

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?

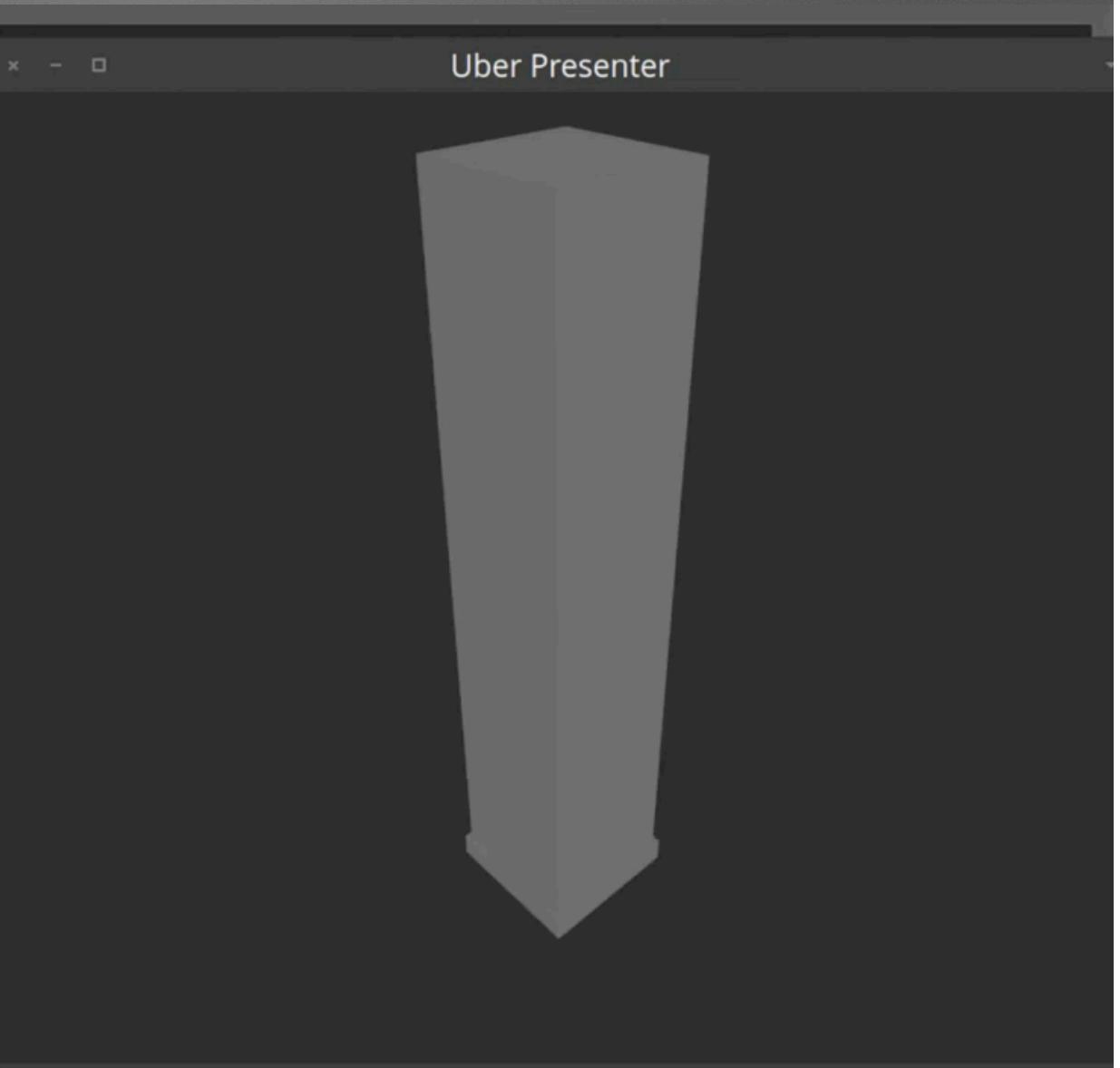


Immersive!

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

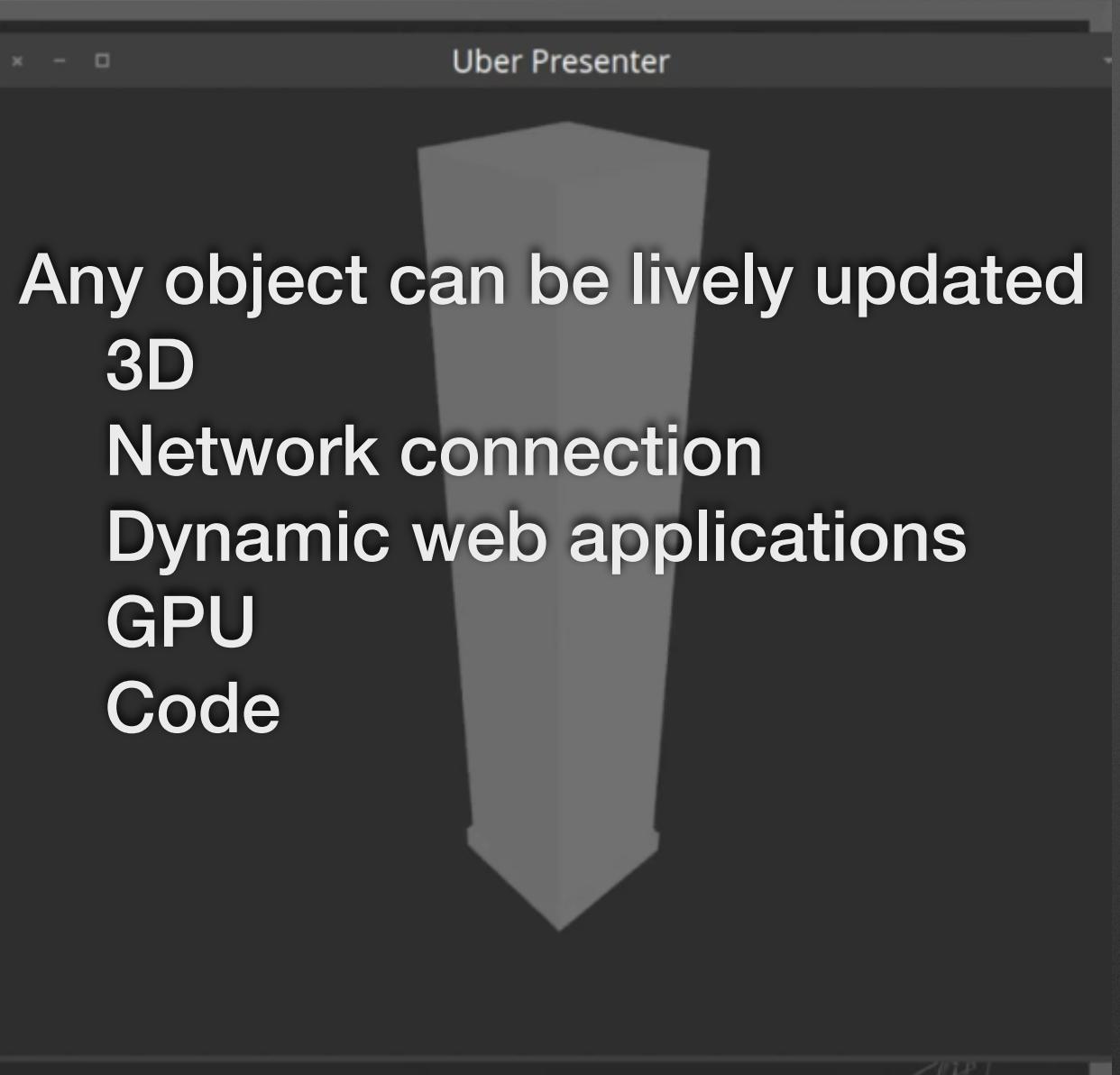
Workspace

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



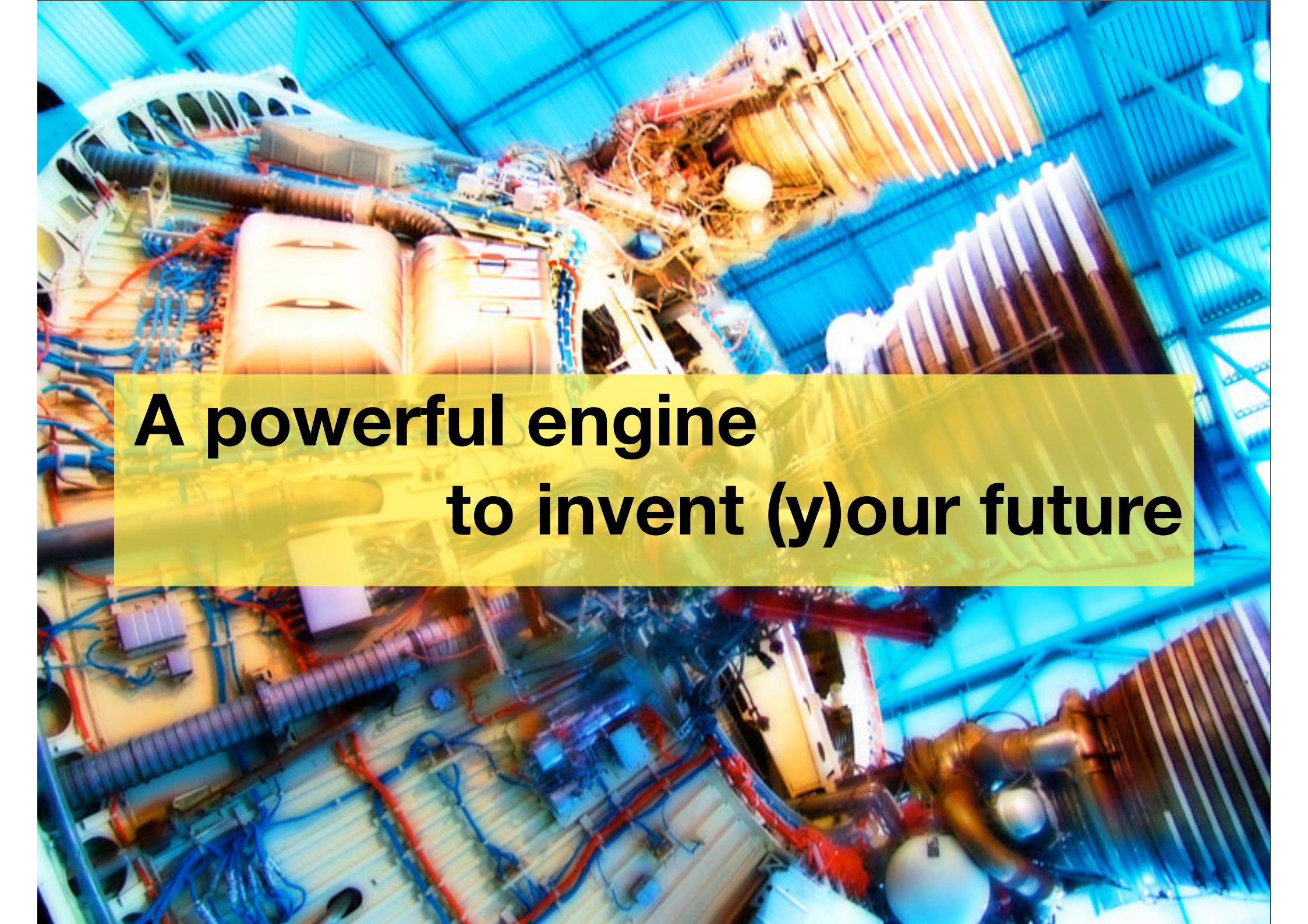
The image shows a software interface with two windows. The left window is titled "Workspace" and contains the following code:

```
| 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
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seaside.gemstone.com
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www.promedmedical.net

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www.yesplan.be
www.synectique.eu
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Nos enfocamos en lo que importa del negocio

sin perder de vista los detalles de su implementación.

