

Introduction:

Welcome to your first C programming assignment, where you'll build an interactive console application that incorporates essential concepts of Variables and Constants, Data Types, printf and scanf, and Operators. This assignment will provide hands-on experience in developing an interactive program that covers these fundamental C programming topics.

Assignment Instructions:

Interactive Console Application (100 points):

You are tasked with creating a single interactive console application that covers all the specified topics. This application should meet the following requirements:

Variables and Constants (20 points):

1. Declare and initialize variables of different data types (int, float, char).
2. Use const to define relevant constants, such as the value of pi (**the value of PI is 3.14159265**).
3. Implement an interactive user interface that allows users to input values for these variables.
4. Display the results with proper formatting within the console application.

Data Types (30 points):

1. Utilize various data types (int, float, char, double) for storing and manipulating data within your application.
2. Perform arithmetic operations on the variables of different data types.

printf and scanf (30 points):

1. Utilize printf for user-friendly output within the interactive console application, including formatting options such as specifying precision.
2. Implement interactive input using scanf, using the correct format specifiers.

Operators (20 points):

1. Use arithmetic operators (addition, subtraction, multiplication, division, and modulus) to perform calculations within the interactive console application.
2. Display the results with proper formatting.

Submission Requirements:

- You are required to submit a well-commented, single C source code file named **solution.c** that contains the entire interactive console application.
- This assignment challenges you to create a comprehensive interactive console application that showcases your understanding of Variables and Constants, Data Types, printf and scanf, and Operators.

Enjoy the coding process, and good luck!

Sample Output

```
Enter an integer: 45
Enter a floating-point number: 7.614
Enter a character: q
Enter a double: 12.4000001
```

Variable Values:

```
Integer: 45
Float: 7.61
Character: q
Double: 12.400000
```

Mathematical Calculations:

```
2 * intergerVar = 90
floatVar + 5.5 = 13.11
carVar as an integer: 113
doubleVar * PI = 38.955750
```