Assignment 7

Due on 2023-07-10, 23:59 GMT

The goal of this assignment is to submit your assignment.

As per the guidelines, you should submit your assignment.

1. Identify the problem statement at the end of this section. Be specific and complete your answer below.

   Problem Statement: Given a list of integers, find the mean of the list.

   Your solution:

   - Initialize a variable to store the sum of the list.
   - Iterate through the list, adding each element to the sum.
   - Calculate the mean by dividing the sum by the length of the list.
   - Return the mean.

2. Write the code to implement your solution above.

   ```python
   def calculate_mean(numbers):
       total_sum = 0
       for number in numbers:
           total_sum += number
       mean = total_sum / len(numbers)
       return mean
   ```

3. Test your function with the following data points:

   - Input: [1, 2, 3, 4, 5]
     Expected Output: 3.0
   - Input: [-1, 0, 1, 2]
     Expected Output: 0.5
   - Input: [10, 20, 30]
     Expected Output: 20.0

4. Discuss the time complexity and space complexity of your solution.

   - Time Complexity: O(n), where n is the length of the list.
     Explanation: The algorithm has a single loop which iterates through the list once.
   - Space Complexity: O(1), constant space is used.
     Explanation: No additional space is used besides the input list.

5. Submit your assignment through the provided platform.

   - Submit your code file as a ZIP file.
   - Include a README file explaining your approach and any assumptions.

6. Reflect on the learning outcomes of this assignment.

   - Improved understanding of basic programming concepts.
   - Enhanced problem-solving skills.
   - Practice of documenting solutions with comments.

7. Suggest improvements or potential extensions for this assignment.

   - Add more test cases with different data types and range.
   - Implement error handling for invalid inputs (e.g., non-integer values).

8. Submit any questions or feedback you have regarding the assignment.

   - Questions:
     - How can I improve the efficiency of my solution?
   - Feedback:
     - The assignment was clear and well-structured.

9. Thank you for your participation in this assignment.

   - Best wishes for your future endeavors!

10. Submission instructions:
    - Submit before the deadline.
    - Follow all submission guidelines.
    - Be mindful of plagiarism.

Good luck!