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Centramos nuestras soluciones en la experiencia móvil. Aplicaciones nativas para el sistema operativo que cuenta con más de 900 millones de dispositivos activados.

Soluciones que escalan de acuerdo a la demanda de uso.

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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

Funktions Details Forum FAQ Presse

Pinesoft MBagger

Dedicated and cost-effective tools for software evolution

Some Success Stories

Yesplan is veelzijdige software voor het efficiënt plannen van evenementen. Yesplan is uiterst gebruiksvriendelijk, flexibel en makkelijk te koppelen met andere software.

Lumene assessment

Moose is a platform for software and data analysis. It is a research project since 1998. It is a distributed system for research groups around the world. It is increasingly adopted in research projects.

Download 4.7

The Moose Book

Dr. Geo Free

We are starting a project to build a free software for research groups around the world. It is increasingly adopted in research projects.

Version 1.0 released

A summary of the last version of Dr. Geo Free is available here.

What is Dr. Geo?

It is a dynamic geometry software for engineers and students. The mouse is the main tool to work with. It is possible to complete all kinds of tasks with the mouse.

Organize your creative work

Sales, tasks and finances - your team and all that's essential in one place

Plans and Pricing

Sign up in 60 seconds

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OBJECT PROFILE

TRMorph(1028537472) TRMorph(43770048)

SYSTEM WEBSITE Bestellen Hinzufügen Clipboard Aktionen Neue Seite | sofort

ARTIKEL Formular | Datei

Das Content Management mit System

100% Inline-Editor

Die CMSbox ist ein Content Management System der höchsten Qualität. Die Benutzeroberfläche ist intuitiv in die Webseiten integriert! Alle Texte werden direkt auf die Seite geschrieben!

Copy / Paste Elemente ausschneiden oder in den Bereich auf der Webseite wieder einfügen

