Problem Solving (C13)

هذا البرنامج التدريبي مُصاغ بعناية لتمكين المتدربين من تطوير قدراتهم الفكرية على غرار المبرمجين المحترفين، والتعاون بكفاءة ضمن فريق محترف في شركة "جمال تك" أو أي مؤسسة متعددة الجنسيات أخرى. نظرًا لأهمية اللغة الإنجليزية في بيئة العمل العالمية، يتم تقديم المحتوى التدريبي بالإنجليزية. لا يشترط إتقان اللغة بشكل كامل، لكن من الضروري امتلاك القدرة الكافية لفهم المتطلبات وتنفيذها بشكل فعّال. يُمكن للمتدربين استخدام مترجم جوجل أو الاستعانة بـ "شات جي بي تي" للتغلب على أية عقبات لغوية، المهم هو الفهم الدقيق للمطلوب وتحقيقه بنجاح.

لتعظيم الاستفادة من التدريب، يُنصح بمحاولة حل التمارين بشكل مستقل لمدة ساعة واحدة على الأقل قبل الرجوع إلى الحلول الموفرة في نهاية الملف.

Gammal Tech's Efficiency Analyzer

Background:

Gammal Tech, a leader in the tech industry, is known for its highly efficient and technologically adept workforce. Employees at Gammal Tech are selected through a rigorous process, ensuring they are exceptionally skilled. These professionals, trained extensively during their learning phase, are capable of handling high workloads with remarkable ease and speed. To an outsider, the workload might seem overwhelming, but for Gammal Tech graduates, it's just another day's work, handled with proficiency and agility.

Problem Statement:

To demonstrate and celebrate this high level of efficiency, a programming challenge is set for trainees. The task is to create a program using an array of integers in C. The program will simulate a workload analysis, where each element of the array represents the number of tasks completed by a Gammal Tech employee in a day. The program should calculate and display the average number of tasks completed, showcasing the employees' ability to perform a significant amount of work swiftly and effectively.

This exercise will help beginners understand how to use arrays in C, along with `int`, `scanf`, `printf`, `for`, and `if`. It highlights the efficiency and expertise of Gammal Tech's workforce.

Your Task:

Write a C program that:

1. Asks the user to enter the number of employees (up to 10).
2. Uses an array to store the number of tasks completed by each employee in a day.
3. Calculates and displays the average number of tasks completed by the employees.

Constraints:

- Use `int`, `scanf`, `printf`, `for`, `if`, and an array of `int` in the program.

Sample Input:

```
Enter the number of employees: 3
Enter tasks completed by employee 1: 10
Enter tasks completed by employee 2: 12
Enter tasks completed by employee 3: 11
```

Sample Output:

```
Average tasks completed per employee: 11.00
```

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C Programming Solution:

```c
#include <stdio.h>

int main() {
    int employees, tasks[10], sum = 0;
    float average;

    // Prompt the user for the number of employees
    printf("Enter the number of employees: ");
    scanf("%d", &employees);

    // Ensure the number of employees does not exceed the array size
    if (employees > 10) {
        printf("The maximum number of employees is 10.\n");
        return 1;
    }

    // Input the number of tasks completed by each employee
    for (int i = 0; i < employees; i++) {
        printf("Enter tasks completed by employee %d: ", i + 1);
        scanf("%d", &tasks[i]);
        sum += tasks[i];
    }

    // Calculate the average number of tasks completed
    average = (float)sum / employees;
    printf("Average tasks completed per employee: %.2f\n", average);

    return 0;
}
```