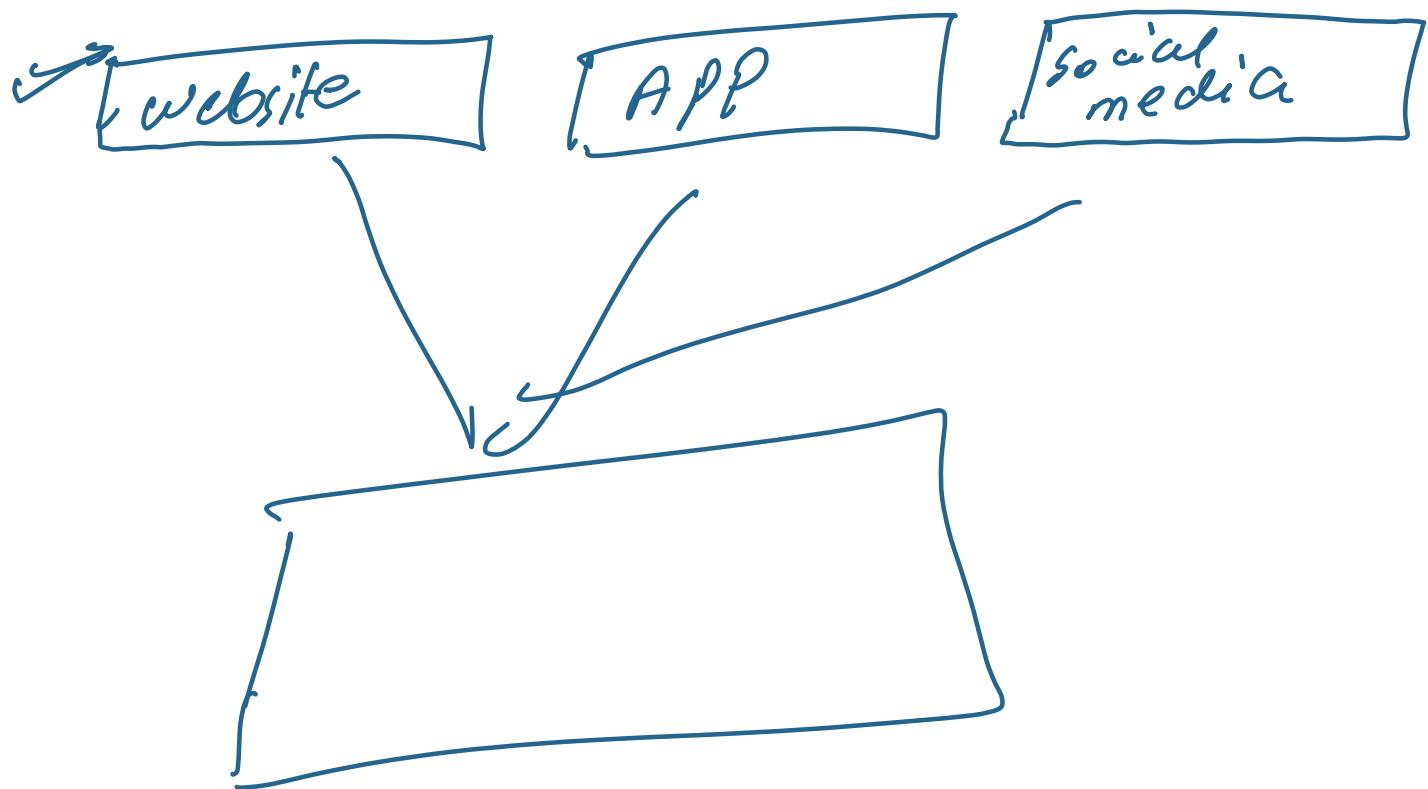


# Python

- ① Data Engineer
- ② Data Analytics
- ③ Data Scientist



Data scientist

some

#

Guido Van Rossum

1991

# Printing "Hello world"

How to Comment → ~~#~~  
      " " " "

