

Homework Assignment: Exploring String Manipulation and Formatting in Python

Objective: The primary objective of this assignment is to introduce students to string manipulation, various string methods, and formatting in Python. This assignment aims to enhance students' proficiency in working with text data.

Instructions:

Problem 1: Basic String Manipulation

1. Write a Python script that initializes a string variable with your full name.
2. Use string concatenation to create a new string that includes the message "Hello, my name is" followed by your full name.
3. Implement string slicing to extract and print only the first name from the full name.

Problem 2: String Methods

4. Create a program that prompts the user to enter a sentence using the `input()` function.
5. Use the `len()` function to calculate and print the length of the entered sentence.
6. Apply the following string methods to the entered sentence and print the results:
 - Convert the sentence to uppercase.
 - Convert the sentence to lowercase.
 - Capitalize the first letter of the sentence.
 - Count the occurrences of a specific letter or word in the sentence.
 - Check if the sentence ends with a question mark.

Problem 3: String Formatting

7. Write a Python script that uses string formatting to create a message containing the current date. Use the `datetime` module to obtain the current date.
8. Extend the script to include placeholders for the day, month, and year in the message. Print the formatted message.
9. Implement f-strings or the `format()` method to display a numerical calculation in a sentence. For example, "The result of 5 multiplied by 3 is ____."

Additional Tips:

- Utilize online resources, Python documentation, and course materials to reinforce your understanding.
- Collaborate with classmates to discuss concepts and problem-solving.
- Seek assistance from your instructor or classmates if you encounter difficulties.