



Login Page

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CSM

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People involved

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Aim of the project

To design a login page containing the fields of user name and password where the user needs to enter details to the fields where the password is verified for a valid user. If the password is correct then the user must be directed to a new page.

Abstract

In the Login page you can register yourself with a username and password, after registering yourself you can login using the login page.

When you press the register button it will open a new frame in which you can register yourself.

When you register yourself the data of that particular user will be stored in a text file.

If you want to register then you can enter username, password and confirm password.

When you enter your username you can have any type of characters or numbers, but it should be different from others. When you enter username and password and press submit. It will check the file and find if the username already exists. If the username exists then it will show you "Username already exists" otherwise it will store your details in the file.

Password and Confirm Password should match otherwise it will display the text "Passwords do not match".

The password must be more than 9 characters and it should contain at least one lowercase letter, uppercase letter, number and a special character. If any of these conditions are not met, the registration will not be done and it will show that the

password should contain more than 9 characters and at least it should contain a lowercase letter, uppercase letter, number and a special character.

If we select show password the password field is displayed with readable text otherwise it is hidden.

If username, password and confirm password are accepted then the details will be stored in a text file named LoginData.

While storing in a file it encrypts the data using Base64 encryption and stores it inside the file so that no one could see the login details of the users.

After registration, if you enter the correct username and wrong password then, it will show that you have entered wrong user credentials and won't let you in.

If you enter the wrong username then it will show you that you haven't registered.

When you try to login using correct login credentials it will open a new frame and welcome you to the page.

By this we complete the registration of a user.

Components used

1. JPasswordField
2. JButton
3. JTextField
4. Checkbox
5. JLabel
6. JFrame
7. ActionListener
8. WindowListener

Project Specifications

- Each section of the project i.e, Registration section, Login Section and Successful Login section each have distinct frames. Frame transition is achieved by alternately changing the visibility of the frames so that only the required frame is visible while the rest of the frames, even though they are present, are invisible.
- If unregistered it will prompt a "You haven't registered yet" message on the label present in the login frame.
- Usage of frame transition from one frame to another while logging in and registering.
- While registering, the password must contain at least one capital letter, a special character, a number and should be at least 10 characters in length.

- Re-entering the password is required to ensure that the user is entering the password without any mistakes in it.
- Once the username is entered it is checked whether it already exists in the database so that there is no ambiguity while logging in.
- While storing the credentials it is encrypted using Base64 encryption so that even when the LoginData file is opened by a third party he/she is unable to read the contents.

