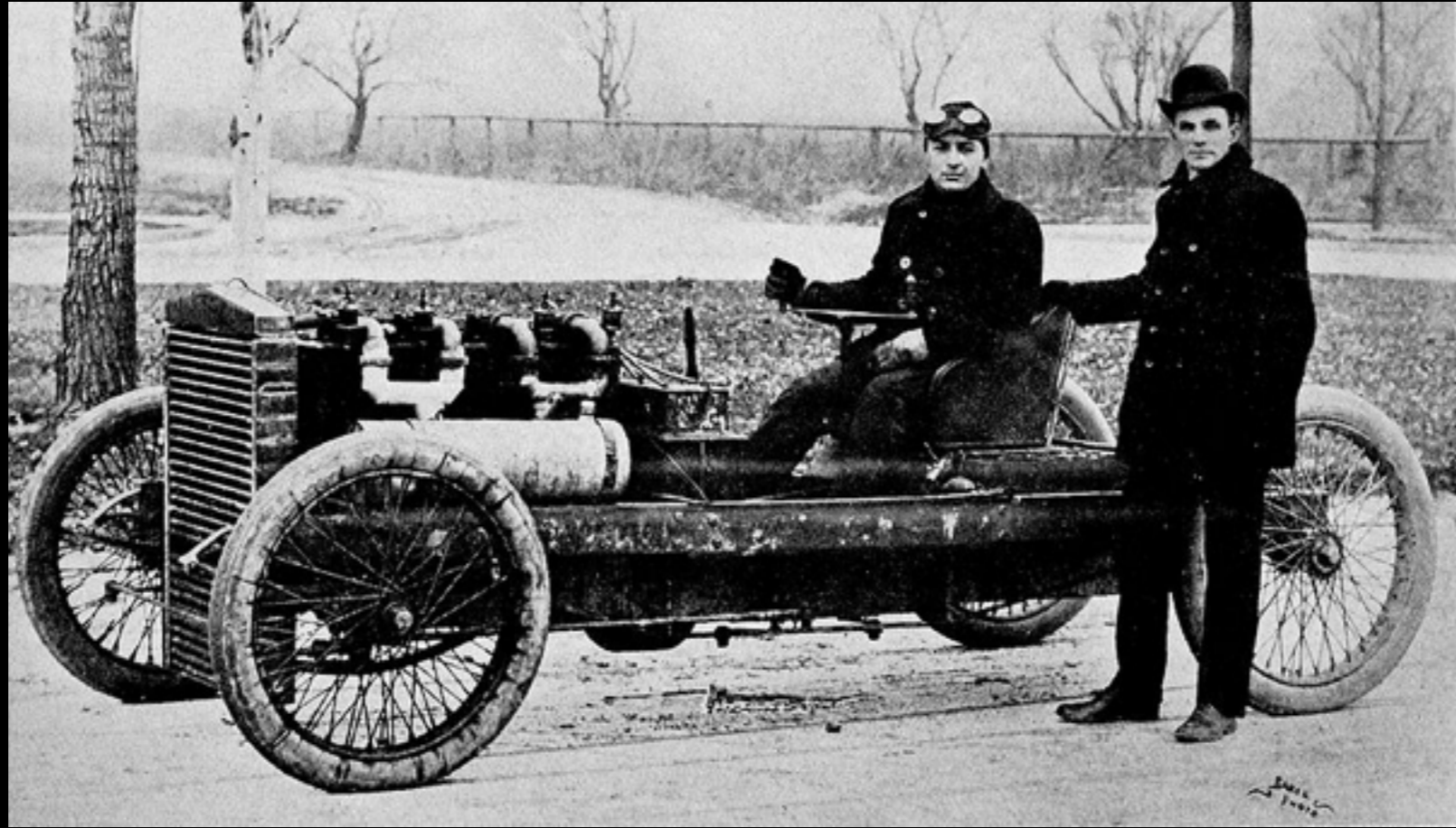
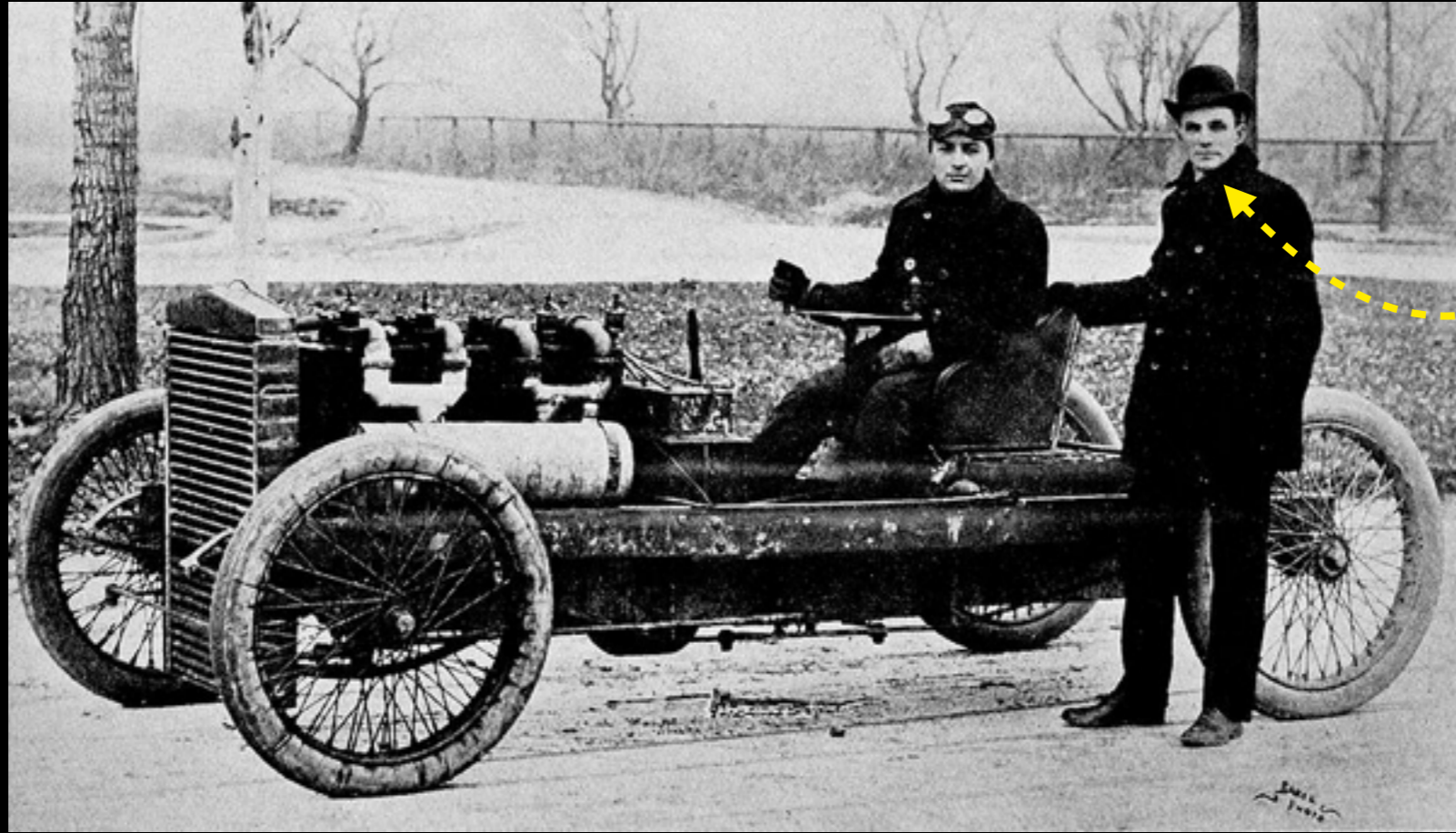


Working with the

DOM

& Living to Tell





Henry
Ford?

