

Week 1: Introduction to C Programming (Solution)

Overview

This week, we will cover the basics of writing and running a simple C program. By the end of this tutorial, you will:

- Understand the structure of a C program
- Learn how to use `printf()` for output
- Take user input using `scanf()`
- Work with basic data types and variables

****1. Writing Your First C Program ****

A C program consists of functions and statements enclosed in `{}`. Every program starts with a `main()` function. Below is a simple C program that prints "Hello, World!" to the screen.

Exercise 1 Solution:

Modify the above program to print your name instead of "Hello, World!".

```
#include <stdio.h>

int main() {
    printf("Hello, my name is John!\n");
    return 0;
}
```

2. Variables and Data Types

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Variables are used to store data. In C, you must declare a variable before using it.

Exercise 2 Solution:

Create a program that declares variables for your name, age, and favorite number, then prints them.

```
#include <stdio.h>

int main() {
    char name[] = "John";
    int age = 25;
    int favoriteNumber = 7;

    printf("Name: %s\n", name);
    printf("Age: %d\n", age);
}
```

```
    printf("Favorite Number: %d\n", favoriteNumber);

    return 0;
}
```

Exercise 3 Solution:

Write a program that asks the user for their name and age, then prints a greeting message.

```
#include <stdio.h>

int main() {
    char name[50];
    int age;

    printf("Enter your name: ");
    scanf("%s", name);
    printf("Enter your age: ");
    scanf("%d", &age);

    printf("Hello %s, you are %d years old.\n", name, age);

    return 0;
}
```

4. Assignment : Medical Checkup Program

Task: Write a C program that simulates a basic medical checkup.

Solution:

```
#include <stdio.h>

int main() {
    int age;
    char gender;
    float height, weight, temperature;
    char bloodType;

    printf("How old are you? ");
    scanf("%d", &age);
    printf("What is your gender (M/F)? ");
    scanf(" %c", &gender);
    printf("What is your height (in meters)? ");
    scanf("%f", &height);
    printf("What is your weight (in kilograms)? ");
```

```
scanf("%f", &weight);
printf("What is your blood type (A, B, O)? ");
scanf(" %c", &bloodType);
printf("What is your body temperature? ");
scanf("%f", &temperature);

printf("\nYou are %d years old and your gender is \"%c\".\n", age,
gender);
printf("Your height and weight are %.2f m, %.2f kg.\n", height,
weight);
printf("Your blood type is '%c'.\n", bloodType);
printf("Your body temperature is %.2f degrees Celsius.\n",
temperature);

return 0;
}
```

Next Week: Basic C Programming - Arithmetic Operations and Control Statements

Happy coding! 🚀