Making Java Groovy

Easier development with Groovy
NFJS

Contact Info
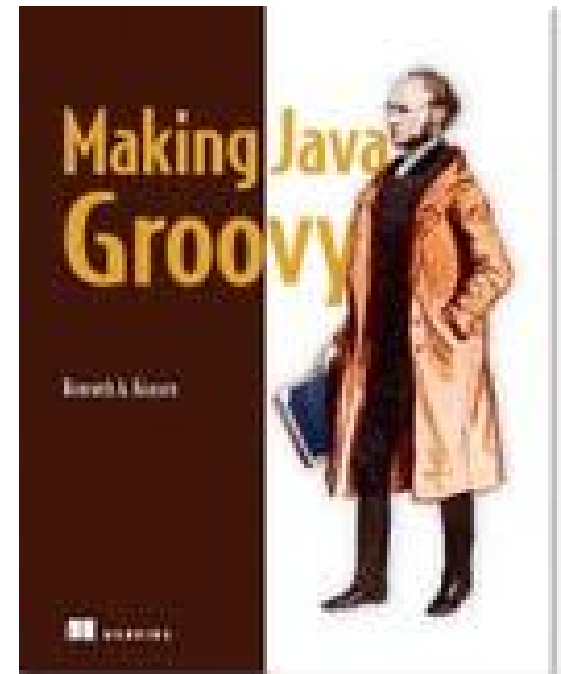
Ken Kousen

ken.kousen@kousenit.com

[@kenkousen](https://twitter.com/kenkousen)

Making Java Groovy

http://manning.com/kousen

Groovy

JVM language

    compiler generates bytecodes

★ Groovy   Documentation ▾   Community & Support ▾   IDE Support ▾   Download   Search

A dynamic language for the Java platform

Download Groovy 2.1

Home

Groovy...

- is an agile and **dynamic language** for the **Java Virtual Machine**
- builds upon the strengths of Java but has **additional power features** inspired by languages like Python, Ruby and Smalltalk
- makes **modern programming features** available to Java developers with **almost-zero learning curve**
- provides the ability to **statically type check** and **statically compile** your code for robustness and performance
- supports **Domain-Specific Languages** and other compact syntax so your code becomes **easy to read and maintain**
- makes writing shell and build scripts easy with its **powerful processing primitives**, OO abilities and an Ant DSL
- increases developer productivity by **reducing scaffolding code** when developing web, GUI, database or console applications
- **simplifies testing** by supporting unit testing and mocking out-of-the-box
- seamlessly **integrates with all existing Java classes and libraries**
- compiles straight to Java bytecode so you can use it anywhere you can use Java

springsource
A division of **vmware**

The Groovy programming language is sustained & led by SpringSource and the Groovy Community

Training Events ...

Information

- News

Groovy

Groovy Is Java

OO language with similar syntax

Everything is an object
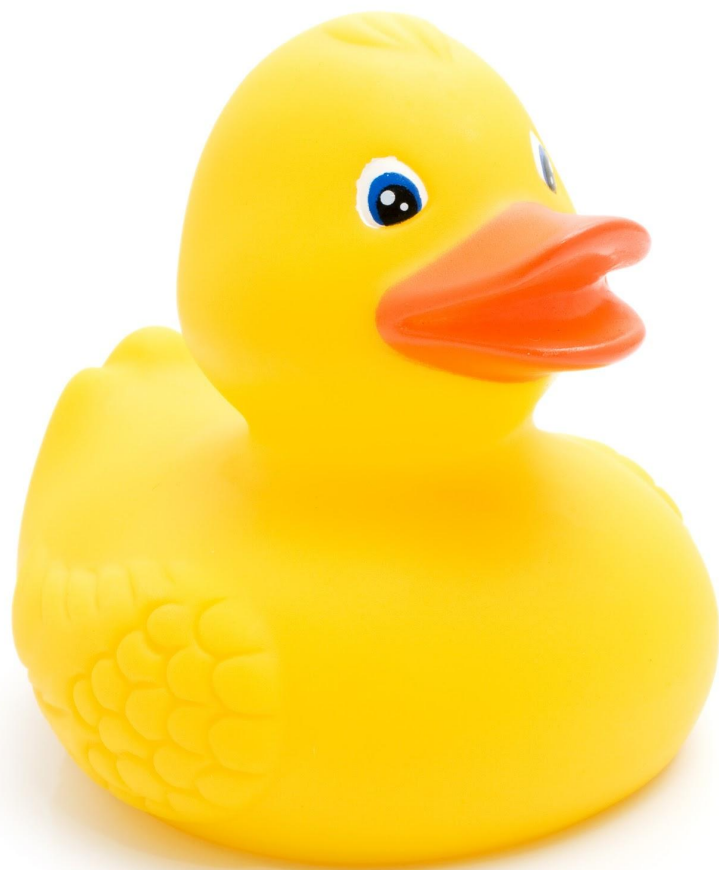
Strings and Groovy Strings

