

Externalizing Business Rules with JBoss Rules



Tim Shadel

Phoenix JUG
9 May 2007



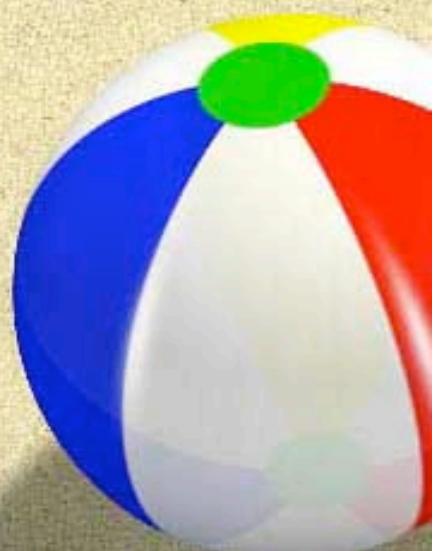
Agenda

- ✳ Who is this guy?
- ✳ Why does he use JBoss Rules?
- ✳ What do rules look like?
- ✳ How does it work?
- ✳ What can you do with it?
- ✳ How does he use JBoss Rules in his app?



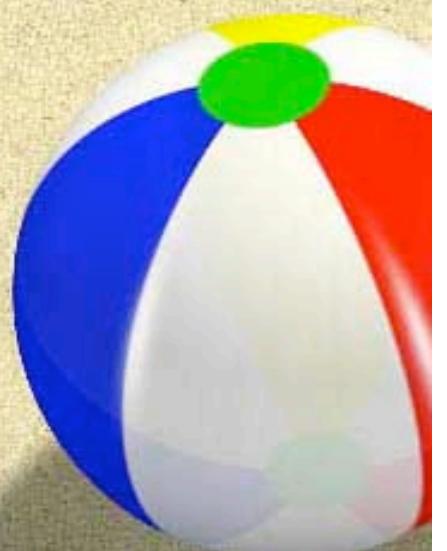
Tim Shadel

- ✿ IT Manager at Apollo Group, Inc.
- ✿ Background mainly in Java web applications, with some database- backed Windows applications before that.
- ✿ Mainly in the IT arena.



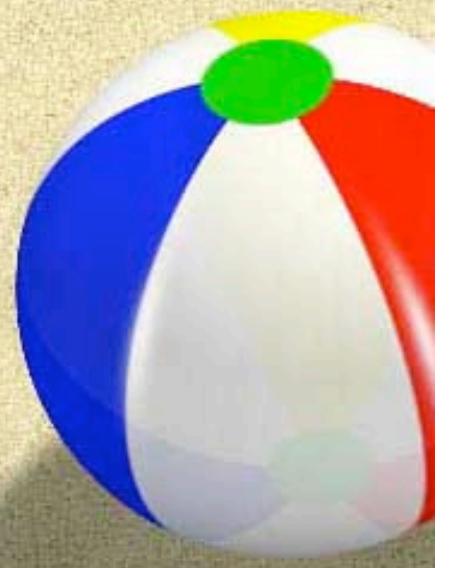
National Qualifying Center

- ✿ 200,000+ phone calls per day
- ✿ ~400 qualifying specialists
- ✿ 70+ ground campuses
- ✿ ~6,000 enrollment counselors (my estimate)
- ✿ ~500 specialized groups
 - ✿ Geography
 - ✿ Program
 - ✿ Bachelor's, Master's, etc.



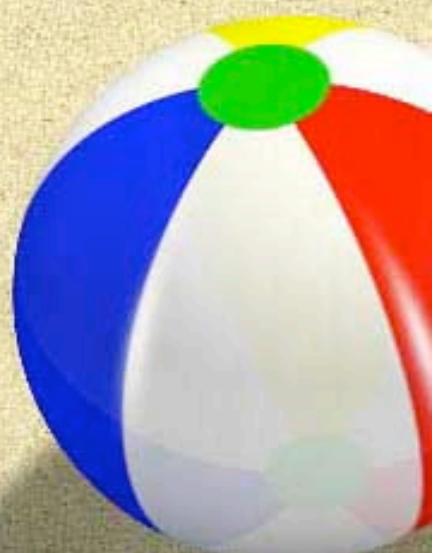
We Use Rules For

- ✿ Routing
- ✿ Managing the call script



Our Rules Setup

- ★ 700+ routing rules
- ★ ~450,000 test scenarios
- ★ ~ 2.5 mins test execution
- ★ => ~3,000 scenarios / second
(3 scenarios / **millisecond**)



