

# A112 – Lab 5

## Input Validation with Loops and Lists

**DUE Friday, April 12, 2024, by 3:00:00 pm (SHARP)**  
**Submit Python script file A112\_LAB5\_YOUR\_NAME.py to**  
**“LAB 5” Assignment in your Canvas “Lab Assignments” group**

**Goal:** The aim of this lab is to enhance your programming expertise by developing a more sophisticated authentication system compared to the last lab that utilizes loops and lists. You'll gain practice in input validation and conditional logic, crucial for securing and handling user logins effectively. This exercise is designed to improve your ability to write well-structured code that can accurately respond to a variety of user input scenarios, thereby bolstering your programming skill set.

### Implementing User Authentication

1. Open IDLE and click on File > New File to create a new Python script file ('.py').
2. Click on File > Save as.. to save the file to your preferred method of choice. Save it as A112\_LAB5\_YOUR\_NAME.py.
3. Write a program meeting the following requirements:
  - a. Define the following two lists:

```
valid_usernames = ['user1', 'user2', 'user3', 'user123']
valid_passwords = ['pass1', 'pass2', 'pass3', 'pass456']
```
  - b. Use the input() function to ask the user to enter their username and password. Store these inputs in two separate variables.
  - c. Next, you'll write a loop accompanied by a conditional check that will set the Boolean flag for a variable called 'login\_success' accordingly (don't forget to initialize this variable before the loop). This is to ensure that the username and password input by the user correspond correctly to a pair in your lists (for instance, 'user1' should match 'pass1', 'user2' should match 'pass2', and so forth). Your goal is to verify that the username and its matching password are both entered correctly, reflecting the pairing as defined in your lists.  
  
Hint: A for loop using range() and len() together would be one way to do it. In this case, it would simply be 3 lines of code for the loop and conditional (4 lines if you decided to use 'break' to terminate the loop when it's finished doing its job).
  - d. Next, write the conditional statement to inform the user if the login was a success:

```
if login_success:
    print("Login successful!")
else:
    print("Incorrect username or password. ")
```

### Expected output:

```
>>>
Enter your username: user1
Enter your password: pass1
Login successful!

>>>
Enter your username: user1
Enter your password: pass2
Incorrect username or password.
```

4. Ensure that your code is appropriately commented.

5. Run, test, and debug your code and make sure it works.
6. Submit the single A112\_LAB5\_YOUR\_NAME.py file to your Canvas “LAB 5” assignment **by 3:00 PM today as indicated above.**

### **Scoring:**

Successfully submitted to Canvas: **2 points**

File “compiles” and runs: **2 points**

Appropriate heading & comments: **2 points**

Authentication system accuracy and completeness: **4 points**

### **Handing in your Assignment**

It should be clear that failure to successfully submit your Python script (.py) file to your Canvas “LAB 5” assignment in the “Lab Assignments” section or failing to meet the deadline will result in a score of zero (0). Partial credit will only be possible if your Python script doesn't compile successfully without errors, but you are successful in submitting the file and most or all of what you submit is correct. If you have questions about this, ask them ASAP.