Eigene Bilder und Videos direkt auf die Webseite in fast airflowing

Continuous API Testing

keep your services under control 24/7

t3

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

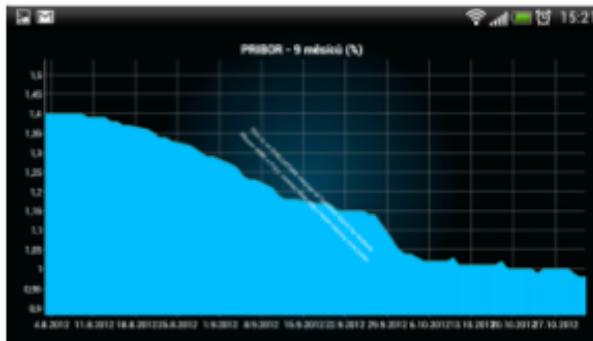
The screenshot shows the iBizLog homepage. At the top is the iBizLog logo with a green icon of a person sitting at a desk. Below the logo is the word "BETA". The main navigation menu includes "Home" and "Sign Up". Below the menu, there's a section titled "What is iBizLog ?" with four numbered steps: 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 screen. A "START NOW !" button is visible.

Full MetaShop developed in 5 months one person

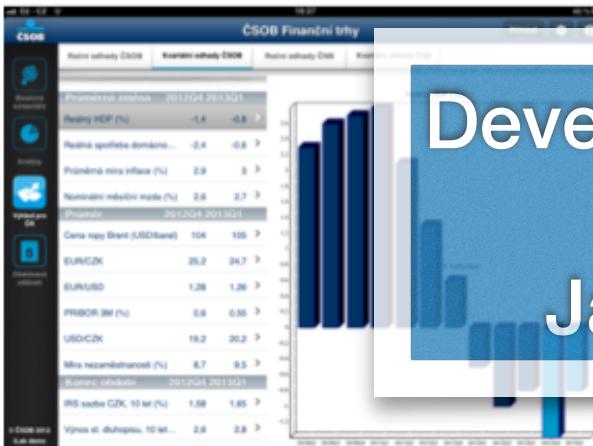
The screenshot shows the MetaShop homepage. It features a large green banner with the text "Have your WebSite" and a "FREE" badge over a thumbnail of a website. Below this is a "Create WebSite" button. To the right is a vertical "feedback" bar. The main content area has three sections: "Personal Identity 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

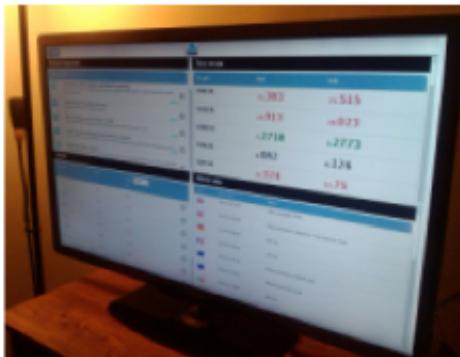
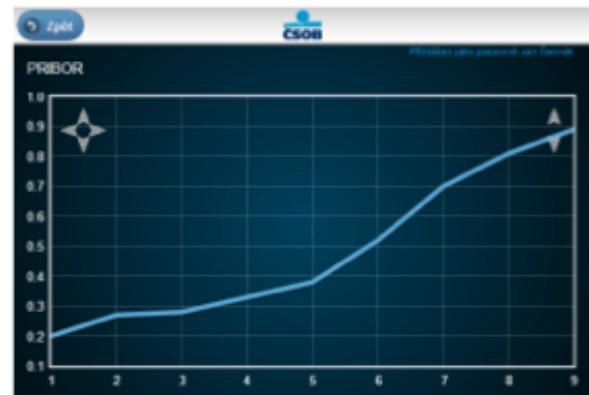
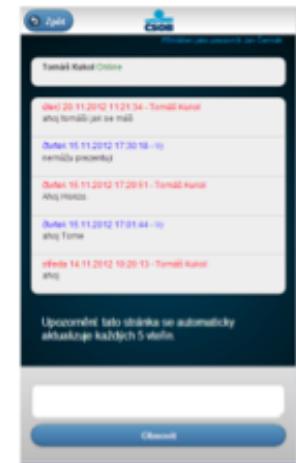
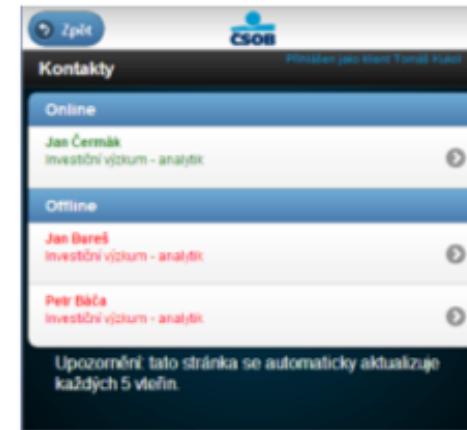




FX pár	Bid	Auk
EURCZK	25.407	25.539
USDCZK	19.746	19.856
EURUSD	1.2836	1.2893
PLNCZK	6.168	6.212
GBPCZK	31.494	31.67
HUF CZK	0.09075	0.09141
CHFCZK	21.082	21.206
AUDCZK	20.471	20.593
AUDUSD	1.0323	1.0415
CADCZK	19.816	19.926
DKKCZK	3.407	3.424
EURAUD	1.2325	1.249



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



Apps Categories ▾ Home Top Charts

My apps

Shop

Games

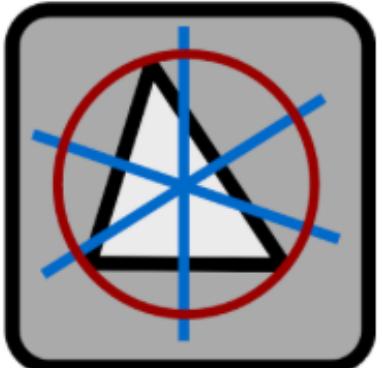
Family

Parent Guide

Editors' Choice



DR. GEO



Dr. Geo

iStoa Education

Unrated

⚠ You don't have any devices

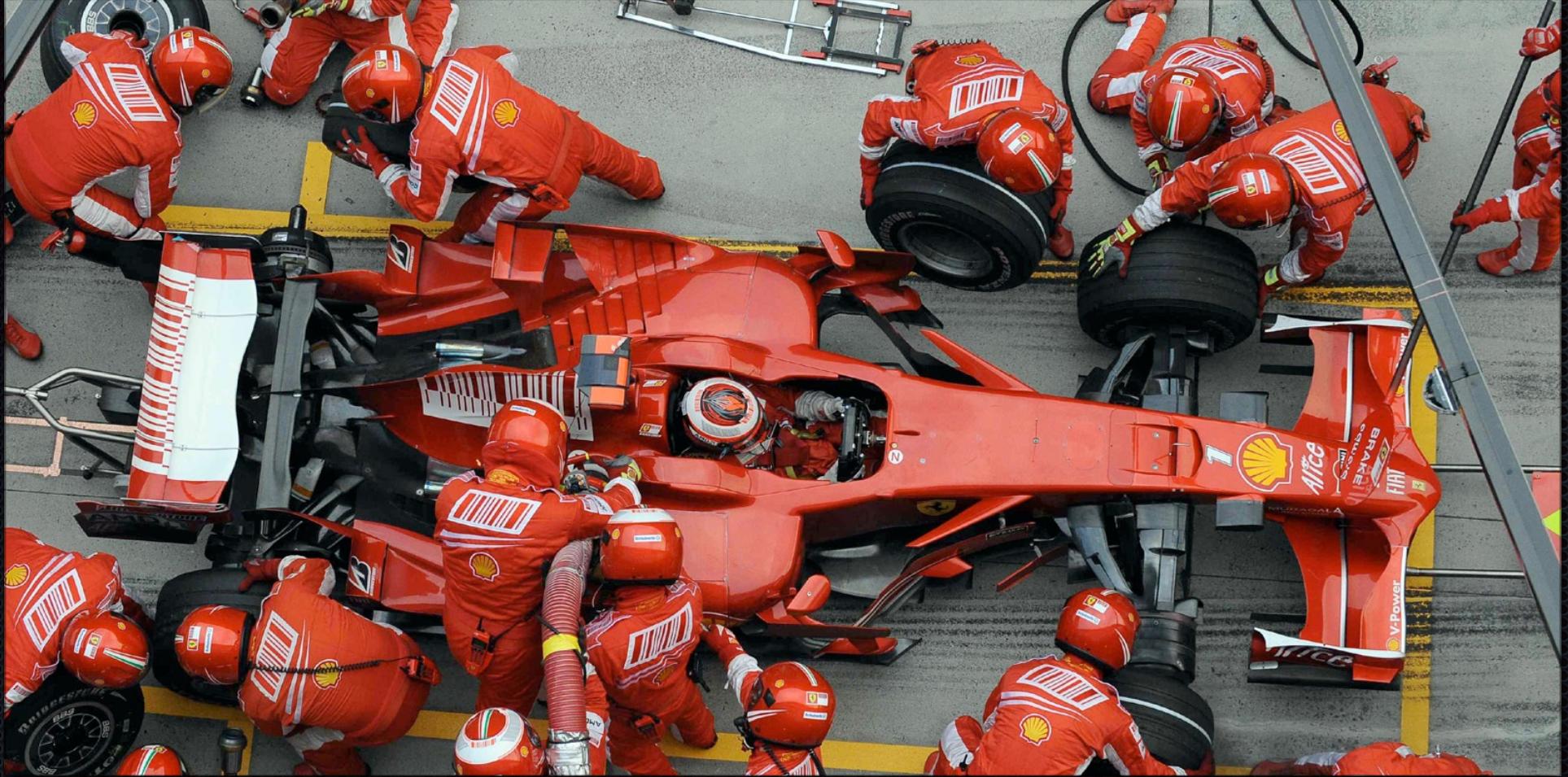
+ Add to Wishlist €3.59 Buy



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

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.”

