

Pharo: an immersive object-oriented system

<http://www.pharo.org>

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Pharo?



Pharo!

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



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

Immersive?

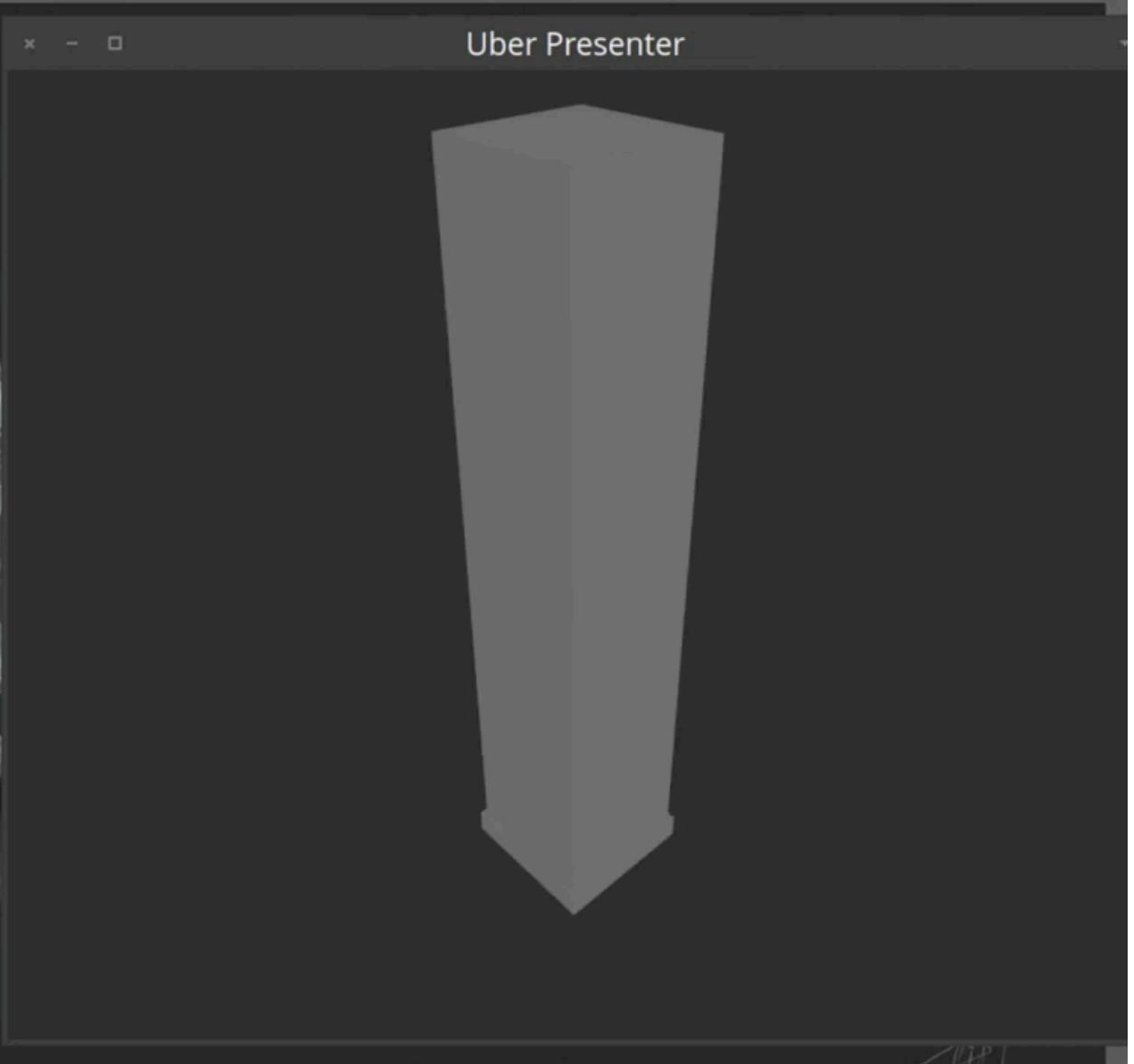


Immersive!

