

# RECURSION FUNCTION:

A function that calls itself is known as a recursive function. And, this technique is known as recursion. Let us consider an example program.

```
#include <stdio.h>

int sum(int n);

int main()
{
    int number, result;
    printf("Enter a positive integer: ");
    scanf("%d", &number);
    result = sum(number);
    printf("sum=%d", result);
}

int sum(int num)
{
    if (num!=0)
        return num + sum(num-1); // sum() function calls itself
    else
        return num;
}
```

Initially, the sum() is called from the main() function with number passed as an argument. Suppose, the value of num is 3 initially. During next function call, 2 is passed to the sum() function. This process continues until num is equal to 0. When num is equal to 0, the if condition fails and the else part is executed returning the sum of integers to the main() function. The recursion process is shown below