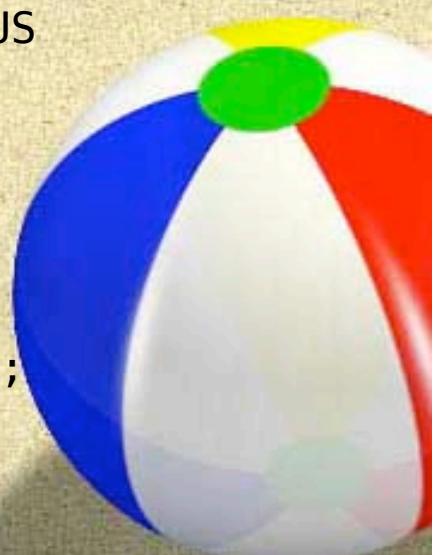
Routing Rules in Excel

RuleSet	edu.apollogrp.app.nqc.rules					
Import	edu.apollogrp.qtask.routing.model.Lead					
Sequential	true					
RuleTable Group 5.1						
CONDITION	CONDITION	CONDITION	CONDITION	CONDITION	CONDITION	ACTION
lead: Lead						
campusOID	learningCenterOID	eligibleOnlineCampusOID	programType	programLevel	military	lead.setHuntGroupName("\$param");
VDN	Campus OID	Learning Center OID	UOP or Axia qualified?	Program Type	Program Level	Military? Hunt Group Name
45066	5	1148	1	Human Services		So Cal - Woodland Hills - Business
45068	5	1148	1 1 1	Nursing Healthcare Education		So Cal - Woodland Hills - Healthcare
45070	5	1148	1			So Cal - Woodland Hills - Education
45093	5	1148	92345			So Cal - Woodland Hills - Axia
45076	5	1190	1	Human Services		So Cal - Palmdale - Business
45078	5	1190	1 1	Nursing Healthcare		So Cal - Palmdale - Healthcare
45080	5	1190	1	Education		So Cal - Palmdale - Education
45096	5	1190	92345			So Cal - Palmdale - Axia
45072	5	1199				So Cal - Ventura - Business

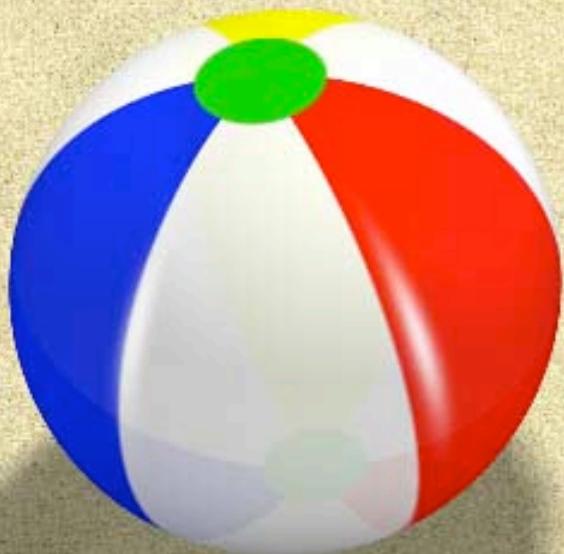
Script Rules in DRL

```
rule "Script Introduction Proceed"
  agenda-group "Intro"
  when
    form: QlStdScriptForm(leadPresent == "Y",
      proceed == "Y",
      //not a lead that switched from US to Canada
      usResident != "canadianResident",
      //not a lead that switched from Canada to US
      canadianResident != "usRes")

      //only for leads that came in as US then
      lead: QualifyLeadDT0(canadianLead == false)
  then
    form.addQuestion(ScriptQuestion.CallLogging);
    drools.setFocus("Call Logging");
  end
```

