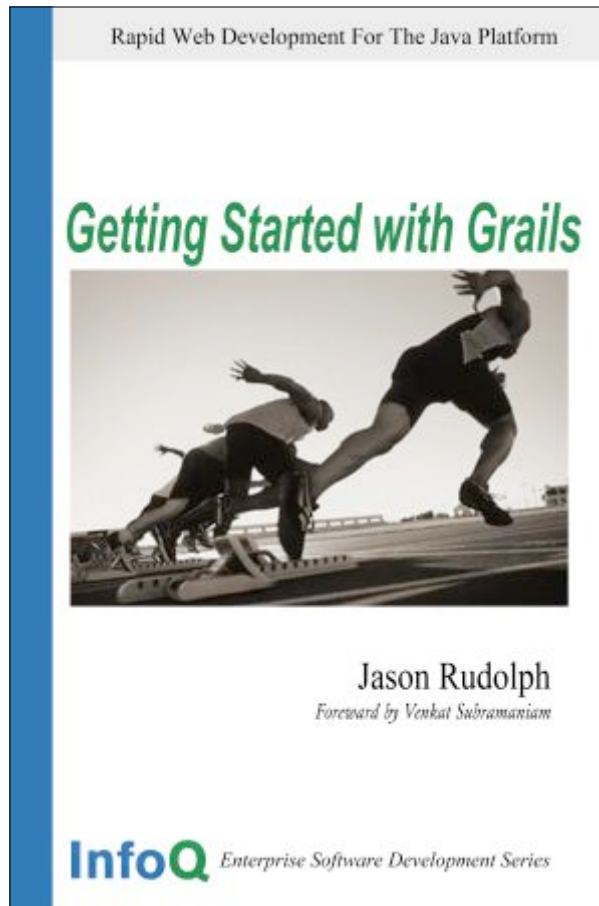


Advanced Domain Models with Grails

Enterprise Integration
Made Easy

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Introduction



- Jason Rudolph
- Grails Committer
- Principal @ Relevance
- Author

InfoQ Enterprise Software Development Series

relevance



Agenda

- **The case for GORM**
 - Conventional thinking, unconventional productivity
 - Relationships, any way you like 'em
 - Constraints, declare and be done
- **GORM for non-conformists**
 - Hibernate mappings
 - EJB3 annotations
- **Going further with GORM**

DAOs Considered Harmful

- **Grails Object-Relational Mapping (GORM)**
 - Zero-configuration persistence management
 - Rich relationship model
 - Declarative validation
 - Powerful query support
 - Easy scaffolding

Rock-Solid Foundation





Demo

Dynamic Persistence Methods

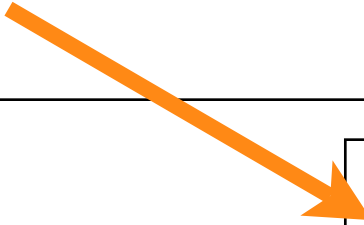
- **save**
- **delete**
- **get**
- **addTo...**
- **removeFrom...**
- **withTransaction**
- **list**
- **findAll**
- **findBy...**
- **count**
- **exists**
- **etc.**

Learning to Relate

One-to-One

1:1 Relationships

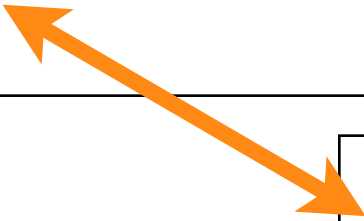
```
class Knight {  
    String name  
    int numDragonsSlain  
    Sword sword  
}
```



```
class Sword {  
    String serialNumber  
    String manufacturer  
}
```

1:1 Relationships

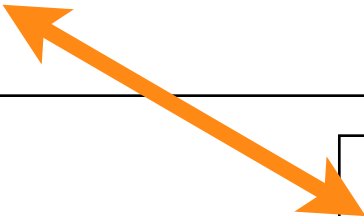
```
class Knight {  
    String name  
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    Sword sword  
}
```



```
class Sword {  
    String serialNumber  
    String manufacturer  
    Knight knight  
}
```

1:1 Relationships

```
class Knight {  
    String name  
    int numDragonsSlain  
    Sword sword  
}
```



```
class Sword {  
    String serialNumber  
    String manufacturer  
    Knight knight  
    static belongsTo = Knight  
}
```

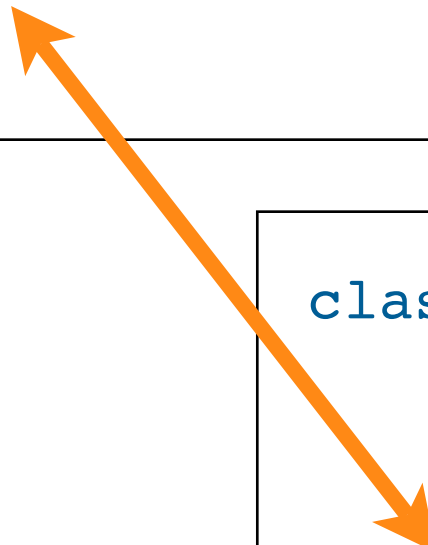
Expanding Our Horizons

One-to-Many

1:n Relationships

```
class Knight {  
    //...  
    static hasMany = [swords:Sword]  
}
```

```
class Sword {  
    //...  
    Knight knight  
    static belongsTo = Knight  
}
```



