

Arithmetic

Datatypes . 5, 10, 76, 54

Numerics .  
↑  
Integral — int (Whole Numbers)  
non-integral — float (Fractional)

27.6, 5.34, 6.173

Logical /  $\leftarrow$  Boolean — bool .

Boolean

operations

True / False

Case Sensitive

$x = 10$

$x > y$

↓

True

$y = 3$

$x == y$

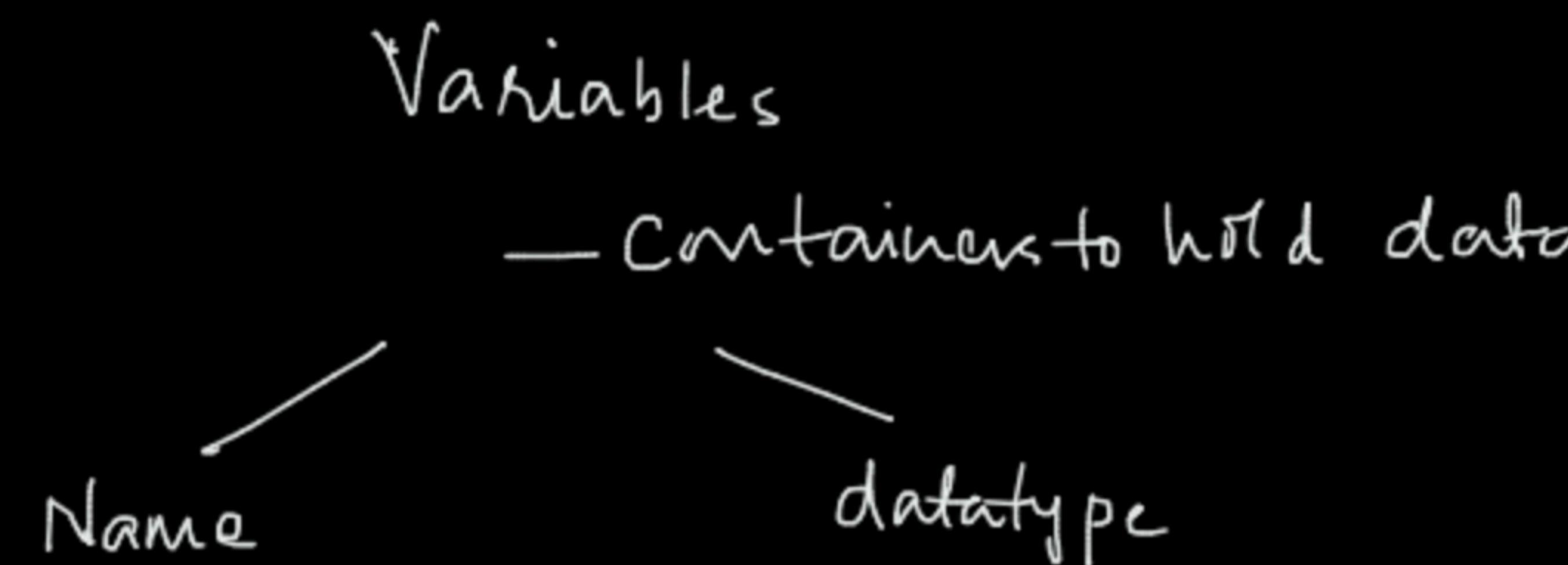
↓

False

$x + iy$   
Complex

$$x = 10.$$

Name      ↓  
  dtype = int



### Rules for naming Variables .

1. The first character should be one of

[a-z, A-Z, -]

2. optionally followed by any no. of

[a-z, A-Z, -, 0-9].

3. Reserved words cannot be used

- $x = 10 \rightarrow \checkmark$
- $x\_val = 5 \rightarrow \checkmark$
- $-x = 12 \checkmark$
- $--x-- = 11 \checkmark$
- $day7 = True \checkmark$
- $7th\_day = False \times$
- $price$ = 50 \times$
- $_ = 'Hello' \checkmark$
- $if = 12 \times$

C, C++, Java -

declare a Variable

int x ←

"Static typing"

Python -

dynamic typing

No declarations

X = 10.  
int ←  
X = '10.72  
float ←

Ipynb - → Julia →  
↓ ↓ Py →  
R →

# Arithmetic Operations

$+$  → Addition

$$x = 10 \quad y = 3$$

$-$  → subtraction

$$x / y = 3.33333\ldots$$

$*$  → Multiplication

$/$  → Division

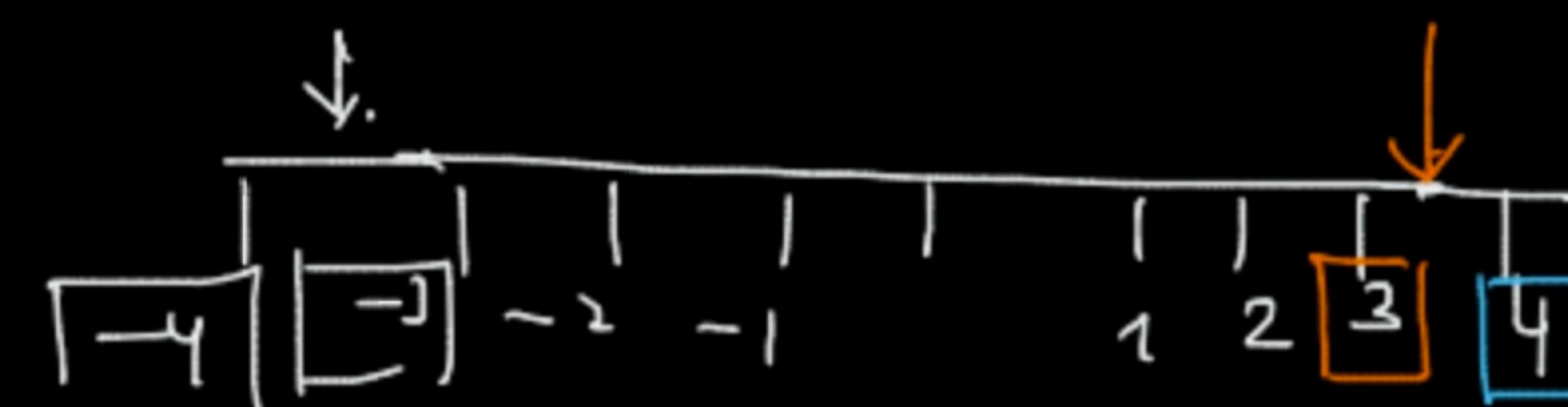
$$x \% y = 1$$

$\%_0$  → Modulo division (Remainder)     $x // y =$

$//$  → Floor division

$**$  → power

$$x ** y$$



Round    ceil    floor

3.3	3.0	<u>4.0</u>	<u>3.0</u>
3.8	4.0	<u>4.0</u>	<u>3.0</u>
-3.3	-3.0	-3.	-4.0