



School of Computer Science

Web and Database Computing 2019

Lecture 7: JavaScript and the DOM

adelaide.edu.au

seek LIGHT

Prac 2 FAQ

Websub is ready



You can override styles

L1 Headings are Sans Serif

All paragraph text is serif. Links, including this link to <http://nyan.cat>, are darkgreen, while this ~~text which is struck out~~ is still grey.

Highlighted text is **darkblue against pink**.

Level 2 Headings are left-aligned, but also Sans Serif

Preformatted text uses the monospace font-family, but is normal size.

VS

L1 Headings are Sans Serif

All paragraph text is serif. Links, including this link to <http://nyan.cat>, are darkgreen, while this ~~text which is struck out~~ is still grey.

Highlighted text is **darkblue against pink**.

Level 2 Headings are left-aligned, but also Sans Serif

Preformatted text uses the monospace font-family, but is normal size.

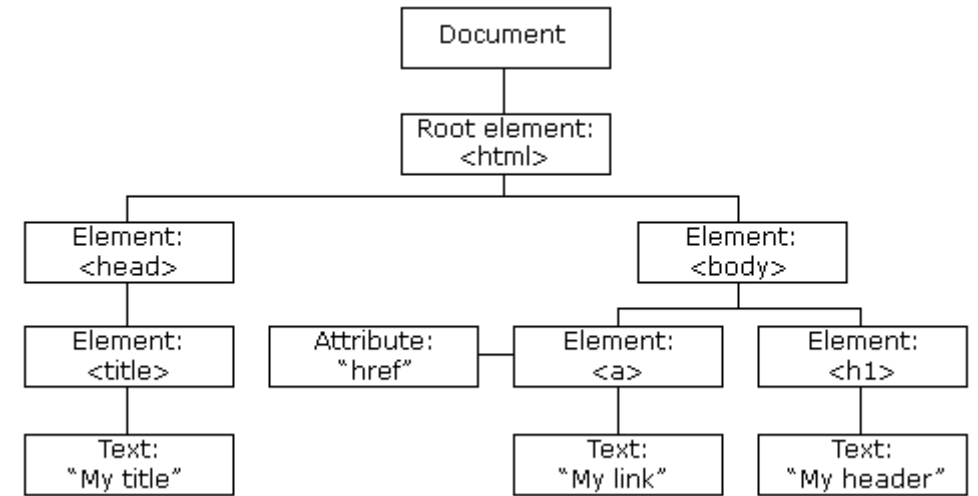
But need to maintain compatibility (e.g. use fallback font families)

DOM

the **D**ocment **O**bject **M**odel

What is the DOM?

- Object based representation of an XML document.
- Tree Structure
- Provides a way for us to navigate a document in Javascript.



From W3Schools

How can we access elements using the DOM?

Using its ID:

```
var element = document.getElementById('SomeID');
```

Using its class name:

```
var elements = document.getElementsByClassName('SomeClass');
```

- Returns a list

Using its tag name:

```
var elements = document.getElementsByTagName('sometag');
```

- Also returns a list

How can we access elements using the DOM?

With a CSS selector:

```
var elements = document.querySelectorAll('p.class div i');
```

- Returns a list

Using an element we already have to get it's parent:

```
var parent_element = element.parentElement;
```

Using an element we already have to get its children:

```
var child_elements = element.children;
```

And more ...

What can we do with DOM elements?

Get content:

```
var text = element.innerText;  
var html = element.innerHTML;
```

Get attributes:

```
var attr = element.getAttribute('someattribute');
```

Some attributes have their own direct values

```
var title = element.title;
```

Style can be accessed directly

```
var color = element.style.color;
```

What can we do with DOM elements?

