
Javascript In Browser

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Agenda

- Script Loading
- Global Object
- DOM
- Browser Capacity

Script Loading

- Javascript is loaded into browser by script tag

`<script src="//other-domain.com/1.js"></script>`

`<script src="2.js"></script>`

`<script>document.write('something')</script>`

Load external script from other domain

Load external script from same domain

Inline script

// mean protocol based on current protocol

2.js locate from current path

/2.js locate from root path

Script Loading

- Javascript is loaded into browser by script tag

```
<script src="//other-domain.com/1.js"></script>
```

```
<script src="2.js"></script>
```

```
<script>document.write('something')</script>
```

What happens in browser?

- Scripts load and execute synchronous
- Block rendering page until they are loaded and executed

Except?

Script Loading

Except?

- Specific defer / async in browsers which support HTML5

`<script src="//other-domain.com/1.js" defer ></script>`

`<script src="2.js" async ></script>`

None	defer	async	both
load and execute in order they appear	Load after page rendered	load and execute while rendering page	same as defer

* async / defer use for external script only

Script Loading

Advices

- Put stylesheet in head of HTML page
- Put javascript at the end of body
- Using script loading library
- Be careful when using html5 defer and async

Global Object

- Definition and Initial

Ex:

```
var firstGlobal = 'something';  
function test() {  
    secondGlobal = 'somethingelse';  
    window.thirdGlobal = 'somethingelseelse';  
}
```

No function scope

Auto global

Window object

Global Object

- Accessing
 - Via window object

Ex: `window.firstGlobal`
`window.secondGlobal`

- Directly

Ex: `function test() {`
 `thirdGlobal;`
`}`

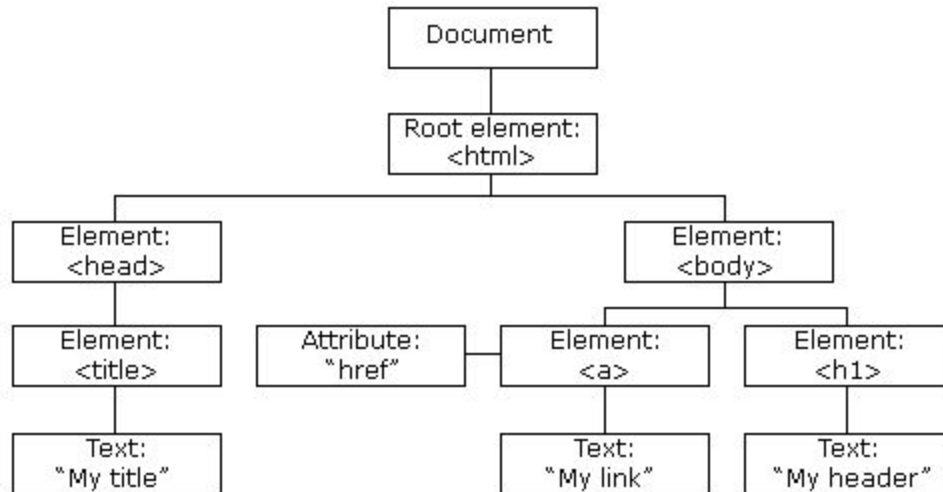
Global Object

- Pros
 - Access anywhere
 - Easy to use
- Cons
 - No Integrity
 - Hard to maintenance



DOM

- DOM (Document Object Model) is a platform- and language-neutral interface that will allow programs and scripts to dynamically access and update the content, structure and style of documents



DOM

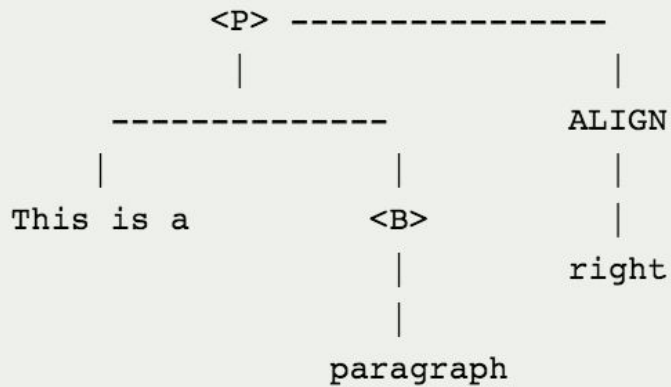
- The HTML DOM is a standard object model and programming interface for HTML. It defines:
 - The HTML elements as objects
 - The properties of all HTML elements
 - The methods to access all HTML elements
 - The events for all HTML elements

