Basic of C Programming

CONCEPTS OF
CONSTANTS
&
FORMAT SPECIFIER

Constants in C -

- A constant is a value or variable that can't be changed in the program, for example: 10, 20, 'a', 3.4, "c programming" etc.

- There are different types of constants in C programming.

Categories		Constants Name	Example
Numeric Constants	Integer Constant		10, 20, 450 etc.
	Real Constant	Decimal or Floating-point Constant	10.3, 20.2, 450.6 etc.
		Octal Constant	021, 033, 046 etc.
		Hexadecimal Constant	0x2a, 0x7b, 0xaa etc.
Character Constants	Character Constant		'a', 'b', 'x' etc.
	String Constant		"c", "c program" etc.

Different types of constants -

- ***Integer constants*** **-** A integer constant is a numeric constant (associated with number) without any fractional or exponential part. There are three types of integer constants in C programming:
  1. decimal constant(base 10)
  2. octal constant(base 8)
  3. hexadecimal constant(base 16)

- ***Floating-point constants*** **-** A floating point constant is a numeric constant that has either a fractional form or an exponent form. For example: 2.0,0.0000234,-0.22E-5 etc.

Different types of constants -

- ***Character constants*** **-** A character constant is a constant which uses single quotation around characters.
  For example: 'a', 'l', 'm', 'F‘ etc.

- ***String constants*** **-** String constants are the constants which are enclosed in a pair of double-quote marks.
  For example: "good" ,"x", "Earth is round\n"

2 ways to define constant in C -

- There are two ways to define constant in C programming.
  1. **const keyword**
  2. **#define preprocessor**

```
#include<stdio.h>
#include<conio.h>

void main()
{
   const float PI=3.14;
   printf("The value of PI is: %f“ , PI);
}
```

2 ways to define constant in C -

- ***const keyword*** **-** The const keyword is used to define constant in C programming.

```
const float PI=3.14;
```

```
#include<stdio.h>

void main()
{
   const float PI=3.14;
   printf("The value of PI is: %f“ , PI);
}
```

- ***#define preprocessor*** **-** The #define preprocessor is also used to define constant. We will learn about #define preprocessor directive later.

Format Specifier in C -

- Format specifiers defines the type of data to be printed on standard output. Whether to print formatted output or to take formatted input we need format specifiers. Format specifiers are also called as **format string**.

Format specifier	Description	Supported data types
%c	Character	char unsigned char
%d	Signed Integer	short unsigned short int long
%e or %E	Scientific notation of float values	float double
%f	Floating point	float

Format Specifier in C -

Format specifier	Description	Supported data types
%g or %G	Similar as %e or %E	float double
%hi	Signed Integer(Short)	short
%hu	Unsigned Integer(Short)	unsigned short
%i	Signed Integer	short unsigned short int long
%l or %ld or %li	Signed Integer	long
%lf	Floating point	double

Format Specifier in C -

Format specifier	Description	Supported data types
%Lf	Floating point	long double
%lu	Unsigned integer	unsigned int unsigned long
%lli, %lld	Signed Integer	long
%llu	Unsigned Integer	unsigned long long
%o	Octal representation of Integer.	short unsigned short int unsigned int long
%p	Address of pointer to void void *	void *

Format Specifier in C -

Format specifier	Description	Supported data types
%s	String	char *
%u	Unsigned Integer	unsigned int unsigned long
%x or %X	Hexadecimal representation of Unsigned Integer	short unsigned short int unsigned int long
%n	Prints nothing	--
%%	Prints % character	--

THANK YOU…