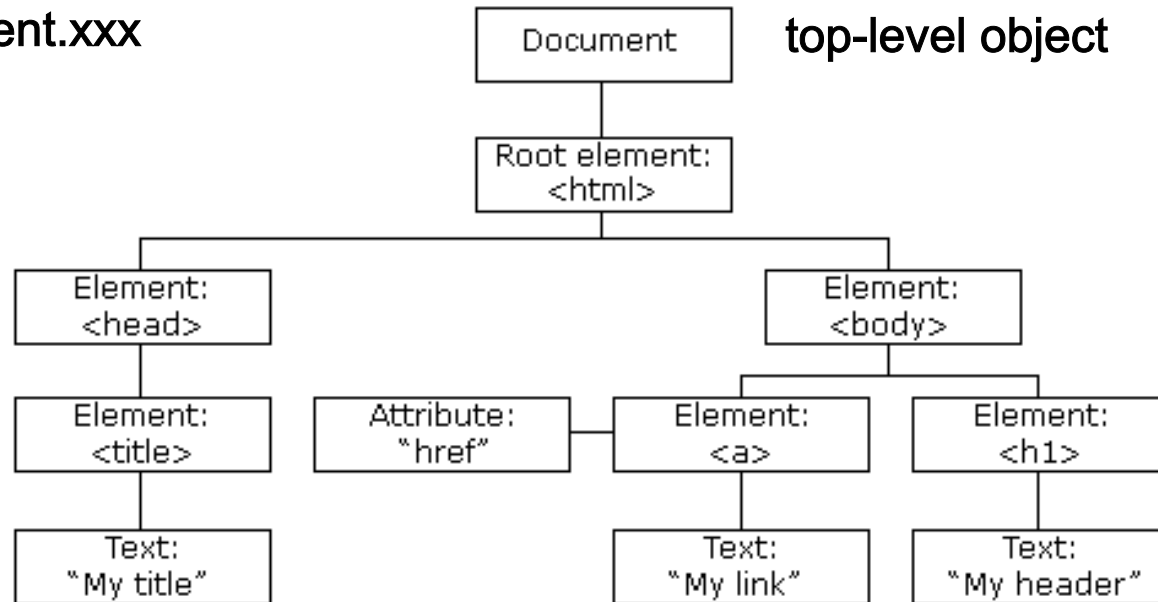# DOM Selectors

Document

It all starts with the document, the root node

document.xxx

top-level object

Exercise

Open up the JS console and try these 4 lines:

```
document.URL;
document.head;
document.body;
document.links;
```

Methods

The document comes with a bunch of methods for selecting elements. We're going to learn about the following 5:

- document.getElementById()
- document.getElementsByClassName()
- document.getElementsByTagName()
- document.querySelector()
- document.querySelectorAll()

getElementById

Takes a string argument and returns the one element with a matching ID

```javascript
var tag = document.getElementById("highlight");
```

console.dir(tag)   //show the objects

```html
<body>
  <h1>Hello</h1>
  <h1>Goodbye</h1>
  <ul>
    <li id="highlight">List Item 1</li>
    <li class="bolded">List Item 2</li>
    <li class="bolded">List Item 3</li>
  </ul>
</body>
```

getElementsByClassName

Takes a string argument and returns a list of
elements that have a matching class

```
var tags = document.getElementsByClassName("bolded");
console.log(tags[0]);
```

returned result: light-weight array

cannot iterate over the array

```
<body>
  <h1>Hello</h1>
  <h1>Goodbye</h1>
  <ul>
    <li id="highlight">List Item 1</li>
    <li class="bolded">List Item 2</li>
    <li class="bolded">List Item 3</li>
  </ul>
</body>
```

getElementsByTagName

Returns a list of all elements of a given tag
name, like *<li>* or *<h1>*

```
var tags = document.getElementsByTagName("li");
console.log(tags[0]);
```

```
<body>
  <h1>Hello</h1>
  <h1>Goodbye</h1>
  <ul>
    <li id="highlight">List Item 1</li>
    <li class="bolded">List Item 2</li>
    <li class="bolded">List Item 3</li>
  </ul>
</body>
```

getElementsByTagName

Returns a list of all elements of a given tag name, like *<li>* or *<h1>*

```
var tags = document.getElementsByTagName("h1");
console.log(tags[0]);
```

```
<body>
  <h1>Hello</h1>
  <h1>Goodbye</h1>
  <ul>
    <li id="highlight">List Item 1</li>
    <li class="bolded">List Item 2</li>
    <li class="bolded">List Item 3</li>
  </ul>
</body>
```

querySelector

Returns the first element that matches a given ==CSS-style selector==

```
//select by ID
var tag = document.querySelector("#highlight");
```

for tag: just tag name

```
<body>
  <h1>Hello</h1>
  <h1>Goodbye</h1>
  <ul>
    <li id="highlight">List Item 1</li>
    <li class="bolded">List Item 2</li>
    <li class="bolded">List Item 3</li>
  </ul>
</body>
```

querySelector

Returns the first element that matches a given CSS-style selector

```
//select by Class
var tag = document.querySelector(".bolded");
```

```html
<body>
  <h1>Hello</h1>
  <h1>Goodbye</h1>
  <ul>
    <li id="highlight">List Item 1</li>
    <li class="bolded">List Item 2</li>
    <li class="bolded">List Item 3</li>
  </ul>
</body>
```

querySelector

Returns **the first element** that matches a given CSS-style selector

```
//select by tag
var tag = document.querySelector("h1");
```
tag name

```
<body>
  <h1>Hello</h1>
  <h1>Goodbye</h1>
  <ul>
    <li id="highlight">List Item 1</li>
    <li class="bolded">List Item 2</li>
    <li class="bolded">List Item 3</li>
  </ul>
</body>
```

querySelectorAll

Returns **a list of elements** that matches a given CSS-style selector

```
//select by tag
var tags = document.querySelectorAll("h1");
```

```html
<body>
  <h1>Hello</h1>
  <h1>Goodbye</h1>
  <ul>
    <li id="highlight">List Item 1</li>
    <li class="bolded">List Item 2</li>
    <li class="bolded">List Item 3</li>
  </ul>
</body>
```

querySelectorAll

Returns **a list of elements** that matches a given
CSS-style selector

```
//select by class
var tags = document.querySelectorAll(".bolded");
```

```html
<body>
  <h1>Hello</h1>
  <h1>Goodbye</h1>
  <ul>
    <li id="highlight">List Item 1</li>
    <li class="bolded">List Item 2</li>
    <li class="bolded">List Item 3</li>
  </ul>
</body>
```

Exercise

Come up with 4 different ways to select the first <p> tag

```
<!DOCTYPE html>
<html>
<head>
        <title>My title</title>
</head>
<body>
  <h1>I am an h1!</h1>
  <p id="first" class="special">Hello</p>
  <p class="special">Goodbye</p>
  <p>Hi Again</p>
  <p id="last">Goodbye Again</p>
</body>
</html>
```

document.getElementById("first");
document.querySelector("#first");
document.getElementsByClassName("special")[0]
document.querySelector(".special") //only return the first one
document.querySelectorAll(".special")[0]
document.querySelector("h1 + p")