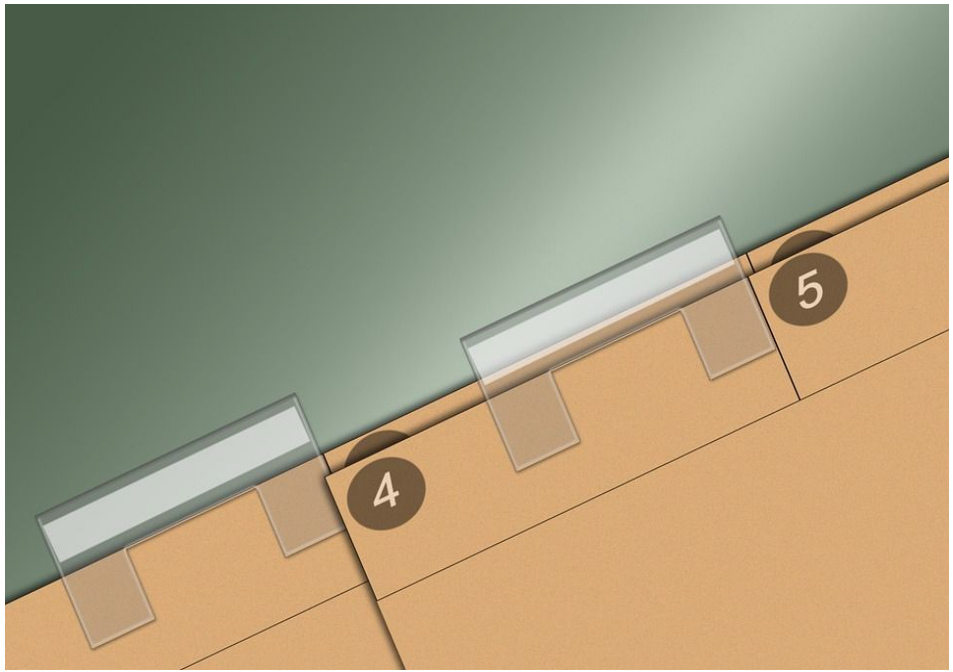
JavaScript

Useful methods and
JavaScript code snippets

Course topics include

1. JavaScript Number Methods
2. JavaScript String Methods
3. JavaScript Math
4. DOMContentLoaded
5. JavaScript Date
6. JavaScript parse and stringify
7. JavaScript LocalStorage
8. JavaScript getBoundingClientRect()
9. JavaScript Timers setTimeout() setInterval() requestAnimationFrame()
10. encodeURIComponent
11. Regex
12. prototype
13. Try and catch
14. Fetch xHR requests



JavaScript Number Methods

- parseInt()
- toFixed(2)

JavaScript Number Methods

Number methods let you work with numbers.

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

```
let myNum = 100.525;
let num2 = "100";
console.log(myNum.toFixed(2));
console.log(Number(num2));
console.log(parseInt(num2));
console.log(num2);
```

Lesson Challenge

Try some of the number methods.

JavaScript String Methods

- String.prototype.trim()
- String.prototype.toUpperCase()
- String.prototype.toLowerCase()
- String.prototype.split()
- String.prototype.slice()
- String.prototype.replace()
- String.prototype.lastIndexOf()
- String.prototype.indexOf()

JavaScript String Methods

String methods let you work with strings.

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

```
console.log(myString.length);
console.log(myString.trim());
console.log(myString.toUpperCase());
console.log(myString.toLowerCase());
console.log(myString.split(' ')); // into array (",") // Split on commas
console.log(myString.charAt(9));
console.log(myString[9]);
console.log(myString.slice(9));
console.log(myString.slice(9,20));
console.log(myString.substring(9,20)); // to position 20 // cannot accept negative indexes
console.log(myString.substr(9,20)); //next 20
console.log(myString.replace('enjoy', 'use'));
console.log(myString.lastIndexOf('JavaScript'));
console.log(myString.indexOf('JavaScript')); //same as search returns position
console.log(myString.search('JavaScript'));//same as indexof returns position
```

Lesson Challenge

Try some of the string methods return part of your string. Turn the string into an array of words, replace content and update the string output.

JavaScript Math

- Generate Random Numbers
- Rounding up
- Rounding down
- Rounding

Math floor and ceil

The Math.floor() function returns the largest integer less than or equal to a given number.

