CP-367 A Assignment 1 due date: Jan. 23, 2026

Description: a take-home , individual assignment.

Objectives: demonstrating your understanding and application of C programming.

Task: write c programs for each of the following questions, compile and run each then show the outputs.

Submission: zip all the files and a single Word document that contain screenshots of all the outputs. Make sure you include your name and student ID# as an author in each program as well as the Word document. Then submit the zip file to the Assignment 1 drop bob in Dropbox section on MyLS.

Note (1): The use of generative AI is not permitted in this course in terms of generating partial or complete solutions – it is a violation of the Academic Code of Conduct. However, the students can search and learn about the assignment topics using AI tools.

Note (2): It is the student's responsibility to read, understand and follow the Laurie's Academic Code of Conduct.

Note (3): students with approved accommodation by WLU must indicate in the comment box in the drop box that they have an approved accommodation with details of what they are entitled to, so it matches my record.

General rubrics: your code is friendly easy to understand, programs satisfy problem requirements, proper naming conventions, programs contain proper comments, programs generated correct outputs, programs handle errors whenever needed, programs are tested for functionality, outputs and errors handling if needed)

Questions (there are 4 questions)

1. Write a function that:
    - Takes a number from the user and calculates the sum of the factors of a number (e.g. for 8, the factors are 1, 2, 4, 8 that need to sum up).
    - Check the number entered if is equal to 0 or negative, ask the user re enter until a positive number is entered.
    - Demonstrates using the main() function and your function.

2. Write a program that:
    - Declares an array of integers.
    - Uses a pointer to traverse the array.
    - Prints all elements and their sum using pointer arithmetic.

3. Create a struct Student with:
        - ID
        - Name
        - GPA
    - Write a program that:
        - Stores multiple student records in a file.
        - Reads and displays all records from the file.

4. Write a program that:
    - Takes student name and marks.
    - Saves them to a file.
    - Reads and displays the file contents.