Modify content:

```
element.innerText = 'Some <text>';  
element.innerHTML = 'Some <text>';
```

Modify attributes:

```
element.setAttribute('someattribute', "value");
```

Direct values don't work for all attributes:

```
element.title = "This title works";  
element.class = "may not work";
```

Style can be set directly

```
element.style.color = "red";
```

An example

JavaScript HTML Result

[Edit in JSFiddle](#)

```
function byId() {
    var item = document.getElementById("demo");
    item.style.backgroundColor = "yellow";
}

function byClass() {
    var items = document.getElementsByClassName("test");
    for (var i=0; i<items.length; i++){
        items[i].style.backgroundColor = "yellow";
    }
}

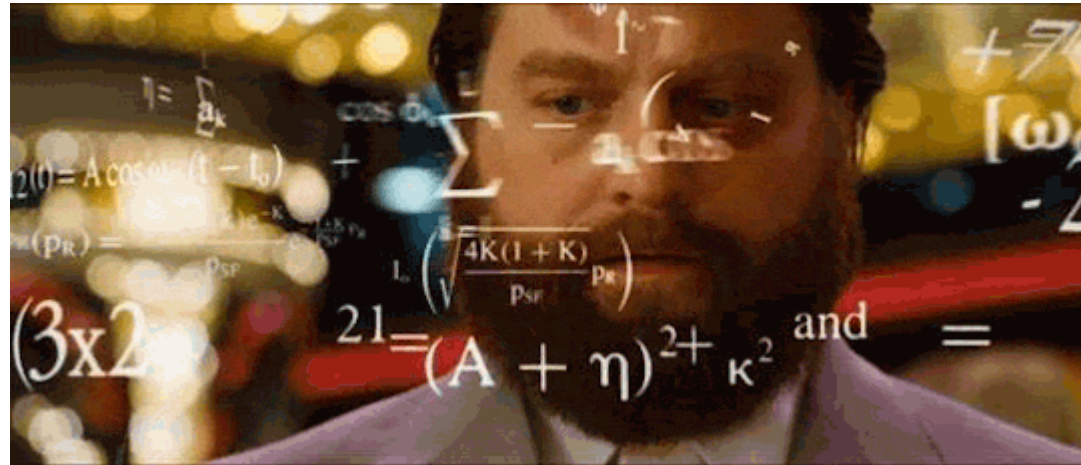
function byTag() {
    var items = document.getElementsByTagName("p");
    for (var i=0; i<items.length; i++){
        items[i].style.backgroundColor = "yellow";
    }
}

function byCSS() {
    var items = document.querySelectorAll("p#demo,span.test");
    for (var i=0; i<items.length; i++){
        items[i].style.backgroundColor = "yellow";
    }
}
```

https://jsfiddle.net/ian_knight_uofa/av4jw97f/3/

A Formula!

3 steps to make writing client JS easier



1) Identify what to Select/Change

- What elements (if any) need to be selected?
 - Are they easy to select?
 - Add class names/ids to make selection easier if needed.
- Do you need to create new elements?
 - Determine the structure of these.
- What do you need to change about the elements?
- Are there any other values you need to obtain?
 - Where do they come from?

2) Identify trigger for change

- What causes the change to occur?
 - Is it a user interaction, or does it happen on when loading the page/some element?\
 - Will you need to add an event listener/attribute?
 - https://www.w3schools.com/jsref/dom_obj_event.asp

3) Implement a function

- Write a function to perform the action
- Link it to the event.

Worked Example

Worked Example

Result

[Edit in JSFiddle](#)

Add a button

- Click Add a button
- A new button is added, the add button changes to delete
- Click Delete a button
- The extra button is removed

Worked Example

workspace

What's happening

Due:

- Prac Exercise 1 complete ASAP if not already done.
- Prac Exercise 2 websub available try to complete before Monday.

This week:

- Workshops are this week.
 - Best time to aks questions & seek help.

Further learning:

- Keep working through the Javascript tutorial at <https://www.w3schools.com/js/>
- Try looking at the scripts in the pages you use.
- Keep using HTML and CSS in your forum posts.



THE UNIVERSITY
of ADELAIDE