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

```
console.log(Math.floor(5.95));
// expected output: 5

console.log(Math.floor(5.05));
// expected output: 5

console.log(Math.floor(5));
// expected output: 5

console.log(Math.floor(-5.05));
// expected output: -6
```

The Math.ceil() function returns the smallest integer greater than or equal to a given number.

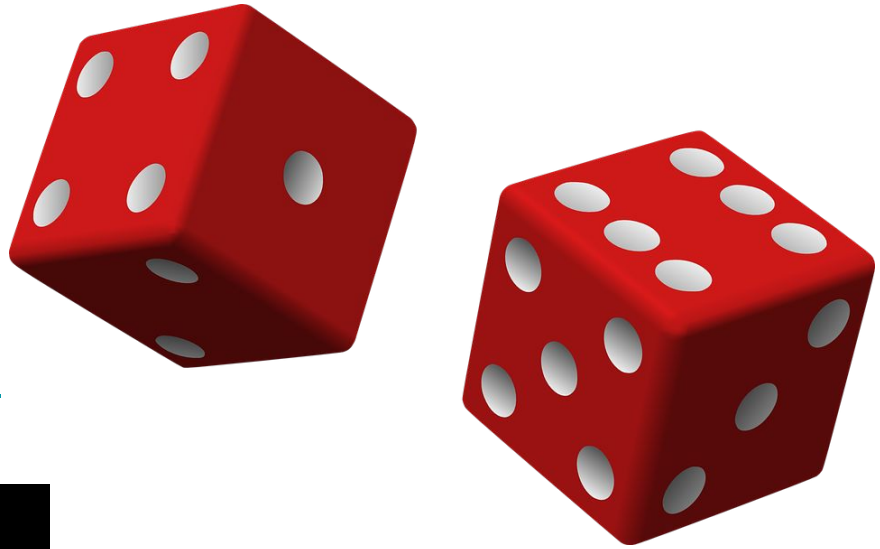
https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Math/ceil

```
console.log(Math.ceil(.95));
// expected output: 1

console.log(Math.ceil(4));
// expected output: 4

console.log(Math.ceil(7.004));
// expected output: 8

console.log(Math.ceil(-7.004));
// expected output: -7
```

Math Random

Let you generate a random value. A floating-point, pseudo-random number between 0 (inclusive) and 1 (exclusive).

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



```
function getRandomInt(max) {
  return Math.floor(Math.random() * Math.floor(max));
}

console.log(getRandomInt(3));
// expected output: 0, 1 or 2

console.log(getRandomInt(1));
// expected output: 0

console.log(Math.random());
// expected output: a number between 0 and 1
```

```
function getRandomInt(min, max) {
  min = Math.ceil(min);
  max = Math.floor(max);
  return Math.floor(Math.random() * (max - min)) + min;
//The maximum is exclusive and the minimum is inclusive
}
```

Lesson Challenge

Create a function to generate a random number

```
function getRandomInt(min, max) {
  min = Math.ceil(min);
  max = Math.floor(max);
  return Math.floor(Math.random() * (max - min)) + min;
//The maximum is exclusive and the minimum is inclusive
}
```

Array Includes and ternary operator

- Includes
- Ternary operator

Includes and ternary

The includes() method determines whether an array includes a certain value among its entries, returning true or false as appropriate.

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

The conditional (ternary) operator is the only JavaScript operator that takes three operands. This operator is frequently used as a shortcut for the if statement.

https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Operators/Conditional_Operator

```
var array1 = [1, 2, 3];
console.log(array1.includes(2)); // expected output: true
var pets = ['cat', 'dog', 'bat'];
console.log(pets.includes('cat'));// expected output: true
console.log(pets.includes('at'));// expected output: false
```

```
function getFee(isMember) {
  return (isMember ? "$2.00" : "$10.00");
}
console.log(getFee(true)); // expected output: "$2.00"
console.log(getFee(false)); // expected output: "$10.00"
console.log(getFee(1)); // expected output: "$2.00"
```

Lesson Challenge

Recursion Random Number Exclude

Generate 50 random numbers from 1 to 20 excluding from a list.
10, 15, 7, 1, 4, 2, 5

Output the results into the console.

