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## Comparison Operators

In this lecture we will be learning about Comparison Operators in Python. These operators will allow us to compare variables and output a Boolean value (True or False).

If you have any sort of background in Math, these operators should be very straight forward.

First we'll present a table of the comparison operators and then work through some examples:

### Table of Comparison Operators

In the table below,  $a=3$  and  $b=4$ .

Operator	Description	Example
<code>==</code>	If the values of two operands are equal, then the condition becomes true.	$(a == b)$ is not true.
<code>!=</code>	If values of two operands are not equal, then condition becomes true.	$(a != b)$ is true
<code>&gt;</code>	If the value of left operand is greater than the value of right operand, then condition becomes true.	$(a > b)$ is not true.
<code>&lt;</code>	If the value of left operand is less than the value of right operand, then condition becomes true.	$(a < b)$ is true.
<code>&gt;=</code>	If the value of left operand is greater than or equal to the value of right operand, then condition becomes true.	$(a >= b)$ is not true.
<code>&lt;=</code>	If the value of left operand is less than or equal to the value of right operand, then condition becomes true.	$(a <= b)$ is true.

Let's now work through quick examples of each of these.

### Equal

```
In [1]: 2 == 2
```

```
Out[1]: True
```

```
In [2]: 1 == 0
```

```
Out[2]: False
```

Note that `==` is a *comparison* operator, while `=` is an *assignment* operator.

### Not Equal

```
In [3]: 2 != 1
```

```
Out[3]: True
```

```
In [4]: 2 != 2
```

```
Out[4]: False
```

### Greater Than

```
In [5]: 2 > 1
```

```
Out[5]: True
```

```
In [6]: 2 > 4
```

```
Out[6]: False
```

### Less Than

```
In [7]: 2 < 4
```

```
Out[7]: True
```

```
In [8]: 2 < 1
```

```
Out[8]: False
```

### Greater Than or Equal to

```
In [9]: 2 >= 2
```

```
Out[9]: True
```

```
In [10]: 2 >= 1
```

```
Out[10]: True
```

### Less than or Equal to

```
In [11]: 2 <= 2
```

```
Out[11]: True
```

```
In [12]: 2 <= 4
```

```
Out[12]: True
```

**Great! Go over each comparison operator to make sure you understand what each one is saying. But hopefully this was straightforward for you.**

Next we will cover chained comparison operators