

Functions in Python:

A function is a block of organized, reusable code that is used to perform a single, related action. Functions provide better modularity for your application and a high degree of code reusing.

As you already know, Python gives you many built-in functions like `print()`, etc. but you can also create your own functions. These functions are called user-defined functions.

Defining a function:

You can define functions to provide the required functionality. Here are simple rules to define a function in Python. Function blocks begin with the keyword `def` followed by the function name and parentheses `()`.

Any input parameters or arguments should be placed within these parentheses. You can also define parameters inside these parentheses.

The first statement of a function can be an optional statement - the documentation string of the function or docstring. The code block within every function starts with a colon `(:)` and is indented. The statement `return [expression]` exits a function, optionally passing back an expression to the caller. A return statement with no arguments is the same as `return None`.

Calling a function:

Defining a function only gives it a name, specifies the parameters that are to be included in the function and structures the blocks of code. Once the basic structure of a function is finalized, you can execute it by calling it from another function or directly from the Python prompt.

Returning a value from a function:

The statement `return [expression]` exits a function, optionally passing back an expression to the caller. A return statement with no arguments is the same as `return None`. All the above examples are not returning any value.

You can return a value from a function as follows –

```
# Function definition is here
def sum( arg1, arg2 ):
    # Add both the parameters and return them."
    total = arg1 + arg2
```

```
print "Inside the function : ", total
return total;
```

```
# Now you can call sum function
total = sum( 10, 20 );
print "Outside the function : ", total
```

Passing functional arguments to functions:

We can also pass function as an argument to other function example:

```
def add(a,b):
    return a + b
def square(c):
    return c * c

square(add(2,3))
```

Modules in Python:

A module allows you to logically organize your Python code. Grouping related code into a module

makes the code easier to understand and use. A module is a Python object with arbitrarily named attributes that you can bind and reference. Simply, a module is a file consisting of Python code. A module can define functions, classes and variables. A module can also include runnable code. You can use any Python source file as a module by executing an import statement in some other Python source file.

example:

```
import module_name
```

Here module_name is the name of the module which contains the code which you want to use.