

# Pharo: an immersive object-oriented system

<http://www.pharo.org>

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# Pharo?



# Pharo!

- <http://www.pharo.org>
- System: Pure object language + full IDE
- Inspired by Smalltalk
- Powerful, elegant and fun to program
- Great community
- Living system under your fingers



# License



# Elegant!

- Full syntax on a postcard
- Simple but powerful object model

# Complete Syntax on a Postcard

```
exampleWithNumber: x
```

“A method that illustrates every part of Smalltalk method syntax”

```
<menu>
```

```
| y |
```

```
true & false not & (nil isNil) ifFalse: [self halt].
```

```
y := self size + super size.
```

```
#($a #a 'a' 1 1.0)
```

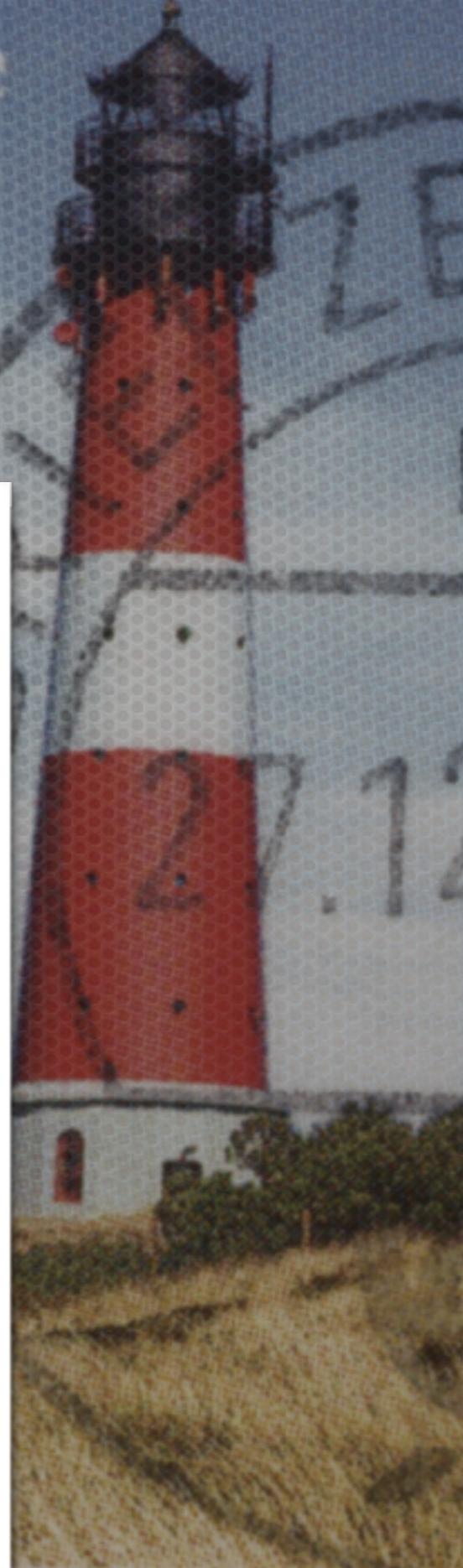
```
do: [ :each | Transcript
```

```
    show: (each class name);
```

```
    show: (each printString);
```

```
    show: ' '].
```

```
^ x < y
```



# Object Model

- Dynamically typed
- **\*\*Everything\*\*** is an instance of a class
- All methods are public and virtual
- Attributes are protected
- Single Inheritance

