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Play! Framework
A revolution in the Java world

Nicolas Leroux • Peter Hilton • 12 August 2011

Outline

- Introductions
- What is wrong with the current Java EE stack
- What makes the Play framework special
- Demo
- Play's philosophy

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Nicolas Leroux

- Senior solution architect and Technical Director at Lunatech
- Joined Lunatech Research in 2001
- Early adopter of Java EE technology - EJB, JBoss Seam, Play
- Expert around the Java EE stack
- Play framework core developer
- RivieraJUG and JBoss User Group
- 2010 presentations included JavaOne, J-Fall, JavaZone, ParisJUG

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Peter Hilton

- Senior solution architect and Operations Director at Lunatech
- Joined Lunatech Research in 2004
- Web application architecture, design and construction expert
- Agile project management
- Other interests include JBoss Drools and functional design
- Play framework committer

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About Lunatech

- Founded in 1993 as an IT consulting, product research and development team
- Web applications, web services, large-scale document-processing and message-processing applications
- Leverage cutting-edge open-source software platforms
- Invest in product research and development
- JBoss AS, Seam, JPA, PostgreSQL, Hibernate Search, jBPM, JBoss Rules, RESTEasy, jQuery, Play framework
- Agile software development

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Lunatech & Play

- 2009 - early research with Play before version 1.0
  - Nicolas joins Play core developers as a committer
  - Internal proof-of-concept built in one day
- 2010 - Lunatech internal projects
  - March - http://plancruncher.com/ on-line
  - Presentations: JavaOne, J-Fall, JavaZone, ParisJUG, etc
  - Peter becomes fifth Play committer
- Late 2010 - first external customer projects
- Close relationship with Zenexity since 2009

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“ Play is a web framework

About Play! framework

- Founded by Guillaume Bort in 2008
- 312,087+ downloads
- 2800+ members
- 60+ e-mails per day
- Trends++
- 85 modules and growing

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“Play is made by web developers for web developers

“Are you a web developer?

