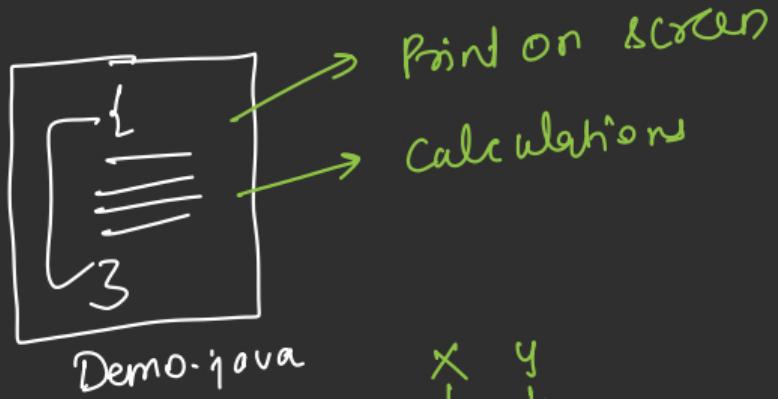
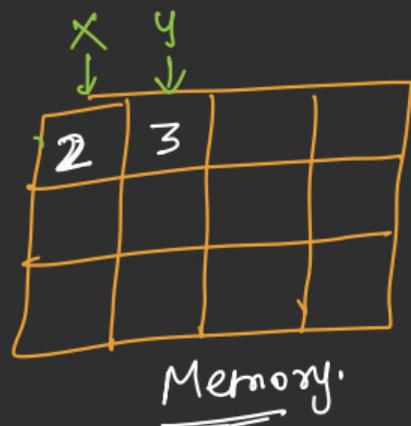
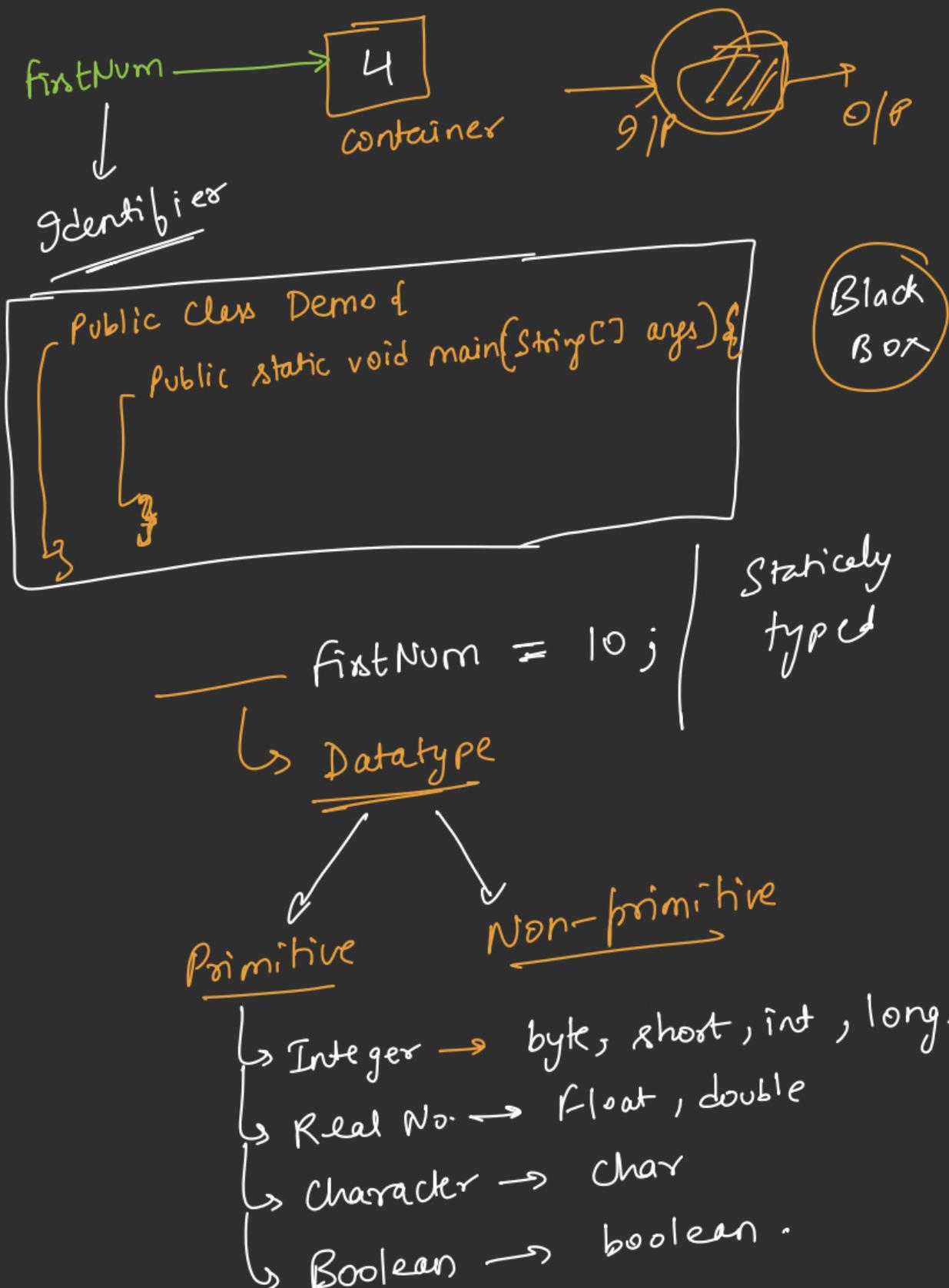


