Function

A Function is a sub-program that acts on data and often returns a value. Large programs are generally avoiding because it is difficult to manage a single list of instructions. Thus, a large program is broken down into smaller units known as functions. A functions is a named unit of a group of program statements. This unit can be invoked from other parts of the program.

Why to use Functions ?

The most important reason to use functions is to make program handling easier as only a small part of the program is dealt with at a time, thereby avoiding ambiguity. Another reason to use functions is to reduce program size. Functions make a program more readable and understandable to a programmer thereby making program management much easier.

C++ Function Types

There are two types of functions: library functions and user-defined functions. Library functions are predefined functions having their special meaning, whereas user-defined functions are the functions defined by the programmer/user. Library functions also called as built-in functions.

C++ Function Definition

In C++, a function must be defined before it is used anywhere in the program.

return_type function_name(comma_separated_parameter_list)

{

function body

}

Example1:

int sum(int a, int b)

{

int add;

 add = a+b;

return add;

}

Example2:write program to find cube of number using function?

```
#include<iostream>

#include<conio.h>

using namespace std;

float cube(float);

void main()

{

clrscr();

 float numpass, numget;

cout<<"Enter a number to calculate its cube: \n";

 cin>>numpass;

 numget = cube(numpass);

cout<<"\nThe cube of "<<numpass<<" is "<<numget;

getch();

}

float cube(float x)

 {

float temp;

temp = x*x*x;

  return temp;

}
```

Example3 :write program to swap two numbers using function?

```cpp
#include<iostream>

#include<conio.h>

using namespace std;

void swap(int, int);

void main()

{ clrscr();

 int num1, num2;

 cout<<"Enter any two number: ";

 cin>>num1>>num2;

cout<<"\nBefore:\n\t";

cout<<"num1 = "<<num1<<"\tnum2 = "<<num2<<"\n\n";

swap(num1, num2);

cout<<"After:\n\t";

cout<<"num1 = "<<num1<<"\tnum2 = "<<num2<<"\n\n";

getch(); }

 void swap(int a, int b)

 { int temp;

temp = a;

 a = b;

 b = temp;

 cout<<"In:\n\t";

 cout<<"num1 = "<<a<<"\tnum2 = "<<b<<"\n\n";

 }
```

Example 4:write program to find factorial any number using function?

```cpp
#include<iostream>

#include<conio.h>

 using namespace std;

 long factorial(int);

 int main() {

int counter, n;

 cout << "Enter the Number :";

 cin>>n;

 cout << n << " Factorial Value Is " << factorial(n);

 getch();

 return 0; }


// Factorial Function


long factorial(int n)
 {    int counter;
 long fact = 1;
   for (int counter = 1; counter <= n; counter++)
    {
  fact = fact * counter;
}
   return fact;
}
```