




# *Pharo 6*

*Pharo Days 2017*  
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# *D e v e l o p m e n t*

- 12 months
- over 1400 closed issues
- almost 500 integrations
- at least 86 image developers

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# *P e o p l e*

Alberto Bacchelli, Alejandro Infante, Alexandre Bergel, Aliaksei Syrel, Alistair Grant, Andrei Chis, Ben Coman, Bernardo Contreras, Bernhard Pieber, Boris Spasojevic, Christophe Demarey, Clement Bera, Cyril Ferlicot, Dale Henrichs, Damien Cassou, Damien Pollet, Dave Lewis, Denis Kudriashov, Dirk Roeleveld, Eliot Miranda, Esteban Lorenzano, Esteban Maringolo, Evan Donahue, Federico Balaguer, Franck Warlouzet, Glenn Cavarle, Guillermo Polito, Gustavo Santos, Henrik Johansen, Henrik Nergaard, Hilaire Fernandes, Holger Hans, Jan Kurs, Jan van de Sandt, Johan Fabry, Juraj Kubelka, K. K. Subramaniam, Ken Causey, Kris Gybels, Lionel Akue, Luc Fabresse, Lucas Godoy, Marcus Denker, Mariano Martinez Peck, Marion Noirbent, Martin Dias, Max Leske, Maxime Roelandt, Merwan Ouddane, Matteo Bellotto, Miguel Campusano, Milton Mamani, Myroslava Romaniuk, Nicolai Hess, Nicolas Cellier, Nicolas Passerini, Norbert Hartl, Offray Luna, Pablo Tesone, Paul De Bruicker, Pavel Krivanek, Peter Uhnak, Philippe Back, Roger Stebler, Ronie Salgado, Sean DeNigris, Serge Stinckwich, Skip Lentz, Sophie Kaleba, Stefan Reichhart, Stephan Eggermont, Stephane Ducasse, Sven Van Caekenberghe, Thibault Arloing, Thibault Arloing, Thibault Raffailac, Thierry Goubier, Thomas Heniart, Tommaso Dal Sasso, Torsten Bergmann, Tudor Girba, Udo Schneider, Valentin Ryckewaert, Vincent Blondeau, Werner Kassens, Yuriy Tymchuk

*...and many many more...*

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System-CoreSystem  
Modified Methods  
Annotations  
System-Core  
Libgit  
Metacello-Integrat  
Plugin  
UI  
Platform-Platforms

- OSPlatform
- MacOSPlatform
- MacOSXPlatform
- UnixPlatform
- Unix32Platform
- Unix64Platform
- WinPlatform
- Win32Platform
- Win64Platform