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

Workspace

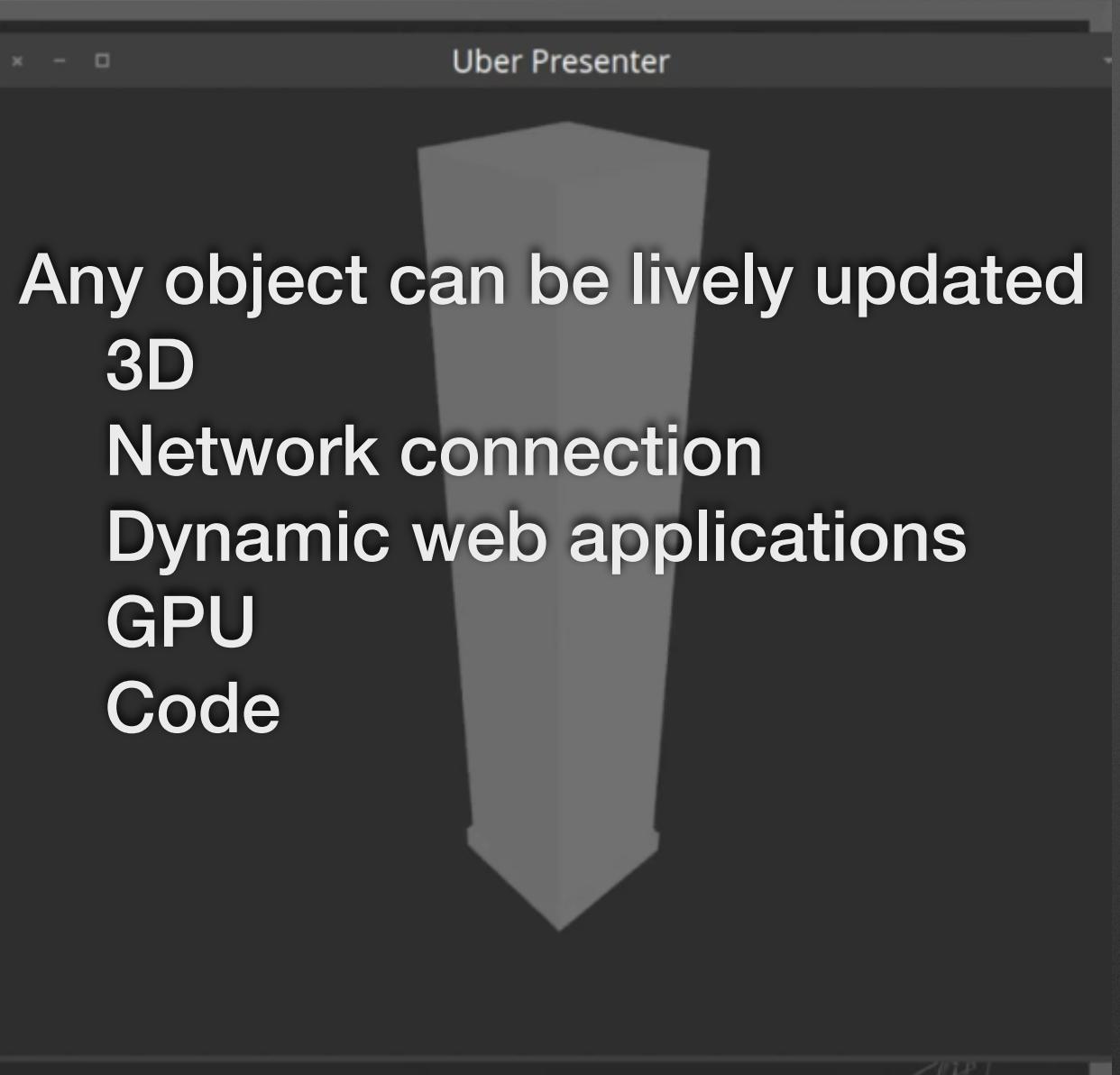
```
| elements lay |  
  
elements := (1 to: 5) collect: [ :ob |  
  (R3CubeShape new) elementOn: ob ].  
  |||  
lay := R3WallLayout new.  
lay on: elements.  
  
UberPresenter present: elements
```



<http://youtu.be/CuimMwuZiGA>

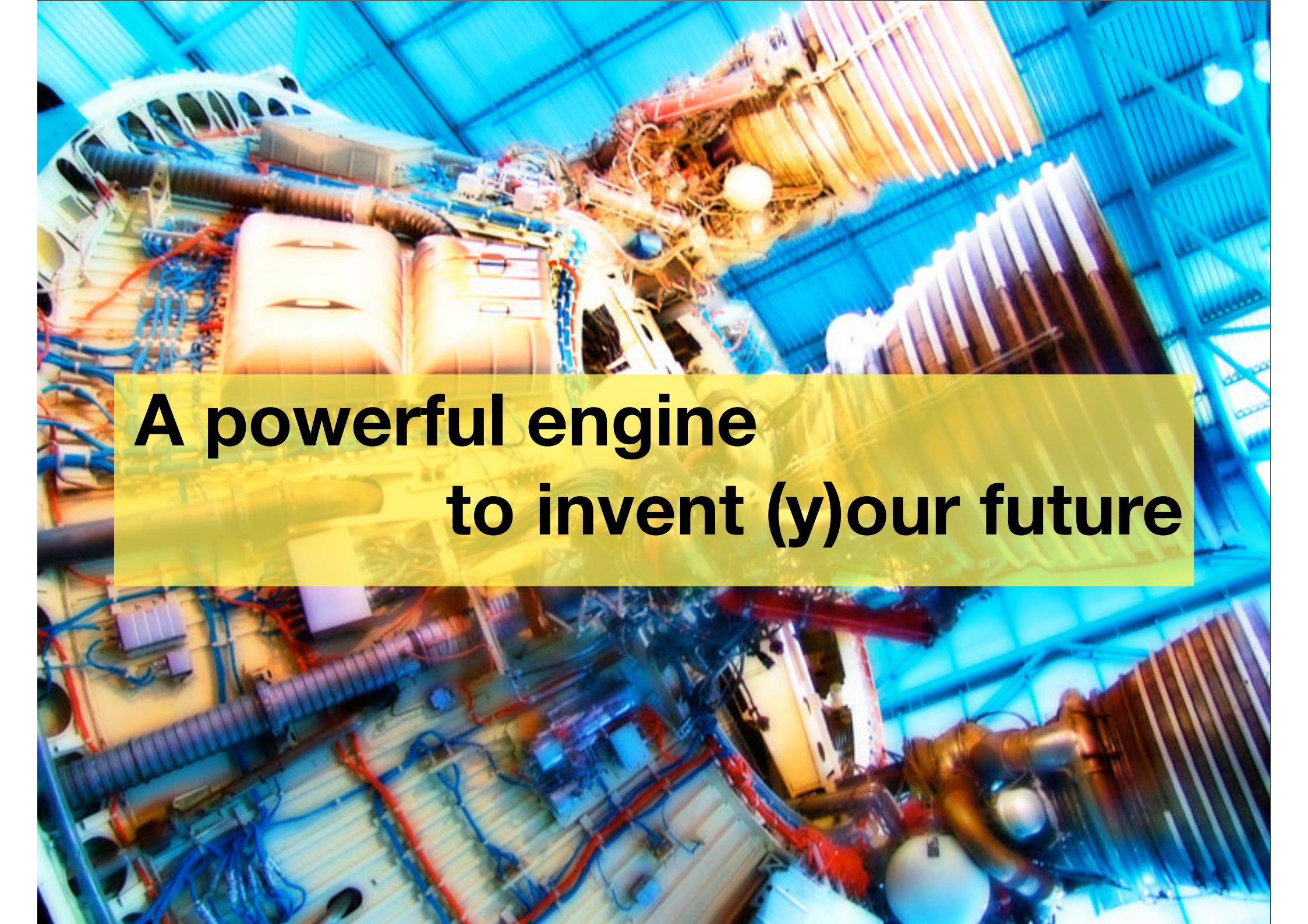
The image shows a software interface with two windows. The left window is titled "Workspace" and contains the following code:

