

Smarter Testing with Spock

Peter Niederwieser

Principal Engineer, Gradleware

Spock is...

- A developer testing framework
- for Java and Groovy applications
- based on Groovy
- fully compatible with JUnit
- but going beyond

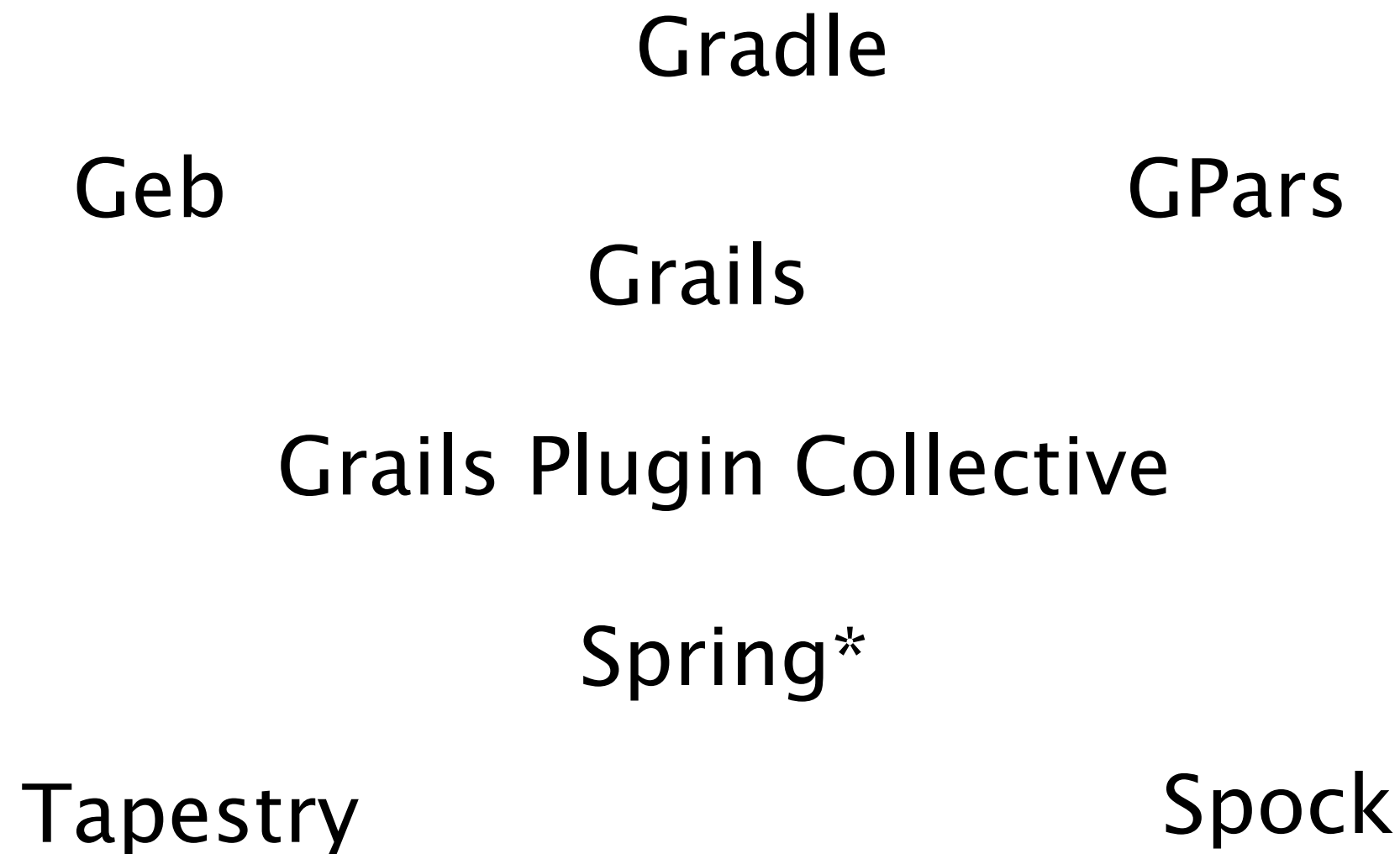
Spock can...

- reduce the lines of test code
- make tests more readable
- turn tests into specs
- be extended in powerful ways
- be a lot of fun!

How to Get Started

- Homepage
<http://spockframework.org>
- Source Code
<https://github.com/spockframework/spock>
- Spock Web Console
<http://meet.spockframework.org>
- Spock Example Project
<http://downloads.spockframework.org>
<https://github.com/spockframework/spock/tree/groovy-1.7/spock-example>
- Slides and Code for this Presentation
<https://github.com/spockframework/spock-ggnyc-2011>

Who is Using Spock?