1990s



World Wide Web

The WorldWideWeb (W3) is a wide-area [hypermedia](#) information retrieval initiative aiming to give universal access to a large universe of documents.

Everything there is online about W3 is linked directly or indirectly to this document, including an [executive summary](#) of the project, [Mailing lists](#), [Policy](#), November's [W3 news](#), [Frequently Asked Questions](#)

[What's out there?](#)

Pointers to the world's online information, [subjects](#), [W3 servers](#), etc.

[Help](#)

on the browser you are using

[Software Products](#)

A list of W3 project components and their current state. (e.g. [Line Mode](#), [X11 Viola](#), [NeXTStep](#), [Servers](#), [Tools](#), [Mail robot](#), [Library](#))

[Technical](#)

Details of protocols, formats, program internals etc.

[Bibliography](#)

Paper documentation on W3 and references.

[People](#)

A list of some people involved in the project.

[History](#)

A summary of the history of the project.

[How can I help?](#)

If you would like to support the web.

[Getting code](#)

Getting the code by [anonymous FTP](#), etc.

1990s

Browser
Wars



World Wide Web

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1990s

Browser
Wars



1990s

Browser
Wars

Netscape vs.
Internet Explorer



1990s

Browser
Wars

Netscape vs.
Internet Explorer

JScript vs.
Javascript

1994

W3C

1995

DOM Level 0 / HTML 4

1997

Intermediate DOM / DHTML,
ECMAScript

1998

DOM Level 1 / weak browser upgrades

2000

DOM Level 2 / getElementById

2004

DOM Level 3 / keyboard

2014

DOM Level 4 / Draft





What exactly is
the DOM?

```
index.html — codepen_EyjGv
FOLDERS
codepen_EyjGv
css
Index.html
license.txt
README.txt
Index.html
1 <!DOCTYPE html>
2 <html>
3
4 <head>
5
6   <meta charset="UTF-8">
7
8   <title>CodePen - A Pen by m3uc</title>
9
10  <link rel="stylesheet" href="css/style.css"
    media="screen" type="text/css" />
11
12 </head>
13
14 <body>
15
16   <div class="owl">
17     <div class="shadow"></div>
18     <div class="branch"></div>
19
20     <div class="ears"></div>
21     <div class="body"></div>
22
```

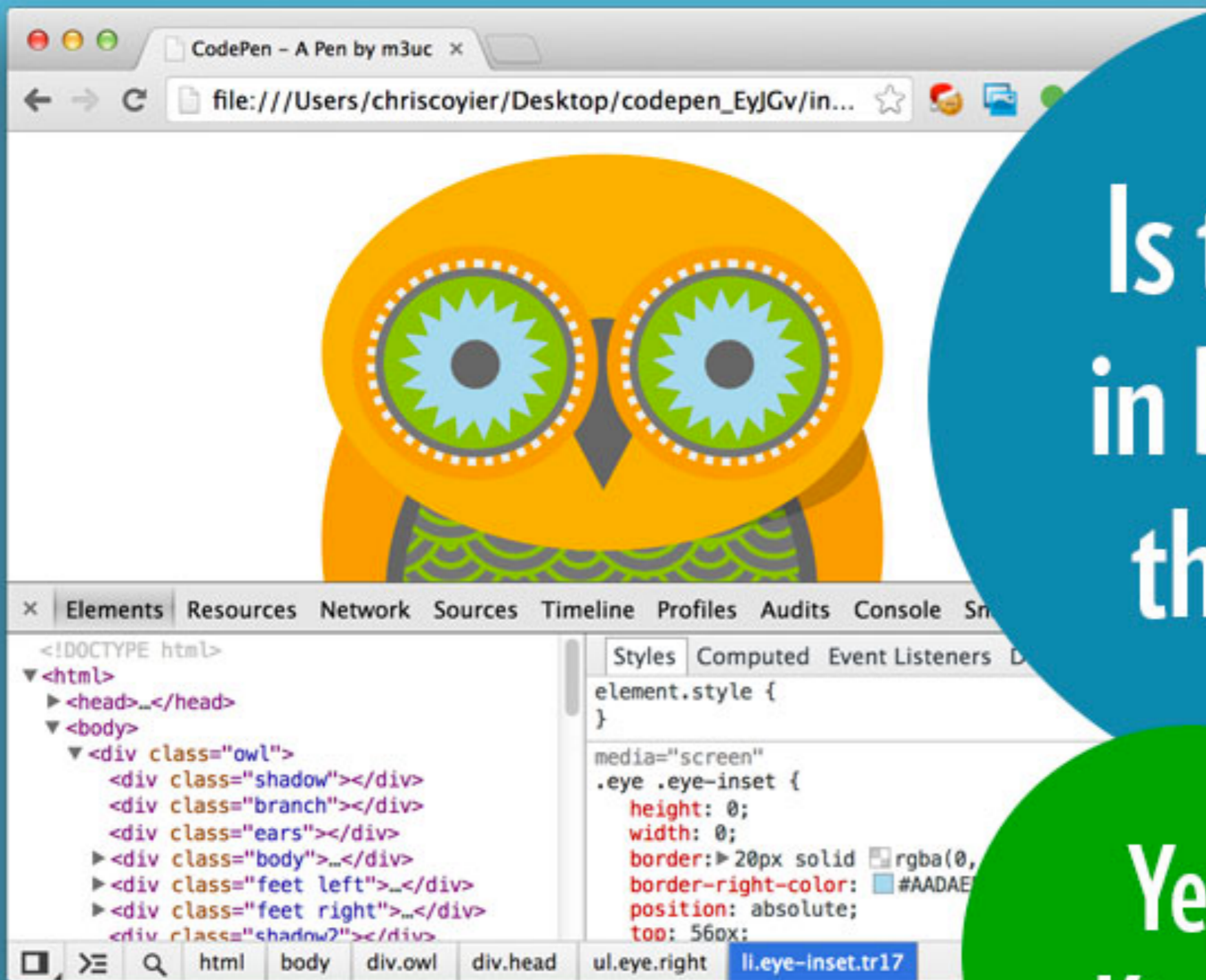
Is the HTML you
write the DOM?

Nope.
Not really.

```
index.html x
view-source:file:///Users/chris...
1 <!DOCTYPE html>
2 <html>
3
4 <head>
5
6   <meta charset="UTF-8">
7
8   <title>CodePen - A Pen by m3uc</title>
9
10  <link rel="stylesheet" href="css/style.css" media="screen" type="text/css" />
11
12 </head>
13
14 <body>
15
16   <div class="owl">
17     <div class="shadow"></div>
18     <div class="branch"></div>
19
20     <div class="ears"></div>
21     <div class="body"></div>
22
23     <div class="feet left"></div>
24     <div class="feet right"></div>
25
26     <div class="shadow2"></div>
27
28     <div class="head">
29       <div class="beak"></div>
30       <ul class="eye left">
```

Is 'View Source'
the DOM?

Nope.
Not really.



Is the code
in DevTools
the DOM?

Yep!
Kinda.