Optional Typing

Type is *optional*

```
String, double, Employee, …
```

```
def x
```

can be assigned to anything

Duck Typing

```
def x
   x.method()

   if method() exists at runtime, no problem
```

Strings

Single quotes == Java strings

Double quotes == Groovy strings
    interpolation

```
"Hello, ${name}!"
```

POGOs

Plain Old Groovy Objects

getters / setters

map-based constructor

public / private

Example

Convert a POJO to a POGO

JUnit test case (**Java**)
POGO (**Groovy**)

Groovy + Java

Adding Groovy to Java is easy

Groovy + Java

Adding Java to Groovy is inevitable

Operator Overloading

Used extensively in Groovy JDK

All operators correspond to methods

Example

`java.math.BigDecimal`

Complex numbers (later)

Collections

Ranges

```
5..10
'a'..'z'
now..then
```

Collections

Lists

```
[3, 1, 4, 1, 5, 9]
['this', 'is', 'a', 'list']
```

Collections

Sets

```
[3, 1, 4, 1, 5, 9] as Set
Set strings
```

Collections

Maps

```
def map = [a:1, b:2, c:3]

map.d = 4
map['e'] = 5
map.put('f') = 6
```

Groovy

Groovy Is Not Java

closures, builders, metaprogramming

Closures

```
{ ... it ... }

{ x, y -> ... }
```

function bodies as first class objects
    (oversimplified, but not a bad start...)

Closures

```
list.each { ... }
    iterator

list.collect { ... }
    transform list by applying closure
```

Example

Closure Coercion

```
{ ... } as FilenameFilter
```

No more anonymous inner classes

Example

RowMapper from Spring

`JdbcTemplate` (**Java**)

closure for `mapRow` (**Groovy**)

Builders

groovy.xml.MarkupBuilder

groovy.json.JsonBuilder

SwingBuilder, AntBuilder, ...

Parsers and Slurpers

XmlParser / XmlSlurper

JsonSlurper

Examples

Google Geocoder

    lists, maps

    Groovy JDK

    `collect`

    `groovy.util.XmlSlurper`

Google
Developers

Google Maps API   X   Search

🔍

ken.kousen@kous

| Home | **Products** | Conferences | Showcase | Live | Groups |

Google Maps API Web Services   +1   216

Feedback on

Introduction

Directions API

Distance Matrix API

Elevation API

Geocoding API

Time Zone API

Blog

Forum

FAQ

The Google Geocoding API

What is Geocoding?

Audience

Usage Limits

Geocoding Requests

Geocoding Responses

    JSON Output Formats

    XML Output Formats

    Status Codes

    Results

    Address Component Types

Reverse Geocoding

Viewport Biasing

Region Biasing

Component Filtering

Examples

ICNDB
    Groovy JDK
    JSON

Metaprogramming

Runtime metaprogramming
  Expando

Expando MetaClass (EMC)