Code Snippet

```
   const excludeNumbers = [10, 15, 7, 1, 4, 2, 5];
function generateRandom(min, max) {
    let num = Math.floor(Math.random() * (max - min + 1)) + min;
    return excludeNumbers.includes(num) ? generateRandom(min, max) : num;
}
for (let x = 0; x < 20; x++) {
    let min = 1;
    let max = 15;
    let num = generateRandom(min, max);
    console.log(num);
}
```

Challenge #1 - Random Array Message

Create an array and randomly on page load output an item from the array on the screen.

```
<body>
    <script>
        const myArray = ["Hello", "Welcome", "Bye Bye"];
        let temp = randomItem(myArray);
        let mes = document.createTextNode(temp);
        document.body.appendChild(mes);

        function randomItem(arr) {
            return arr[Math.floor(Math.random() * arr.length)]
        }
    </script>
</body>
```

Challenge #2 - Random Background Color Body

Update the body of the page to have a random background color.

```
<body>
    <script>
        document.body.style.backgroundColor = randomColor();

        function randomColor() {
            return "#" + Math.random().toString(16).substr(-6);
        }
    </script>
</body>
```

DOMContentLoaded

- Invokes when DOM has loaded

JavaScript DOMContentLoaded

The DOMContentLoaded event fires when the initial HTML document has been completely loaded and parsed, without waiting for stylesheets, images, and subframes to finish loading.

https://developer.mozilla.org/en-US/docs/Web/API/Window/DOMContentLoaded_event

```
window.addEventListener('DOMContentLoaded', function (event) {
  console.log('DOM fully loaded and parsed');
});
```

Challenge #3 Keyboard mover

Using only JavaScript create an element that moves with key presses. Create the element when DOMContentLoaded . Write the rest of the code from the below starter.

Updated please use event.key value ArrowLeft, ArrowRight, ArrowUp, ArrowDown

```
document.addEventListener("keydown", function (e) {
  let key = e.key;
  if (key === 'ArrowLeft') {          player.x -= player.speed;        }
  if (key === 'ArrowRight') {          player.x += player.speed;        }
  if (key === 'ArrowDown') {          player.y += player.speed;        }
  if (key === 'ArrowUp') {          player.y -= player.speed;        }
  player.el.style.left = player.x + "px";
  player.el.style.top = player.y + "px";
})
```

Challenge #3 Code

```
<body>
    <script>
        let player = {
            speed: 100
            , x: 100
            , y: 100
        }
        document.addEventListener("DOMContentLoaded", build);
        document.addEventListener("keydown", function (e) {
            let key = e.key;
            if (key === 'ArrowLeft') {
                player.x -= player.speed;
            }
            if (key === 'ArrowRight') {
                player.x += player.speed;
            }
            if (key === 'ArrowDown') {
                player.y += player.speed;
            }
            if (key === 'ArrowUp') {
                player.y -= player.speed;
            }
            player.el.style.left = player.x + "px";
            player.el.style.top = player.y + "px";
        })
```

```
        function build() {
            player.el = document.createElement("div");
            player.x = 100;
            player.y = 100;
            player.el.style.position = "absolute";
            player.el.style.width = "100px";
            player.el.style.height = "100px";
            player.el.style.backgroundColor = "red";
            player.el.style.top = player.y + "px";
            player.el.style.left = player.x + "px";
            document.body.appendChild(player.el);
        }
    </script>
</body>
```

JavaScript Date

- new Date()
- getDate()
- setDate()

JavaScript Date

Examples show several ways to create JavaScript dates

```
var today = new Date();
var birthday = new Date('December 17, 1995 03:24:00');
var birthday = new Date('1995-12-17T03:24:00');
var birthday = new Date(1995, 11, 17);
var birthday = new Date(1995, 11, 17, 3, 24, 0);
```

JavaScript Date

Creates a JavaScript Date instance that represents a single moment in time.

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

Date.prototype.getTime()

Returns the numeric value of the specified date as the number of milliseconds since January 1, 1970, 00:00:00 UTC (negative for prior times).

```
let d = new Date();
console.log(d);
d = new Date(2020, 10, 15, 5, 15, 30, 0); //year, month, day, hour, minute, second
//JavaScript counts months from 0 to 11. January is 0. December is 11.
console.log(d);
//milliseconds
d = new Date(0); //Start January 01, 1970
console.log(d);
console.log(d.toString());
console.log(d.toUTCString());
console.log(d.toDateString());
d = new Date("2020-12-31");
console.log(d);
d = new Date("12/31/2020");
console.log(d);
console.log(d.getDate());
console.log(d.getDay());
console.log(d.getTime());
d = new Date();
console.log(d.getMilliseconds()); //according to local time.
console.log(d.getUTCMilliseconds()); //according to universal time.
d.setFullYear(2025)
console.log(d);
```

JavaScript Date

Add 1 day to current date.

```
let days = 1;
const newDate = new Date(Date.now() + days * 24*60*60*1000);
console.log(newDate);
```

*Try it add a week now.

