

Task-3:- Importing Python modules and packages in Python Programming.

Aim:-

To write Python demonstrating importing Python modules and packages

a) you are tasked with developing a modules

calculator application in python. The calculator should support basic arithmetic operations: addition, subtraction, multiplication, and division. Each operation should be implemented in a separate module. ie. Additionally, you should create a main program to handle user input, call the appropriate module, and display the result.

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 function

4. Initialize two number ($a=10, b=5$)

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5. Call each function using mymath.<function_name>(a,b).

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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
```

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

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

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

```
    return a/b
```

output:

Addition 15

subtraction: 5

multiplication: 50

Division: 20

✓

```
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))
```

b) 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 few calculations and printing the results.

Algorithm:-

create mathfunctions.py module:

create areafunctions.py module:

create __init__.py files in Pack1 and Pack2:

create main.py:

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):

 return a*b

def divide(a,b):

 if b == 0

 return "Error! Division by zero!"

 return a/b

2. create the area functions.py module

import math

def circle_area(radius):

 return math.pi * radius * radius

def rectangle_area(length, width):

 return length * width

def triangle_area(base, height):

 return 0.5 * base * height

addition : 15

subtraction : 5

multiplication : 50

division : 2.0000000000000002589985

circle area (radius = 7) : 15.39380400

rectangle area $a(5 * 10)$: 50

triangle area (base = 6, height = 8) : 24.0

3. Create init-.py in each package folder (pack1 and pack2)

```
from.mathfunctions import add, subtract, multiply, divide  
from.areafunctions import circle_area, rectangle_area,  
triangle_area.
```

4. Create the main.py file

```
from Pack1 import mathfunctions  
from Pack2 import areafunctions  
#using math functions  
print("Addition:", mathfunctions.add(10,5))  
print("Subtraction:", mathfunctions.subtract(10,5))  
print("Multiplication:", mathfunctions.multiply(10,5))  
print("Division:", mathfunctions.divide(10,5))  
#using area functions  
print("Circle area(radius=7):", areafunctions.circle_area(7))  
print("Rectangle area(5x10):", areafunctions.rectangle_area(5,10))  
print("Triangle Area(base=6, height=8):", areafunctions.triangle  
-area(6,8))
```

VELTECH	
EX NO.	3
PERFORMANCE (5)	3
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	5
TOTAL (20)	20
SIGN WITH DATE	8/3/25

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