Source Code

```
import java.awt.*;
import javax.swing.*;
import java.awt.event.*;
import java.io.*;
import java.util.*;

public class MiniApp extends JFrame implements ActionListener{
    String userName=null,password=null;
    JPasswordField p,t2,t3;
    JButton b,b1,b2;
    JTextField t,t1;
    Checkbox cb,cb1;
    JLabel l1,l2,l3,l4,x,y,z,xy;
    JFrame f3=new JFrame("Registration");
    JFrame f2=new JFrame("Page After Logging in");
    MiniApp(){
        cb=new Checkbox("Show Password");
        cb.setBounds(100,105,150,28);
        cb1=new Checkbox("Show Password");
        cb1.setBounds(100,152,150,28);
        b=new JButton("Login");
        b.setBounds(100,145,90,25);
```

```
b1=new JButton("Register");
b1.setBounds(203,145,90,25);
b2=new JButton("Submit");
b2.setBounds(150,193,90,25);
l1=new JLabel("Username");
l1.setBounds(100, 8, 70, 20);
l2=new JLabel("Password");
l2.setBounds(100, 55, 70, 20);
l3=new JLabel();
l3.setBounds(150, 200, 400, 50);
l4=new JLabel();
x=new JLabel("Username");
x.setBounds(100, 8, 70, 20);//Register Username
y=new JLabel("Password");
y.setBounds(100, 55, 70, 20);//Register Password
z=new JLabel("Confirm Password");
z.setBounds(100,102,150,20);//Confirm Register Password
xy=new JLabel();
p=new JPasswordField();
p.setBounds(100, 75, 193, 28);//Login Password Field
t=new JTextField();
t.setBounds(100,27,193,28);//Login Text Field
t1=new JTextField();
t1.setBounds(100,27,193,28);
t2=new JPasswordField();
t2.setBounds(100, 75, 193, 28);
t3=new JPasswordField();
t3.setBounds(100,123,193,28);
add(cb);
```

```
add(l1);
add(l2);
add(p);
add(t);
add(b);
add(b1);
b2.addActionListener(this);
f3.add(b2);
f3.add(x);
f3.add(y);
f3.add(z);
f3.add(t1);
f3.add(t2);
f3.add(t3);
f3.add(cb1);
f3.add(xy);
b1.addActionListener(this);
add(l4);
addWindowListener(new WindowAdapter() {
    public void windowClosing(WindowEvent e) {
        dispose();
    }
});
cb1.addItemListener(e -> {
    if (e.getStateChange() == ItemEvent.SELECTED) {
        t2.setEchoChar((char) 0);
        t3.setEchoChar((char) 0);
    }
    else {
```

```
t2.setEchoChar('*');
t3.setEchoChar('*');
}
});
cb.addItemListener(e -> {
    if (e.getStateChange() == ItemEvent.SELECTED)
        p.setEchoChar((char) 0);
    else
        p.setEchoChar('*');
});
b.addActionListener(this);
f2.setBounds(450,270,400,400);
f2.setLayout(null);
f2.addWindowListener(new WindowAdapter(){
    public void windowClosing(WindowEvent e) {
        f2.dispose();
    }
});
f3.setBounds(450,270,400,400);
f3.setLayout(null);
f3.addWindowListener(new WindowAdapter(){
    public void windowClosing(WindowEvent e) {
        f3.dispose();
    }
});
setTitle("Login");
setBounds(450,270,400,300);
setLayout(null);
setVisible(true);
```

```
}  
public static void main(String[] Args){  
    new MiniApp();  
}  
public void actionPerformed(ActionEvent a){  
    if((a.getActionCommand()).equals("Login")){  
        l4.setText("");  
        userName=t.getText();  
        password=String.valueOf(p.getPassword());  
        int k=0;  
        try {  
            k = check(userName,password);  
        } catch (Exception e) {  
            e.printStackTrace();  
        }  
        if(k==0) {  
            l4.setBounds(105,185,400,50);  
            l4.setText("<html><pre>You haven't registered yet.</pre></html>");  
        }  
        else{  
            if (k==2) {  
                f2.add(l3, BorderLayout.CENTER);  
                l3.setBounds(150,150,200,50);  
                t.setText("");p.setText("");  
                dispose();  
                l3.setText("Welcome "+userName+"");  
                f2.setVisible(true);  
            }  
            else {
```



```
l4.setBounds(65, 190, 400, 50);

l4.setText("<html><pre>\tWrong User Credentials.\nPlease enter correct user
credentials.</pre></html>");

        t.setText("");
        p.setText("");
    }
}
}

if((a.getActionCommand()).equals("Register")){
    l4.setText("");
    f3.setVisible(true);

        t.setText("");
        p.setText("");
        t1.setText("");
        t2.setText("");
        t3.setText("");

    }

if((a.getActionCommand()).equals("Submit")){
    cb1.setState(false);

    l4.setText("");
    userName=t1.getText();password=String.valueOf(t2.getPassword());
    String cpassword=String.valueOf(t3.getPassword());
    int u=check(userName,password);

    int s=0,n=0,c=0;
    for(int i=0;i<password.length();i++){
        if(Character.isDigit(password.charAt(i)))
            n++;
        if(Character.isUpperCase(password.charAt(i)))
            c++;
    }
}
```

```
if(Character.isDigit(password.charAt(i))&&!Character.isLetter(password.charAt(i))&&!Character.isWhitespace(password.charAt(i)))
```

```
    s++;
```

```
}
```

```
if((password.length()<9) || (n<1) || (c<1) || (s<1)){
```

```
    xy.setBounds(25,230,400,50);
```

```
    xy.setText("<html><pre>Password length must be more than 9 characters\nIt  
must be combination of alphabets(capital,small),\nnnumber & special  
characters.</pre></html>");
```

```
    t2.setText("");t3.setText("");
```

```
}
```

```
    else if(u==1){
```

```
        xy.setBounds(125,230,400,50);
```

```
        xy.setText("<html><pre>Username already  
exists</pre></html>");
```

```
        t1.setText("");t2.setText("");t3.setText("");
```

```
    }
```

```
else if(password.equals(cpassword) && userName!=null) {
```

```
    store(userName,password);
```

```
        t1.setText("");
```

```
        t2.setText("");
```

```
        t3.setText("");
```

```
        f3.dispose();
```

```
}
```

```
else{
```

```
    xy.setBounds(125,230,400,50);
```

```
    xy.setText("<html><pre>Passwords do not match</pre></html>");
```

```
    t2.setText("");t3.setText("");
```

```
}
```

