package example

object Main {
  def main(args: Array[String]): Unit = {
  }
}

/** @constructor */
ScalaJS.c.example_Main$.constructor = function() {}
ScalaJS.c.example_Main$.prototype = new ScalaJS.inheritable.java_lang_Object
ScalaJS.c.example_Main$.prototype.constructor = ScalaJS.c.example_Main
ScalaJS.c.example_Main$.prototype.prototype.main_AT_V = (function(args) {
  /*<skip>*/
});
ScalaJS.c.example_Main$.prototype.main = (function(arg$1) {
  return this.main__AT__V(arg$1)
});
/** @constructor */
Who Scala.js?

- I work at Dropbox writing Python
- I write Scala on the side
  - Been working on/with Scala.js since last October
  - Core work done by @sjrd and @gzm0
- Not that much compiler-work, but I send in all the tickets
What Scala.js?

- Scala -> Javascript Compiler
- Write code in Scala, run it in Chrome
- Everything works*
  - *You’ll see in a moment
package example

object Main {
  def main(args: Array[String]): Unit = {
  
  }
}

/** @constructor */
ScalaJS.c.example_Main$ = (function() {
  ScalaJS.c.java_lang_Object.call(this)
});
ScalaJS.c.example_Main$.prototype = new ScalaJS.inheritable.java_lang_
ScalaJS.c.example_Main$.prototype.constructor = ScalaJS.c.example_Main
ScalaJS.c.example_Main$.prototype.main__AT__V = (function(args) {
  /*<skip>*/
});
ScalaJS.c.example_Main$.prototype.main = (function(arg$1) {
  return this.main__AT__V(arg$1)
});
/* Constructor */
Live Demo: Games

http://lihaoyi.github.io/scala-js-games/
Why Scala.js

"I particularly wanted to emphasise the biggest weakness of Scala being its inherent dependency on Java"

“I love Scala. It is my favorite programming language... The problem is, I can't use it in the places I want to use it - like the browser, or in a mobile app"
Why Scala.js

"At least in my applications I wish it could be compiled to native binaries or to JS (my use of Java classes is absolutely minimal)"

“If anyone has the requisite skills, I would really like to support the development of some sort of Scala to IOS compile chain.”
Why Scala.js

...even if Scala is great, ..., as a web developer there always was this unavoidable "stone in the shoe"... JavaScript.

...Scala.js is invaluable because it makes the circle complete: it provides that same "experience" of Scala (back-end) to web front-end development.
How Scala.js

*.scala files

Scala Compiler

ScalaJS Plugin

Lots of small *.js files

A few large *.js files

A few small *.js files

Closure Compiler

~1mb

Whitespace removal
Variable renaming
Dead code elimination

Not used, but they make IntelliJ happy

One for each .class file

200 kb

*.class files
When Scala.js?

- **Jun 2013:** [Scaladays](by @sjrd)
  - Hello World!
  - 16mb of Javascript
  - Reversi in the browser!

- **Aug 2013:**
  - 900kb of Javascript
  - 30s compilation/packaging/reloading
  - "Does this project have a test suite?"

Yay for Google Closure Compiler!

Ouch

Nope
Oct 2013
- 700kb
- Scala-Js-Games
- "Does Scalaz work?" "Omg it does!"

Nov 2013
- Roll, a HTML5/Canvas 2D Platformer
- 400kb
- ~10s incremental compilation/packaging/reloading

Dec 2013
- Rhino-based test suite!
- Cross-platform Sliding Puzzle game by Seb Nozzi
Today

- Feb 2014
  - 200kb
  - ~1s Incremental Compilation/Packaging/reloading
  - Passes entire scala partest suite
  - 2 Cross JS/JVM libraries (Scalatags, Scala.Rx)
  - 1 Cross JS/JVM test framework (uTest)
  - TodoMVC
Live Demo: Roll

http://lihaoyi.github.io/roll/
Live Coding!

Be sure to interrupt if you have questions
Libraries used

**Scala.js**

**scala-js-workbench**

**scala-js-dom**

**workbench-example-app**

Live-reloading and sbt log-forwarding to the browser

Static types 4 everything!