Part of our daily job

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You need laser vision…

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… to spot the error

```
13:07:55,796 ERROR [[PersonServlet]] Servlet.service() for servlet
PersonServlet threw exception
javax.ejb.EJBException: null; CausedByException is:
      null
      at org.jboss.ejb3.tx.Ejb3TxPolicy.handleExceptionInOurTx(Ejb3TxPolicy.java:46)
      at org.jboss.aspects.tx.TxPolicy.invokeInOurTx(TxPolicy.java:70)
      at org.jboss.aspects.tx.TxInterceptor$Required.invoke(TxInterceptor.java:134)
      at org.jboss.aop.joinpoint.MethodInvocation.invokeNext(MethodInvocation.java:98)
      at org.jboss.aspects.tx.TxPropagationInterceptor.invoke(TxPropagationInterceptor.java:61)
      at org.jboss.aop.joinpoint.MethodInvocation.invokeNext(MethodInvocation.java:98)
      at org.jboss.ejb3.stateless.StatelessInstanceInterceptor.invoke(StatelessInstanceInterceptor.java:39)
      at org.jboss.aop.joinpoint.MethodInvocation.invokeNext(MethodInvocation.java:98)
      at org.jboss.aspects.security.AuthenticationInterceptor.invoke(AuthenticationInterceptor.java:63)
      at org.jboss.aop.joinpoint.MethodInvocation.invokeNext(MethodInvocation.java:98)
      at org.jboss.ejb3.ENCPropagationInterceptor.invoke(ENCPropagationInterceptor.java:32)
      at org.jboss.aop.joinpoint.MethodInvocation.invokeNext(MethodInvocation.java:98)
      at org.jboss.ejb3.asynchronous.AsynchronousInterceptor.invoke(AsynchronousInterceptor.java:91)
      at org.jboss.aop.joinpoint.MethodInvocation.invokeNext(MethodInvocation.java:98)
      at org.jboss.ejb3.stateless.StatelessContainer.dynamicInvoke(StatelessContainer.java:189)
      at org.jboss.aop.Dispatcher.invoke(Dispatcher.java:107)
      at org.jboss.ejb3.remoting.IsLocalInterceptor.invoke(IsLocalInterceptor.java:37)
      at org.jboss.aop.joinpoint.MethodInvocation.invokeNext(MethodInvocation.java:98)
      at org.jboss.ejb3.stateless.StatelessRemoteProxy.invoke(StatelessRemoteProxy.java:88)
      at $Proxy76.getAllPeople(Unknown Source)
      at uk.co.mediaport.web.PersonServlet.showTelephones(PersonServlet.java:54)
      at uk.co.mediaport.web.PersonServlet.doPost(PersonServlet.java:45)
      at uk.co.mediaport.web.PersonServlet.doGet(PersonServlet.java:34)
      at javax.servlet.http.HttpServlet.service(HttpServlet.java:697)
      at javax.servlet.http.HttpServlet.service(HttpServlet.java:810)
      at org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(ApplicationFilterChain.java:252)
      at org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterChain.java:173)
      at org.jboss.web.tomcat.filters.ReplyHeaderFilter.doFilter(ReplyHeaderFilter.java:81)
      at org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(ApplicationFilterChain.java:202)
      at org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterChain.java:173)
      at org.apache.catalina.core.StandardWrapperValve.invoke(StandardWrapperValve.java:213)
      at org.apache.catalina.core.StandardContextValve.invoke(StandardContextValve.java:178)
      at org.jboss.web.tomcat.security.CustomPrincipalValve.invoke(CustomPrincipalValve.java:39)
      at org.jboss.web.tomcat.security.SecurityAssociationValve.invoke(SecurityAssociationValve.java:159)
      at org.jboss.web.tomcat.security.JaccContextValve.invoke(JaccContextValve.java:59)
```

```
at org.apache.catalina.core.StandardHostValve.invoke(StandardHostValve.java:126)
at org.apache.catalina.valves.ErrorReportValve.invoke(ErrorReportValve.java:105)
at org.apache.catalina.core.StandardEngineValve.invoke(StandardEngineValve.java:107)
at org.apache.catalina.connector.CoyoteAdapter.service(CoyoteAdapter.java:148)
at org.apache.coyote.http11.Http11Processor.process(Http11Processor.java:856)
at org.apache.coyote.http11.Http11Protocol$Http11ConnectionHandler.processConnection(Http11Protocol.java:744)
at org.apache.tomcat.util.net.PoolTcpEndpoint.processSocket(PoolTcpEndpoint.java:527)
at org.apache.tomcat.util.net.MasterSlaveWorkerThread.run(MasterSlaveWorkerThread.java:112)
at java.lang.Thread.run(Thread.java:595)
java.lang.NullPointerException
at uk.co.mediaport.core.PeopleBean.getAllPeople(PeopleBean.java:33)
at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:39)
at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:25)
at java.lang.reflect.Method.invoke(Method.java:585)
at org.jboss.aop.joinpoint.MethodInvocation.invokeNext(MethodInvocation.java:109)
at org.jboss.ejb3.AllowedOperationsInterceptor.invoke(AllowedOperationsInterceptor.java:32)
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at org.jboss.aspects.tx.TxPolicy.invokeInOurTx(TxPolicy.java:66)
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at org.jboss.web.tomcat.filters.ReplyHeaderFilter.doFilter(ReplyHeaderFilter.java:81)
```

Incredible force…

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… to link all those together

RichFaces

Spring

TOMCAT

HIBERNATE

JUnit.org

Se

maven

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Sometimes you need to fight hard to get them working together

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Sometimes, there is only one solution

