

Groovy

David Pick, Mark Jenne, Patrick Nowicki

A little about Groovy

- Dynamically compiled to Java Virtual Machine byte code
- Object-Oriented
- Closures
- Operator Overloading
- Lists!



<http://i136.photobucket.com/albums/q172/IMANDEA/GroovyBaby.jpg>

Getting Started With Groovy

- Generally a .java file can be renamed to .groovy
- Groovy has lists and maps, no more importing ArrayList :)
- Closures, Java should have them, but it doesn't, so now Groovy does
- Closure coding example



<http://i128.photobucket.com/albums/p177/nandysewton/groovy.gif>

Differences from Java

- == means equals on all types
- alternate for-loop syntax
 - for (i in 0..len-1)
 - for (i in 0..<len)
- semicolons are optional
- Nested classes not currently supported
- throws clause not checked by compiler
- dynamic and static typing is supported

Some Groovy Features

- multiple assignment and one-line variable swapping
- named parameter passing

- passing closures into methods

```
def closure = { param -> param + 1 }  
def answer = [1, 2].collect(closure)  
assert answer == [2, 3]
```

- safe navigation

```
def streetName = user?.address?.street
```

GUI Programming

- GUI design can directly use Java Swing elements or the Groovy SwingBuilder
- SwingBuilder simplifies the syntax of Swing elements
 - Builders - handle the busywork of Swing for you
 - Code is much more readable and maintainable
- "actionPerformed" attributes can be set on elements
 - these act as closures
- Reference elements by ID, like JavaScript

SwingBuilder Example

```
import groovy.swing.SwingBuilder
import java.awt.BorderLayout as BL

def swing = new SwingBuilder()
count = 0

def frame = swing.frame(title:'Frame', size:[300,300])
{
    BorderLayout()
    label(id:'clickCount', text:"Click the button!", constraints: BL.NORTH)
    button(text:'Click Me',
           actionPerformed:{count++;
                           clickCount.text = "Clicked ${count} time(s).";},
           constraints:BL.SOUTH)
}

frame.show()
```

- Elements can be given an id instead of complete definitions
- actionPerformed attribute acts like a closure

Project Demonstration

Projects in Groovy

- Good Ideas
 - Quick development
 - GUI based Java applications
- Bad Ideas
 - Speed dependent applications
 - Pure functioning code
- Groovy Project Home - <http://groovy.codehaus.org/>



<http://groovy.codehaus.org>

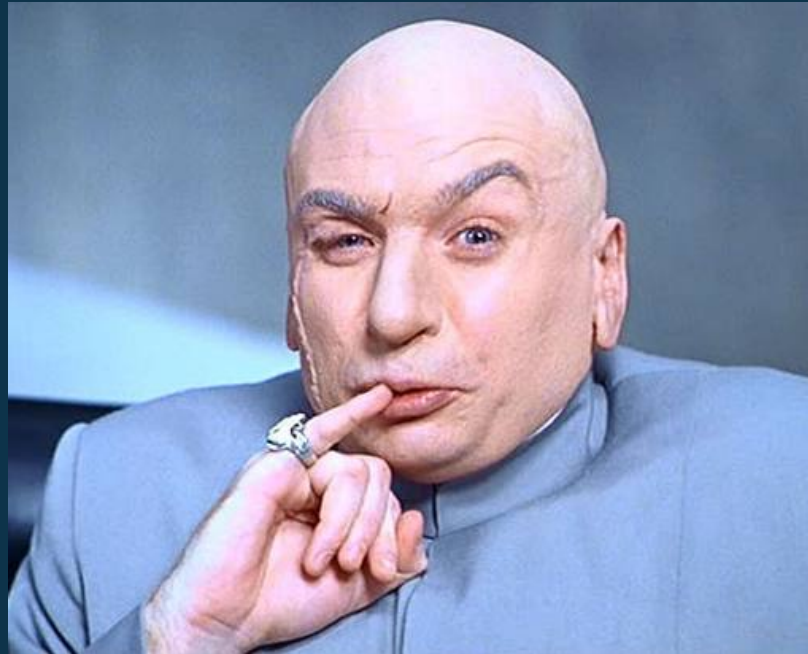
Key Challenges

- Lack of documentation
- Non-comprehensive sample code
- Googling for "Groovy"
- Trying to write Groovy and not Java



http://i209.photobucket.com/albums/bb281/EVO_8_MR/mini_me.gif

Questions, Comments...Concerns?



http://www.deadline.com/wp-content/uploads/2008/07/dr_evil.jpg