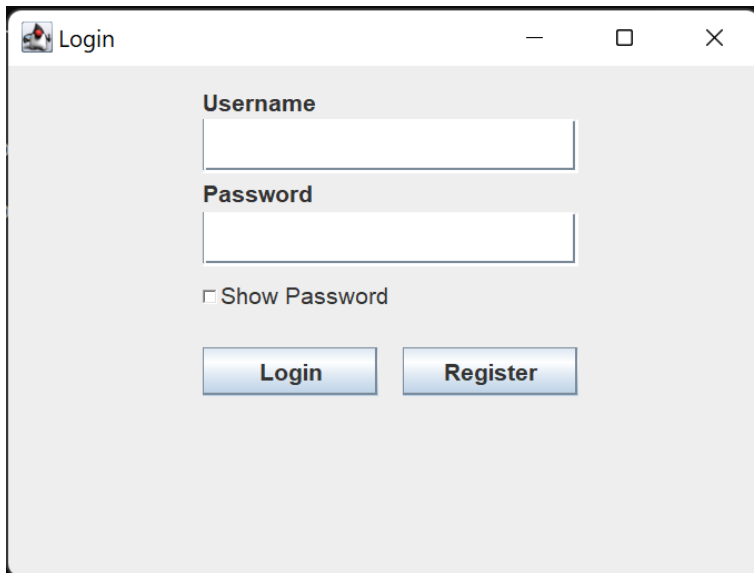
```
}
```

```
}  
public int check(String u,String pass) {  
    FileReader fr;  
    int f=0;  
    BufferedReader br;  
    try{  
        fr=new FileReader("LoginData.txt");  
        br=new BufferedReader(fr);  
        String str;  
        while((str=br.readLine())!=null){  
            String decipher = new String(Base64.getDecoder().decode(str));  
            String[] s=decipher.split("\\s");  
            if(u.equals(s[0])){  
                f++;  
                if(pass.equals(s[1]))  
                    f++;  
            }  
        }  
    }  
    catch(Exception e){  
        System.out.println(e.getMessage());  
    }  
    return f;  
}  
public void store(String str1,String str2){  
    FileWriter fw;  
    BufferedWriter bw;  
    try{  
        fw=new FileWriter("LoginData.txt",true);
```

```
        bw=new BufferedWriter(fw);
        String str;
        bw.newLine();
        str=str1+" "+str2;
        bw.write(Base64.getEncoder().encodeToString(str.getBytes()));
        bw.close();
    }
    catch(Exception e){
        System.out.println(e.getMessage());
    }
}
```

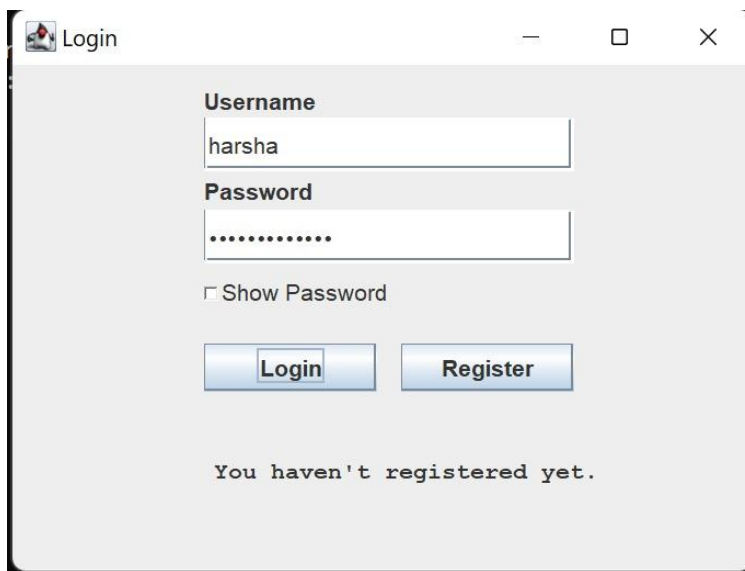
Possible Outputs:

Opening frame



The screenshot shows a Java Swing window titled "Login". The window has a standard title bar with a minimize button, a maximize button, and a close button. The main content area has a light gray background. It contains two text input fields, one labeled "Username" and one labeled "Password". Below the "Password" field is a checkbox labeled "Show Password". At the bottom of the window are two buttons: "Login" and "Register".