Lesson Challenge

Get the number of milliseconds since January 01, 1970 for your birthday output it in the console.

```
const birthday = new Date(1980, 8, 4);
console.log(birthday.getTime());
```

JavaScript parse and stringify

- JSON.parse()
- JSON.stringify()

JavaScript parse and stringify

The JSON.parse() method parses a JSON string, constructing the JavaScript value or object described by the string

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

```
const json = '{"first":"Laurence", “last":"Svekis"}';
let obj = JSON.parse(json);
console.log(obj);
console.log(obj.first);
```

The JSON.stringify() method converts a JavaScript object or value to a JSON string

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

```
const myObj = {
    first: "Laurence"
    , last: "Svekis"
};
console.log(myObj);
let myString = JSON.stringify(myObj);
console.log(myString);
```

Lesson Challenge

Take an object turn it into a string output it in the console.

Take that same string convert back to an object and output some of the values in the console.

```
const myObj = {
    first: "Laurence"
    , last: "Svekis"
};
console.log(myObj);
let myString = JSON.stringify(myObj);
console.log(myString);
let newObj = JSON.parse(myString);
console.log(newObj.first);
console.log(newObj.last);
```

JavaScript LocalStorage

- localStorage.setItem()
- localStorage.getItem()
- localStorage.removeItem()
- localStorage.clear()

JavaScript LocalStorage

The read-only localStorage property allows you to access a Storage object for the Document's origin; the stored data is saved across browser sessions. localStorage is similar to sessionStorage, except that while data stored in localStorage has no expiration time.

```
localStorage.setItem('myName', 'Laurence');
let me = localStorage.getItem('myName');
localStorage.removeItem('myName');
localStorage.clear();
```

https://developer.mozilla.org/en-US/docs/Web/API/Window/localStorage

Lesson Challenge

Check if a value exists in the local storage, if it does increment it by one, otherwise create it and set it to 1. Output the value into the console.

```
if(localStorage.getItem('num')){
    let cnt = localStorage.getItem('num');
    cnt = Number(cnt);
    cnt++;
    localStorage.setItem('num',cnt);
}else{
    localStorage.setItem('num',1);
}
console.log(localStorage.getItem('num'))
```

JavaScript getBoundingClientRect()

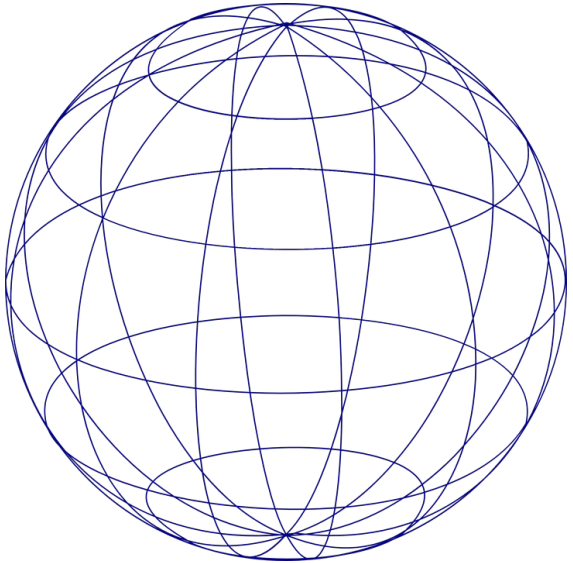
- getBoundingClientRect()

getBoundingClientRect

The Element.getBoundingClientRect() method returns the size of an element and its position relative to the viewport.

https://developer.mozilla.org/en-US/docs/Web/API/Element/getBoundingClientRect

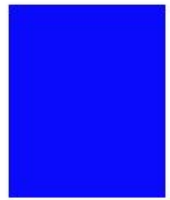
```
var rect = obj.getBoundingClientRect();
```

