

Orion: Software Development in the Browser

Slides from
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IBM Ottawa Lab



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What is Orion?

- Software development in the browser: edit code, navigate code, search, versioning/SCM...
- Not an IDE in the Browser - a set of linked web pages
 - This makes adding functionality easy: link to new pages, potentially from different servers
- Current target: client-side web developers, working with JavaScript, HTML, and CSS

Why Orion?

- Me-too-argument:
(Almost) everything else is already web-based
- More arguments later

SW development in the Browser

- Bug tracking (Bugzilla, JIRA, Trac, Lighthouse, RTC)
- Builds (Jenkins/Hudson, CruiseControl, Bamboo, BuildForge)
- Code review (Bugzilla, Gerrit, GitHub)
- Documentation, Code Snippets
- Code repositories (GitHub, ViewCVS, Ohloh, Code Search, RTC)
- Debugger (Firebug, Web Inspector)

What's missing? Not much:

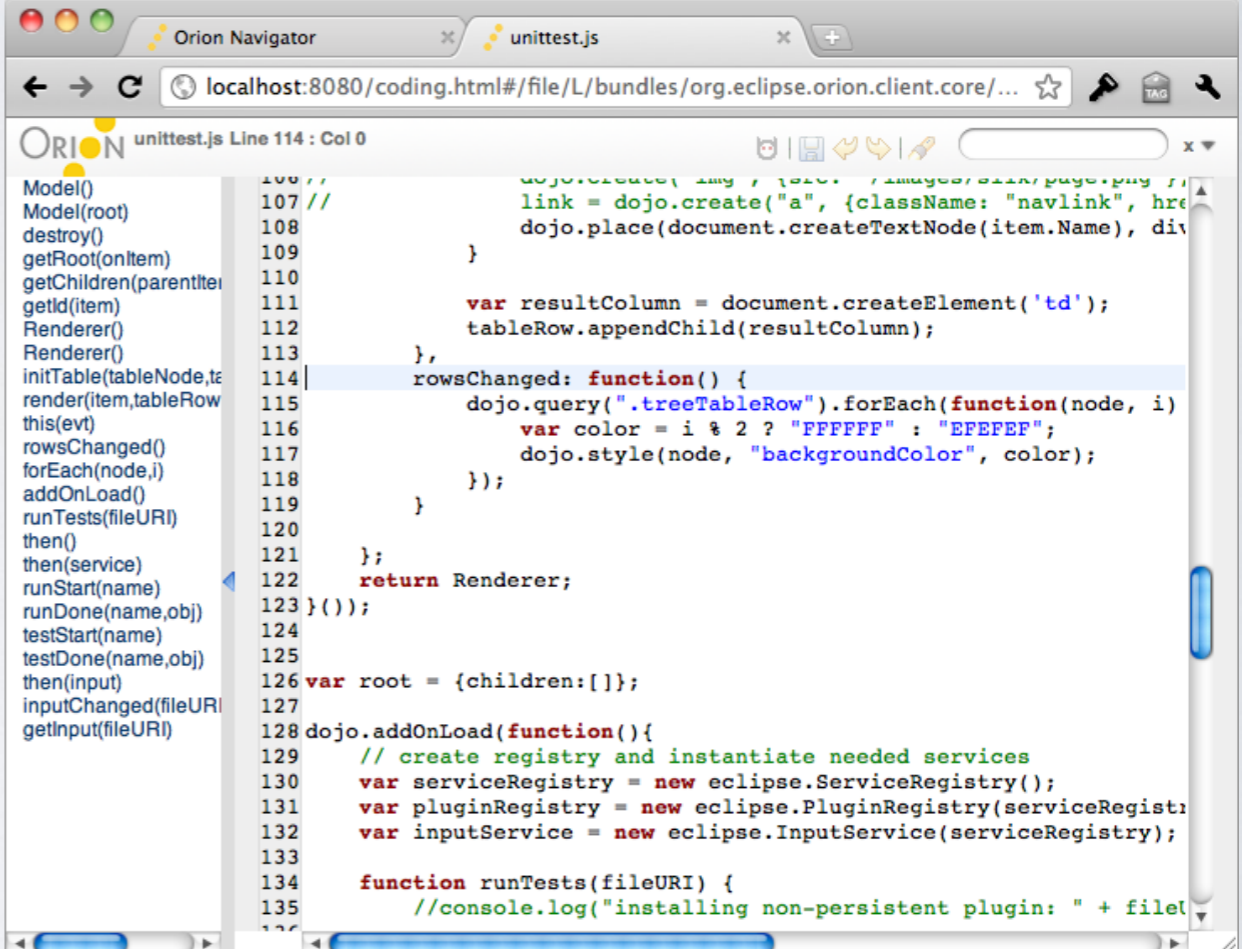
- Code Editor
- Navigator
- SCM (Commit, Compare, Merge, etc.)
- Indexing/Search
- Unit tests

