

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)
```

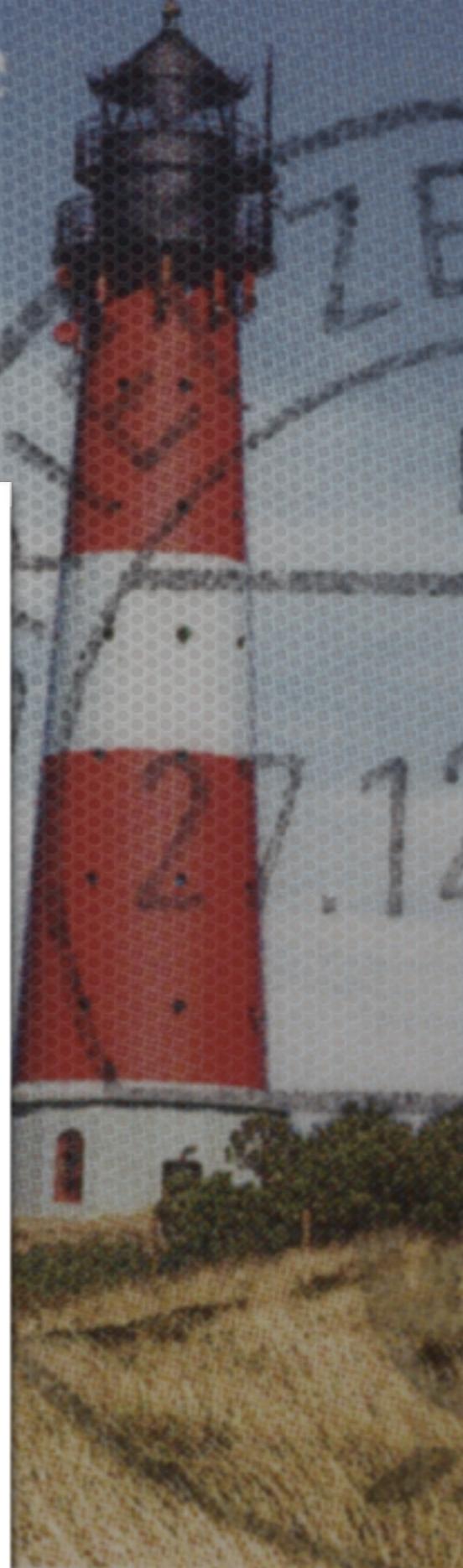
```
do: [ :each | Transcript
```

```
    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

2007

Immersive?



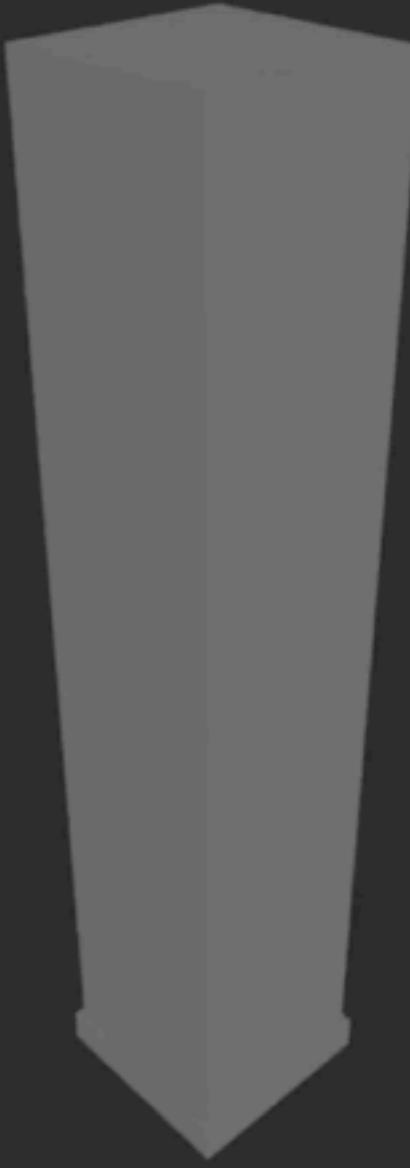
Immersive!

- 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

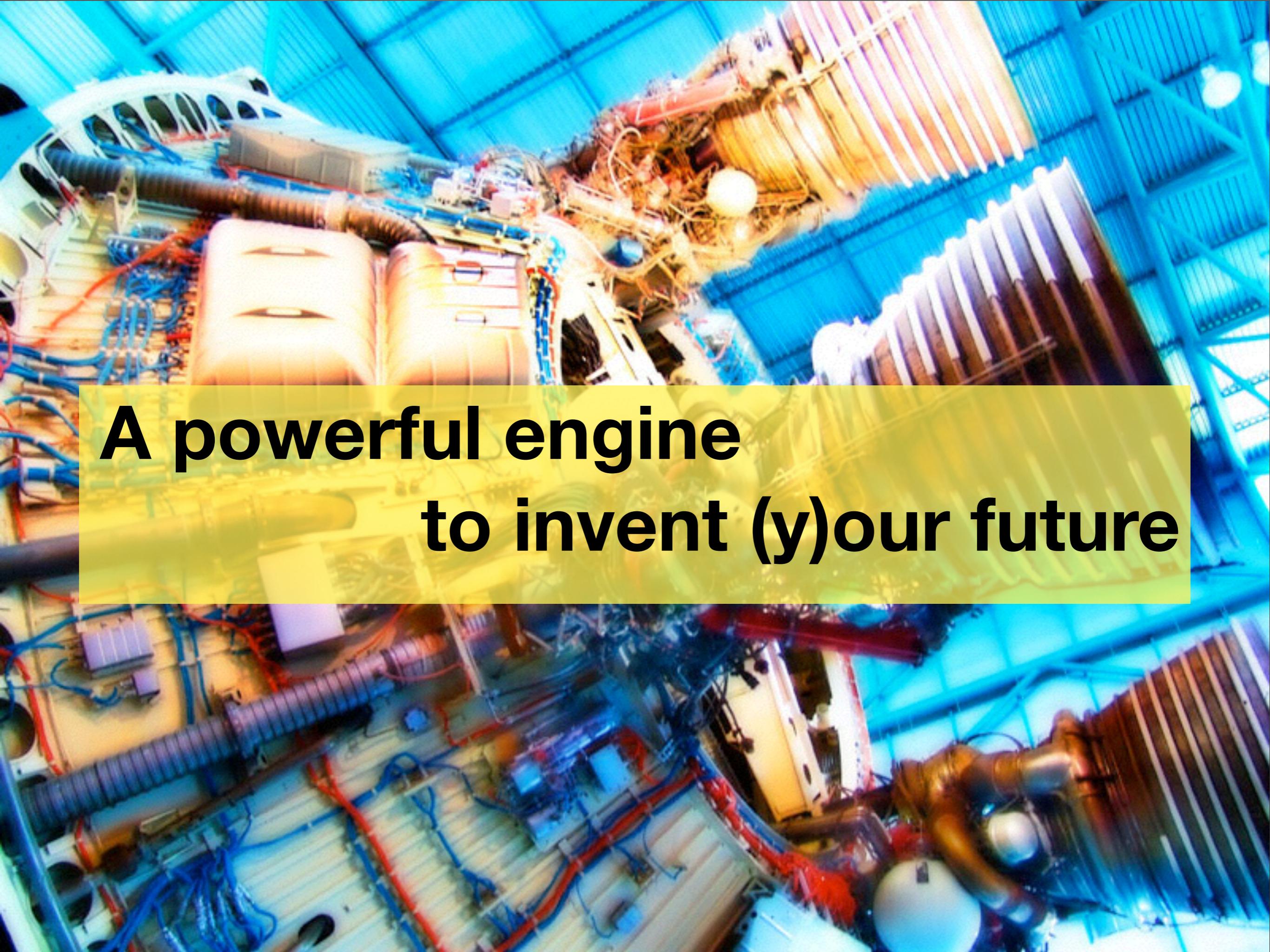
```
| elements lay |  
  
elements := (1 to: 5) collect: [ :ob |  
  (R3CubeShape new) elementOn: ob ].  
    
lay := R3WallLayout new.  
lay on: elements.  
  
UberPresenter present: elements
```