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



Pharo vision





A powerful engine
to invent (y)our future



An ecosystem where
innovation/business bloom

Pharo's Teachers

- Uni. of Buenos Aires • Uni. of Bern • Uni. of Maroua • Uni. of Brussels • Ecole des Mines de Douai • Uni. de Savoie • Ivan Franko Nat. Uni. of Lviv • Czech Technical Uni. • CULS Prague
- Uni. of Quilmes • Uni. of La Plata • Northern Michigan Uni. • Uni. Technologica Nacional (UTN)
- Uni. Catholic of Argentina • Uni. of Santiago • Uni. Policnica de Catalunya • Uni. de Bretagne Occidentale • Uni. of Tomsk • Uni. of Fernhagen • IT University of Copenhagen • Uni. Cat del Sacro Cuore of Brescia • Uni. Lyon • Uni. Yaounde

Research Groups

Lafhis (AR)

Software

Composition Group
(CH)

CAR (FR)

RMOD (FR)

Ummisco (IRD)

Reveal (CH)

Lysic (FR)

CEA-List (FR)

Uqbar (AR)

OC (FR)

CCMI-FIT (CZ)

ASERG (BR)

Pleiad (CL)

Some Companies

www.2denker.de
www.airflowing.com
www.beta9.be
www.bombardier.com
www.cmsbox.com
www.finworks.biz
seaside.gemstone.com
www.inceptive.be
www.majcon.de
www.mindclue.ch
www.miriamtech.com
www.netstyle.ch
www.panasoft.com
www.pinesoft.co.uk
www.promedmedical.net

www.sharedlogic.ca
www.smallworks.com.ar
www.trantaria.com
www.yesplan.be
www.synectique.eu
www.sorabito.com
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Pharo platform as a Service: put your Smalltalk web-application online at Pharocloud in just 3 clicks

Try it for FREE Watch how it works

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Wind Energy Pioneering new ways of maximising sustainable wind energy yields. Our products and services optimise asset availability, wind turbine performance and downtime reliability. We work with owners, operators, manufacturers, insurers and service providers worldwide.

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Overview Why we are specialists Who we work with

Wind Energy Pioneering new ways of maximising sustainable wind energy yields

WEBDRUCK.CH Web-To-Print Solution

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iBizLog - <http://www.ibizlog.com>

A product by Smallworks

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Pinesoft MBagger

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Some Success Stories

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OBJECT PROFILE

Left to run / Right for code

Das Content Management mit System

100% Intuitive-Editor

Copy / Paste

Left to run / Right for code

Continuous API Testing

keep your services under control 24/7

iBizLog - <http://www.ibizlog.com>

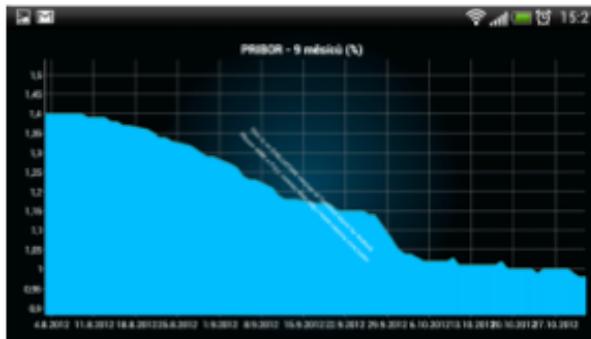
The screenshot shows the iBizLog homepage. At the top is the iBizLog logo with a green icon of a person sitting at a desk. Below the logo is the word "BETA". The main navigation menu includes "Home" and "Sign Up". Below the menu, there's a section titled "What is iBizLog ?" with four numbered steps: 1. A hand writing on a notepad, 2. A smartphone displaying a website, 3. A person typing on a keyboard, and 4. A person cheering at a computer. A "START NOW !" button is visible.

Full MetaShop developed in 5 months one person

The screenshot shows the MetaShop homepage. It features a large green banner with the text "Have your WebSite" and a "FREE" badge over a thumbnail of a website. Below this is a "Create WebSite" button. To the right is a vertical "feedback" bar. The main content area has three sections: "Personal Identity and URL" (with a globe icon), "Communication Tools" (with a globe and envelope icon), and "Multilingual Menu" (with flags of France, Spain, Italy, and Germany). At the bottom, there's a footer with links to "Blog | Facebook | Twitter", "About Us | News | Partners | Contact Us | Terms of Service", and the copyright notice "www.iBizLog.com - All rights reserved - Copyright © ...".

A product by Smallworks

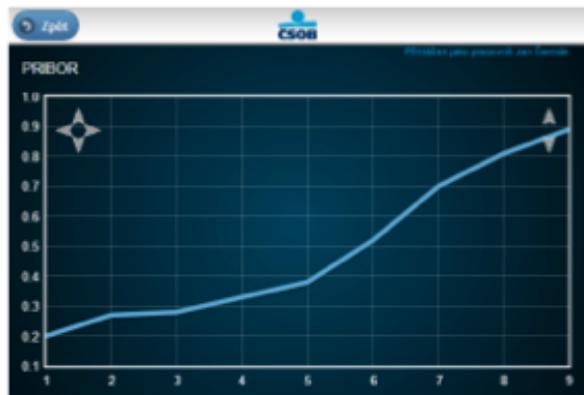
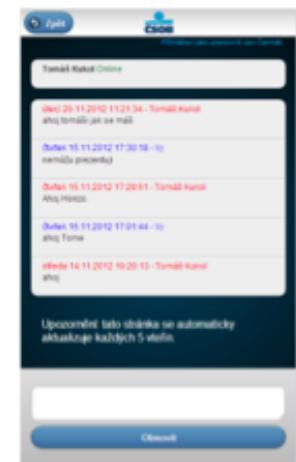
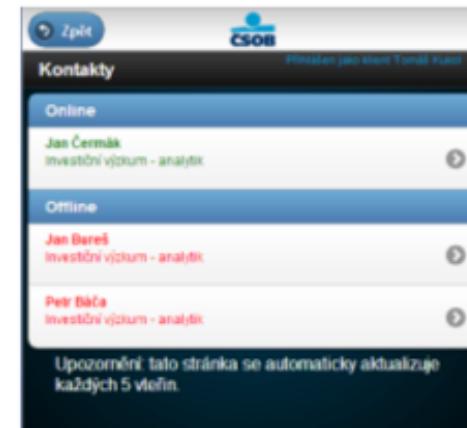