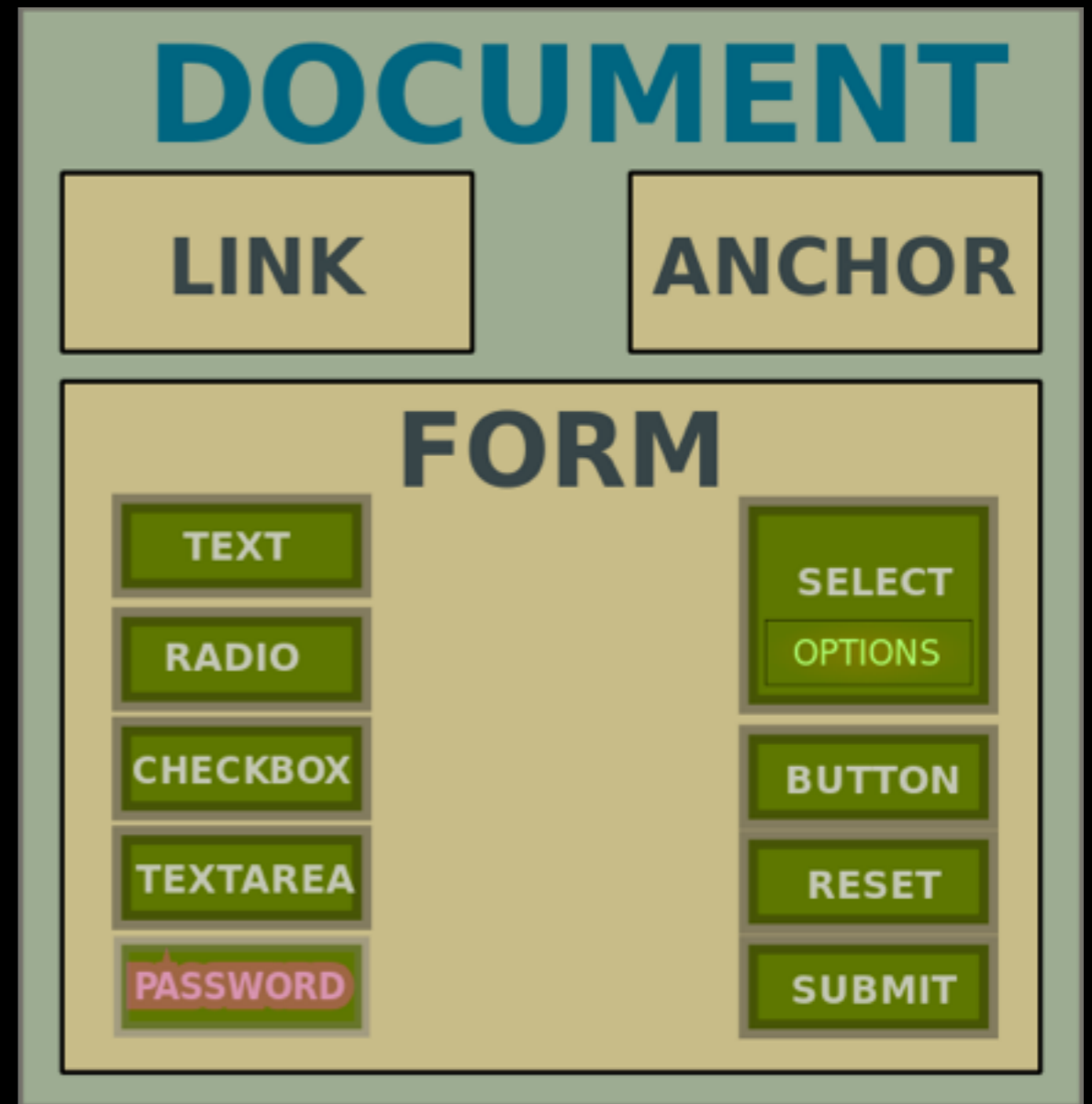
The Document Object Model (DOM) is a platform- and language-neutral interface that will allow programs and scripts to dynamically access and update the content, structure and style of documents. (w3.org/DOM)

