Functions

What is Function ?

A function is a block of code which only runs when it is called.

```
{
…..

…..

…..

}
```

In Python, a function is a block of organized ,reusable code that performs a specific task or set of tasks.Functions allow you to break down your code into smaller,modular pieces,making it more readable,maintainable,and reusable.

Defining a Function

To define a function,you use the def keyword ,followed by the function name and a pair of parentheses.If the function takes parameters ,you list them within the parenthesis.The function code is indented below the definition.

```
def greet():
        print(“Hello,Welcome to Python Life”)
```

Function Call

To execute a function and perform the tasks defined within it,you call the function by using its name followed by parentheses.If the function expects parameters,you provide them within the parentheses.

```
greet()
```

Functions

Parameters and Arguments:

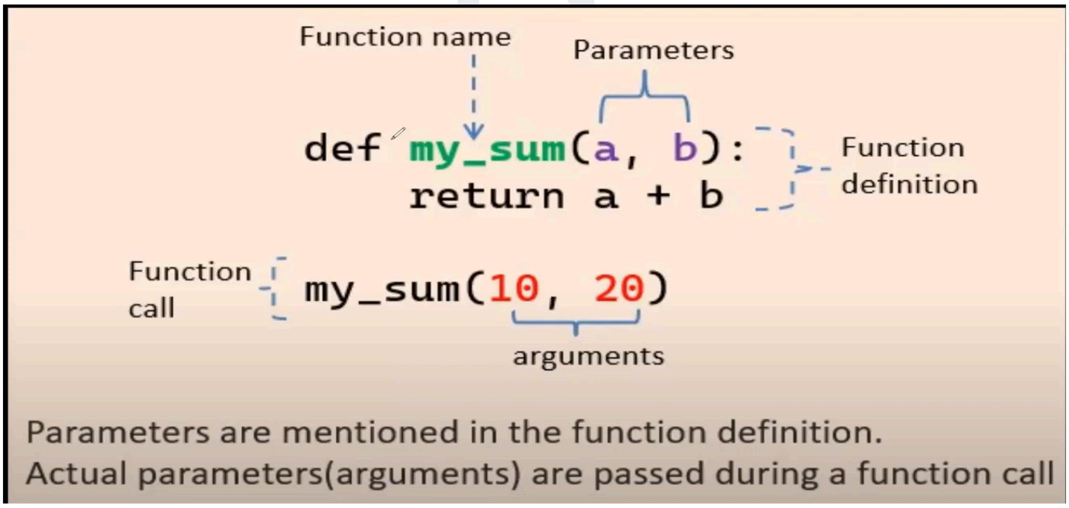
Parameters are variables that are used in a function definition,while arguments are values passed to the function during the function call.Parameters receive values from arguments

```
def multiply(x,y):
        Return x*y
multiply(3,4) # Here,3 and 4 are arguments
```

Return Statement:

The return statement is used to exit a function and return a value to the caller

```
def add(x,y):
        return x+y
result= add(3,4) # result is now 7
print("The result is:",result)  #output: The result is 7
```



```
def my_sum(a, b):
    return a + b

my_sum(10, 20)
```

Parameters are mentioned in the function definition.
Actual parameters(arguments) are passed during a function call

Functions

Arbitrary argument:

In order to pass multiple argument values to the function, Python provides us with Arbitrary Arguments also known as Python *args.

In this, we use the asterisk (*) to denote this method before the parameter in the function. The asterisk (*) allows us to pass any number of values to the defined function.

Keyword Arguments:

Keyword arguments (or named arguments) are values that, when passed into a function, are identifiable by specific parameter names. A keyword argument is preceded by a parameter and the assignment operator, = . Keyword arguments can be likened to dictionaries in that they map a value to a keyword.

Default Parameters

You can provide default values for parameters,which allows the function to be called with fewer arguments.If a value is not provided for a default parameter ,the default value is used.

Local variables:

Declared inside a function and are only accessible within that function.

Global variables:

Declared outside any function and can be accessed throughout the program.

Module

In programming ,a module is a file containing Python definitions and statements.These files typically have a .py extension and are used to organize code into reusable units.

Any Python file can be referenced as a module. A file containing Python code, for example: test.py , is called a module, and its name would be test . There are various

Functions

methods of writing modules, but the simplest way is to create a file with a . py extension, which contains functions and variables.

math:

The math module provides mathematical functions such as trigonometric,logarithmic,exponential functions ,and more

random:

The random module is used for generating pseudo-random numbers

datetime:

The datetime module provides classes for working with dates and times

os:

The os module provides a way to interact with the operating system,such as reading or changing the current working directory

sys:

```
import sys
print(sys.version)

#This shows how the sys module interacts with the interpreter.
```