Marwadi University Marwadi Chandarana Group NAAC A+	**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:17/7/25**	**Enrollment No:92510133028**

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:

```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.1.py
The sum of 10 and 30 is: 40
PS E:\PWP>
```

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Subtraction

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

num1, num2 = 10, 30

sub= num1-num2

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

output:

```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.2.py
The subtraction of 10 and 30 is: -20
PS E:\PWP>
```

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:

```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.3.py
The product of 10 and 30 is: 300
PS E:\PWP>
```

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:

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```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.3.py
The division of 10 and 30 is: 0.3333333333333333
PS E:\PWP>
```

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:

```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.3.py
The reminder of 10 and 30 is: 10
PS E:\PWP>
```

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:

```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.3.py
The exponentiation of 10 and 3 is: 1000
PS E:\PWP>
```

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.

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num1, num2 = 10, 3

floordiv = num1//num2

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

Output:

```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.3.py
The Floor Division of 10 and 3 is: 3
PS E:\PWP>
```

Task:

x = 8

y = 3

mod = x % y

print (mod)

Output:

```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.3.py
2
PS E:\PWP>
```

a = -5

b = 2

res1 = a % b

print (res1)

Output:

```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.3.py
1
PS E:\PWP>
```

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m = 5

n = -2

res2 = m % n

print (res2)

Output

```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.3.py
-1
PS E:\PWP>
```

e = -5

f = -2

res3 = e % f

print (res3)

Output

```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.3.py
-1
PS E:\PWP>
```

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

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

print (((5 + 4) / 3) * 2)

Output

```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.3.py
6.0
PS E:\PWP>
```

x = 3

y = 4

z = 6

print(x*y//z)

print(x*(y//z))

Output:

```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.3.py
2
0
PS E:\PWP>
```

x = 2

y = 3

z = 2

print(x**y**z)

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

Output

```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.3.py
512
64
PS E:\PWP>
```

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Post Lab

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

```
length = float(input("Enter length: "))
breadth = float(input("Enter breadth: "))

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

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

Output:

```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.3.py
Enter length: 23
Enter breadth: 56
Area of Rectangle: 1288.0
Perimeter of Rectangle: 158.0
PS E:\PWP>
```

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

```
n = int(input("Enter a number: "))
if n % 2 == 0:
    print("Even")
else:
    print("Odd")
```

Output:

```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.3.py
Enter a number: 46
Even
PS E:\PWP>
```

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

```
side = float(input("Enter side of cube: "))
area = 6 * (side ** 2)
volume = side ** 3
print("Surface Area of Cube:", area)
print("Volume of Cube:", volume)
```

Output:

```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.3.py
Enter side of cube: 5
Surface Area of Cube: 150.0
Volume of Cube: 125.0
PS E:\PWP>
```

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

```
x = float(input("Enter x: "))
y = float(input("Enter y: "))
z = (x + y) * (x - y)
print("z =", z)
```

Output:

```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.3.py
Enter x: 10
Enter y: 30
z = -800.0
PS E:\PWP>
```

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

```
# This code calculates z = (x+y)*(x+y) - 2*x*y
x = float(input("Enter x: "))
y = float(input("Enter y: "))
z = (x + y) * (x + y) - 2 * x * y
print("z =", z)
```

Output:

```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.3.py
Enter x: 10
Enter y: 15
z = 325.0
PS E:\PWP>
```

Write a python code for Converting Celsius to Fahrenhit.

```
celsius = float(input("Enter temperature in Celsius: "))
fahrenheit = (celsius * 9/5) + 32
print("Temperature in Fahrenheit:", fahrenheit)
```

Output:

```
PS E:\PWP> & C:/Users/keshv/AppData/Local/Programs/Python/Python313/python.exe e:/PWP/harikeshsirexperiment/exp2.3.py
Enter temperature in Celsius: 129
Temperature in Fahrenheit: 264.2
PS E:\PWP>
```