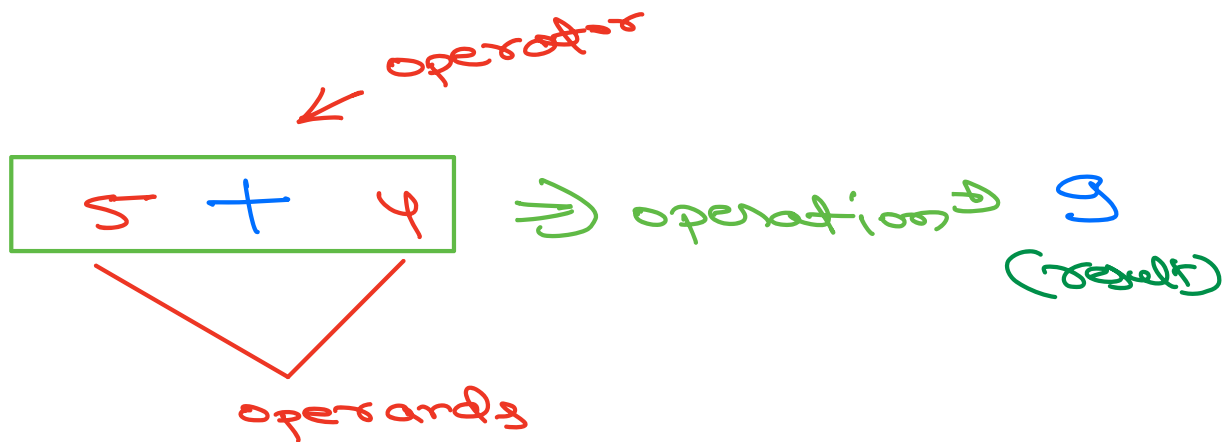


Agenda

- ① Arithmetic operators
- ② Precedence of operators
- ③ Boolean operators
- ④ Comparison operators
- ⑤ Assignment operators
- ⑥ Logical operators

Operators

A symbol used for some operations

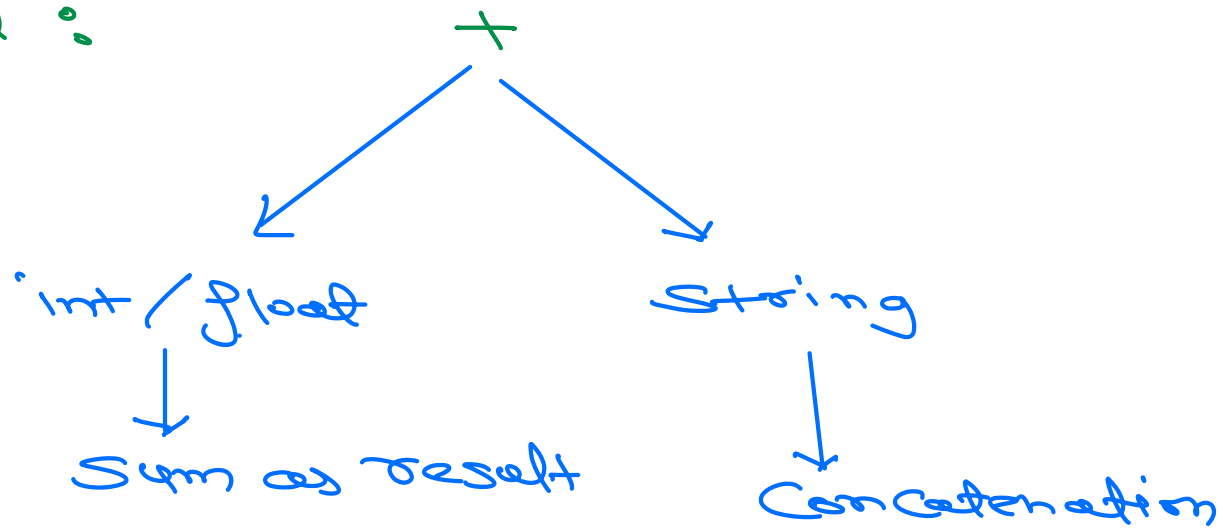


Arithmetic Operators

① $+$, $-$, $/$, $*$

② $//$, $**$, $\%$
(floor Division) Operator (Exponentiation) Operator (Modulo)

① Add :



