

Algoritma dan Pemrograman

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04

Operators Arithmetic

What is operators?

- Operators are special symbols that perform specific operations on one, two, or three *operands*, and then return a result.

Assignment, Arithmetic, and Unary 1/3

- One of the most common operators that you'll encounter is the simple assignment operator "`=`".
 - `int cadence = 0;`
 - `int speed = 0;`
 - `int gear = 1;`

Assignment, Arithmetic, and Unary 2/3

- The Java programming language provides operators that perform addition, subtraction, multiplication, and division. There's a good chance you'll recognize them by their counterparts in basic mathematics. The only symbol that might look new to you is "%", which divides one operand by another and returns the remainder as its result.

Operators	functions
+	additive operator (also used for String concatenation)
-	subtraction operator
*	multiplication operator
/	division operator
%	remainder operator

Assignment, Arithmetic, and Unary 1/3

- The unary operators require only one operand; they perform various operations such as incrementing/decrementing a value by one, negating an expression, or inverting the value of a boolean.

Operators	Functions
+	Unary plus operator; indicates positive value (numbers are positive without this, however)
-	Unary minus operator; negates an expression
++	Increment operator; increments a value by 1
--	Decrement operator; decrements a value by 1
!	Logical complement operator; inverts the value of a boolean

```
package Package02;

public class ArithmeticDemo {

    public static void main (String[] args){

        // result is now 3
        int result = 1 + 2;
        System.out.println(result);

        // result is now 2
        result = result - 1;
        System.out.println(result);

        // result is now 4
        result = result * 2;
        System.out.println(result);

        // result is now 2
        result = result / 2;
        System.out.println(result);

        // result is now 10
        result = result + 8;
        // result is now 3
        result = result % 7;
        System.out.println(result);
    }
}
```

ConcatDemo.java

```
package Package02;

public class ConcatDemo {
    public static void main(String[] args){
        String firstString = "This is";
        String secondString = " a concatenated string.";

        String thirdString = firstString + secondString;

        System.out.println(firstString);
        System.out.println(secondString);
        System.out.println(thirdString);
    }
}
```

Problems Javadoc Declaration Console

<terminated> ConcatDemo [Java Application] C:\Program Files (x86)\Java\jre7\bin\javaw.exe (07/10/2012 11:46:14 PM)

```
This is
 a concatenated string.
This is a concatenated string.
```

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Arithmetic

10/10/2012 22:12:39

```
PrePostDemo.java  UnaryDemo.java ✕
package Package02;

public class UnaryDemo {

    public static void main(String[] args) {
        // result is now 1
        int result = +1;
        System.out.println(result);
        // result is now 0
        result--;
        System.out.println(result);
        // result is now 1
        result++;
        System.out.println(result);
        // result is now -1
        result = -result;
        System.out.println(result);
        boolean success = false;
        // false
        System.out.println(success);
        // true
        System.out.println(!success);
    }
}

Problems  @ Javadoc  Declaration  Console ✕
<terminated> UnaryDemo [Java Application] C:\Program Files (x86)\Jav
1
0
1
-1
false
true
```