

Unit – 5

Python Functions and Modules

Introduction to Functions

In Python, a function is a group of related statements that performs a specific task.

Functions help break our program into smaller and modular chunks. As our program grows larger and larger, functions make it more organized and manageable.

Defining a Function (def)

In Python a function is defined using the `def` keyword. it avoids repetition and makes the code reusable.

Syntax of Function

```
def function_name(parameters):  
    """docstring"""  
    statement(s)
```

Above shown is a function definition that consists of the following components.

1. Keyword `def` that marks the start of the function header.
2. A function name to uniquely identify the function. Function naming follows the same rules of writing identifiers in Python.

3. Parameters (arguments) through which we pass values to a function. They are optional.
4. A colon (:) to mark the end of the function header.
5. Optional documentation string (docstring) to describe what the function does.
6. One or more valid python statements that make up the function body. Statements must have the same indentation level (usually 4 spaces).
7. An optional `return` statement to return a value from the function.

Ex.

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

Calling a Function

Once we have defined a function, we can call it from another function, program or even the Python prompt. To call a function we simply type the function name with appropriate parameters.

Example

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

```
my_function()
```

• 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.

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:

Example

```
def my_function(fname):  
    print(fname+ "Raj")
```

```
my_function("John")  
my_function("Ravi")  
my_function("Ram")
```