Demo

```
106 //      dojo.create( "img", {src: "/images/skin/page.png",
107 //      link = dojo.create("a", {className: "navlink", href:
108      dojo.place(document.createTextNode(item.Name), div
109      }
110
111      var resultColumn = document.createElement('td');
112      tableRow.appendChild(resultColumn);
113  },
114  rowsChanged: function() {
115      dojo.query(".treeTableRow").forEach(function(node, i)
116          var color = i % 2 ? "FFFFFF" : "EFEFEF";
117          dojo.style(node, "backgroundColor", color);
118      });
119  }
120
121  };
122  return Renderer;
123 }());
124
125
126 var root = {children:[]};
127
128 dojo.addOnLoad(function(){
129     // create registry and instantiate needed services
130     var serviceRegistry = new eclipse.ServiceRegistry();
131     var pluginRegistry = new eclipse.PluginRegistry(serviceRegistry);
132     var inputService = new eclipse.InputService(serviceRegistry);
133
134     function runTests(fileURI) {
135         //console.log("installing non-persistent plugin: " + fileURI);
136     }
```


Code Editor

- Fast
- Scalable
- Works in all desktop browsers
- Faster than desktop Eclipse editor!



```
107 //      dojo.create( "img", {src: "/images/eclipse.png"},
108 //      link = dojo.create("a", {className: "navlink", href:
109 //      dojo.place(document.createTextNode(item.Name), div
110 //      }
111 //      var resultColumn = document.createElement('td');
112 //      tableRow.appendChild(resultColumn);
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121 //      return Renderer;
122 //      }());
123 //      };
124 //      };
125 //      };
126 //      var root = {children:[]};
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128 //      dojo.addOnLoad(function(){
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134 //      function runTests(fileURI) {
135 //      //console.log("installing non-persistent plugin: " + fileURI);
136 //      }
```

Orion Design Principles

- Regular Hyperlinks, back button, bookmarking, link sharing.
- Functionality on separate pages. Page = Task+Resource.
- Performant and Lightweight. Speed trumps power.
- Components should have value on their own.
- Low barrier of entry for adopters. Don't require technology buy-in.

Integration Possibilities

- Hyperlinks as an integration mechanism.
- OSLC, OAuth: Consume and produce server APIs.
- Client-side plug-ins: adding commands to existing UI.
- Integrate with browser debuggers: Firebug, WebKit Inspector
- Host additional UI components, e.g. OpenSocial Gadgets.

Additional thoughts: Why Orion

Development Tools

- We build our own tools.
- Not many other professions are like that.
- We enjoy writing tools!