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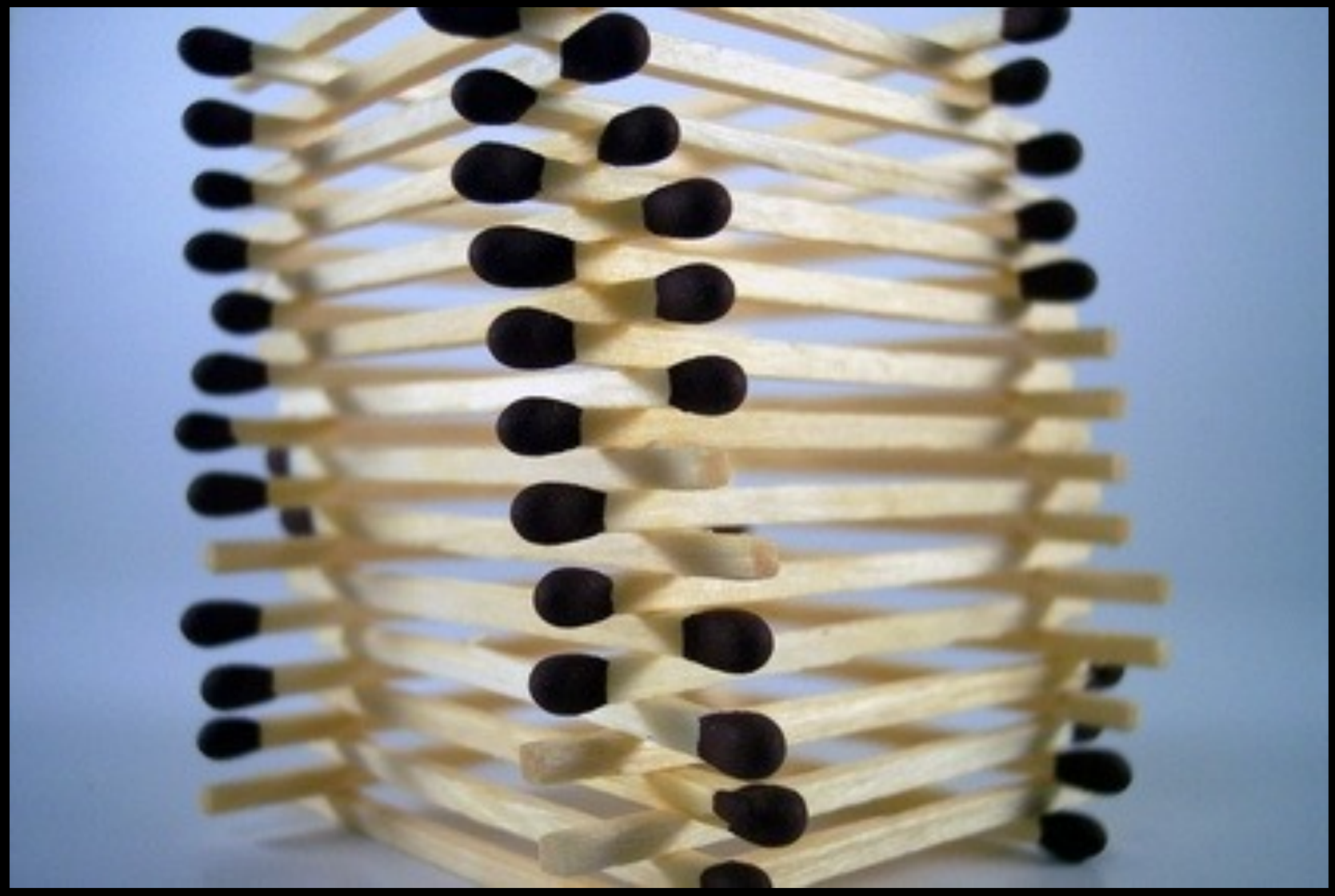
And pray that it all works out!