Uber Presenter

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

Pharo 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
www.objectprofile.com
www.pharocloud.com
debrispublishing.com
spesenfuchs.de
norizzk.com



PharoCloud

pharocloud

Overview Pricing Blog Login Sign Up

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

Ramex

Wind Energy

Pioneering new ways of maximizing sustainable wind energy yields. Our products and services optimize asset availability, wind turbine performance and drivetrain reliability. We work with owners, operators, manufacturers, insurers and service providers worldwide.

Get in touch:

Related links:

Wind Energy

Wind industry solutions

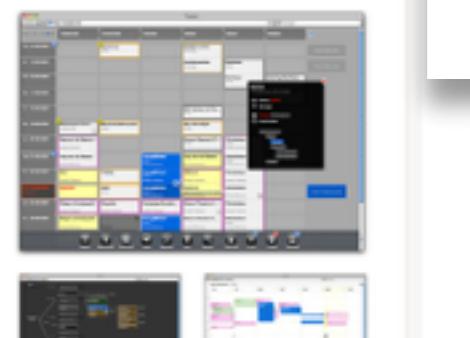
Web-To-Print Solution

- Design and create individual printed matter
- eShop with credit card payment
- High quality PDF output with Printing Process integration
- Thousands of orders for seven Swiss printing companies



Yesplan is veelzijdige software voor het efficiënt plannen van evenementen.

Yesplan is uitstekend gebruiksvriendelijk, flexibel en makkelijk te koppelen met andere software.



