User Defined Function

User defined functions -

- In programming, function refers to a segment that groups code to perform a specific task. Depending on whether a function is predefined or created by programmer; there are two types of function:
  1. Library Function
  2. User-defined Function

- **Library Function –** Library functions are the built-in function in C++ programming. Programmer can use library function by invoking function directly; they don't need to write it themselves.

- **User defined Function -** C++ allows programmer to define their own function. A user-defined function groups code to perform a specific task and that group of code is given a name(identifier). When the function is invoked from any part of program, it all executes the codes defined in the body of function.

Example 1: Library Function -

```c
#include<stdio.h>
#include<cmath.h>

void main()
{
    double number, squareRoot;
    printf("Enter a number: ");
    scanf("%d",&number);

    squareRoot = sqrt(number);
    printf("Square root=  %d",squareRoot);

}
```
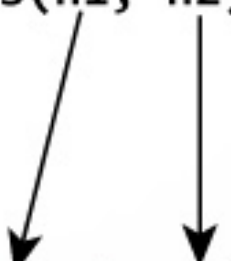
How user-defined function works in C Programming?

```c
#include <stdio.h>

int addNumbers(int a, int b);

int main()
{
    ... .. ...

    sum = addNumbers(n1, n2);

    ... .. ...
}

int addNumbers(int a, int b)
{
    ... .. ...
    ... .. ...
}
```

Example 2: User Defined Function -

```c
#include<stdio.h>

// Function prototype (declaration)
int add(int, int);


void main()
{
    int num1, num2, sum;
    printf("Enters two numbers to add: ");
    scanf("%d %d",&num1,&num2);


    // Function call
    sum = add(num1, num2);
    cout << "Sum = " << sum;
}

// Function definition
int add(int a, int b)
{
    int add;
    add = a + b;
    // Return statement
    return add;
}
```

Different types of user defined functions -

- ❏ *With out return type, with out parameters*
- ❏ *With out return type, with parameters*
- ❏ *With return type, with out parameters*
- ❏ *With return type, with parameters*