

Pemrograman Berbasis Obyek

Operator dan Assignment

Oleh Politeknik Elektronika Negeri Surabaya
2017



Politeknik Elektronika Negeri Surabaya
Departemen Teknik Informatika dan Komputer

1

Konten

- Assignment Operator
- Arithmetic operator
- Unary operator
- Equality and Relational operator
- Conditional operator
- Shift operator: <<, >>, dan >>>
- Comparison operator
- Bitwise operator: &, ^, dan |.
- Short – Circuit operator
- Operator lain : new, instanceof
- Urutan pemrosesan



Politeknik Elektronika Negeri Surabaya
Departemen Teknik Informatika & Komputer

2

Assignment Operator

- Merupakan operator yang paling sering digunakan
- Gunanya adalah
 “ **assigns** the value on its **right** to the operand on its **left**”
- Contoh:
 - `int speed = 0;`
 - `int gear = 1;`
 - `int age = 19;`



The Unary Operators

- Operator yang hanya membutuhkan satu operan.

operator	Contoh	Keterangan
+	<code>int result = +100;</code>	unaryMenandakan nilai positif
-	<code>Int result = -50;</code>	Menandakan nilai negatif
++	result++; atau ++result;	Increment, increment value by 1
--	result--; atau --result;	Decrement, decrement value by 1
!	<code>boolean success = true;</code> <code>if(!success){}</code>	Logical complement, invert the value of a boolean



Arithmetic operators

- Operator yang digunakan untuk perhitungan arithmetic

Operator	Contoh	Keterangan
+	result = 5 + 5;	Additive operator (also used for String concatenation)
-	result = 10 - 5;	Subtraction operator
*	result = 4 * 4;	Multiplication operator
/	result = 10 / 2;	Division operator
%	result = 5 % 2;	Remainder operator



Equality and Relational operator

- Operator equality dan relational menghasilkan output boolean

Operator	Keterangan	Contoh
==	equal to	int value1 = 10; value2 = 15; If(value1 == value2)
!=	not equal to	If(value1 != value2)
>	greater than	If(value1 > value2)
>=	greater than or equal to	If(value1 >= value2)
<	less than	If(value1 < value2)
<=	less than or equal to	If(value1 <= value2)



Conditional operator

Operator	Keterangan	Contoh
&&	Conditional AND "shot-circuiting" second operand/condition is evaluated only if needed	if(condition1 && condition2)
	Conditional OR "shot-circuiting" second operand/condition is evaluated only if needed	if(condition1 condition2)
?:	Ternary operator, pengganti statement if-else-then	If(someCondition) result = value1; else result = value2; Dapat diubah dengan ? : result = someCondition?value1:value2



Bitwise and Bit Shift Operator

Operator	Keterangan
~	Unary bitwise complement
<<	Signed left shift
>>	Signed right shift
>>>	Unsigned right shift
&	Bitwise AND
	Bitwise inclusive OR
^	Bitwise exclusive OR



Bitwise and Bit Shift operator

	A	~A	A << 2	A >> 2	A >>> 2
	0011 1100	1100 0011	1111 0000	0000 1111	0000 1111
Nilai	60	195	240	15	15



Bitwise and Bit Shift operator

A	B	A & B	A && B	A ^ B	A B	A B
0	0	0	0	0	0	0
0	1	0	0	1	1	1
1	0	0	0	1	1	1
1	1	1	1	0	1	1



Logical and Bitwise

	& dan	&& dan
operan	numeric dan boolean	boolean
evaluate	Evaluate left and right operan	Right operan is evaluate only if needed
...		



Tugas

- Jelaskan perbedaan operator "&" dan "&&" !
- Jelaskan perbedaan operator "|" dan "||" !
- Buatlah ringkasan mengenai operator dalam java!



1. Oracle Java Documentation, The Java™ Tutorials, <https://docs.oracle.com/javase/tutorial/>, Copyright © 1995, Oracle 2015.
2. Tita Karlita, Yuliana Setrowati, Rizky Yuniar Hakkun, Pemrograman Berorientasi Obyek, PENS-2012
3. Sun Java Programming, Sun Educational Services, Student Guide, Sun Microsystems, 2001.
4. John R. Hubbard, Programming With Java, McGraw-Hill, ISBN: 0-07-142040-1, 2004.
5. Patrick Niemeyer, Jonathan Knudsen, Learning Java, O'reilly, CA, ISBN: 1565927184, 2000.
6. Philip Heller, Simon Roberts, Complete Java 2 Certification Study Guide, Third Edition, Sybex, San Francisco, London, ISBN: 0-7821-4419-5, 2002.
7. Herbert Schildt, The Complete Reference, Java™ Seventh Edition, Mc Graw Hill, Osborne, ISBN: 978-0-07-163177-8, 2007