Strings

After the character type, we'll study its extension called string.

WE'LL COVER THE FOLLOWING

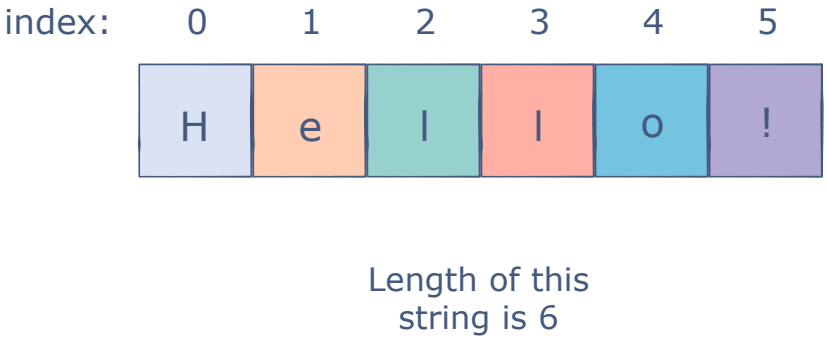
Definition

> A string is a collection of characters joined together.

Double quotes are used to enclose the value of a string, e.g., `"Hello"`.

Since a string is a collection, we can access each individual character in the string as well. The characters are indexed from `0` to `n-1` where `n` is the length of the string.

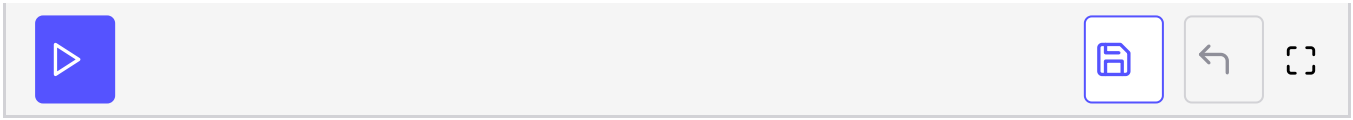
Unlike characters, strings can be of any length, including `1`.



We've already seen an example of a string in the first lesson when we printed "Hello World".

We can print strings using `Js.log()` (prints in a new line each time) or `print_string()` (prints in the same line):

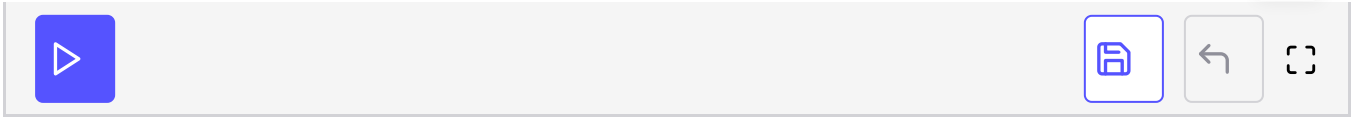
```
Js.log("Hello World");

/* Alternate method */
print_string("Hello World");
```



Concatenation

Reason allows us to append strings together using the `++` operator.

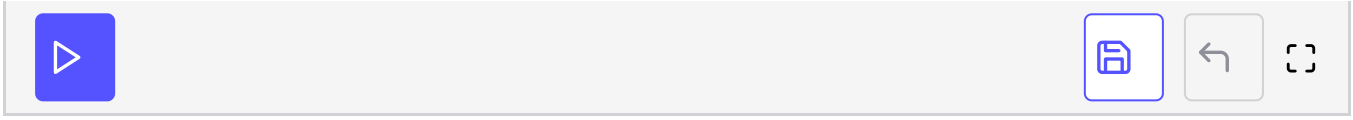
```
print_string("Hello W" ++ "orld" ++ "!");
```



String Length

The length of a string can be obtained using the `String.length()` method. Keep in mind that an empty space in a string also counts as an element.

```
Js.log(String.length("Hello World")); /* 11 */
Js.log(String.length("a")); /* 1 */
```



Accessing Elements

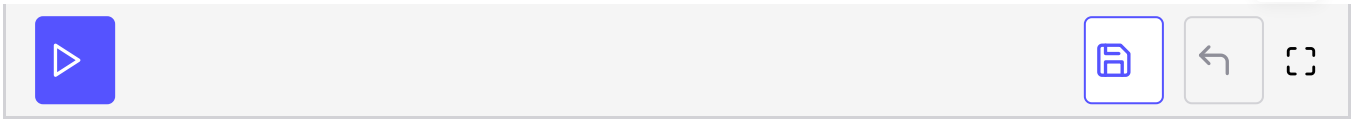
A character in a string can be accessed using its index. The simplest approach is to use the `.[]` notation:

```
("Hello World").[4]
```

The line above will return `o` as it is the fifth character in the string. The index is enclosed inside the square brackets. This process is known as **indexing**.

Here it is in action:

```
print_char(("Hello World").[4]);
```



An alternative approach is to use the `String.get()` method, but we'll leave that as a self-exercise.

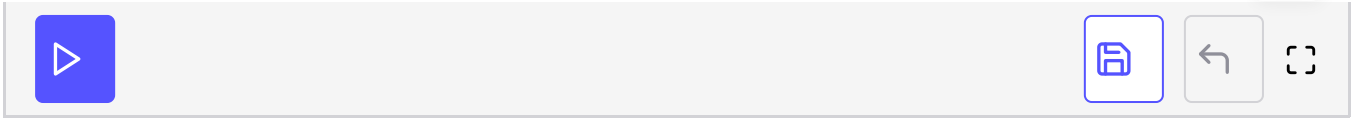
The Existence of a Character

We can check if a particular character exists in a given string using the `String.contains()` method. It requires the following template:

```
String.contains(string, char)
```

Here's the method in action:

```
Js.log(String.contains("Hello World", 'e'));
```



This is helpful when we need to do a character search in a large piece of string.

The last data type we need to discuss is the **unit**, but we'll leave that for a later section in order to give it context. For now, let's move on to the concept of polymorphic operators.