

Python and JavaScript Coding Logic Refresher with Peer Review

Overview:

In this assignment, you will complete challenges in both Python and JavaScript, but with a twist: for one Python script and one JavaScript script, you will intentionally introduce a slight error that the IDE won't automatically catch, such as a logic error or an incorrect output. You will then swap your code with another student, and they will have to identify and correct the errors in your work. This exercise will help you and your peers sharpen your debugging skills.

1. Control Structures (If-Else Statements)

Challenge 1:

- a. Write a program in **Python** that checks if a number is even or odd.
- b. Write a program in **Python** that checks if a person is eligible to vote based on their age.
- c. Write a program in **Python** that checks if a number is positive, negative, or zero, and displays the appropriate message.

Once you've completed parts a, b, and c in **Python**, replicate each of these programs in **JavaScript**.

2. Loops (For and While Loops)

Challenge 2:

- a. Write a program in **Python** that prints numbers from 1 to 10 using a for loop.
- b. Write a program in **Python** that prints numbers from 1 to 5 using a while loop.
- c. Write a program in **Python** that calculates the factorial of a given number using a loop.

Once you've completed parts a, b, and c in **Python**, replicate each of these programs in **JavaScript**.

3. Functions and Scope

Challenge 3:

- a. Write a function in **Python** that greets a user by name.
- b. Write a function in **Python** that checks if a number is even or odd.
- c. Write a function in **Python** that accepts a string and returns the number of vowels in the string.

Once you've completed parts a, b, and c in **Python**, replicate each of these functions in **JavaScript**.

4. Arrays and Objects

Challenge 4:

- a. Write a program in **Python** that stores a list of fruits and prints each fruit using a loop.
- b. Write a program in **Python** that stores student names and their grades in a dictionary, and prints each student's name and grade.
- c. Create an array of numbers in **Python** and write a function to find the highest number in the array.

Once you've completed parts a, b, and c in **Python**, replicate each of these programs in **JavaScript**.

Error Task: In two separate Python scripts, two separate JavaScript scripts, and one script of your choosing, intentionally introduce a slight logic error or print the wrong thing. Ensure it's not something that would cause a syntax error but would lead to incorrect output. This error should be subtle, such as an off-by-one error in a condition or printing the wrong message.

SUBMISSION GUIDELINES ON LAST PAGE

Submission Guidelines:

- Complete each challenge in **both Python and JavaScript** for parts a, b, and c.
- Introduce a subtle error in **two Python scripts, two JavaScript scripts, and one script of your choosing** as specified. The errors should be related to logic or output, something that doesn't cause a syntax error.
- Once your code is complete, **you will swap your scripts with another student that I choose** for peer review.
- As part of the review, **identify and correct the errors** in your peer's work and submit the corrections along with your code.
- Test your programs and make sure they run (except for the intended errors).
- Submit all files, including the error-introduced versions and the corrected versions from your peer review, in a **.zip** folder.