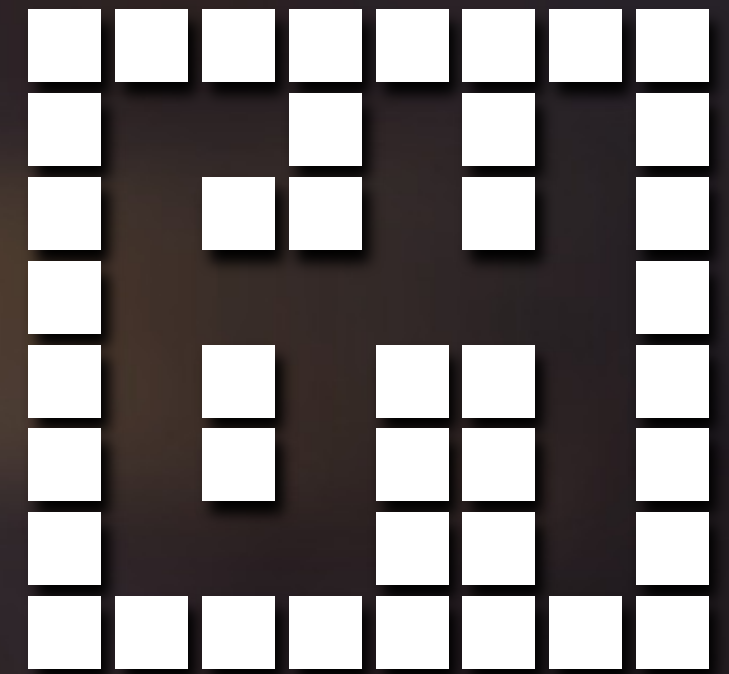
FFI\_x86\_64

History Navigator

-- all --  
default abi  
types

1  
2  
3  
4  
5  
6  
7  
8

# 6 4 b i t s



- long way with many steps  
(Spur, UFFI, bindings, image code...)
- huge images, no need of 32-bit packages...
- standalone 64-bit VM and image
- conversion needed  
`Spur32to64BitBootstrap new bootstrapImage: 'Pharo.image'`
- some steps needed (Windows VM, Iceberg)

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# Epicea - Code Changes

- SlotTestsClassA class » classOne Today, 2:00 pm
- SlotTestsClassA » one Today, 2:00 pm
- + SlotTestsClassA Today, 2:00 pm
- + Package tag SlotTestsTmp Today, 2:00 pm
- ✗ Package tag SlotTestsTmp Today, 2:00 pm

- SlotTe
- SlotTe
- + SlotTe

- Browse Cmd + B
- Apply changes Cmd + P
- Revert changes Cmd + R
- Comment Cmd + C
- Filter
- File Out Cmd + I
- Inspect

- remove all filters
- done today
- done earlier
- done afterwards
- is change to this method
- is change to this package
- is class or trait change
- is code change

Select

"pro

classOne

^ 1

# *E p i c e a*

in Pharo: **EVERYTHING** is an object

method  $\neq$  method source code

class  $\neq$  class definition source code

**desynchronization?**

Smalltalk-80 solution:

- \*.changes file
- efficient
- powerfull but insufficient for modern needs

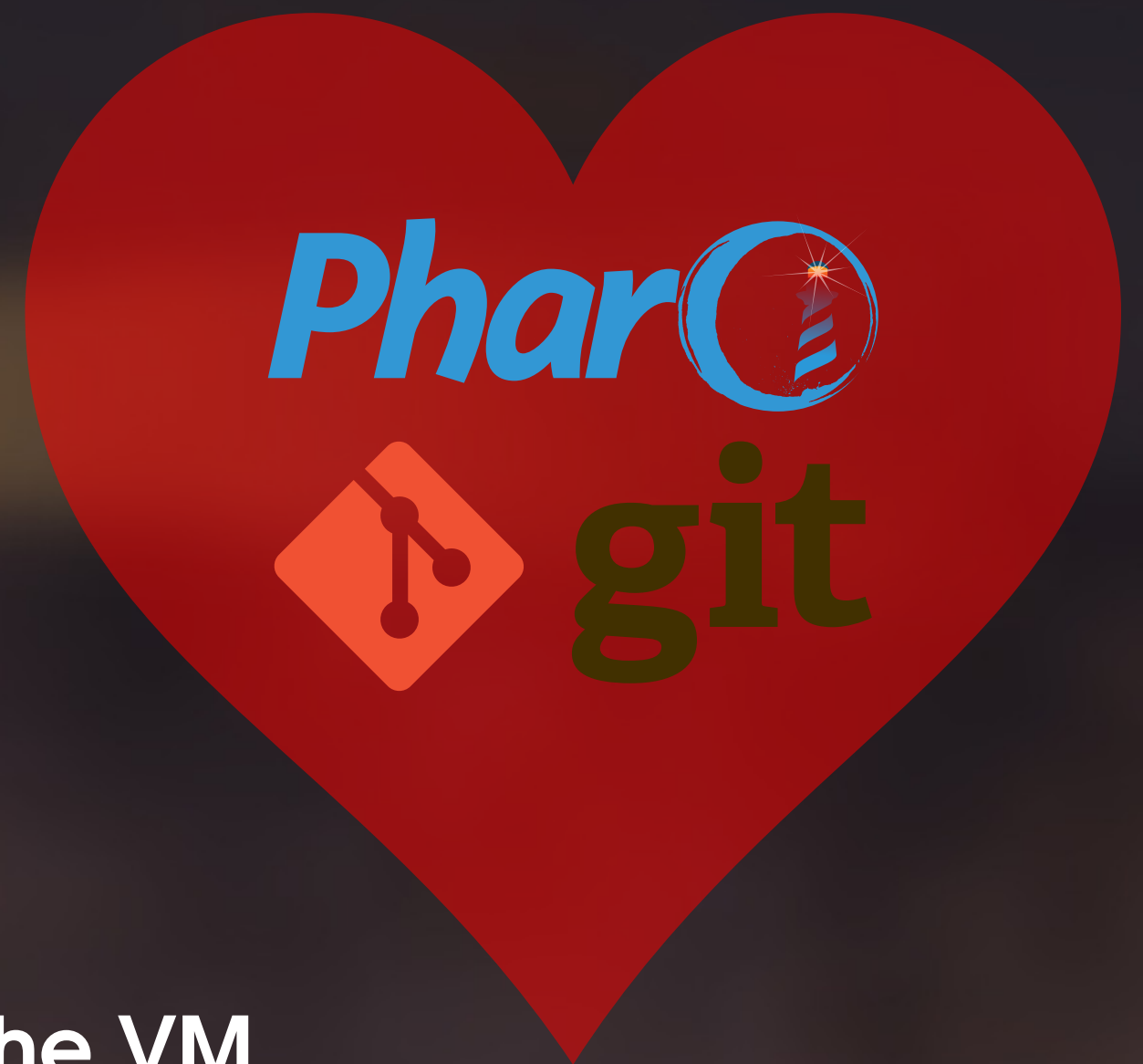
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# *E p i c e a*