FX pár	Bid	Auk
EURCZK	25.407	25.539
USDCZK	19.746	19.856
EURUSD	1.2836	1.2893
PLNCZK	6.168	6.212
GBPCZK	31.494	31.67
HUF CZK	0.09075	0.09141
CHFCZK	21.082	21.206
AUDCZK	20.471	20.593
AUDUSD	1.0323	1.0415
CADCZK	19.816	19.926
DKKCZK	3.407	3.424
EURAUD	1.2325	1.249



Developed in three months one dev
Sold to another bank
Java team estimated 2 years



Apps Categories ▾ Home Top Charts

My apps

Shop

Games

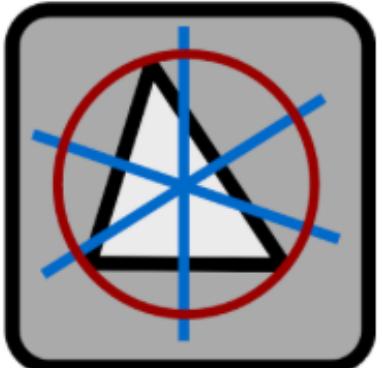
Family

Parent Guide

Editors' Choice



DR. GEO



Dr. Geo

iStoa Education

Unrated

⚠ You don't have any devices

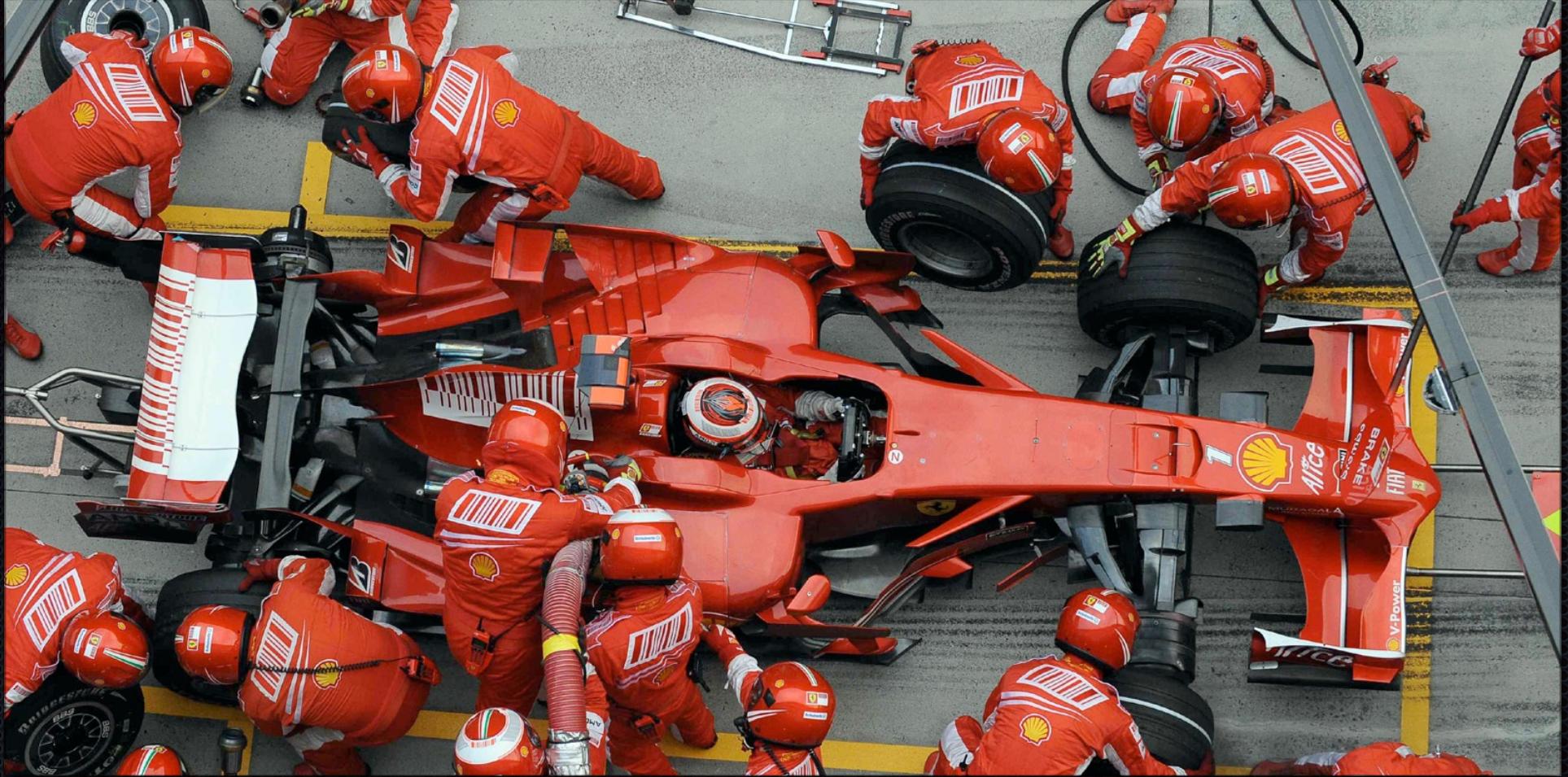
+ Add to Wishlist €3.59 Buy



Pharo Web Stack is Gorgeous

- Seaside (component, Javascript, REST)
- Zinc (HTTP, HTTPS, REST)
- Magritte Metamodelling (no form)
- Protocols/Encoding: Oauth, JSON, STON,...
- Database: noSql, mongoDB, riak, relational databases