The DOM is an

API

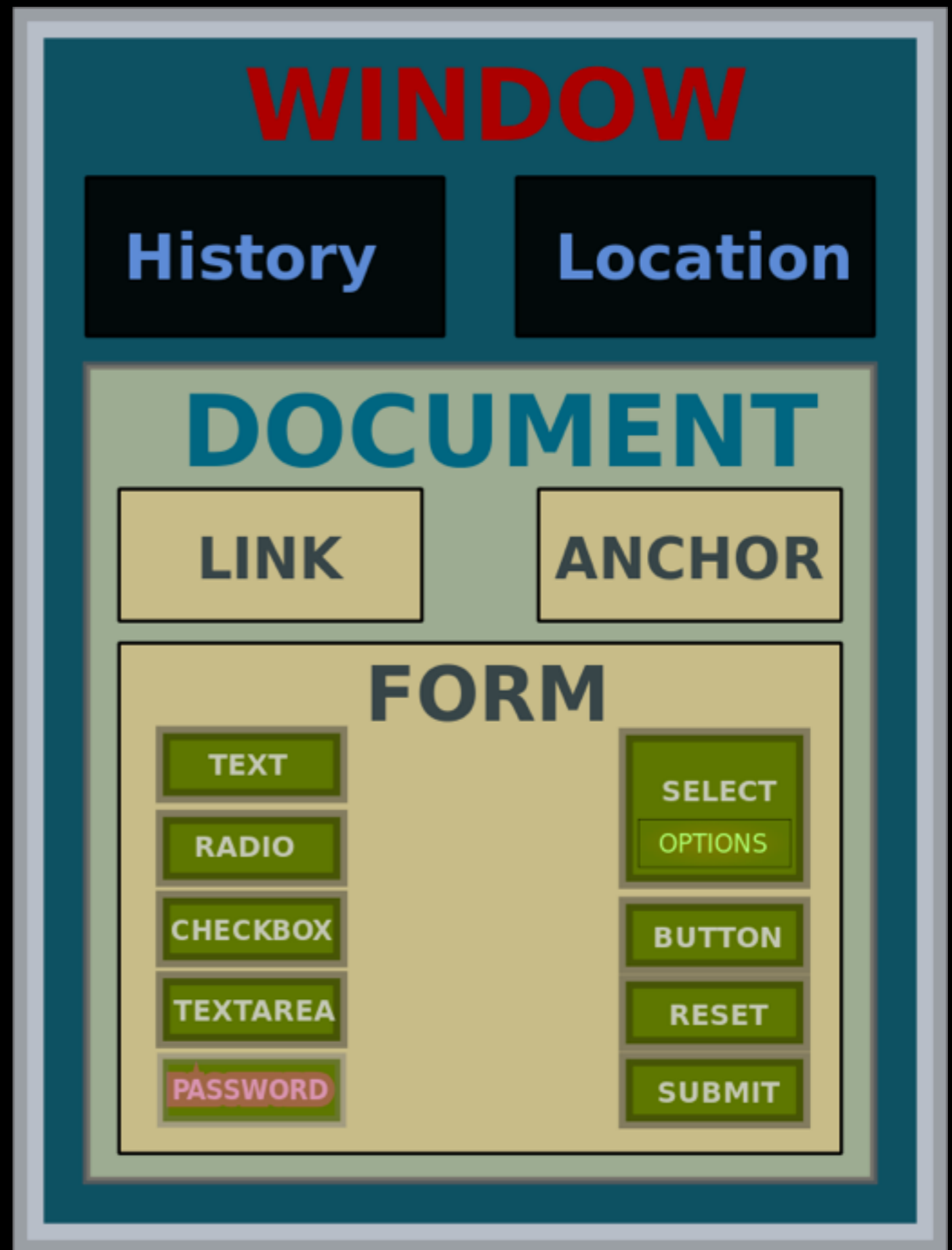


DOM

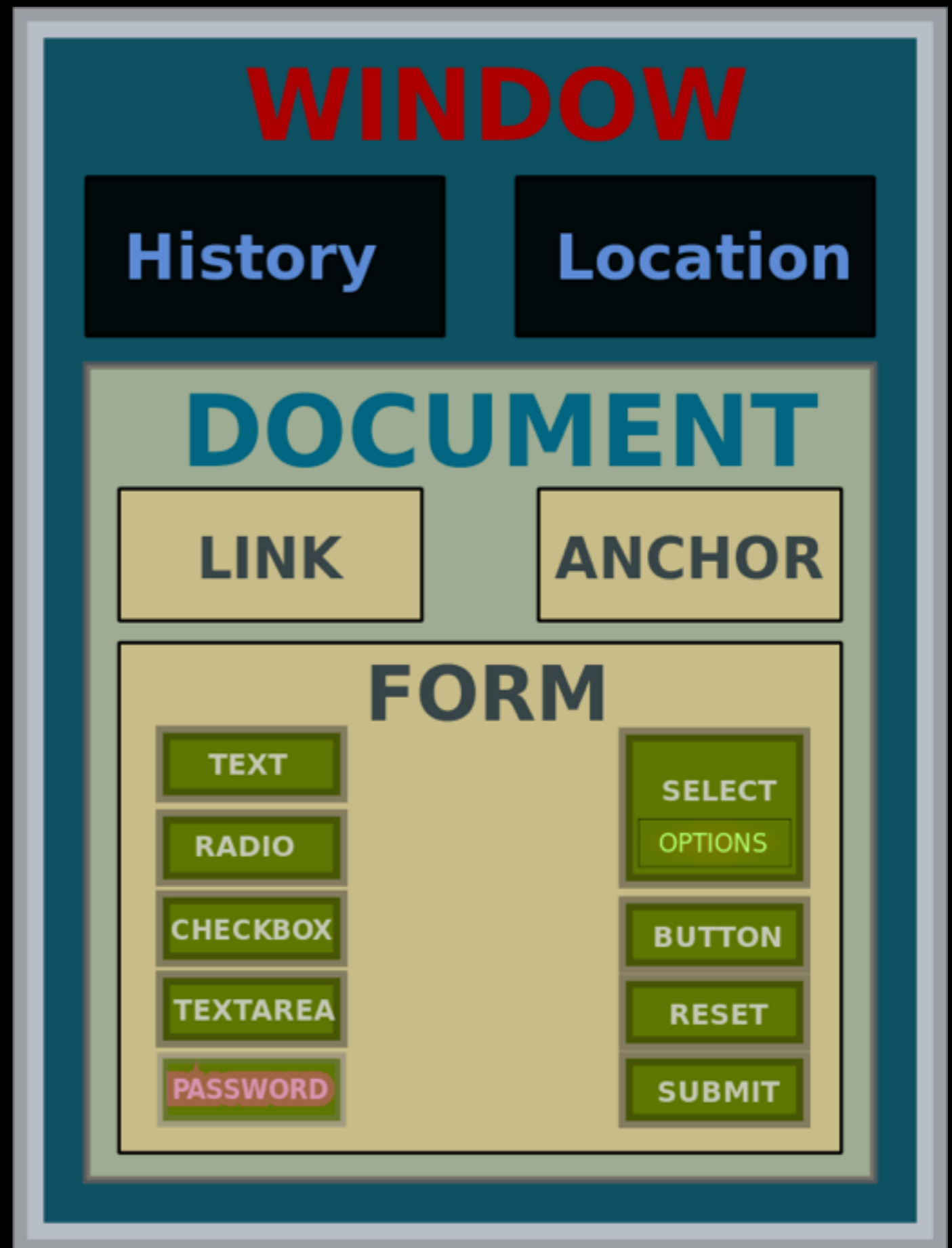


BOM

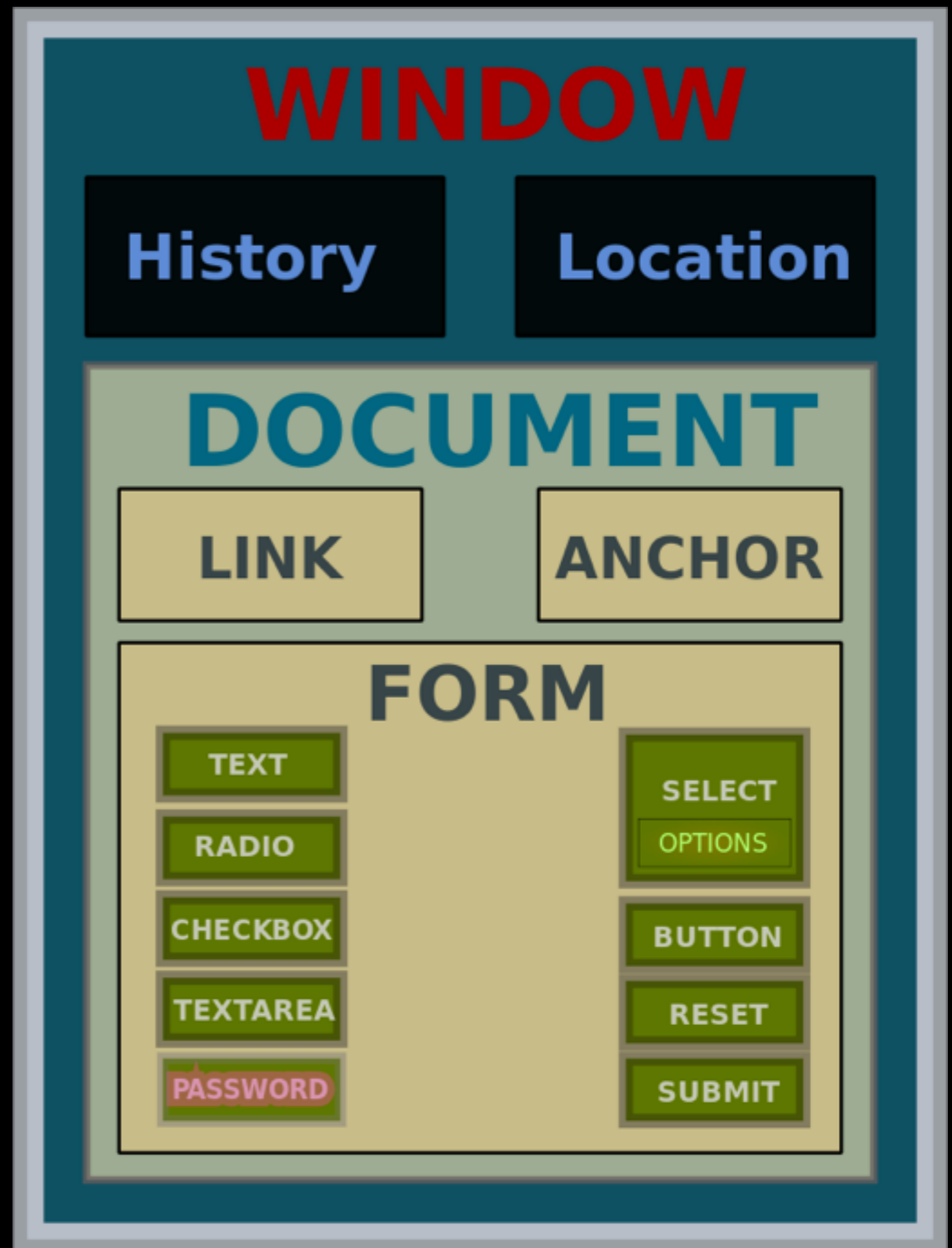
DOM