- code changes management tool
- independent on source code model
- high level: aggregate changes  
refactorings, behavior copying,  
expression evaluation, IDE events...
- nice UI (filters, image evolution trees...)
- addition to \*.changes mechanism, future  
replacement



*G i t*



- libgit2 provided with the VM
- Iceberg

<https://github.com/pharo-vcs>

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commits  
private

Commitish  
▲ incomingCommits  
▲ incomingCommitsFrom:

# Iceberg repositories

⚙️ New repository + Clone repository

Add local repository

Current branch

Loaded version

master  
master

84042fa (12 April 2017)  
2a86f76 (19 April 2017)

Status  
Uncommitted changes  
Incoming

pharo-bindings

Packages

Remotes

Branches

Value

git@github.com:npasserini/iceberg.git

Iceberg/npasserini/iceberg



# *Iceberg*

- **Git repositories manager**
- **preview for Pharo 6 (default for Pharo 7)**
- **covers everyday tasks**
- **GitHub pull requests**
- **metadata-less FileTree format**

<https://github.com/pharo-vcs/iceberg>

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# *O p e n S m a l l t a l k*

- Pharo VM is now part of OpenSmalltalk initiative
- commonly managed VM for Pharo, Squeak, Cuis and Newspeak
- closer collaboration
- Git

