



<http://www.pharo-project.org>

Pharo in a nutshell

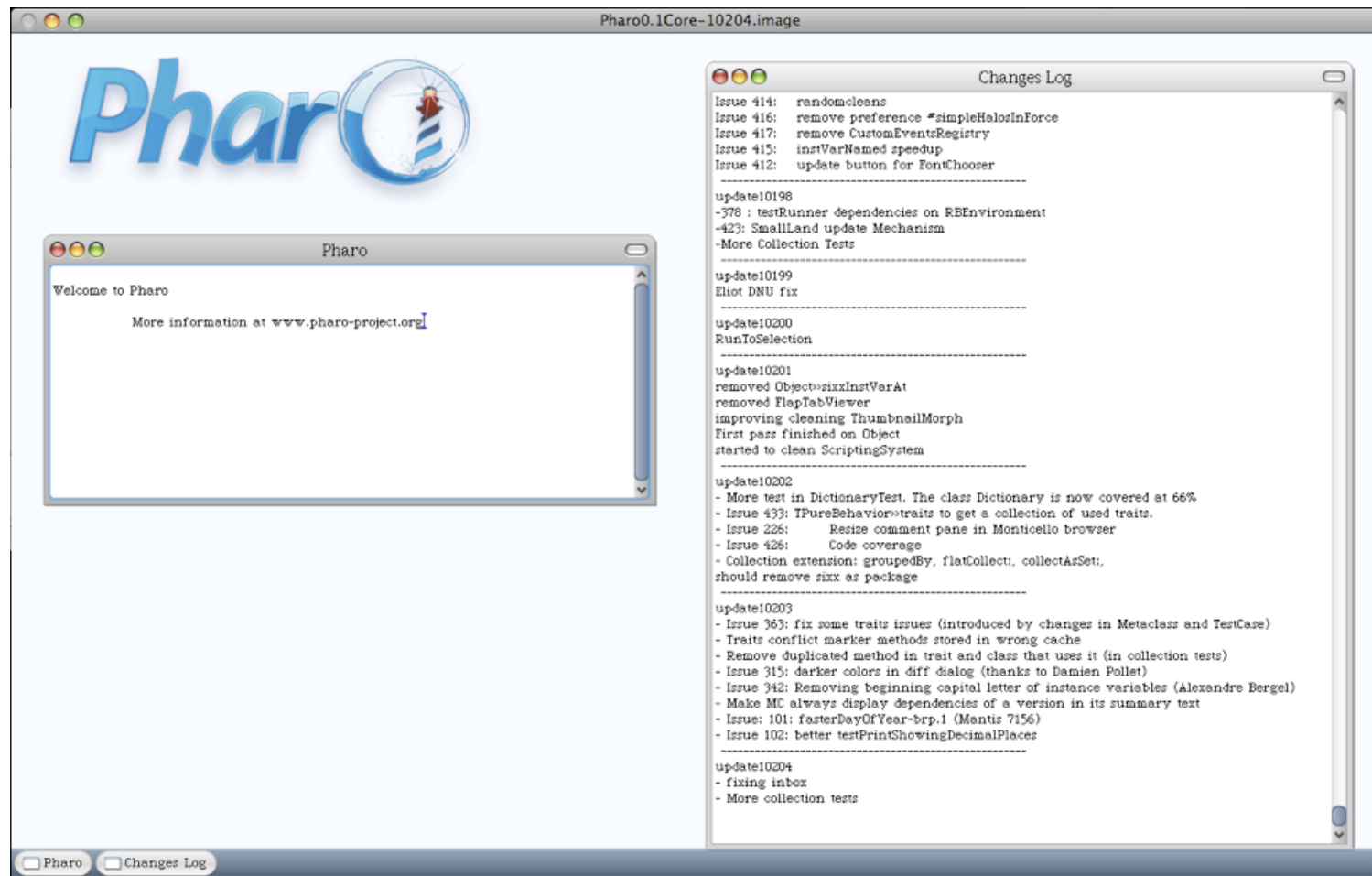
- *Pharo = language + IDE + update mechanism*
- Pure object-oriented programming language
- Dynamically typed and trait-based
- Open and flexible environment (OB, Polymorph, Scripting)
- Using as executing platform for Seaside and Aida/Web web frameworks

