

Pharo: an immersive object-oriented system

Damien CASSOU, Stéphane DUCASSE and Luc FABRESSE

www.pharo.org
W1S02



Pharo?



Pharo!

- * System: Pure object language + full IDE
- * Inspired by Smalltalk
- * Powerful, elegant and fun to program
- * Great community
- * Living system under your fingers
- * Works on Mac OSX, Linux, iOS, Android, Windows, Pi
- * 100% MIT



Elegant!

- * Full syntax on a postcard
- * Simple and powerful objet model



Full Syntax!

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

Leuchttürme

ZENTRA

ma

27.12.09-



Full Model!

- * Dynamically typed
- * Everything is an object instance of a class
- * All methods are public virtual
- * All attributes are protected
- * Single Inheritance



Fully Written in Itself

The background of the slide features a grayscale photograph of a hand holding a red pencil, pointing towards the text. Below this, there is a red-tinted illustration of a hand holding a pencil, which is partially obscured by the grayscale hand. The overall theme is writing and self-referentiality.

- * Everything is written in Pharo
- * Pharo itself
- * One simple syntax/model to access everything

Immersive?



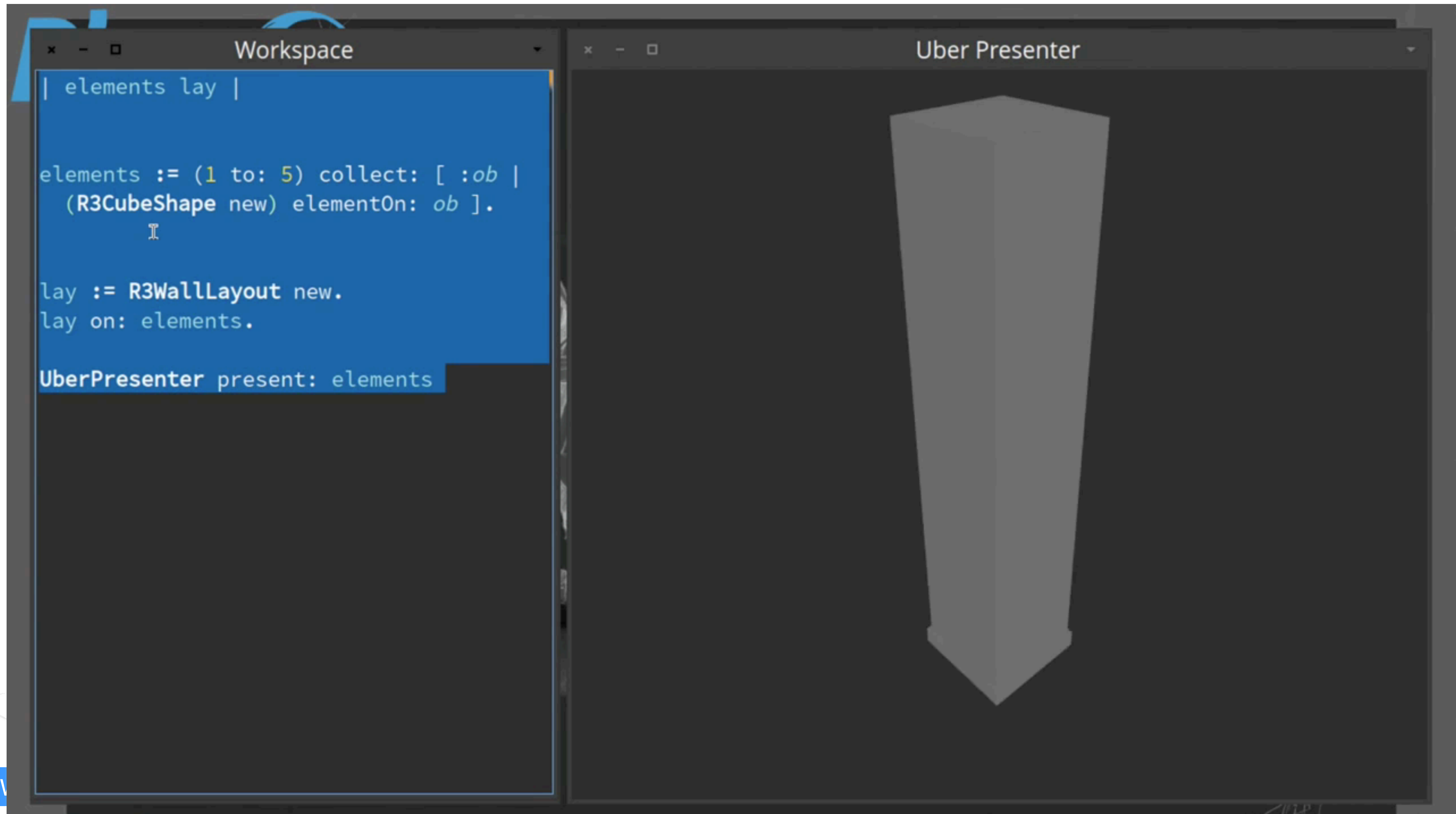
Immersive

- ✦ Pharo is not a blackbox
- ✦ Pharo is fully inspectable and reflective
- ✦ You can get immersed in objects

Immersed and interacting

* You can interact with objects

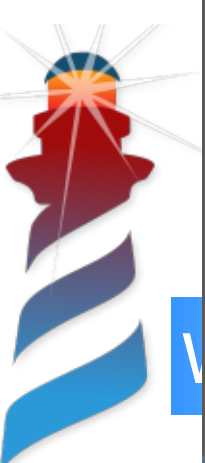
Immersive



The image shows a software interface with two main windows. The left window, titled "Workspace", contains a code editor with the following text:

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

The right window, titled "Uber Presenter", displays a 3D rendering of a tall, narrow, gray rectangular prism (a cube) centered in a dark gray space.



Pharo by Example

- * <http://books.pharo.org>
 - * translated to french, merci!
 - * translated to spanish, gracias!
 - * translated to japanese, ありがとう!
- * Currently updated to Pharo 80



Deep into Pharo

- * <http://books.pharo.org>
- * Some advanced topics
 - * Libraries
 - * Core language
 - * Tools



