13. Python - Module

Table of Contents

13. Python - Module

1. Modules

- ✓ In python a module means, a saved python file.
- ✓ This file can contain a group of classes, methods, functions and variables.
- ✓ Every Python file mean **.py** or **.python** extension file is called as a module.

Program
Name

module program
additionmultiplication.py

```
x = 10

def addition(a, b):
        print("Sum of two values: ", (a+b))

def multiplication(a, b):
        print("Multiplication of two values: ",  (a*b))
```

- ✓ Now additionmultiplication.py file is a module.
- ✓ additionmultiplication.py module contains one variable and two functions.

2. import module

- ✓ **import** is a keyword in python.
- ✓ By using import keyword we can import (get) modules in our program.
- ✓ Once we imported the module then we can use members (variables, functions & etc) of module.

Program Name	importing additionmultiplication module and calling members demo1.py
	import additionmultiplication
	print(additionmultiplication.x) additionmultiplication.addition(1, 2) additionmultiplication.multiplication(2, 3)
output	10 Sum of two values: 3 Multiplication of two values: 6

Make a note:

- ✓ Whenever we are using a module in our program, for that module compiled file will be generated and stored in the hard disk permanently.

3. Renaming or aliasing a module.

✓ **as** is a keyword in python
✓ By using **as** keyword we can rename/alias existing module.

Syntax

      import additionmultiplication as admul

✓ Here additionmultiplication is module name and alias name is admul
✓ We can access members by using alias name admul

Program
Name

    importing module
    demo2.py

```
import additionmultiplication as admul

print(admul.x)
admul.addition(1,2)
admul.multiplication(3, 4)
```

output

    10
    Sum of two values: 3
    Multiplication of two values: 12

---

4. from and import keywords

- ✓ **from** is keyword in python
- ✓ We can import some specific members of module by using **from** keyword.
- ✓ The main advantage of **from** keyword is we can access members directly without using module name.

Program Name	from and import keywords demo3.py **from** additionmultiplication **import** x, addition print(x) addition(10,20)
output	10 Sum of two values: 30

Program Name	NameError: name 'multiplication' is not defined demo4.py **from** additionmultiplication **import** x, addition print(x) multiplication(10,20)
Error	10 NameError: name 'multiplication' is not defined

5. import * (star symbol)

✓ We can use ***** symbol to import all members of a module.
✓ We can import all members of a module as by using import ***** (symbol)

Program Name	importing by using ***** demo5.py **from** additionmultiplication **import** ***** print(x) addition(10, 20) multiplication(10, 20)
output	10 Sum of two values: 30 Multiplication of two values: 200

6. Member aliasing

✓ We can give alias name to the members of a module

Program Name	member aliasing demo6.py **from** additionmultiplication **import** x **as** y, addition **as** add print(y) add(10, 20)
output	10 Sum of two values: 30