

Javascript in the browser

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Example

```
<html>
<body>
<script type="text/javascript">
    document.body.innerHTML = "<h1>This is a heading</h1>";
</script>
</body>
</html>
```

Javascript: Inline, embedded or separate file?

Inline

```
<button onclick="console.log('Hello World!');">Click me</button>
```

Embedded

```
<script type="text/javascript">  
    console.log("Hello World!");  
</script>
```

Separate file

```
<script src="js/script.js"></script>
```

Javascript in the browser is restrictive

- ✓ You can access elements of the webpage and the browser
- ✓ You can track user actions on the webpage (events)
- ✓ You can create threads (web workers)
- ✓ You can open sockets (web sockets)
- ✓ ...
- ⊙ You cannot access the file system (only via the upload form)
- ⊙ You cannot access to other programs
- ⊙ You cannot access to other tabs in the browser
- ⊙ ...

The Browser

Pop-up Boxes

<code>alert("hello world!")</code>	dialog box with “ok” button
<code>confirm("are you sure?")</code>	dialog box with “ok” and “cancel” buttons
<code>prompt("Name?", "John")</code>	input box with prompt text and default value

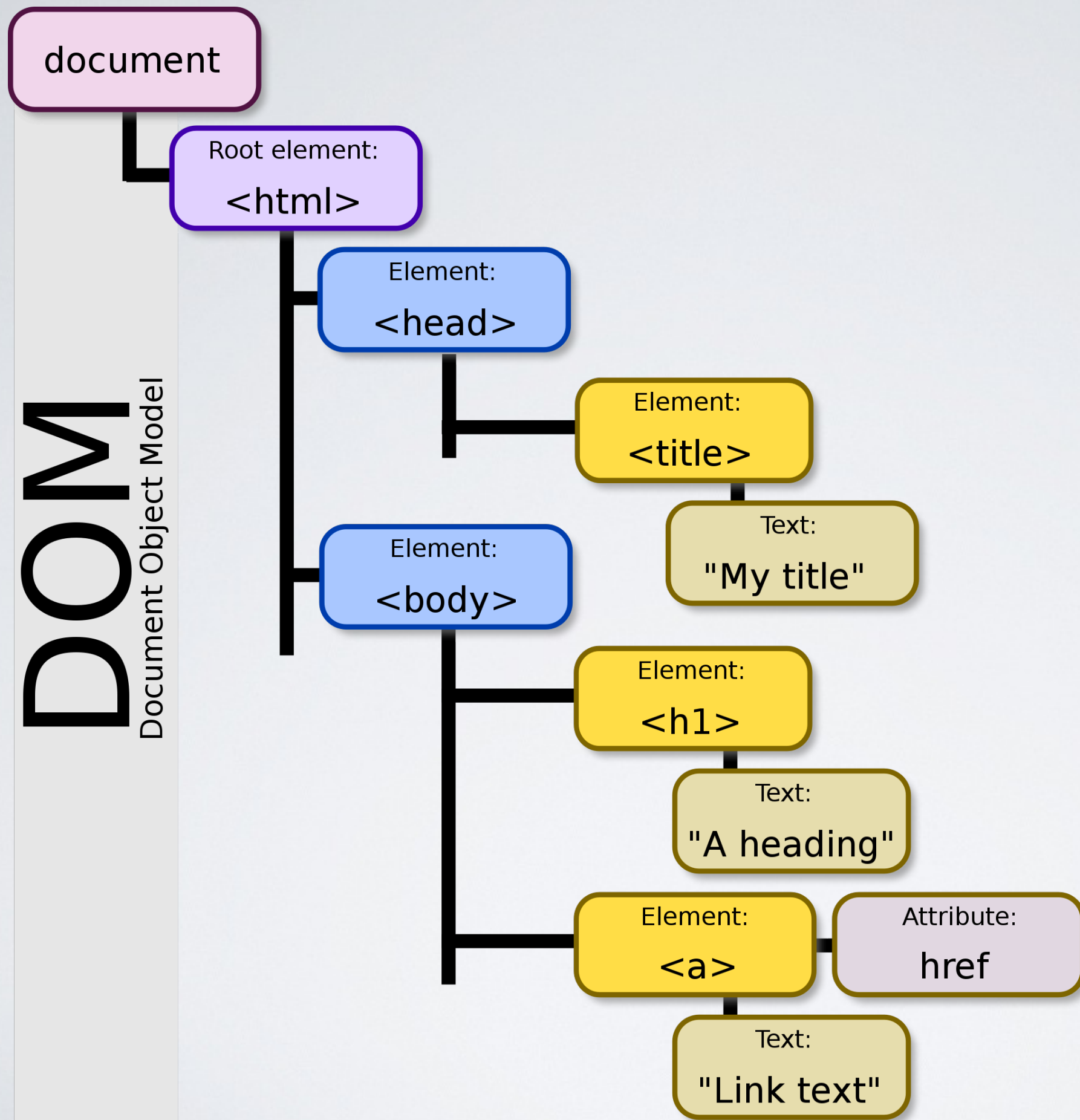
The Browser

screen	the visitor's screen
browser	the browser itself
window	the current browser window
url	the current url
history	Back and forward URLs

Document Object Model

DOM

Document Object Model



Node accessors

The root node

`document`

Accessors

```
document.getElementById("id")  
document.getElementsByTagName("p");  
document.getElementsByClassName("class");  
document.querySelector("#id .class p");  
document.querySelectorAll("#id .class p");
```

DOM methods

x.innerHTML	the content of x
x.attributes	the attributes nodes of x
x.style	css of x
x.parentNode	the parent node of x
x.children	the child nodes of x
x.appendChild	insert a child node to x
x.removeChild	remove a child node from x
...	...

Events

DOM events and handlers

<code>e.onload</code>	when e is fully loaded
<code>e.onclick</code>	when e is clicked
<code>e.onSubmit</code>	when e is submitted
<code>e.onhover</code>	when the mouse is on top e
<code>e.onkeydown</code>	when a key is pressed while e is in focus
<code>...</code>	<code>...</code>

<https://developer.mozilla.org/en-US/docs/Web/Events>

User-defined events and listeners

```
// Listen for the event
document.addEventListener( 'onSomething', function(e) {
    ...
});
```

```
// Dispatch the event
document.dispatchEvent(new Event( 'onSomething' ));
```

Custom events

```
// Listen for the custom event
document.addEventListener('onSomething', function(e) {
    console.log(e.detail);
});
```

```
// Dispatch the custom event
document.dispatchEvent(new CustomEvent('onSomething',
{ e.detail: 'Hello World!' }));
```