What's new in Grails 2.0?

About me

- Jeff Brown
- Grails Core Developer
- SpringSource/VMware Engineer
- jbrown@vmware.com
- @jeffscottbrown

The Year in Grails

GRAILS

The Year in Grails

- Grails 1.3
  - Plugins in Dependency DSL, Groovy 1.7, Named Queries etc.

The Year in Grails

- Grails 1.3
  - Plugins in Dependency DSL, Groovy 1.7, Named Queries etc.
- More and more plugins
  - Spring Security Core et al.
  - RabbitMQ
  - Gemfire
  - Resources, etc.

The Year in Grails

- Grails 1.3
  - Plugins in Dependency DSL, Groovy 1.7, Named Queries etc.
- More and more plugins
  - Spring Security Core et al.
  - RabbitMQ
  - Gemfire
  - Resources, etc.
- NoSQL
  - Redis, MongoDB, Riak, etc.

High Profile Sites

Walmart MP3 Music Downloads

manymoon

NM Northwestern Memorial Hospital

sky

eHarmony

BIG LOTS!

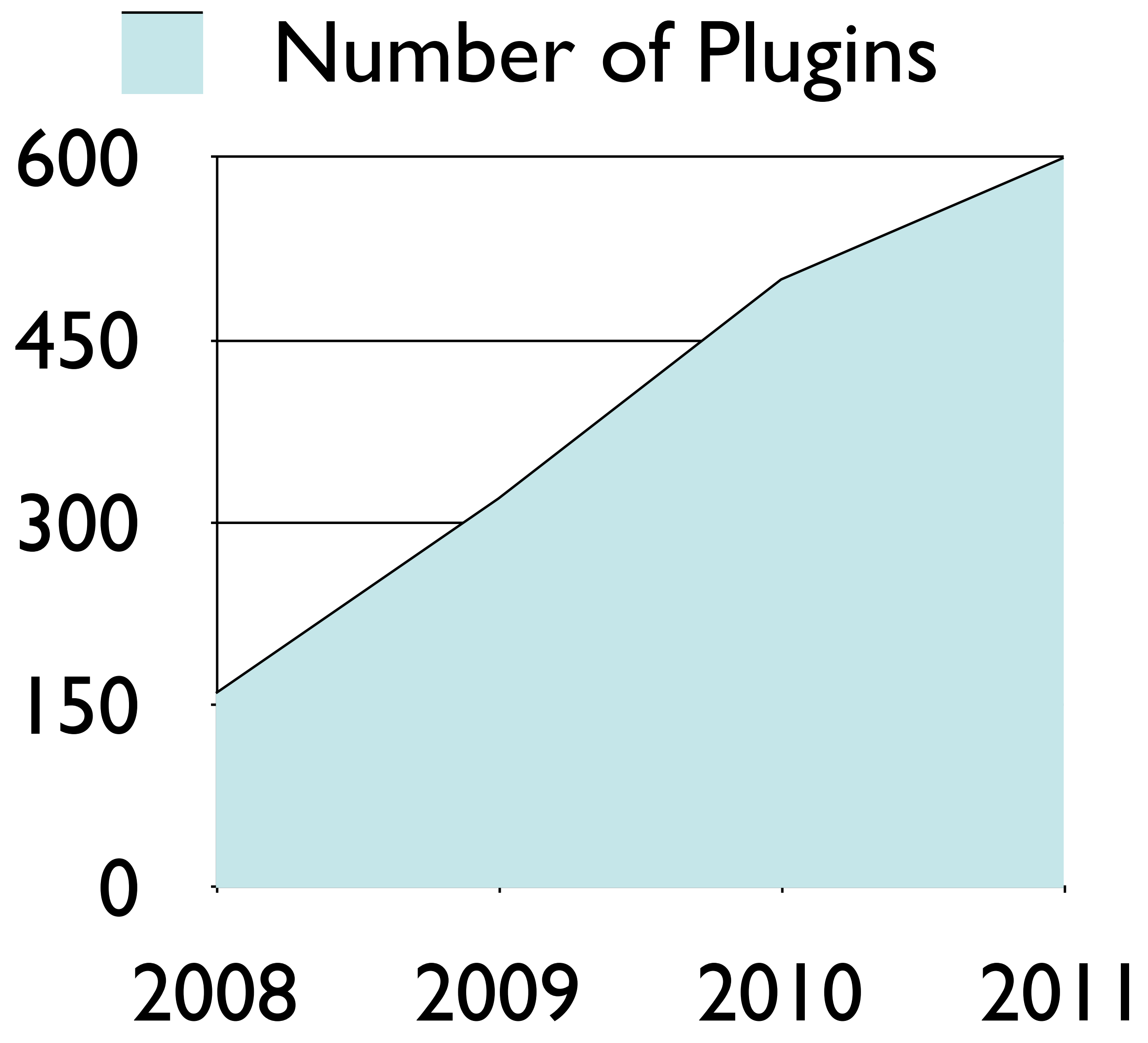
#hashable BETA

Vodafone Music

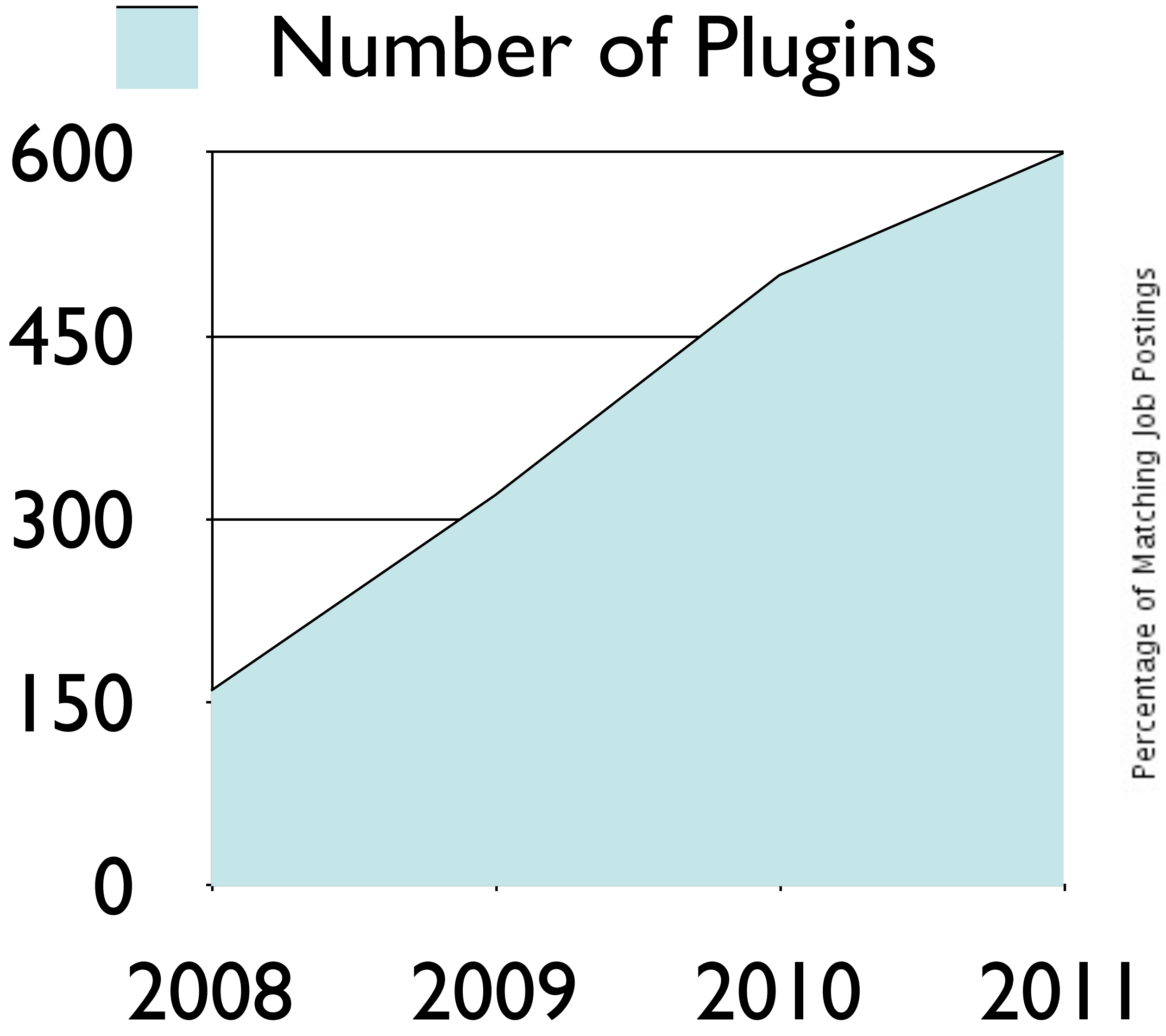
NETFLIX

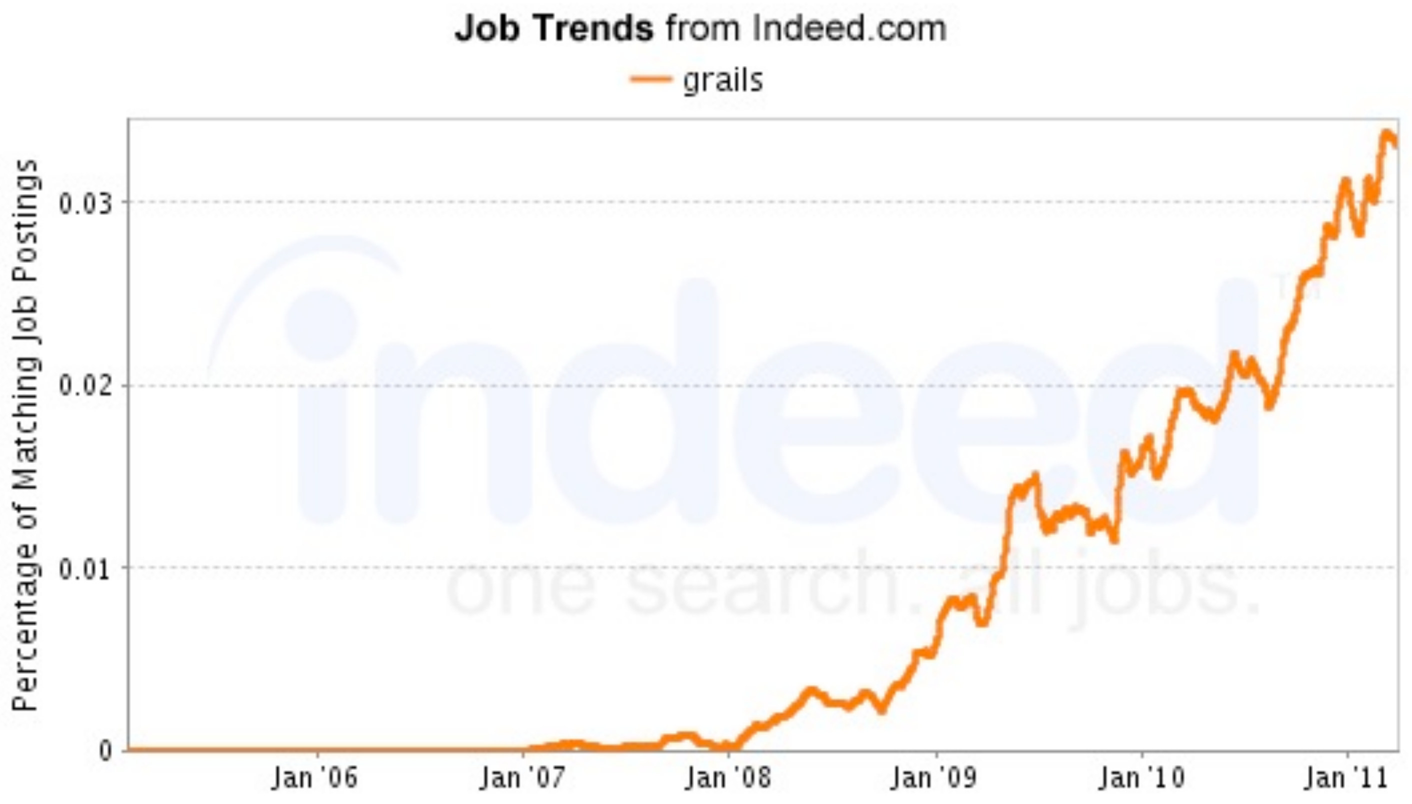
LinkedIn

Grails Continued Growth



Grails Continued Growth

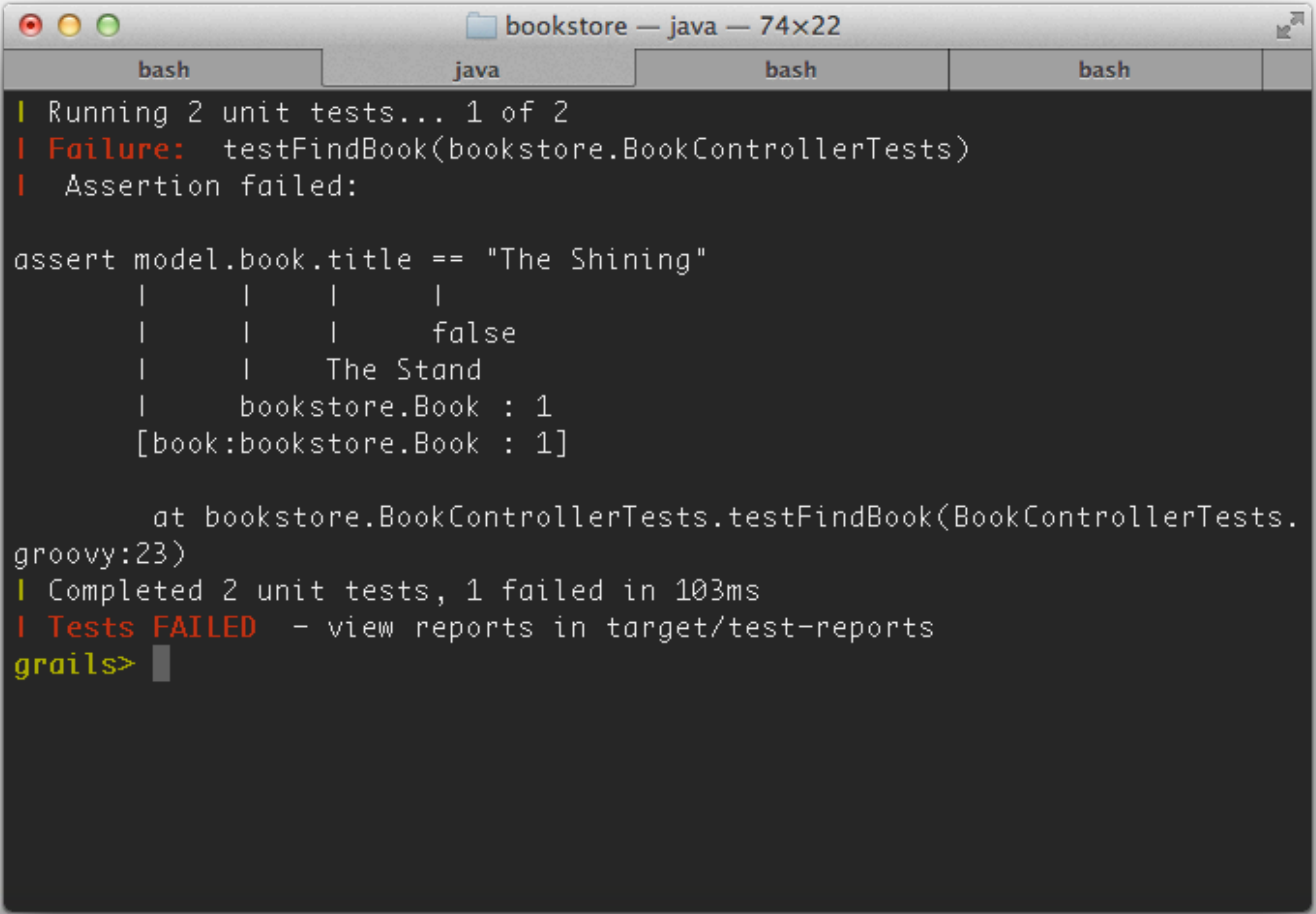




What’s new in Grails 2.0?

