

## Java Programming

### Control statement

In java, Control statement are used to control the flow of execution in a program. They determine which statement are executed under different condition. There are three main types:-

#### 1) Conditional statement:-

- If statement:- Execution a block of code if a given condition is true.

- If-Else statement:- Executes one block of code if the condition is true and another block if it's false.

- Switch Statement :- select one of several code blocks to execute based on the value of an Expression.

## 2, Looping statements:-

- For loop:- Repeats a block of code for a specific number of times.
- while loop:- Repeats a block of code while a given condition is true.
- do-while loop:- Repeats a block of code at least once and then continues while a condition is true.



## Operator :-

In java, the "operator" refers to special symbol & characters that are used to perform operation. Can include mathematical calculation, logical comparisons, assignments, and more. java operators are classified into several categories:

i) Arithmetic operation :- These are used to perform basic arithmetic operation like addition, subtraction, multiplication, division and modulo.

Assignment operation :- These are used to assign value to variables. The common assignment operator is "=" assignment like '+=', '-=', '\*=', etc.

## 4) Logical operators:-

operators	Name	Example
&	logical and	$x \& 5 \& 10$
	logical or	$x \& 5    x \& 4$
!	logical not	$! (x \& 5 \& 10)$

## 5) Bitwise operators:-

operators	Name	Example
&	Bitwise AND	$x \& y$
	Bitwise OR	$x   y$
^	Bitwise inclusive	$x ^ y$
~	complement	$x \sim y$
<<	left shift	$x \ll y$
>>	right shift	$x \gg y$

## 6) Increment / Decrement operator:-

operator	Name	Example
++	Post increment	$x++$
	Pre increment	$++x$
--	Post decrement	$x--$
	Pre decrement	$--x$



iii) Comparison operators:-

These operators are used to compare value and return boolean results.

Example: '=', '!=', '>', '<', '>=', and '<='.

iv) Logical operation:- Logical operation perform logical operation on boolean values.

operators are '&&' (AND), '||' (OR), and '!' (NOT)