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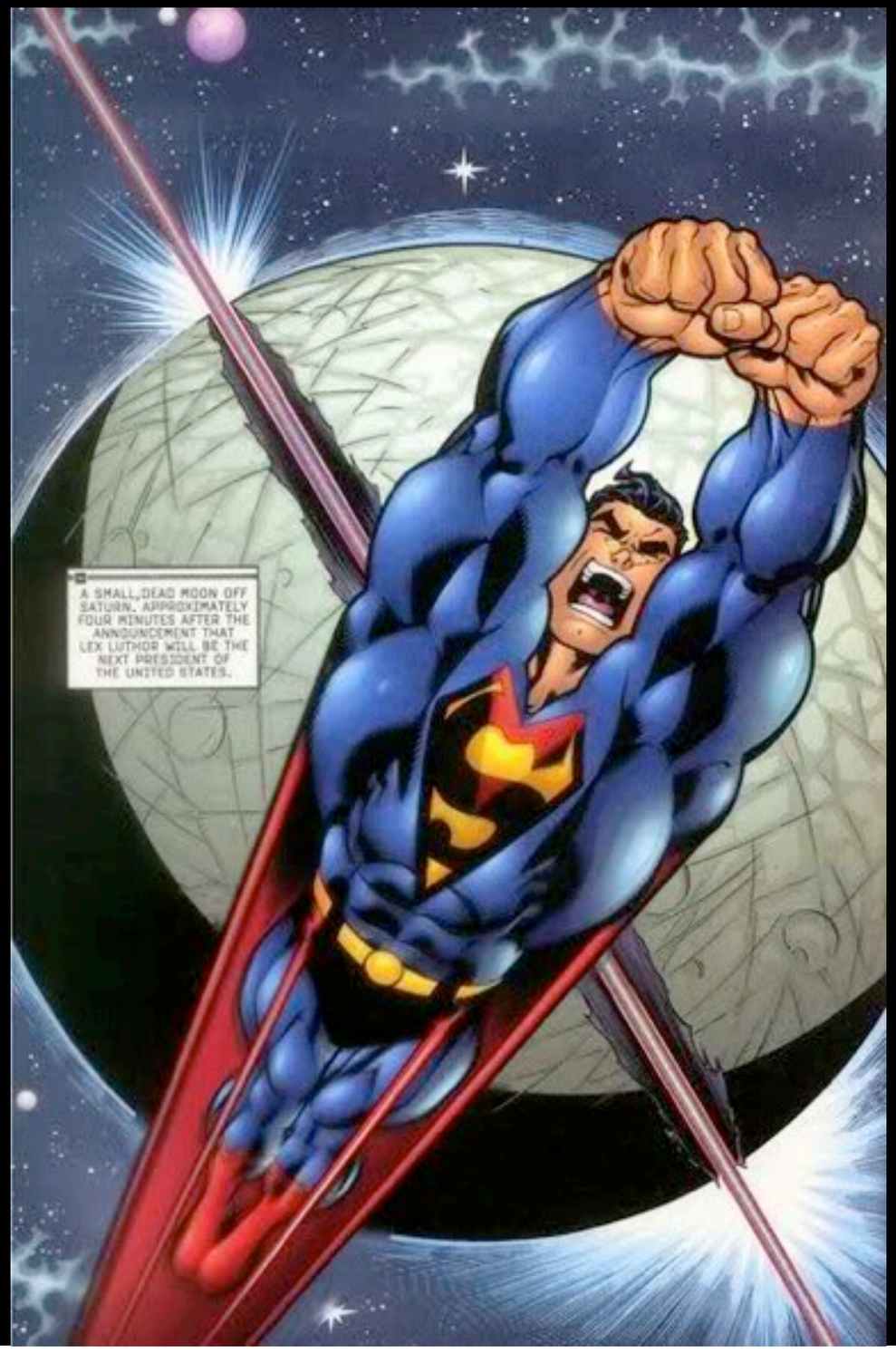
You need incredible speed to build the web app



