Operators in Python

+ - * / // % **

< > == != >= <=

=

& | ~ ^ << >>

and or not

in not in

is is not

Introduction to PYTHON

Module 1 / Lecture-4

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Topics

- Operators in Python
  - Arithmetic Operators **+ - * / // % ****
  - Relational Operators **< > == != >= <=**
  - Assignment Operator **=**
  - Bitwise Operators **& | ~ ^ << >>**
  - Logical Operators **and or not**
  - Membership Operators **in not in**
  - Identity Operators **is is not**

Arithmetic Operators

+ - *

Let **a** and **b** are operand

- If a and b both are **int** the result will be **int**
- If a and b both are **float** the result will be **float**
- If in **a b,** one of them is float, result will be **float**

Arithmetic Operators

+

+ can be applied on Numbers, List, Tuple, String

Arithmetic Operators

-

- can be applied on Numbers only

Arithmetic Operators

*

* can be applied on Numbers, and between

  int and string,

  int and list,

  int and tuple

Arithmetic Operators

/

True division

Applied on numbers only

Let **a** and **b** are operand

- If a and b both are **int** or **float** or one of them is float, result will be **float**

Arithmetic Operators

//

floor division or **truncated division**

Can be applied on int and float only

Let **a** and **b** are operand

- If a and b both are **int** the result will be **int**
- If a and b both are **float** the result will be **float**
- If in **a** **b** one of them is float, result will be **float**

Arithmetic Operators

%

Modulus or Remainder Operator

Can be applied on int

Result is an int

Arithmetic Operators

**

Exponent

Can be applied on numbers

Let **a** and **b** are operand

- If a and b both are **int** the result will be **int**
- If a and b both are **float** the result will be **float**
- If in **a** **b** one of them is float, result will be **float**

Relational Operators

< > == != >= <=

- Returns **True** or **False**
- Can be applied on Numbers and String

Assignment Operator

=

Variable assignment

```
a = 5
b = 3.2
c = "Hello"
```

Multiple assignments

```
>>>a, b, c = 5, 3.2, "Hello"
>>>x = y = z = 100
```

Assignment Operator

=

Compound assignment

```
>>>a += 5
>>>a = a+5
```

Bitwise Operators

& |

```
>>>x=5          #101
>>>y=7          #111

>>>x&y
5

>>>x|y
7
```

Bitwise Operators

~ ^

```
>>>x=5          #101
>>>y=7          #111

>>>~x           #1's complement
-6             #  -(101+1)  =>  -(110)  =>  -6

>>>x^y
2              #010
```

Bitwise Operators

<< >>

```
>>>x=5          #101

>>>x>>2         #001
1

>>>x<<2         #10100
20
```

Logical Operators

and or not

- expr1 **and** expr2
- expr1 **or** expr2
- expr **not**

Membership Operators

in not in

syntax: var **in** iterable_object

```
>>>x=5
>>>y=[1,2,3,5,6,7]
>>>x in y
True

>>>x not in y
False
```

Identity Operators

is is not

```
>>>a=10
>>>b=10
>>>a is b
True

>>>x=500
>>>y=500
>>>x is y
False
```