Entreprise Pharo

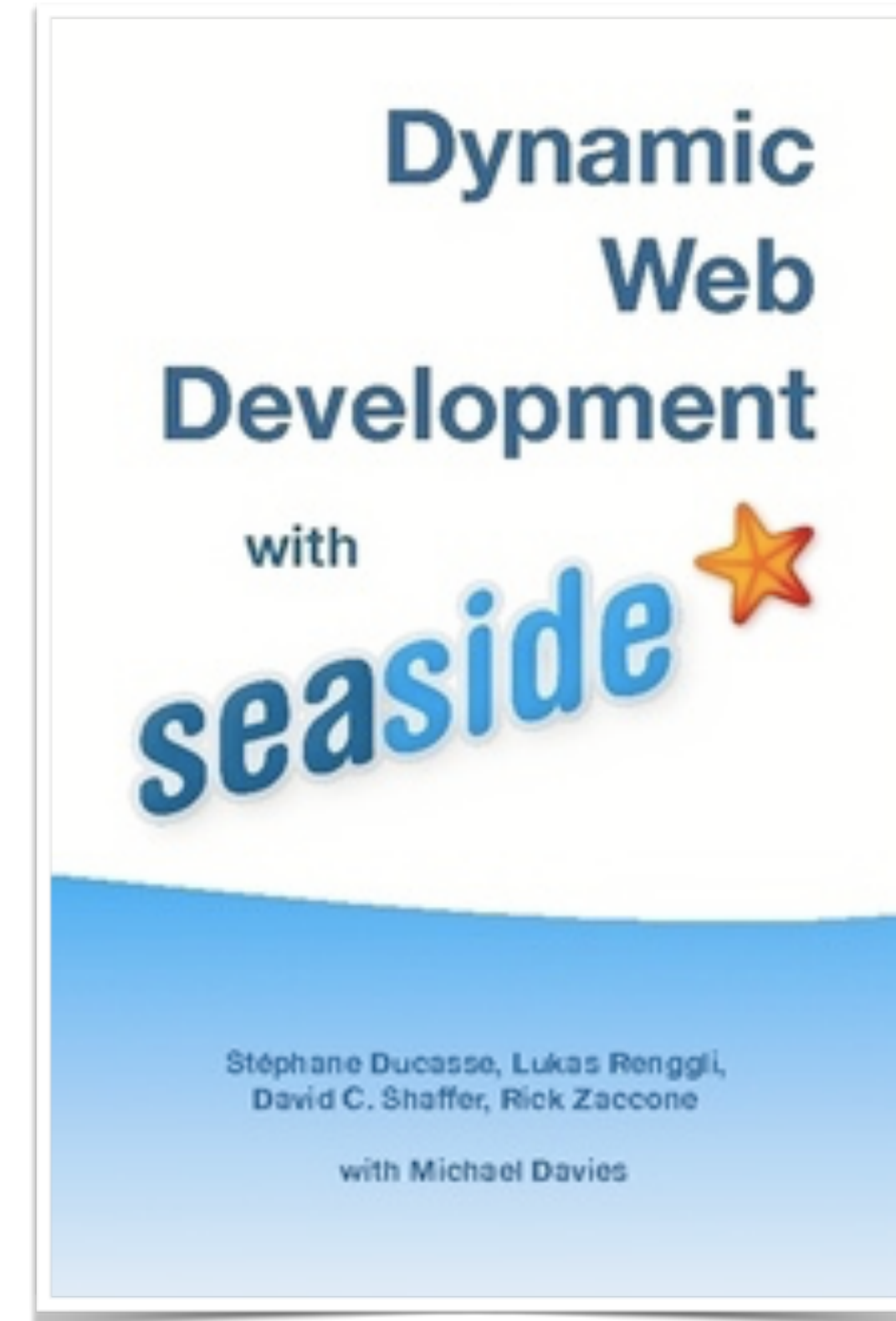
- * <http://books.pharo.org>
- * Web related
 - * Encodings,
 - * Mustache
 - * JSON
 - * WebSockets
 - * HTTP/HTTPS