Variables

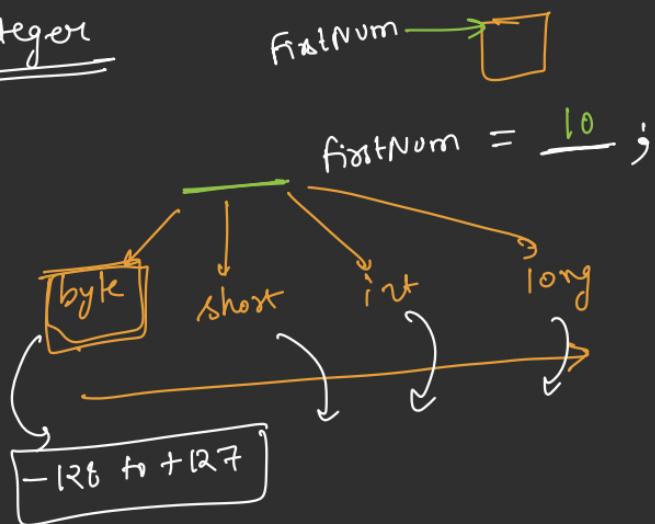


$$x + y = \\ (2) + 3 = ? (5)$$





Integer



$(4)_{10} \rightarrow$

$[0-9]$

$10, 11, 12, 13, \dots$

$(\underline{\quad})_{10}$ $\overline{1} \overline{0} \overline{0} \overline{0} \overline{0}$ ones
Hundreds tens

$[0-1] \rightarrow 0, 1, -$

$$\left\{ -\frac{1}{2^1}, \frac{1}{2^0} \right\} = 2$$

$$(\underline{\quad})_2 \overline{1} \overline{1} \overline{1} \overline{1} \overline{1} \text{ ones}$$

$$y = \frac{1}{2^2} \frac{0}{2^1} \frac{0}{2^0} = 3 = 4$$

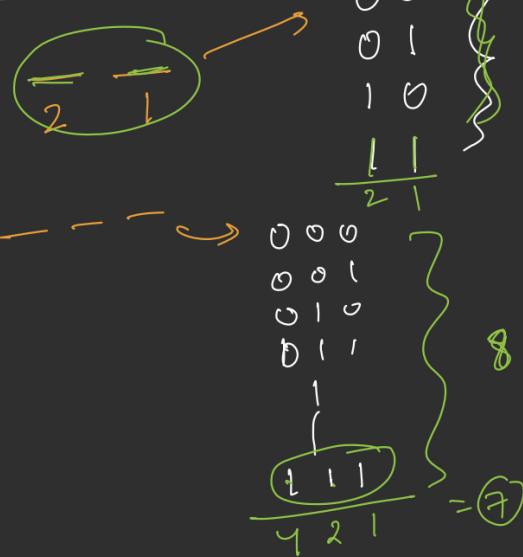
$$= \underline{\quad} \overline{0} \frac{0}{4} \frac{1}{2} \frac{0}{1}$$