2007

# Immersive?



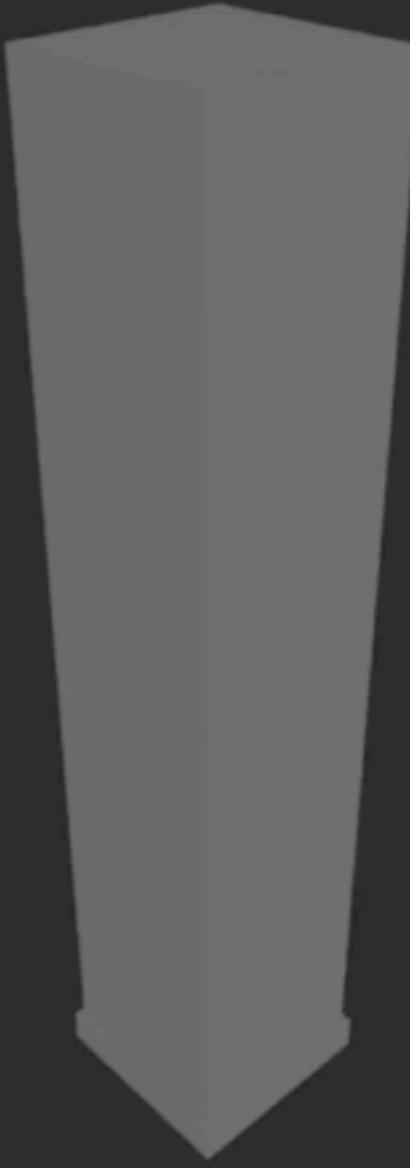
# Immersive!

- Deep contact with objects
- Highly interactive programming sessions
- Reflective, inspectable

Workspace

```
| elements lay |  
  
elements := (1 to: 5) collect: [ :ob |  
  (R3CubeShape new) elementOn: ob ].  
    
lay := R3WallLayout new.  
lay on: elements.  
  
UberPresenter present: elements
```

Uber Presenter



## Workspace

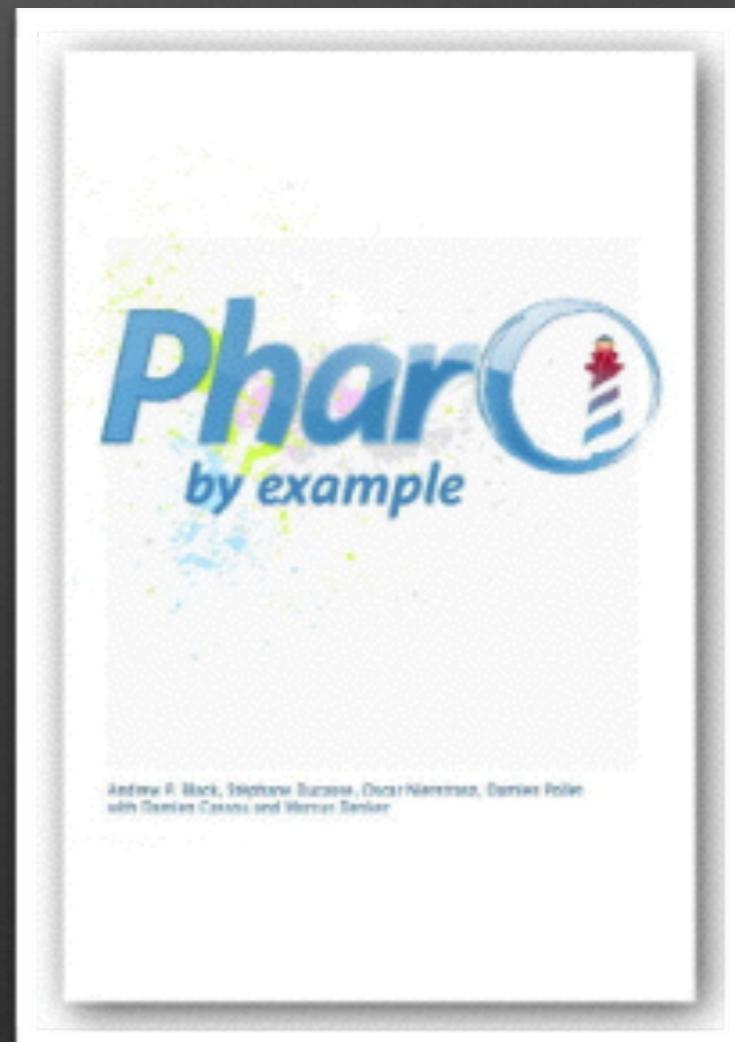
```
| elements lay |  
  
elements := (1 to: 5) collect: [ :ob |  
  (R3CubeShape new) elementOn: ob ].  
    
lay := R3WallLayout new.  
lay on: elements.  
  
UberPresenter present: elements
```

