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## INF 154 Assignment 4

Practical #: 4

Topic: Practical Lecture 4 – Decisions, IF statements, nested IF statements

- Understand how to make key operational decisions using IF statements

Practical Name: INF154Prac4xxxxxxxx (where xxxxxxxxx is your student number)

Due: Monday, 3 April 2023 at 08:30

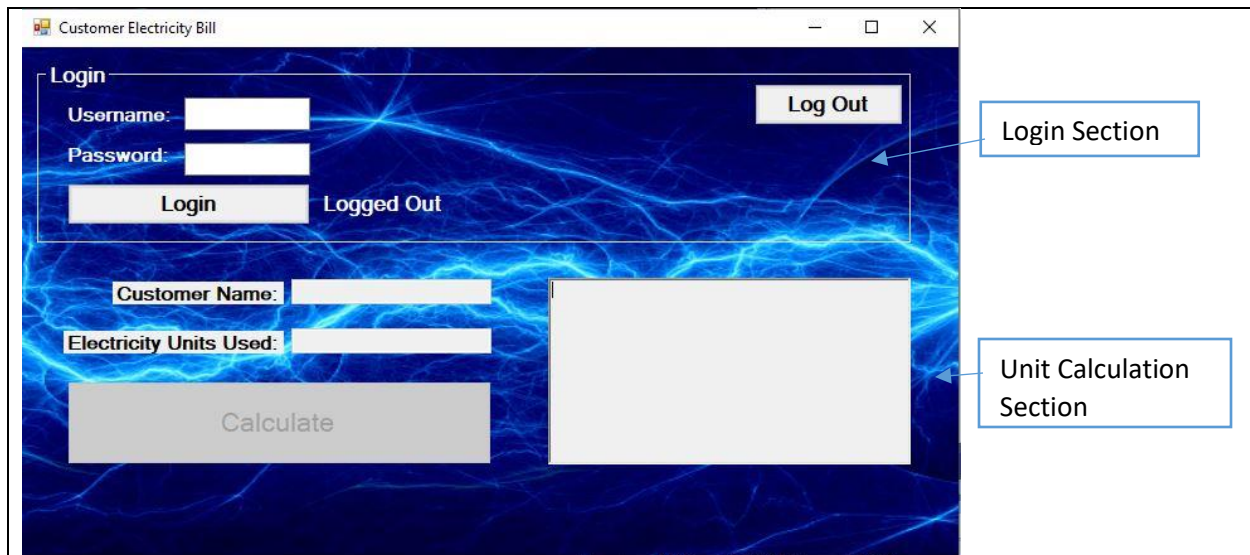
## PART 1: Log In

*But first....*

**Create the form:**

Create the following section in your Practical 4 form with the appropriate controls.

Make sure you download the background image via ClickUp (located inside the Practical 4 folder).



Part 1 will focus on the log in functionality

Ensure that the controls in the Unit Calculation Section are disabled until the user has successfully been logged in (They should not be able to enter any data in the textboxes or be able to click the Calculate button)

The richTextBox (rtbOutput) should be ReadOnly.

*Now you can really get into it....*

#### Step 1: Login

##### IMPORTANT INFORMATION:

The username and password is being given to you, you do not create these variables yourself.

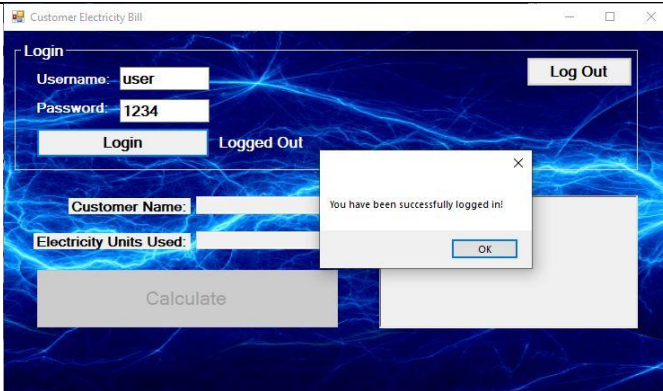
The username = user

The password = 1234

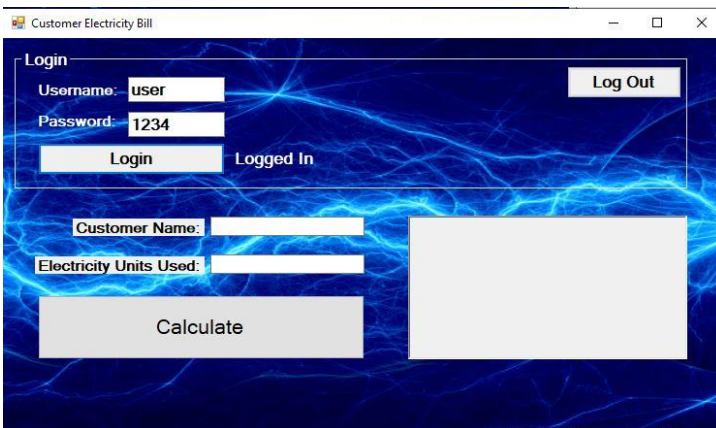
When the Login button is clicked, and validation is successful, the following should happen:

- The “Logged Out” label (lblStatus) should be changed to “Logged In” and A message box should also be displayed, alerting the user that they have been successfully logged in.
- The textboxes (txtCustomerName and txtUnitesUsed) and button (btnCalculate) in the Unit Calculation Section should now be enabled

*Alert that the validation has been successful :*

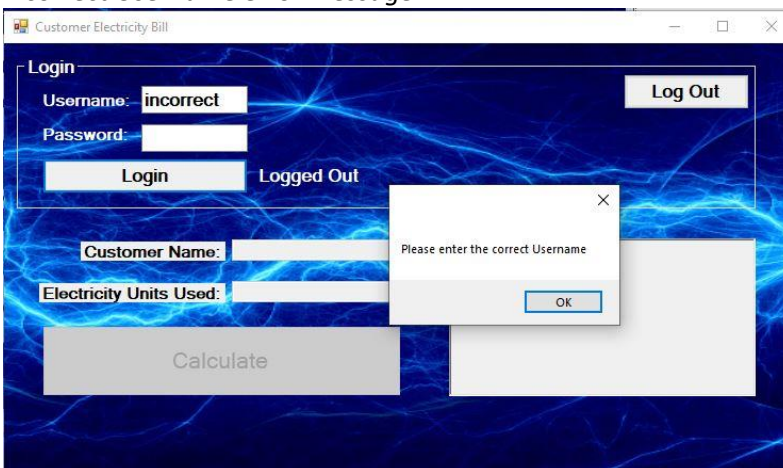


*Controls in Unit Calculation Section have been enabled:*

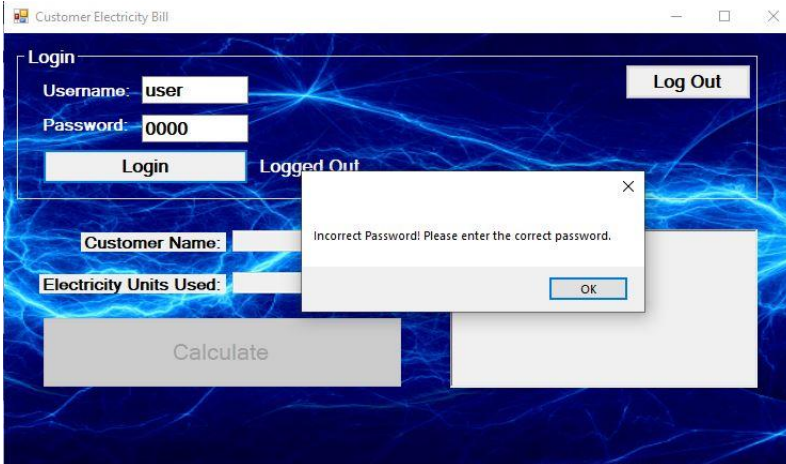


If the username is incorrect, then a messageBox alert should be displayed indicating so. Likewise, if the password is incorrect, the user should be alerted that the password is incorrect:

*Incorrect Username error message:*



*Incorrect password error message:*

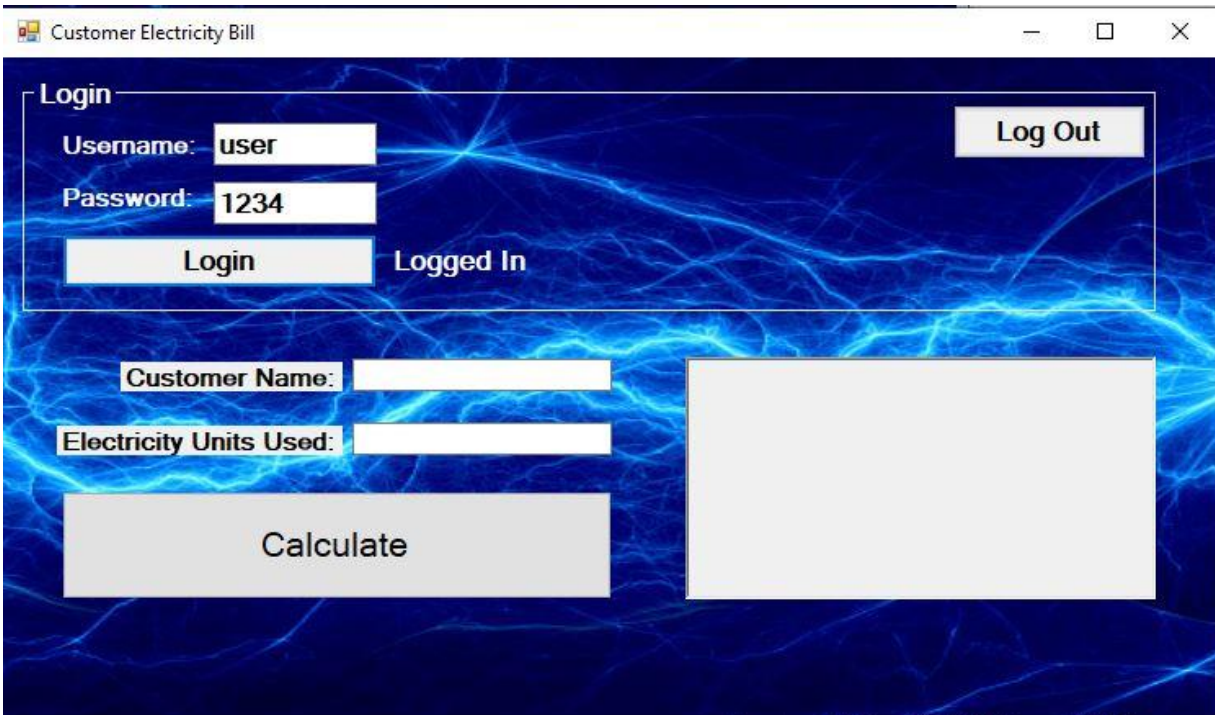


(Hint: Nested IF condition)

## PART 2: Unit Calculation Section

### Create an Electricity Units Calculator

Once you have successfully logged in, you will now need to calculate and display a customer's electricity bill. The Customer's Name, and Unit used should be displayed in a richtextbox along with the total bill amount that the customer must pay at the end of the month.





**Note the Charge Rates per United Used:**

Charge rate for Units Used are as follows:

Units Used per Month	Charge Rate per Units Used
0 – 200	@ R2.50
201 – 400	@ R5.00
401 – 600	@ R7.50
601 and above	@ R10.00

If the total monthly bill exceeds R3000.00 then a supercharge of 12% will be added on.

For every customer, the minimum monthly bill should be R100.00.

### **Step 1: btnCalculate**

The user will enter the Customer's name in the related textbox as well as their Electricity Units Used in that related textbox.

When the Calculate button is clicked, the following should happen:

- You will need to use IF statements to categorize the charge rates with the user's units used input in order to calculate the billing amount
- IF the billing amount is more than R3000.00 then you should apply the 12% supercharge ontop of the billing amount to make a final amount.
- IF the billing amount is less than R3000.00 then the final amount will be the billing amount
- IF the billing amount is less than R100.00, the final amount should STILL be R100.00
- All the calculated details should be displayed in the richTextBox (rtbOutput) in the requested format:

Customer Electricity Bill

Login

Username: user

Password: 1234

Log Out

Login

Logged In

Customer Name: abc

Electricity Units Used: 600

Calculate

Monthly Electricity Bill

Customer Name : abc  
Unit Used: 600  
Charge Rate : R7.5 per unit used.  
Supercharged Amount: R540  
Monthly Bill Due: R5040

Exceeding  
R3000.00,  
Supercharge  
applied.

Customer Electricity Bill

**Login**

Username:  Password:

Logged In

Customer Name:  Electricity Units Used:

**Monthly Electricity Bill**

Customer Name : abc  
Unit Used: 400  
Charge Rate : R5 per unit used.  
Supercharged Amount: R0  
Monthly Bill Due: R2000

Bill is below R3000.00

Customer Electricity Bill

**Login**

Username:  Password:

Logged In

Customer Name:  Electricity Units Used:

**Monthly Electricity Bill**

Customer Name : abc  
Unit Used: 20  
Charge Rate : R2,5 per unit used.  
Supercharged Amount: R0  
Monthly Bill Due: R100

Minimum possible bill

(Hint: don't forget about "\n")

### Step 3: btnLogOut

When the Log Out button is clicked, the following should happen:

- Both textboxes in the Login groupBox (txtUsername and txtPassword) should be blank
- The Logged In label (lblStatus) should change to "Logged Out"
- The textboxes in the Unit Calculation Section (txtCustomerName and txtUnitsUsed) should also be blank. They should also be disabled again.
- The Calculate button (btnCalculate) should be disabled
- The richTextBox (rtbOutput) should be blank.

(Note: Set everything back to default)

**NOTE: Please ensure that you do your own research when it comes to Nested IF statements. I can ensure you that this assignment is not difficult, it will take some time – but it's not difficult.**

## **Marking RUBRIC**

<b>Part 1: Login</b>	<b>Mark</b>
<i>Units Calculation Section</i> controls disabled on run-time	1
Successful Login notification with label change and enabling <i>Units Calculation Section</i> controls	3
Login Validation (Error Messages)	2
<b>Part 2: Calculate</b>	
Successfully displaying information in the richTextBox (Supercharge Bill)	4
Successfully displaying information in the richTextBox (under R3000.00 but above R100.00)	2
Successfully displaying information in the richTextBox (under R100.00)	1
<b>Part 3: Log out</b>	
<i>Units Calculation Section</i> controls disabled	2
All textboxes are blank	
lblStatus text set to "Logged Out"	
<b>Total</b>	<b>/ 15</b>