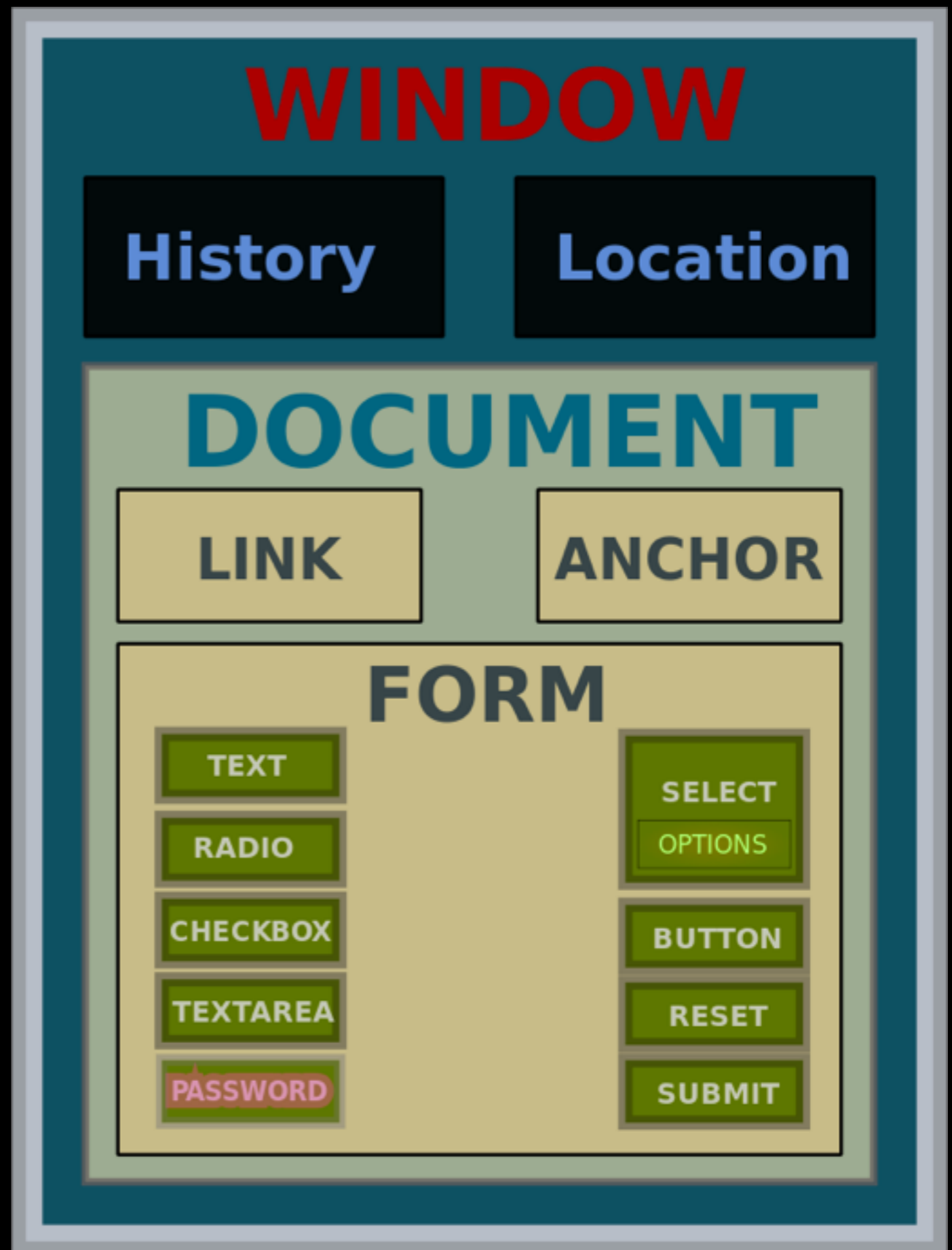
- Interact with it (JS, CSS)



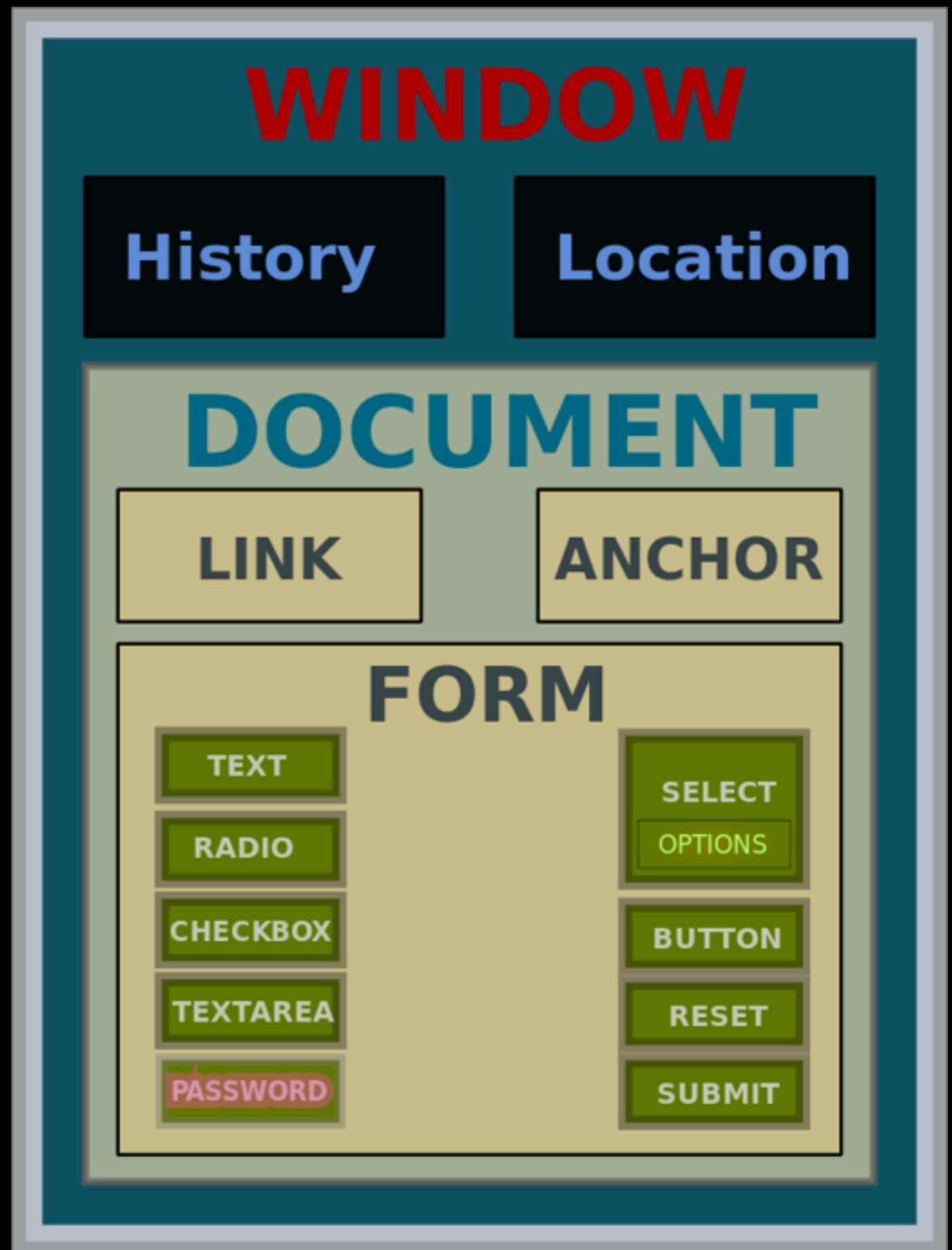
- Interact with it (JS, CSS)
- Nodes (elements)