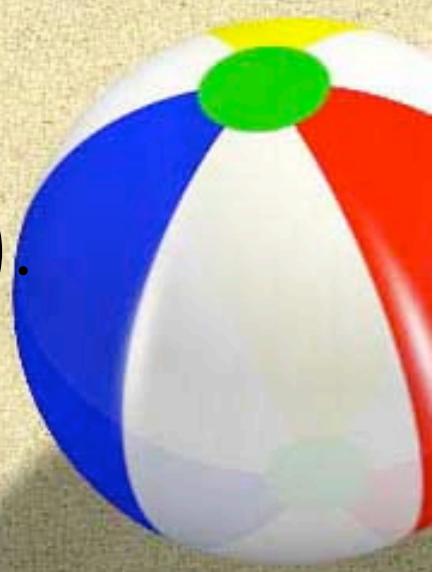


JBoss Rules



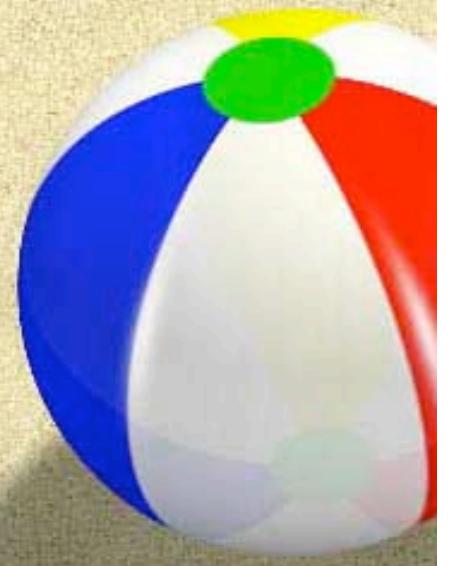
Background

- ✳ Started as Drools in 2001 (est.)
- ✳ JBoss acquired it about a year ago just before version 3.0
- ✳ Version 4.0 is being worked on now
- ✳ There are some good theoretical underpinnings to it, and the basics are accessible to us (mere mortals).



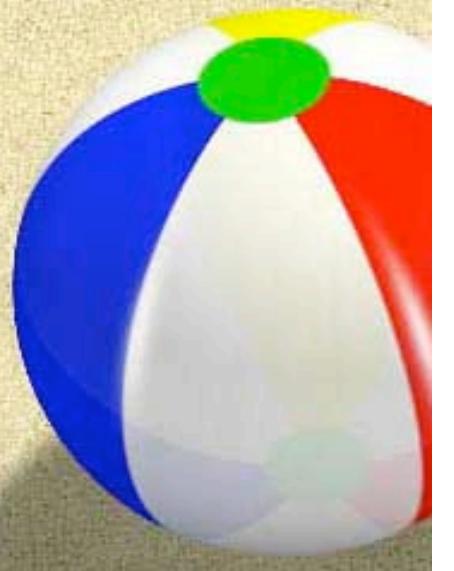
Terms

- ✳ Rule
- ✳ Working Memory
- ✳ Agenda



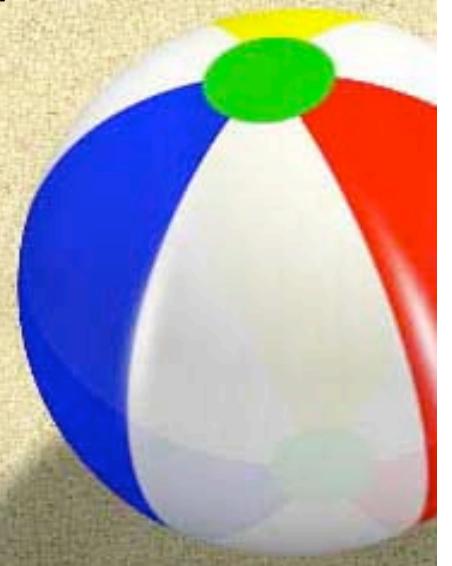
Basic Rule Example

```
rule "Print Cheddar Cheese"
when
    Cheese( type == "cheddar" )
then
    System.out.println("cheddar");
end
```