Name	Width	Range
long	64	-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807
int	32	-2,147,483,648 to 2,147,483,647
short	16	-32,768 to 32,767
byte	8	-128 to 127

$$2^8 - 1 = 256 - 1 = 255$$

$$\underline{10} = \underline{0} \underline{0} \underline{0} \underline{0} \underline{0} \underline{1} \underline{0}$$

Every No. is signed in java



$$2^n - 1 = \begin{matrix} n \\ 1 \\ | \\ 1 \\ | \\ n-1 \end{matrix}$$

$$n = 2^m$$

$$= 2 = 2^2 = 4 - 3$$

$$= 3 = 2^3 = 8$$

$$= 2^3 - 1 = 8 - 1 = 7$$

$$\rightarrow \underline{128} \underline{64} \underline{32} \underline{16} \underline{8} \underline{4} \underline{2} \underline{1} = 255$$

Real Numbers



5.23
10.02

Floating point No.

float

double

num

5.23

$$num = \underline{5.23}$$

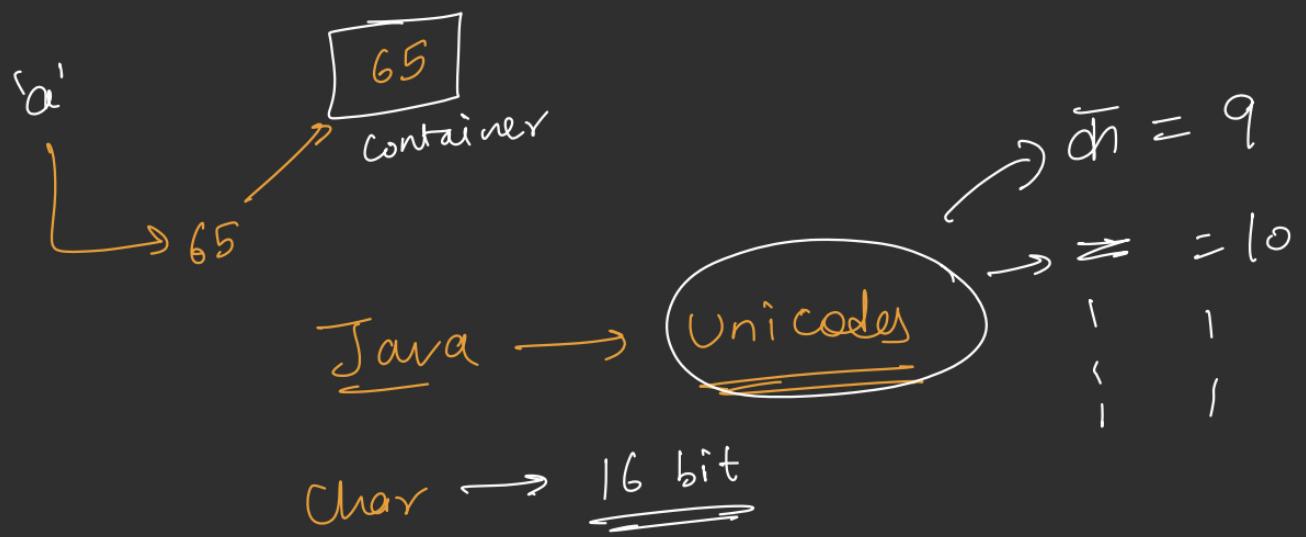
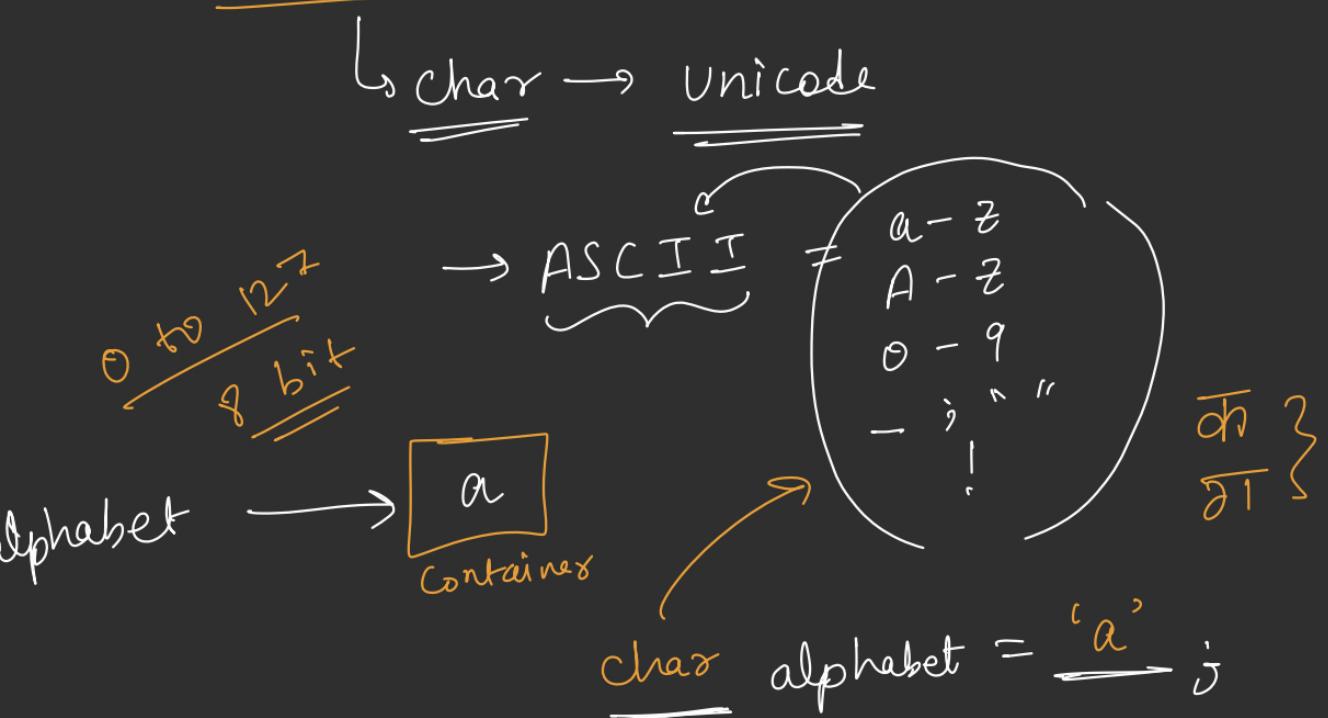
Name	Width in Bits	Approximate Range
double	64	4.9e-324 to 1.8e+308
float	32	1.4e-045 to 3.4e+038