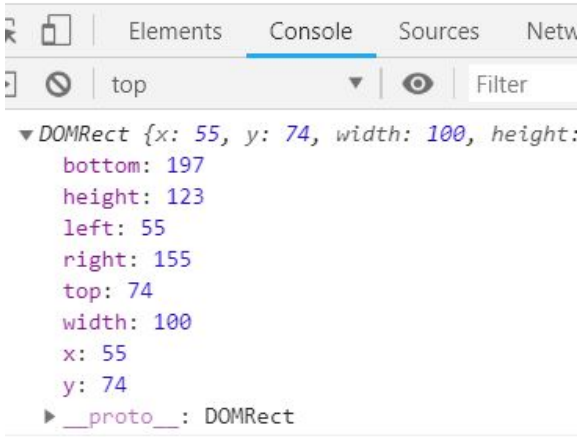


Lesson Challenge

Get the dimensions and location x,y of the element. Output to the console.

```
<title>JavaScript</title>
<style>
    div{
        width: 100px;
        height:123px;
        position: absolute;
        left:55px;
        top:74px;
        background-color: blue;
    }
</style>
<div></div>
<script>
    const el = document.querySelector("div");
    console.log(el.getBoundingClientRect());
</script>
```





JavaScript Timers

- setTimeout()
- setInterval()
- requestAnimationFrame()

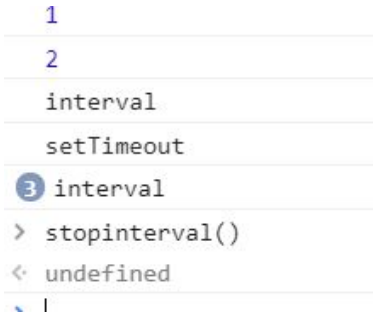
Timers setTimeout() setInterval()

Timers which allow us to delay the execution of arbitrary instructions:

setTimeout() sets a timer which executes a function or specified piece of code once the timer expires.

The **setInterval()** method **repeatedly calls** a function or executes a code snippet, with a fixed time delay between each call. It returns an interval ID which uniquely identifies the interval, so **you can remove it later by calling it.**

https://developer.mozilla.org/en-US/docs/Archive/Add-ons/Code_snippets/Timers

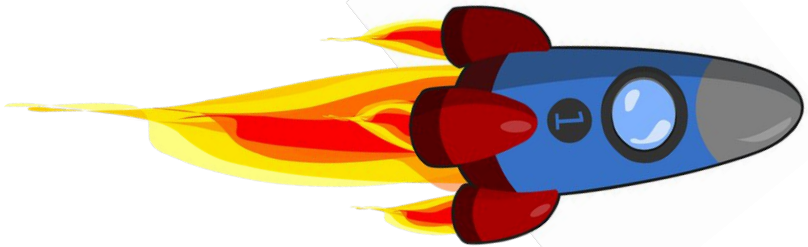



```
const intervalID = window.setInterval(myCallback, 500, 'interval');
const timeoutID = window.setTimeout(myCallback, 500, 'setTimeout');
console.log(intervalID);
console.log(timeoutID);

function myCallback(mes) {
    console.log(mes);
}

function stopinterval() {
    clearInterval(intervalID);
}
```

Timers requestAnimationFrame()

The window.requestAnimationFrame() method tells the browser that you wish to perform an animation and requests that the browser call a specified function to update an animation before the next repaint.

https://developer.mozilla.org/en-US/docs/Web/API/Window/requestAnimationFrame

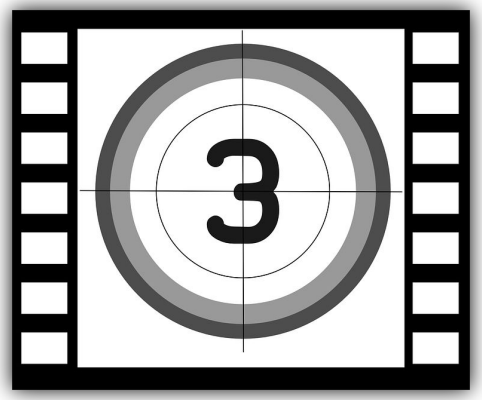


```
<div>Hello</div>
<script>
    let x = 0;
    const element = document.querySelector('div');
    function step() {
        x++;
        element.style.transform = 'translateX(' + x + 'px)';
        if (x < 450) {
            window.requestAnimationFrame(step);
        }
    }
    window.requestAnimationFrame(step);
</script>
```

Lesson Challenge

Create a countdown timer that decreases by one each second until it reaches zero. Output the value to an element.

```
<div></div>
<script>
    let x = 10;
    const element = document.querySelector('div');
    const intervalID = window.setInterval(counter, 100);
    function counter() {
        element.textContent = x;
        x--;
        if (x < 0) {
            clearInterval(intervalID);
        }
    }
</script>
```



encodeURIComponent

- decodeURIComponent()
- encodeURIComponent()
- encodeURI()
- decodeURI()

encodeURIComponent decodeURIComponent

Less NOT escaped than encodeURI

The encodeURIComponent() function encodes a Uniform Resource Identifier (URI) component by replacing each instance of certain characters

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

The decodeURIComponent() function decodes a Uniform Resource Identifier (URI) component previously created by encodeURIComponent or by a similar routine.

