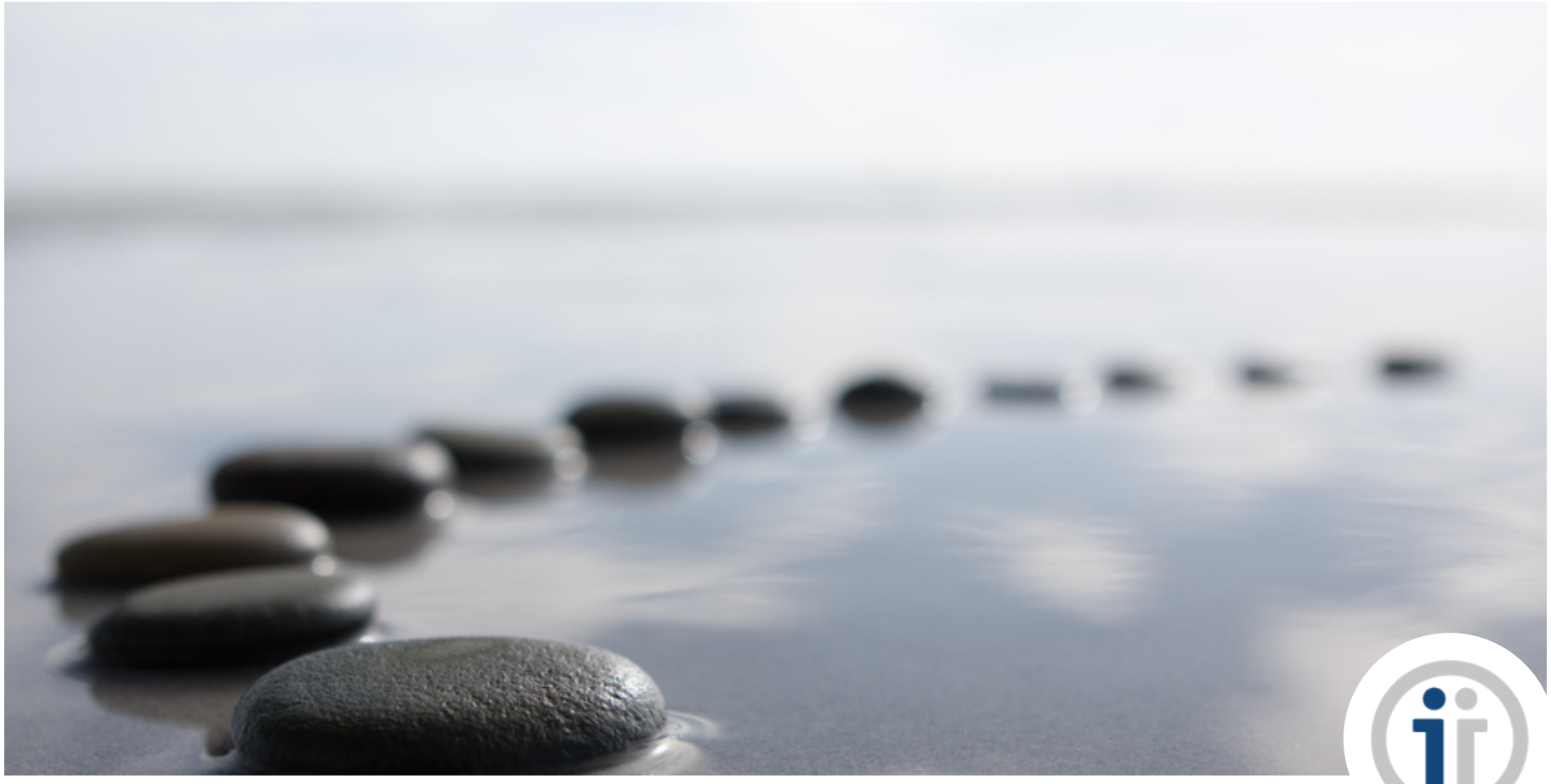
itemis



Interpreting Xtend - How to do it and why

Marco Eilers, July 3, 2015

Overview

1 What is Xtend?

2 The How

3 The Why

Xtend as a language

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- Xtend uses Xbase for its expressions
- $\rightarrow$ Xtend wraps Xbase expressions in methods and classes

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- Add context switches for method calls
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- Add polymorphic dispatch and other mechanics
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- Done?

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*(There are some restrictions)

Java-Xtend-interaction

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Reflection?

Solution

Attempt number zero

Create a class "XtendObject"!

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Does not work.

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- Messy, behaviour may depend on caller.
- No reflection
- Constructors are problematic

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Attempt number two

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- Create correct fields, methods etc.
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- JVM handles a lot of messy issues

- Messy if compiled classes exist, ClassLoader magic needed
- Otherwise very natural solution that solves a lot of problems.

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- No Active Annotations
- RichString evaluation is somewhat messy
- Prototype status

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1. Dynamically create and execute code at runtime
2. No Java compiler needed
3. Execution can be manipulated and/or tracked
4. For Xtend: Existing tooling is very helpful
5. I like writing interpreters

Applications

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- Dynamically create data structures and behaviour
- Command line REPL
- Tracing program execution
  - e.g. model transformations

And now...

Demo!

Thank you for your attention

Use it, give us feedback, improve it, extend it!

`https://github.com/kbirken/xtendency`