avionschool

Lesson 10.0 Strings

BATCH 4

DECEMBER 14, 2020

CREATE-ing Strings

String Literals: Anatomy

- Strings are used to represent text.
- They are written by enclosing their content in quotes.
- That is, as long as the quotes at the start and the end of the string match.

```
const firstLine = 'Worker bees can leave'
const secondLine = "Even drones can fly away"
const thirdLine = `The queen is their slave`
```

String Literals: Anatomy

- But how about multi-lined? Quoted?
- These cases and other special characters can be encoded using escape notation

```
const haikuOne = 'Worker bees can leave\nEven drones can fly away\nThe queen is their slave'

const haikuTwo = "Worker bees can leave\nEven drones can fly away\nThe queen is their slave"

const haikuThree = `Worker bees can leave\nEven drones can fly away\nThe queen is their slave`
```

Template Literals

- Strings written with single or double quotes behave very much the same— the only difference is in which type of quote you need to escape inside of them.
- Backtick-quoted strings, usually called template literals, can do a few more tricks. Apart from being able to span lines, they can also embed other values.
- When you write something inside ${} in a template literal, its result will be computed, converted to a string, and included at that position.

Template Literals: Anatomy

- "template strings" // ES5
- embedded expressions
- string / expression interpolation

```
let worker = 'bees'
let royalty = 'queen'


let haikuBackTicks = `Worker ${worker} can leave\nEven drones can fly away\nThe ${royalty} is their
slave`

console.log(haikuBackTicks)

worker = 'ants'

haikuBackTicks = `Worker ${worker} can leave\nEven drones can fly away\nThe ${royalty} is their slave`

console.log(haikuBackTicks)

worker = 'termites'
royalty = 'king and queen'

haikuBackTicks = `Worker ${worker} can leave\nEven drones can fly away\nThe ${royalty} ${worker ===
'termites' ? 'are' : 'is'} their slave${worker === 'termites' ? 's' : ''}`

console.log(haikuBackTicks)
```

Template Literals: Anatomy

- nesting templates // ES6

```
const haikuLines = [
  `Worker bees can leave`,
  '',
  "The queen is their slave",
]

const currentHaiku = `
  ${haikuLines[0] === '' ? '' : haikuLines[0]}
  ${haikuLines[1] === '' ? `Only ${haikuLines.length-1} lines available` : haikuLines[1]}
  ${haikuLines[2] === '' ? '' : haikuLines[2]}
`

console.log(currentHaiku)
```

String() constructor

- The only difference between a string literal or primitive and using the string constructor is the ability to add properties to the one that is constructed as an object.

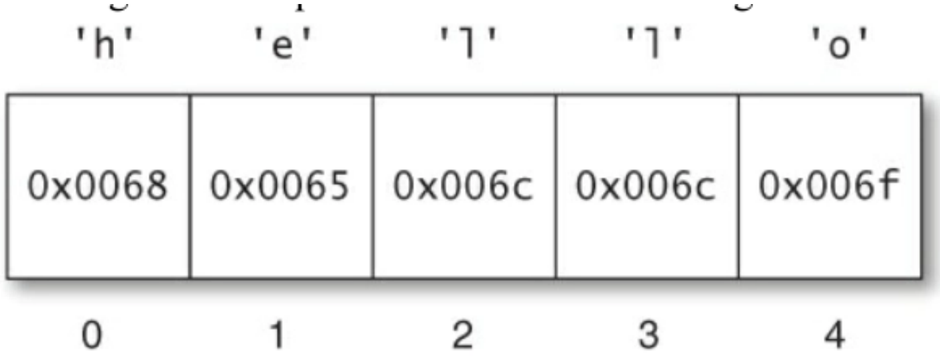
```
const haikuLines = [
  `Worker bees can leave`,
  String('Even drones can fly away'),
  new String("The queen is their slave"),
]

haikuLines.forEach(line => console.log(typeof line))
```

READ-ing Characters

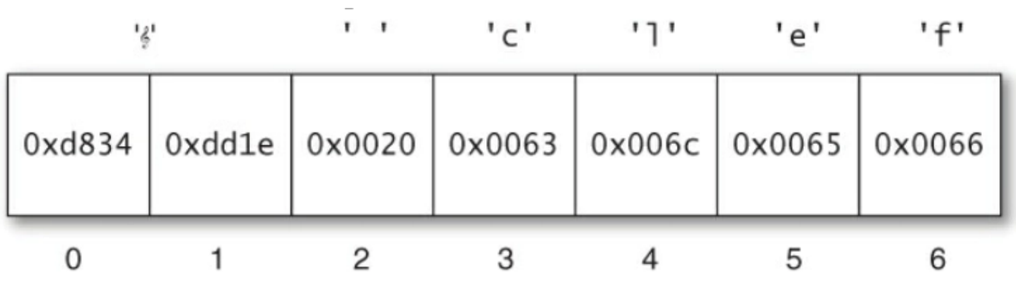
As Arrays

- Strings are in fact, just an array of characters!
- Think of strings as sequences of 16-bit code units



As Arrays

- Every unit of text of all the world's writing systems is assigned a unique integer between 0 and 1,114,111, known as a code point in Unicode terminology. (Hardly not any different from any other text encoding such as ASCII)
- The designers of Unicode historically miscalculated their budget for code points. It was originally thought that Unicode would need no more than 2^16 code points.



As Arrays

```
"𝄞 clef".length; // 7
"G clef".length; // 6
```

```
"𝄞 clef".charCodeAt(0);     // 55348 (0xd834)
"𝄞 clef".charCodeAt(1);     // 56606 (0xdd1e)
"𝄞 clef".charAt(1) === " "; // false
"𝄞 clef".charAt(2) === " "; // true
```

Character Access

```
const alphabet = 'abcdefghijklmnopqrstuvwxyz'

alphabet.charAt(10)
alphabet[10]

alphabet.indexOf('m')
```

UPDATE-ing Strings

+ Operator

- Strings cannot be divided, multiplied, or subtracted, but the + operator can be used on them.
- It does not add, but it concatenates—it glues two strings together.

Long Literal Strings

```
const haiku = "Worker bees can leave " +
  "Even drones can fly away " +
  "The queen is their slave"

const haikuClone = "Worker bees can leave \
Even drones can fly away \
The queen is their slave"

console.log(haiku === haikuClone) // true
```

String Conversion

- https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String
- https://github.com/blakeembrey/change-case
- It's possible to use String as a more reliable toString() alternative, as it works when used on null, undefined, and on symbols.

DELETE-ing Strings

https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/String

https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array