

## Boolean expressions

Java's boolean expressions are very similar to those of Python, but there are some differences.

- "True" and "false" values are true and false.
- Comparators ==, !=, >, <, <= and >= are the same.
- "Not", "and" and "or" operators are !, && and ||, respectively.

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## Java Syntax Details

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## Conditionals

In Java, if statements have the form:

```
if (<condition>) {  
    <statements>  
}
```

- <condition> is a boolean expression.
- <statements> can be any sequence of statements.

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## Boolean expressions

It's a good idea to enclose boolean expressions in parentheses to help disambiguate them:

**Example.**

```
while ((i >= 1) && (i <= n))  
    i = i + 1;
```

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## Braces are Optional but...

The braces here are optional if you have only one statement:

```
if (<condition>)  
<one statement>
```

Indentation is for readdability only. So what will this print?

```
if (5 == 4)  
    System.out.println("One");  
    System.out.println("Two");  
    System.out.println("Three");
```

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## Conditionals

In Java, if-else statements have the form:

```
if (<condition>) {  
    <statements1>  
}  
else {  
    <statements2>  
}
```

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## Braces are Optional but...

The braces here are optional if you have only one statement:

```
if (<condition>)  
<one statement>
```

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Indentation is for readdability only. So what will this print?

```
if (5 == 4)  
    System.out.println("One");  
    System.out.println("Two");  
    System.out.println("Three");
```

Two  
Three

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## while loops

In Java, while statements have the form:

```
while (<condition>) {  
    <statements>  
}
```

- <condition> is a boolean expression.
- <statements> can be any sequence of statements.

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## for loops

```
for (<initialization>; <condition>; <update>) {  
    <statements>  
}
```

is equivalent to:

```
<initialization>;  
while (<condition>) {  
    <statements>  
    <update>;  
}
```

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## Conditionals

In Java, there is no "elif", so we must spell out "else if".

```
if (<condition1>) {  
    <statements1>  
}  
else if (<condition2>) {  
    <statements2>  
}  
else {  
    <statements3>  
}
```

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## for loops

In Java, for statements have the form:

```
for (<initialization>; <condition>; <update>) {  
    <statements>  
}
```

- <initialization> is a statement to execute once *before* starting the loop.
- <condition> is a boolean expression.
- <update> is a statement to execute after each iteration.

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## For loops

```
for (int n = 0; n < 100; n++)  
    System.out.println(n);
```

is equivalent to:

```
int n = 0;  
while (n < 100) {  
    System.out.println(n);  
    n++;  
}
```

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## For loops

**Example.** A For loop to print numbers 0 through 99:

```
for (int n = 0; n < 100; n++)  
    System.out.println(n);
```

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