

Task 8: Importing Python modules and packages in the Python Programming

Aim: To write the Python demonstrating importing Python modules and Packages.

Algorithm:-

1. Define function 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 mymath <function.name>(a,b)
6. Print the result 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')  
    import mymath
```

$a=10$

$b=5$

output:-

Addition is sum of two or more numbers
Subtraction is result of addition

Multiplication :-

Division :-

Significant figures, addition & subtraction

Significant figures, multiplication & division

($d = d_{\text{obj}} + d_{\text{sub}}$) Addition out significant

($d = d_{\text{obj}} - d_{\text{sub}}$) Subtraction out significant

($d = d_{\text{obj}} \times d_{\text{sub}}$) Multiplication out significant

($d = d_{\text{obj}} \div d_{\text{sub}}$) Division out significant

($d = d_{\text{obj}} + d_{\text{sub}}$) Addition out significant

($d = d_{\text{obj}} - d_{\text{sub}}$) Subtraction out significant

($d = d_{\text{obj}} \times d_{\text{sub}}$) Multiplication out significant

($d = d_{\text{obj}} \div d_{\text{sub}}$) Division out significant

(Crosses out significant figures from answer)

Atomism theory

$$SI = P$$

$$2 = d$$

```

print("Addition:", mymath.add(a,b))
print("Subtraction:", mymath.subtract(a,b))
print("Multiplication:", mymath.multiply(a,b))
print("Division:", mymath.divide(a,b))

```

- ⑥ 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 packages pack1 and pack2 with two modules: math functions and area functions. Demonstrate the use of the functions by performing a few calculation and printing the results.

Algorithm:

1. Create mathfunctions.py module.
2. Create areafunctions.py module.
3. Create -init-.py files in Pack1 & Pack2.
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):

```

Addition:

Subtraction:

Multiplication:

Division:

Circle Area (radius=7): 153.93804002589983

rectangle Area (5x10): 50

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

~~Handwriting~~

>Create a multiplication table

5. Create a square

3. Create a triangle

2. Draw the outline

1. Copy & copy

1. Create the multiplication table

2. Add & add

3. Subtract & subtract

4. Multiply & multiply

5. Divide & divide

6. Square & square

7. Cube & cube

if b == 0:

return "cannot: division by zero
return 0

2. Create the area function by module
import math

def circle_area(radius):

return math.pi * radius * radius

def rectangle_area(length, width):

return length * width

3. Create --int--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 pack1 import mathfunction

using math functions?

point("addition:", mathfunction.add(10, 5))

point("subtraction:", mathfunction.subtract(10, 5))

point("multiplication:", mathfunction.multiply(10, 5))

point("division:", mathfunction.divide(10, 5))

using area functions

point("Circle Area radius=2:", area_functions.circle_area(2))

point("Rectangle Area (5x10):", area_functions.rectangle_area(5, 10))

point("Triangle Area (base=6, height=8):", area_functions.triangle_area(6, 8))

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

VEL TECH	
1. A.N.O.	3/5
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	5
TOTAL (20)	15
DATE WITH DATE	01/01/2023