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

`encodeURIComponent` escapes all characters **except**:

> **Not Escaped:**
>
> A-Z a-z 0-9 - _ . ! ~ * ' ( )

```
let url = window.location.href;
let encodeurl = encodeURIComponent(url);
let dencodeurl = decodeURIComponent(encodeurl);
console.log(encodeurl);
console.log(dencodeurl);
```

encodeURI and decodeURI

A common issue is special characters and spaces in URLs. encodeURI does not encode queryString or hash values. The encodeURI() is used to encode a URI.

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

```
let url2 = "https://www.discoveryvip.com/?id=500&more=hello world";
 console.log(encodeURI(url2));
 console.log(decodeURI(url2));
```

```
https://www.discoveryvip.com/?id=500&more=hello%20world
https://www.discoveryvip.com/?id=500&more=hello world
```

`encodeURI` escapes all characters **except**:

> **Not Escaped:**
>
> A-Z a-z 0-9 ; , / ? : @ & = + $ - _ . ! ~ * ' ( ) #

```
let url2 = "https://www.discoveryvip.com/?id=500&more=hello world";
console.log(encodeURI(url2));
console.log(encodeURIComponent(url2));
```

```
https://www.discoveryvip.com/?id=500&more=hello%20world
https%3A%2F%2Fwww.discoveryvip.com%2F%3Fid%3D500%26more%3Dhello%20world
```

Lesson Challenge

Try the code below to encodeURI() and encodeURIComponent(), which one do you use for websites?

```
let url2 = "https://www.discoveryvip.com/?id=user-id&more=hello world";
console.log(encodeURI(url2));
console.log(encodeURIComponent(url2));
```

Regex

- RegExp
- Match
- Replace
- Test
- exec

RegExp

The RegExp constructor creates a regular expression object for matching text with a pattern

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

* (zero or more times)
+ (one or more times)
{n} (exactly n times)
{n,} (at least n times)
{n,m} (at least n times but no more than m times)
[0-9]+ (and its equivalent \d+) matches any non-negative integer
\d{4}-\d{2}-\d{2} matches dates formatted like 2019-01-01

\d	Any digit character
\w	Alphanumeric character
\s	Any whitespace character
\D	A character that is not a digit
\W	A nonalphanumeric character
\S	A nonwhitespace character

https://regexr.com/ - best tool to build regex, **check the cheatsheet for a nice list.**

```
let myStr = "HelloWorld JavaScript 123 this works  I love JavaScript 44";
let reg = /(\w+)\s(\w+)/;
let temp1 = myStr.replace(reg, 'TEST1,TEST2');
let temp5 = myStr.replace("World", "People");
console.log(temp1);
console.log(temp5);
console.log(myStr.match(/J/));
console.log(myStr.match(/J/gi));
console.log(/JavaScript/.test(myStr));
console.log(/[0-9]/.test(myStr));
let temp4 = /\d+/.exec(myStr);
console.log(temp4);
console.log(temp4.index);
let myArr = ["one", "two", "three", "four"];
let temp2 = myArr.toString();
let temp3 = myArr.join('....');
console.log(temp3);
console.log(myStr.search(/JavaScript/));
let exp = /JavaScript/gi;
let data = myStr.match(exp);
console.log(data);
```

Lesson Challenge

Take all the email addresses from the string and output them into the console.

