C Constants :-

Constants are like a variable, except that their value never changes during execution once defined.

C Constants is the most fundamental and essential part of the C programming language. Constants in C are the fixed values that are used in a program, and its value remains the same during the entire execution of the program.

- Constants are also called literals.
- Constants can be any of the data types.
- It is considered best practice to define constants using only *upper-case* names.

Constant Definition in C

Syntax:

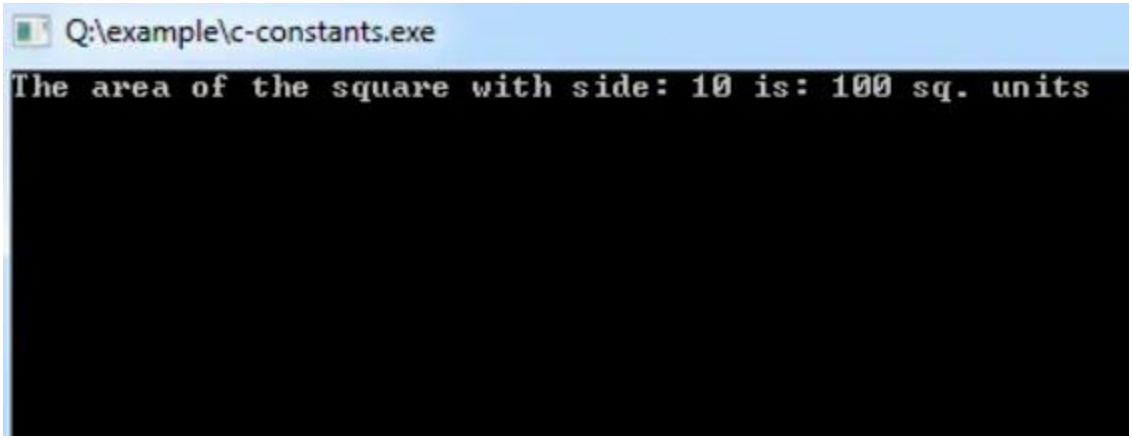
```
const type constant_name;
```

const keyword defines a constant in C.

Example:

```
#include<stdio.h>
void main()
{
   const int SIDE = 10;
   int area;
   area = SIDE*SIDE;
   printf("The area of the square with side: %d is: %d sq. units", SIDE, area);
}
```

Program Output:



Putting const either before or after the type is possible.

```
int const SIDE = 10;
```
or

```
const int SIDE = 10;
```

Constant Types in C

Constants are categorized into two basic types, and each of these types has its subtypes/categories. These are:

Primary Constants

1. Numeric Constants
    - Integer Constants
    - Real Constants
2. Character Constants
    - Single Character Constants
    - String Constants
    - Backslash Character Constants

Integer Constant

It's referring to a sequence of digits. Integers are of three types viz:

1. Decimal Integer
2. Octal Integer
3. Hexadecimal Integer

Example:
15, -265, 0, 99818, +25, 045, 0X6

Real constant

The numbers containing fractional parts like 99.25 are called real or floating points constant.

Single Character Constants

It simply contains a single character enclosed within ' and ' (a pair of single quote). It is to be noted that the character '**8**' is not the same as **8**. Character constants have a

specific set of integer values known as ASCII values (American Standard Code for Information Interchange).

Example:

'X', '5', ';'

String Constants

These are a sequence of characters enclosed in double quotes, and they may include letters, digits, special characters, and blank spaces. It is again to be noted that "**G**" and '**G**' are different - because "G" represents a string as it is enclosed within a pair of double quotes whereas 'G' represents a single character.

Example:

"Hello!", "2015", "2+1"

Backslash character constant

C supports some character constants having a backslash in front of it. The lists of backslash characters have a specific meaning which is known to the compiler. They are also termed as "Escape Sequence".

For Example:

t is used to give a tab

n is used to give a new line

Constants	Meaning
\a	beep sound
\b	backspace
\f	form feed
\n	new line
\r	carriage return
\t	horizontal tab

\v	vertical tab
\'	single quote
\"	double quote
\\	backslash
\0	null

Secondary Constant

- Array
- Pointer
- Structure
- Union
- Enum