<https://github.com/OpenSmalltalk/opensmalltalk-vm>

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# *B o o t s t r a p*

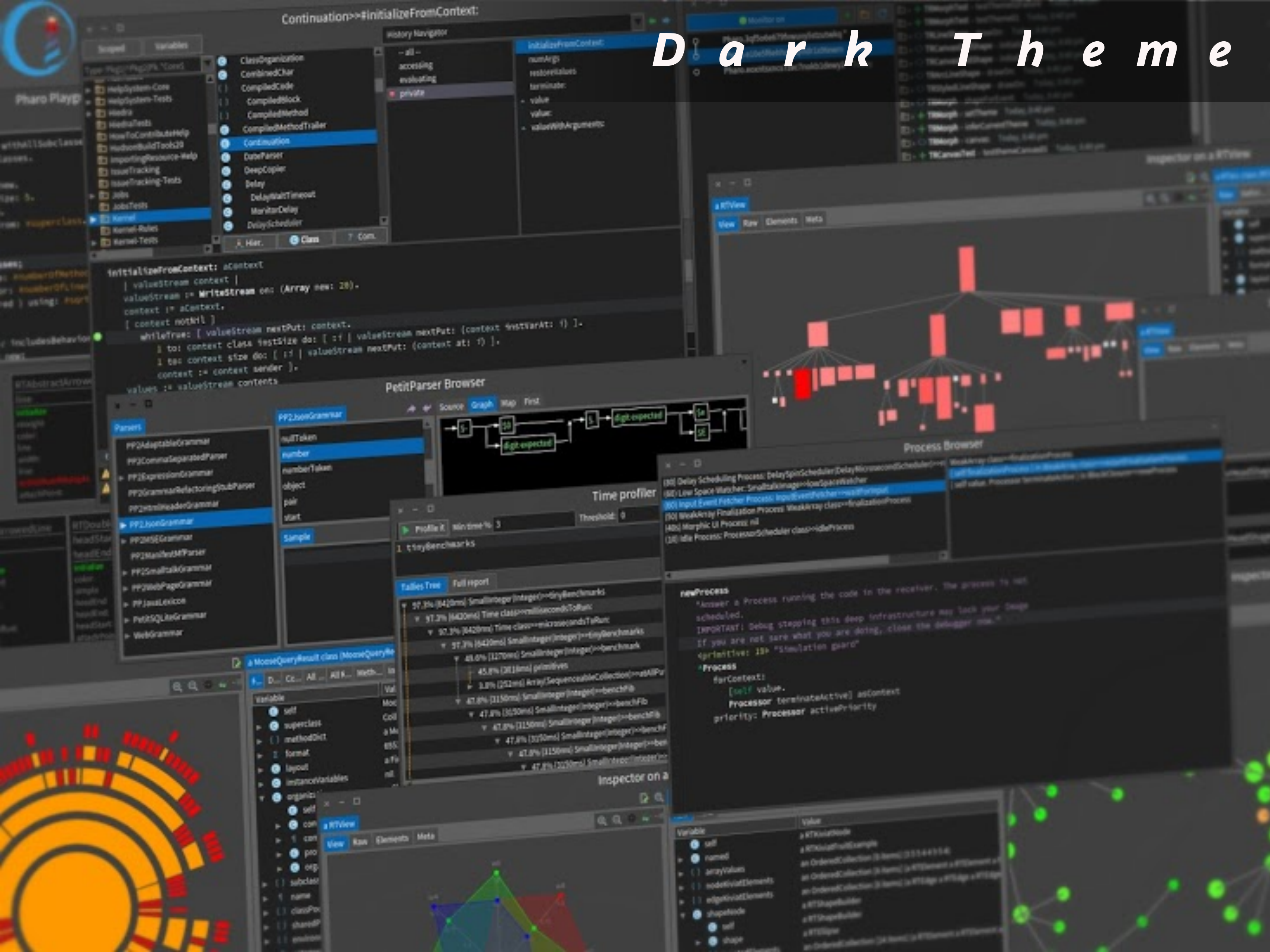
- image bootstrapping from source codes  
(after 40 years)
- alternative to image snapshots
- control what the image contains
- easier changes and experiments
- enforces modularity
- customizable images

# *B o o t s t r a p*

- special VM simulator
- bootstrap small kernel
- reload required packages  
compiler → Monticello → Metacello → baselines
- Pharo 6 released in non-bootstrapped form
- bootstrapping default for Pharo 7

