**Assignment operator.**

(=)

The assignment operator assigns a value to a variable.

|  |  |  |
| --- | --- | --- |
|  | x = 5; |  |

This statement assigns the integer value 5 to the variable x. The assignment operation always takes place from right to left, and never the other way around:

|  |  |  |
| --- | --- | --- |
|  | x = y; |  |

This statement assigns to variable x the value contained in variable y. The value of x at the moment this statement is executed is lost and replaced by the value of y.

Consider also that we are only assigning the value of y to x at the moment of the assignment operation. Therefore, if y changes at a later moment, it will not affect the new value taken by x.

For example, let's have a look at the following code - I have included the evolution of the content stored in the variables as comments:

|  |  |  |  |
| --- | --- | --- | --- |
| 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 | // assignment operator  #include <iostream>  using namespace std;  int main ()  {  int a, b; // a:?, b:?  a = 10; // a:10, b:?  b = 4; // a:10, b:4  a = b; // a:4, b:4  b = 7; // a:4, b:7  cout << "a:";  cout << a;  cout << " b:";  cout << b;  } | a:4 b:7 | [Edit & Run](https://cplusplus.com/doc/tutorial/operators/) |

This program prints on screen the final values of a and b (4 and 7, respectively). Notice how a was not affected by the final modification of b, even though we declared a = b earlier.

Assignment operations are expressions that can be evaluated. That means that the assignment itself has a value, and -for fundamental types- this value is the one assigned in the operation. For example:

|  |  |  |
| --- | --- | --- |
|  | y = 2 + (x = 5); |  |

In this expression, y is assigned the result of adding 2 and the value of another assignment expression (which has itself a value of 5). It is roughly equivalent to:

|  |  |  |
| --- | --- | --- |
| 1 2 | x = 5;  y = 2 + x; |  |

With the final result of assigning 7 to y.

The following expression is also valid in C++:

|  |  |  |
| --- | --- | --- |
|  | x = y = z = 5; |  |

It assigns 5 to the all three variables: x, y and z; always from right-to-left.