Lab Programs 3

Expressions & Operators

Objectives

In this lab programs, you learn about

- Python Operators
- Assignment Operators
- Arithmetic Operators
- Relational Operators
- Numeric Comparison
- Conditional Logical Operators
- Bitwise Operators
- Assignment Operators
- Conditional Operators
- Order of Operator Precedence.

Prerequisites

Before working on this lab program, you must know

- How to develop Python programs.
- How to declare variables.
- How to use literals.
- About the expressions & operators.

Estimated time to complete this lab programs: 150 minutes

❖ Lab Program 01

1. Open the **LiClipse Python** project called **<Your-Name-Project**.>
2. Create a folder called **CHP03** in **<Your-Project-Name>.**
3. Create a new Python file called **H01AssignmentOperatorEx1.py** in the **CHP03 Package**.
4. Type the below code

```
a = 10

b = c = d = 12

print(a)
print(b)
print(c)
print(d)
```

5. Save the program.
6. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 02

1. Create a new Python file called **H06ComplexAssignmentEx1.py** in the **CHP03 Package**.
2. Type the below code

```
a, b, c = 10, 'Wisen', 20

print(a)
print(b)
print(c)
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 03

1. Create a new Python file called **H11UnaryOperatorEx1.py** in the **CHP03 Package**.
2. Type the below code

```
x = 10

y = -11

print(x)

print(y)
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 04

1. Create a new Python file called **H21ArithmeticOperatorsEx1.py** in the **CHP03 Package**.
2. Type the below code

```
print(2+5)

print(5-2)

print(5*3)

print(5/3)

print(5//2)

print(5%2)

print(2**3)
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 05

1. Create a new Python file called **H31FloatArithemticEx1.py** in the **CHP03 Package**.
2. Type the below code

```
print(2.2 + 5.3)
print(5.4 - 2.5)
print(5.2 * 3.6)
print(5.2 / 3.6)
print(5.2 % 3.6)
print(5.2 // 3.6)
print(5.2 ** 3.6)

print(2.0/0.0)
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 06

1. Create a new Python file called **H41RelationalOperationsEx1.py** in the CHP03 Package.
2. Type the below code

```
x = 10
y = 10
z = 11

print(x > y)
```

```
print(x >= y)

print(x < y)

print(x <= y)

print(x == y)

print(x != z)
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 07

1. Create a new Python file called **H51NumericComparisionEx1.py** in the **CHP03 Package**.
2. Type the below code

```
x = 1.0 / 3.0

print(x)

if x==0.333333 :
   print("Both are Equals for 0.333333");

if x==0.3333333333333333 :
   print("Both are Equals for 0.3333333333333333");
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 08

1. Create a new Python file called **H61LogicalNegationEx1.py** in the **CHP03 Package**.
2. Type the below code

```
a = 10

print(a == 10)

print(not(a == 10))
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 09

1. Create a new Python file called **H71ConditionalAndEx1.py** in the **CHP03 Package**.
2. Type the below code

```
a = 10
def myFunction():
    print("Function called")
    return True;

if (a == 11) and myFunction() :
    print("Hello")

if (a == 10) and myFunction() :
    print("Wisen")
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 10

1. Create a new Python file called **H81ConditionalOREx1.py** in the **CHP03 Package**.
2. Type the below code

```
a = 10

def myFunction():
    print("Function called")
```

```
        return True;

    if (a == 11) or myFunction() :
        print("Hello")
    if (a == 10) or myFunction() :
        print("Wisen")
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 11

1. Create a new Python file called **H91BitNegationEx1.py** in the **CHP03 Package**.
2. Type the below code

```
x = 25
y = ~x;
print(x)
print("{0:b}".format(x))
print(y)
print("{0:b}".format(y))
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 12

1. Create a new Python file called **I01BitwiseAndEx1.py** in the **CHP03 Package**.
2. Type the below code

```
x = 25

y = x & 10;

print(x)
print("{0:b}".format(x))

print(y)
print("{0:b}".format(y))
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 13

1. Create a new Python file called **I11BitwiseOREx1.py** in the **CHP03 Package**.
2. Type the below code

```
x = 25

y = x | 10;

print(y)
print("{0:b}".format(y))
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 14

1. Create a new Python file called **I21BitwiseExclusiveOREx1.py** in the CHP03 Package.
2. Type the below code

```
x = 25

y = x ^ 11;

print(y)
print("{0:b}".format(y))
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 15

1. Create a new Python file called **I31BitwiseLeftShiftEx1.py** in the **CHP03 Package**.
2. Type the below code

```
y = 1 << 5;

print(y)
print("{0:b}".format(y))
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 16

1. Create a new Python file called **I41BitwiseRightShiftEx1.py** in the **CHP03 Package**.
2. Type the below code

```
y = 64 >> 5;

print(y)
print("{0:b}".format(y))
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?

❖ Lab Program 17

1. Create a new Python file called **I51ConditionalOperatorEx1.py** in the **CHP03 Package**.
2. Type the below code

```
x = 1
y = 2

maximum = x if x > y else y
print(maximum)
```

3. Save the program.
4. Execute the program.

Program Output

What you learnt from this program?