Dynamic Web with Seaside

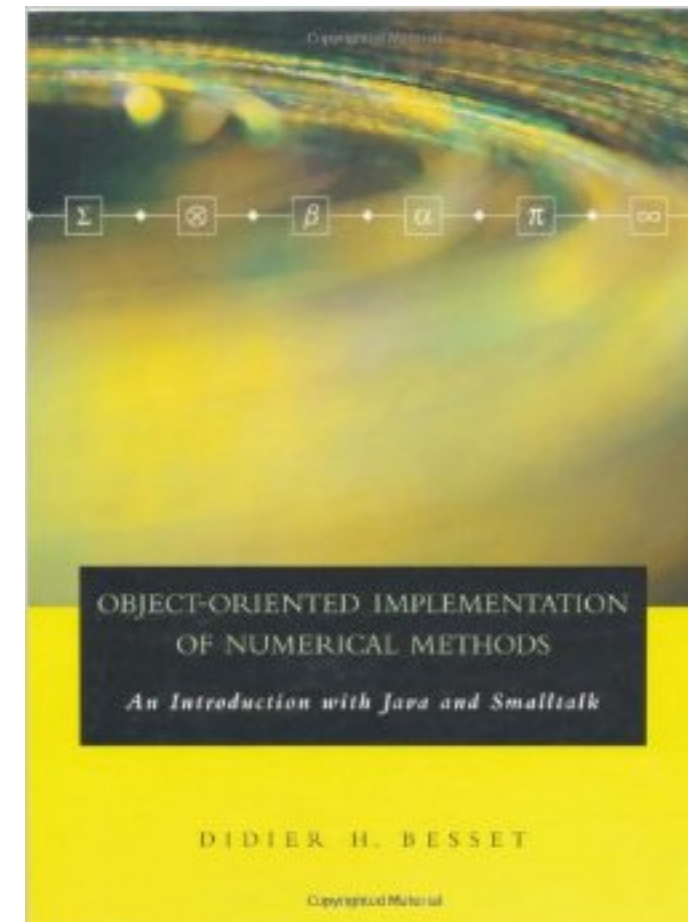
- * <http://book.seaside.st>
- * Full framework explained
- * DSL + Call:/answer:
- * Automatic form generation
- * Deployment

