

Java = Y

=> Java → Foundation

=> 1995 = Y 2023

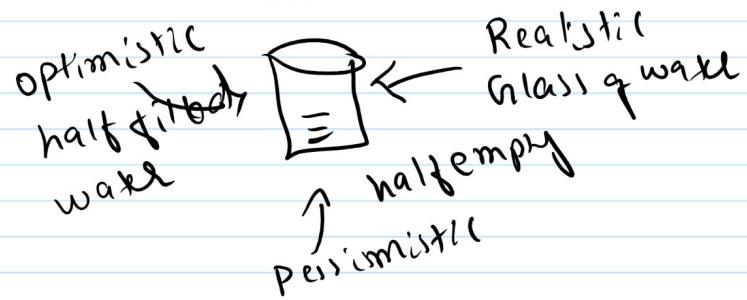
=> Object Orientation :-

Orientation :-

↳ Prospective

↳ Way of looking

↳



=> Object => Laptop, mic, speaker, Room, House
pen, Book, Bus, Road, Train, Kernel

=> Focus is the key :-

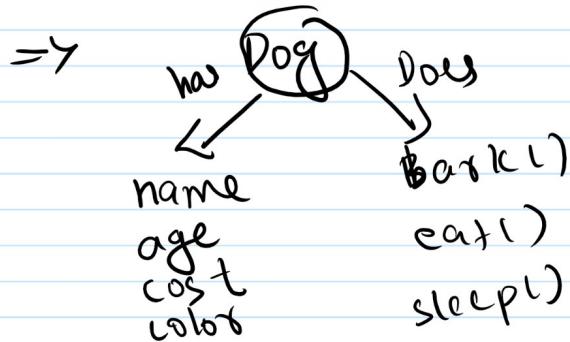
=>

=> Whole world as collection object

=> Every object has something, Does something

↓
Properties

↓
Behavior



=> Object → class :-

=>

Bike

cost start()
 color stop()
 gear ride()
 model carrybag()
 ; ;
Datatypes
variable

class Bike
 {
 int cost; has
 String color;
 String model;
 void ride();
 }
 does
 y

=> Variables and Datatypes y

=> Info / Data = y ✓ age 18 ≡
variable :-

{ age = 18;
 name = "Rohan";

=> Statically typed PL vs Dynamically typed PL
(Strongly typed) (Weakly typed)

int age = 18; X × age = 18; ✓
 char a = 'A';
 String n = "Rohan";
 × a = 'A'
 ⇒ C, C++, Java ----
 JavaScript, Python
 ≡

=> Working with Data / Info

↓

Type of Data = y ✓

↓

Datatypes

=> To Manage Data by In-Built classes
 Type of Data by primitive Datatypes

$\Rightarrow \text{char} c = 'a' @ ' '$

} char = manages character type Data
byte, short, int, long = manages Number
float, double = Real Number } 85, 29
boolean => true, false } 92, 92

$\text{char } c = 'a';$ }
 $\text{int } \underline{\text{temp}} = 44;$
 $\text{double } \underline{\text{m}}$ = 44.5;
 $\text{boolean } \underline{\text{a}} = \text{false};$

Memory: 0's and 1's 0101010

character	Binary
A	0
B	1
A	00
B	01
C	10
D	11

American CS	
A	000
B	001
C	010
D	100
E	101
F	110
G	—
H	—

128 → characters

$128 \Rightarrow 2^7 \Rightarrow 7 \text{ bit}$ 1 Byte $\Rightarrow 8 \text{ bit}$

