**“PYTHON OPRETORS”**

**Python Operators**

**1. Arithmetic Operators**  
These operators are used to perform basic mathematical operations.

* **Addition (+)**: Adds two values.  
  Example: a + b (if a = 5 and b = 3, then a + b = 8)
* **Subtraction (-)**: Subtracts one value from another.  
  Example: a - b (if a = 5 and b = 3, then a - b = 2)
* **Multiplication (\*)**: Multiplies two values.  
  Example: a \* b (if a = 5 and b = 3, then a \* b = 15)
* **Division (/)**: Divides one value by another, returns a float.  
  Example: a / b (if a = 5 and b = 3, then a / b = 1.6667)
* **Floor Division (//)**: Divides and returns the integer part of the result.  
  Example: a // b (if a = 5 and b = 3, then a // b = 1)
* **Modulus (%)**: Returns the remainder of the division.  
  Example: a % b (if a = 5 and b = 3, then a % b = 2)
* **Exponent (\*\*)**: Raises one value to the power of another.  
  Example: a \*\* b (if a = 5 and b = 3, then a \*\* b = 125)

**2. Comparison Operators**  
These operators compare two values and return True or False.

* **Equal to (==)**: Checks if two values are equal.  
  Example: a == b (returns False if a = 5 and b = 3)
* **Not equal to (!=)**: Checks if two values are not equal.  
  Example: a != b (returns True if a = 5 and b = 3)
* **Greater than (>)**: Checks if one value is greater than another.  
  Example: a > b (returns True if a = 5 and b = 3)
* **Less than (<)**: Checks if one value is less than another.  
  Example: a < b (returns False if a = 5 and b = 3)
* **Greater than or equal to (>=)**: Checks if one value is greater than or equal to another.  
  Example: a >= b (returns True if a = 5 and b = 3)
* **Less than or equal to (<=)**: Checks if one value is less than or equal to another.  
  Example: a <= b (returns False if a = 5 and b = 3)

**3. Assignment Operators**  
These operators assign values to variables and can also perform operations during assignment.

* **Assign (=)**: Assigns the value on the right to the variable on the left.  
  Example: a = 10
* **Add and assign (+=)**: Adds the right value to the left and assigns the result to the left.  
  Example: a += 5 (if a = 10, then a = 15)
* **Subtract and assign (-=)**: Subtracts the right value from the left and assigns the result to the left.  
  Example: a -= 5 (if a = 10, then a = 5)
* **Multiply and assign (\*=)**: Multiplies the left value by the right and assigns the result.  
  Example: a \*= 5 (if a = 10, then a = 50)
* **Divide and assign (/=)**: Divides the left value by the right and assigns the result.  
  Example: a /= 5 (if a = 10, then a = 2)

**4. Logical Operators**  
These operators are used to combine conditional statements.

* **AND (and)**: Returns True if both conditions are true.  
  Example: x > 5 and x < 10 (returns True if x = 7)
* **OR (or)**: Returns True if at least one condition is true.  
  Example: x > 5 or x < 3 (returns True if x = 7)
* **NOT (not)**: Reverses the result of a condition.  
  Example: not(x > 5) (returns False if x = 7)

**5. Membership Operators**  
These operators are used to test if a sequence contains a certain value.

* **in**: Returns True if the value is found in the sequence.  
  Example: x in list (returns True if x is in list)
* **not in**: Returns True if the value is not found in the sequence.  
  Example: x not in list (returns True if x is not in list)

**6. Identity Operators**  
These operators compare objects to see if they are the same object in memory.

* **is**: Returns True if both variables point to the same object.  
  Example: x is y (returns True if x and y point to the same object)
* **is not**: Returns True if the variables point to different objects.  
  Example: x is not y (returns True if x and y point to different objects)