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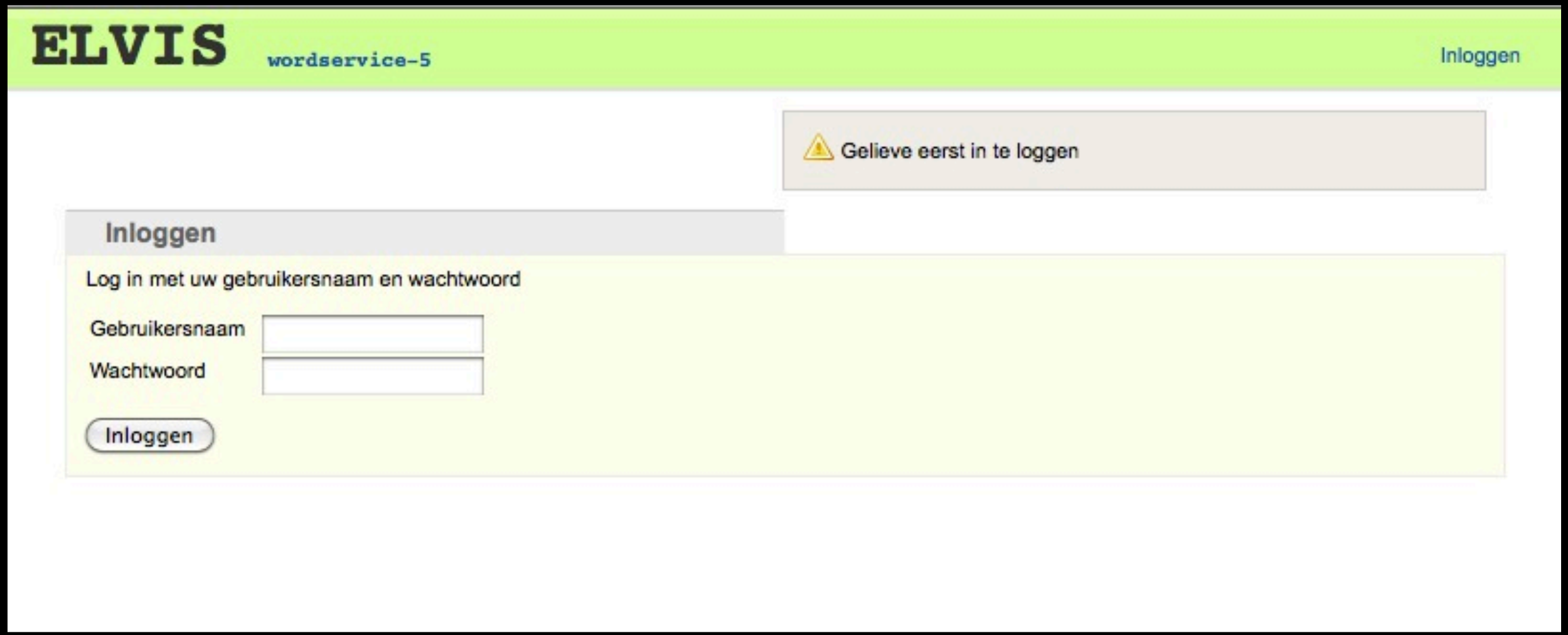
Typical Java web app. We can do better…



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Internationalization is often part of your job

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Also part of our job

- Asynchronous job
- URL Routing
- Testing
- Upload files
- Generate PDF
- Validation
- Dependency management
- Persistence

Being superman is hard work for little recognition

And you might really end up like him

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“ You should not need to be Superman to create a web application

(obvious conclusion)

“ This is exactly what the Play framework focuses on

(the real conclusion)

“ Thank you!