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

A product by Smallworks

Some Success Stories

Lumina

data analysis

CSOB

Bank



airflowing

Organize your creative work

Plans and Pricing

Manage your simple way

Object PROFILE

Das Content Management mit System

Das Content Management mit System

100% inline-Editor

Copy / Paste

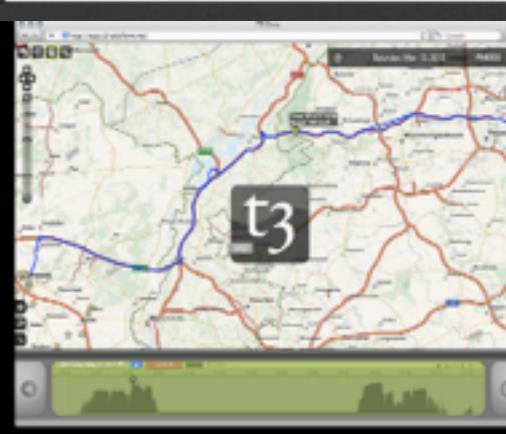
Continuous API Testing

Keep your services under control 24/7

z2denker

Continuous API Testing

Keep your services under control 24/7

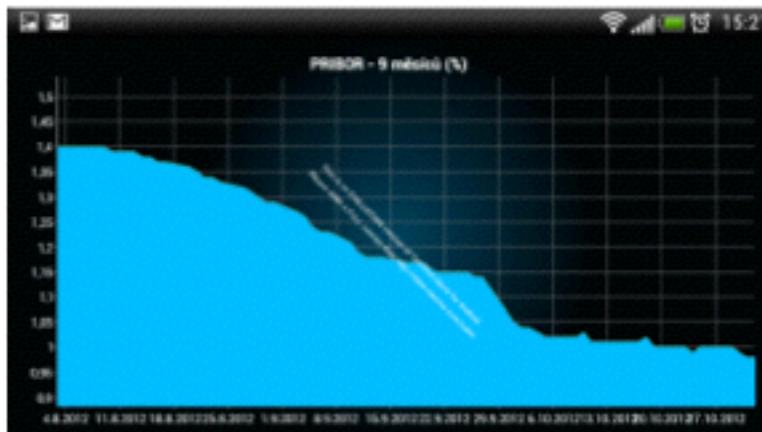


iBizLog - <http://Full meta shop developed in 5 months one person>

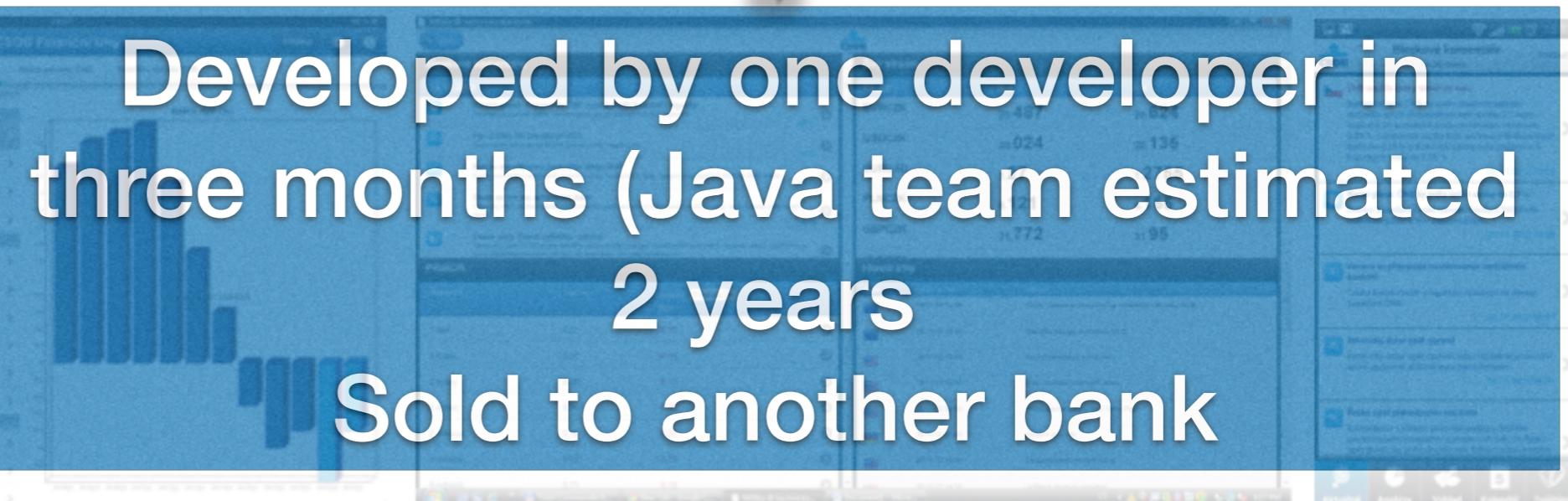
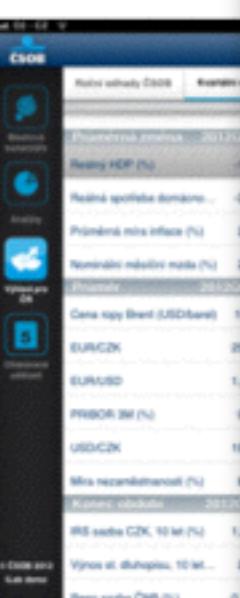
The screenshot shows the iBizLog homepage. At the top is the iBizLog logo with a green icon of a person writing on a notepad, followed by the text "iBizLog" in a stylized font and "BETA" in smaller letters. Below the logo are "Home" and "Sign Up" buttons. A large section titled "What is iBizLog ?" features four numbered steps: 1. A hand writing on a notepad, 2. A stack of colorful websites, 3. Hands typing on a keyboard, and 4. A person cheering at a computer. Below these steps is a descriptive text: "It is a simple and easy online system you can use to create your own website online in order to promote and sell your products or services. Create your website now!" with a "START NOW!" button. To the right is a green box with the heading "Have your WebSite" and a "FREE" badge, containing a thumbnail of a website and a "Create WebSite" button. At the bottom, there are 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.

A product by Smallworks

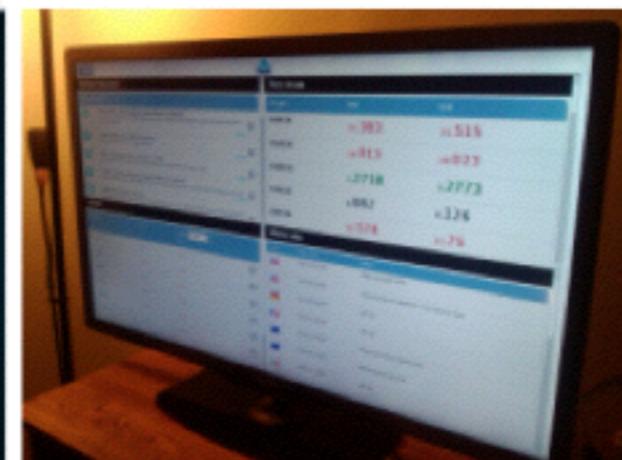
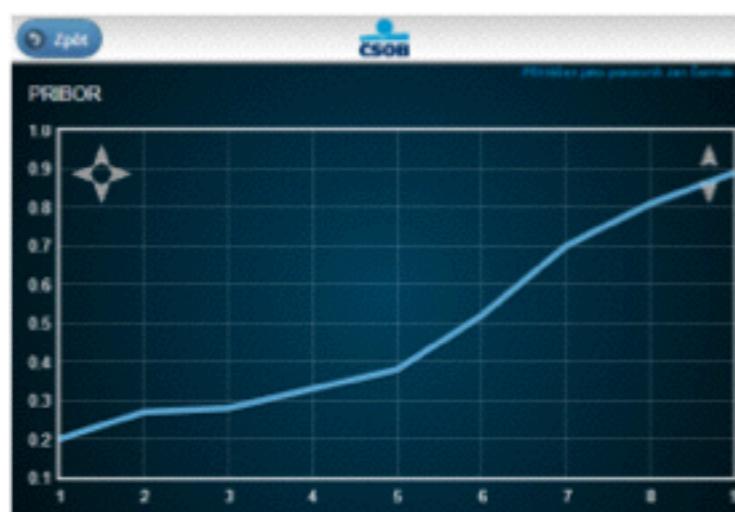
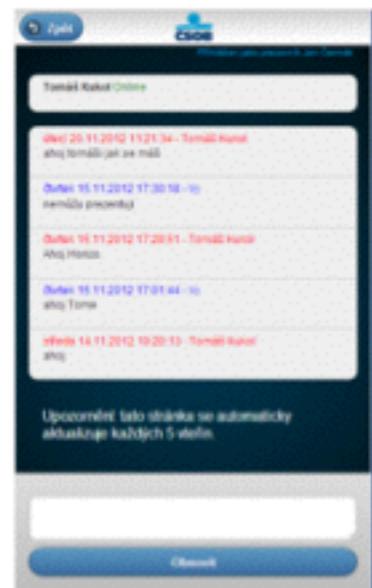
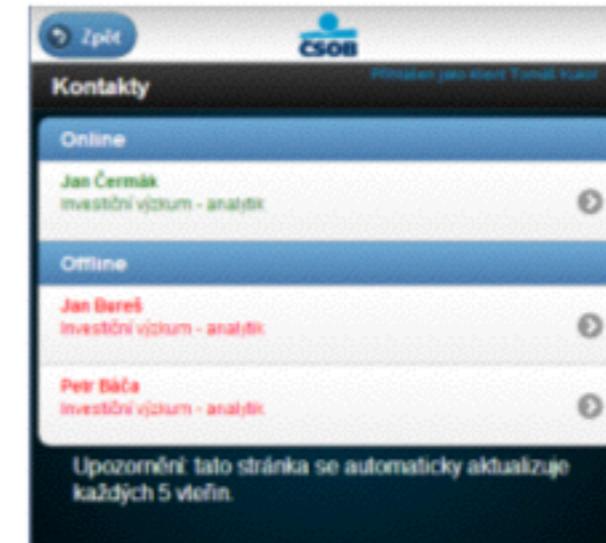
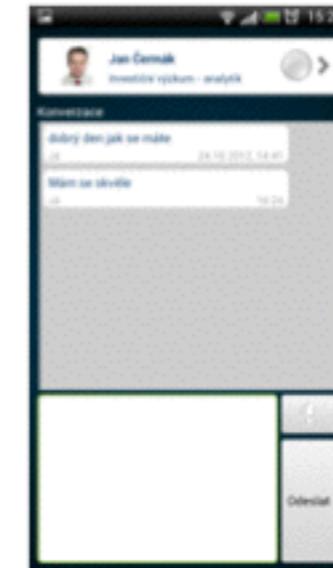




