

Python Functions :-

- A function is a block of code which only runs when it is called.
- You can pass data, known as parameters, into a function.
- A function can return data as a result.

Creating a Function:-

In Python a function is defined using the `def` keyword

Example:

```
def my_function():  
    print("Hello from a function")
```

Calling a Function:

Program:

```
def my_function():  
  
print("Hello from a function")
```

Output:

Hello from a function

Arguments:-

- Information can be passed into functions as arguments.
- Arguments are specified after the function name, inside the parentheses. You can add as many arguments as you want, just separate them with a comma.

Example:

```
def my_function(fname):  
    print(fname + " Refsnes")  
my_function("Emil")
```

```
my_function("Tobias")  
my_function("Linus")
```

Output:

```
Emil Refsnes  
Tobias Refsnes  
Linus Refsnes
```

The following example has a function with one argument (fname). When the function is called, we pass along a first name, which is used inside the function to print the full name

Parameters or Arguments?

A parameter is the variable listed inside the parentheses in the function definition.

An argument is the value that is sent to the function when it is called.

Default Parameter Value:-

If we call the function without argument, it uses the default value.

Example:

```
def my_function(country = "Norway"):  
    print("I am from " + country)  
  
my_function("Sweden")  
my_function("India")  
my_function()  
my_function("Brazil")
```

Output:

```
I am from Sweden  
I am from India
```

I am from Norway

I am from Brazil

Passing a List as an Argument:-

You can send any data types of argument to a function (string, number, list, dictionary etc.), and it will be treated as the same data type inside the function.

E.g. if you send a List as an argument, it will still be a List when it reaches the function

Example

```
def my_function(food):  
    for x in food:  
        print(x)
```

```
fruits = ["apple", "banana", "cherry"]
```

```
my_function(fruits)
```

Output:

```
apple  
banana  
cherry
```

Return Values

To let a function return a value, use the return statement

Example:

```
def my_function(x):  
    return 5 * x
```

```
print(my_function(3))  
print(my_function(5))  
print(my_function(9))
```

Output:

```
15  
25  
45
```