

TASK 3: Importing Python modules and package programming

Aim: To write Python demonstration importing Python modules and package

- a. you are tasked with developing a modular calculator application in python the calculator should support basic arithmetic operations should be implemented in a separate module additionally you should create a main program to handle user input call the appropriate module and display the results

Algorithm

1. Define funⁿ for addition, subtraction, multiplication and division raising an error if like and division
2. Handle division by zero by divisor is zero
3. Import the module mymath <function name>(a,b)
4. Initialize two numbers (a=10, b=5)
5. Call each funⁿ using mymath <funⁿ name>(a,b)
6. Print the result of all operation

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):  
    return 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, b))
```

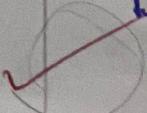
Output:

Addition: 15

Subtraction: 5

Multiplication: 50

Division: 2.0



b. You are working on a Python project that required you to perform various mathematical operation operation and geometric related calculations.

Answers

Algorithm

obj

1. Create mathfunctions.py module
for creating init__.py files in pack1 and

2. Create arithmetics.py "module" library

3. Create __init__.py files in pack1 and pack2

4. Create main.py

func

5. Print the output as expected.

func

Program

func

1. Create the mathfunctions.py module, if there

u. u

def add(a, b):

func

return a+b

func

def subtract(a, b):

func

if b == 0:

func

return "Error! Division by zero."

return a/b

that

thermally
conducts

2. Create one area function in "area.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 main.py in each package folder(
PACK1 and PACK2)

```
from math import add, subtract, multiply,
```

```
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 mathfunctions

from pack import areafunctions

from pack 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":; area function circle

area(7) →

Print "rectangle width=10":; area function rectangle
area(5,10) →

Print "triangle area base=6, height=8":;
area function triangle → area(6,8)

Output:
Addition: 15
Subtraction: 5.00
Multiplication: 50
Division: 8.0
Circle area (radius=7): 153.938

rectangle area (5x10): 50
triangle area (base=6, height=8): 24.0
circle area (radius=7): 153.938

Result

thus the program for implementing Python
functions was successfully
modified and packaged successfully.

The output was verified
executed and the output from Python

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EX No	1
PERFORMANCE	15
RESULTS AND ANALYSIS	15
RECORDS	15
VIVA VOCE	15
TOTAL	60
SIGNATURE	DATE

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