

 Marwadi University Marwadi Chandarana Group 	Marwadi University Faculty of Engineering & Technology Department of Information and Communication Technology	
Subject: Programming With Python (01CT1309)	Aim: Write a program to perform different arithmetic operations on numbers in python.	
Experiment No: 02	Date:	Enrollment No:92510133019

Aim: Write a program to perform different arithmetic operations on numbers in python.

IDE:

Arithmetic operations are fundamental to programming, and Python provides straightforward operators to perform these calculations. Let's revisit these basic arithmetic operations, which you've likely encountered in your math classes, and see how they can be used in Python.

Types of Arithmetic Operators in Python

Arithmetic operators in Python are fundamental tools used for performing basic mathematical operations. Here are the primary types of arithmetic operators:

- Addition
- Subtraction
- Multiplication
- Division
- Modulus
- Exponentiation
- Floor Division

Let's take a closer look at each of these operators to understand them better.

Addition

The addition operator in Python is “+”. It is used to add or sum two values.

Python Code:

```
num1, num2 = 10, 30

sum= num1+num2

print("The sum of",num1,"and",num2,"is:",sum)
```

Output:

Subtraction

The subtraction operator in Python is “-”. It is used to subtraction or difference two values.

```
num1, num2 = 10, 30
```

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```
sub= num1-num2
```

```
print("The subtraction of",num1,"and",num2,"is:",sub)
```

output:

Multiplication

The Arithmetic Operator in Python for multiplication is “*”. With this operator, we can find the product of two values.

```
num1, num2 = 10, 30
```

```
product= num1*num2
```

```
print("The product of",num1,"and",num2,"is:",product)
```

Output:

Division

The “/” operator is the division operator in Python. We can find the quotient when the first operand is divided by the second.

```
num1, num2 = 10, 30
```

```
div = num1/num2
```

```
print("The division of",num1,"and",num2,"is:",div)
```

output:

Modulus

The “%” operator is the division operator in Python. Using this, we can find the remainder when the first operand is divided by the second.

```
num1, num2 = 10, 30
```

```
rem = num1%num2
```

```
print("The reminder of",num1,"and",num2,"is:",rem)
```

Output:

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Exponentiation

The exponentiation operator in Python is denoted by “**”. It is used to raise the power of the first operand to the power of the second.

```
num1, num2 = 10, 3
```

```
exp = num1**num2
```

```
print("The exponentiation of",num1,"and",num2,"is:",exp)
```

Output:

Floor Division

It is denoted by “//” in Python. We use it to find the floor of the quotient when the first operand is divided by the second.

```
num1, num2 = 10, 3
```

```
floordiv = num1//num2
```

```
print("The Floor Division of",num1,"and",num2,"is:",floordiv)
```

Output:

Task:

```
x = 119
```

```
y = 110
```

```
mod = x % y
```

```
print (mod)
```

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Output:

```

Output
9

=== Code Execution Successful ===

```

```

a = -45
b = 18
res1 = a % b
print (res1)

```

Output:

```

Output
9

=== Code Execution Successful ===

```

```

m = 68
n = -84
res2 = m % n
print (res2)

```

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Output

```

Output
-16
=== Code Execution Successful ===

```

e = -15

f = -85

res3 = e % f

print (res3)

Output

```

Output
-15
=== Code Execution Successful ===

```

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Order of precedence of Arithmetic operators in Python

Arithmetic Operators in Python follow a basic order of precedence. When more than one operator is used, they are executed according to this order:

Operator	Purpose
()	Parentheses
**	Exponent
%, *, /, //	Modulos, Multiplication, Division and Floor division
+, -	Addition and Subtraction

The operator listed at the top of the table will be executed first.

```
print (((5 + 6) / 4) * 5)
```

Output

```

Output
13.75

=== Code Execution Successful ===

```

```
x = 9
```

```
y = 6
```

```
z = 5
```

```
print(x*y//z)
```

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```
print(x*(y//z))
```

Output:

```
Output
10
9

=== Code Execution Successful ===
```

```
x = 4
y = 4
z = 9
```

```
print((x**y)**z)
```

Output

```
Output
4722366482869645213696

=== Code Execution Successful ===
```

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Post Lab

Write a python code for calculating the Area and Perimeter of a Rectangle

Code:-

```
length = float(input("Enter the length of the rectangle: "))
width = float(input("Enter the width of the rectangle: "))

area = length * width
perimeter = 2 * (length + width)

print("Area of the rectangle:", area)
print("Perimeter of the rectangle:", perimeter)
```

Output:-

```
Output
Enter the length of the rectangle: 5
Enter the width of the rectangle: 6
Area of the rectangle: 30.0
Perimeter of the rectangle: 22.0

=== Code Execution Successful ===
```

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Write a python code for testing if a number is even or odd

Code:-

```
number = int(input("Enter a number: "))

if number % 2 == 0:
    print("The number is even.")
else:
    print("The number is odd.")
```

output:-

```
Output
Enter a number: 19
The number is odd.

=== Code Execution Successful ===
```

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Write a python code for calculate the area and volume of the Cube.

Code:-

```
side = float(input("Enter the side of the cube: "))

area = 6 * (side ** 2)
volume = side ** 3

print("Surface area of the cube:", area)
print("Volume of the cube:", volume)
```

Output:-

```
Output
Enter the side of the cube: 19
Surface area of the cube: 2166.0
Volume of the cube: 6859.0

=== Code Execution Successful ===
```

Write a python code to solve the equation $z = (x+y)*(x-y)$

Code:-

```
x = float(input("Enter value of x: "))
y = float(input("Enter value of y: "))

z = (x + y) * (x - y)

print("Result of z = (x + y) * (x - y):", z)
```

Output:-

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```

Output

Enter value of x: 19
Enter value of y: 20
Result of z = (x + y) * (x - y): -39.0

=== Code Execution Successful ===

```

Write a python code to solve the equation $z = (x+y)*(x+y)-2xy$; write a comment on it.

Code:-

```

x = float(input("Enter value of x: "))
y = float(input("Enter value of y: "))

# This formula is an identity: (x + y)^2 - 2xy = x^2 + 2xy + y^2 - 2xy = x^2 + y^2
z = (x + y) * (x + y) - 2 * x * y

print("Result of z = (x + y)^2 - 2xy:", z)

```

Output:-

```

Output

Enter value of x: 19
Enter value of y: 20
Result of z = (x + y)^2 - 2xy: 761.0

=== Code Execution Successful ===

```

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Write a python code for Converting Celsius to Fahrenheit

Code:-

```
celsius = float(input("Enter temperature in Celsius: "))

fahrenheit = (celsius * 9/5) + 32

print("Temperature in Fahrenheit:", fahrenheit)
```

output:-

```
Output

Enter temperature in Celsius: 19
Temperature in Fahrenheit: 66.2

=== Code Execution Successful ===
```