Example

Complex numbers
  metaprogramming
  Spock

AST Transformations

Compile time metaprogramming

```
@Delegate
@EqualsAndHashCode
@Immutable
```
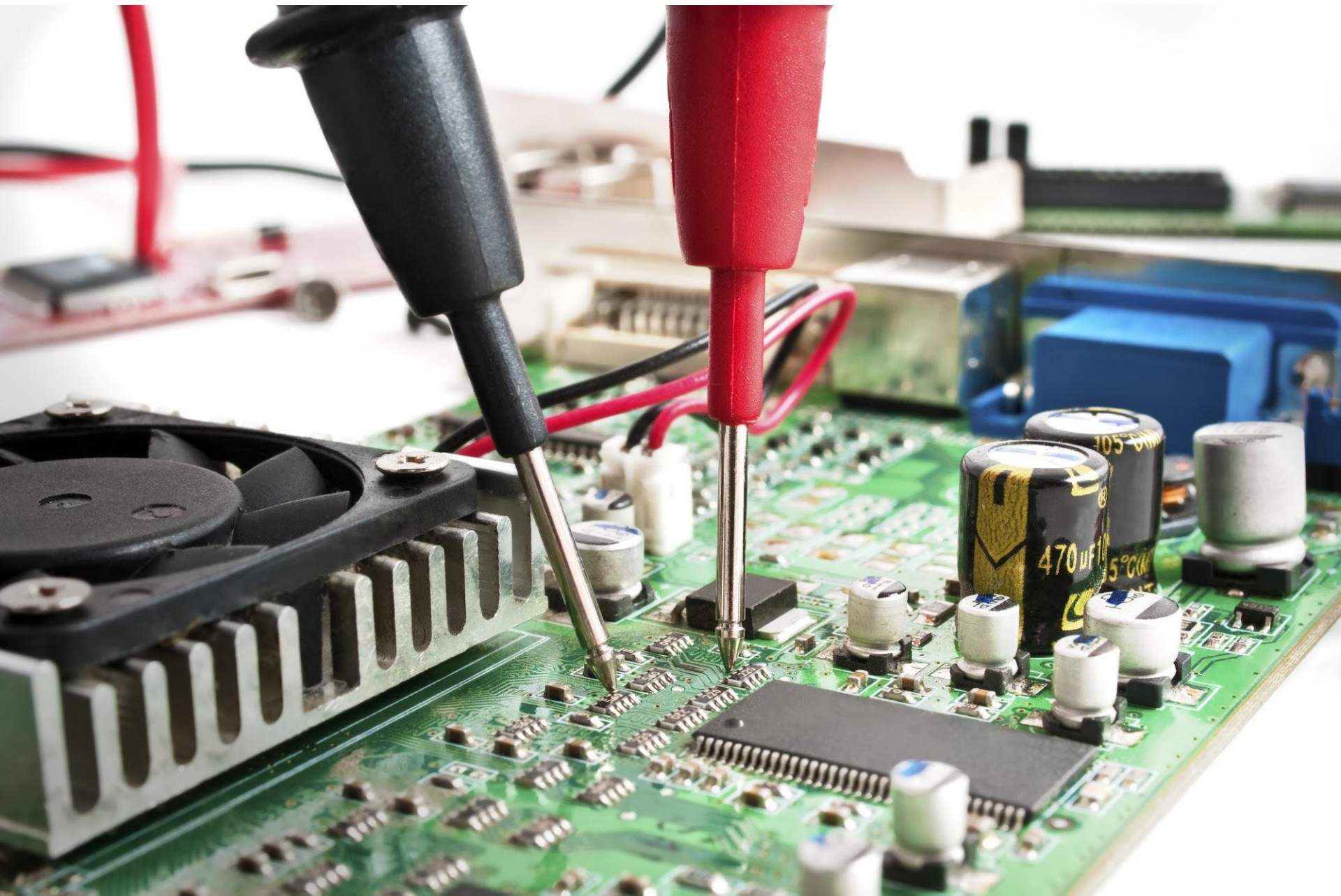
Example

```
SmartPhone
    @Delegate Phone
    @Delegate Camera
```

Testing

`assert` keyword

  returns nothing if true

  lots of debugging info if false

Testing

```
GroovyTestCase

    extends JUnit TestCase

    shouldFail(...) {
        ...
    }
```

Testing

Spock Framework

Build Tool

Gradle

DSL for your build

BY ALDOUS HUXLEY

Only one

Digital Photography

Computer

College Guides

Two (or more)

New Teen Paranormal Romance

Teen Paranormal Romance

Examples

Groovy Vampires
    Groovy JDK
    REST (GET only)
    JSON

    Mongo DB

Examples

People service

    Full REST (w/o hypermedia)

    Spock

    POGOs

    AST Transformations

    `groovy.sql.Sql`

Summary

Groovy is Java
    Collections, Groovy JDK,
    Streamlined, simplified code

Groovy is not Java
    Closures, Builders, Metaprogramming

Thanks for coming!

Please complete your session evals

All code is (or will be) on GitHub
https://github.com/kousen