## Uber Presenter

Any object can be lively updated  
3D  
Network connection  
Dynamic web applications  
GPU  
Code

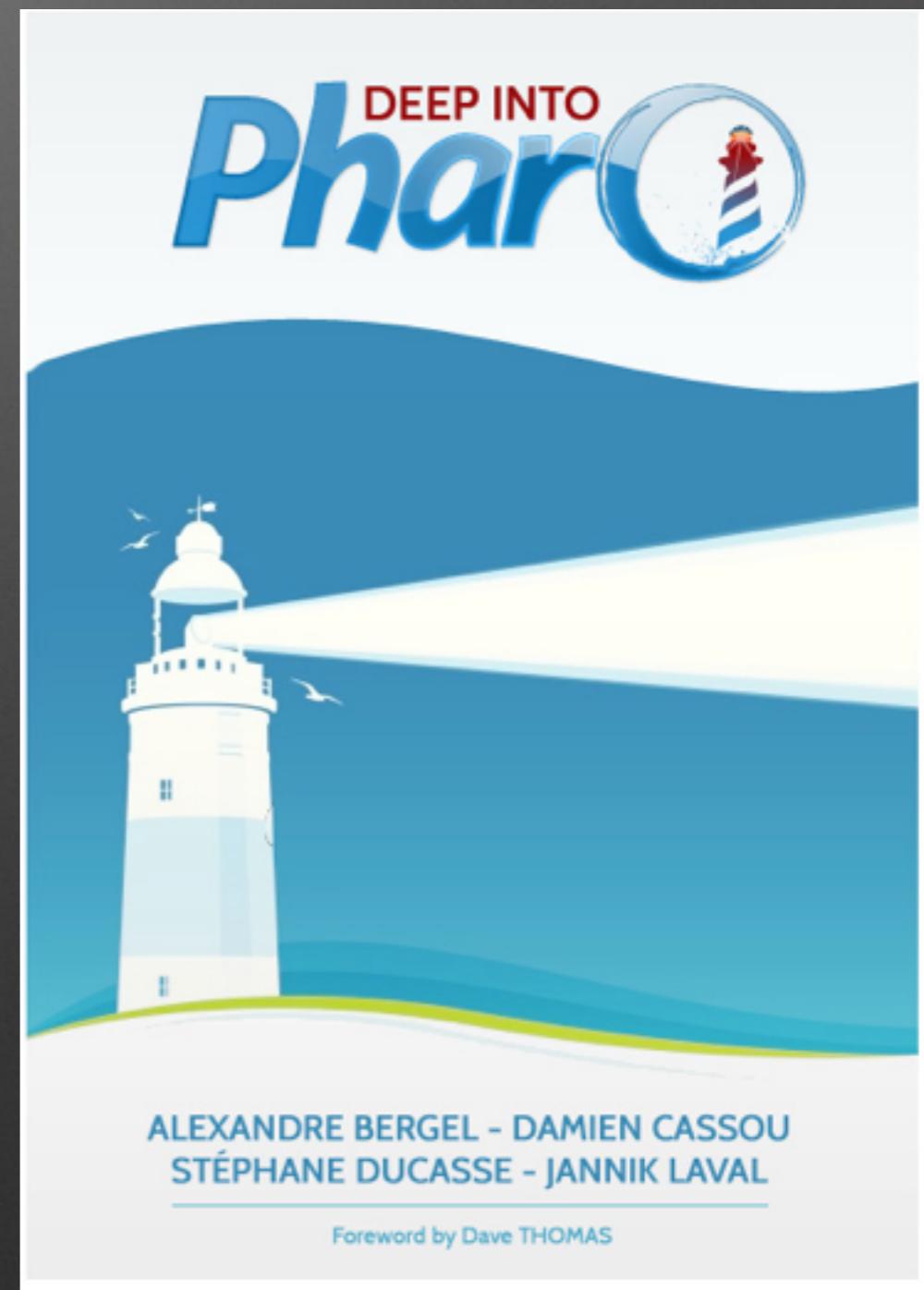
# Pharo by Example

- ❖ Pharo by example <http://www.pharobyexample.org>
  - ❖ translated to french, merci!
  - ❖ translated to spanish, gracias!
  - ❖ translated to japanese, ありがとう!
- ❖ Currently updated to Pharo 40