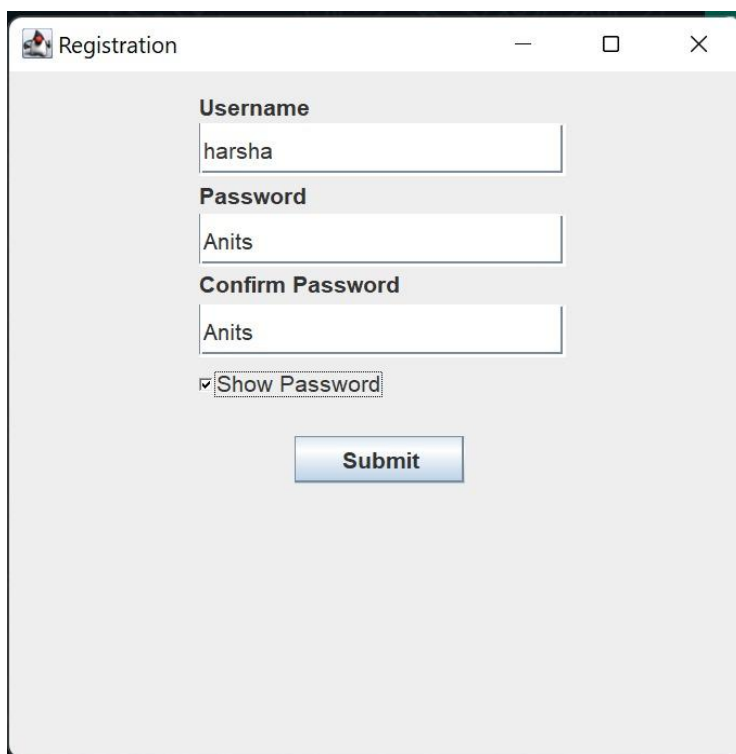
When the user is not registered



A screenshot of a web application window titled "Login". The window has a standard title bar with minimize, maximize, and close buttons. The main content area is light gray and contains the following elements:

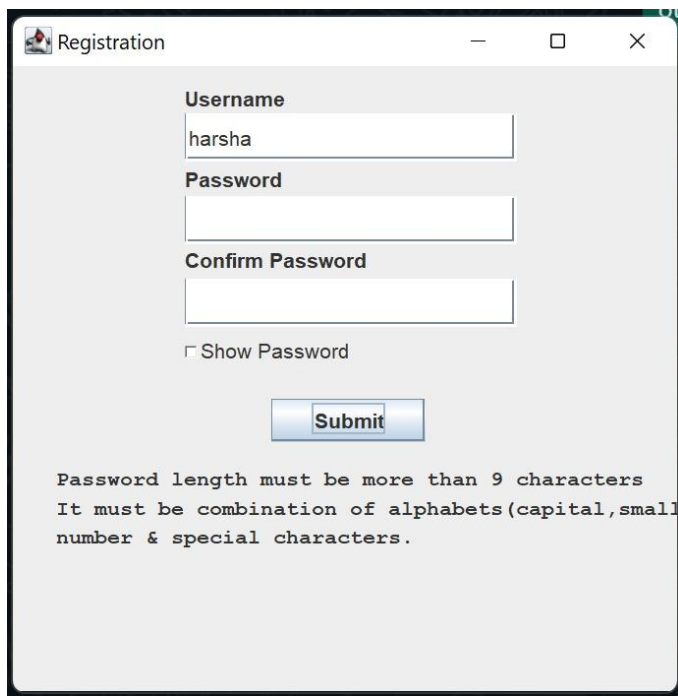
- A "Username" label followed by a text input field containing the text "harsha".
- A "Password" label followed by a text input field filled with dots.
- A checkbox labeled "Show Password" which is currently unchecked.
- Two buttons: "Login" and "Register", both with a blue gradient and white text.
- A message at the bottom: "You haven't registered yet."