	Bdo	Abo
EURCZK	26.407	25.539
USDCZK	19.746	19.856
EURUSD	1.2836	1.2893
PLNCZK	6.168	6.212
GBPCZK	31.494	31.67
HUF CZK	0.09075	0.09141
CHECZK	21.082	21.206
AUDCZK	20.471	20.593
AUDUSD	1.0323	1.0415
CADCZK	19.816	19.926
DHKCZK	3.407	3.424
EURAUD	1.2325	+249



Měnový pář	Nákup	Prodej	Denní změna
EURAUD	120.000	120.000	0.00
EURCAD	120.000	120.000	0.00
EURCHF	1.2000	1.2000	0.00
EURCZK	20.1000	20.0700	-0.0300
EURDKK	7.4400	7.4500	0.0100
EURGBP	0.8000	0.8000	0.00
EURHUF	100.000	100.000	0.00
EURJPY	100.7000	100.2000	-0.5000
EURNOK	1.3000	1.3000	0.00
EURPLN	0.8000	0.8000	0.00
EURRON	4.3300	4.3000	-0.3000
EURRUB	0.0000	0.0000	0.00
EURSEK	6.6000	6.6000	0.00





Apps

My apps

Shop

Games

Editors' Choice

My wishlist

Redeem

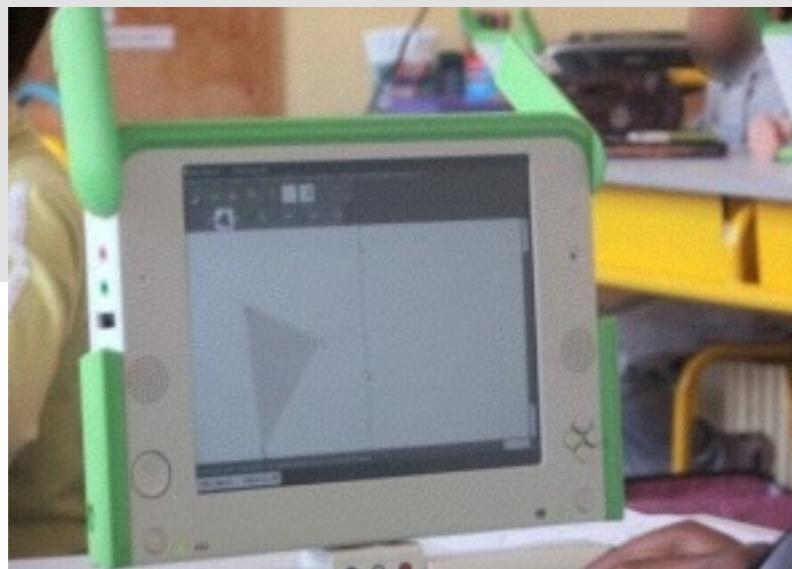
Search

Apps



Dr. Geo free
Hilaire Fernandes & Dimi

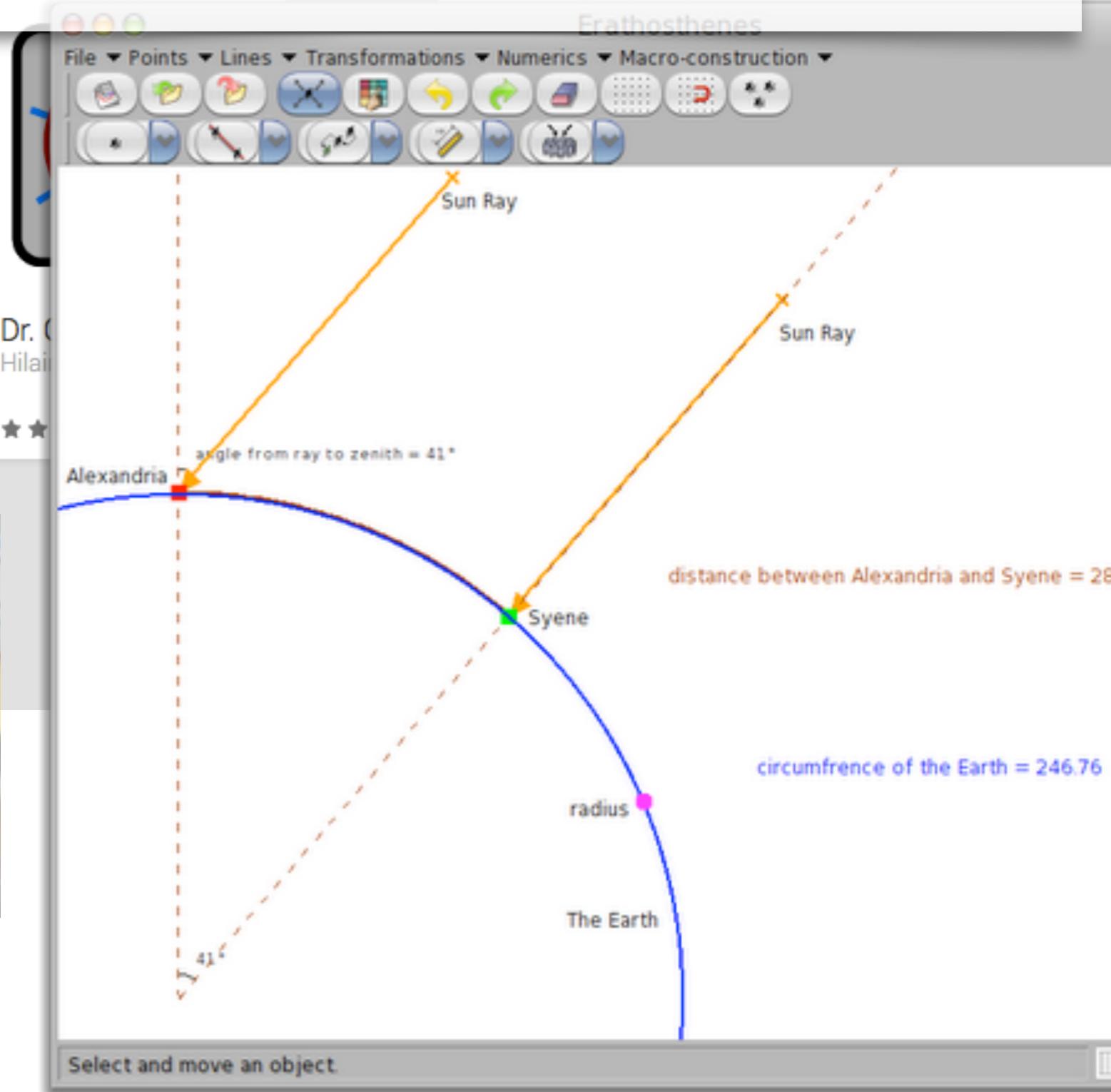
★★★★★ FREE



Android Apps

All prices

Works on linux, mac, windows, android, OLPC



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

seaside 



Pharo is a vehicle

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

Enabler

“One of the things that drew me to do the Delay refactoring, is simply that I could. That is, I was amazed that I could dig so deep so easily, see a path to improvement and effect change at a fundamental level. Excepting complexities with the Continuous Integration due to “changing the wheels on the car at 100km/h” (and one slip), it seems to have gone reasonably smoothly. That sense of mastery is seductive.”

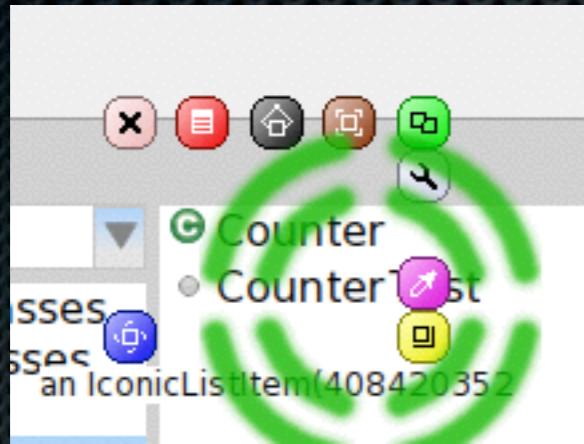
Enabler: Turtles all the way

A Bryant developed Seaside in Pharo ancestor (while he knew ruby, python, scheme, C, objective-C) because he could manipulate the stack behind the back of developers. Seaside is based on stack on-demand reification.

