Assignment 1: C Programming and Assembly Basics

Problem 1: [Using loops, branching and arrays]

Write a pure C program and the corresponding assembly program that gets the minimum element in an integer array of size 10 and prints a message with the minimum number.

Deliverables: min.c , min.asm

Test cases:

Array: 10, 31, 5, 7, 11, 3, 8, 40, 12, 4
Output: Min element is: 3

Array: 11, 2, 3, 7, 5, 10, 9, 22, 6, 1
Output: Min element is: 1

Problem 2: [Using loops, branching and arrays]

Write a pure C program and the corresponding assembly program that counts the number of even elements in an integer array of size 10 and prints a message with the result.

Deliverables: count.c , count.asm

Test cases:

Array: 10, 31, 5, 7, 11, 3, 8, 40, 12, 4
Output: Count of even numbers is: 5

Array: 19, 2, 3, 7, 5, 10, 9, 0, 6, 1
Output: Count of even numbers is: 4

Problem 3 [Using loops, branching and arrays]:

Write a pure C program and the corresponding assembly program that calculates the average of elements in an integer array of size 10 and prints a message with the average.

Deliverables: average.c , average.asm

Test cases:

Array: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
Output: Average is: 5.5

Array: 7, 2, 5, 11, 4, 6, 1, 1, 8, 3
Output: Average is: 4.8

Remarks

1. You should write a **pure C** not a mix of C and C++ syntax.
2. Array will be **static in the data section**, not an input from the user.
3. Output should be printed **as mentioned in the test cases**.

Submission Rules

1. Max members in a team: 3 from the same lab, or labs given by the same TA.
2. Assignment due date is: Thu. 12 Dec. 2024.
3. Submit one compressed folder named G#_ID1_ID2_ID3 contains the 6 files ONLY (2 files per problem .c, .asm)
4. Cheating is totally prohibited and it will be escalated directly to the Dr.
5. No submissions are accepted by mail.