

# In-browser code editing

## Marijn Haverbeke

(Interactive slides at <http://marijnhaverbeke.nl/talks/goto2012>)

# a 3-part talk:

state of the art ✱

inspirational demo ✱

implementation war stories ✱

**textarea**  
**schmextarea**

who's who

ACE ❄️

CodeMirror ❄️

Orion ❄️

ACE  $\approx$  furniture  
CodeMirror  $\approx$  timber

**trust me**

**I am biased**

demo**time**

```
1 var curSlide, slides;
2
3 // Slide/hashmark management
4
5 CodeMirror.on(window, "load", function() {
6   slides = document.getElementsByTagName("slide");
7   runTimer()
8   changeSlide(document.location.hash ? Number(document.location.hash.slice(1))
9
10  CodeMirror.on(window, "scroll", function() {
11    if (atSlide(curSlide)) return;
12    for (var i = 0; i < slides.length; ++i)
13      if (atSlide(i)) {
14        var atEnd = document.body.scrollTop > document.body.scrollHeight -
15          document.documentElement.clientHeight - 10;
16        changeSlide(i, !atEnd);
17        return;
18      }
19  });
20
21
```

**cm.on("change", runLinter)**



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15         document.documentElement.clientHeight - 10;
16       changeSlide(i, !atEnd);
17       return;
18     }
19 });
20
21 CodeMirror.on(window, "hashchange", function() {
22
```

**a taste of ACE**

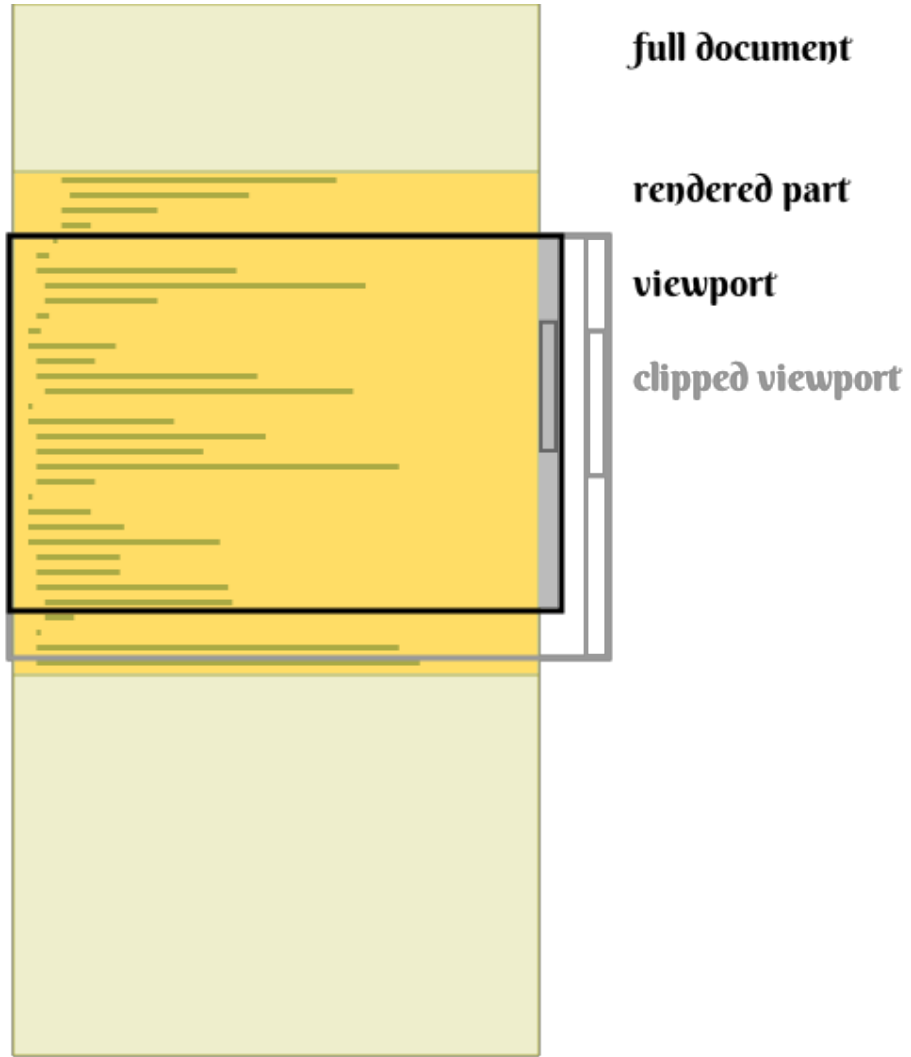
but  
how does it  
work?

the cursor  
is a **lie**

those  
scrollbars?

not

real  
either



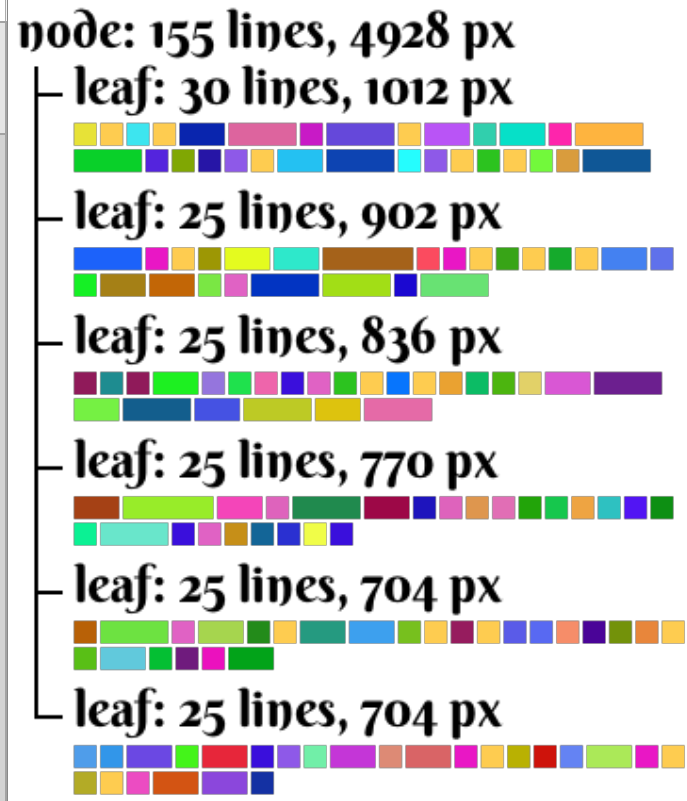
**scrolling model**

who's afraid of  
huge files?

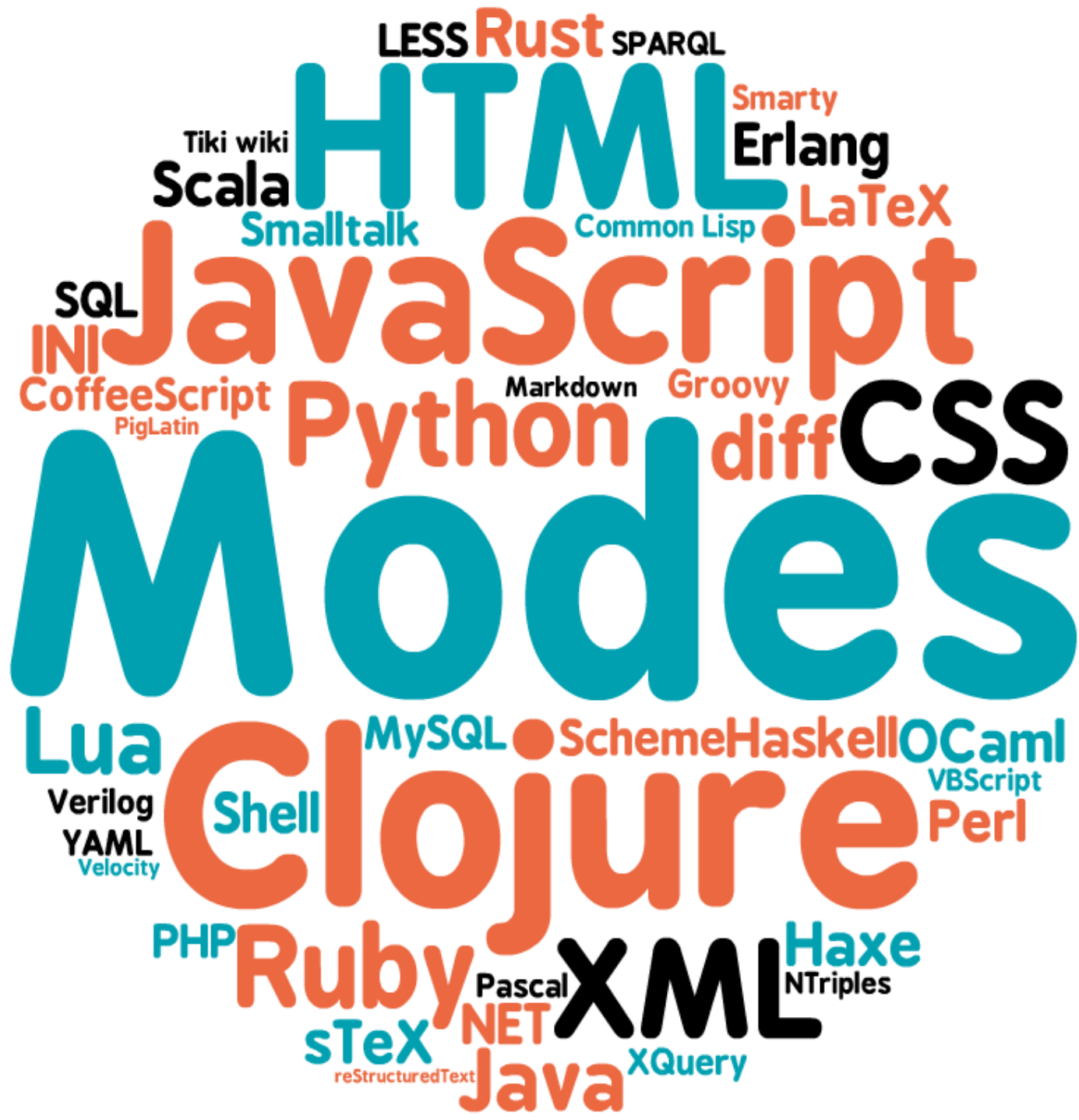
```