Development Environment Features

New Console UI & Interactive Mode

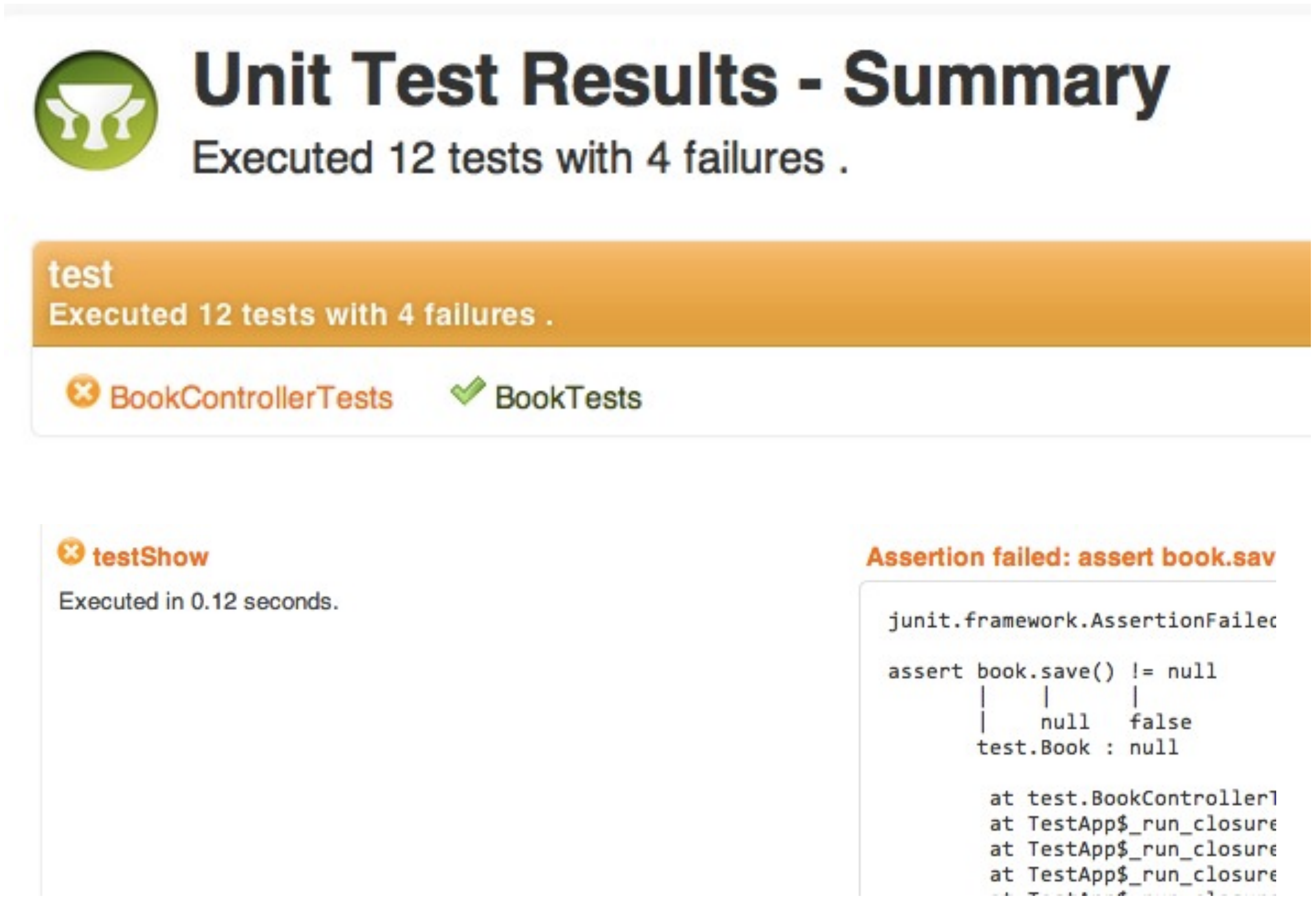


```
| Running 2 unit tests... 1 of 2
| Failure:  testFindBook(bookstore.BookControllerTests)
|  Assertion failed:

assert model.book.title == "The Shining"
       |     |    |     |
       |     |    |     false
       |     |    The Stand
       |     bookstore.Book : 1
       [book:bookstore.Book : 1]

        at bookstore.BookControllerTests.testFindBook(BookControllerTests.
groovy:23)
| Completed 2 unit tests, 1 failed in 103ms
| Tests FAILED  - view reports in target/test-reports
grails> 
```

Better Unit Test Template


Unit Test Results - Summary

Executed 12 tests with 4 failures .

test

Executed 12 tests with 4 failures .

BookControllerTests BookTests

testShow

Executed in 0.12 seconds.

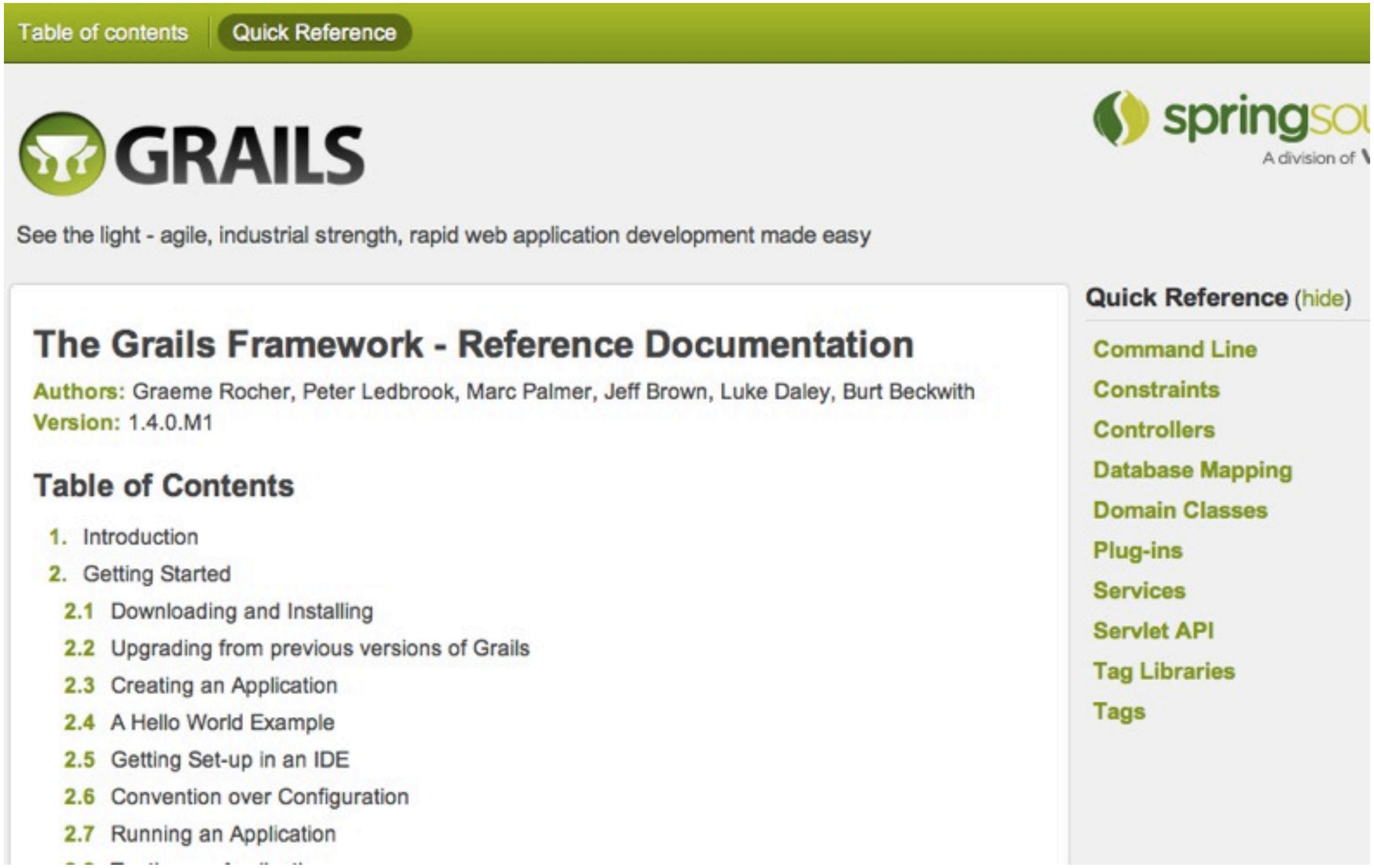
Assertion failed: assert book.sav

```
junit.framework.AssertionFailed

assert book.save() != null
       |    |      |
       |    null   false
       test.Book : null

        at test.BookController1
        at TestApp$_run_closure
        at TestApp$_run_closure
        at TestApp$_run_closure
```

