

6825 Tasks :- Importing Python modules and Packages in the Python Programming.

Aim :- To write the Python demonstrating importing Python modules and Packages.

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) containing these functions.
4. Initialize two numbers ( $a=10, b=5$ )
5. Call each function using mymath <function name> (a,b).
6. Print the result 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  
  
def divide (a,b):  
    if b == 0:  
        raise ValueError ("Cannot divide by zero")  
    return a/b  
  
import mymath
```

outPut :-

Addition : 15

Subtraction : 5

Multiplication : 50

Division : 2.0

b=5  
Point ("Addition:", mymath.add (a,b))

Point ("Subtraction:", mymath.Subtract (a,b))

Point ("Multiplication:", mymath.multiply (a,b))

Point ("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 sub packages pack1 and pack2 with two modules: mathFunctions and areaFunctions. Demonstrate the use of the functions by performing a few calculations and printing the results.

### Algorithm :-

1. Create mathFunctions .py module;
2. Create areaFunctions .py module;
3. Create \_\_init\_\_.py files in Pack1 & Pack2;
4. Create main.py;
5. Print the output as expected.

### Program :-

1. Create mathFunctions .py module

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

```
    return a+b
```

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

```
    return a-b
```

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

```
    return a*b
```

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

```
    if b == 0:
```

return "Error! Division by zero!"

return ab

2. Create the area Functions.py module

import math

def circle\_area(radius):

return math.pi \* radius \* radius

3. Create \_\_init\_\_.py in each Package Folder (Pack1 & 2)

from .mathFunctions import add, subtract, multiply,  
divide  
from .areaFunctions import circle\_area,  
rectangle\_area, triangle\_area.

4. Create the main.py file

from Pack import mathFunctions

from Pack import areaFunctions

# Using math Functions

point ("Addition:", mathFunctions.add(10, 5))

point ("Subtraction:", mathFunctions.subtract(10, 5))

point ("Multiplication:", mathFunctions.multiply(10, 5))

point ("Division:", mathFunctions.divide(10, 5))

# Using area Functions

Point ("Circle Area (radius = 7):", areaFunctions.circle\_area(7))

Point ("Rectangle Area (5x10):", areaFunctions.rectangle\_area(5, 10))

Point ("Triangle Area (base=6, height=8):", areaFunctions.triangle\_area(6, 8))

WELTECH	
EXAM NO.	
PERFORMANCE (5)	5
BIGUARD ANALYSIS (5)	5
ATTENDANCE (5)	4
REPORT TIME	
TOTAL (15)	12
DATE WITH DATE	17/10/20

Result:- Thus, the program for importing python modules and packages was successfully executed and the output was verified.

Output

Addition : 15

Subtraction : 5

Multiplication : 50

Division : 2.0

Circle Area (radius = 7) :  $15 \cdot 93804002589$

~~or~~ Rectangle Area  $(5 \times 10) : 50$

~~or~~ Parallelogram Area (base = 6, height = 8) : 48.0

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

~~or~~ Trapezoid Area (sum of parallel sides = 10, height = 5) : 25.0

~~or~~ Rhombus Area (diagonals = 6 and 8) : 24.0

~~or~~ Kite Area (diagonals = 6 and 8) : 24.0

~~or~~ Square Area (side = 6) : 36.0

~~or~~ Cube Volume (side = 6) : 216.0

~~or~~ Cuboid Volume (length = 6, width = 4, height = 3) : 72.0

~~or~~ Sphere Volume (radius = 3) : 36.0

~~or~~ Cone Volume (radius = 3, height = 4) : 36.0

~~or~~ Prism Volume (length = 6, width = 4, height = 3) : 72.0

~~or~~ Pyramid Volume (length = 6, width = 4, height = 3) : 36.0

~~or~~ Hemisphere Volume (radius = 3) : 54.0