① $1 + 3 \Rightarrow 4$

② $'Sachin' + 'Hi' \Rightarrow 'SachinHi'$

③ $1 + 'Sachin' \Rightarrow \text{Type Error}$

④ $1 + 4.0 \Rightarrow 5.0$

* Note : If one of your operand is float, the result will be float Type

② Subtract : -

$'Sachin' - 'in' \Rightarrow \text{X}$ (-) doesn't support str

③ Multiplication

① $1 \times 3 \Rightarrow 3$

② $1 \times 3.0 \Rightarrow 3.0$

③ $'Sachin' \times 'Hi' \Rightarrow \text{Type Error}$

④ $'Sachin' \times 3 \Rightarrow \text{'SachinSachinSachin'}$

④ Division : /

It always outputs float

$4 / 2 \Rightarrow 2.0$

Doesn't support str

⑤ Floor Division //

Always return/output always integer

① $4 // 2 \Rightarrow 2$

② $5 // 2 \Rightarrow$



③ $-5 // 2$ ৩

$\cancel{-2}, \textcircled{-3} \checkmark$

$a // b$ ৩ 4.9999999
 \searrow
 4

⑥ Exponentiation: $**$ $x ** y$ ৩ x^y
 (power)

$2 ** 3$ ৩ $2 \times 2 \times 2$ ৮

$3 ** 2$ ৩ 3×3 ৯

⑦ Modulo: $\%$ (Remainder)

$2 \div 3$ ৩ $3 \times 0 + \textcircled{2}$ ↗

$4 \div 3$ ৩ $3 \times 1 + \textcircled{1}$
 ↗ rem

$3 \overline{) 5}$

$3 \times 0 + \textcircled{2}$
 ↗

$$2 \% 3 \Rightarrow 2$$

$$4 \% 3 \Rightarrow 1$$

$$\textcircled{1} \quad 10 \% 3 \Rightarrow 1$$

$$\textcircled{2} \quad -10 \% 3 \Rightarrow 2 \quad \text{why?}$$

$$\textcircled{11} \quad : \quad 10^{**}-1 \Rightarrow \frac{1}{10^{**1}} \Rightarrow 0.1$$

$$10 - 4 * 2$$

$$\textcircled{1} \quad 12$$

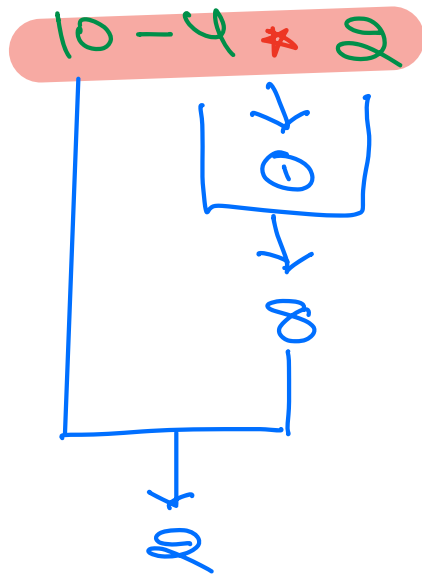
$$\textcircled{2} \quad 2$$

Precedence of Operator

() P	** E	* / ** % P D	+ - A S
Parentthesis	Exp	Equal Precedence	Equal Precedence

lower in precedence →

* For equal precedence we go Left to Right



11

$$10 - 4 * 2 + 5 - 6 / 2$$

$$10 - 8 + 5 - 3$$

$$2 + 5 - 3$$

$$7 - 3 = 4$$

12

$$x = 1$$

$$y = 2$$

$$z = 4$$

$$\text{res} = (x + y - z) * (x \% z)$$

$$(11 + 2 - 4) \star\star (11 \% 4)$$

$$(13 - 4) \star\star (11 \% 4)$$

$$9 \star\star (11 \% 4)$$

$$9 \star\star 3$$

$$\Rightarrow 9 \times 9 \times 9 \Rightarrow 729$$

Bool Function

It is used to convert any datatype to Boolean (T, F)

Bool gives False only for

0, e, None, 0.0

Everything else is considered True

Comparison Operators

① $>$, $<$, \geq , \leq

② $==$, $!=$

equality

Not Equal

return

Boolean Value

Logical Operator

and, or, not!

- * Purpose: Combine two or more conditional operator results

name = 'Sachin'

mark >= 90

is name 'Sachin' and mark > 95

and

(name == 'Sachin' and mark > 95)

True

and

False

↓
False

And

Cond1	Cond2	Res
F	T	F
T	F	F
F	T	F
T	T	T

only when both
cond are True
we get True

Or

Cond1	Cond2	Res
F	T	T
T	F	T
F	T	T
T	T	T

If any of cond
is True, we
get True

not

$\text{not}(\text{bool})$ and return opposite
bool

$\text{not}(\text{True}) \Rightarrow \text{False}$

$\text{not}(\text{False}) \Rightarrow \text{True}$

h -layers
Time-Spent

$T_{\text{spent-prep}} \approx Q \times n\text{-layers}$

Total Spend \approx Time-Spent-bake
+
Time-Spent-prep

$3 \times 2 \approx 6$ prep

$20 \approx$ bake

$20 + 6$