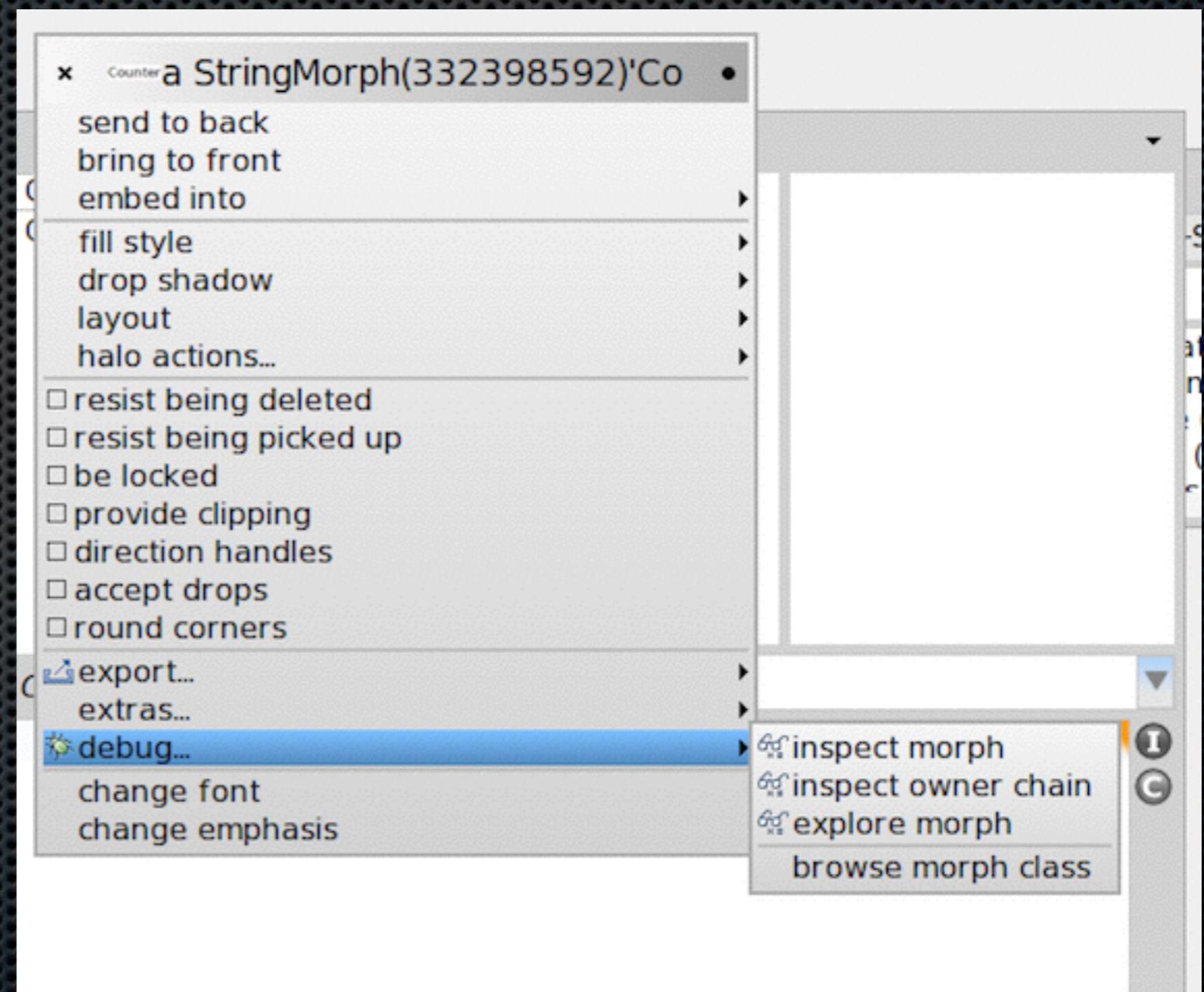
**Learning from the
system...**

Click on it :)

Cmd+shift+option



- Cmd-Shift+option



Finder :)

Finder

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

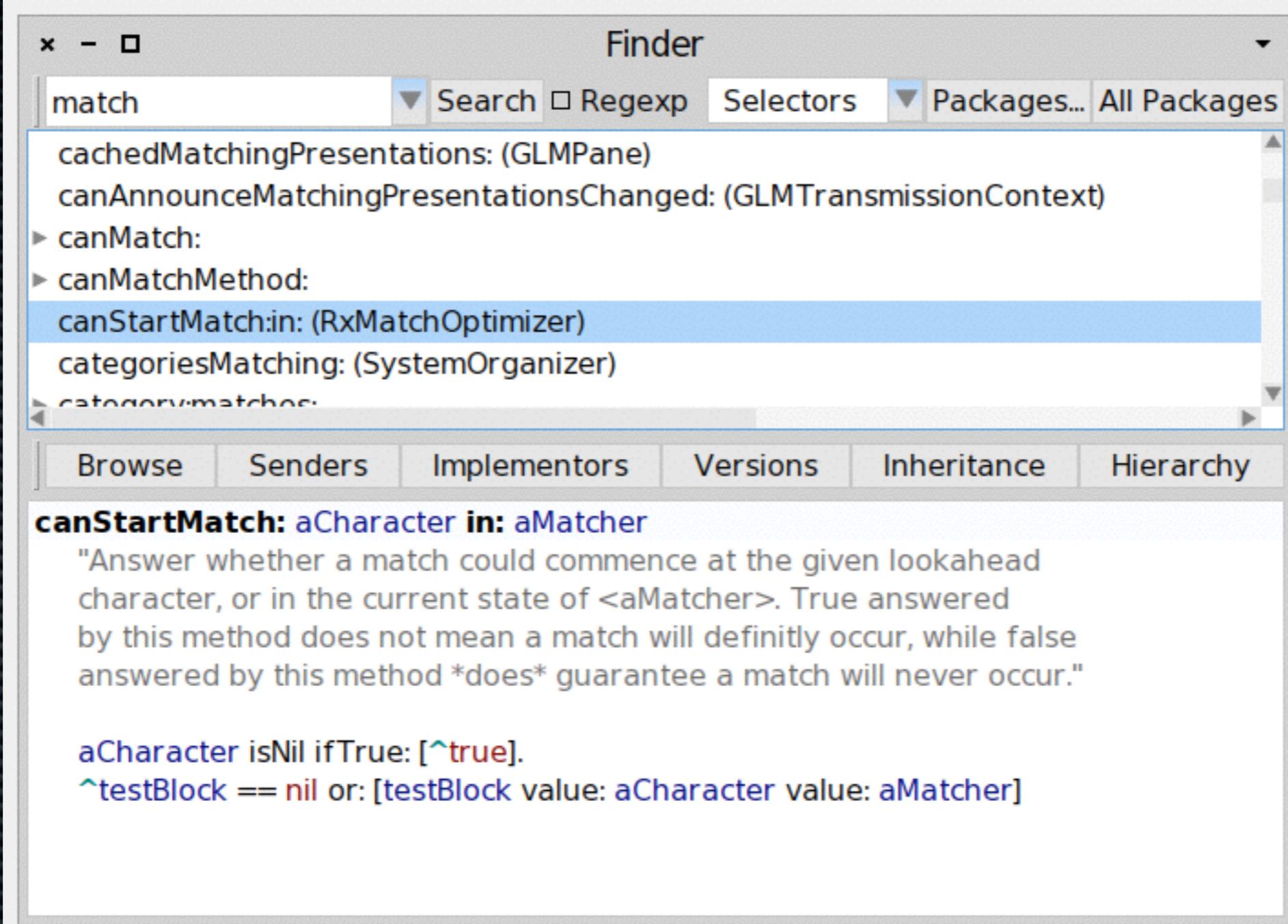
- cachedMatchingPresentations: (GLMPane)
- canAnnounceMatchingPresentationsChanged: (GLMTransmissionContext)
- ▶ canMatch:
- ▶ canMatchMethod:
- canStartMatch:in: (RxMatchOptimizer)
- categoriesMatching: (SystemOrganizer)
- ◀ categoriesMatching:

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]



Finder: *give* examples

The screenshot shows the Pharo Smalltalk Finder interface. The search bar at the top contains the query `'ab' . 'c' . 'abc'`. The "Examples" tab is selected. The results list includes:

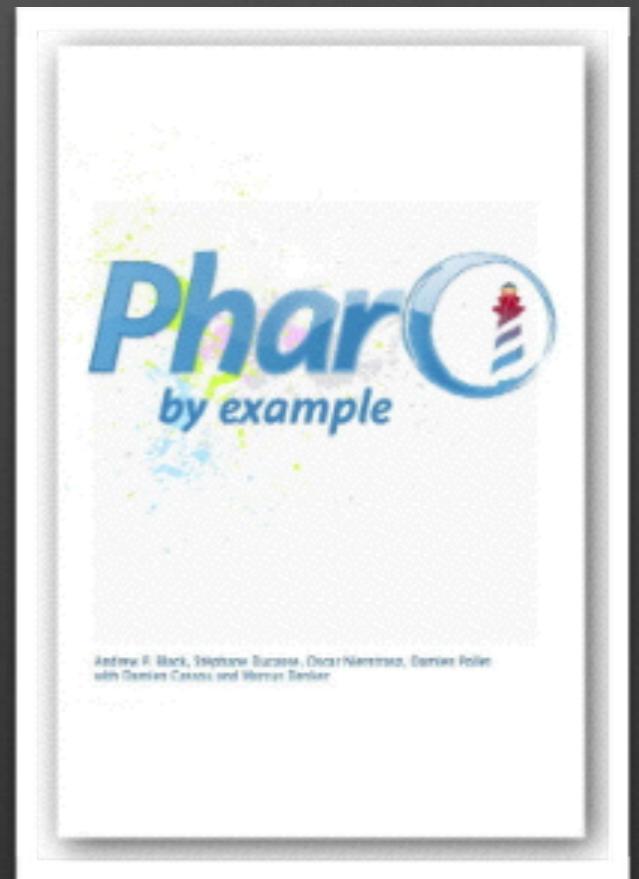
- KMNoShortcut
- KMStorage
- Matrix
- Path
- RunArray
- *SequenceableCollection** (highlighted in blue)
- SortAlphabeticallyClassList

