Basics of C language

Data Types in C: ref: https://www.geeksforgeeks.org/data-types-in-c/

Here are some of the primitive data types in the C programming language:

- int: Represents integer numbers, both positive and negative.Example: 10, -10
- char: Represents a single character or a small integer value. Example: A,a
- float: Represents single-precision floating-point numbers. Example: 3.14

Format Specifiers in C: ref: https://www.geeksforgeeks.org/format-specifiers-in-c/

The format specifier in C is used to tell the compiler about the type of data to be printed or scanned in input and output operations. They always start with a % symbol and are used in functions like printf(), scanf() etc. The C language provides a number of format specifiers that are associated with the different data types such as:

- %d for int,
- %c for char,
- %f for float etc.

Variable: ref: https://www.geeksforgeeks.org/variables-in-c/

A variable in C language is the name associated with some memory location to store data of different types. We can also retrieve the data when it is required.

Syntax: *data_type variable_name*

Example:

- int var; // integer variable named var
- char a; // character variable named a
- float fff; // float variable named fff

Basic Input and Output in C: ref: https://www.geeksforgeeks.org/basic-input-and-output-in-c/

C language has standard libraries that allow input and output in a program. The **stdio.h** or standard input output library in C that has methods for input and output.

- **scanf():** The scanf() method in C, reads the value from the console (User given) as per the type specified.

  Syntax: *scanf("%X", &variableOfXType);*

  %X is the format specifier in C and variableOfXType is the name of a variable of X data type.

  Example: scanf("%d",&var);

scanf("%c",&a);

scanf("%f",&fff);

- **printf():** The printf() method, in C, prints the value passed as the parameter to it, on the console screen.
  Syntax: *printf("%X", variableOfXType);*

  %X is the format specifier in C and variableOfXType is the name of a variable of X data type.

  Example: printf("%d",var);

  printf("%c",a);

  printf("%f",fff);

Arithmetic Operators in C: ref: https://www.geeksforgeeks.org/arithmetic-operators-in-c/

Arithmetic Operators are the type of operators in C that are used to perform mathematical operations in a C program. They can be used in programs to define expressions and mathematical formulas. There are a total of 9 arithmetic operators in C to provide the basic arithmetic operations such as addition, subtraction, multiplication, etc. Some of the basic ones are given here:

Operator	Name of the Operator	Arithmetic Operation	Syntax
+	Addition	Add two operands.	x + y
–	Subtraction	Subtract the second operand from the first operand.	x – y
*	Multiplication	Multiply two operands.	x * y
/	Division	Divide the first operand by the second operand.	x / y
%	Modulus	Calculate the remainder when the first operand is divided by the second operand.	x % y

Sample Code:

```
#include <stdio.h>
int main()
{
   int a = 10, b, res;
   //taking input for b
   printf("Give value for b\n");
   scanf("%d",&b);

   // printing a and b
   printf("a is %d and b is %d\n", a, b);

   res = a + b; // addition
   printf("a + b is %d\n", res);

   res = a - b; // subtraction
   printf("a - b is %d\n", res);

   res = a * b; // multiplication
   printf("a * b is %d\n", res);

   res = a / b; // division
   printf("a / b is %d\n", res);

   res = a % b; // modulus
   printf("a %% b is %d\n", res);

   return 0;
}
```