seaside 



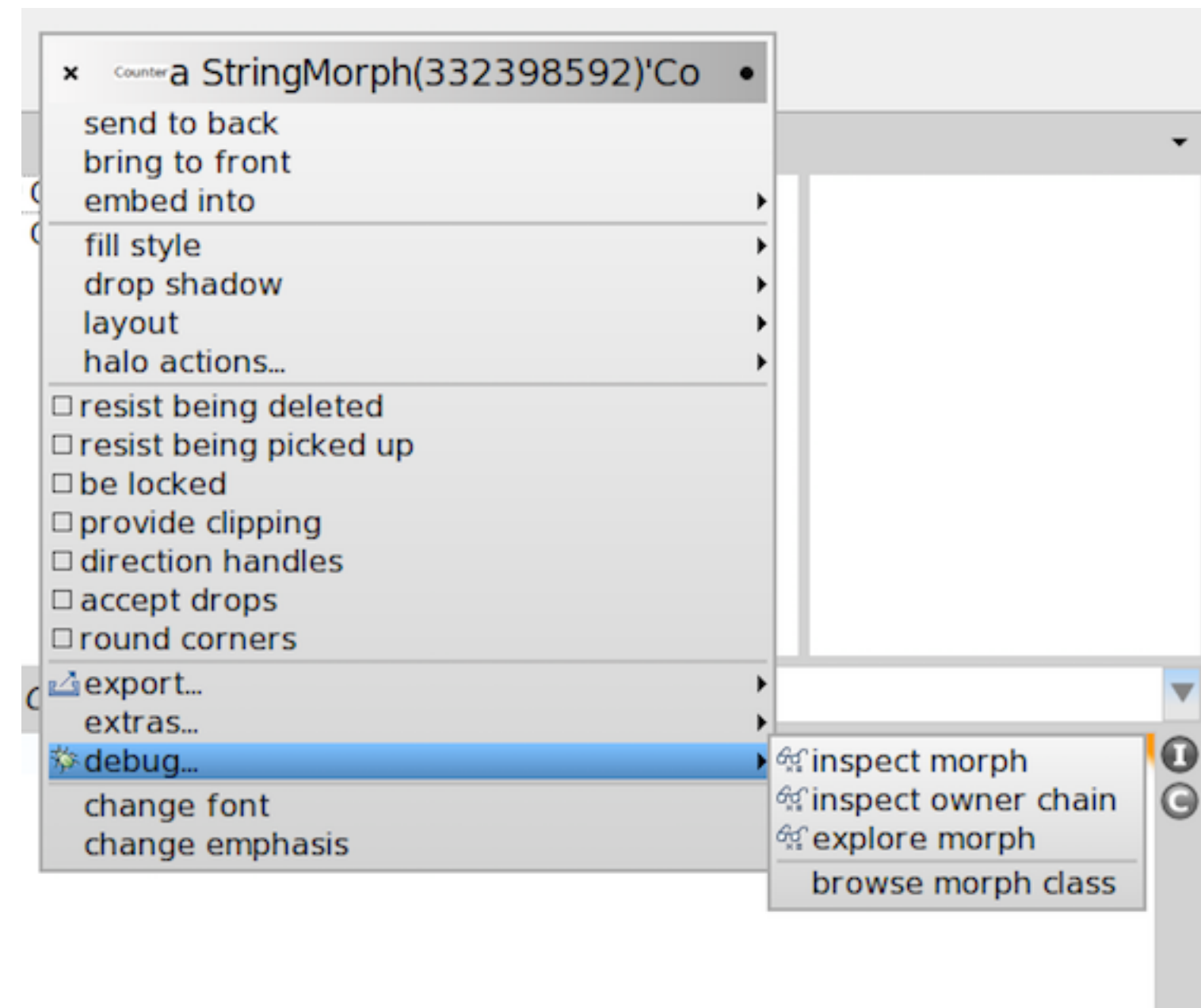