## \* Variables

⇒ Container

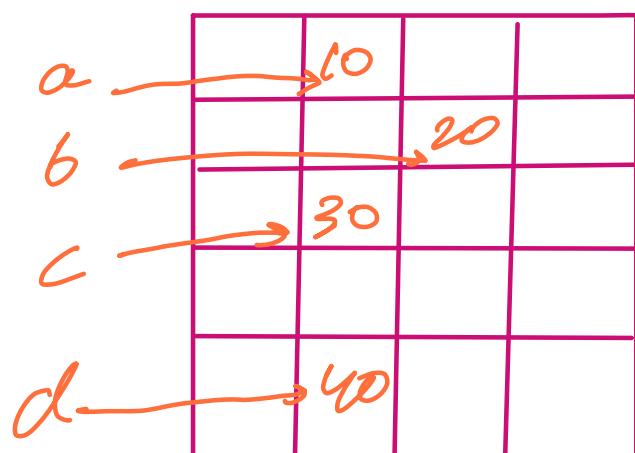
⇒ \* Name of memory location  
which contains the data

$$a = 10$$

$$b = 20$$

$$c = 30$$

$$d = 40$$



## Rules of Naming Variable

① Keywords ✗

② No start w/  
symbol start ✗      }      Alpha numeric

③ age, Ag AGE

## Creating Variables

a = 10

b = "Arun"

Point(a)

Point(b)

a = Arun

b = Sunit

c = Ramegh

x, y, z = " " - " "