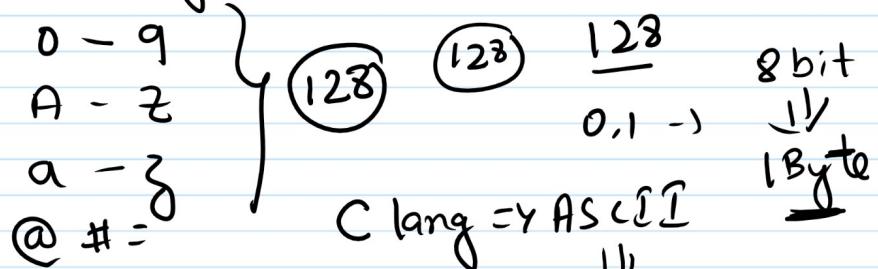
Q
 +
 -
 A
 B
 Z
 a
 s
 c
 @

0	00000000
1	00000001
2	— —
3	— —
4	— —
5	— —
6	— —
7	— —
8	— —
9	— —
A	— —
B	— —
Z	— —
a	— —
s	— —
c	— —
@	— —

ASCII by 128

A $\rightarrow 8 \text{ bit}$
 B $\rightarrow 8 \text{ bit} = 1 \text{ Byte}$

\Rightarrow ASCII = Binary Representation to 128 characters



I EEE \Rightarrow Research

\downarrow
 $65536 \Rightarrow$ character
 $128 + 65408 = \text{ASCII}$ 65536 \Rightarrow Binary rep

$8 \text{ bit} \rightarrow 1 \text{ Byte}$ 0000 0000 0000 0000
 $16 \text{ bit} \rightarrow 2 \text{ Bytes}$ 4 2 Bytes

$\Rightarrow 128 \rightarrow \text{ASCII} + 65408$

char	Dec	Binary	char	Dec
A	65	1000001	A	65
B	66	1000010	B	66
C	67	1000011	C	67
:	:	:		
a	97	1100001	a	97
b			b	
c			c	

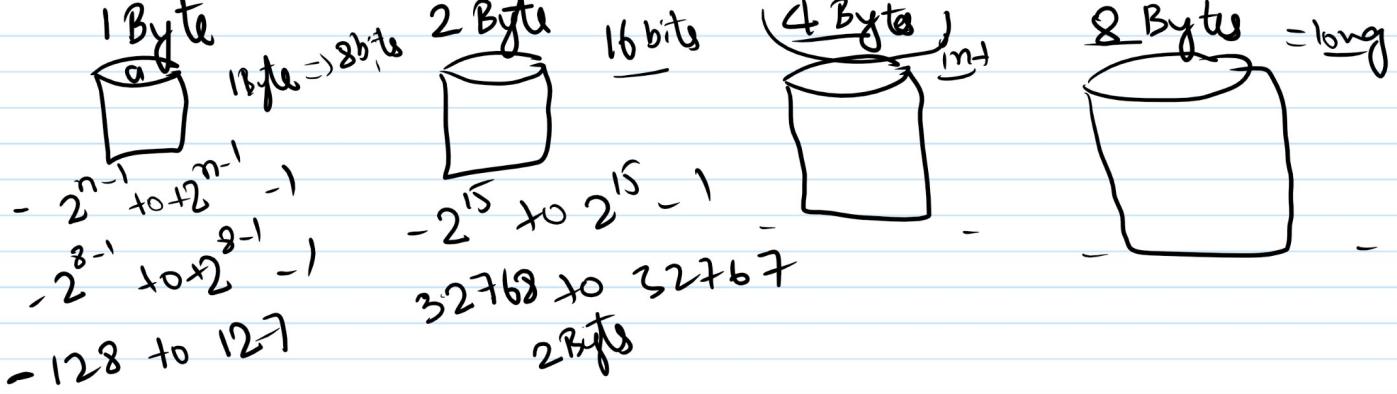
\Rightarrow To manage character type Data Java supports 'char' primitive Data type by 2 Bytes

char c = 'a'; \checkmark

char a = 'a'; \times

\Rightarrow Number, Integer + 45, 100, 45546
byte short int long

byte a = 45; short b = 45; int c = 45; long d = 45L;



byte a = 45;

(1Byte)

int n = 45;
- 4 byte

3Bytes

int)

1.1
1.2
1.3
1.4
5
6
7
8

byte a = 45;

byte b = 45.

a+b)

45 + 45;

int

90