

Parameters

Variables that are listed within the parentheses of a function header

Function Body

The block of statements / indented statements beneath function header that define the actions performed by the function

The function body may or may not return any value. A function returns a value through a return statement, e.g. `showGivenNum()` is returning a value stored in variable, but function `greet()` is not returning a value.

A function not returning any value can still have a return statement without any expression or value. Examples below will make it clearer.

Indentation

The blank space in the beginning of a statement (convention is four spaces) within a block. All statements within same block have same indentation.

Let us now have a look at some more function definitions.

Sample Code 1

```
def sumOf3Multiples1(n):
    s = n * 1 + n * 2 + n * 3
    return s
```

Both these functions are doing the same thing BUT first one is **returning** the computed value using return statement and

Sample Code 2

```
def sumOf3Multiples2(n):
    s = n * 1 + n * 2 + n * 3
    print(s)
```

second function is **printing** the computed value using `print()` statement

Consider some more function definitions:

Sample Code 3

```
def areaOfSquare(a):
    return a * a
```

Sample Code 4

```
def areaOfRectangle(a, b):
    return a * b
```

Sample Code 5

```
def perimeterCircle(r):
    return (2 * 3.1459 * r)
```

Sample Code 6

```
def perimeterRectangle(l, b):
    return 2 * (l + b)
```

Sample Code 7

```
def Quote():
    print("\t Quote of the Day")
    print("Act Without Expectation!!")
    print("\t -Lao Tzu")
```

For all these function definitions, try identifying their parts. (Not as an exercise, just do casually, while reading them.)

A function definition defines a user-defined object function. The function definition does not execute the function body; this gets executed only when the function is called or invoked. In the following lines, we are discussing how to invoke functions, but before that it would be useful to know the basic structure of a Python program.

Structure of a Python Program

In a Python program, generally all function definitions are given at the top followed by statements which are not part of any functions. These statements are not indented at all. These are often called from the top-level statements (the ones with no indentation). The Python interpreter starts the execution of a program/script from the top-level statements. The top level statements are part of the main program. Internally Python gives a special name to top-level statements as `__main__`.
The structure of a Python program is generally like the one shown below :

NOTE
By default, Python names the segment with top-level statements (main program) as `__main__`.

```
def function1( ) :  
    :  
def function2( ) :  
    :  
def function3( ) :  
    :  
    :  
# top-level statements here  
statement1  
statement2  
    :
```

Python names the segment with top-level statements (no indentation) as `__main__`. Python begins execution of a program from the top-level statements i.e., from `__main__`.



Python stores this name in a built-in variable called `__name__` (i.e., you need not declare this variable ; you can directly use it). You can see it yourself. In the `__main__` segment of your program if you give a statement like :

```
print( __name__ )
```

Python will show you this name. For example, run the following code and see it yourself.

```
def greet( ) :  
    print("Hi there!")  
    print("At the top-most level right now")  
    print("Inside" , __name__)
```

The top-level statements, i.e., the `__main__` segment of this Python program. Python will start execution of this program from the segment.



Upon executing above program, Python will display :

```
At the top-most level right now  
Inside __main__
```



Notice word '`__main__`' in the output by Python interpreter. This is the result of statement :
`print(... __name__)`