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C Program to Count Number of Digits in an Integer

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C Program to Count Number of Digits in an Integer

In this tutorial, we will write a program to count the number of digits in an integer in C language. For example, if we have to count how many digits are there is an integer number "36810". To find out the number of digits we will keep dividing the given number by "10" until the number becomes zero as shown in figure 1:

Note: We have to count how many times the number is divided by "10" before its value become "0"
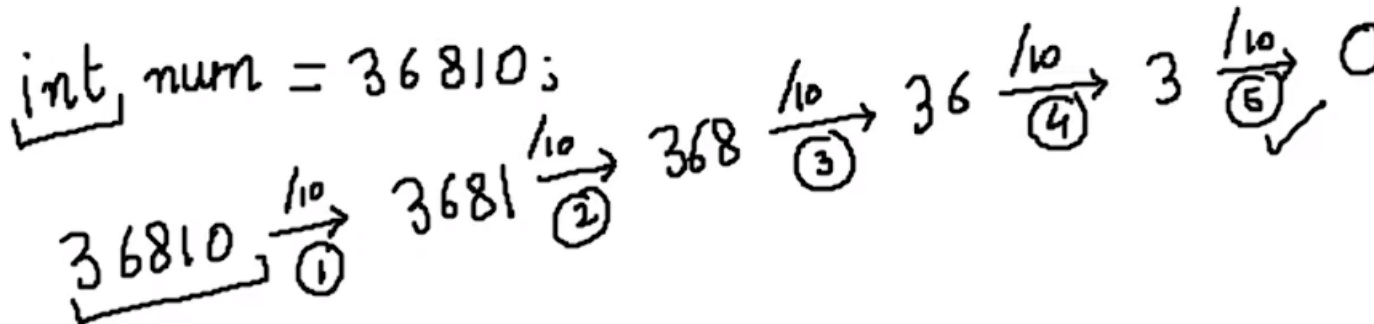

Figure 1: Method to count digits in a number

As shown in figure 1, the given number is "36801" and we have to count its digit. We will divide the number by "10",

1. When we divided the number "36810" with "10"; the remaining value is "3681" and the value of count is now "1"

2. When we divided the number "3681" with "10"; the remaining value is "368" and the value of count is now "2"

3. When we divided the number "368" with "10"; the remaining value is "36" and the value of count is now "3"

4. When we divided the number "36" with "10"; the remaining value is "3" and the value of count is now "4"

5. When we divided the number "3" with "10"; the remaining value is "0" and the value of count is now "5"

By using this technique we have figured it out that there are "5" digits in the number "36810". The C program of this example is shown below:

C program to count number if digits is an integer

```c
int main(){

    int n, counter = 0;

    printf("Enter the number\n");

    scanf("%d", &n)
```

Code Snippet 1: Main Program 1

As shown in the code snippet 1,

1. We have declared an integer variable "n" which will be used to store the number which user will input.

2. We have initialized an integer variable "Counter" and assigned a value "0" to it; the counter will be used to count how many times number is divided

3. The function "printf" is used to print "Enter the number"

4. And the function "scanf" is used to take input from the user at run time

```c
if(n==0)
printf("There is only 1 digit in your number");

else
{
while (n !=0 )

{

n = n/10;

counter++:
```

```
    }

    printf(“There are %d digits in your number ”, counter);

    return 0;
    }
```

Code Snippet 2: Main program 2

As shown in the code snippet 2,

1. We have used an "if" condition to check that if the number entered by the user is "0". It will simply print that "There is only 1 digit in your number"

2. In the "else" we have used a "while" loop which will run till the value of "n" is not equal to "0"; in the body of while loop the value of "n" will be divide by "10" at each iteration; and the value of the counter will be incremented by "1"

3. When the loops end the value of the "counter" will be printed this will tell us how many numbers are there in the given digit.

The output of the following program is shown in figure 2

```
Enter the number
0
There is only 1 digit in your number
```

Figure 2: Program Output 1

```
Enter the number
12200
There are 5 digits in your number
```

Figure 3: Program Output 2

Previous   Next

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