21 May

# Python Basic - 2

**Q.1. Create two int type variables, apply addition, subtraction, division and multiplications and store the results in variables. Then print the data in the following format by calling the variables:**

**First variable is_____& second variable is __.**

**Addition:_+____= ___**
**Subtraction:_____-_____=_____**
**Multiplication:_____*___=_____**
**Division:_/_____= _____**

Ans:

```
num1=float(input("Enter first variable"))
num2=float(input("Enter second variable"))
print("First variable is:",num1)
print("Second variable is:",num2)

#Addition
result=num1+num2
print("Addition is:",result)

#Substraction
result=num1-num2
print("Substraction is:",result)

#Multiplication
result=num1*num2
print("Multiplication is:",result)

#Division
result=num1/num2
print("Division is:",result)
```

```
Enter first variable 3
Enter second variable 1
First variable is: 3.0
Second variable is: 1.0
Addition is: 4.0
Substraction is: 2.0
Multiplication is: 3.0
Division is: 3.0
```

**Q.2. What is the difference between the following operators:**

**(i) '/' & '//'**

**(ii) '**' & '^'**

Ans:

(i)

'/' – This operator is used to perform division of two integer value. The output for this operator is always a quotient with float datatype. Even the sign of the input operand does not affect the output.

```
x=17
print("The first number is",x)

y=3
print("The second number is",y)

result=x/y
print("The result is:",result)
```

```
The first number is 17
The second number is 3
The result is: 5.666666666666667
```

'//'— This operator is used to perform division of two integer value. The output for this operator is always a quotient which is rounded off to the nearest whole number.

```
x=17
print("The first number is",x)

y=3
print("The second number is",y)

result=x//y
print("The result is:",result)
```

```
The first number is 17
The second number is 3
The result is: 5
```

(ii)

‘**’ – This operand is use to perform square of any two-integer value.

```
x=6
print("The first number is",x)

y=3
print("The second number is",y)

result=x**y
print("The result is:",result)
```

```
The first number is 6
The second number is 3
The result is: 216
```

‘^’--This ^ operator compares each bit and set it to 1 if only one is 1, otherwise (if both are 1 or both are 0) it is set to 0

```
x=6
print("The first number is",x)
print("The binary value of first number is:",bin(6))

y=3
print("The second number is",y)
print("The binary value of first number is:",bin(3))

result=x**y
print("The result is:",result)
print("The binary value of result is:",bin(result))
```

```
The first number is 6
The binary value of first number is: 0b110
The second number is 3
The binary value of first number is: 0b11
The result is: 216
The binary value of result is: 0b11011000
```

## Q.3. List the logical operators.

Ans: In Python, there are three types of logical operators: and, or, and not. And Operator returns true only when both conditions are true simultaneously.

```
# Logical operator example

a=False
b=True
print(a and b)   #since 'a' is not equal to 'b' So the output is False
print(a or b)    #output here is either 'a' or 'b'
print(not a )    #output will be opposite of 'a'
```

```
False
True
True
```

## Q.4. Explain right shift operator and left shift operator with examples.

Ans: In right shift operand bits are moved towards the left side for the given number of times.

Whereas in left shift operand bits are moved towards the right side for a given number of times.

```
#Example of Right shift

a=10
print("The Number is:",a)
print("The binary form of the number is:",bin(10))
print("-----------------------------------------")
result=a>>2
print("The result is:",result)
print("The binary form of result is",bin(2))
```

```
The Number is: 10
The binary form of the number is: 0b1010
-----------------------------------------
The result is: 2
The binary form of result is 0b10
```

```
#Example of Left shift

a=10
print("The Number is:",a)
print("The binary form of the number is:",bin(10))
print("-----------------------------------------")
result=a<<2
print("The result is:",result)
print("The binary form of result is",bin(2))
```

```
The Number is: 10
The binary form of the number is: 0b1010
-----------------------------------------
The result is: 40
The binary form of result is 0b10
```

**Q.5. Create a list containing int type data of length 15. Then write a code to check if 10 is present in the list or not.**

Ans:

```
num_list = [int(input("Enter a number: ")) for _ in range(15)]

if 10 in num_list:
    print("The number 10 is present in the list.")
else:
    print("The number 10 is not present in the list.")
```

```
Enter a number:  2
Enter a number:  3
Enter a number:  4
Enter a number:  5
Enter a number:  6
Enter a number:  7
Enter a number:  10
Enter a number:  11
Enter a number:  12
Enter a number:  13
Enter a number:  14
Enter a number:  15
Enter a number:  16
Enter a number:  1
Enter a number:  90
The number 10 is present in the list.
```