In [28]:
```
# PYTHON

# BINARY NUMBER SYSTEM

# # BTIWISE OPERATOR
```

In [21]:
```
bin(30)    # BINARY
```

Out[21]: '0b11110'

In [22]:
```
oct(30)     #OCTA
```

Out[22]: '0o36'

In [23]:
```
hex(1)        #HEXA
```

Out[23]: '0x1'

In [6]:
```
hex(25)
```

Out[6]: '0x19'

In [7]:
```
# BITWISE
```

In [9]:
```
12&13 # AND operator
```

Out[9]: 12

In [10]:
```
35&40
```

Out[10]: 32

In [17]:
```
35|40    #OR operator
```

Out[17]: 43

In [16]:
```
25^30   #XOR operator
```

Out[16]: 7

In [15]:
```
bin(7)
```

Out[15]: '0b111'

In [26]:
```
10<<1  #left shift
```

Out[26]: 20

In [ ]:
```

```

In [34]:
```
bin(10>>1)  #right shift
```

Out[34]: '0b101'

In [35]:
```
bin(10>>2)
```

Out[35]: '0b10'

In [36]:
```
bin(10>>3)
```

Out[36]: '0b1'

In [1]:
```
#BINARY ADDITION
```

In [2]:
```
a=5
b=3
addition = a + b
print ('binary addition operator',addition)            # BINARY ADDITION
```

```
binary addition operator 8
```

In [5]:
```
multiplication = a * b
print ('binary Multiplication operator', multiplication)    #BINARY MULTI
```

```
binary Multiplication operator 15
```

In [20]:
```
subtraction= a - b
print ('binary SUBTRACTION operator', subtraction)     #BINARY SUBTRACTIO
```

```
binary SUBTRACTION operator 2
```

In [22]:
```
division=a / b
print ('binary division operator',division)
```

```
binary division operator 1.6666666666666667
```

In [23]:
```
modulus = a % b
print ('binary modulus operator', modulus)
```

```
binary modulus operator 2
```

In [24]:
```
exponent = a ** b
print('binary exponent operator', exponent)
```

```
binary exponent operator 125
```

In [32]:
```
#------------floor division
```

In [39]:
```
dividend = 10
divisor = 3
```

In [43]:
```
floor_div= dividend // divisor
print(floor_div)
```

```
3
```

In [29]:
```
a += 3     #   add 3 to a using +=
a
```

Out[29]:
```
17
```

In [31]:
```
b *= 5
b
```

Out[31]:
```
75
```

In [6]:
```
# LOGICAL AND (&) OPERATOR
```

In [7]:
```
bitwise_and = a & b
print ('bitwise AND operator :', bitwise_and)
```

```
bitwise AND operator : 1
```

In [15]:
```
bitwise_or = a | b
print('bitwise OR operator:', bitwise_or)
```

```
bitwise OR operator: 7
```

In [14]:
```
bitwise_not = a != b
print('bitwise NOT operator:', bitwise_not)
```

```
bitwise NOT operator: True
```

In [16]:
```
a>8 and b<2
```

Out[16]:
```
False
```

In [17]:
```
x=False
not x
```

Out[17]:
```
True
```

In [ ]:
```

```