Command Line

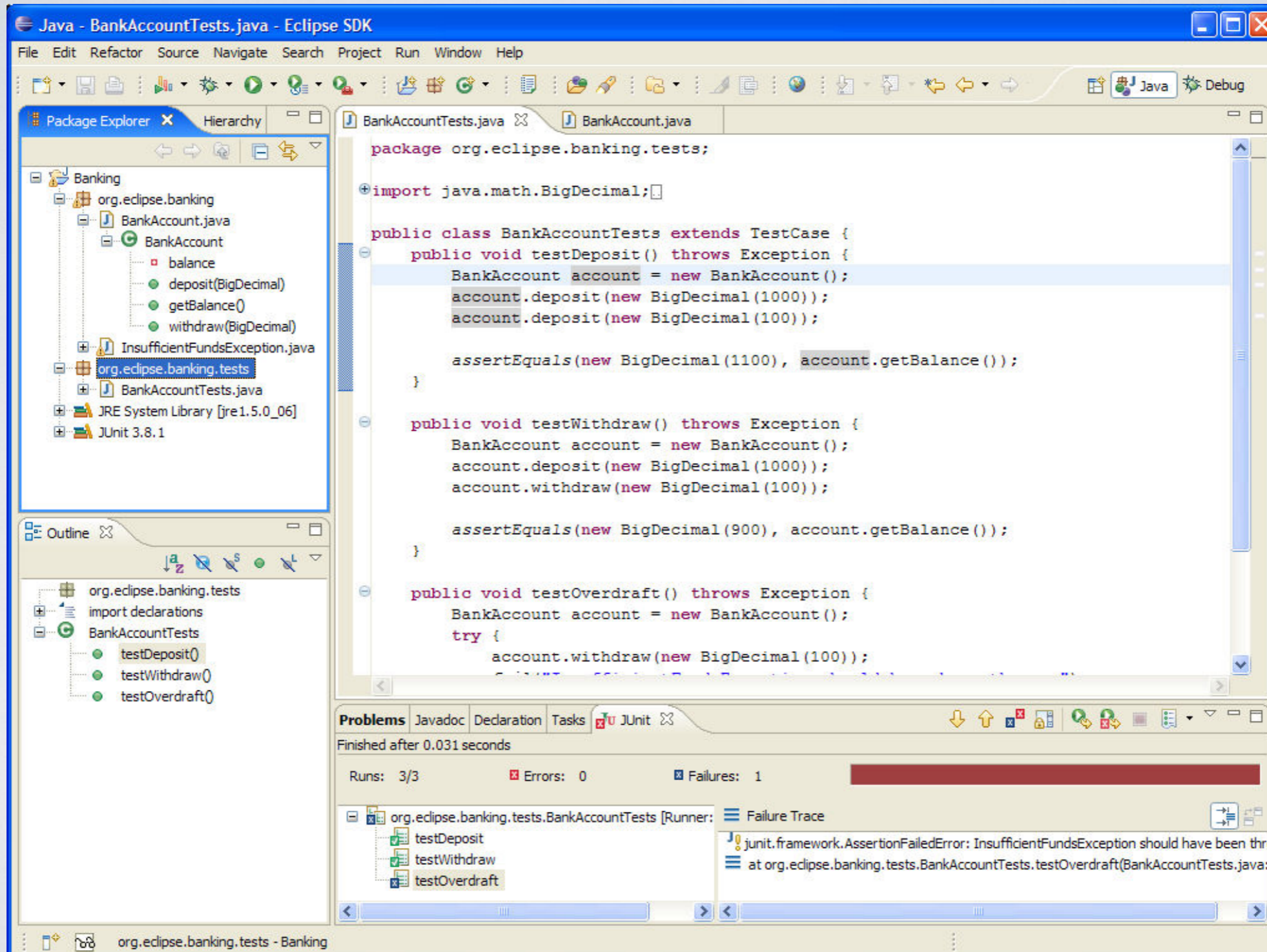
- Edit-> Compile -> Run
- but also:

```
find . -type f -name '*.png'  
| sort  
| perl -n -e 'chomp; /^.*\./([^\./]+)\.png$/; print "\t<section  
class=\"auto\"><hgroup><h1>".$1."</h1></hgroup><img src=\"content/" .  
$_ . "\"></section>\n";'
```

Command Line

- Experts can add tools.
- Powerful integration through file system and pipes.
- Scripting.
- Distribution is a problem.

IDE



IDE

- Hard to add tools.
- Deep integration but complex APIs.
- Distribution is a problem (still).

The Web

- Easy to add tools, reachable by URL.
- Distribution problem is solved!
- Integration - How do these tools work together?