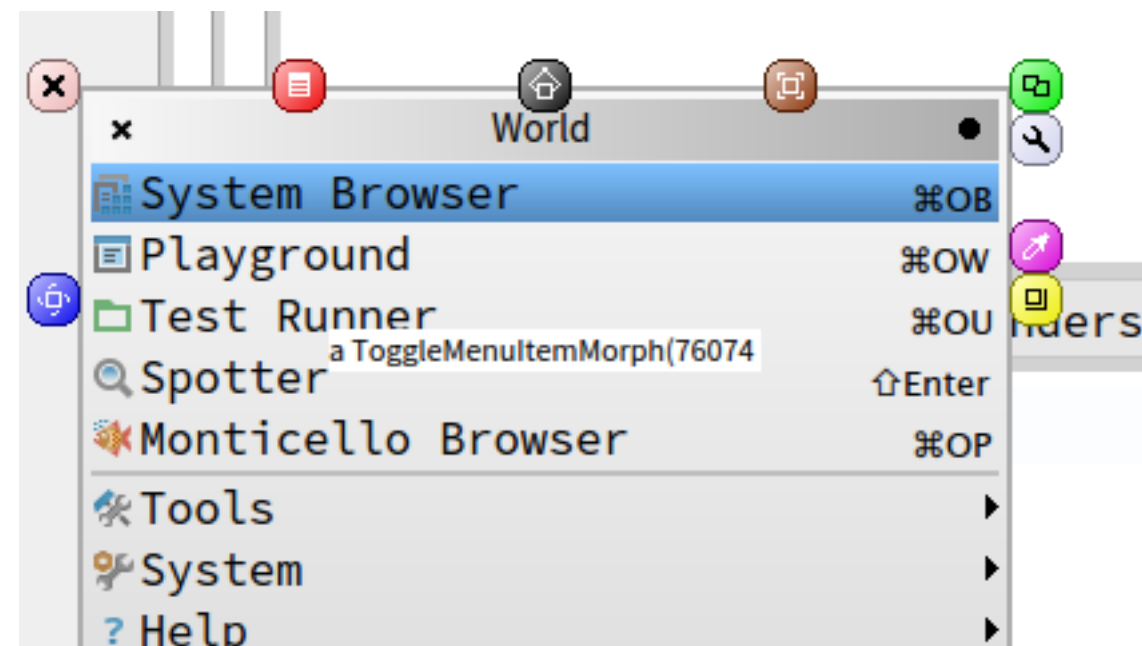
Numerical Methods

