Rules as a Control Structure

Ryan Brush

Let’s code some business logic

Delivery date must be more than 10 business days away

Must have a 27B/6

Ensure compatible parts

Process a Work Order

Additional charge for expedited orders

Approval required if total cost > X

Ensure regulatory paperwork complete

27B/6?

How do we code this?

```
(defn process-order [order]
;;TODO: write giant mess of logic
)
```

```
(defn process-order [order]
    ;; TODO: write smaller messes of logic
    ;; and tightly couple them together
    )
```

“Restricted elements depend on location and cannot be used without manager approval or with a justification form.”

"Restricted elements depend on location and cannot be used without manager approval or with a justification form."

"Restricted elements depend on location and cannot be used without manager approval or with a justification form."

"Restricted elements depend on location and cannot be used without manager approval or with a justification form."

Excessive plumbing is not a requirement

Can we get rid of it?

How our requirements look

How our code looks


MIND THE GAP

So how can we close the gap?

Delivery date must be more than 10 business days away

Must have a 27B/6

Ensure compatible parts

Process a Work Order

Additional charge for expedited orders

Approval required if total cost > X

Ensure regulatory paperwork complete

Write independent rules

Let the system do the plumbing

Drools

Nools

Jess

Rule Engines

OPS5

CLIPS

Rule engines do the plumbing

when:
  item I restricted at location L
  work W order at location L
then:
  approval required

when:
  approval required
  no approval form
then:
  reject work order

But there are downsides

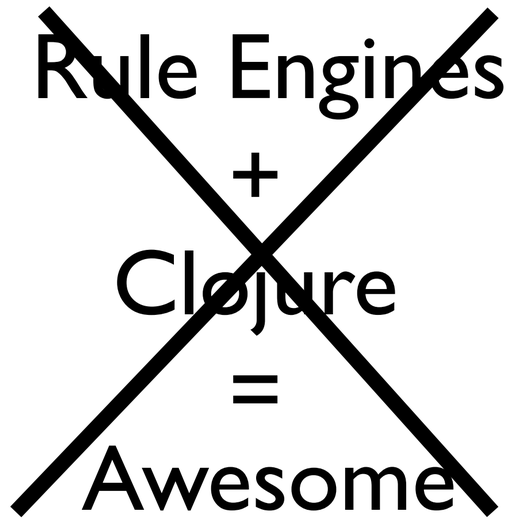
Simplicity of a DSL limits expressiveness

Obstacles to invoking arbitrary functions

Working memory is mutable

No direct rule introspection

Brush's Conjecture




```
(= “Awesome”
   (+ “Clojure”
      “Rule Engines”))
```

Emacs Time!

Simple things should be simple;
complex things should be possible.
-Alan Kay

Moving forward...

Distributed working memory

Change logging and replay

Application history a la Om

Explanatory visualization

Questions?

http://github.com/rbrush/clara-rules

http://www.toomuchcode.org/