**Arithmetic Operations**

**Arithmetic Operations on Strings**

1. **Addition Operator**

str1 = 'Geeksfor'

str2 = 'Geeks'

print(str1 + str2)

**Output -** GeeksforGeeks

1. **Subtraction Operator**

The subtraction operator does not work on strings and will throw TypeError.

str1 = 'Geeksfor'

str2 = 'Geeks'

print(str1 - str2)

**Output -** ---------------------------------------------------------------------------

TypeError Traceback (most recent call last)

<ipython-input-2-6e5745747226> in <module>

1 str1 = 'Geeksfor'

2 str2 = 'Geeks'

----> 3 print(str1 - str2)

TypeError: unsupported operand type(s) for -: 'str' and 'str'

1. **Multiplication Operator**

Multiplying a string by an integer gives the string times the integer. However, two strings cannot be multiplied.

>>>str1 = 'Geeksfor'

str2 = 'Geeks'

print(str1\* str2)

**Output -** ---------------------------------------------------------------------------

TypeError Traceback (most recent call last)

<ipython-input-3-25c90a55b6f3> in <module>

1 str1 = 'Geeksfor'

2 str2 = 'Geeks'

----> 3 print(str1\* str2)

TypeError: can't multiply sequence by non-int of type 'str'

>>>str1 = 'Geeks'

print(str1\*3)

**Output -**

GeeksGeeksGeeks

1. **Division Operator**

Strings cannot be divided within themselves and neither with any other integer.

-----------Arithmetic Operators on Numbers -------------------

**Arithmetic operators** are used to perform mathematical operations like addition, subtraction, multiplication and division.

There are 7 arithmetic operators in Python :

1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Modulus
6. Exponentiation
7. Floor division

**1. Addition Operator :** In Python, **+** is the addition operator. It is used to add 2 values.

**Example :**

| val1 = 2  val2 = 3    # using the addition operator  res = val1 + val2  print(res) |
| --- |

**Output :**

5

**2. Subtraction Operator :** In Python, **–** is the subtraction operator. It is used to subtract the second value from the first value.

**Example :**

| val1 = 2  val2 = 3    # using the subtraction operator  res = val1 - val2  print(res) |
| --- |

**Output :**

-1

**3. Multiplication Operator :** In Python, **\*** is the multiplication operator. It is used to find the product of 2 values.

**Example :**

| val1 = 2  val2 = 3    # using the multiplication operator  res = val1 \* val2  print(res) |
| --- |

**Output :**

6

**4. Division Operator :** In Python, **/** is the division operator. It is used to find the quotient when the first operand is divided by the second.

**Example :**

| val1 = 3  val2 = 2    # using the division operator  res = val1 / val2  print(res) |
| --- |

**Output :**

1.5

**5. Modulus Operator :** In Python, **%** is the modulus operator. It is used to find the remainder when the first operand is divided by the second.

**Example :**

| val1 = 3  val2 = 2    # using the modulus operator  res = val1 % val2  print(res) |
| --- |

**Output :**

1

**6. Exponentiation Operator :** In Python, **\*\*** is the exponentiation operator. It is used to raise the first operand to the power of second.

**Example :**

| val1 = 2  val2 = 3    # using the exponentiation operator  res = val1 \*\* val2  print(res) |
| --- |

**Output :**

8

**7. Floor division :** In Python, **//** is used to conduct the floor division. It is used to find the floor of the quotient when the first operand is divided by the second.

**Example :**

| val1 = 3  val2 = 2    # using the floor division  res = val1 // val2  print(res) |
| --- |

**Output :**

1

Below is the summary of all the 7 operators :

| Operator | Description | Syntax |
| --- | --- | --- |
| + | Addition: adds two operands | x + y |
| – | Subtraction: subtracts two operands | x – y |
| \* | Multiplication: multiplies two operands | x \* y |
| / | Division (float): divides the first operand by the second | x / y |
| // | Division (floor): divides the first operand by the second | x // y |
| % | Modulus: returns the remainder when first operand is divided by the second | x % y |
| \*\* | Power : Returns first raised to power second | x \*\* y |