float → single precision

double → Double precision

→ sin(), cos(), arg()

Characters



Boolean → boolean
true False

boolean b = false;

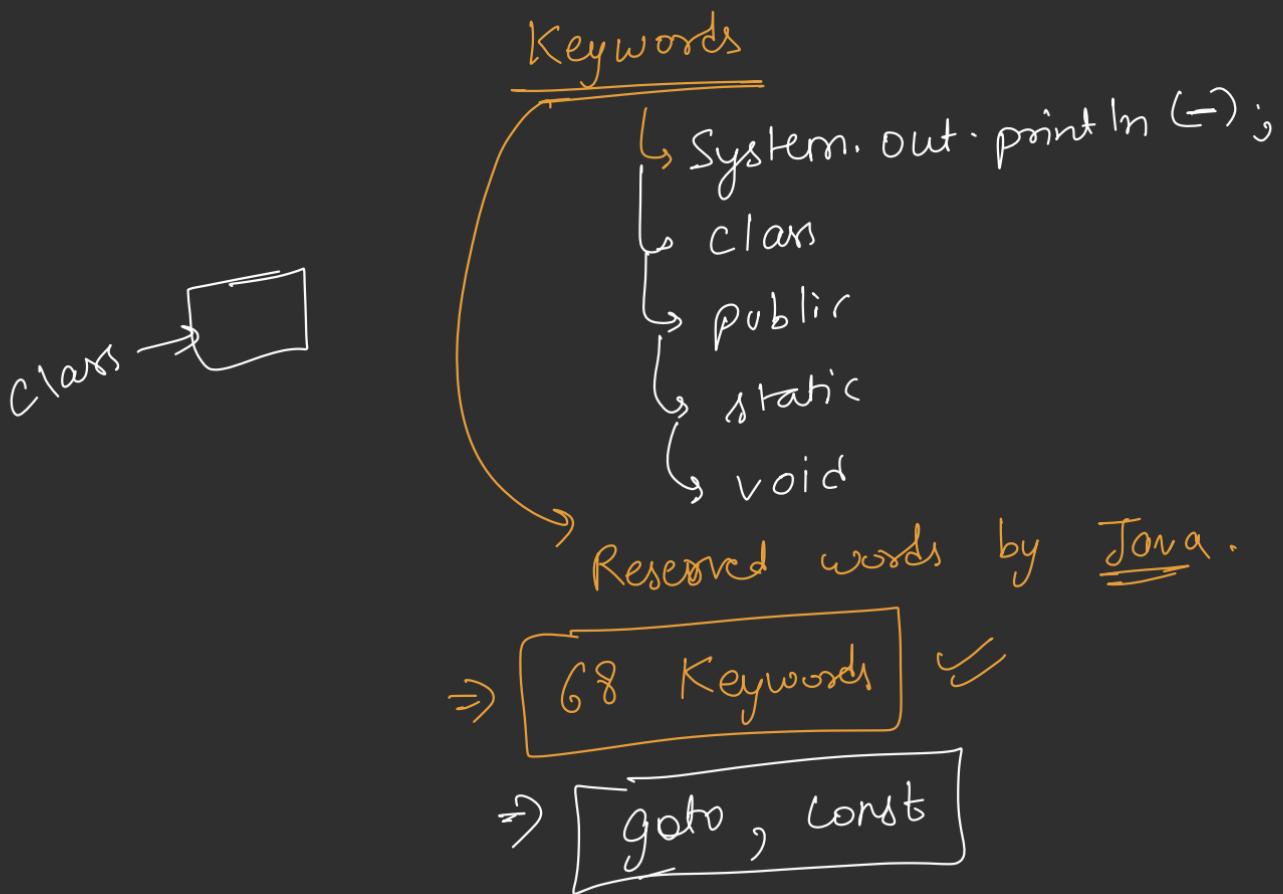
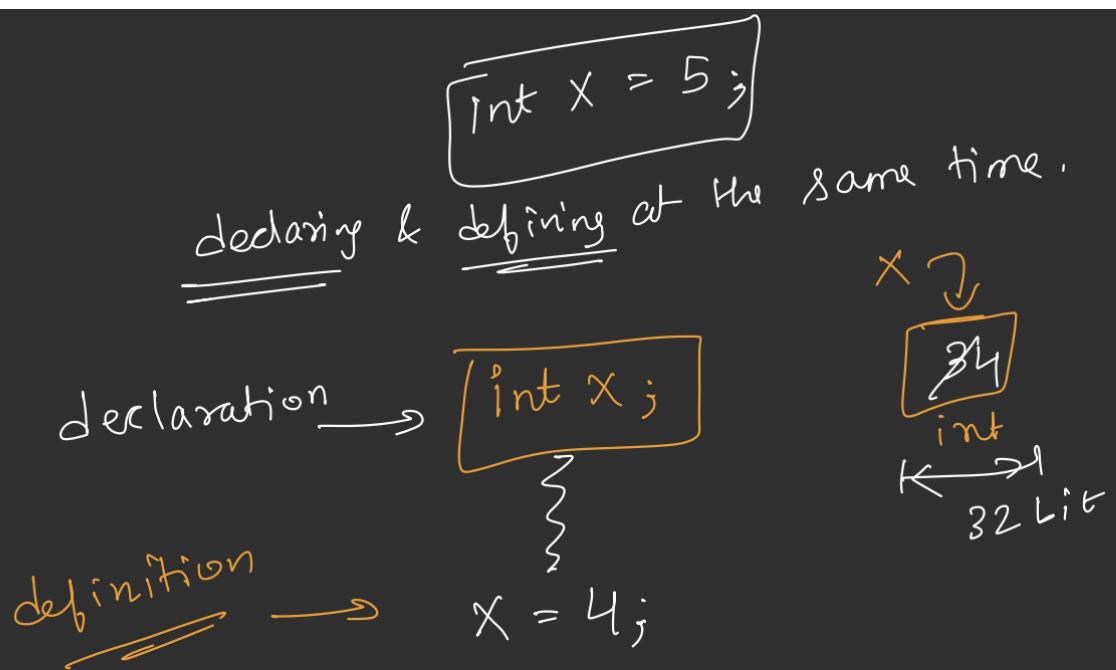


variable

literal

12
Container
b
Identifier

x → 5
Container



Comments

//-----

/*
 */

*/