“ Play focuses on creating simplicity

“ Play is stateless... like the web

“ Any changes to the application are automatically reloaded when you hit your browser’s ‘reload’ button

(yes any changes: DB, Controller, views, etc...)

http://www.myapp.com/WarRootDirectory1/ServletsOnAMoFoPlane?sessionId=x81ndj38avngjLOLdxpanewq&action=NextPage&Mykel=Alvis&entityId=1299124&processName=UnladenSwallowComputation&role=peon&date=03%2F01%2F1999&flagSettings=01010001110110&returnPage=%2FServletThatRing

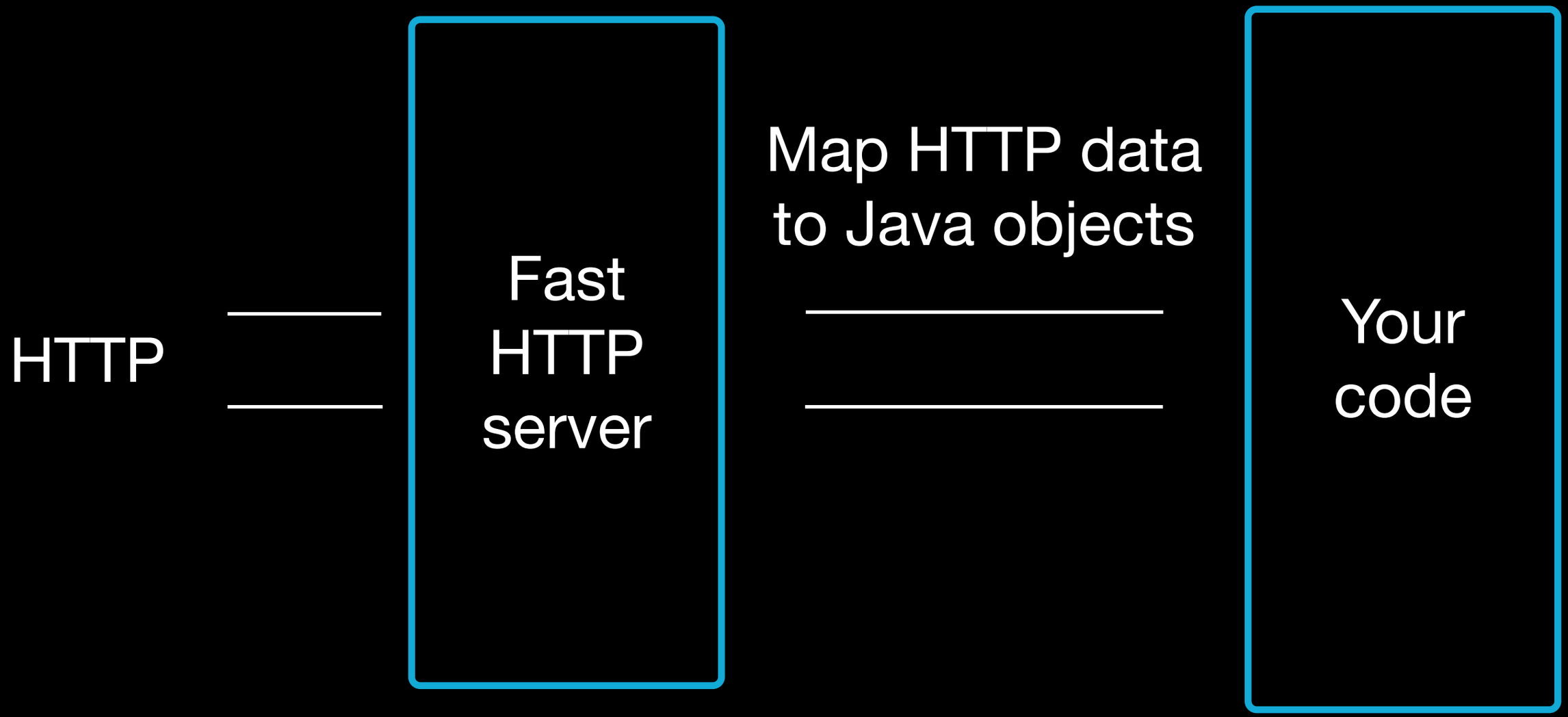
URLs for perfectionists

- e.g. http://www.myapp.com/items/323
  - You can read it
  - You can bookmark it
  - You can share it

So you can be RESTful

- URLs are important.
  - Fully realise the meaning of HTTP as a protocol not just a transport layer.
  - Take care of side effects & idempotence.
  - Hypermedia as the engine of application state (no server side navigation state).

