How to execute the assignment statement
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There are two different issues with a statement:

1. Is it syntactically correct, i.e. will it compile?
2. How is it executed during execution of a program?

When describing how to execute a statement, we automatically assume that is syntactically correct —otherwise, how could it be executed? We focus on only one thing: how to execute it.

For example, since we are talking about executing the Java the assignment statement,

<variable> =   <expression> ;

we assume that the <variable> was already declared and that the type of the <expression> is appropriate for the type of the <variable>.

Executing the assignment statement
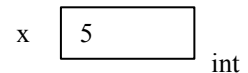
Here is how the assignment statement is executed:

Evaluate the <expression> and
Store its value in the <variable>.

That's all there is to it!

Example execution of an assignment statement

Now suppose we have a variable x. Note that this is Java and not Python, so box x contains the value and not a pointer to the value.

$$x \quad \boxed{5}$$
int

To execute the assignment statement

x= x + 2;

evaluate the expression x + 2, resulting in the value 7, and store this value in box x. Thus, cross out the value 5 and store the value 7 in the box. Since a variable can hold only one value, the old value is removed.

Don't make this mistake

It is wrong to draw another box named x with the value 7 in it. There is only one box x, and its value is changed. Drawing another box will lead to misconceptions about how the assignment statement is executed and may result in your making errors when trying to figure out how to write or debug a particular program.