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

Aim:- To write python demonstrating importing python modules and packages.

a) you are tasked with developing a modular calculator application in python. The calculator should support basic arithmetic operation addition, substraction, multiplication and division. each operation should be implemented in a seperate module. Additionally, you should create a main program to hadle user input, call you appropriate module and display the results.

Algorithm:-

1. define functions for addition, substraction, multiplication and division.
2. Handle division by zero by raising an error if the division is zero
3. Import the module(my math) containing these functions.
4. Initialize two numbers(a=10, b=5)
5. call each function using my math. <function-name> (a,b)
6. print the results of all operations.

Program:-

```
def add (a,b):
return a+b
def substract (a,b):
return a-b
def multiply (a,b):
return a*b
def divide (a,b):
if b!=0:
raise value error ("cannot divide by zero")
return a/b
import my math
a=10
```

output :-

Addition : 15

subtraction : 5

multiplication : 50

Division : 20

print ("addition:", my math . add (a,b))

print ("subtraction:", my math . subtract (a,b))

print ("multiplication:", my math . multiply (a,b))

print (" division :", my math . divide (a,b))

b.) you are working on a python project that requires you to perform various mathematical operations and geometric areas of calculations. To organize your code better, you decide to create to a package named my_package which you includes sub packages pack 2 and pack1 with two modules: math functions and area functions demonstration the use of the functions by performing a calculation and printing the result.

Algorithm:-

1. create math functions . py module.
2. create are functions. py modules.
3. create - - init - py files in pack 1 and pack 2.
4. create main . py :
5. print the output as expected.

program :-

1. create the math functions . 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.
```

output :-

Addition : 15

subtraction : 5

multiplication : 50

Division : 20

Circle Area (radius : 7) : 153.93804002589985

Rectangle Area (5 x 10) : 50

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

2. create the area functions by module.

```
import math
def circle_area (radius):
return math.pi * radius * radius
def rectangle_area (length, width):
return length * width
```

3. create __init__.py in each package folder (pack1 and pack2) 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 function. 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 (5x10):", area functions rectangle
_area (5,10))
print ("Triangle Area (base: 6, height =8):", area
functions. triangle_area (6, 5))
```

Result:-

Thus the program for importing by packages was ~~successfully~~ executed verified.

VEL TECH	
NO.	3
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	5
TOTAL (20)	20
SIGN WITH DATE	