Sample C Programs

Program to Display "Hello, World!"

```c
#include <stdio.h>
int main() {
    // printf() displays the string inside quotation
    printf("Hello, World!");
    return 0;
}
```

Output

```
Hello, World!
```

How "Hello, World!" program works?

- The `#include` is a preprocessor command that tells the compiler to include the contents of `stdio.h` (standard input and output) file in the program.
- The `stdio.h` file contains functions such as `scanf()` and `printf()` to take input and display output respectively.
- If you use the `printf()` function without writing `#include <stdio.h>`, the program will not compile.
- The execution of a C program starts from the `main()` function.
- `printf()` is a library function to send formatted output to the screen. In this program, `printf()` displays `Hello, World!` text on the screen.
- The `return 0;` statement is the **"Exit status"** of the program. In simple terms, the program ends with this statement.

Program to Print an Integer

```c
#include <stdio.h>
int main() {
    int number;

    printf("Enter an integer: ");
```

```
    // reads and stores input
    scanf("%d", &number);

    // displays output
    printf("You entered: %d", number);

    return 0;
}
```

Output

```
Enter an integer: 25
You entered: 25
```

In this program, an integer variable `number` is declared.

```
int number;
```

Then, the user is asked to enter an integer number. This number is stored in the `number` variable.

```
printf("Enter an integer: ");
scanf("%d", &number);
```

Finally, the value stored in `number` is displayed on the screen using `printf()`.

```
printf("You entered: %d", number);
```

C Program to Add Two Integers

In this example, the user is asked to enter two integers. Then, the sum of these two integers is calculated and displayed on the screen.

To understand this example, you should have the knowledge of the following C programming topics:

- C Data Types
- C Variables, Constants and Literals
- C Input Output (I/O)
- C Programming Operators

Program to Add Two Integers

```c
#include <stdio.h>
int main() {

    int number1, number2, sum;

    printf("Enter two integers: ");
    scanf("%d %d", &number1, &number2);

    // calculating sum
    sum = number1 + number2;

    printf("%d + %d = %d", number1, number2, sum);
    return 0;
}
```

Output

```
Enter two integers: 12
11
12 + 11 = 23
```
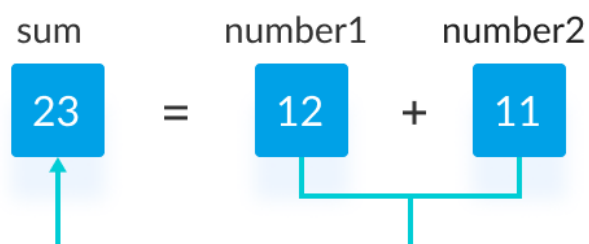

In this program, the user is asked to enter two integers. These two integers
are stored in variables `number1` and `number2` respectively.

```c
printf("Enter two integers: ");
scanf("%d %d", &number1, &number2);
```

Then, these two numbers are added using the `+` operator, and the result is
stored in the `sum` variable.

```c
sum = number1 + number2;
```


Finally, the `printf()` function is used to display the sum of numbers.

```c
printf("%d + %d = %d", number1, number2, sum);
```