

## Task-3 :- Importing python modules and Packages in the python programming.

### Aim:

To write Python demonstrating importing python modules and Packages.

- Q) You are tasked with developing a modular calculator applications in Python. The Calculator should support basic arithmetic operations addition, subtraction, multiplication and division. Each operation should be implemented in a separate module. Additionally you should create a main program to handle user input, call you appropriate module and display the results.

### Algorithm:

1. Define functions for addition, subtraction, multiplication and division.
2. Handle division by zero by raising an error if the divisor is zero.
3. Import the module (mymath) contains these functions.
4. Initialize two numbers ( $a=10, b=5$ )
5. Call each function using mymath <function-name> (a, b)
6. Print the results of all operations.

### Program:

```
def add(a, b):  
    return a + b  
def subtract(a, b):  
    return a - b  
def multiply(a, b):  
    return a * b
```

Output:

Addition: 15

Subtraction: 5

Multiplication: 50

Division: 20

✓

```
def divide(a,b):
```

```
    if b == 0
```

```
        raise ValueError("Cannot divide by zero")
```

```
    return a/b
```

```
import mymath
```

```
a = 10
```

```
b = 5
```

```
Print("Addition:" mymath.add(a,b))
```

```
Print("Subtraction:" mymath.subtract(a,b))
```

```
Print("multiplication:" mymath.multiply(a,b))
```

```
Print("Division:" mymath.divide(a,b))
```

- ⑥ You are working on a Python project that requires you to perform various mathematical operations and geometric area calculations. To organize your code better, you decide to create a package named `myPackage`, which includes subpackages `Pack1` and `Pack2` with two modules: `mathFunctions` and `areaFunctions`. Demonstrate the use of the functions by performing a calculation and printing the result.

Algorithm:-

1. Create `mathFunctions.py` module.
2. Create `areaFunctions.py` module.
3. Create `--init--.py` files in `Pack1` and `Pack2`.
4. Create `main.py`.
5. Print the output as expected.

Program:

1. create the `mathFunctions.py` module

```
def add(a,b):
```

```
    return a+b
```

```
def subtract(a,b):
```

```
    return a-b
```

```
def multiply(a,b):
```

## Output:

Addition: 15

Subtraction: 5

Multiplication: 50

Division: 2.0

Circle Area (radius = 7): 153.9380400

Rectangle Area (5x10) = 50

Triangle Area (base = 6, height = 8): 24.0

DN

✓



return a\*b

def divide(a,b):

if b == 0

return "Error Division by zero"

return a/b

2. Create the area function.py module

import math

def circle\_area(radius):

return math.pi \* radius \* radius

def rectangle\_area(length, width):

return length \* width

3. Create the main.py file

3. Create --init--.py in each package folder

from math\_functions import add, subtract,  
multiply, divide.

from area\_functions import circle\_area,  
rectangle\_area, triangle\_area

4. Create the main.py file

from pack import math\_functions

from pack import area\_functions

# Using math functions

Print("Addition:", math\_functions.add(10,5))

Print("Subtraction:", math\_functions.subtract(10,5))

Print("Multiplication:", math\_functions.multiply(10,5))

Print("Division:", math\_functions.divide(10,5))

# Using area functions

Print("Circle Area(radius=7):", area\_functions.circle\_area(7))

Print("Rectangle Area(5x6):", area\_functions.rectangle\_area(5,6))

Print("Triangle Area(base=6, height=8):", area\_functions.triangle\_area(6,8))

Result:

Thus, the program for importing modules and packages was successfully executed and the output was verified.

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