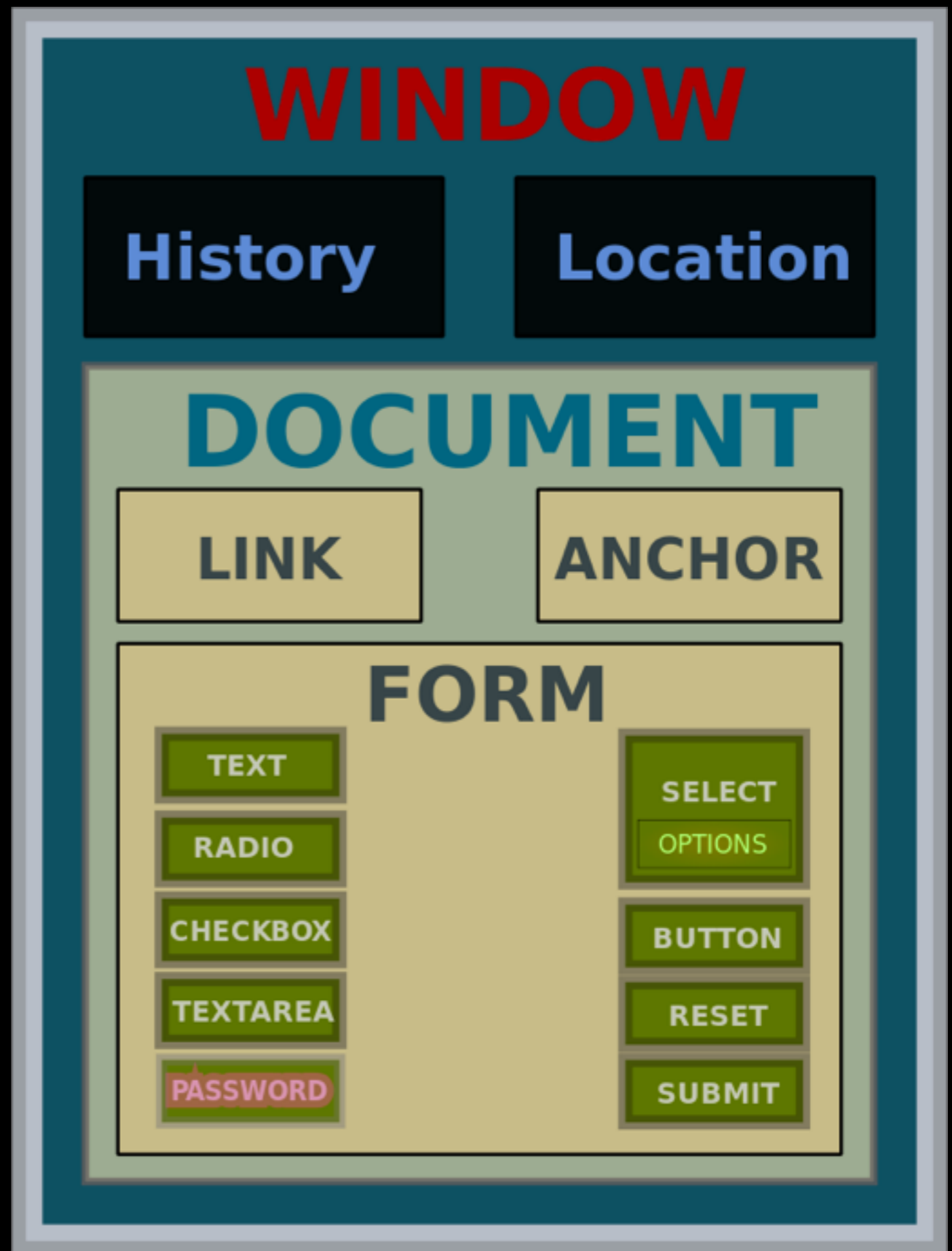
- Interact with it (JS, CSS)
- Nodes (elements)
- Parents & Children (inheritance)



- Interact with it (JS, CSS)
- Nodes (elements)
- Parents & Children (inheritance)
- Events



- Interact with it (JS, CSS)
- Nodes (elements)
- Parents & Children (inheritance)
- Events
- \neq HTML (a markup language that enables representing a certain kind of DOM in text.)



- Designed for C, C++, JAVA, JavaScript and others.

- Designed for C, C++, JAVA, JavaScript and others.
- "A camel is a horse designed by committee." ([source](#))

- Designed for C, C++, JAVA, JavaScript and others.
- "A camel is a horse designed by committee." ([source](#))
- Implemented in each browser, **differently**. (!!)

- Designed for C, C++, JAVA, JavaScript and others.
- "A camel is a horse designed by committee." ([source](#))
- Implemented in each browser, **differently**. (!!)

Test	IE 5-5	IE 6	IE 7	IE 8	IE 9	IE10 pr2	FF 7.0 Win	FF 6.1 Mac	Saf 5.1 Win	Saf 5.1 Mac	Chrome 14 Win	Chrome 13 Mac	Opera 11.51 Win	Opera 11.51 Mac
<p>keypress</p> <p>When a keystroke leads to a character being added to an HTML element.</p> <p>This event should fire only if a keystroke leads to a character actually being added to an HTML element such as a text input. It should not fire when the user presses keys like the arrow keys which do not result in a character.</p> <p>The event should continue firing as long as the user keeps the key depressed.</p> <ul style="list-style-type: none"> • Firefox and Opera fire keypress events on any key. 	yes	yes	yes	yes	yes	yes	incorrect	incorrect	yes	yes	yes	yes	incorrect	incorrect

Test	IE 5-5	IE 6	IE 7	IE8	IE9	IE10 pr2	FF 7.0 Win	FF 6.1 Mac	Saf 5.1 Win	Saf 5.1 Mac	Chrome 14 Win	Chrome 13 Mac	Opera 11.51 Win	Opera 11.51 Mac
<p>mouseenter</p> <p>When the mouse enters an element, but doesn't bubble.</p> <p>Come on, Mozilla.</p> <p>Come on, Apple.</p> <p>Come on, Google.</p>	yes	yes	yes	yes	yes	yes	no	no	no	no	no	no	yes	yes
<p>THE OTHER BROWSERS SHOULD IMPLEMENT THESE EVENTS AS SOON AS POSSIBLE. THEY ARE IN THE SPEC. THE SPEC IS THE THINGY YOU SHOULD FOLLOW. SO FOLLOW IT!</p> <p>(Yes, I know I'm shouting, but I've been saying this since 2003 and nobody has ever paid my message the least attention ... well, Opera has done something, but it took eight years.)</p> <p>Mouseover and mouseout also fire when the user mouses over or out of a <i>child element</i> of the element you registered the events on. Mouseenter and mouseleave don't. Thus, they are the true equivalent of CSS <code>:hover</code>.</p> <p>Once these events are supported by all browsers, creating dropdown menus will become a walk in the park. It's the non-conforming browsers' fault that we still have to waste hours and hours on carefully distinguishing between important and unimportant mouseover and mouseout events. If we just had mouseenter and mouseleave, all our problems would be solved.</p>														