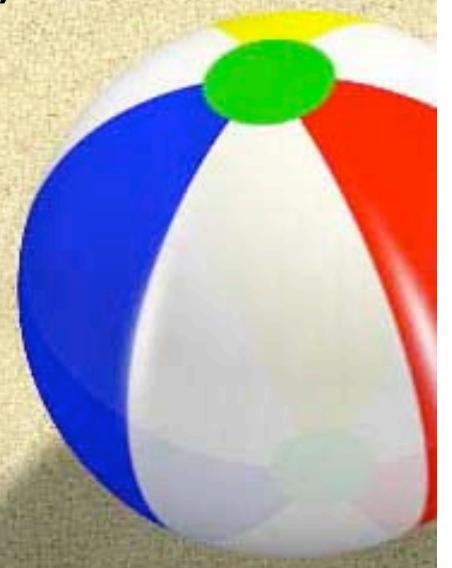
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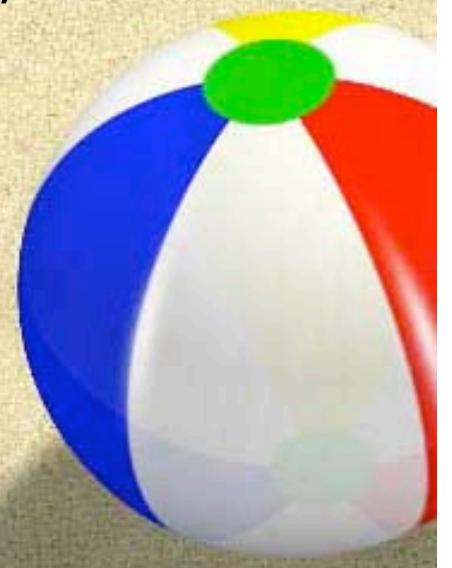
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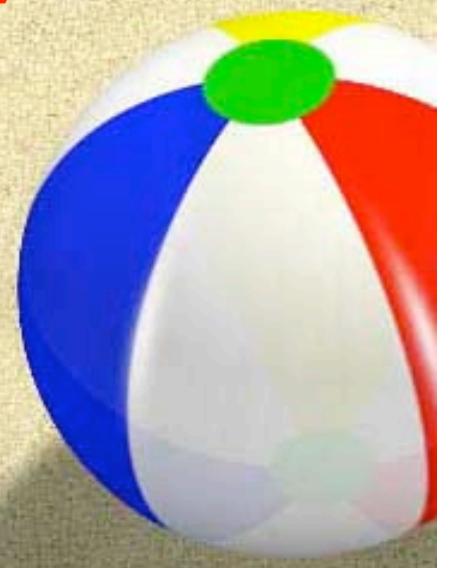
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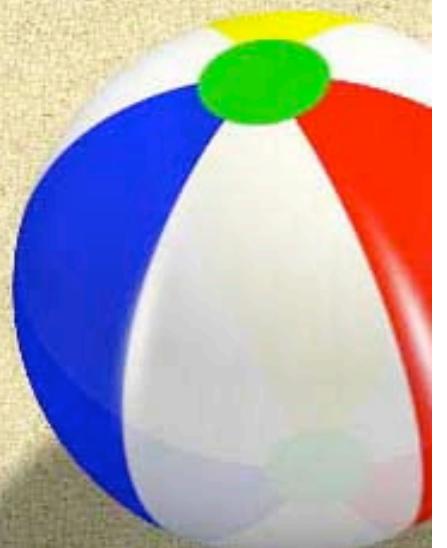
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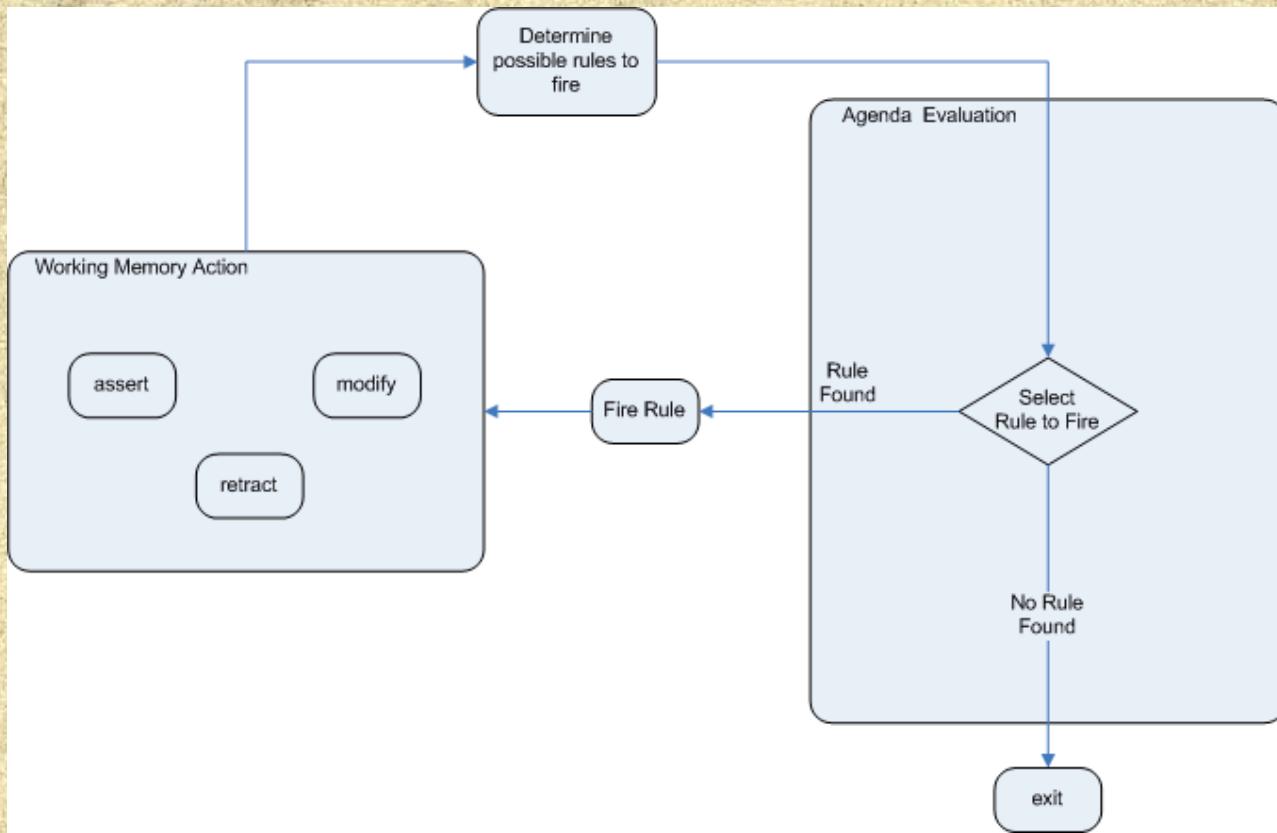