Play is not Servlet based



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HTTP parameter binding

```
http://www.myapp.com/items/{id}

public static show(String id) {
    Item item = Item.findById(id);
    render(item);
}
```

```
GET   /items/{id}    Application.show

<div><b>Item : </b>${item.name}</div>
```

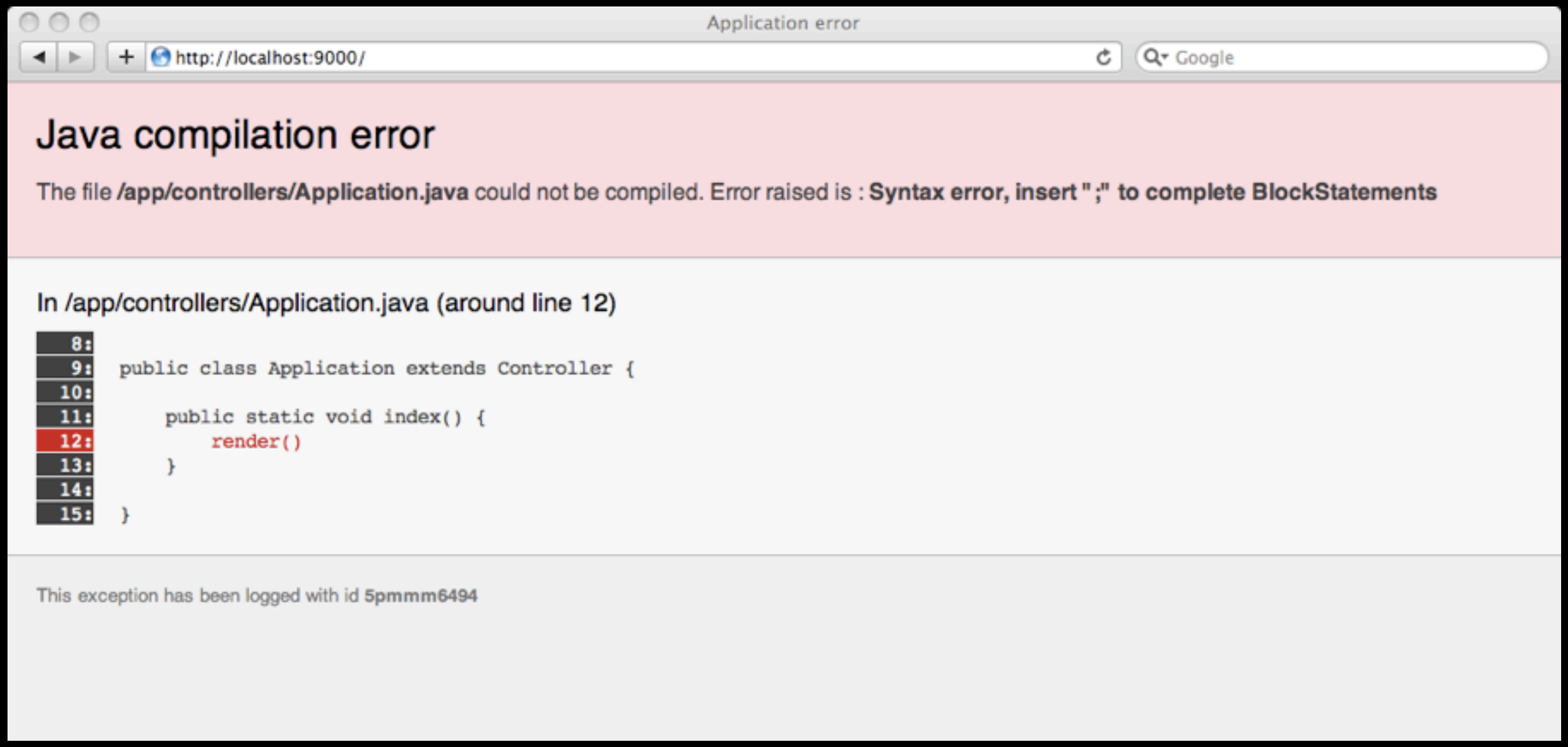
HTTP parameter binding

```
POST  /items/save          Application.save

public void save(Item item) {
    item.save();
    show(item.id);
}
```

```
<form action="@{Application.save}" >
    <input type="hidden" name="item.id" value="$
{item.id}">
    <input type="text" name="item.name" />
</form>
```