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# Dark Theme



# *A d d o p t i o n*

**Easy!**

- stabilization of Pharo 5 codebase

**Two double quotes inside comments**

```
"This code prints ""I love Pharo!"" and saves the image"
```

**Important deprecations:**

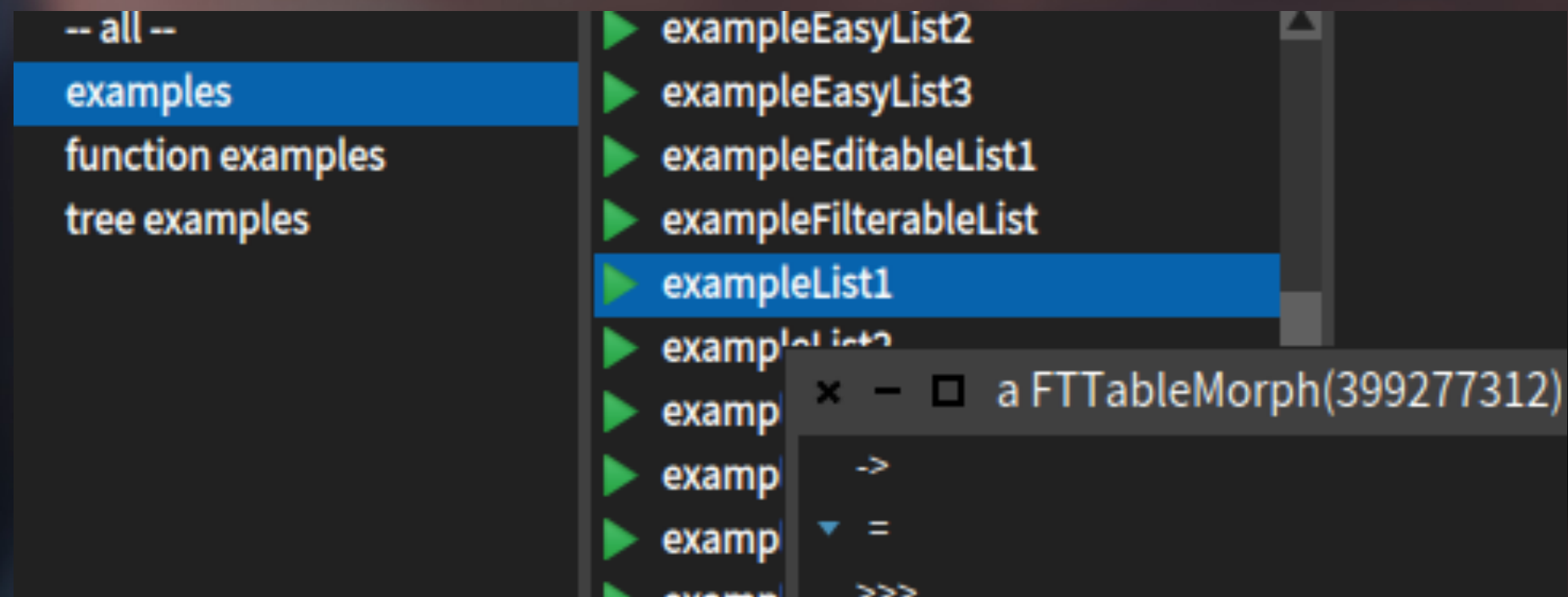
```
Object>>#name  
Object>>#ifNil:ifNotNilDo:  
Object>>#ifNotNilDo:  
Object>>#ifNotNilDo:ifNil:  
Collection>>#groupBy:having:  
Collection>>#ifEmpty:ifNotEmptyDo:  
Collection>>#ifNotEmptyDo:  
Collection>>#ifNotEmptyDo:ifEmpty:
```

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# I D E

- GTools faster (FastTable)
- improved debugger
- more responsive (Cmd+.), progress bars
- filtering in MessageBrowser
- improved QualityAssistant (new model)
- examples easier to execute  
pragmas <example>, <sampleInstance>
- small Nautilus improvements



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standalone Morphic worlds  
in separate windows

Playground

Page

OSWindowWorldMorph new open

Playground

- World
- System Browser      Ctrl + O + B
- Playground            Ctrl + O + W
- Test Runner            Ctrl + O + U
- Spotter                 Shift + Enter
- Monticello Browser    Ctrl + O + P
- Tools
- System
- Debugging
- Windows
- Help
- Save                    Ctrl + Shift + S
- Save as...
- Save and quit
- Quit

*OS Window*

## *O t h e r*

- working directory structure (pharo-local)
- Reflectivity and Metalinks improvements
- memory leaks fixes
- better autocategorisation of methods
- FuzzyMatcher
- better UUIDs generation
- improved newAnonymousSubclass
- inheritable process specific variables
- RecursionStopper
- more documentation
- UI elements improvements
- ...etc...

# *Pharo 6*

*T h a n k y o u*

