

FUNCTIONS

C Programming

A function is a group of statements which performs a specific task.

Each C program has at least one function, that is `main()`.

We can divide our complex programs into functions.

There are 3 concepts which you should understand

- 1) Function Declaration
- 2) Function Definition
- 3) Calling a Function



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Function Declaration

A function declaration tells the compiler about a function name and how to call the function.

`return_type function_name(parameters)`

Parameter names are not important in function declaration only their type is required,

```
int sum(int, int);
```

This tells compiler that there is `sum()` function which accepts two integers as parameters and returns an integer in the program



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Function Definition

A function definition consists of block of statements which defines what the function does.

```
return_type function_name( parameter list ) {  
    body of the function  
}
```

Eg:

```
int sum(int a, int b){  
    print("Sum=%d",a+b);  
}
```



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Calling a function

To use a function, you will have to call the function to perform the defined task.

When a program calls a function, the program control is transferred to the called function. A called function performs a defined task.

To call a function, you simply need to pass the parameters along with the function name

Eg: `sum(5,6)` //call this in `main()` method



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Addition of any two numbers using Functions

```
#include <stdio.h>
int sum(int, int); //function declaration
int main() {
    // You can call the function as many times as you want
    sum(5,6);
    sum(10,5);
    sum(5,1);
    return 0;
}

//Function Definition
int sum(int a, int b){
    printf("Sum of %d & %d is %d\n",a,b,a+b);
}
```



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Addition of any two numbers using Functions

Output

```
Sum of 5 & 6 is 11  
Sum of 10 & 5 is 15  
Sum of 5 & 1 is 6
```



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