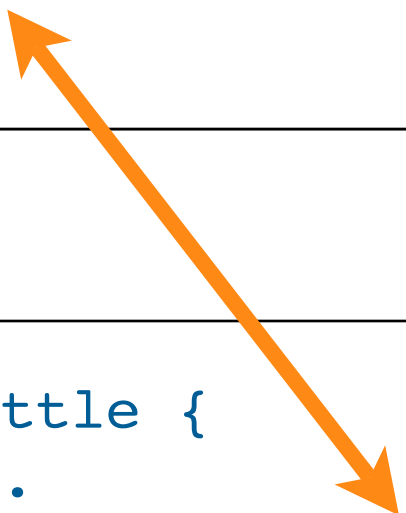
Wisdom of Crowds

Many-to-Many

m:n Relationships

```
class Knight {  
    //...  
    static hasMany = [battles:Battle]  
    static belongsTo = Battle  
}
```

```
class Battle {  
    //...  
    static hasMany = [knights:Knight]  
}
```



Learning to Relate

Demo

Conventional Thinking

Demo

More GORM Fu

- **Customizable fetch modes**
 - static fetchMode = [someOtherAttribute : 'eager']
- **Composition**
 - static embedded = ['someAttribute']
- **Table-per-hierarchy inheritance**

Declaring Constraints

- **Pre-packaged constraints**

- blank
- min
- range
- creditcard
- max
- unique
- email
- matches
- url
- inList
- nullable
- etc.

- **Custom constraints**

- **Influence schemas and scaffolding**

The Power of Constraint

Demo

Defying Conventional Wisdom

- **Non-conforming table/column names**
- **Custom sequences**
- **Complex keys**
- **Advanced mappings**

No Schema Left Behind

Demo

Hibernate XML - Step-by-Step

- **Define Hibernate artifacts**
 - Add hibernate.cfg.xml
 - Prepare HBM file for each deviant table
 - Consider reverse engineering with Hibernate tools
- **Create Grails domain classes**
- **Add constraints (optional)**

Why Hibernate XML?

- **Standard Hibernate artifacts**
- **Reuse your existing mappings**
- **Full power of GORM**
 - Dynamic persistence methods
 - Constraints
 - Scaffolding

Pimp My EJBs

Demo

EJB3 Step-by-Step

- **Start with Java 5 (or higher)**
- **Update DataSource.groovy**
 - `configClass =`
`GrailsAnnotationConfiguration.class`
- **Add POJOs to src/java**
- **Define hibernate.cfg.xml**
- **Drop in constraints (optional)**

Why Annotate?

- **Standards-based POJOs**
 - Reuse elsewhere
 - Not tied to Grails
- **Full power of GORM (once again)**
 - Dynamic persistence methods
 - Constraints
 - Scaffolding

A Groovier Solution

Demo

Going Further with GORM

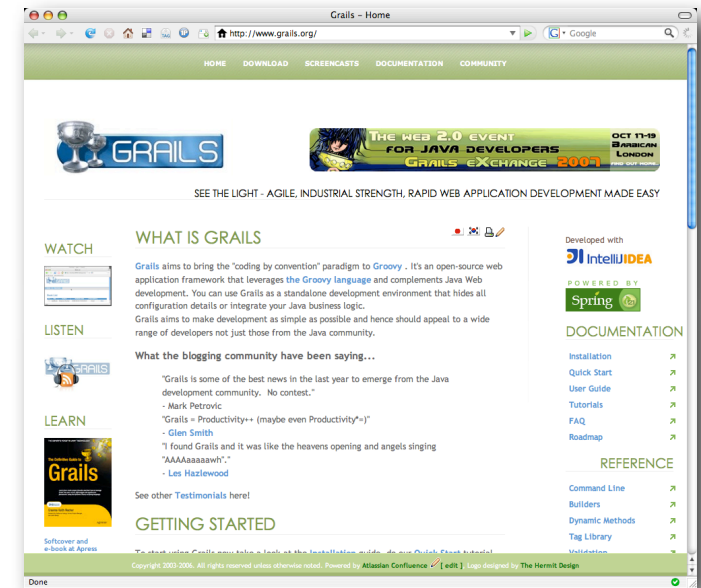
- **GORM outside of Grails**
 - grails.org/gorm+-+standalone+gorm
- **Java on GORM**
 - jroller.com/page/ie?entry=java_on_grails

Still More to Explore

- **Custom user types**
 - grails.org/hibernate+integration
- **ORM DSL <brand new!>**
 - grails.org/GORM+-+Mapping+DSL
- **Migrations <brand new!>**
 - code.google.com/p/dbmigrate/wiki/Grails

Resources

- grails.org
- Downloads
 - Latest release (0.6)
 - Development snapshot (1.0-RC1)
- User guide, tutorials, screencasts, etc.
- Mailing lists (grails.org/ mailing+lists)



Resources (cont'd)

- **GORM Documentation**
 - grails.org/gorm

- **Grails Podcast - Episode 18**
 - svenhaiges.de/space/start/2006-11-24/1

Resources (cont'd)

- **Grails + EJB3 Tutorial**
 - infoq.com/articles/grails-ejb-tutorial

- **Hibernate Tools**
 - hibernate.org/255.html

Rapid Web Development For The Java Platform

Getting Started with Grails



Jason Rudolph

Foreward by Venkat Subramaniam

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