Registration Frame



A screenshot of a web application window titled "Registration". The window has a standard title bar with minimize, maximize, and close buttons. The main content area is light gray and contains the following elements:

- A "Username" label followed by a text input field containing the text "harsha".
- A "Password" label followed by a text input field containing the text "Anits".
- A "Confirm Password" label followed by a text input field containing the text "Anits".
- A checkbox labeled "Show Password" which is currently checked.
- A "Submit" button with a blue gradient and white text.

Scenario when the password does not meet required criteria

Registration

Username
harsha

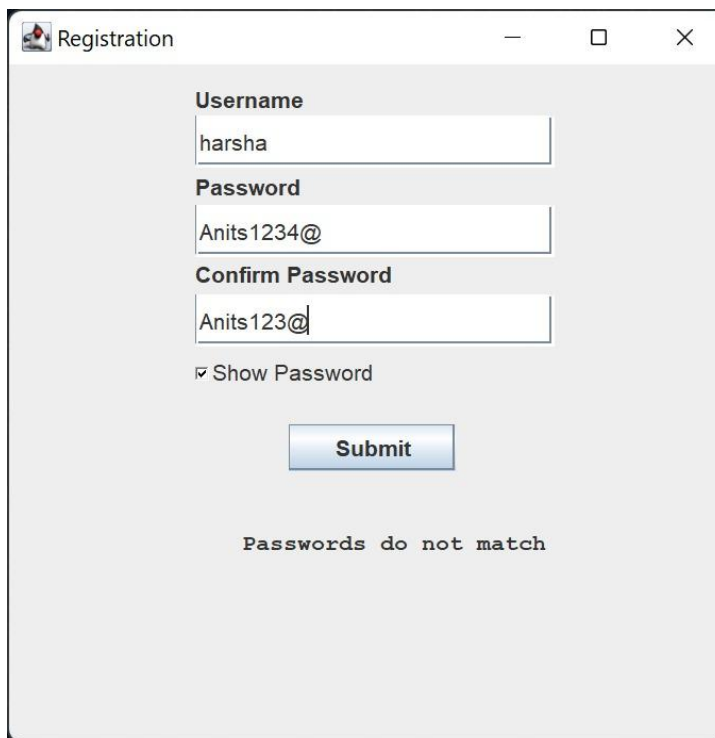
Password

Confirm Password

☐ Show Password

Submit

Password length must be more than 9 characters
It must be combination of alphabets(capital,small
number & special characters.