Better Documentation Template



See the light - agile, industrial strength, rapid web application development made easy

The Grails Framework - Reference Documentation

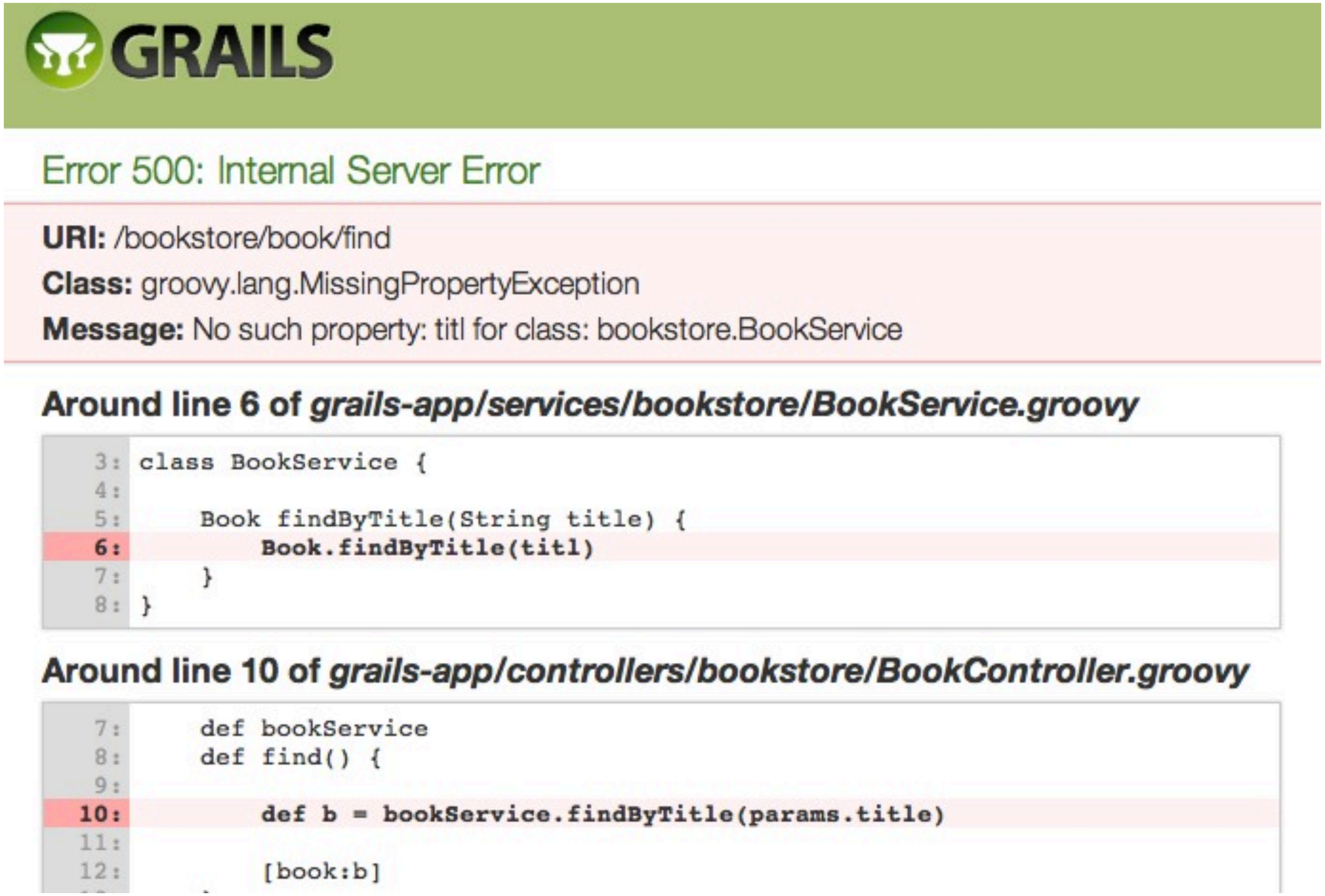
Authors: Graeme Rocher, Peter Ledbrook, Marc Palmer, Jeff Brown, Luke Daley, Burt Beckwith
Version: 1.4.0.M1

Table of Contents

Quick Reference (hide)

- Command Line
- Constraints
- Controllers
- Database Mapping
- Domain Classes
- Plug-ins
- Services
- Servlet API
- Tag Libraries
- Tags