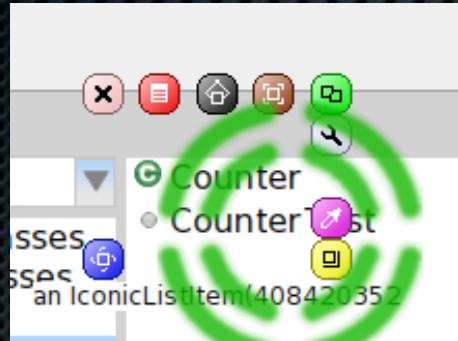
Enabler: Turtles all the way

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.

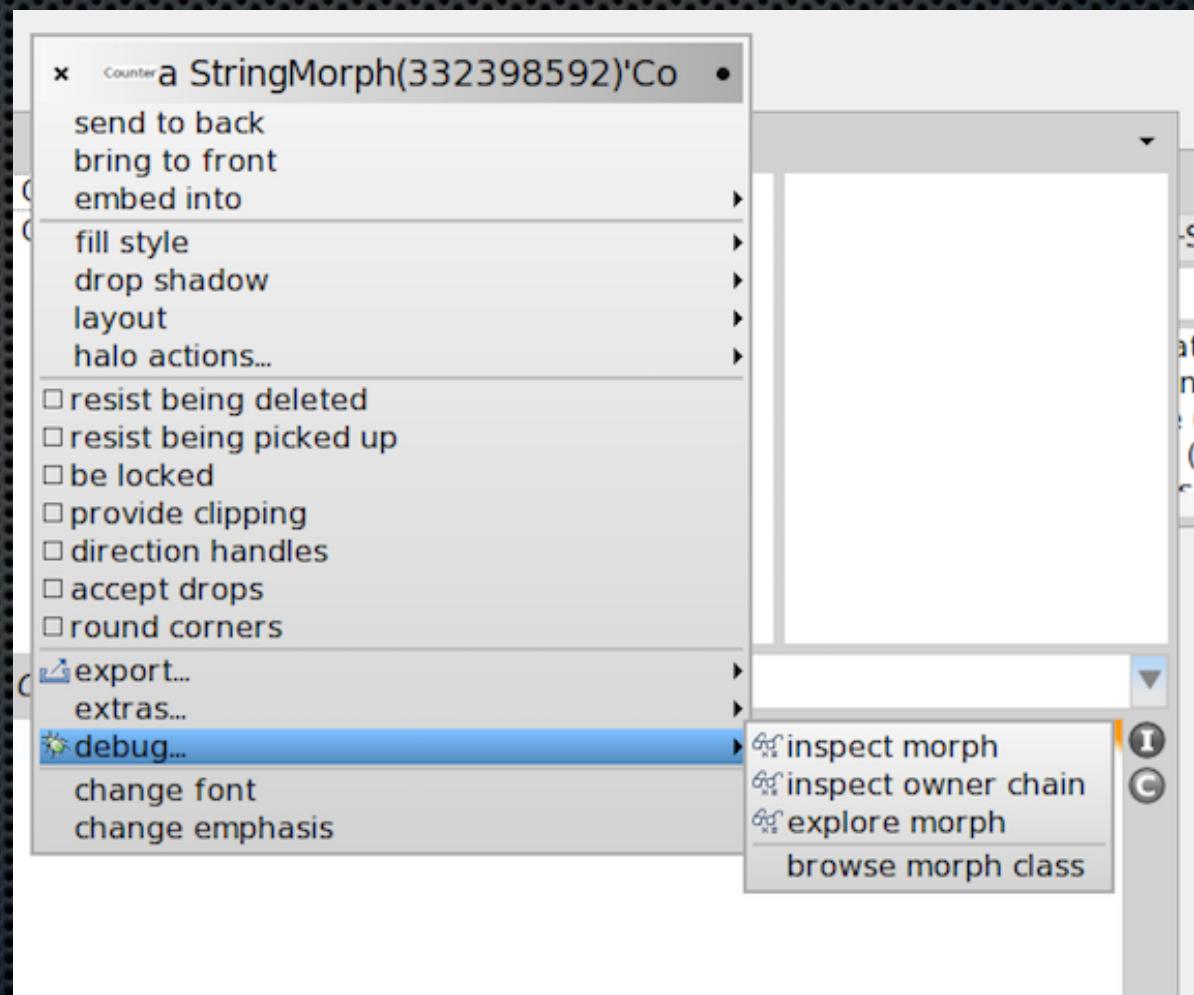
Learning from the
system...

