Core Java 8

Lesson 04 : Operators

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Lesson Objectives

After completing this lesson, participants will be able to:

- Understand Basic Java Language constructs like:
  - Java Operators
  - Assignment Operators
  - Relational Operators
  - instanceof Comparison
  - Arithmetic Operators
  - Conditional Operator
  - Logical Operators

Operators in Java

Operators can be divided into following groups:

- Arithmetic
- Assignment
- Conditional
- Relational
- Logical
- *instanceof* Comparison

Assignment Operators

Assignment operator is used to assign value to a variable.

This is the operator you are already familiar with. This is denoted by the symbol “=”. This is used to assign the value to a variable.

Example

int value = 10;

Shorthand Assignment Operators :

+= operator : var1=var1+var2 → var1+=var2;

-= operator : var1= var1-var2 → var1-+var2;

*= operator : var1=var1*var2 → var1*=var2;

/= operator : var1=var1/var2 → var1/=var2;

%= operator : var1= var%var2 → var1%=var2;

Arithmetic Operators

Operator	Result
+	Addition
-	Subtraction (or unary) operator
*	Multiplication
/	Division
%	Modulus
++	Increment
+=	Addition assignment
-=	Subtraction assignment
*=	Multiplication assignment
/=	Division assignment
%=	Modulus assignment
--	Decrement

Relational Operators

Determine the relationship that one operand has to another.

- Ordering and equality.

Operator	Result
==	Equal to
!=	Not equal to
>	Greater than
<	Less than
>=	Greater than or equal to
<=	Less than or equal to

Logical Operators

Operator	Result
&&	Logical AND
||	Logical OR
^	Logical XOR
!	Logical NOT
==	Equal to
?:	Ternary if-then-else

Conditional Operator

This operator is used to make conditional expressions.

Syntax :

Expression1 ? Expression 2 : expression 3 ;

Here expression1 will be evaluated first. IF we get “true” then the result of expression2 will be overall result of conditional expression .

If we get “false” then expression3 will be evaluated and the result of expression3 will be overall result of conditional expression .

```
int a=10;
int b= 20;
int value1 = (a<b) ? a : b;
int value2 = (a>b) ? a : b;
```

instanceof Operator

The instanceof operator compares an object to a specified type

Checks whether an object is:

- An instance of a class.
- An instance of a subclass.
- An instance of a class that implements a particular interface.
- Example : The following returns true:

```
new String("Hello") instanceof String;
```

Summary

In this lesson you have learnt:

- Assignment Operators
- Relational Operators
- instanceof Comparison
- Arithmetic Operators
- Conditional Operator
- Logical Operators

Review Question

Question 1: What is the output of below expression.

6-2+10%4+7

a.10

b.12

c.13

d.14

Question 2: Which of the Following Operator does not exist in java :

1. >>
2. %=
3. >>>
4. <<