

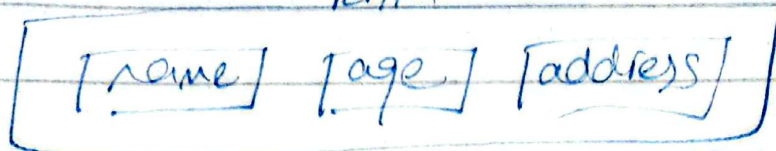
Variables, Datatypes & operators

① — Variables (vary-able) → can vary at times
name = "zeeshan";

age = 20 ;

address = 'ICRICK';

RAM



Datatypes:-

It is the type of the data to be stored in the variables. which are as:-

int	→	4 bytes or 32 bits	} Primitive Basic
float	→	4 bytes or 32 bits	
char	→	1 byte or 8 bits	
bool	→	1 byte or 8 bits	
double	→	8 bytes = 64 bits	

Memory Allocation Process:-

In computer the language is binary 0/1

0/1 represents the 1 bit

1 bit

8 bits = 1 byte

4 bytes memory = 8 bits + 8 bits + 8 bits + 8 bits
= 32 bits

can be checked using:-

size(variable)

→ In general numbers:

numbers → Binary

→ In case of strings/alphabets

Strings/alphabets → ASCII values → Binary



A, B, C, D, E, -----

65, 66, 67, 68, 69, -----

a, b, c, d, e, -----

96, 97, 98, 99, 100, -----

→ Type Casting

Converting data from one type to another
Type Casting



Conversion

(Implicit)

(Automatic, Compiler)

Small → Big

float 3.14 → double
4 bytes 8 bytes

Conversion would be easy



Casting

(Explicit)

(Manual)

Big → Small

double 100.99 → int
8 bytes 4 bytes

We will force the compiler

Operators

- ① Arithmetic $+, -, *, /, \%$
- ② Relational $<, >, <=, >=, ==, !=$
- ③ Logical OR, AND, NOT

① Arithmetic

Further explanation of /

$$\frac{12}{7} = 1 \rightarrow \frac{\text{int}}{\text{int}} = \text{int}$$

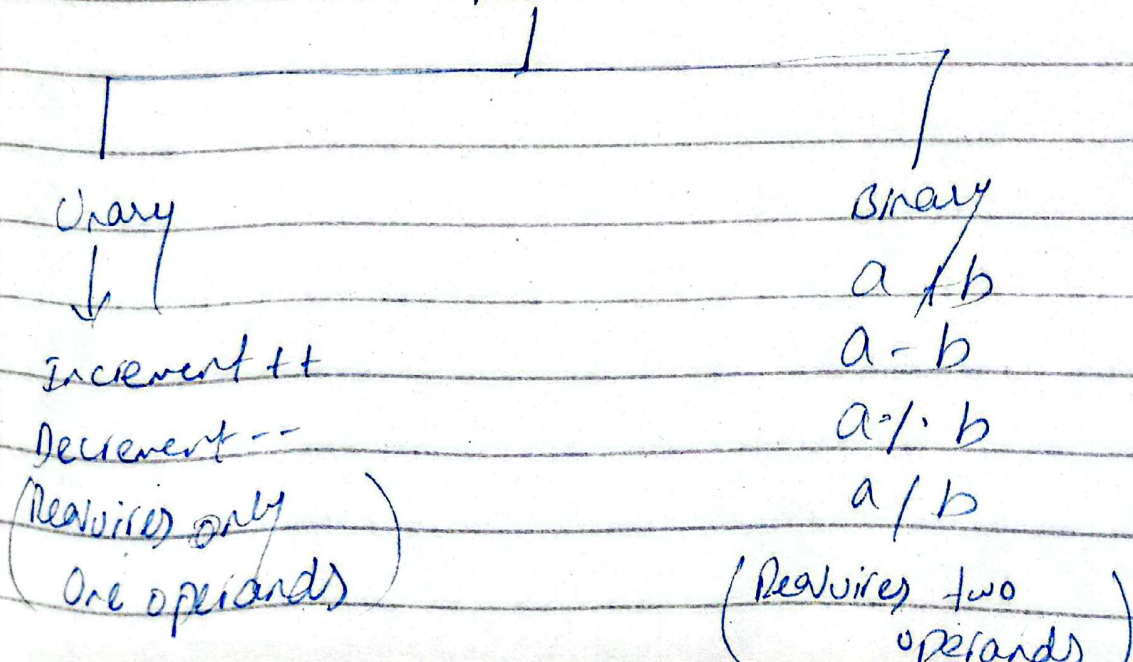
likewise $\frac{\text{float}}{\text{int}} = \text{float}$ or $\frac{\text{double}}{\text{int}} = \text{double}$

vice versa

Now $\text{int number} = 7 / (\text{double}) \text{number}_2$

Answer will be in int
because right side will give
double but double \rightarrow int
as the double is now to be
stored into int.

operators



Unary operators

Post

(Post++) Increment ++
(Post--) Decrement --

Pre

(++ Pre) ++ Increment
(-- Pre) -- Decrement