- ✱ <https://github.com/SquareBracketAssociates/NumericalMethods>
- ✱ Data mining
- ✱ Clustering
- ✱ Iterative algorithms
- ✱ Series
- ✱ Statistical analysis

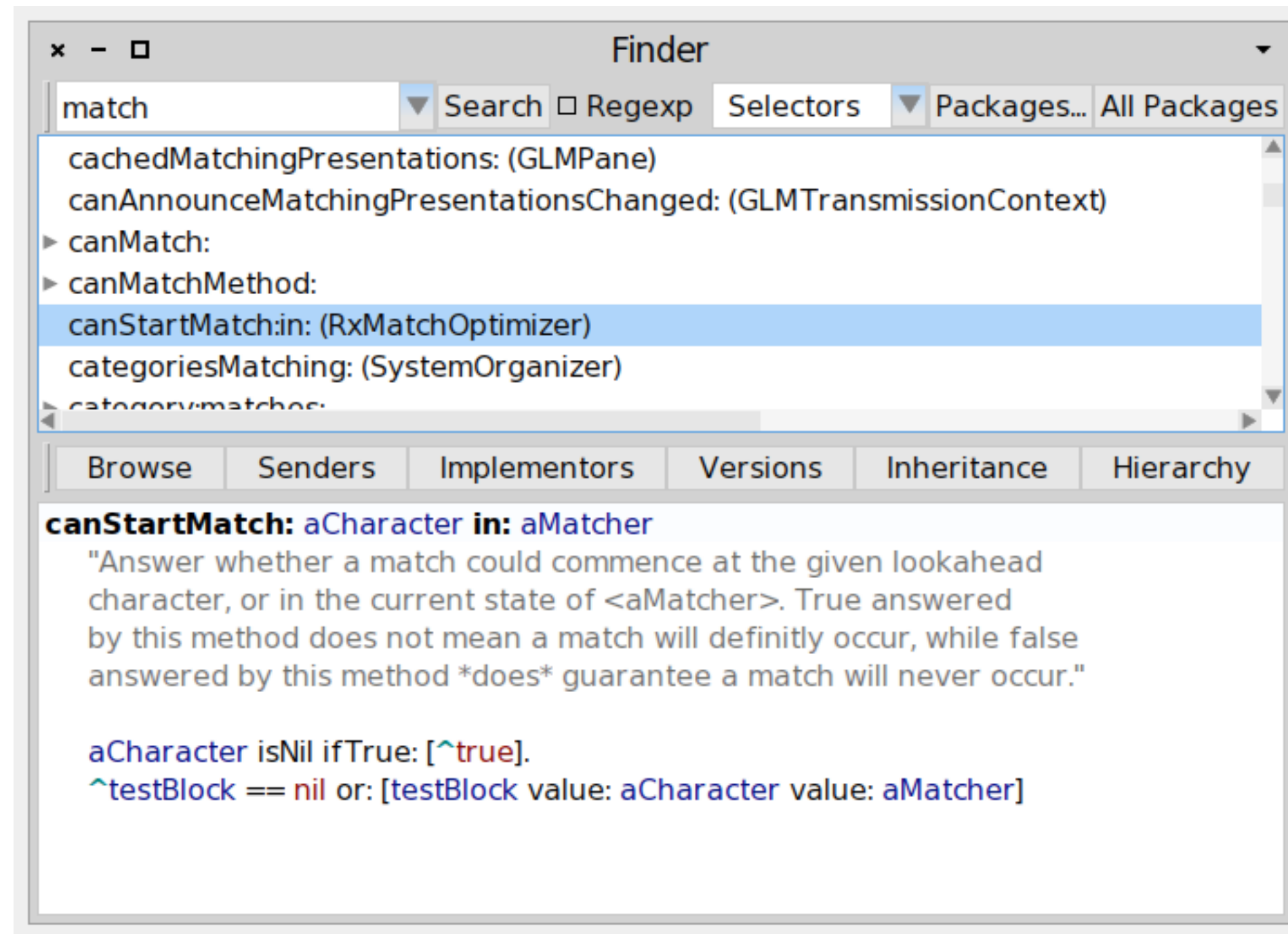


A System to Learn From

- ✱ Click on it
- ✱ Cmd+Shift+Option

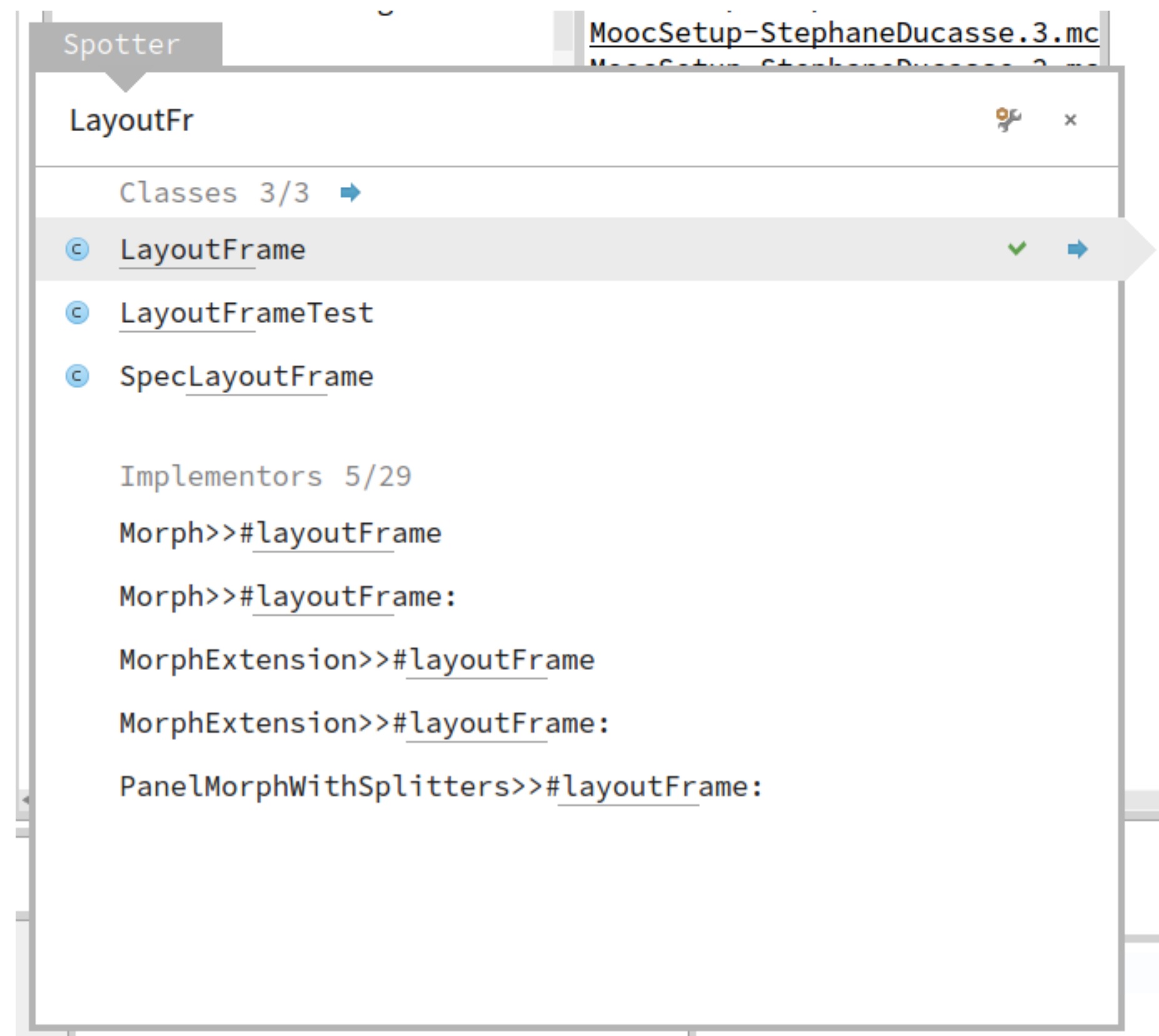


Ask the Finder

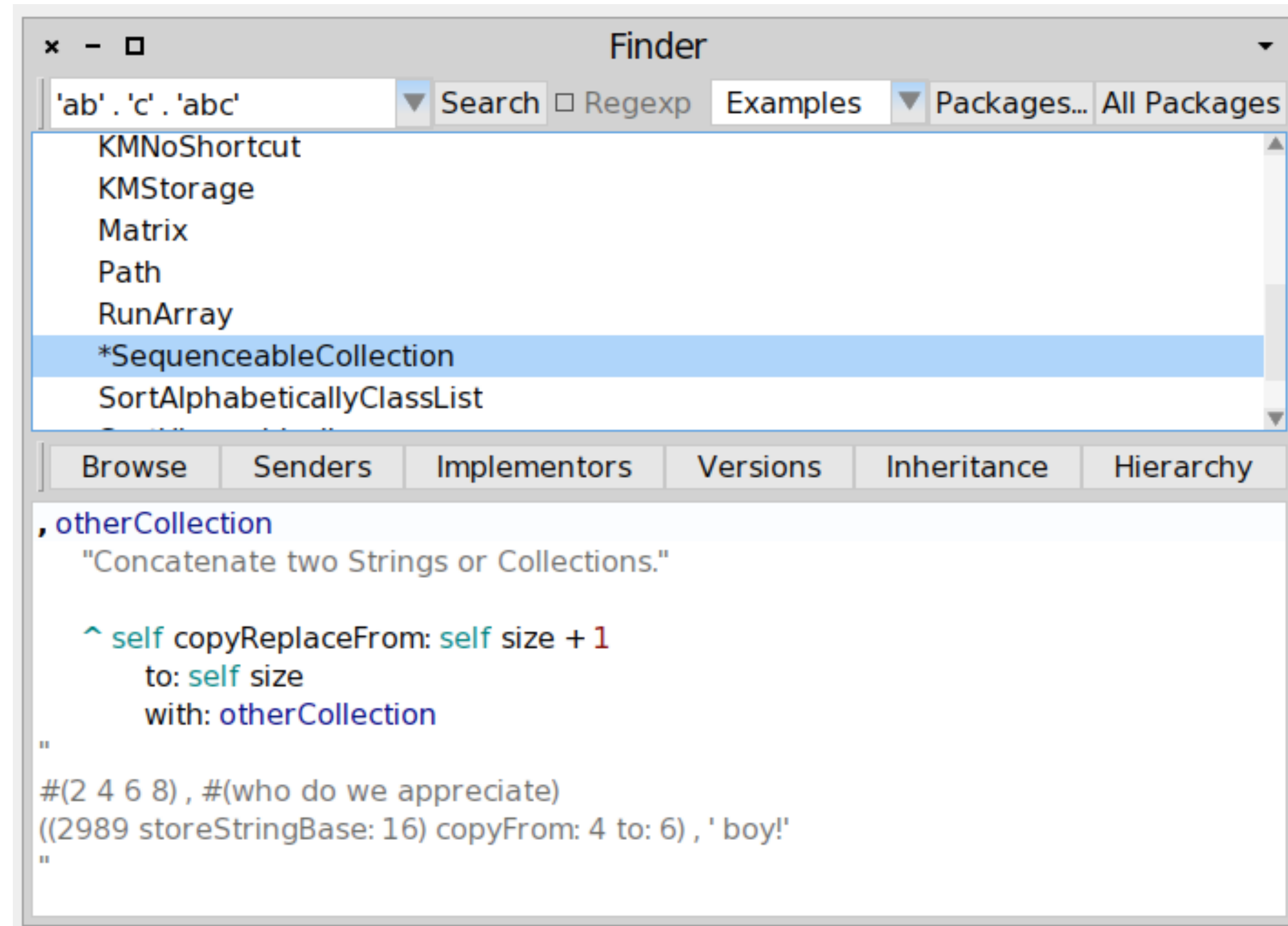


