**Operators**

**Arithmetic Operator**

+ - Addition

* - Subtraction

\* - multiplication

/ - division ( quotient )

% - modulus ( remainder )

+= - Addition assignment

a+=b;

a=a+b;

-= - Subtraction assignment

a-=b

a=a-b

\*= - mulplication assignment

/= - division assignment

%= - modulus assignment

++ - increment

--

decrement

increment

* Post increment a++
* Pre increment ++a

Decrement

* Post decrement a—
* Pre decrement --a

Example :

**public** **class** ArithmeticOperator2 {

**public** **static** **void** main(String[] args) {

// **TODO** Auto-generated method stub

// increment operator

/\* int a=5,b=7;

int c=a++; // post increment

int d=++b; // pre increment

System.out.println("value of c is : "+c);

System.out.println("value of d is : "+d); \*/

// decrement operator

**int** a=8,b=11;

**int** c=a--;

**int** d=--b;

System.***out***.println("value of c is : "+c);

System.***out***.println("value of d is : "+d);

}

}

**Relational operator :**

Relational operator determines the relationship between two operands,

< - less then

* - greater then

<= - less then equal to

>= - greater then equal to

!= - not equal to

== - equal to

Relational operator mostly used in condition or expression, outcome of the condition will be a Boolean value (true/false). This condition mostly used in the if statement and loop statement.

int a=10, b=10

a<b false

a>b false

a<=b true

a>=b true

a!=b false

a==b true

**Assignment Operator :**

**= sign is a assignment operator**

**int a=5;**

**ternary operator or conditional operator or three way operator**

**?:**

**Syntax**

**Expression1?expression2:expression3**

**int a=10,b=20;**

**int c=(a>b)?5:4;**

**public class ternaryOperator {**

**public static void main(String[] args) {**

**// TODO Auto-generated method stub**

**/\* int a=10,b=20;**

**int c=(a>b)?5:4;**

**System.out.println("the value of c is : "+c); \*/**

**int a=20,b=30;**

**char d=(a<b)?'r':'e';**

**System.*out*.println("the character value is : "+d);**

**}**

**}**

**Boolean logical Operator :**

Boolean logical operator works only on Boolean operand, it compare two Boolean operand and result will be a boolean value

& logical AND

| logical OR

! logical Unary NOT

A B A&B A|B !A

true false false true false

false true false true true

true true true true false

false false false false true

**Example :**

**public class BooleanLogicalOperator {**

**public static void main(String[] args) {**

**// TODO Auto-generated method stub**

**int a=5,b=10,c=20;**

**boolean flag=true;**

**// boolean logical AND**

**/\* if(a<b & c<a) {**

**System.out.println("first statement");**

**}**

**System.out.println("second statement");**

**if(a<b & a<c) {**

**System.out.println("third statement");**

**}**

**System.out.println("fourth statement"); \*/**

**// boolean Logical OR**

**/\* if(a<b | c<a) {**

**System.out.println("fifth statement");**

**}**

**System.out.println("sixth statment");**

**if(a>b | c<a) {**

**System.out.println("seventh statement");**

**}**

**System.out.println("eighth statement"); \*/**

**if(!flag) {**

**System.*out*.println("nineth statement");**

**}**

**System.*out*.println("tenth statement");**

**}**

**}**

**Short circuit Operator**

&& Short circuit AND - looks only for false

|| Short circuit OR - looks only for true

A || B Result

( ) ( )

True false true

False true true

True true true

False false false

**Example :**

**public class ShortcircuitOperator {**

**public static void main(String[] args) {**

**// TODO Auto-generated method stub**

**int a=3, b=5;**

**// shortcircuit AND**

**/\* if(a++>b++ && a++<b++) {**

**System.out.println("value of a1 : "+a +"value of b1 : "+b);**

**}**

**System.out.println("value of a2 : "+a +"value of b2 : "+b); \*/**

**// Shortcircuit OR**

**if(a++>b++ || a++<b++) {**

**System.*out*.println("value of a1 : "+a +"value of b1 : "+b);**

**}**

**System.*out*.println("value of a2 : "+a +"value of b2 : "+b);**

**}**

**}**