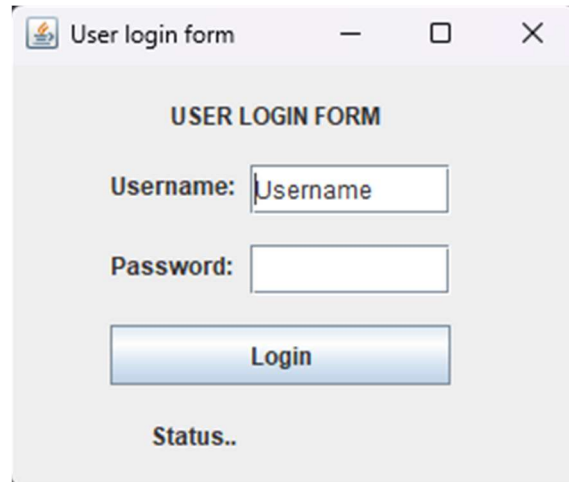
    if (username.equals("Jayesh") && password.equals("123")){
        statusBar.setText("User login successful :)");
    } else {
        statusBar.setText("User login failed :(");
    }
}

// main method or entry point
public static void main(String[] args){
    // instance of a class
    new UserLoginForm();
}
}

```

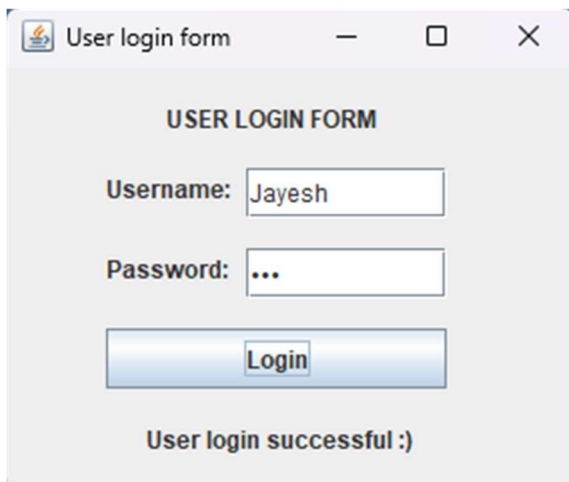
Output:

How application looks like :



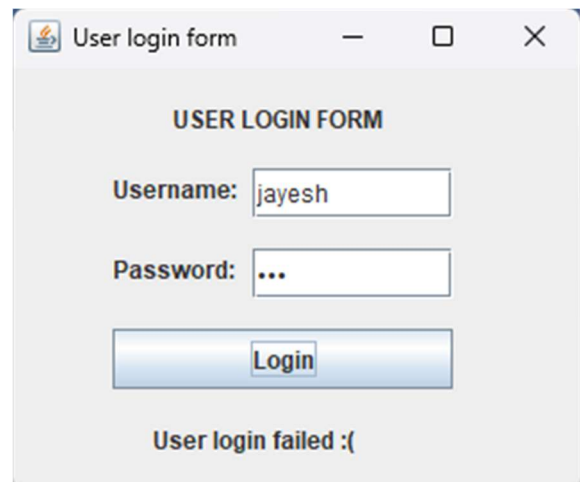
A screenshot of a Java Swing window titled "User login form". The window has a light gray background and a title bar with standard Windows controls. The main content area is titled "USER LOGIN FORM" in bold. It contains two text input fields: "Username:" followed by a text box containing the placeholder text "Username", and "Password:" followed by an empty text box. Below these fields is a blue "Login" button. At the bottom of the window, the text "Status.." is displayed.

After successful login:



A screenshot of the "User login form" window after a successful login. The "Username:" field now contains the text "Jayesh". The "Password:" field contains three dots "...". The "Login" button is still present. At the bottom of the window, the status message has changed to "User login successful :)", indicating a successful authentication.

After login failed:



A screenshot of the "User login form" window after a failed login attempt. The "Username:" field contains the text "jayesh" (lowercase). The "Password:" field contains three dots "...". The "Login" button is still present. At the bottom of the window, the status message has changed to "User login failed :(", indicating an unsuccessful authentication.