



SNS COLLEGE OF TECHNOLOGY



Coimbatore-36.

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COURSE NAME : 23CST101 PROBLEM SOLVING AND C PROGRAMMING
I YEAR/ V SEMESTER

UNIT – IV FUNCTIONS AND POINTERS

Definition of Function

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UNIT IV



Function–Definition of function– User-defined Functions Declaration of function–Call by reference – Call by value – Recursion – Pointers - Definition – Initialization –Operations on pointers-Pointer arithmetic – Pointers and arrays–Illustrative programs.



FUNCTIONS

Function is basically a set of statements that takes inputs, perform some computation and produces output

```
Return_type function_name(set_of_inputs);
```

Inputs provided to the function

Why we are using
Functions



1. Reusability

Once the function is defined, it can be reused over and over again.

2. Abstraction

If you are just using the function in your program then you don't have to worry about *how it works inside!*

Example: scanf function



Function Declaration

When we declare variable we declare its properties to the compiler

Function Declaration (also called function prototype) means declaring the properties of a function

For example: `int var;`

Properties:

- 1. Name of variable: `var`
- 2. Type of variable: `int`

For example: `int fun(int, char);`

Properties:

- 1. Name of function : `fun`
- 2. Return Type of function: `int`
- 3. Number of parameters: `2`
- 4. Type of parameter 1: `int`
- 5. Type of parameter 2: `char`

```
1  #include <stdio.h>
2  char fun(); //function prototype
3  int main()
4  {
5      char c = fun();
6      printf("character is: %c", c);
7  }
9  char fun()
10 {
11     return 'a';
12 }
13
```





FUNCTION DEFINITION

Function definition

Function definition contains the block of code to perform a specific task. In our example, adding two numbers and returning it.

Syntax of function definition

```
returnType functionName(type1 argument1, type2 argument2, ...)  
{  
    //body of the function  
}
```

When a function is called, the control of the program is transferred to the function definition. And, the compiler starts executing the codes inside the body of a function.



FUNCTION DEFINITION

```
int addNumbers (int a, int b);
```



1. name of the function is `addNumbers()`
2. return type of the function is `int`
3. two arguments of type `int` are passed to the function



TYPES OF FUNCTION



Types of function

There are two types of function in C programming:

- Standard library functions
- User-defined functions

