

# JAVA FUNDAMENTALS COURSE

## LOOPS IN JAVA



By: Ing. Ubaldo Acosta



**JAVA FUNDAMENTALS COURSE**

[www.globalmentoring.com.mx](http://www.globalmentoring.com.mx)

Hello, Ubaldo Acosta greets you again. I hope you're ready to start with this lesson.

We are going to study the subject of loops in Java.

Are you ready? Come on!

# LOOPS IN JAVA

¿REPEAT?



¿HOW  
MANY  
TIMES?

**JAVA FUNDAMENTALS COURSE**

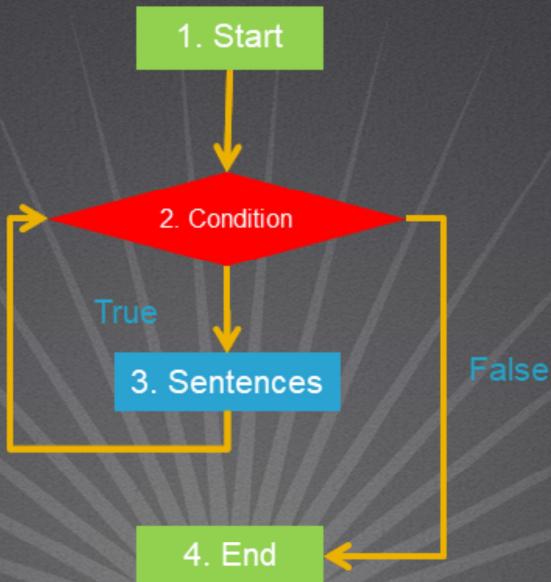
[www.globalmentoring.com.mx](http://www.globalmentoring.com.mx)

Loops will allow us to repeat a set of instructions a certain number of times. This will depend on a condition, which we must control in order to stop the loop at some point, otherwise we could end up executing an infinite loop, and therefore block the execution of the device that executes the loop.

The condition to be fulfilled can be determined by the user or by the program, according to the logic that has been established.

Let's see below in the elements of a loop.

# LOOPS



## JAVA FUNDAMENTALS COURSE

[www.globalmentoring.com.mx](http://www.globalmentoring.com.mx)

As we have said, a loop can be defined as a structure that allows us to repeat or iterate a set of instructions or sentences. As we can see in the figure we have the following elements:

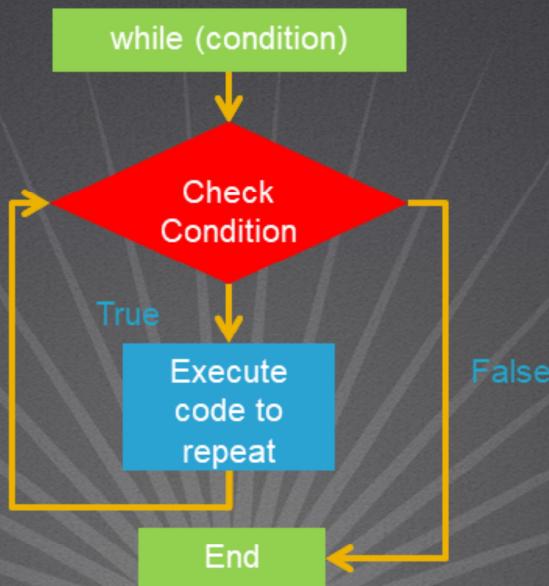
- 1) Start of the cycle,
- 2) Condition to be fulfilled, may be true or false.
- 3) The sentence or sentences to be executed.
- 4) The evaluation of the condition again (2). And the loop is repeated if the condition was true again, otherwise it ends.

In addition, we can observe the following characteristics:

- a) The set of instructions must be finite.
- b) The number of times this set of instructions is repeated must also be finite. In some cases this number of times will depend on an explicit condition and in others cases will depend on an implicit condition. A condition is explicit when it depends only the execution of the program itself, without the participation of the user. Likewise, a condition is implicit when it depends only on the will of the user and therefore the number of iterations or repetitions of the cycle could vary depending on the final decision of the user.
- c) Within a cycle, you can go to any sentence, including other cycles (this is known as nested cycles)

There are different types of loops in Java, such as: while, do-while and for. We will see each them in more detail.

# FLOW CHART WHILE LOOP



## JAVA FUNDAMENTALS COURSE

[www.globalmentoring.com.mx](http://www.globalmentoring.com.mx)

The while loop in Java is the most fundamental to perform iterations. Basically, as we can see in the figure, a block of code is executed as many times as the condition being evaluated is true.

Once this condition is false, then the iteration is completed.

The expression to evaluate can be any value of type boolean.

## WHILE LOOP

**boolean**  
type

Don't have a  
semicolon

```
while (condition) {  
    //Body of the loop while  
    //Sentences to repeat  
  
} //End of the while loop and the program continues
```

The sentences  
do have a  
semicolon

### JAVA FUNDAMENTALS COURSE

[www.globalmentoring.com.mx](http://www.globalmentoring.com.mx)

In Java, if we are going to use the while loop and repeat only one line of code, it is not mandatory to use curly brackets. Ej:

```
while (condition)  
    // Single sentence
```

But if the while loop is going to execute more than one code statement, then it must carry keys. Ex:

```
while (condition) {  
    // Sentence 1  
    // Setence 2  
    //etc  
}
```

Because the condition of the while loop is evaluated at startup, the code block to be repeated will not be executed even once if this condition is not met. For this there is the do-while loop that we will see next.

In the exercises that we are going to develop later on, we will implement the while cycle.