



# In-browser code editing

## Marijn Haverbeke

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

INTERNATIONAL  
SOFTWARE DEVELOPMENT  
CONFERENCE



gotocon.com

A series of white silhouettes of people in various poses, such as sitting at desks or standing in groups, are arranged along the bottom edge of the slide, suggesting a conference environment.

a 3-part talk:

state of the art \*

inspirational demo \*

implementation war stories \*

textarea

schmextarea

who's who

ACE \*

CodeMirror \*

Orion \*

$\mathcal{ACE} \approx \text{furniture}$   
 $\text{CodeMirror} \approx \text{timber}$

**trust me**  
**I am biased**

demotime

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

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

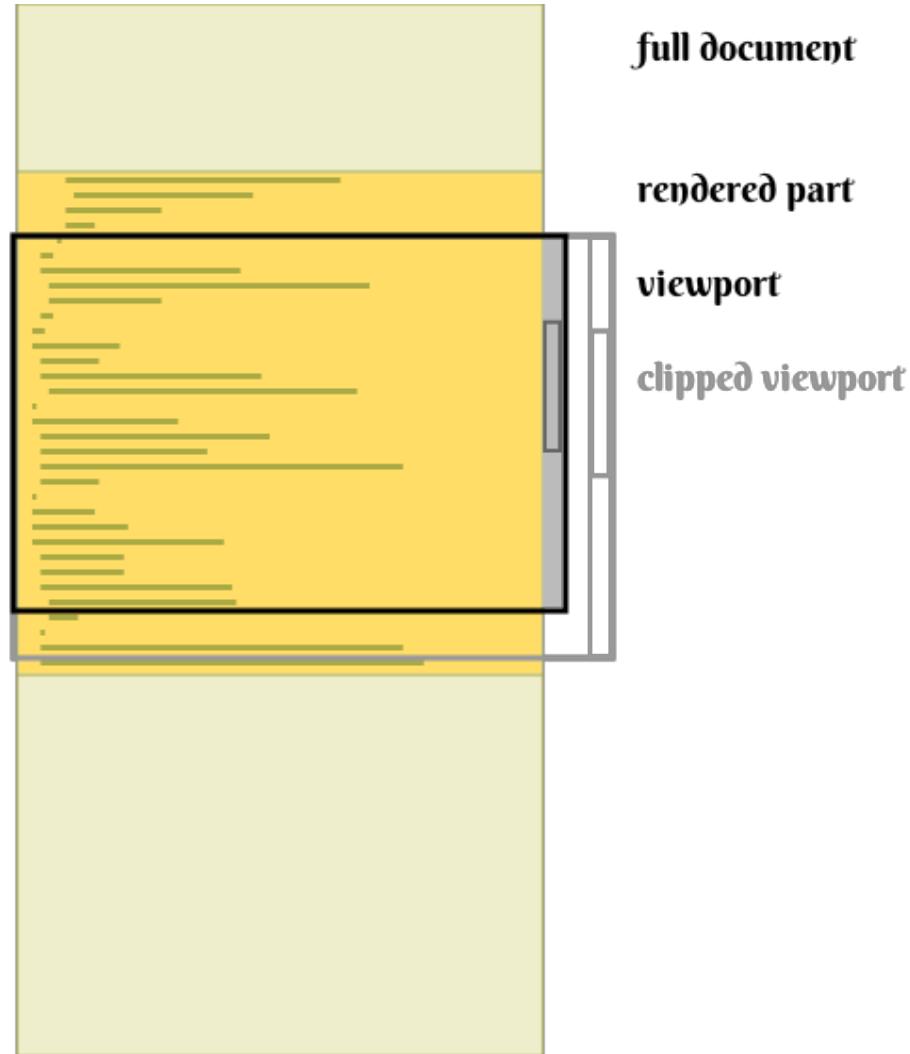
```
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15         document.documentElement.clientHeight - 10;
16       changeSlide(i, !atEnd);
17       return;
18     }
19   });
20
21 CodeMirror.on(window, "hashchange", function() {
22
```

a taste of  $\mathcal{ACE}$

but  
how does it  
work?

