**Assignment Report**

**Program No. 1: Arithmetic Operators**

This program demonstrates the usage of basic arithmetic operators such as:

* **Addition (+)**: Adds two numbers.
* **Subtraction (-)**: Subtracts the second number from the first.
* **Division (/)**: Divides the first number by the second.
* **Modulus (%)**: Finds the remainder when the first number is divided by the second.
* **Exponentiation (**)\*\*: Raises the first number to the power of the second.
* **Floor Division (//)**: Performs division but returns the integer part of the result (discards the decimal value).

**Program No. 2: Comparison Operators**

This program compares two numbers provided by the user and uses the comparison operators (<, >) to determine if the first number is greater than or less than the second. It also makes use of:

* **If-elif statements**: Used to check multiple conditions. For example:
  + if a > b: Print that "a is greater".
  + If not satisfied, it proceeds to check other conditions using elif.
  + Finally, else is used if none of the conditions are met.

**Program No. 3: Logical Operators**

In this program, logical operators (and, or, not) are used with boolean values. These operators return:

* **True** if both operands are true (and).
* **True** if either of the operands is true (or).
* **True** if the operand is false (not).

**Program No. 4: String Manipulation**

This program manipulates strings by performing various operations like:

* Finding the **length** of a string (including spaces).
* Accessing characters using **indexing**. For example, [starting index : ending index].
* Converting strings to **uppercase** using .upper() and to **lowercase** using .lower().

**Program No. 5: String Formatting**

A simple program that demonstrates how to manipulate strings and insert variable names in the middle of a string. For example:

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print("My name is", name, "and my location is", location)

**Program No. 6: If-Elif Statements**

This program makes use of if and elif statements to check multiple conditions. The index() function is used to find the position of elements in a list.

**Program No. 7: List Functions**

In this program:

* **sum()** is used to find the sum of all numbers in a list.
* **max()** finds the largest value.
* **min()** finds the smallest value.

**Program No. 8: List Manipulation**

The program demonstrates basic list manipulations:

* **append()**: Adds an item to the end of the list.
* **pop()**: Removes an item at a specified index.

**Program No. 9: Sorting a List**

The program uses the **split()** function (which splits content based on whitespace or another separator) and sorts the list:

* **Ascending order**: Using reverse=False.
* **Descending order**: Using reverse=True.

**Program No. 10: List Slicing**

This exercise demonstrates how to slice a list using index ranges. For example:

* [:5] returns elements from the start to the fourth element.
* [-5:] starts from the fifth-last element.
* [1:5] returns elements from the second to the fourth element.