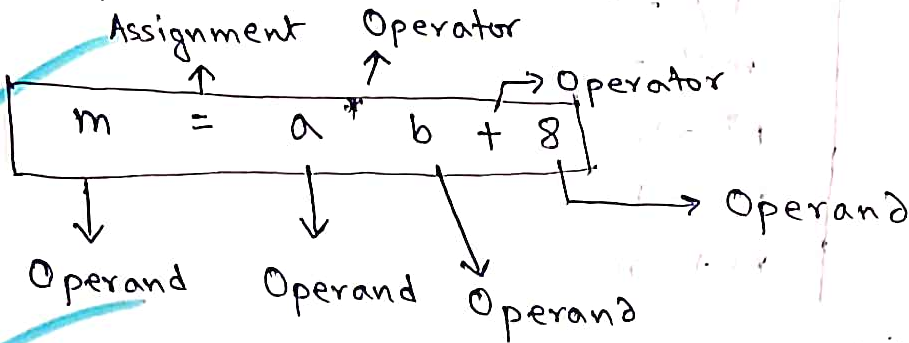


Unit IV : Operators in Java

- ① Operator is a symbol or sign used to specify an operation.
- ② The elements used in Operation on which the action is to be taken are known as operands.



- ③ Expression is a set of variables, constants and arithmetical operators.

Arithmetic Operators

Unary

- Unary plus (+)
if $a = 6$ then $+a$ is 6
- Unary minus (-)
if $a = 6$ then $-a$ is -6
- Unary increment (++) and Decrement (--)
(Will increase and decrease value by one respectively)

prefix

$++a,$
 $--a$

Binary

Operators that operate on two operands are said to be binary operators.

Ternary

Syntax

$v = (\text{test condition}) ?$

Exp 1 : Exp 2

Operate on three operands

Eg:-

$\text{max} = (a > b) ? a : b$

$\text{min} = (a < b) ? a : b$

Postfix

$a--,$
 $a++$

Shorthand Operations

The binary operators available in java language can also be written in short form. ~~for example~~

<u>Expression</u>	<u>Shorthand form</u>
$q = q / 8$	$q /= 8$
$m = m \% 3$	$m \% = 3$
$p = p * 5$	$p *= 5$
$a = a - b$	$a -= b$
$m = m + n$	$m += n$



Nested Ternary

$\text{max} = (a > b) ? (a > c) ? a : c : (b > c) ? b : c$

Test
condition

Expression 1

Expression 2

Logical Operators

Operators used between two or more conditions in a java statement.

→ Logical AND (&&)

returns true if all the conditions associated are true

→ Logical OR (||)

returns false if all the conditions associated are false else true.

→ Logical NOT (!)

It is used with a condition operand to reverse the result

AND OPERATOR

$a > b$	$a > c$	$(a > b) \ \&\& \ (a > c)$
False	False	False
False	True	False
True	False	False
True	True	True

NOT OPERATOR

$a > b$	$!(a > b)$
False	True
True	False

OR OPERATOR

$a > b$	$a > c$	$(a > b) \ \&\& \ (a > c)$
False	False	False
False	True	True
True	False	True
True	True	True

RELATIONAL OPERATOR

Symbol	Meaning	Syntax
$<$	Less than	$a < b$
$>$	Greater than	$a > b$
$< =$	Less than or equal to	$a < = b$
$> =$	Greater than or equal to	$a > = b$
$= =$	Equal to	$a == b$
$! =$	Not equal to	$a != b$