Enhanced Error Reporting



GRAILS

Error 500: Internal Server Error

URI: /bookstore/book/find

Class: groovy.lang.MissingPropertyException

Message: No such property: titl for class: bookstore.BookService

Around line 6 of *grails-app/services/bookstore/BookService.groovy*

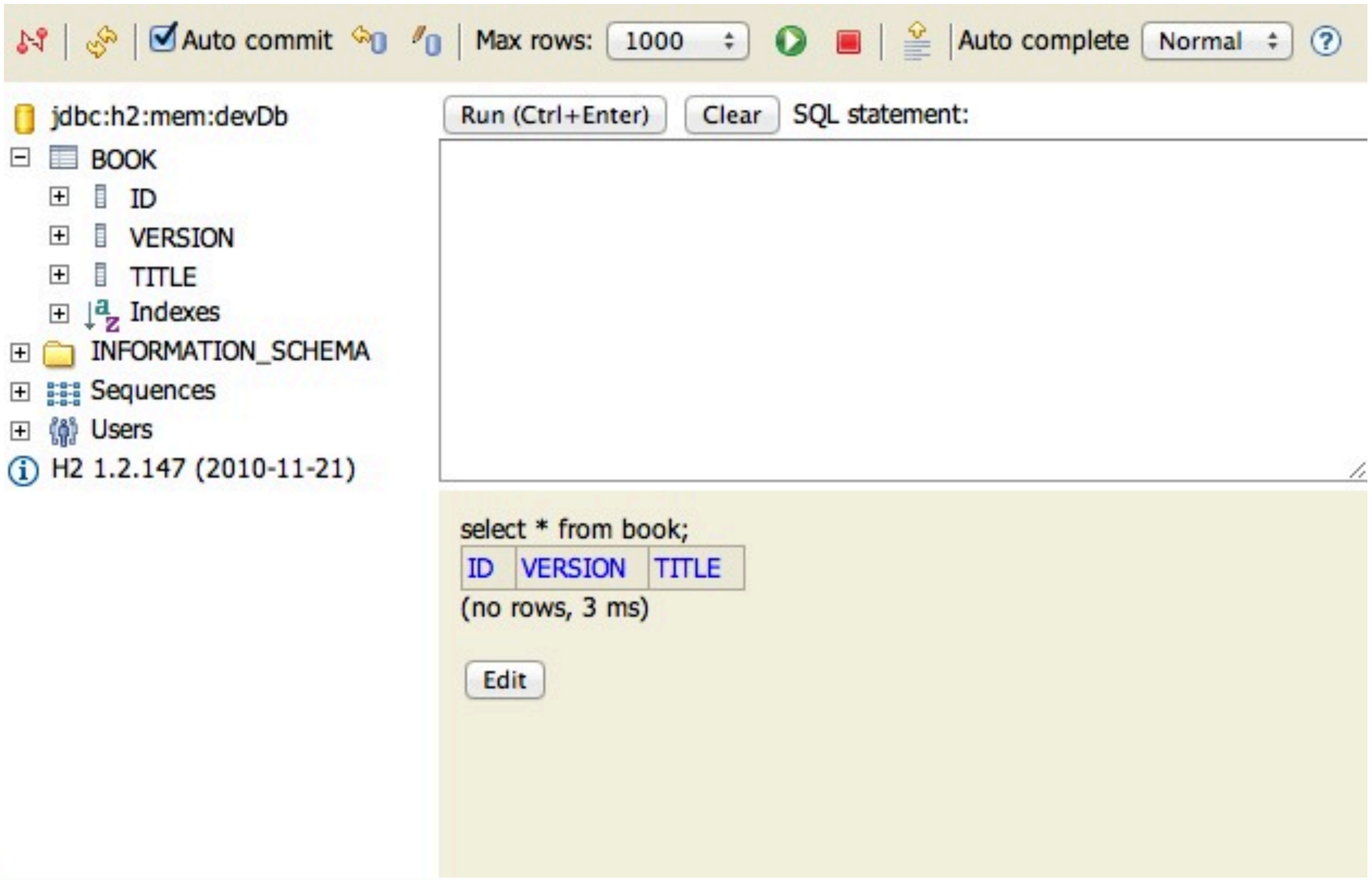
```
 3: class BookService {
 4:
 5:     Book findByTitle(String title) {
 6:         Book.findByTitle(titl)
 7:     }
 8: }
```

Around line 10 of *grails-app/controllers/bookstore/BookController.groovy*

```
 7:     def bookService
 8:     def find() {
 9:
10:         def b = bookService.findByTitle(params.title)
11:
12:         [book:b]
```

H2 Console

- Available at http://localhost:8080/app/dbconsole in development only!



jdbc:h2:mem:devDb
BOOK
ID
VERSION
TITLE
Indexes
INFORMATION_SCHEMA
Sequences
Users
H2 1.2.147 (2010-11-21)

```
select * from book;
ID | VERSION | TITLE
(no rows, 3 ms)
```

Upgraded Libraries

Groovy

spring
source

Apache
Tomcat

New Automatic Reloading

New Automatic Reloading

- Reloading in run-app works with
  - Typed service references
  - Domain classes
  - src/groovy, src/java

Binary Plugins

- Package pre-compiled plugins into JAR files
- Deployable as standard JARs to Maven repositories
- Declared as JAR dependencies
- Commercial plugins more viable
- No special IDE integration needed

```
$ grails package-plugin --binary
```

Web Features

Methods as Actions and Binding Arguments

- Actions are now declared as public methods

- Form parameters bound to method arguments

Methods as Actions and Binding Arguments

- Actions are now declared as public methods

```
def save(String name, int age) {
    // remaining
}
```

- Form parameters bound to method arguments

Methods as Actions and Binding Arguments

- Actions are now declared as public methods

```
def save(String name, int age) {
    // remaining
}
```

- Form parameters bound to method arguments

```
<g:form name="myForm" action="save">
    <input name="name" />
    <input name="age" />
</g:form>
```

