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

Aim :- TO write python demostrating importing python modules and packages.

a) You are tasked with developing a modular calculation application in python. The calculator should support basic arithematic operations, additions subtraction, multiplication, and division. Each operation should be implemented in separate module. Additionally, you should create a main program to handle user input, call the appropriate module, a display the result.

Algorithm :-

1. Define functions for addition, subtraction, multiplication, & division.
2. Handle division by zero by raising an error if the divisor is zero
3. Import the module (my math) conteing these function.
4. Initialize two number (a=10, b=5).
5. call each function using mymath< function - name > (a, b)
6. print the result of all operations.

Programs :-

```
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 value Error ("cannot divide by zero")
    raise value Error ("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))
```

b) You are working on a python project that requires you to perform various mathematical operations and geometric are calculations.

Algorithm :-

1. create mathfunctions.py module:
2. create area functions.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
```

Output :-

Addition : 15
Subtraction : 5
Multiplication : 50
Division : 2.0

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

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 (pack1 and pack2) from mathfunctions import add, subtract, multiply, divide from. area functions import circle_area, rectangle_area, triangle_area.

4. create the main.py file

```
from pack import mathfunctions.
from pack import areafunctions.
Print("Addition:", mathfunctions.add(10,5))
Print("subtraction:", mathfunctions.subtract(10,5))
print("Multiplication:", mathfunctions.Multiply(10,5))
print("Division:", mathfunctions.divide(10,5))
print("circle Area(radius)=7):", areafunctions.circle
  _area(7))
print("Rectangle Area(5x10):", area functions.rectangle
  _area(5,10))
Print("Triangle Area(base=6, height=8):", "area functions.
    triangle_area(6,8))
```

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

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