COMPUTING FUNDAMENTALS USING PYTHON

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Python Operators…

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Bitwise Operators

- Bitwise operators are used to **compare (binary) numbers**

Operator	Name	Description
&	AND	Sets each bit to 1 if both bits are 1
|	OR	Sets each bit to 1 if one of two bits is 1
^	XOR	Sets each bit to 1 if only one of two bits is 1
~	NOT	Inverts all the bits
<<	Zero fill left shift	Shift left by pushing zeros in from the right and let the leftmost bits fall off
>>	Signed right shift	Shift right by pushing copies of the leftmost bit in from the left, and let the rightmost bits fall off

Identity Operators

- **is** and **is not** are the identity operators in Python.
- Identity operators are used to **compare the objects**, not if they are equal, but if they are **actually the same object, with the same memory location**

Identity Operators

Operator	Description	Example
is	Returns True if both variables are the same object	x is y
is not	Returns True if both variables are not the same object	x is not y

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Identity Operators

```
x1 = 5
y1 = 5
x2 = 'Hello'
y2 = 'Hello'
x3 = [1,2,3]
y3 = [1,2,3]

# Output: False
print(x1 is not y1)

# Output: True
print(x2 is y2)

# Output: False
print(x3 is y3)
```

Output

```
False
True
False
```

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Membership Operators

- Membership operators are used to test if a sequence is presented in an object

Operator	Description	Example
in	Returns True if a sequence with the specified value is present in the object	x in y
not in	Returns True if a sequence with the specified value is not present in the object	x not in y

Membership Operators

- **in** and **not in** are the membership operators in Python.
- They are used to test whether a value or variable is found in a sequence.

Operators - Precedence and Associativity

- Precedence is a rule of priority.
- It is used while evaluating an expression which contain multiple operators

Here is the **list of priority** of operators:

1. ()
2. **
3. Unary operator
4. *, /, //, % has same precedence
5. +, -
6. << , >>
7. &
8. ^
9. |
10. Relational and membership operators
11. not
12. and
13. or

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THANK YOU

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