Working Memory

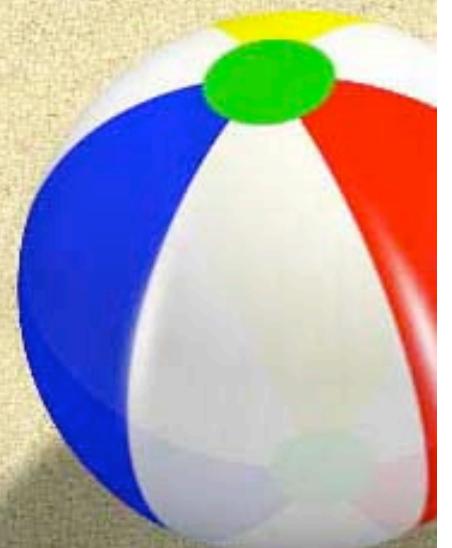
- ★ Lightweight objects
- ★ It's the “world” for your rules
- ★ You **assert** objects as Facts; updating them could cause rules to fire.
- ★ You can use **globals** for references to helper objects, like an email service.



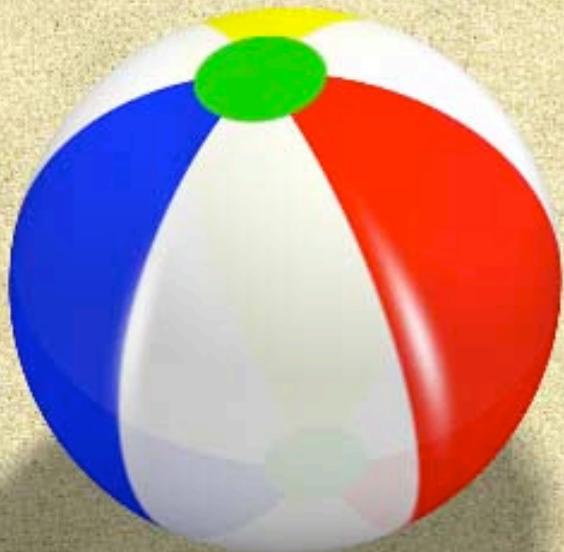
Rule Execution: How it works



Questions before we move on?



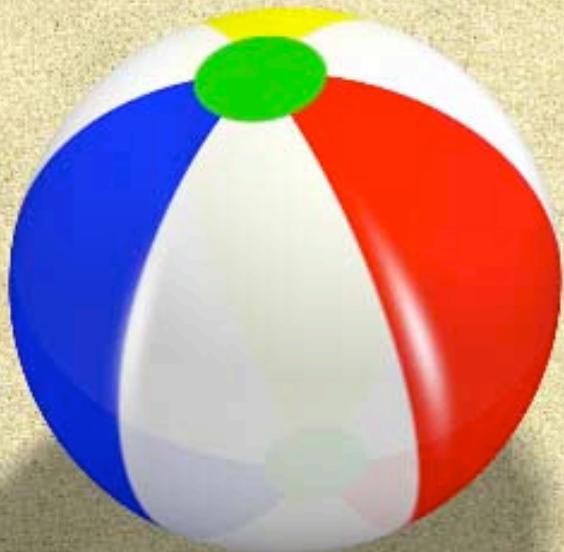
Demo #1: Coupons



Demo #2: State Machine “Game”



Mini Demo: DSL



Summary

- ✿ Rules representation is flexible (DRL, Excel, DSL)
- ✿ Execution is fast because of RETE
- ✿ Rules should usually be written without “flow” in mind.
- ✿ It’s hard to “think” in rules at first.
- ✿ Avoid much code in the **then** block.
- ✿ Use helper services. Read properties.
- ✿ Rules **might** be more clear than code.
They are for us.