Click on it :)

Cmd+shift+option



- Cmd-Shift+option



Finder :)

x - □ Finder

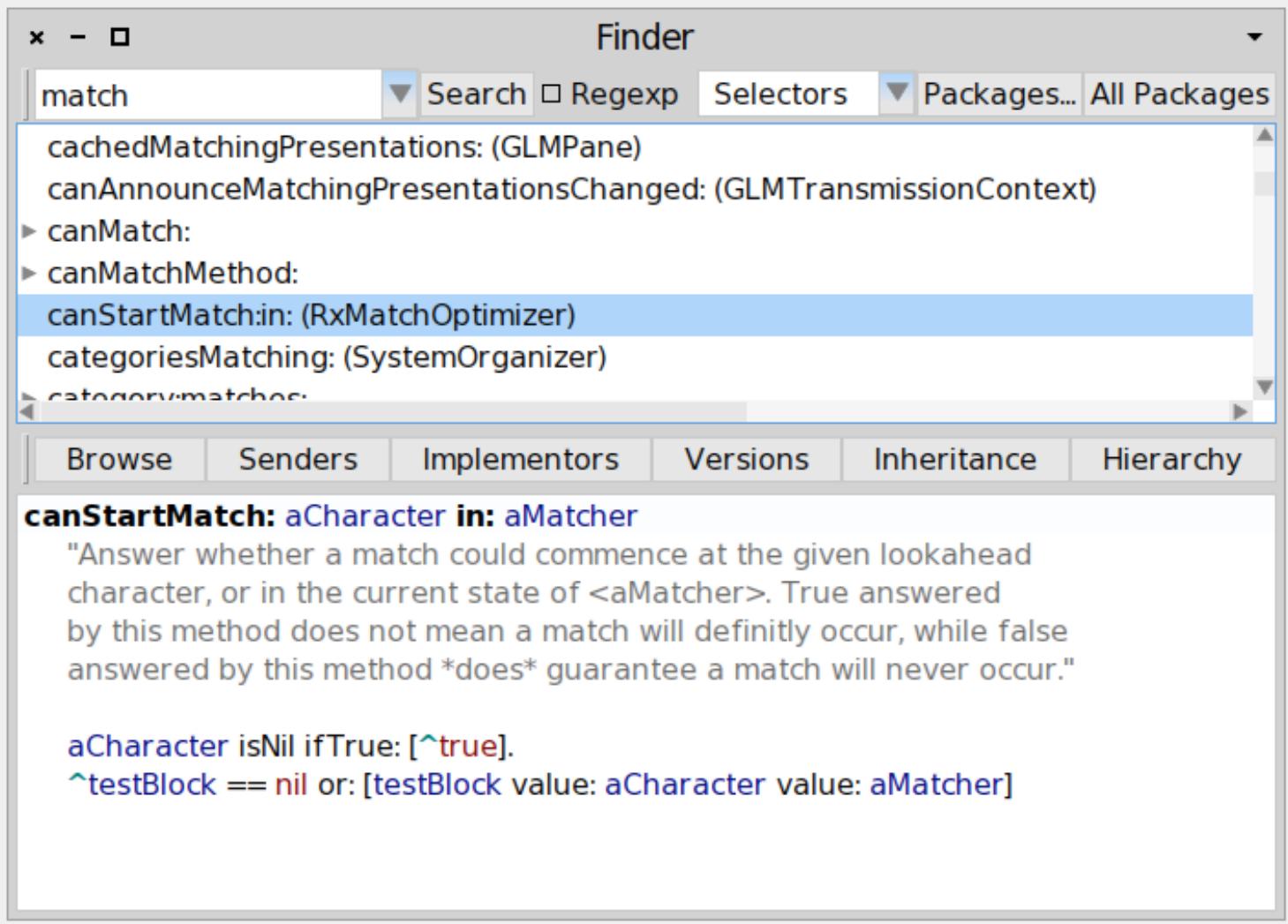
match ▼ Search Regexp Selectors ▼ Packages... All Packages

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

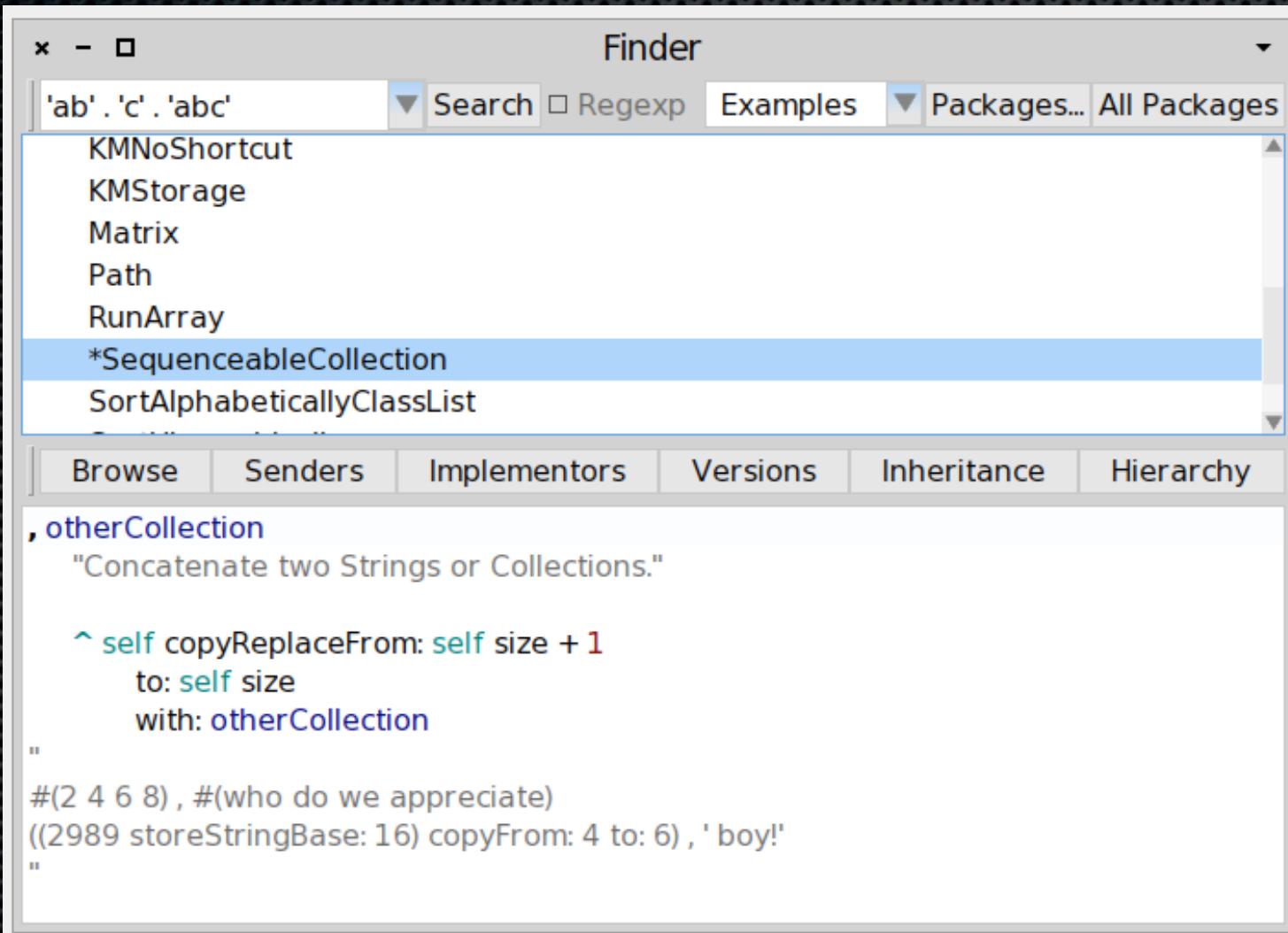
Browse Senders Implementors Versions Inheritance Hierarchy

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
 - Comment: "Concatenate two Strings or Collections."