x, y, z = Arun, Sunit, Ramegh

$x = \text{Arun}$

$y = \text{Arun}$

$z = \text{Arun}$

$x = y = z = "Arun"$

## # Data type

Data

String → immutable  
String is mutable

text → String

Numeric → integer, float, complex

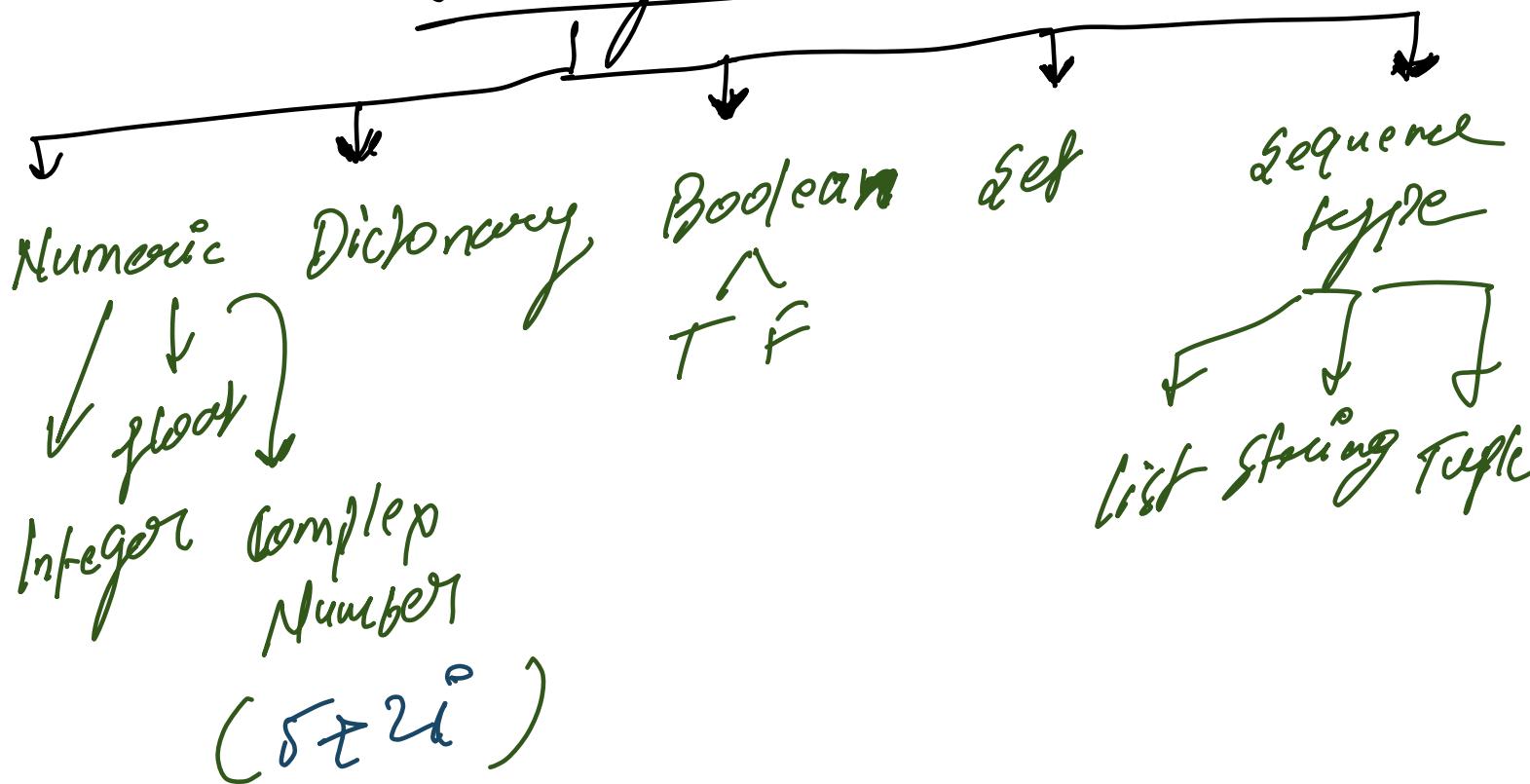
Sequence Type → list, tuple, range

mapping types ⇒ dict

Set

Boolean ⇒ T, F

# Data Types



# Key → Value

1 → "Akash"

2 → "Abhishek"

3

$x = "Arun"$

$y = "Kumar"$

$z = "Sharma"$

$\text{point}(x, y, z)$



$\text{point}(x)$

$p(y)$

$p(z)$

- (a) Arun Kumar Sharma
- (b) ArunKumarSharma
- (c) Arun  
Kumar  
Sharma

key : value

String  $\Rightarrow$  ; " "

`int a = 10`

`string b = "20"`

## # Operators

special symbol used  
to perform operations  
on values &  
variables

## Operand

$a \oplus b$

if is the value on which the  
operator is applied.

## Types

- ① Arithmetic operators
- ② Comparison "

- ③ Assignment "
- ④ Logical "
- ⑤ Bitwise "
- ⑥ Identifying operations  
And membership  
operators

## Addition

$a = 5$

$b = 3$

$\text{print}(a + b)$

$a = "Akash"$

$b = "Kumar"$

$\text{print}(a + b) \Rightarrow \text{Concatenation}$

$\text{print}(a - b)$

$\text{print}(a * b)$

$\text{print}(a / b)$

2 → 1 forms

$$a = 10$$

$$b = 20$$

$$c = a + b$$

point(c)

point(type(c))