"HelloWorld JavaScript 123 this works sometestemail@gmail.com I love JavaScript 44 sample@email.com";

```
let myStr2 = "HelloWorld JavaScript 123 this works sometestemail@gmail.com
I love JavaScript 44 sample@email.com";
let exp2 = /([A-Za-z0-9._-]+@[a-zA-Z0-9._-]+\.[a-zA-Z0-9._-]+)/g;
let emailData = myStr2.match(exp2);
for (let x = 0; x < emailData.length; x++) {
    console.log(emailData[x]);
}
```

```
sometestemail@gmail.com
sample@email.com
```

prototype

- prototype

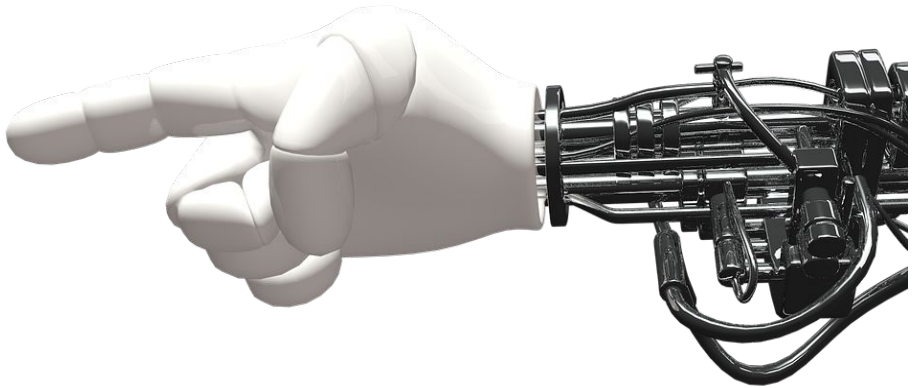
prototype

The Object.prototype is a property of the Object constructor. And it is also the end of a prototype chain. All JavaScript objects inherit properties and methods from a prototype. Use existing or create your own. **TIP : declare it before you try to use it.**

Date objects inherit from Date.prototype

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

```
function Person(first, last) {
    this.firstName = first;
    this.lastName = last;
}
Person.prototype.fullName = function () {
    return this.firstName + " " + this.lastName;
};
const me = new Person("Laurence", "Svekis");
console.log(me);
console.log(me.fullName());
```



Lesson Challenge

Create a date prototype that adds days to the date value. Output the date with 7 days added into the console.

```
Sat Mar 30 2019 15:24:01 GMT-0400 (Eastern Daylight Time)
Fri Apr 05 2019 15:24:01 GMT-0400 (Eastern Daylight Time)
```

```
Date.prototype.addDays = function (days) {
    return new Date(this.valueOf() + days * 864e5);
}
console.log(new Date().addDays(7));
```

Try and catch

- Try
- Catch
- Throw
- Finally

try...catch...throw….finally

The try...catch statement marks a block of statements to try, and specifies a response, should an exception be thrown.

- try - test a block of code for errors.
- catch - handle the error.
- throw - custom errors.
- finally - execute code, after try and catch, regardless of the result.

https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Statements/try...catch

```
<input type="text"> <button>Check</button>
<script>
    const el = document.querySelector("input");
    const btn = document.querySelector("button");
    btn.addEventListener("click", tester);
    function tester() {
        let num = el.value;
        console.log(num);
        try {
            if (num == "") throw "no value";
            if (isNaN(num)) throw "not a number";
            num = Number(num);
            if (num > 5) throw "over 5";
            if (num < 5) throw "under 5";
        }
        catch (error) {
            console.log(error);
        }
        finally {
            console.log("this will always show");
        }
    }
</script>
```

Lesson Challenge

Multiply an input field value by 10 on button press. Provide error messages to the user if the input is not correct format. Clear the input value each time.

test Check

not a number

```
<input type="text"><button>Check</button><div></div>
<script>
   const el = document.querySelector("input");
   const btn = document.querySelector("button");
   const message = document.querySelector("div");
   btn.addEventListener("click", tester);
   function tester() {
      let num = el.value;
      let rep;
      try {
         if (num == "") throw "no value";
         if (isNaN(num)) throw "not a number";
         message.textContent = num * 10;
      }
      catch (error) {
         message.textContent = error;
      }
      finally {
         el.value = "";
      }
   }
</script>
```

Fetch xHR requests

- Fetch
- xHR

XMLHttpRequest()

Use XMLHttpRequest (XHR) objects to interact with servers. You can retrieve data from a URL without having to do a full page refresh.

The XMLHttpRequest.readyState property returns the state an XMLHttpRequest client is in.

