Bitwise-Operator

January 30, 2025

0.1 Is operator

[1]:
```
#in python is  and is not operator is used to check if two objects refer to the␣
 ↪same memory location
```

[32]:
```
a = 5
b = a
```

[33]:
```
a is b
```

[33]:
```
True
```

[38]:
```
l1 = [1,2,3,4,5]
l2 = [1,2,3,4,5]
l3 = l1
```

[39]:
```
l1 is l2  # list create diffrent memory even if its elements are identical
```

[39]:
```
False
```

[40]:
```
l1 is not l2
```

[40]:
```
True
```

[41]:
```
a is b
```

[41]:
```
True
```

[42]:
```
l3 is l1 # its true because l3 it holds the value of l1 so l3 points on l1␣
 ↪location
```

[42]:
```
True
```

0.2 While '==' operators compares the if elements are identical or not

[12]:
```
l1 == l2
```

[12]:
```
True
```

1 Bitwise operators

[14]:
```
a = 5 # 0101 in binary
b = 3 # 0101 in binary
```

[18]:
```
c =  a & b # Bitwise AND
c          # 0101 & 0011 = 0001 (1 in decimal)
```

[18]: 1

[19]:
```
d = a | b #Bitwise OR
d         # 0101 | 0011 = 0111 (7 in decimal)
```

[19]: 7

[20]:
```
e = a ^ b # Bitwise XOR
e         # 0101 ^ 0011 = 0110 (6 in decimal)
```

[20]: 6

2 Membership Operator

[21]:
```
fruits = ['apple', 'banana', 'orange']
```

[26]:
```
'banana' in fruits # in operator is to check if a value present in sequence␣
↪(list,tuple,string)
```

[26]: True

[25]:
```
'grapes' in fruits
```

[25]: False

[27]:
```
'apple' not in fruits
```

[27]: False

[28]:
```
'apple' in fruits
```

[28]: True

[29]:
```
'grapes' not in fruits
```

[29]: True

3 Ternary conditional operator

[45]:
```
Percentage = 60
D = 'First Division' if Percentage >= 60 else 'Second Divison'
print(D)
```

```
First Division
```

[46]:
```
Percentage = 50
D = 'First Division' if Percentage >= 60 else 'Second Divison'
print(D)
```

```
Second Divison
```

[ ]:
```

```