**EXPERIMENT 4**

**Program:**

# Arithmetic Operators

a, b = 10, 5

print("Addition:", a + b)

print("Subtraction:", a - b)

print("Multiplication:", a \* b)

print("Division:", a / b)

print("Floor Division:", a // b)

print("Modulus:", a % b)

print("Exponentiation:", a \*\* b)

# Relational Operators

x, y = 15, 10

print("Equal to:", x == y)

print("Not equal to:", x != y)

print("Greater than:", x > y)

print("Less than:", x < y)

print("Greater than or equal to:", x >= y)

print("Less than or equal to:", x <= y)

# Assignment Operators

a = 10

a += 5

print("Add and assign (a += 5):", a)

a -= 3

print("Subtract and assign (a -= 3):", a)

a \*= 2

print("Multiply and assign (a \*= 2):", a)

a /= 4

print("Divide and assign (a /= 4):", a)

a %= 2

print("Modulus and assign (a %= 2):", a)

# Logical Operators

a, b = True, False

print("AND (a and b):", a and b)

print("OR (a or b):", a or b)

print("NOT (not a):", not a)

# Bitwise Operators

x, y = 10, 4

print("Bitwise AND (x & y):", x & y)

print("Bitwise OR (x | y):", x | y)

print("Bitwise XOR (x ^ y):", x ^ y)

print("Bitwise NOT (~x):", ~x)

print("Left Shift (x << 1):", x << 1)

print("Right Shift (x >> 1):", x >> 1)

# Ternary Operator

x, y = 10, 20

result = "x is greater" if x > y else "y is greater or equal"

print("Ternary Operator result:", result)

# Membership Operators

list = [1, 2, 3, 4, 5]

print("5 in list:", 5 in list)

print("10 not in list:", 10 not in list)

# Identity Operators

a, b = [1, 2, 3], [1, 2, 3]

print("a is b:", a is b)

print("a is not b:", a is not b)

**Output:**

Addition: 15

Subtraction: 5

Multiplication: 50

Division: 2.0

Floor Division: 2

Modulus: 0

Exponentiation: 100000

Equal to: False

Not equal to: True

Greater than: True

Less than: False

Greater than or equal to: True

Less than or equal to: False

Add and assign (a += 5): 15

Subtract and assign (a -= 3): 12

Multiply and assign (a \*= 2): 24

Divide and assign (a /= 4): 6.0

Modulus and assign (a %= 2): 0.0

AND (a and b): False

OR (a or b): True

NOT (not a): False

Bitwise AND (x & y): 0

Bitwise OR (x | y): 14

Bitwise XOR (x ^ y): 14

Bitwise NOT (~x): -11

Left Shift (x << 1): 20

Right Shift (x >> 1): 5

Ternary Operator result: y is greater or equal

5 in list: True 10 not in list: True a is b: False a is not b: True

**EXPERIMENT 19**

**Aim:** To sort words in a file and put them in another file. The output file should have only lower

case words, so any upper-case words from source must be lowered.

**Program:**

def sort\_words\_in\_file(input\_file, output\_file):

try:

# Open the input file and read the words

with open(input\_file, 'r') as f:

words = f.read().split()

# Convert words to lowercase and sort them alphabetically

words = [word.lower() for word in words]

sorted\_words = sorted(words)

# Write the sorted words to the output file

with open(output\_file, 'w') as f:

for word in sorted\_words:

f.write(word + '\n')

print(f"Words successfully sorted and written to {output\_file}")

except FileNotFoundError:

print(f"The file {input\_file} does not exist.")

except Exception as e:

print(f"An error occurred: {e}")

# Get input file and output file names from the user

input\_file = input("Enter the input file name (with extension): ")

output\_file = input("Enter the output file name (with extension): ")

sort\_words\_in\_file(input\_file, output\_file)

ds\_in\_file(input\_file, output\_file)

Enter the input file name (with extension): c:\Notepad\input.txt

Enter the output file name (with extension): c:\Notepad\output.txt

Words successfully sorted and written to c:\Notepad\output.txt