Tutorial 2: *Working with Operators and Expressions*

Unary Operators

Unary operators work on only one operand, in contrast to binary operators like + - * / % that work with two operands in an expression. Unary operators make code more compact and efficient. Here are the *unary operators*:

Unary Operators		
Operator Name	**Operator**	**Description**
Increment	++	Increases the item's value by 1
Decrement	--	Decreases the item's value by 1
Negation	-	Changes the sign of the item's value

Increment Operator Examples

x++; has the same effect as the statement x = x + 1;

The placement of the operator before or after the operand impacts the value ultimately assigned by JavaScript:

- If the increment ++ operator is placed after the operator the operand is evaluated after is incremented.

  For example, if the variable x has an initial value of 5 then the statement

  y = x++;

  assigns a value of 5 to y and 6 to x. This is because the statement combines two actions. It first assigns y the value of x using

  y = x;

  setting the value of y to 5. The expression then increments the value of x using

  x = x + 1;

  increasing the x value to 6. The end result is that y is equal to 5 and x is equal to 6.

- If the increment ++ operator is placed before the operand the increment happens before the operand is evaluated.

  For example, if the variable x has an initial value of 5 then the statement

  y = ++x;

  assigns a value of 6 to y and 6 to x. This is because the statement combines two actions.

  It first increments the value of x using

  x = x + 1;

The expression then assigns y the value of x using

y = x;

setting the y value to 6. The end result is that both x and y are equal to 6.

Decrement Operator Examples

x--; has the same effect as the statement x = x - 1;

The placement of the operator before or after the operand impacts the value ultimately assigned by JavaScript:

- If the decrement -- operator is placed after the operator the operand is evaluated after is incremented.

  For example, if the variable x has an initial value of 5 then the statement

  y = x--;

  assigns a value of 5 to y and 4 to x. This is because the statement combines two actions. It first assigns y the value of x using

  y = x;

  setting the value of y to 5. The expression then decrements the value of x using

  x = x - 1;

  decreasing the x value to 4. The end result is that y is equal to 5 and x is equal to 4.

- If the decrement -- operator is placed before the operand the increment happens before the operand is evaluated.

  For example, if the variable x has an initial value of 5 then the statement

  y = --x;

  assigns a value of 4 to y and 4 to x. This is because the statement combines two actions.

  It first decrements the value of x using

  x = x - 1;

  The expression then assigns y the value of x using

  y = x;

  setting the y value to 4. The end result is that both x and y are equal to 4.

Negation Operator Examples

-x; has the same effect as the statement x = x * -1;