Test	IE 5-5	IE 6	IE 7	IE8	IE9	IE10 pr2	FF 7.0 Win	FF 6.1 Mac	Saf 5.1 Win	Saf 5.1 Mac	Chrome 14 Win	Chrome 13 Mac	Opera 11.51 Win	Opera 11.51 Mac
<p>mousewheel</p> <p>When the user uses the mousewheel. Note that the page does not have to scroll for the event to fire.</p>	no	yes	buggy	yes	yes	yes	no	no	yes	yes	yes	yes	yes	yes
<p>It is possible to cancel the default action so that the element does not scroll.</p> <ul style="list-style-type: none"> If a mousewheel event handler is defined on an element in IE8, using the mouse wheel does not scroll the element. The event fires correctly, though. In other words, IE8 always prevents the default of the mousewheel event. 														

Headaches! [\(link\)](#)

- Getting the Cursor Position
- Getting the Size of the Viewport, or Browser Window
- IE, background transparent click (and many many many others)
- DOM Ready (38-line [solution](#))

Solutions?

- jQuery,
- MooTools,
- Prototype,
- CSS Resets.

Whatever it is you want to do,
you need to do it with DOM!

What did I want to do?

What did I want to do?

```
the quick brown  
fox jumps over the  
lazy dog
```

What did I want to do?

the quick brown
fox jumps over the
lazy dog



THE QUICK
BROWN
FOX
JUMPS OVER THE
LAZY DOG

1. Default Behaviour

```
<div>  
  the quick  
  brown  
  fox  
  jumps over the  
  lazy dog  
</div>
```

```
the quick brown  
fox jumps over the  
lazy dog
```

2. Add CSS

```
<div class="styled">  
  the quick  
  brown  
  fox  
  jumps over the  
  lazy dog  
</div>
```

the quick brown fox
jumps over the lazy dog

3. Uppercase & Line Breaks

```
<div class="styled">  
  THE QUICK<br>  
  BROWN<br>  
  FOX<br>  
  JUMPS OVER THE<br>  
  LAZY DOG<br>  
</div>
```

THE QUICK
BROWN
FOX
JUMPS OVER THE
LAZY DOG

4. ■ Separate Lines

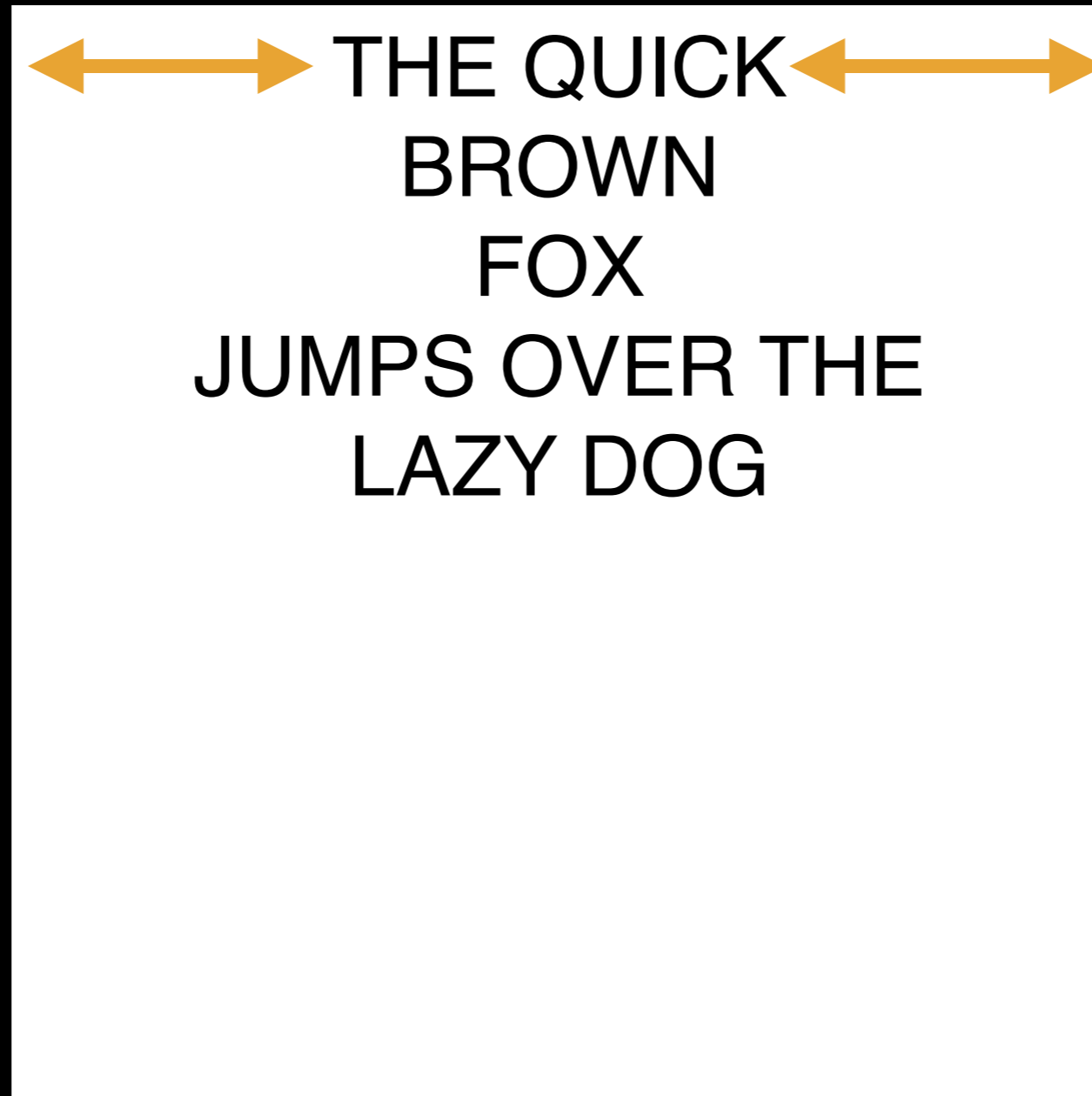
```
<div class="styled">  
  <div class="line">THE QUICK</div>  
  <div class="line">BROWN</div>  
  <div class="line">FOX</div>  
  <div class="line">JUMPS OVER THE</div>  
  <div class="line">LAZY DOG</div>  
</div>
```

THE QUICK
BROWN
FOX
JUMPS OVER THE
LAZY DOG

5. Calculate Line Width

THE QUICK
BROWN
FOX
JUMPS OVER THE
LAZY DOG

5. Calculate Line Width



6 ■ Do the Math (Rule of Three, anybody?)

THE QUICK

BROWN

FOX

JUMPS OVER THE

LAZY DOG

6 ■ Do the Math (Rule of Three, anybody?)

THE QUICK
BROWN

FOX

JUMPS OVER THE

LAZY DOG

Voilà!

THE QUICK
BROWN
FOX
JUMPS OVER THE
LAZY DOG

Voilà!

FOOD

&

BEVERAGE

Voilà!

**WORLD
WAR II**

Chrome

Voilà!