Ask Spotter

✱ Shift + Enter



From Examples to Messages



About OO Design

Programming in Pharo will change
the way you program and think OO



How not is implemented?

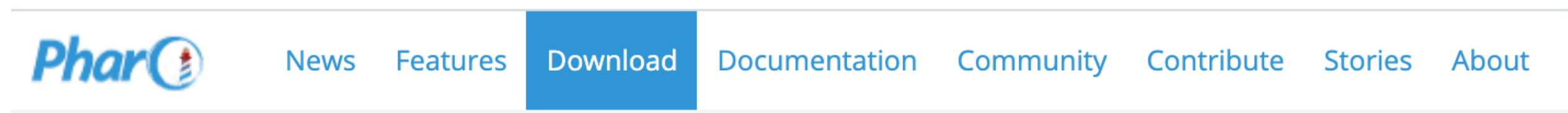
- * false not \rightarrow true
- * true not \rightarrow false

- * Why such question illustrates something so deep?



Try Pharo now!

<http://pharo.org/download>



Download Pharo Launcher

Pharo Launcher for OS X, GNU/Linux, and Windows.



<http://www.pharo.org>

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



A course by



and



in collaboration with



Except where otherwise noted, this work is licensed under CC BY-NC-ND 3.0 France
<https://creativecommons.org/licenses/by-nc-nd/3.0/fr/>