Who is Using Spock? (2)

be2

eHarmony

CTI Digital

Smarter Ecommerce

BSkyB

bemoko

Energized Work

IntelliGrape Software

SystemsForge

Software Projects

Gennemtænkt IT

State-based Testing

- Arrange – Act – Assert (AAA)
- Given – When – Then

DEMO

Recap: State-based Testing

- **Blocks**
given, when, then, where
setup, cleanup, and
- **Fixture methods**
setup(), cleanup(), setupSpec(), cleanupSpec()
- **instance and @Shared variables**
- **old() and thrown()**
- **Data-driven tests**

Interaction-based Testing

- Mocking and Stubbing
- Interactions between SUT and collaborators

DEMO

Recap: Interaction-based Testing

Creating:

```
def sub = Mock(Subscriber)
Subscriber sub = Mock()
```

Mocking:

```
1 * sub.receive("msg")
(1..3) * sub.receive(_)
(1.._) * sub.receive(_ as String)
1 * sub.receive(!null)
1 * sub.receive({it.contains("m")})
1 * _./rec.*/"msg")
```

Recap: Interaction-based Testing (2)

Stubbing:

```
String receive(String msg) { ... } // now returns status code
```

```
sub.receive(_) >> "ok"  
sub.receive(_) >>> ["ok", "ok", "fail"]  
sub.receive(_) >>> { msg -> msg.size() > 3 ? "ok" : "fail" }
```

Mocking and stubbing:

```
3 * sub.receive(_) >>> ["ok", "ok", "fail"]
```

Impressing your friends:

```
(_.._) * _._(_) >> _
```

Extensions

- Based on Listeners and Interceptors
- Annotation-Driven Extensions
- Global Extensions

Built-in Extensions

@Ignore

@IgnoreRest

@FailsWith

@Timeout

@AutoCleanup

@Stepwise

@RevertMetaClass

@Rule

@Rule Extension

```
class JUnitRules extends Specification {  
    @Rule name = new TestName()  
  
    def "retrieve test name at runtime"() {  
        println "running '$name.methodName'"  
        expect: 1 + 1 == 2  
    }  
}
```

@Stepwise Extension

```
@Stepwise
class StepwiseSpec extends Specification {
  def "step 1"() {
    expect: true
  }

  def "step 2"() {
    expect: false
  }

  def "step 3"() {
    expect: true
  }
}
```

Optional Extensions

- spock-grails
 - spock-spring
 - spock-guice
 - spock-tapestry
 - spock-unitils
-
- spock-griffon
 - spock-arquillian
 - spock-extensions
- <http://github.com/robletcher/spock-extensions>

Grails Extension

<http://www.grails.org/plugin/spock>

```
grails install-plugin spock 0.5-groovy-1.7
```

```
grails test-app
```

```
grails test-app integration:spock 'C*'
```

Grails 2.0:

<https://github.com/spockframework/spock-grails>

Grails Extension (2)

```
class MyUnitSpec extends UnitSpec {  
    def "domain mocking"() {  
        setup:  
            mockDomain(Person)  
  
        when:  
            new Person(name: name).save()  
  
        then:  
            Person.findByName(name) != null  
  
        where:  
            name = "bill"  
    }  
}
```

Spring Extension

```
class InjectionExamples extends Specification {  
    @Autowired  
    IService1 byType  
  
    @Resource  
    IService1 byName  
  
    @Autowired  
    ApplicationContext context  
}
```

Writing Custom Extensions

DEMO

Configuring Spock

~/.spock/SpockConfig.groovy, or on class path, or with -Dspock.configuration

```
runner {  
    filterStackTrace false  
    include Fast  
    exclude Slow  
    optimizeRunOrder true  
}  
  
@Fast  
class MyFastSpec extends Specification {  
    def "I'm really fast!"() { expect: true }  
  
    @Slow  
    def "sorry but I'm slow"() { expect: false }  
}
```

Tool Integration

- IDEs: Eclipse, IDEA
- Build Tools: Ant, Maven, Gradle
- CI Servers: Hudson/Jenkins, Bamboo, TeamCity
- Runs everywhere JUnit and Groovy run!

Spock Under The Hood

DSL implemented as Groovy compiler plugin (AST transform)

Before:

```
expect: sum(a, b) == c
```

After:

```
def recorder = new ValueRecorder()
runtime.verify(
    record(4, record(sum(2, record(0, a), record(1, b)))
              == record(3, c)
    )
)
```

Q&A

- Homepage
<http://spockframework.org>
- Source Code
<https://github.com/spockframework/spock>
- Spock Web Console
<http://meet.spockframework.org>
- Spock Example Project
<http://downloads.spockframework.org>
<https://github.com/spockframework/spock/tree/groovy-1.7/spock-example>
- Slides and Code for this Presentation
<https://github.com/spockframework/spock-ggnyc-2011>