# Deep into Pharo

<http://books.pharo.org>



# Entrepri\$e Pharo: a Web perspective

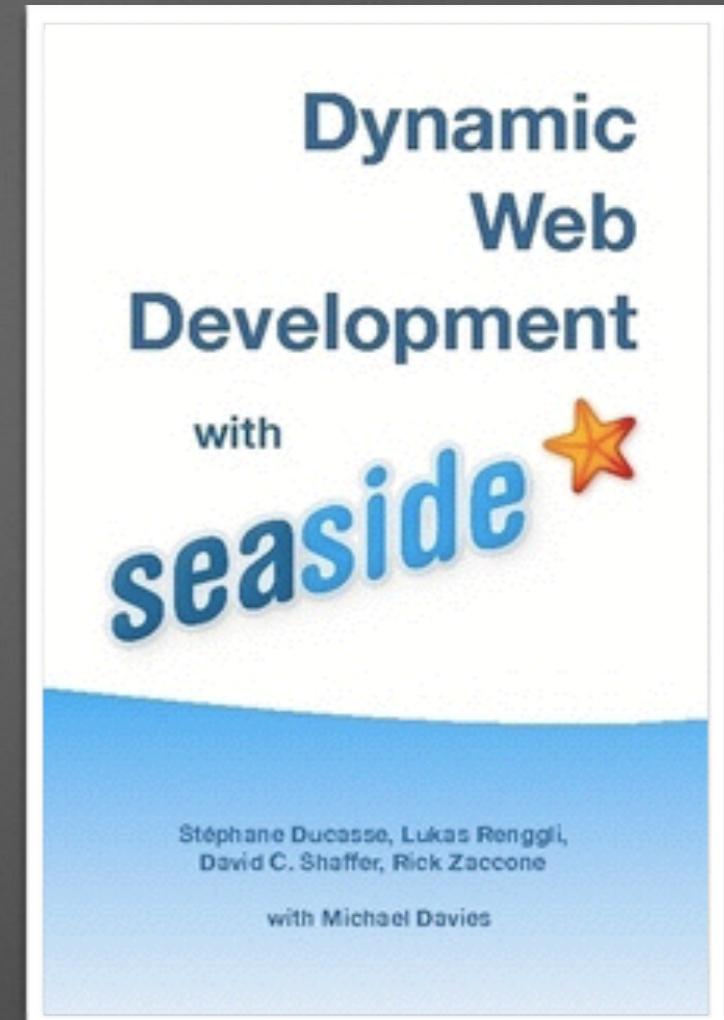
<http://books.pharo.org>

**ENTERPRISE PHARO:**  
**A WEB PERSPECTIVE**



# Other books

- Numerical Methods in Pharo
- Dynamic Web Development with Seaside
  - <http://book.seaside.st>