this is what Orion is about,
and why we need to start now

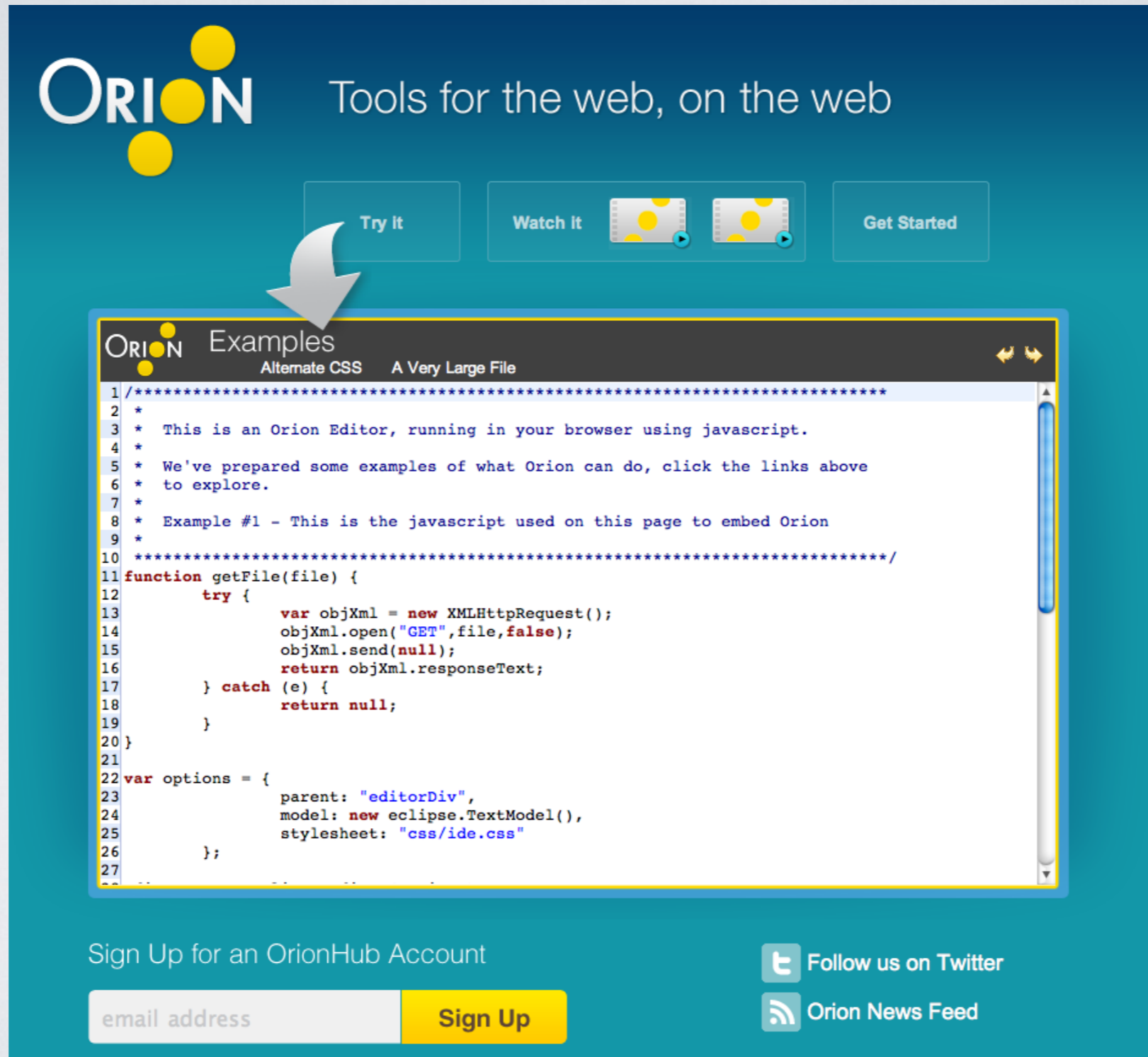
Why now?

- Online IDEs are up and coming (e.g., Cloud 9 IDE) and to influence the direction, we need to play
- We need to fail, learn from mistakes, try again - some things are similar to what we know about IDEs, some things not
- IBM are interested in community-building and are contributing code as a seed. We want this community to form at the Eclipse Foundation

The Web is the Platform!

- highly distributed content
- scalable computing power
- simple connectivity -- links
- trivial update mechanism
- powerful rendering engine
- large, active community
- artifacts all over the web
- large scale analysis possible
- no central “IDE”
- refresh the page
- look and feel easy to adapt
- innovation by everyone

Sign up at eclipse.org/orion



The screenshot shows the Orion IDE website with the following elements:

- Logo:** ORION with three yellow circles.
- Slogan:** Tools for the web, on the web
- Buttons:** Try It, Watch it (with video icons), and Get Started.
- Code Editor:** A window titled 'ORION Examples' showing JavaScript code for embedding Orion. The code includes a `getFile` function and an `options` object.
- Footer:** Sign Up for an OrionHub Account (with an email input field and a yellow Sign Up button), Follow us on Twitter, and Orion News Feed (with a RSS icon).

```
1 /*****  
2 *  
3 * This is an Orion Editor, running in your browser using javascript.  
4 *  
5 * We've prepared some examples of what Orion can do, click the links above  
6 * to explore.  
7 *  
8 * Example #1 - This is the javascript used on this page to embed Orion  
9 *  
10 *****/  
11 function getFile(file) {  
12     try {  
13         var objXml = new XMLHttpRequest();  
14         objXml.open("GET", file, false);  
15         objXml.send(null);  
16         return objXml.responseText;  
17     } catch (e) {  
18         return null;  
19     }  
20 }  
21  
22 var options = {  
23     parent: "editorDiv",  
24     model: new eclipse.TextModel(),  
25     stylesheet: "css/ide.css"  
26 };  
27
```

Thank you!

Questions?