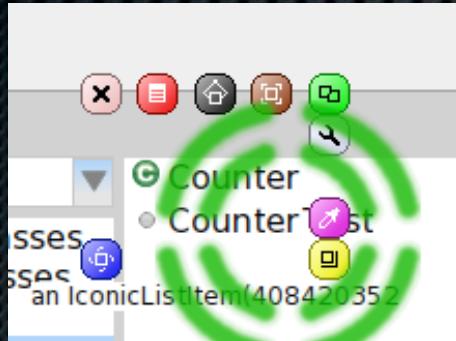
Pharo is a vehicle

Pharo is just starting, ****every**** single day we improve it

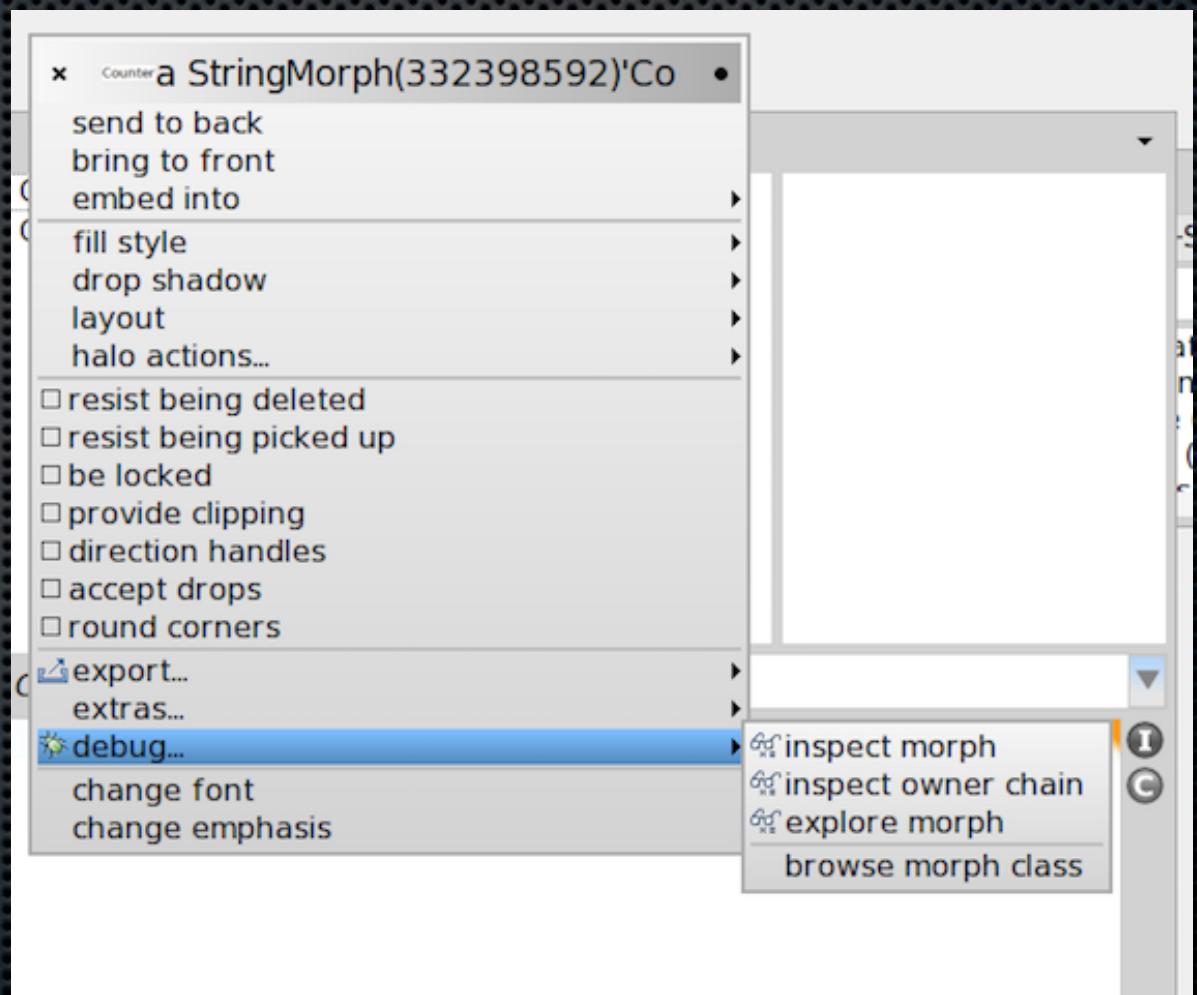
Learning from the
system...

Click on it :)

Cmd+shift+option



- Cmd-Shift+option



Finder :)