the cursor  
is a lie

those  
scrollbars?  
**not** real  
either



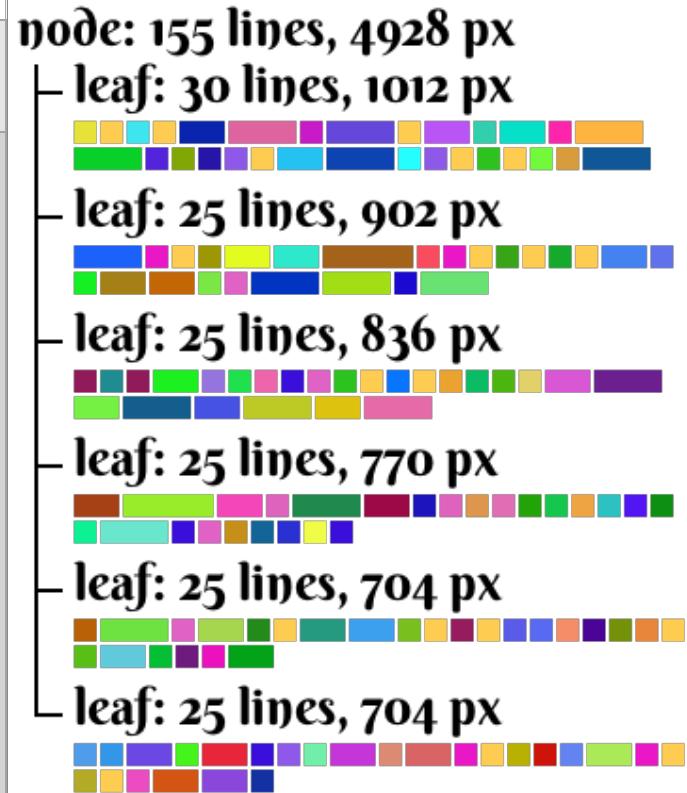
**scrolling model**

who's afraid of  
huge files?

```

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

```

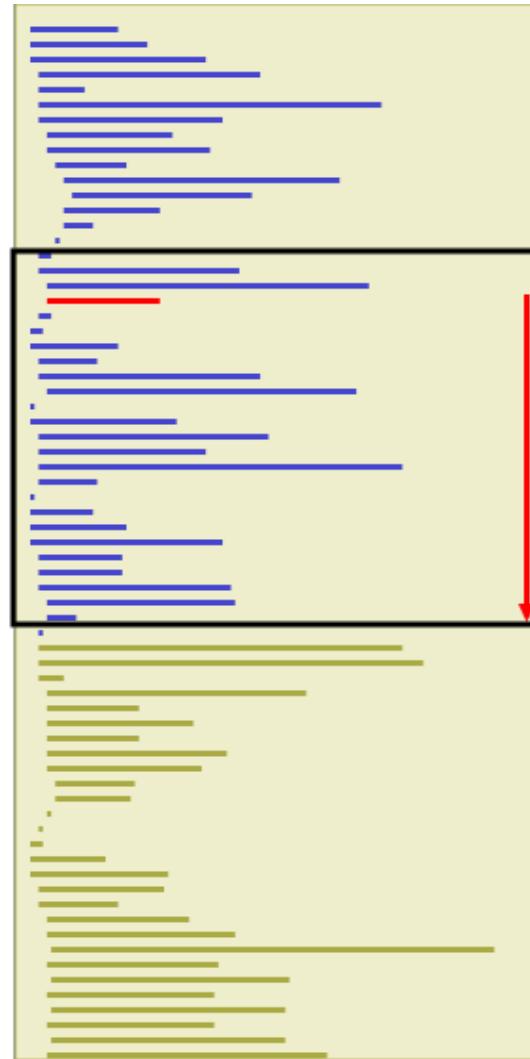


## document b-tree

LESS Rust SPARQL  
Tiki wiki Scala HTML Smarty  
Smalltalk Common Lisp LaTeX  
SQLINI JavaScript Python Groovy  
CoffeeScript PigLatin Markdown diff CSS  
Lua MySQL Scheme Haskell OCaml  
Verilog YAML Shell VBScript Perl  
Velocity Clojure  
PHP Ruby XML Haxe  
sTeX Pascal NET NTriples  
reStructuredText Java XQuery

# Modes

**startState**: function $0 \rightarrow \text{state}$   
**token**: function(stream, state)  $\rightarrow$  string  
**indentation**: function(state, string)  $\rightarrow$  integer



**full document**

**viewport**

**node 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 fund;
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>



marijnjh

