Lab no.04

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Task 01:

Q) Write a Python program to take two numbers as input and perform all arithmetic operations on them.

```
a = float(input("Enter first number: "))
b = float(input("Enter second number: "))

print("Addition:", a + b)
print("Subtraction:", a - b)
print("Multiplication:", a * b)
print("Division:", a / b)
print("Floor Division:", a // b)
print("Modulus:", a % b)
print("Exponentiation:", a ** b)
```

```
Enter first number:  12
Enter second number:  2
Addition: 14.0
Subtraction: 10.0
Multiplication: 24.0
Division: 6.0
Floor Division: 6.0
Modulus: 0.0
Exponentiation: 144.0
```

Task 02

Q) Create a function that takes two numbers and returns their sum, difference, product, and quotient.

```
def arithmetic_operations(a, b):
    sum_ = a + b
    difference = a - b
    product = a * b
    quotient = a / b if b != 0 else None
    return sum_, difference, product, quotient

result = arithmetic_operations(10, 5)
print("Sum:", result[0])
print("Difference:", result[1])
print("Product:", result[2])
print("Quotient:", result[3])
```

```
Sum: 15
Difference: 5
Product: 50
Quotient: 2.0
```

Task 03

Q) Write a Python script to find the remainder when one number is divided by another.

```
num1 = int(input("Enter the dividend: "))
num2 = int(input("Enter the divisor: "))

if num2 != 0:
    remainder = num1 % num2
    print("Remainder:", remainder)
else:
    print("Error: Division by zero is not allowed.")
```

```
Enter the dividend:  20
Enter the divisor:  3
Remainder: 2
```

Task 04

Q) Write a program to calculate the area of a circle using the formula: Area = π * r^2.

```
import math

radius = float(input("Enter the radius of the circle: "))
area = math.pi * radius ** 2

print("Area of the circle:", area)
```

```
Enter the radius of the circle:  20
Area of the circle: 1256.6370614359173
```

Task 05

Q) Implement a program that takes a number as input and returns its square and cube using exponentiation.

```
num = float(input("Enter a number: "))

square = num ** 2
cube = num ** 3

print("Square:", square)
print("Cube:", cube)
```

```
Enter a number:  30
Square: 900.0
Cube: 27000.0
```

Task 06

Q) Create a simple calculator in Python that allows the user to choose an operation (addition, subtraction, etc.) and inputs two numbers.

```
print("Simple Calculator")
print("Select operation:")
print("1. Addition")
print("2. Subtraction")
print("3. Multiplication")
print("4. Division")

choice = input("Enter choice (1/2/3/4): ")

num1 = float(input("Enter first number: "))
num2 = float(input("Enter second number: "))

if choice == '1':
    print("Result:", num1 + num2)
elif choice == '2':
    print("Result:", num1 - num2)
elif choice == '3':
    print("Result:", num1 * num2)
elif choice == '4':
    if num2 != 0:
        print("Result:", num1 / num2)
    else:
        print("Error: Cannot divide by zero")
else:
    print("Invalid input")
```

```
Simple Calculator
Select operation:
1. Addition
2. Subtraction
3. Multiplication
4. Division
Enter choice (1/2/3/4):  2
Enter first number:  23
Enter second number:  23
Result: 0.0
```