x - □ Finder

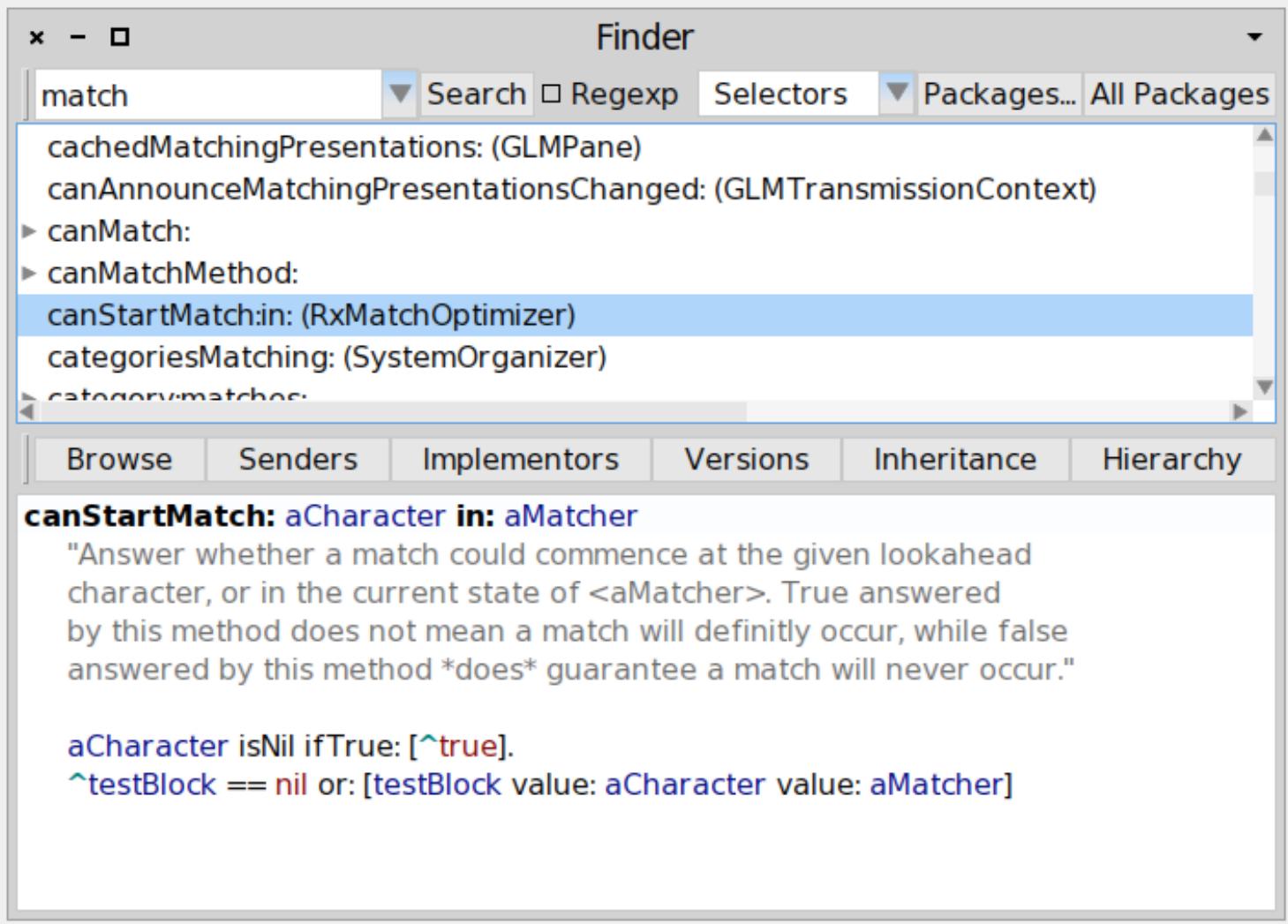
match ▼ Search Regexp Selectors ▼ Packages... All Packages

cachedMatchingPresentations: (GLMPane)
canAnnounceMatchingPresentationsChanged: (GLMTransmissionContext)
► canMatch:
► canMatchMethod:
canStartMatch:in: (RxMatchOptimizer)
categoriesMatching: (SystemOrganizer)
► categoryMatches:
▼

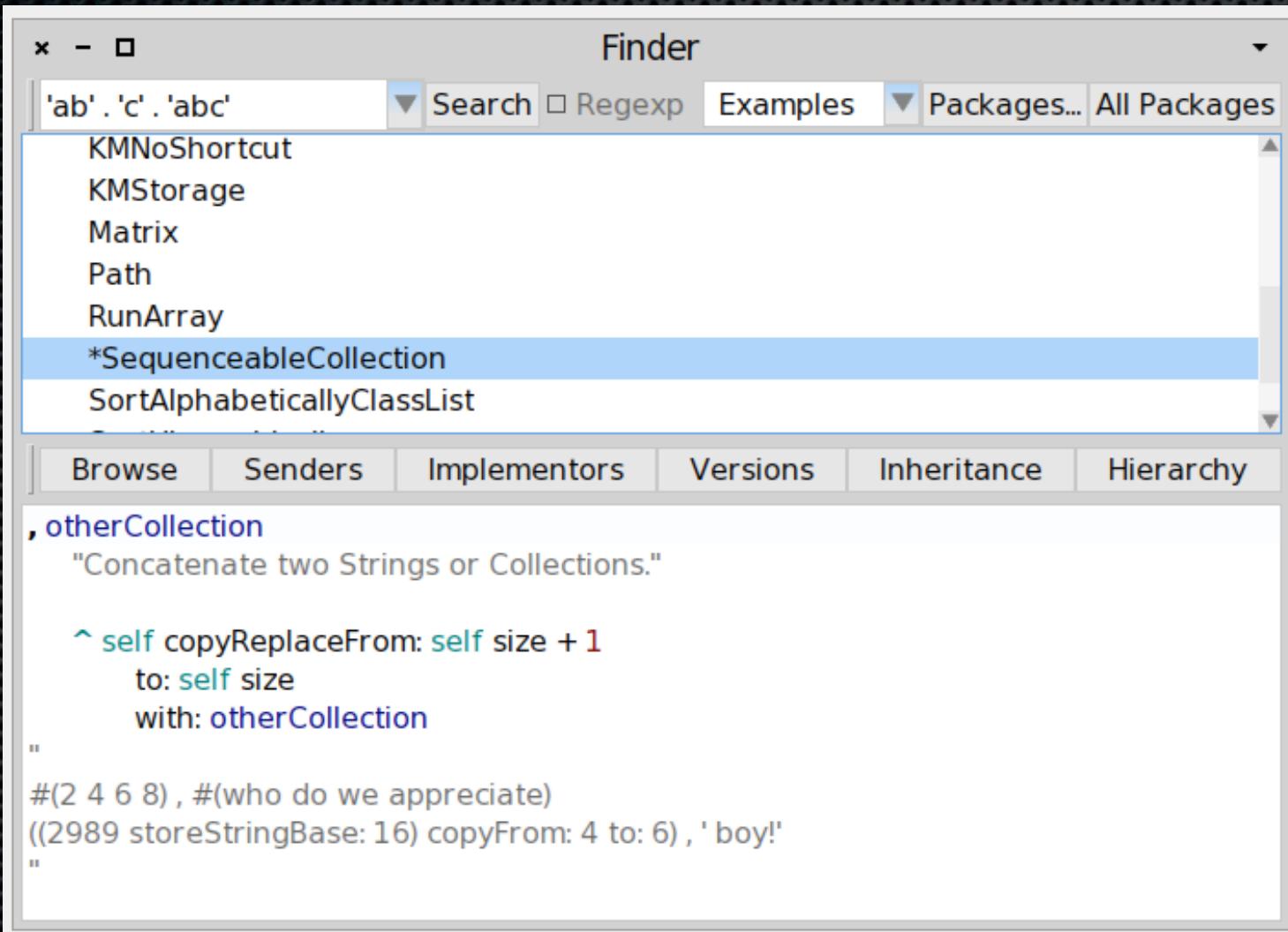
Browse Senders Implementors Versions Inheritance Hierarchy