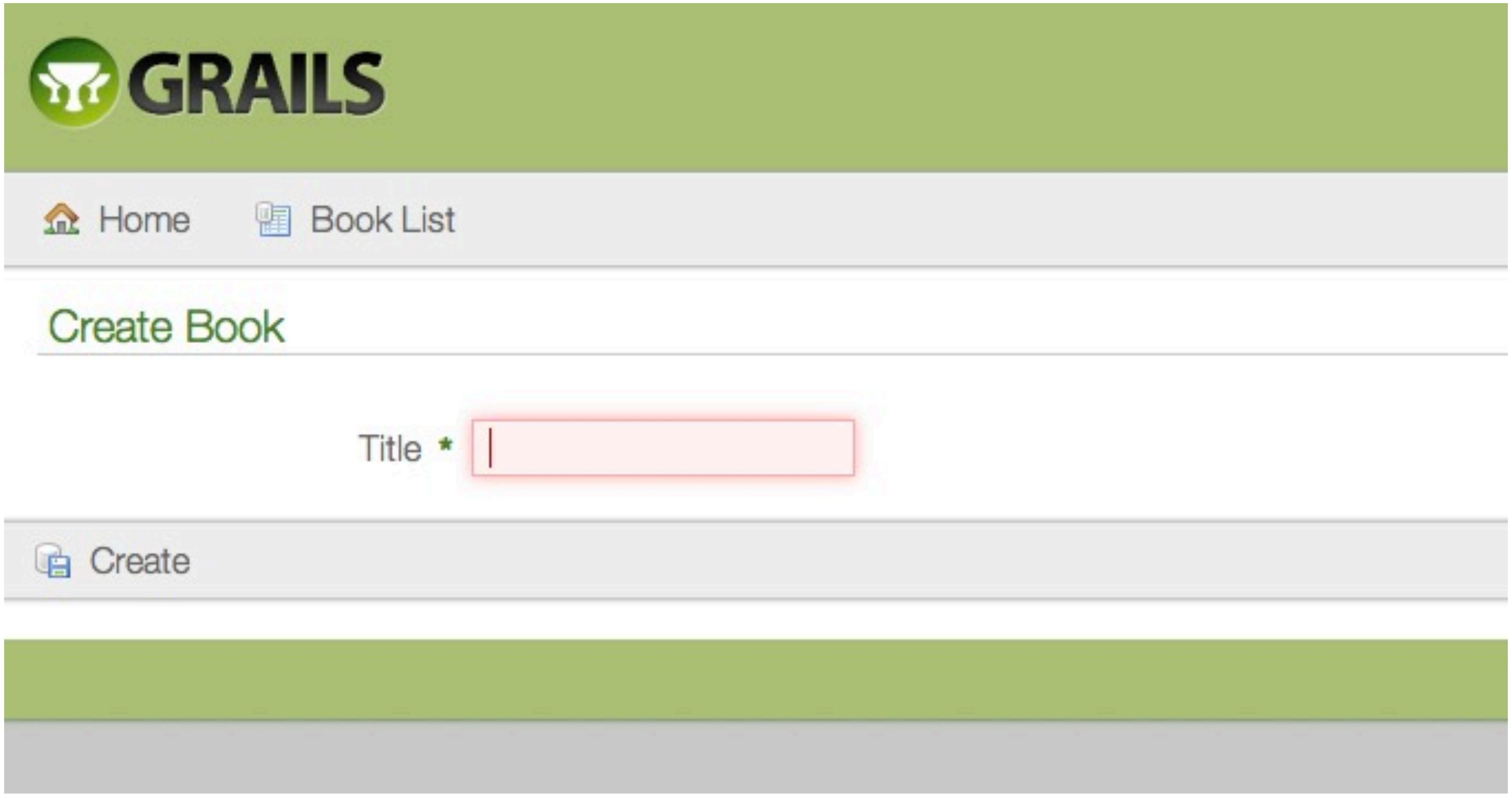
Methods as Actions and Binding Arguments

- Actions are now declared as public methods

```
def save(String name, int age) {
    // remaining
}
```

- Form parameters bound to method arguments

HTML5 Scaffolding



New APIs

- Page Rendering

```
PageRenderer renderer
void welcomeUser(User user) {
    def contents = renderer.render(view:"/emails/welcome",
                                   model:[user: user])
    ...
}
```

- Link Generation

```
LinkGenerator generator
def generateLink() {
    generator.link(controller:"book", action:"list")
}
```

Other Web Novelties

- jQuery now the default
- Easy Date Parsing

- Customizable URL formats
- Filter exclusions

Other Web Novelties

- jQuery now the default
- Easy Date Parsing

```
def val =
    params.date('myDate', 'dd-MM-yyyy')
```

- Customizable URL formats
- Filter exclusions

Other Web Novelties

- jQuery now the default
- Easy Date Parsing

- Customizable URL formats
- Filter exclusions

Persistence Features

GORM API

GORM API

GORM API

mongoDB riak

Cassandra redis

HIBERNATE

- Plugins should not assume Hibernate!

GORM Plugins

- Redis - http://grails.org/plugin/redis-gorm
- MongoDB - http://grails.org/plugin/mongodb
- Amazon SimpleDB - http://grails.org/plugin/simpledb
- Neo4j - http://grails.org/plugin/neo4j
- Riak - http://grails.org/plugin/riak
- GORM JPA - http://grails.org/plugin/gorm-jpa
- Hibernate - http://grails.org/plugin/hibernate

Where Queries

- New, compile-time checked query DSL
- Uses native Groovy operators ==, !=, >, <, <=, >= etc
- Aggregate functions supported avg, sum, max, min etc.

Where Queries

- New, compile-time checked query DSL

```
def query = Person.where {
   firstName == "Bart"
}
Person bart = query.find()
```

- Uses native Groovy operators ==, !=, >, <, <=, >= etc
- Aggregate functions supported avg, sum, max, min etc.

Where Queries

- New, compile-time checked query DSL

```
def query = Person.where {
   firstName == "Bart"
}
Person bart = query.find()
```

- Uses native Groovy operators ==, !=, >, <, <=, >= etc

```
def query = Person.where {
   firstName == "Fred" && !(lastName == 'Simpson')
}
```

- Aggregate functions supported avg, sum, max, min etc.

Where Queries

- New, compile-time checked query DSL

```
def query = Person.where {
   firstName == "Bart"
}
Person bart = query.find()
```

- Uses native Groovy operators ==, !=, >, <, <=, >= etc

```
def query = Person.where {
   firstName == "Fred" && !(lastName == 'Simpson')
}
```

- Aggregate functions supported avg, sum, max, min etc.

```
def query = Person.where {
  age > avg(age)
}
```

Multiple Data Sources

- Support for defining multiple scoped data sources

- Each data source accessible via static property

Multiple Data Sources

- Support for defining multiple scoped data sources

```
class ZipCode {
   String code
   static mapping = {
      datasource 'auditing'
   }
}
```

- Each data source accessible via static property

Multiple Data Sources

- Support for defining multiple scoped data sources

```
class ZipCode {
    String code
    static mapping = {
        datasource 'auditing'
    }
}
```

- Each data source accessible via static property

```
def zipCode = ZipCode.auditing.get(42)
```

Other GORM Improvements

Other GORM Improvements

- Abstract base domain classes
  - These now result in a table

Other GORM Improvements

- Abstract base domain classes
  - These now result in a table
- findOrCreateWhere()

Other GORM Improvements

- Abstract base domain classes
  - These now result in a table
- findOrCreateWhere()
- findOrSaveWhere()

Other GORM Improvements

- Abstract base domain classes
  - These now result in a table
- findOrCreateWhere()
- findOrSaveWhere()

```
def user = User.findByLogin('admin')
if (!user) {
    user = new User(login: 'admin')
    user.save(failOnError: true)
}
```

```
def user = User.findOrSaveWhere(login: 'admin')
```