Project skeleton
Future Plans and Ideas

- **ScalaJS Web Console**
  - Opened by lihaoyi 4 days ago

- **A Reactive UI Library**
  - Opened by lihaoyi 6 days ago

- **Actors and Akka**
  - Opened by lihaoyi 6 days ago

- **Play! Framework Integration**
  - Opened by lihaoyi 6 days ago

- **Use a headless webkit for running tests**
  - Opened by lihaoyi a month ago

- **ScalaTest/Specs compatibility**
  - Opened by lihaoyi a month ago
Live Demo: TodoMVC

http://lihaoyi.github.io/workbench-example-app/todo.html
TodoMVC Comparison

- **ScalaJS**: 120 LOC, 1 file
  - +120 LOC, 1 file of “framework”
- **AngularJS**: 240 LOC, 5 files
- **BackboneJS**: 440 LOC, 7 files
- **Facebook React**: 470 LOC, 6 files
- **GWT**: 950 LOC, 14 files

Gluing together:
- Scala.Rx
- Scalatags
- Scala-js-dom
## Future Plans and Ideas

<table>
<thead>
<tr>
<th>#</th>
<th>Description</th>
<th>Opened by</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>#199</td>
<td><strong>ScalaJS Web Console</strong></td>
<td>lihaoyi</td>
<td>4 days ago</td>
</tr>
<tr>
<td>#190</td>
<td><strong>A Reactive UI Library</strong></td>
<td>lihaoyi</td>
<td>6 days ago, 1 comment</td>
</tr>
<tr>
<td>#189</td>
<td><strong>Actors and Akka</strong></td>
<td>lihaoyi</td>
<td>6 days ago</td>
</tr>
<tr>
<td>#188</td>
<td><strong>Play! Framework Integration</strong></td>
<td>lihaoyi</td>
<td>6 days ago, 2 comments</td>
</tr>
<tr>
<td>#115</td>
<td><strong>Use a headless webkit for running tests</strong></td>
<td>lihaoyi</td>
<td>a month ago, 2 comments</td>
</tr>
<tr>
<td>#96</td>
<td><strong>ScalaTest/Specs compatibility</strong></td>
<td>lihaoyi</td>
<td>a month ago, 10 comments</td>
</tr>
</tbody>
</table>
Play! Framework Integration

- What if routing for Ajax calls is done for you?
- What if Ajax calls were just
  ```scala
def func(a, b): T
  ajax{func(a, b)}: Future[T]
  ```
- What if they were all compiled together and typechecked?
Future Plans and Ideas

- **ScalaJS Web Console**
  - ideas
  - Opened by lihaoyi 4 days ago

- **A Reactive UI Library**
  - ideas
  - Opened by lihaoyi 6 days ago
  - 1 comment

- **Actors and Akka**
  - ideas
  - Opened by lihaoyi 6 days ago

- **Play! Framework Integration**
  - ideas
  - Opened by lihaoyi 6 days ago
  - 2 comments

- **Use a headless webkit for running tests**
  - ideas
  - Opened by lihaoyi a month ago
  - 2 comments

- **ScalaTest/Specs compatibility**
  - enhancement ideas
  - Opened by lihaoyi a month ago
  - 10 comments
package example

object Main {
  def main(args: Array[String]): Unit = {
  }
}

/** @constructor */
ScalaJS.c.example_Main$.prototype = new ScalaJS.inheritable.java_lang_Object();
ScalaJS.c.example_Main$.prototype.main__AT__V = (function(args) {
  /*<skip>*/
});
ScalaJS.c.example_Main$.prototype.main = (function(arg$1) {
  return this.main__AT__V(arg$1)
});
/*@constructor */
Take Aways

- Scala.js is Awesome
- It’s way more mature than you thought it was
- The development workflow is *slick*
- There’s a ridiculous amount of potential
How to get involved?

Try it out

Hang out on the mailing list

Try your hand at some issues

Make some cool stuff with it!
Thanks!

Questions?