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]



Finder: *give* examples



The screenshot shows a 'Finder' window with the following interface elements:

- Search bar: 'ab' . 'c' . 'abc'
- Buttons: Search, Regexp, Examples, Packages..., All Packages
- List of results:
 - KMNoShortcut
 - KMStorage
 - Matrix
 - Path
 - RunArray
 - *SequenceableCollection
 - SortAlphabeticallyClassList
- Toolbars below the list:
 - Browse, Senders, Implementors, Versions, Inheritance, Hierarchy
- Details pane:
 - Description: , otherCollection
 - Summary: "Concatenate two Strings or Collections."
 - Implementation code:

```
^ self copyReplaceFrom: self size + 1
    to: self size
    with: otherCollection
```
 - Example code:

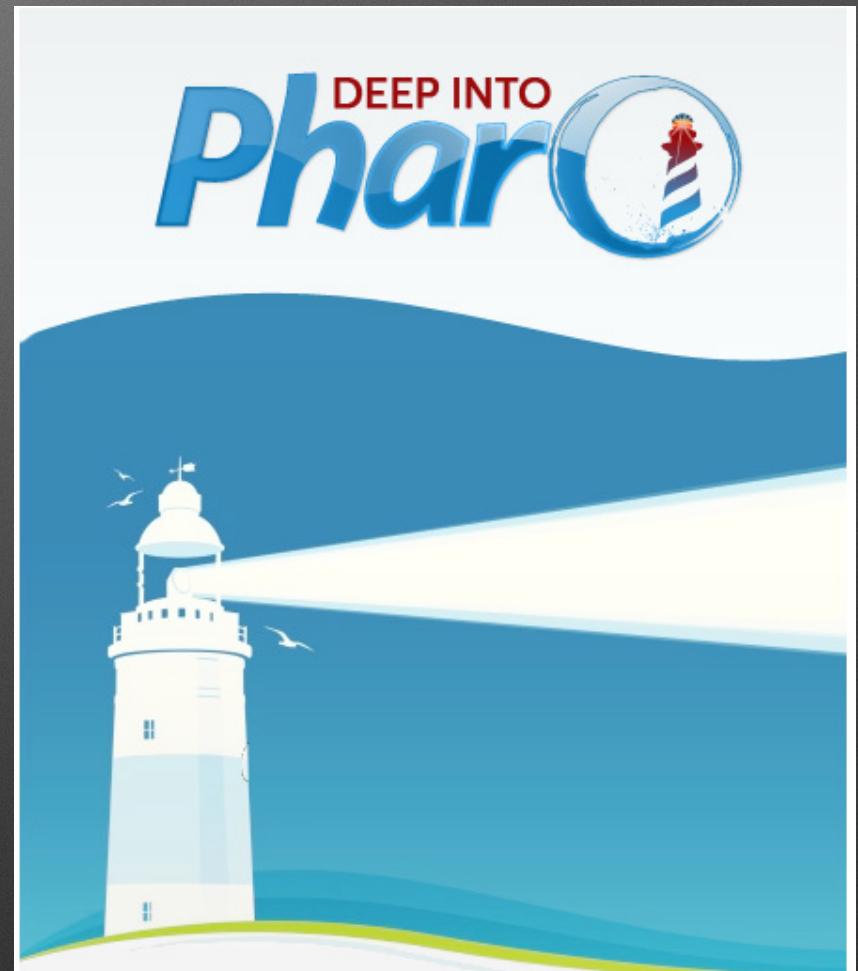
```
""
#(2 4 6 8) , #(who do we appreciate)
((2989 storeStringBase: 16) copyFrom: 4 to: 6) , ' boy!'
```

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



ALEXANDRE BERGEL - DAMIEN CASSOU
STÉPHANE DUCASSE - JANNIK LAVAL

Foreword by Dave THOMAS

Enterprise Pharo: a Web perspective

Other books

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

seaside 

**Learning OO advanced
design
from the system...**

How to implement not?

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

Let the receiver decide!

Not implementation

Boolean>>not

self subclassResponsibility

False>>not

^true

True>>not

^false

Check in the system

x - □ Implementors of not [9]

Boolean (logical operations)	not [Kernel]
False (logical operations)	not [Kernel]
True (logical operations)	not [Kernel]

Browse Senders Implementors Version Source

not

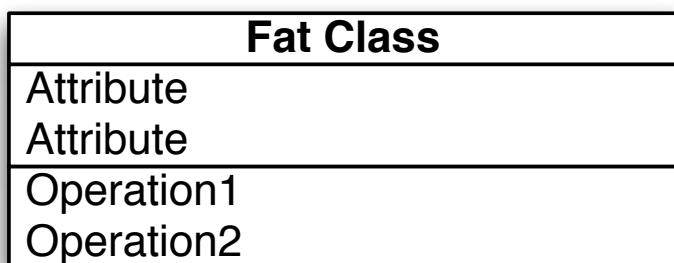
"Negation -- answer true since the receiver is false."