<http://www.quirksmode.org/dom/intro.html>

DOM

```
<P ALIGN="right">This is a <B>paragraph</B></P>
```

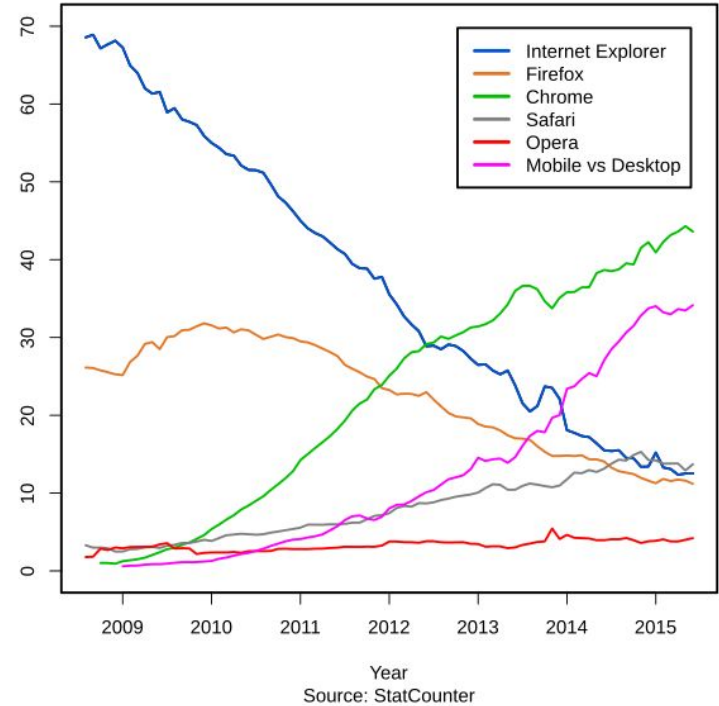
would give something like



Browser Capacity

Browser	HTML5test score ^[67]
Apple Safari 9.0	400/555
Google Chrome 47	521/555
Internet Explorer 11	336/555
Microsoft Edge 13	458/555
Mozilla Firefox 42	468/555
Opera 31	525/555

Usage share of web browsers



Browser Capacity

Local storage limitation (Tested on MacOS)

- Chrome 47.0.2526.106 : 5200000 characters
- Safari Version 9.0.1 (11601.2.7.2): 2600000 characters
- FireFox 33.1.1: 5200000 characters

Browser Capacity

Mobile

	Chrome	Android Browser	Firefox	Safari	Safari	iOS WebView	iOS WebView
	40	4.3	34	6, 7	8	6, 7	8
Application Cache	up to quota	Unlimited?	5MB, Unlimited	300MB?	300MB?	100MB?	100MB?
FileSystem	up to quota						
IndexedDB	up to quota		5MB, Unlimited		up to quota?		up to quota?
WebSQL	up to quota	200MB~		5MB, 10MB, 25MB, 50MB	5MB, 10MB, 25MB, 50MB	50MB	50MB
LocalStorage	10MB	2MB	10MB	5MB	5MB	5MB	5MB
SessionStorage	10MB	Unlimited		5MB	Unlimited	5MB	Unlimited

Browser Capacity

Desktop

	Chrome	Firefox	Safari	Safari	IE	IE
	40	34	6, 7	8	9	10, 11
Application Cache	up to quota	500MB, Unlimited	Unlimited?	Unlimited?		100MB?
FileSystem	up to quota					
IndexedDB	up to quota	50MB, Unlimited		up to quota?		10MB, 250MB (~999MB)
WebSQL	up to quota		5MB, 10MB, 50MB, 100MB, 500MB, 600MB, 700MB...	5MB, 10MB, 50MB, 100MB, 500MB, 600MB, 700MB...		
LocalStorage	10MB	10MB	5MB	5MB	10MB	10MB
SessionStorage	10MB		Unlimited	Unlimited	10MB	10MB

<http://www.html5rocks.com/en/tutorials/offline/quota-research/>

Browser Capacity

- Check capacity of browser <http://caniuse.com/>

Assignment

1. Research about script loading follow HTML5 specs (defer / async) and write example to validate
2. Research about localStorage, sessionStorage, IndexedDB, WebSQL. Write examples.

* Research = research + example + presentation



Q&A



Thanks for your listening!