Clear error reporting



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Excellent documentation

Documentation

Welcome to the Play framework documentation. This documentation is intended for the **1.2 release** and may significantly differ from previous framework versions' documentation.

Check the version 1.2 release notes.

Getting started

Your first steps with Play and your first 5 minutes of fun.

1. Play framework overview
2. Watch the screencast
3. Five cool things you can do with Play
4. Usability - details matter as much as features
5. Frequently Asked Questions
6. Installation guide
7. Setting-up your preferred IDE
8. Your first application — the 'Hello World' tutorial
9. Sample applications

Tutorial — Play guide, a real world app step-by-step

Learn Play by coding **'Yet Another Blog Engine'**, from start to finish. Each chapter will be a chance to learn one more cool Play feature.

1. Starting up the project
2. A first iteration of the data model
3. Building the first screen
4. The comments page
5. Setting up a Captcha
6. Add tagging support
7. A basic admin area using CRUD
8. Adding authentication

Play!

Play master-d863a94

Browse

- Table of contents
- Next: Installation guide

Contents

1. Getting started
2. Tutorial — Play guide, a real world app step-by-step
3. The essential documentation
   - Main concepts
   - HTTP routing
   - Controllers
   - The template engine
   - HTTP form data validation
   - The domain object model
   - JPA persistence
   - Play libs
   - Asynchronous Jobs
   - Asynchronous programming with HTTP
   - Ajax requests
   - Internationalization
   - Cache
   - Sending e-mail
   - Testing the application
   - Security Guide
   - Modules and the module repository
   - Dependency management
   - Managing your database evolutions
   - Logging configuration

Play is full stack

- Development & production NIO server
- Incremental compiler
- MVC stack with a template system
- Persistence engine
- Complete test runner
- Powerful web services client
- Asynchronous task management
- Extension point through modules
- Dependency management
- Validation
- Websocket support
- Asynchronous features

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Play is extendable

- Scala module
- PDF module
- Excel module
- Google App Engine module
- MongoDB
- Cloudbees
- 84 modules and counting

- Cloud ready
  - Cloudbees
  - Google App Engine
  - Playapps
  - ...

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TDD

Tests runner

Select the tests to run, then click [Start] and pray

Start ! 3 tests to run (Bookmark this link to save this configuration) - Unselect all

There is 1 unit test,

\+ **BasicTest**

1 functional test,

\- **ApplicationTest**

testThatIndexPageWorks **Failure, Response status expected:<200> but was:<302>** 14 ms

In /test/ApplicationTest.java, line 12 :

```
assertIsOk(response);
```

and 1 selenium test,

~ **Application**

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Not for the javascript haters

- It only manages the server side. Use any client technologies you want (but favor HTML5).

Sencha

jQuery
write less, do more

jQTouch

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“ Let’s chat!

Live coding demo…

“ Features are nice, but they should empower not distract

Play philosophy

- Simple to start with, easy to learn

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Play philosophy

- Little by little, assemble simple pieces

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Play philosophy

- Build awesome web applications

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