Functions Introduction

- Function is a piece of program code which do a specific task but performs it completely.

->It takes inputs as parameters and return some value
->It is useful for procedural programming or modular programming
->Functions can be used multiple times in a code, thus it is reusable.
-> Once it is created it can also be used in other programs as well.

Pseudo code of functions

```
  Return-type  Function-name (parameter list)
 Int add (int x, int y)
{
  Int z;
  z=x+y;
return z;
}

Void main ()
{
Int a=10, b=15, c;
c=add(a,b);              //calling the created functions
cout<<"sum is "<< c;
}
```

Working of Funtions in Memory:

- We have 3 segments in memory i.e Code, Stack, & Heap
- In code space “add” function & ‘’main” function is loaded.
- When the main function is running it is being loaded in Stack part of memory.
- At the moment when integer type ‘a’ ‘b’ ‘c’ is called during execution of code, the activation record is created in Stack part of memory.
- In our case a=10 and b=15. And the function ‘add’ is doing addition of a+b and after its addition the sum value i.e 25 is stored in ‘z’ of add function and then it is returned to ‘c’ of main function.
- Once the value is reached to ‘c’ of main function then the activation record is deleted.
- Basically, Whenever the function is called the memory of all the variable is created in the stack and upon its executions all that memory will be cleared automatically.
- Some of the function memory is also created in the Heap and it will not get deleted automatically we have to delete it manually using Delete keywordz`z