Getting started with Pharo

Everything is an object

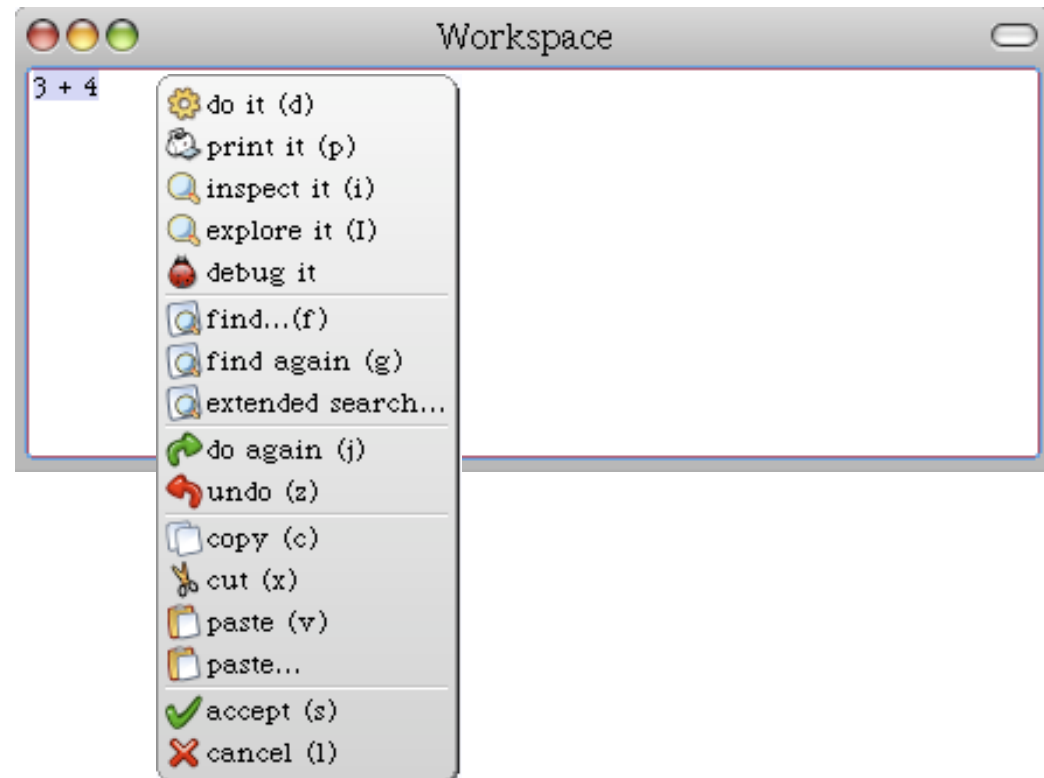
Everything happens by sending messages to
objects

Running Pharo

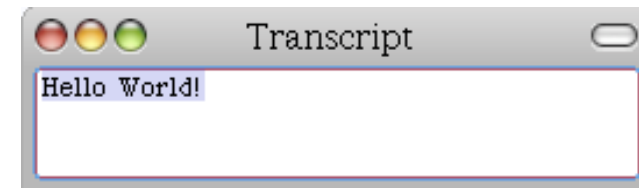
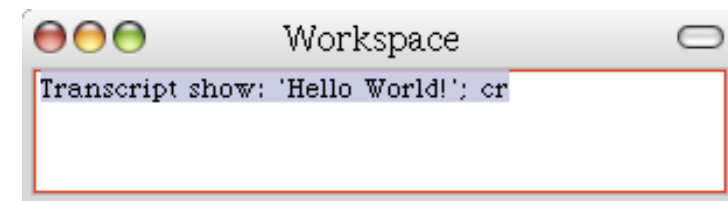
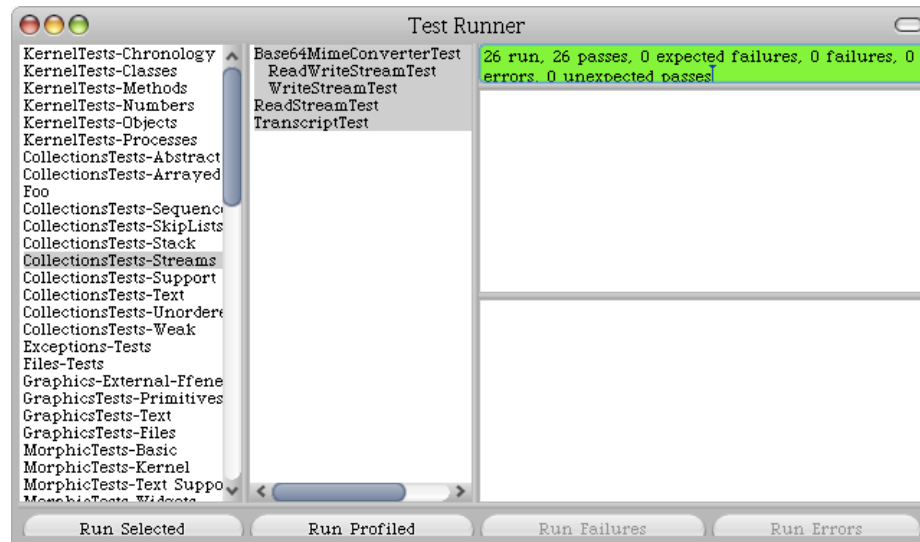
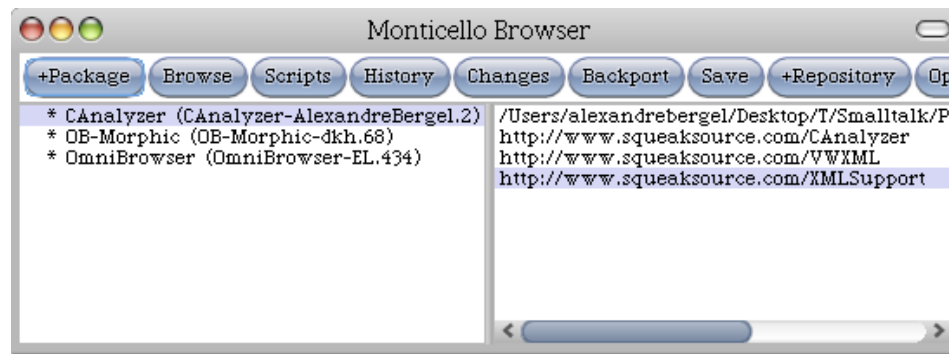