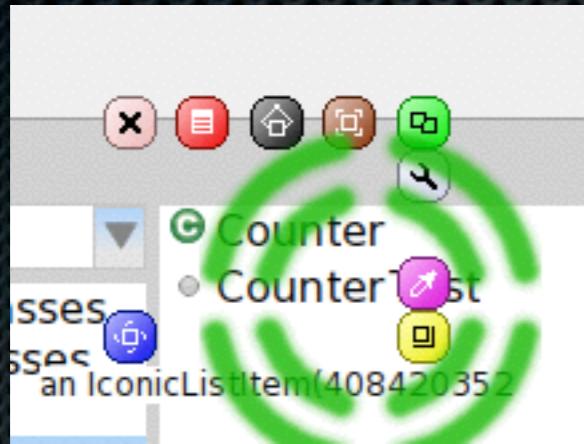


seaside\*

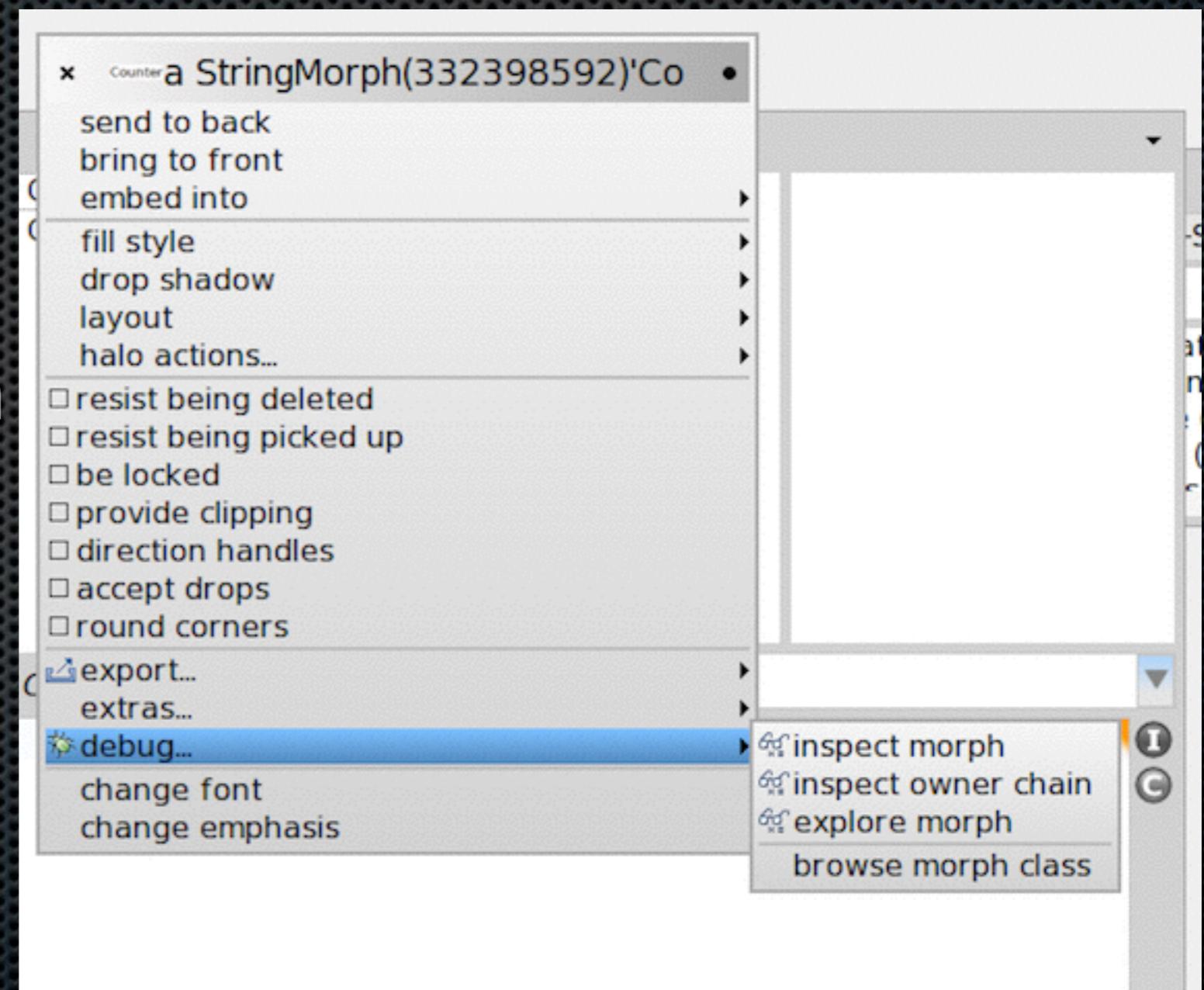
**Learning from the  
system...**

# Click on it :)

## Cmd+shift+option



- Cmd-Shift+option



# Finder :)

**Finder**

match ▾ Search  Regexp Selectors ▾ Packages... All Packages