 - Implementation:

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

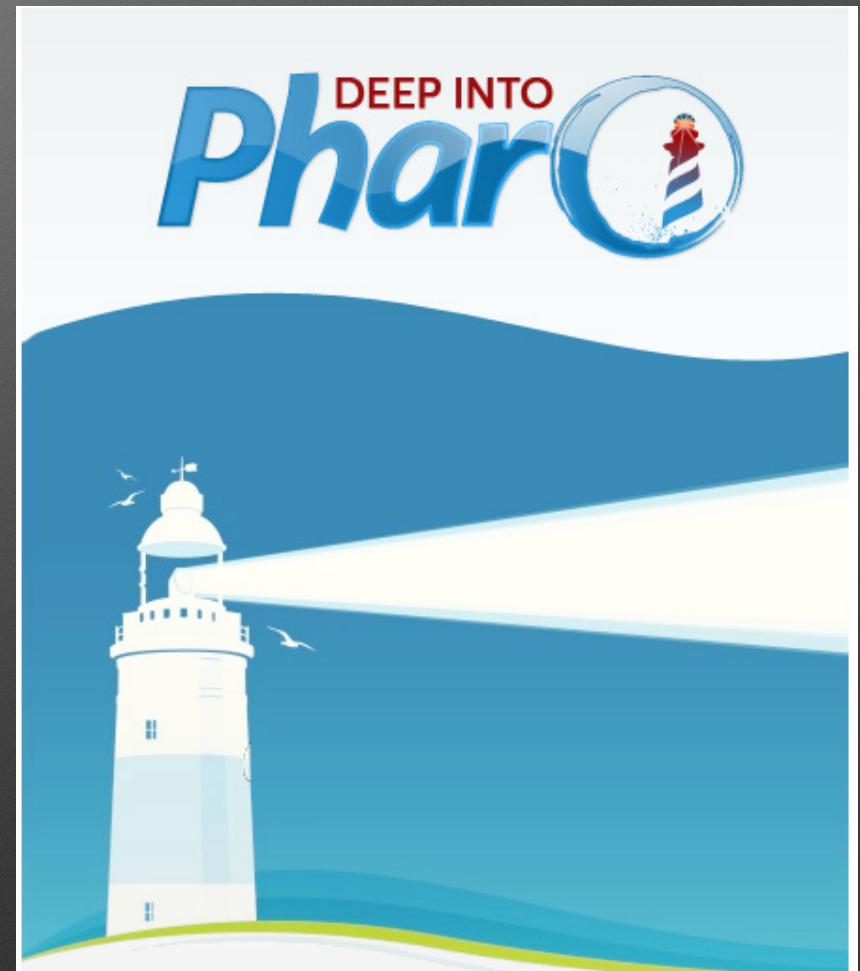
```
""
#(2 4 6 8) , #(who do we appreciate)
((2989 storeStringBase: 16) copyFrom: 4 to: 6) , ' boy!'
```

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



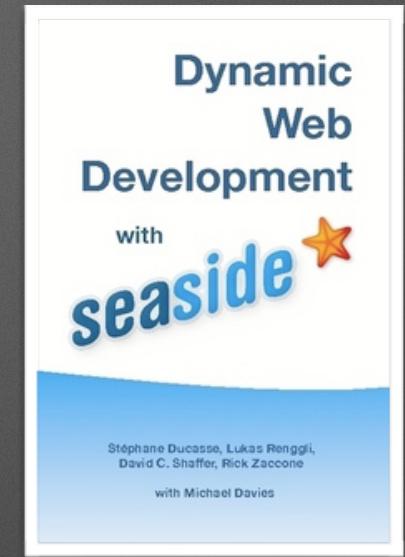
ALEXANDRE BERGEL - DAMIEN CASSOU
STÉPHANE DUCASSE - JANNIK LAVAL

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

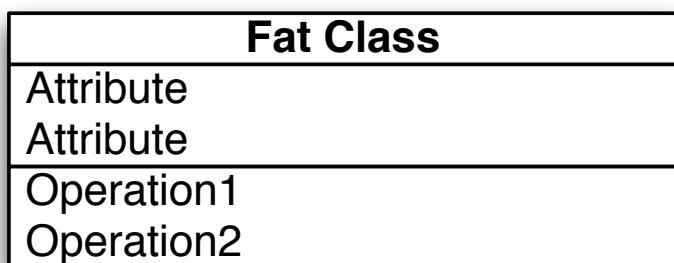
"Negation -- answer true since the receiver is false."