**WORLD
WAR II**

Firefox

Voilà!

**WORLD
WAR II**

IE

Voilà!?!?

WORLD
D
WAR II

Safari

Frameworks & Extensions

jQuery (edge)

jQuery UI 1.8.5

QUnit

Firebug Lite

jQuery UI 1.8.9

jQuery Lint

onLoad

Fiddle Options

External Resources

Languages

Ajax Requests

Legal, Credits and Links

```
1 <div class='wrapper'>
2   The quick
3   brown
4   fox
5   jumps over the
6   lazy dog
7 </div>
8 <br>
```

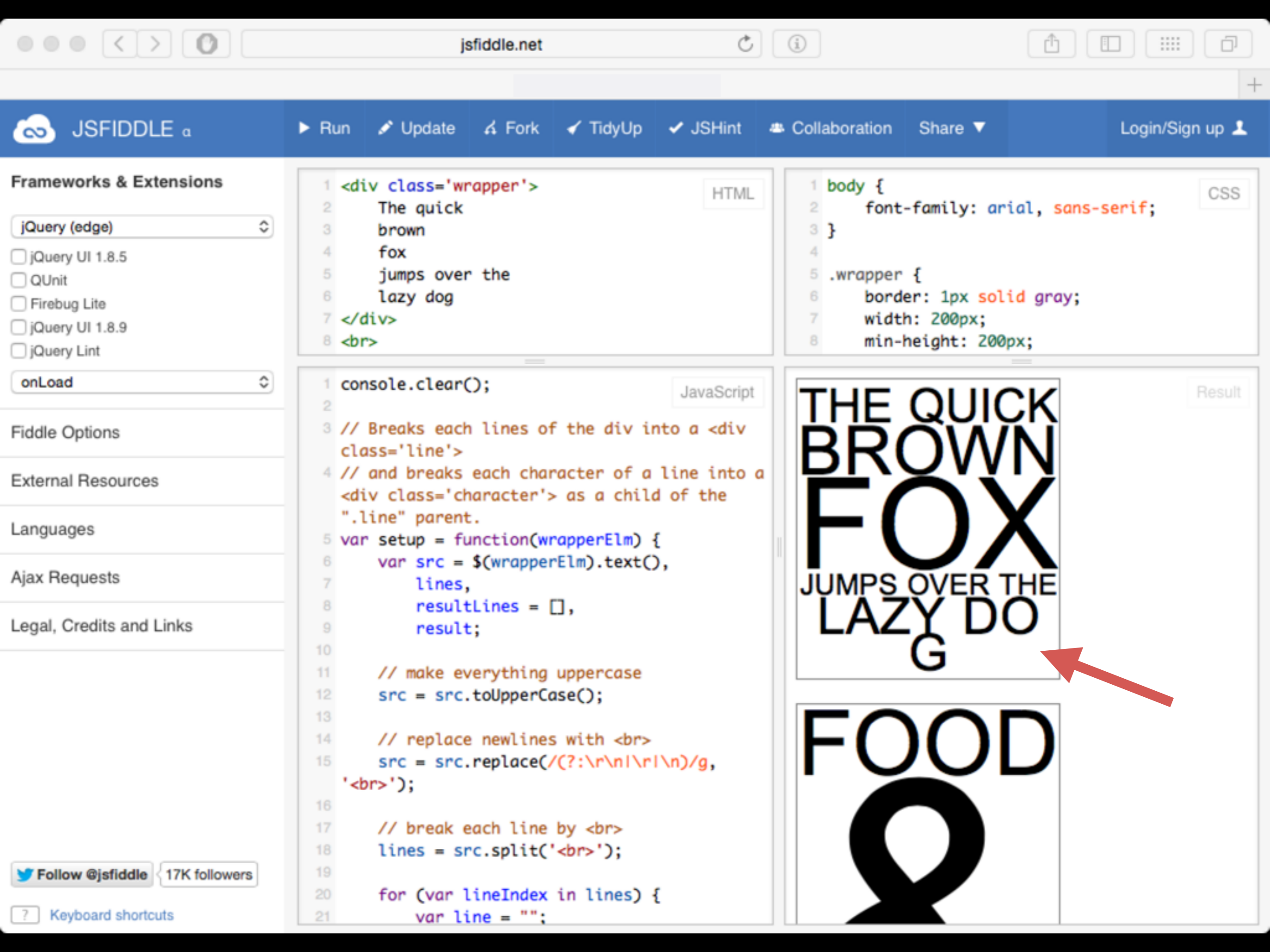
```
1 body {
2   font-family: arial, sans-serif;
3 }
4
5 .wrapper {
6   border: 1px solid gray;
7   width: 200px;
8   min-height: 200px;
```

```
1 console.clear();
2
3 // Breaks each lines of the div into a <div
4 // and breaks each character of a line into a
5 // as a child of the
6 // ".line" parent.
7 var setup = function(wrapperElm) {
8   var src = $(wrapperElm).text(),
9       lines,
10      resultLines = [],
11      result;
12
13 // make everything uppercase
14 src = src.toUpperCase();
15
16 // replace newlines with <br>
17 src = src.replace(/(?:\r\n|\r|\n)/g,
18 '<br>');
19
20 // break each line by <br>
21 lines = src.split('<br>');
22
23 for (var lineIndex in lines) {
```



Follow @jsfiddle 17K followers

Keyboard shortcuts



Frameworks & Extensions

- jQuery (edge)
 - jQuery UI 1.8.5
 - QUnit
 - Firebug Lite
 - jQuery UI 1.8.9
 - jQuery Lint
- onLoad

Fiddle Options

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```
1 <div class='wrapper'>
2   The quick
3   brown
4   fox
5   jumps over the
6   lazy dog
7 </div>
8 <br>
```

HTML

```
1 body {
2   font-family: arial, sans-serif;
3 }
4
5 .wrapper {
6   border: 1px solid gray;
7   width: 200px;
8   min-height: 200px;
```

CSS

```
1 console.clear();
2
3 // Breaks each lines of the div into a <div
4 // and breaks each character of a line into a
5 // <div class='character'> as a child of the
6 // ".line" parent.
7 var setup = function(wrapperElm) {
8   var src = $(wrapperElm).text(),
9       lines,
10      resultLines = [],
11      result;
12
13   // make everything uppercase
14   src = src.toUpperCase();
15
16   // replace newlines with <br>
17   src = src.replace(/(?:\r\n|\r|\n)/g,
18   '<br>');
19
20   // break each line by <br>
21   lines = src.split('<br>');
```

JavaScript



Follow @jsfiddle 17K followers

Keyboard shortcuts

Tricky Hack

WORLD
D

WAR II

Safari

Tricky Hack

WORLD
WAR II

Safari

Solution

Dynamically adjust font-size



Chrome



Safari

Advantages

- OS-agnostic
- Infinite font support
- Dynamic rendering

Disadvantages

- Performance issues

Advantages

- OS-agnostic
- Infinite font support
- Dynamic rendering

Disvantages

- ~~Performance issues~~ - use cookies!

Optimize

TIM.JS
ROCKS

Optimize

TIM.J

S

ROCK

S

Optimize

TIM.

JS

ROCK

KS

Optimize

TIM.J

S

ROCK

S

Optimize

TIM.JS
ROCKS

cramify.JS

cramify.js

<https://github.com/cassilup/cramify.js>

Try Fork Contribute

What the Others did. (L.O.S.T. anybody?)

AngularJS

Don't touch the DOM!



ReactJS

Virtual DOM.