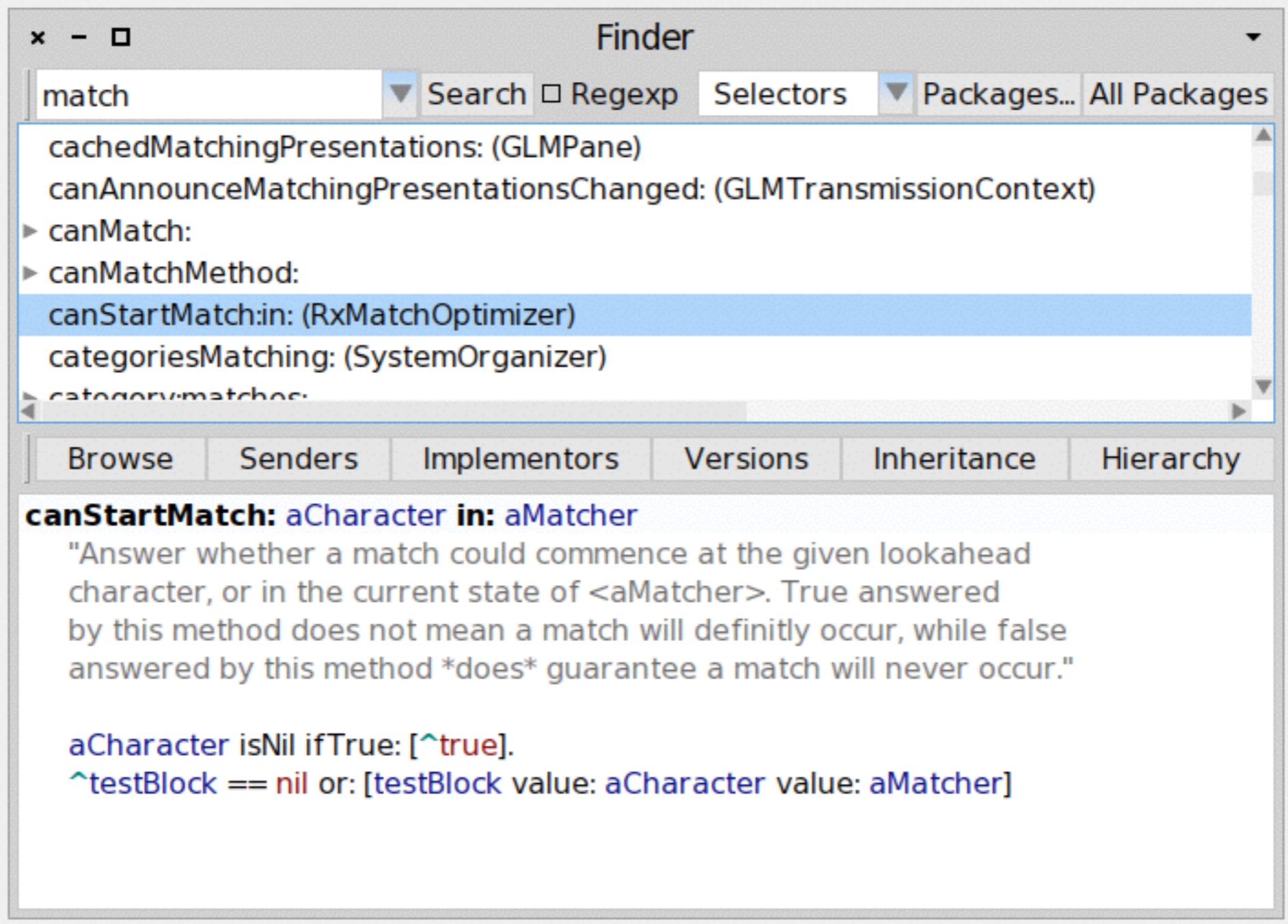
cachedMatchingPresentations: (GLMPane)  
canAnnounceMatchingPresentationsChanged: (GLMTransmissionContext)  
▶ canMatch:  
▶ canMatchMethod:  
canStartMatch:in: (RxMatchOptimizer)  
categoriesMatching: (SystemOrganizer)  
◀ categoriesMatching:

Browse Senders Implementors Versions Inheritance Hierarchy

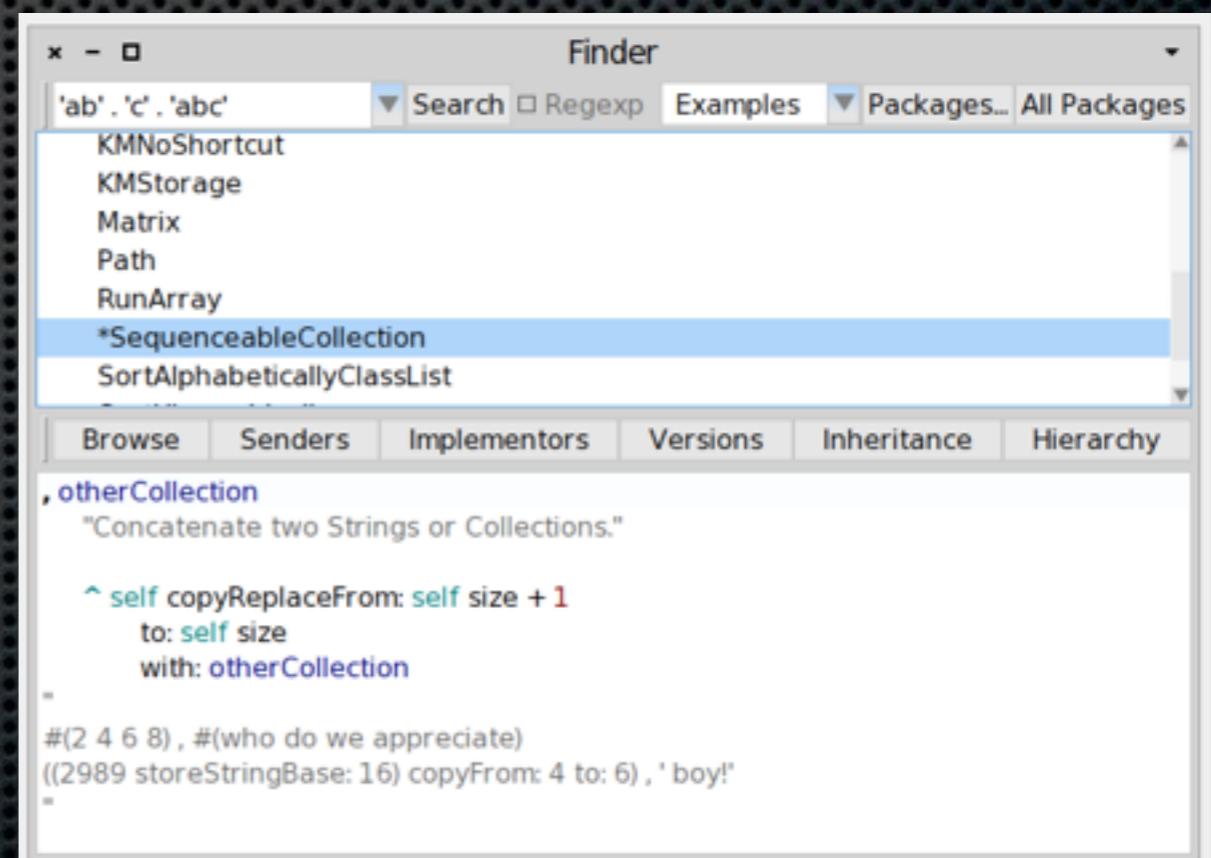
**canStartMatch:** aCharacter in: aMatcher

"Answer whether a match could commence at the given lookahead character, or in the current state of <aMatcher>. True answered by this method does not mean a match will definitely occur, while false answered by this method \*does\* guarantee a match will never occur."

aCharacter isNil ifTrue: [^true].  
^testBlock == nil or: [testBlock value: aCharacter value: aMatcher]



\*give\* examples and  
get the methods that works!