Response gets Status codes

https://developer.mozilla.org/en-US/docs/Web/API/XMLHttpRequest

https://developer.mozilla.org/en-US/docs/Web/API/XMLHttpRequest/readyState

https://developer.mozilla.org/en-US/docs/Web/HTTP/Status


```
var xhr = new XMLHttpRequest();
var url = "https://api.chucknorris.io/jokes/random";
xhr.onreadystatechange = function(){
    console.log(xhr.readyState);
    if(xhr.readyState == 4){
        console.log(xhr.response);
        }
}
xhr.open("GET",url);
xhr.send();
console.log(xhr);
```

XMLHttpRequest()

Do something with the data.

```
var output = document.querySelector("#output");
var xhr = new XMLHttpRequest();
var url = "https://api.chucknorris.io/jokes/random";
xhr.onreadystatechange = function(){
    console.log(xhr.readyState);
    if(xhr.readyState == 4  && xhr.status == 200){
        console.log(xhr.responseText);
        var str = xhr.responseText;
        var obj = JSON.parse(str);
        var str1 = JSON.stringify(obj);
        console.log("***STRING***");
        console.log(str1);
        output.innerHTML = obj.value + '<br><img src="'+obj.icon_url+'">';
        console.log(obj);
    }
}
xhr.open("GET",url);
xhr.send();
console.log(xhr);
```

fetch()

The Fetch API provides an interface for fetching resources (including across the network). It will seem familiar to anyone who has used XMLHttpRequest, but the new API provides a more powerful and flexible feature set.

https://developer.mozilla.org/en-US/docs/Web/API/Fetch_API

```
const btn = document.querySelector("button");
const url = "https://randomuser.me/api/";
btn.addEventListener("click", getInput);

function getInput() {
   fetch(url)
  .then(function(response) {
    return response.json();
  })
  .then(function(data){
    console.log(data.results);
  })
}
```

Fetch

The Fetch API provides a JavaScript interface for accessing and manipulating parts of the HTTP pipeline, such as requests and responses. It also provides a global fetch() method that provides an easy, logical way to fetch resources asynchronously across the network.

https://developer.mozilla.org/en-US/docs/Web/API/Fetch_API/Using_Fetch

```
fetch('http://example.com/movies.json')
  .then(function(response) {
    return response.json();
  })
  .then(function(myJson) {
    console.log(myJson);
  });
```

fetch()

Multiple results iteration

```
<input type="number" value="10"><button>Get</button><div></div>
<script>
    const btn = document.querySelector("button");
    const output = document.querySelector("div");
    const intake = document.querySelector("input");
    const url = "https://randomuser.me/api/";
    btn.addEventListener("click", getInput);
    function getInput() {
        let tempVal = intake.value;
        let tempURL = url + "?results=" + tempVal;
        fetch(tempURL).then(function (response) {
            return response.json();
        }).then(function (data) {
            console.log(data.results);
            for (let x = 0; x < data.results.length; x++) {
                output.innerHTML += data.results[x].name.first + " ";
                output.innerHTML += data.results[x].name.last + "<br>";
            }
        })
    }
</script>
```

Lesson Challenge

Get data *https://jsonplaceholder.typicode.com/todos* create elements that are green for completed and red for not complete items in the list. Populate a page div.

1. delectus aut autem
2. quis ut nam facilis et officia qui
3. fugiat veniam minus
4. et porro tempora
5. laboriosam mollitia et enim quasi adipisci quia provide
6. qui ullam ratione quibusdam voluptatem quia omnis
7. illo expedita consequatur quia in
8. quo adipisci enim quam ut ab
9. molestiae perspiciatis ipsa
10. illo est ratione doloremque quia maiores aut
11. vero rerum temporibus dolor
12. ipsa repellendus fugit nisi
13. et doloremque nulla

```
const output = document.querySelector("div");
const url = "https://jsonplaceholder.typicode.com/todos";
loadJSON();
function loadJSON() {
    fetch(url).then(function (res) {
        return res.json()
    }).then(function (data) {
        console.log(data);
        for (let x = 0; x < data.length; x++) {
            let div = document.createElement("div");
            if (data[x].completed) {
                div.style.color = "green"
            }
            else {
                div.style.color = "red"
            }
            div.textContent = data[x].id + ". " + data[x].title;
            output.appendChild(div);
        }
    })
}
```

Congratulations on completing the course!

Thank you

This ebook uses https://developer.mozilla.org/en-US/docs/Web/JavaScript as a source for examples. Check out more about JavaScript at MDN.

Find out more about my courses at http://discoveryvip.com/

Course instructor : Laurence Svekis - providing online training to over 500,000 students across hundreds of courses and many platforms.