Outcome when the passwords do not match

Registration

Username
harsha

Password
Anits1234@

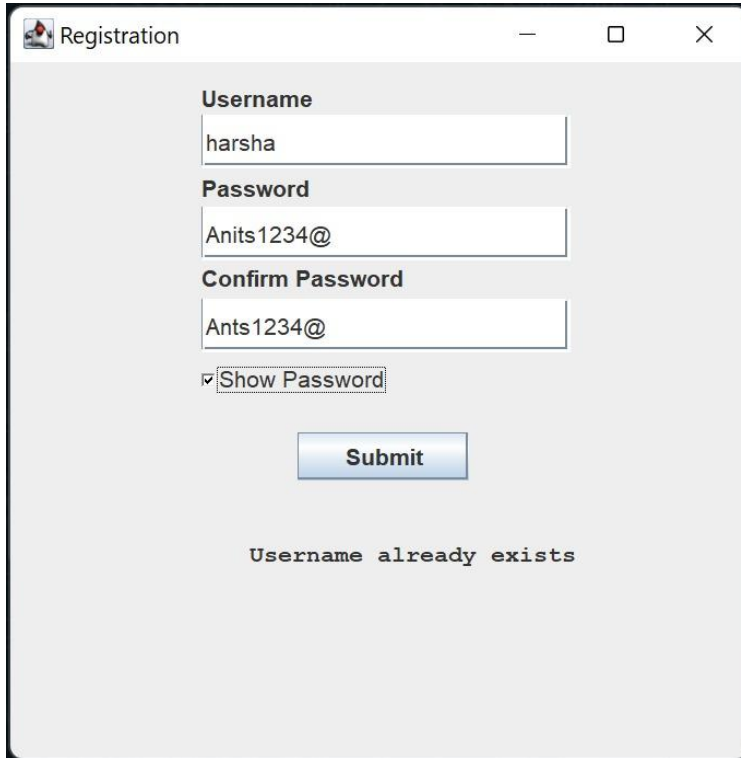
Confirm Password
Anits123@

☒ Show Password

Submit

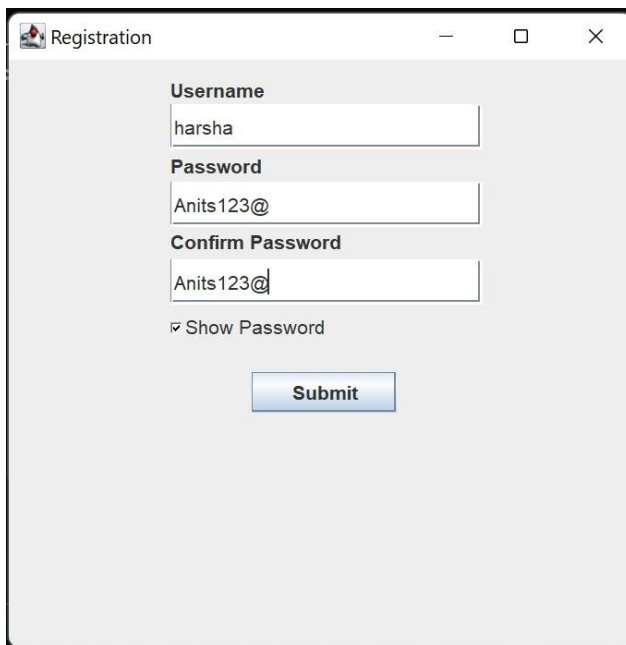
Passwords do not match

When another person tries to register with an already existing username



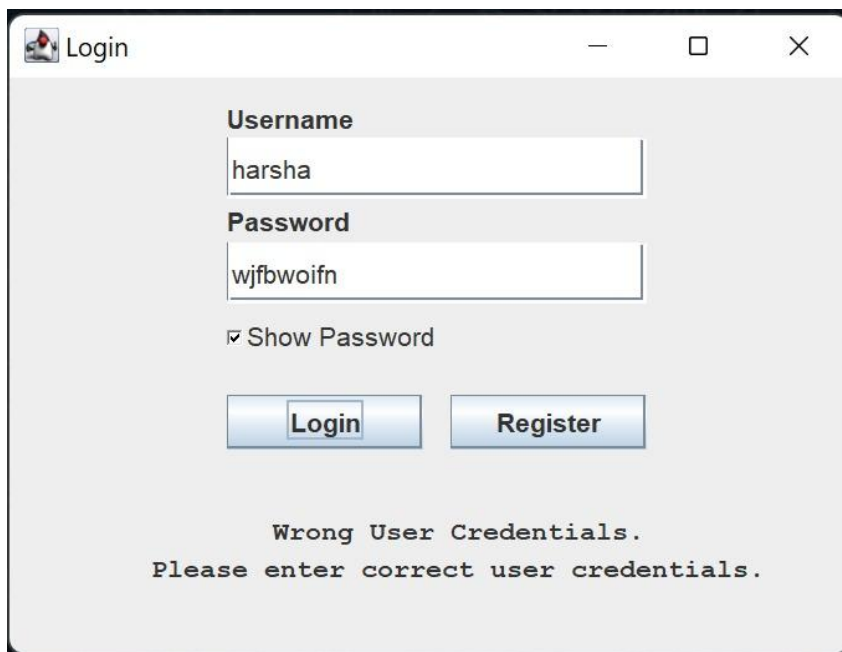
A screenshot of a web browser window titled "Registration". The form contains three input fields: "Username" with the value "harsha", "Password" with the value "Anits1234@", and "Confirm Password" with the value "Anits1234@". Below these fields is a checkbox labeled "Show Password" which is checked. A blue "Submit" button is centered below the checkbox. At the bottom of the form, the text "Username already exists" is displayed in a monospaced font.

Registration form, filled with password satisfying all the criterias and username does not exist in the database(here a text file).