^true

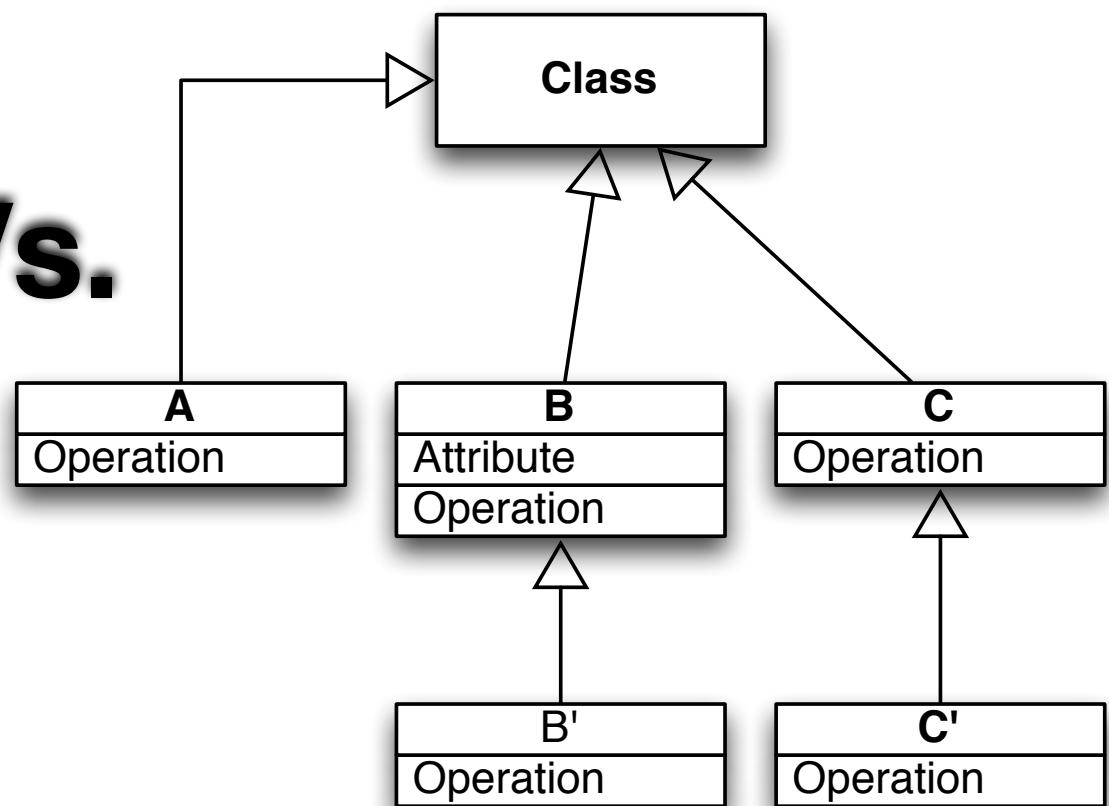
Message sends act as case statements

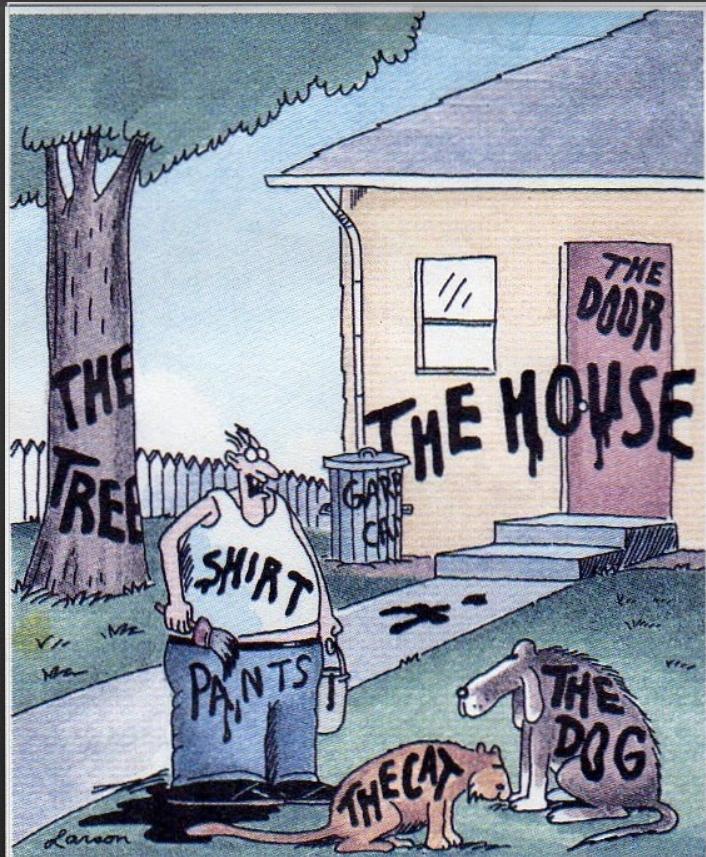
- But dynamic and open
- Can add a branch (define a subclass)
- Branches can be defined in different packages

OOP: the Art of Dispatching



Vs.





Pharo Humour

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

<http://pharo.org>

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





THALES

dp debris
publishing



Yesplan
Let's make it happen

Sensus
Systems that make sense

MINES
Douai
IA
Informatique
et Automatique

Pleiad project
uqbar

esug
EUROPEAN SMALLTALK USER GROUP

Lam[®]
RESEARCH

netstyle.ch

GEMTALKTM
SYSTEMS

BetaNine
software engineering

CaesarSystems
Accelerate Confidently

OBJECT PROFILE

Q^b

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Inria
INVENTEURS DU MONDE NUMÉRIQUE

projector
software

HR works

denker

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HD

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BADASS MOBILE DEVELOPMENT

Gagnez une Qualité d'Avance
CZECH TECHNICAL UNIVERSITY
IN PRAGUE

RMod

lifl
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