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3 // Slide/hashmark management
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5 CodeMirror.on(window, "load", function()
6 {
7   slides =
8   document.body.getElementsByTagName("slide
9   ");
10  runTimer();
11  changeSlide(document.location.hash ?
12  Number(document.location.hash.slice(1)) :
13  0);
14
15  CodeMirror.on(window, "scroll",
16  function() {
17    if (atSlide(curSlide)) return;
18    for (var i = 0; i < slides.length;
19    ++i)
20      if (atSlide(i)) {
21        var atEnd =
22        document.body.scrollTop >
23        document.body.scrollHeight -
24        document.documentElement.clientHeight -

```



## document b-tree





**startState:** `function()`  $\rightarrow$  `state`

**token:** `function(stream, state)`  $\rightarrow$  `string`

**indentation:** `function(state, string)`  $\rightarrow$  `integer`



**full document**

**viewport**

**mode state updates**

```
1 <document>
2   <section>
3     <item name="item0">01100111010101000111</item>
4     <item name="item1" type="2">11010000112001</item>
5   </secion>
6 </document>
7
```

**highlighting tag mismatch**

```
1 (function(){
2   function count(array, elt) {
3     var found = 0;
4     for (var i = 0; i < array.length; ++i)
5       if (array[i] === elt)
6         ++found;
7     console.log(array, found);
8     return found;
9   }
10 })();
```

**spotting local variables**

```
1 <!doctype html>
2
3 <head>
4   <meta charset="utf-8">
5   <title>Test HTML</title>
6   <style>
7     p#main { color: #90440a; }
8   </style>
9 </head>
10
11 <p id="main">I am HTML</p>
12
13 <script>
14   window.onload = function() {
15     alert("Hi, I am JavaScript");
16   };
17 </script>
18
```

**modes compose easily**

**the**  
**future**

**aside:**

**Orion's**  
**approach**

that's **all**, folks

<http://codemirror.net>

 **marijnjb** 