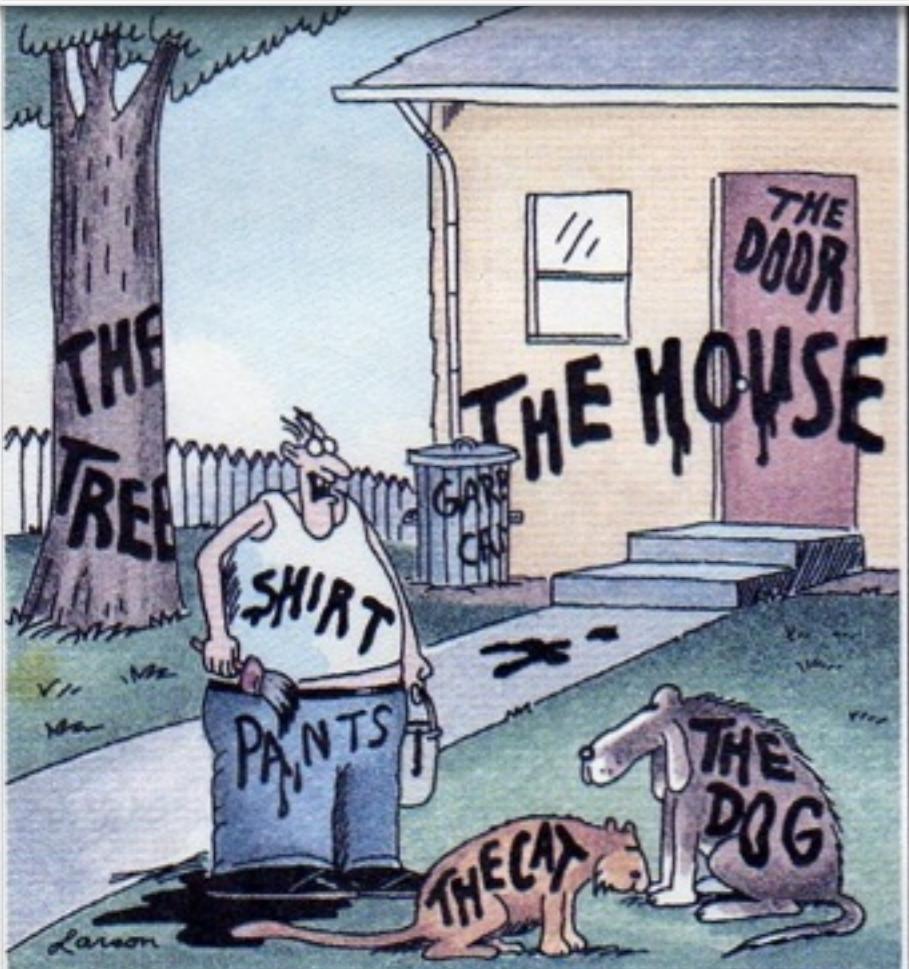
A system to learn advanced  
oo design

# How to implement not?

- false not -> true
- true not -> false



IT'S SAD HOW SOME PEOPLE  
CAN'T HANDLE A LITTLE  
VARIETY.



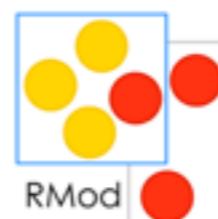
"Now! ... That should clear up  
a few things around here!"

# Pharo Humour

<http://pharo.org>

Fun, simple  
Excellent for teaching  
Pure & elegant  
Highly productive  
Empowering Tools  
Full access





# Try Pharo NOW!

<http://pharo.org/download>

The screenshot shows the Pharo.org website's download section. At the top, there is a navigation bar with links for News, Download (which is highlighted in blue), Documentation, Community, Contribute, Stories, and About. Below the navigation bar, the page title 'Download Pharo' is displayed in large blue text. A descriptive paragraph below the title states: 'Version 4.0 for OS X, GNU/Linux, and Windows. The zip files contain all necessary files. Just download and run the executable.' Three blue buttons at the bottom provide links for Mac OSX, Windows, and GNU/Linux.

**Download Pharo**

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