Task :- 7.1 Date:- 10/10/25

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 modular Calculator application in python. The Calculator should support basic arithmetic operations: additions, subtraction, multiplication, and division. Each operation should be implemented in a separate module. Additionally, you should create a main program to handle user input and call the 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) containing 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.

Output:

Addition : 15

Subtraction : 5

Multiplication : 50

Division : 2.0

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.
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,10))
```

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 sub-package 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 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):
```

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 sub-package 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 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):
    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
```

3) Create __init__.py in each package folder (main and package) from .mathfunctions import add, subtract, multiply, divide from .area_functions import circle_area, rectangle_area, triangle_area.

4) Create the main.py file

```
from package import area_functions
```

output :-

Addition : 15

Subtraction : 5

Multiplication : 50

Division : 2.0

Circle Area (radius = 7) : 153.93804002589985

Rectangle Area (5 x 10) : 50

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

```
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 function.multiply
                                    (10, 5))
Print ("Division:", math function.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 function.triangle - area (6,8))
```

VEL TECH - CSE	
EX NO.	1
PERFORMANCE (5)	5
RESULT AND ANALYSIS (3)	3
VIVA VOCE (3)	3
RECORD (4)	4
TOTAL (15)	15
SIGN WITH DATE	

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