Below the results, there are tabs for `Browse`, `Senders`, `Implementors`, `Versions`, `Inheritance`, and `Hierarchy`. The `Senders` tab is selected. The code snippet for `*SequenceableCollection` is displayed:

```
, otherCollection
"Concatenate two Strings or Collections."
^ self copyReplaceFrom: self size + 1
   to: self size
   with: otherCollection
"
#(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



Andrew P. Black, Stephan Ducasse, Oscar Nierstrasz, Daniel Pollin
with Damien Cassou and Werner Denker

Deep into Pharo



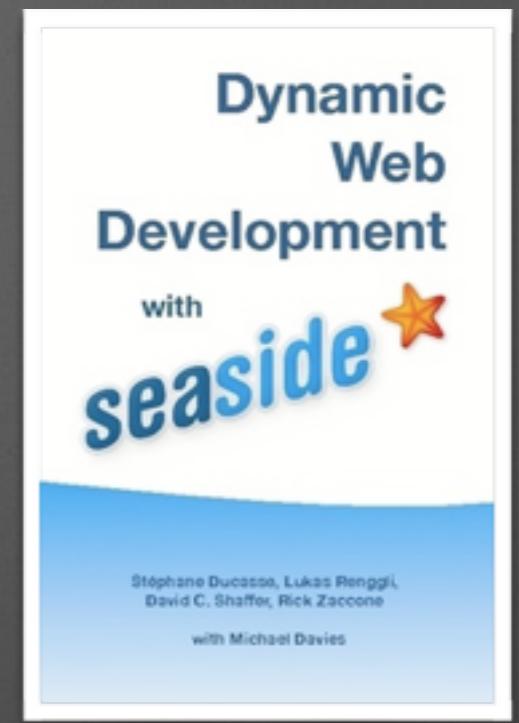
ALEXANDRE BERGEL - DAMIEN CASSOU
STÉPHANE DUCASSE - JANNIK LAVAL

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

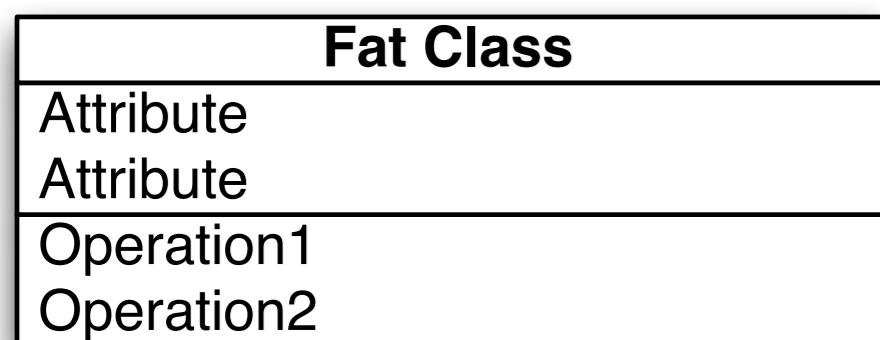
not
"Negation -- answer true since the receiver is false."

^true

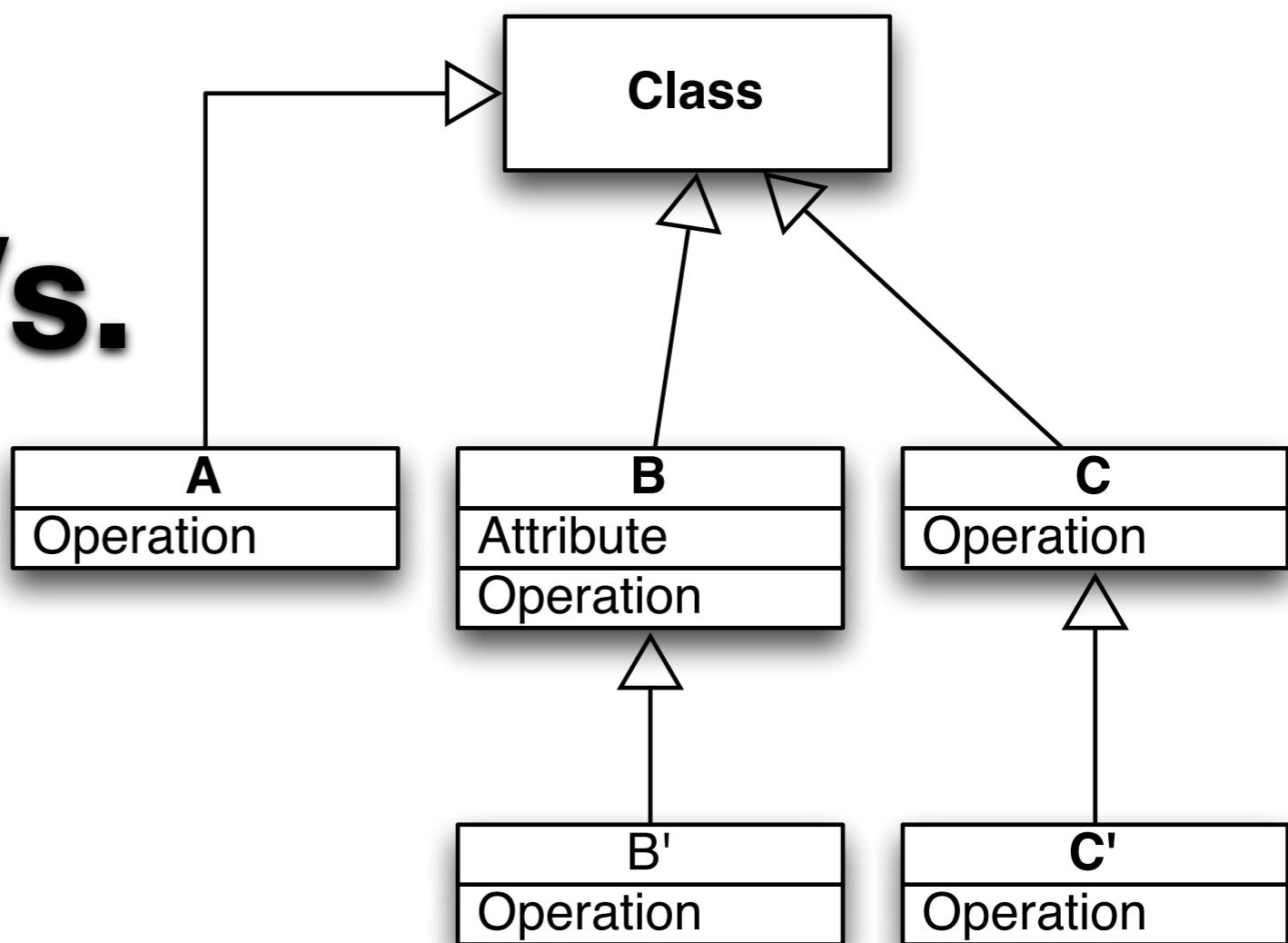
Message sends act as case statements

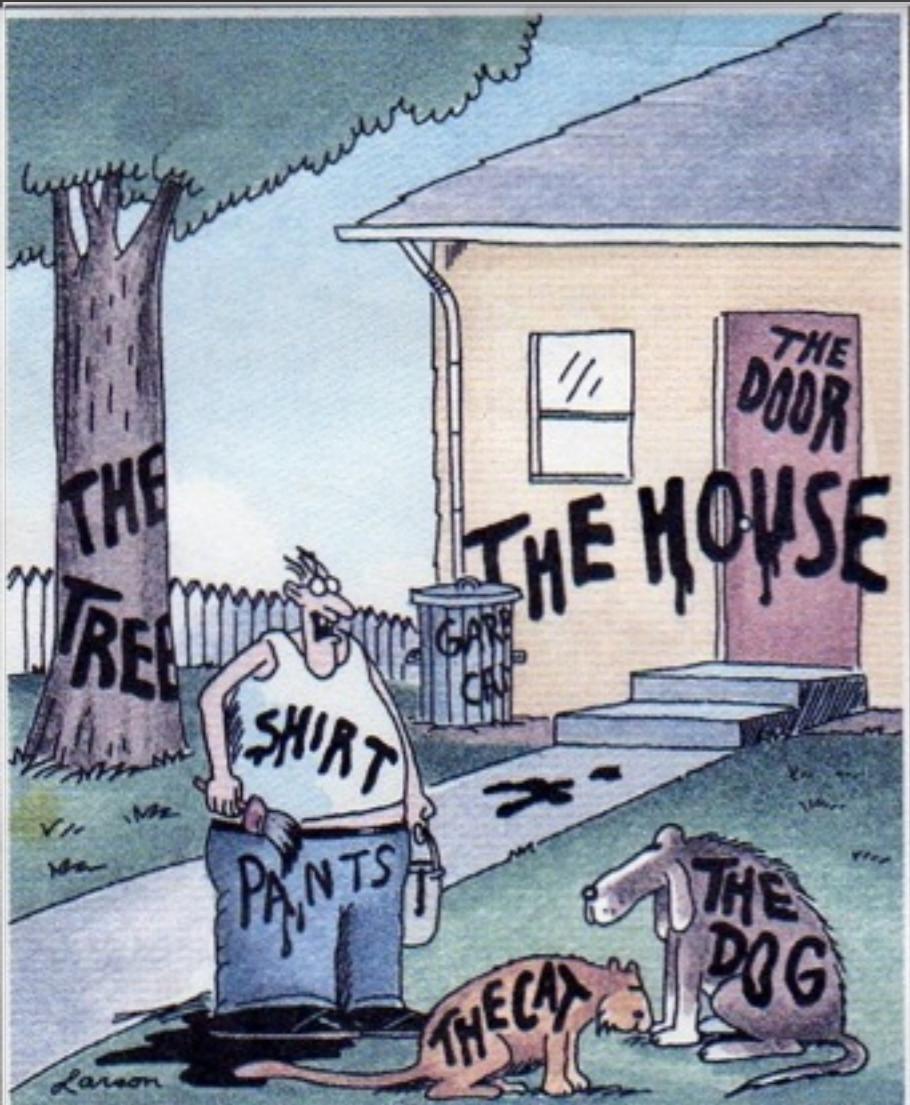
- But dynamic and open
- Can add a branch (define a subclass)
- Branches can be defined in different packages

OOP: the Art of Dispatching



Vs.





"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



