CONSTANT IN C LANGUAGE

Constants

This tutorial will cover Constants in C. Constants refers to the fixed values that do not change during the execution of a program. A "constant" is a number, character, or character string that can be used as a value in a program. Use constants to represent floating-point, integer, enumeration, or character values that cannot be modified. C supports several types of constants that I am discussing in this article.

There may be a situation in programming that the value of certain variables to remain constant during execution of a program. In doing so we can use a qualifier const at the time of initialization. For example:

1. `const float pie = 3.147;`
2. `const int radius = 4;`
3. `const char c = 'A';`
4. `const char name[] = "Samina Kauser";`

In C constant can also be used using preprocessor directive For example:

1. `#define FIRST_NUMBER 1`

Note

1. const is a new data type qualifier in C defined by ANSI

Types of constant in C Language

1. Primary Constant

Primary Constant have following sub categories

   ○ Integer Constant
   ○ Real constant
   ○ Character constant

2. Secondary Constant

Secondary Constant have following sub categories

   ○ Array
   ○ Pointer Structure
Using Constant In Our Program

(a) Constant definitions typically follow the `#include` directives at the top of C source code:

```c
#include<stdio.h>
#define SPEEDLIMIT 55
#define RATE 15
#define FIRST_TICKET 85
#define SECOND_TICKET 95
#define THIRD_TICKET 100

int main()
{
    int total,fine,speeding; puts("Speeding Tickets\n");
    /* first ticket */
    speeding = FIRST_TICKET - SPEEDLIMIT;
    fine = speeding * RATE;
    total = total + fine;
    printf("For going %d in a %d zone: $%d\n",FIRST_TICKET,SPEEDLIMIT,fine);
    /* second ticket */
    speeding = SECOND_TICKET - SPEEDLIMIT;
    fine = speeding * RATE;
    total = total + fine;
    printf("For going %d in a %d zone: $%d\n",SECOND_TICKET,SPEEDLIMIT,fine);
    /* third ticket */
    speeding = THIRD_TICKET - SPEEDLIMIT;
    fine = speeding * RATE;
    total = total + fine;
    printf("For going %d in a %d zone: $%d\n",THIRD_TICKET,SPEEDLIMIT,fine);
    /* Display total */
    printf("\nTotal in fines: $%d\n",total);
}
27. return(0);
28. }

(b) Constant using const keyword C programming:
When declaring a const variable, it is possible to put const either before or after the type: that is, both

1. int const a = 15;

Or

1. const int x = 15;

Following is a simple example

1. main()
2. {
3.   const float pi = 3.14;
4.   float area_of_circle;
5.   area_of_circle = pi*r*r;
6.   printf("Area of circle is :%f",area_of_circle);
7. }