^true

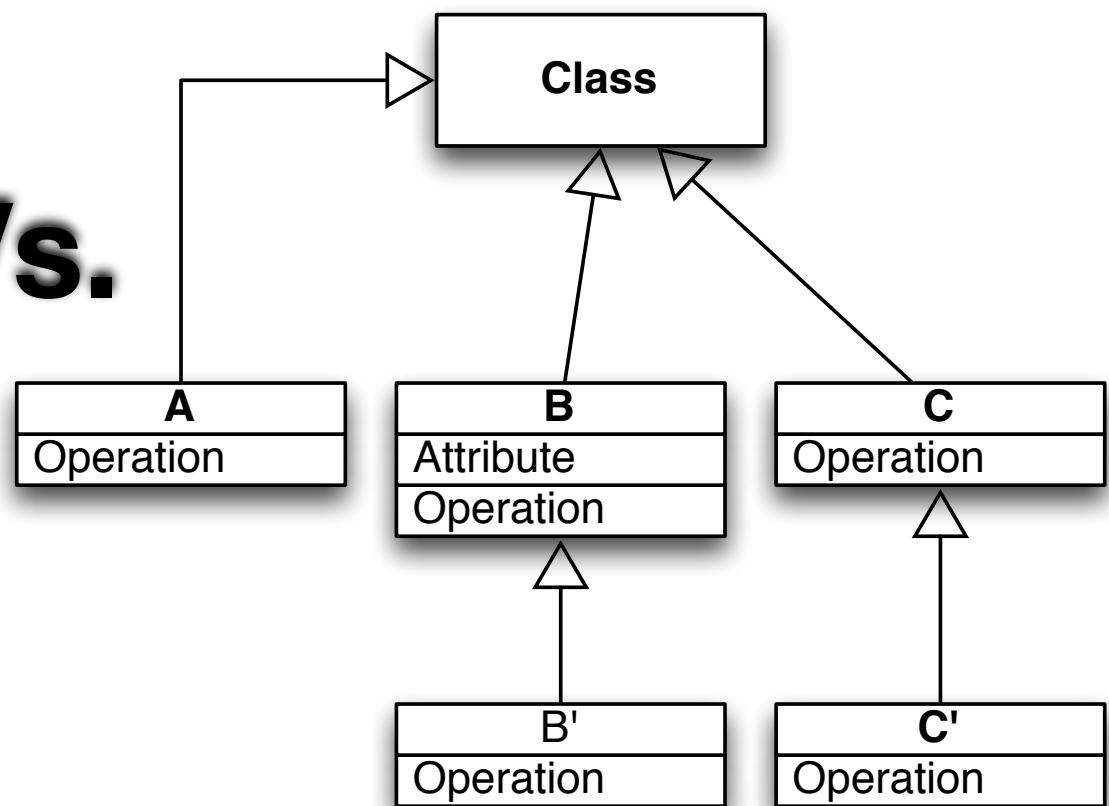
Message sends act as case statements

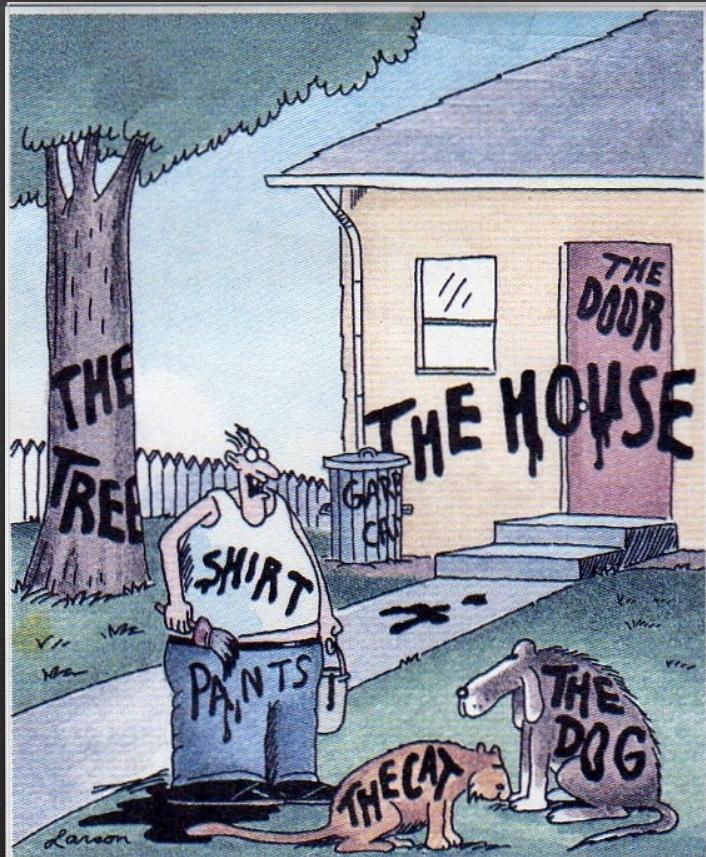
- But dynamic and open
- Can add a branch (define a subclass)
- Branches can be defined in different packages

OOP: the Art of Dispatching



Vs.





Pharo Humour

<http://pharo.org>

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





THALES

dp debris
publishing



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Sensus
Systems that make sense

MINES
Douai
IA
Informatique
et Automatique

Pleiad project
uqbar

esug
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RESEARCH

netstyle.ch

GEMTALKTM
SYSTEMS

BetaNine
software engineering

CaesarSystems
Accelerate Confidently

OBJECT PROFILE

Q^b

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software

HR works

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RMod

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