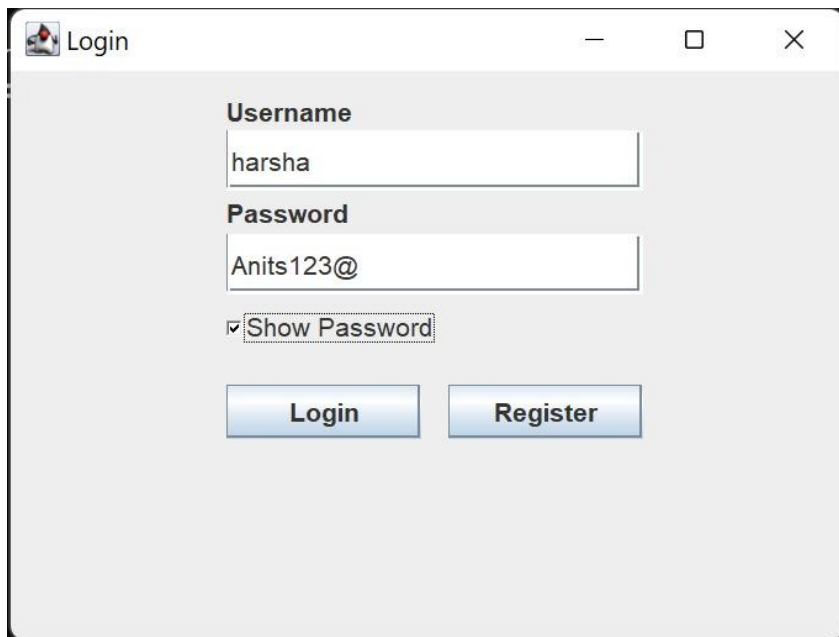
A screenshot of a web browser window titled "Registration". The form contains three input fields: "Username" with the value "harsha", "Password" with the value "Anits123@", and "Confirm Password" with the value "Anits123@". Below these fields is a checkbox labeled "Show Password" which is checked. A blue "Submit" button is centered below the checkbox.

When a person enters a correct username and wrong password



A screenshot of a web application window titled "Login". The window has a standard Windows-style title bar with minimize, maximize, and close buttons. Inside the window, there are two input fields: "Username" with the text "harsha" and "Password" with the text "wjfbwoifn". Below the password field is a checkbox labeled "Show Password" which is checked. At the bottom, there are two buttons: "Login" and "Register". Below the buttons, there is a message in a monospaced font: "Wrong User Credentials. Please enter correct user credentials."

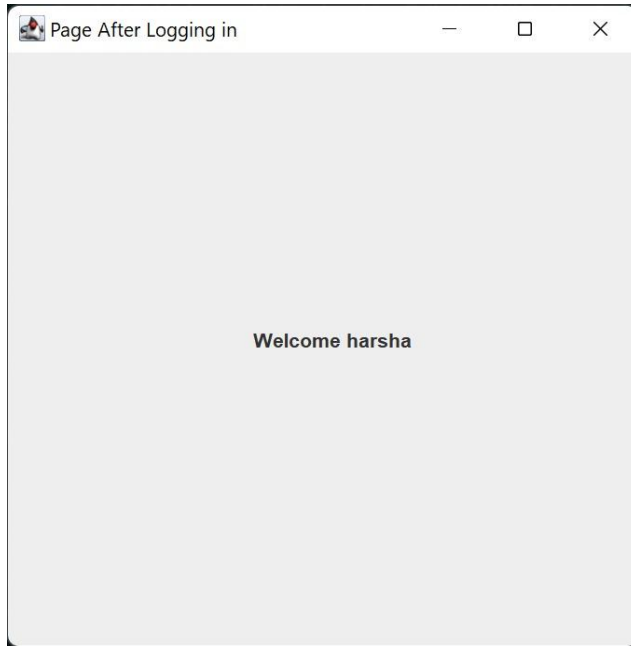
When user enters right username and password



A screenshot of a web application window titled "Login". The window has a standard Windows-style title bar with minimize, maximize, and close buttons. Inside the window, there are two input fields: "Username" with the text "harsha" and "Password" with the text "Anits123@". Below the password field is a checkbox labeled "Show Password" which is checked. At the bottom, there are two buttons: "Login" and "Register".

Successful Output:

After successful login



The text file which stores all the usernames and passwords. The text file acts as a database, storing all the user credentials using Base64 encryption.