Better Unit Testing

Unit Testing 1.x

Unit Testing 1.x

- mockDomain() had only partial GORM support
  - always lagged changes in GORM

Unit Testing 1.x

- mockDomain() had only partial GORM support
  - always lagged changes in GORM
- Inheritance-based
  - hierarchy duplicated for Spock
  - difficult to extend

Unit Testing 1.x

- mockDomain() had only partial GORM support
  - always lagged changes in GORM
- Inheritance-based
  - hierarchy duplicated for Spock
  - difficult to extend
- Weak support for web-related testing
  - controllers
  - tag libraries

The Mixin Approach

```
@TestFor(MyController)
@Mock(Person)
class MyControllerUnitTests {
     void setUp() {
          new Person(...).save()
          new Person(...).save()
     }

     void testIndex() {
          def model = this.controller.index()
          ...
     }
}
```

Spockified

```
@TestFor(MyController)
@Mock(Person)
class MyControllerUnitTests extends Specification {
    void loadPeople() {
        new Person(...).save()
        new Person(...).save()
    }

    def 'Test index action'() {
        given: 'Some people'
            loadPeople()
        when: 'The index action is called'
            def model = this.controller.index()
        then: 'The people variable is in the model'
            model.people != null
    }
}
```

In-Memory GORM

- Full GORM implementation against ConcurrentHashMap
- Based on GORM for NoSQL codebase
- Support for
  - Criteria queries
  - Where queries
  - Dynamic finders
  - Detached criteria

Contributions

Contributions

- 110+ pull requests on grails-core

Contributions

- 110+ pull requests on grails-core
- 60+ pull requests on grails-docs

Contributions

- 110+ pull requests on grails-core
- 60+ pull requests on grails-docs
- More and more plugins

Contributions

- 110+ pull requests on grails-core
- 60+ pull requests on grails-docs
- More and more plugins
- GitHub for the win!
  - grails-core
  - grails-docs
  - grails-website
  - grails-maven
  - and many, many plugins

Grails in the Cloud

Grails in the Cloud

CLOUD FOUNDRY™

Grails in the Cloud

CLOUD FOUNDRY™

amazon web services™

CloudBees

Grails in the Cloud

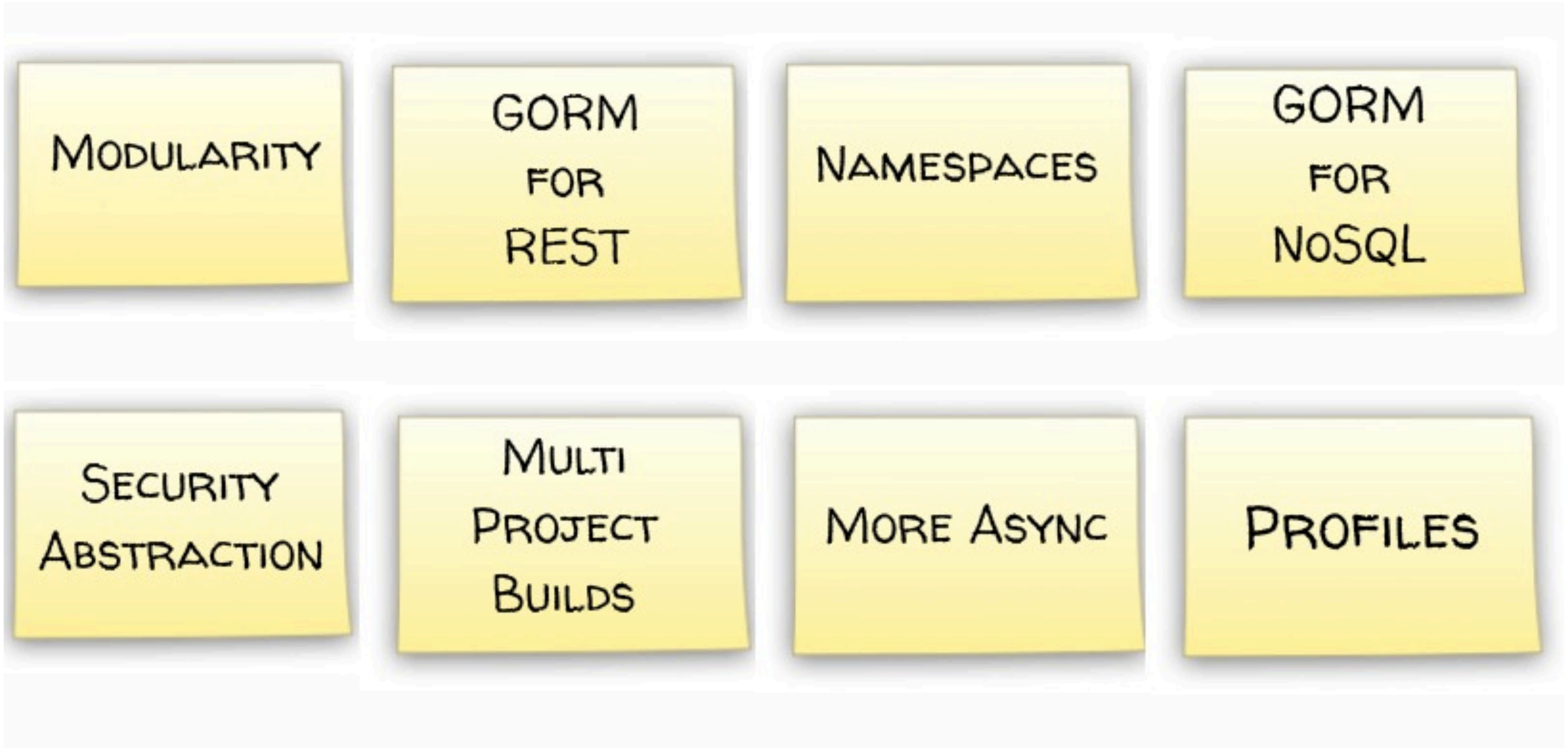
CLOUD FOUNDRY™

amazon web services™

CloudBees

heroku

Roadmap


Modularity
GORM for REST
Namespaces
GORM for NoSQL
Security Abstraction
Multi Project Builds
More Async
Profiles

Thank you!

Questions?