$$x = 2.34$$

$$y = 5.67$$

$$x - y$$

$$y - x$$

$$a = 5 + 3j$$

$$b = 2$$

$$\oplus \rho \quad j + 3j$$

$$a = 5 + 3j$$

$$b = 3 + 2j$$

⇒

#  $a = 10 \cdot 3$

$$b = 2$$

$$c = 5 + 3j$$

Resulting  $(a+b) \pm c$

#  $a =$  "Agecum"  
 $b =$  "Shortuey"  
 $(a - b)$

~~#~~ Moduloces

$\hookrightarrow$  remainder

①  $15 \% \textcircled{3} =$

$15 \% 4 =$

$12 \% 5 =$

$6 \% 5 =$

$$19\%_3 =$$

$$a \sqrt[3]{N} = \boxed{ob(N-1)}$$

$$11\%_3 \Rightarrow 2 \quad 11\%_5 \Rightarrow ①$$

$$12\%_3 \Rightarrow 0 \quad 0$$

$$13\%_3 \Rightarrow 1 \quad 1$$

$$14\%_3 \Rightarrow 2 \quad 1 \\ 2$$

$$15\%_3 \Rightarrow 0 \quad 0$$

$$16\%_3 \Rightarrow 1 \quad \text{1}$$

$$12^{\circ}/4 = 0$$

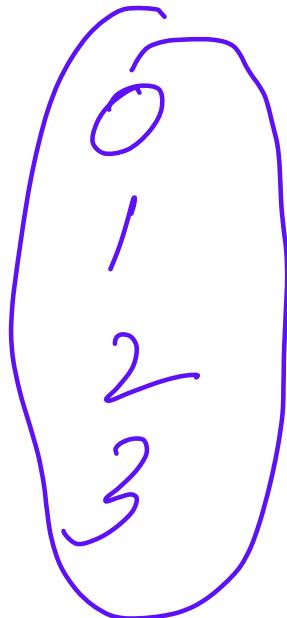
$$0-(N-1)$$

$$13^{\circ}/4 = 1$$

$$14^{\circ}/4 = 2$$

$$15^{\circ}/4 = 3$$

$$16^{\circ}/4 = 0$$



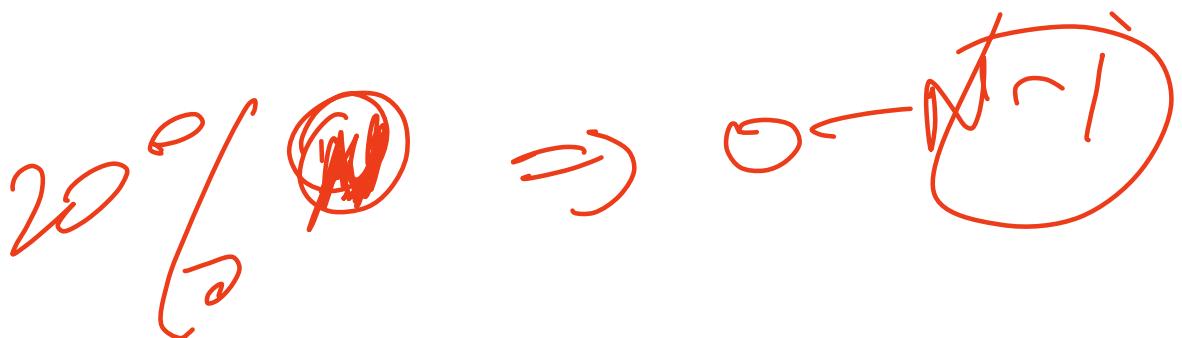
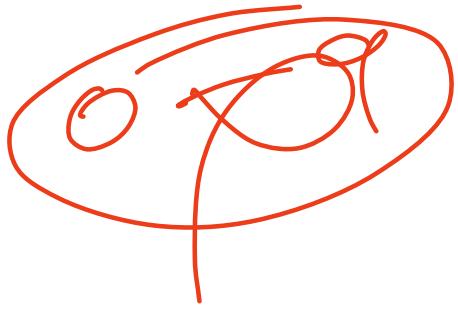
$$0-(4-1)$$

$$0-(N-1)$$

$$17^{\circ}/4 = 1$$

$$18^{\circ}/4 = 2$$

3  
0



# Exponent

— 126

2387

$\delta^4 \Rightarrow \star\star$

Point( $\delta \times \star^4$ )

$$a = 12.79$$

$$b = 5$$

Point( $a \neq b$ )  $\Rightarrow$  

\*

$$a = \text{true}$$

$$b = \text{false}$$

Point(type(a))

Point(type(b))

Q) find the perimeter of a square with side 6 cm

⑥ find the area of the same square

- Q2(a) find the area of  
the rectangle with  
 $l = 6 \text{ cm}$ ,  $b = 4 \text{ cm}$
- ⑥ find the perimeter