Booleans

Now we'll learn about the boolean data type.

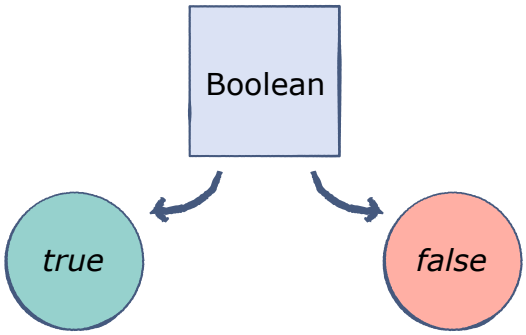
WE'LL COVER THE FOLLOWING

- Definition
- Logical Expressions
- Comparisons

Definition

> The Boolean, or bool, data type can have either **true** or **false** as a value.

A Boolean is typically used to indicate whether the logic of an expression is true or false. In **bit value** terms, `true` is considered as `1`, whereas `false` is `0`.



A boolean takes *1 byte* in memory.

Logical Expressions

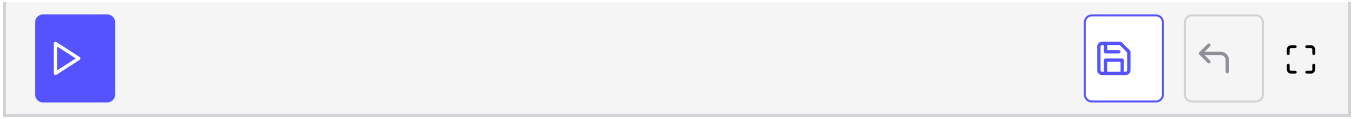
Booleans are compatible with logic operators. They can be used in logical AND (`&&`), OR (`||`), or NOT (`!`) expressions. This allows us to create **conditions** on the basis of which the program can move forward. More on this in the future.

The result of a logical expression is always a bool as well.

Here's the boolean data type in action:

```
Js.log(true); /* In-built true object */
Js.log(false);

/* Logical Expressions */
Js.log(true && false && true); /* false */
Js.log(true && true); /* true */
Js.log(true || false); /* true */
Js.log(!true); /* false */
```

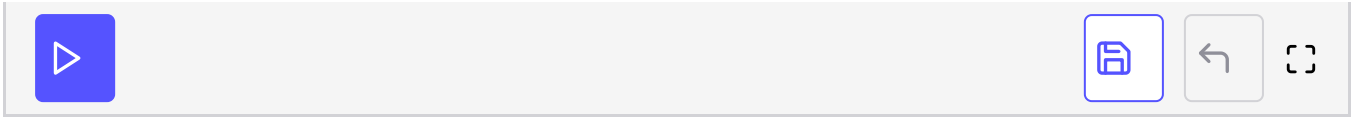


Comparisons

The comparison operators discussed earlier in the course always return a boolean value. This is because we are making a comparison such as "`10` is greater than `5`".

If the condition of the comparison is satisfied, `true` is returned. Otherwise, we'll get a `false`.

```
Js.log(5 > 2); /* true */
Js.log(20 < 10); /* false */
Js.log (20 == (5 * 4));/* true */
```



As we'll soon observe, these operators can work with several data types but the output is always a boolean value.

By now, we've got the basics of booleans. The next data type on our list is the **float**.