

Loops in Java

Java has three standard looping constructs: *while*, *do-while*, *for*.

As long as condition is true, you do everything inside the loop *block*. The loop block is bounded by a pair of curly braces, so whatever you want to repeat needs to be inside that block.

The key to a loop is the *conditional test*. In java a conditional test is an expression that results in a *Boolean* value --- in other words, something that is either **true** or **false**.

1. For loop

Regular (non-enhanced) for loops

For loop is another entry control loop in the *for* loop also the body of loop statements are execute repeatedly until the text condition is **true**.

Syntax:

for (initialization; boolean test; iteration expression)

```
{  
  
    // the code to repeat goes here (the body)  
  
}
```

Example:

```
for (int i=0; i<100; i++)  
{  
    // the code to repeat goes here (the body)  
}
```

i=0 (initialization)

i<100 (boolean test)

i++ (iteration expression / post-increment operator)

What it means: “Repeat 100 times.”

How the compiler sees it:

- ❖ Create a variable *i* and set it to 0.
- ❖ Repeat while *i* is less than 100.
- ❖ At the end of each loop iteration, add 1 to *i*.

Part one: *initialization*

Use this part to declare and initialize a variable to use within the loop body. You'll most often use this variable as a counter. You can actually initialize more than one variable here.

Part Two: *boolean test*

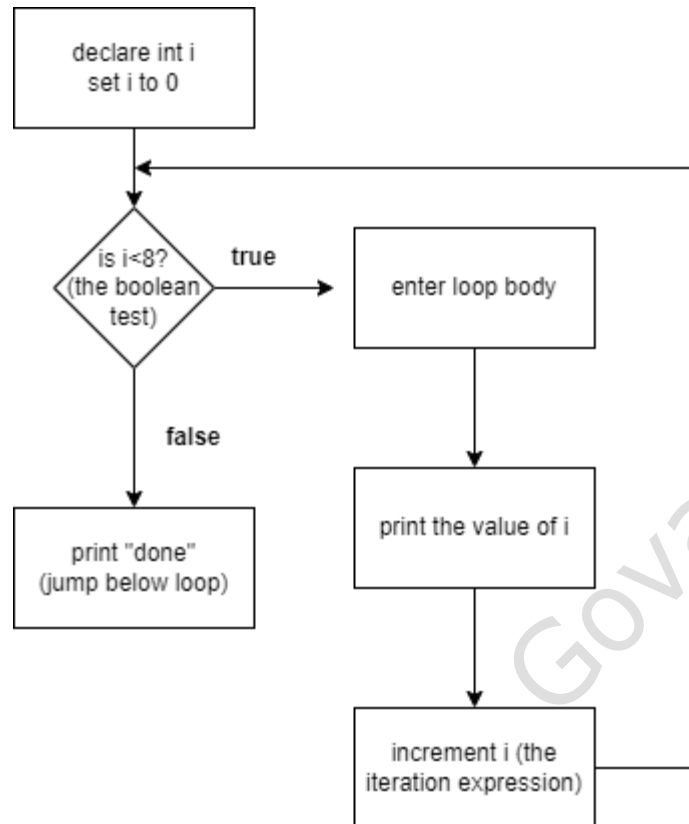
This is where the conditional test goes. Whatever's in there, it must resolve to a boolean value (you know, *true* or *false*).

Part Three: *iteration expression*

In this part, one or more things you want to happen with each trip through the loop. Keep in mind that this stuff happens at the end of each loop.

Trips through a loop (Example)

```
for (int i=0; i<8; i++)  
{  
    System.out.println(i);  
}  
System.out.println("Done");
```



Output:

```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19043.1348]
(c) Microsoft Corporation. All rights reserved.

D:\MyJava>javac For.java

D:\MyJava>java For
0
1
2
3
4
5
6
7
Done

D:\MyJava>
```