Do it, print it

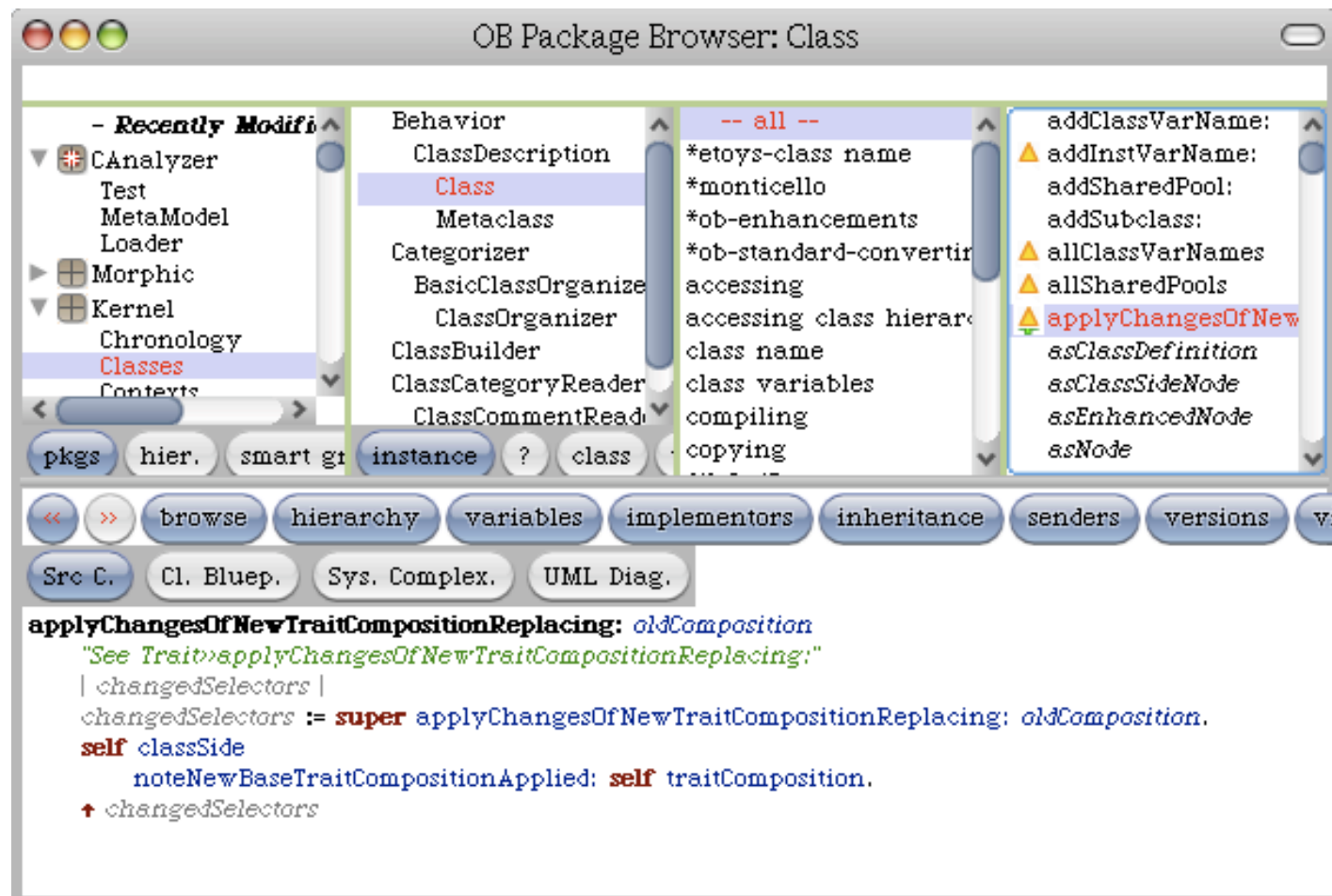
You can evaluate
any expression
anywhere
in Pharo



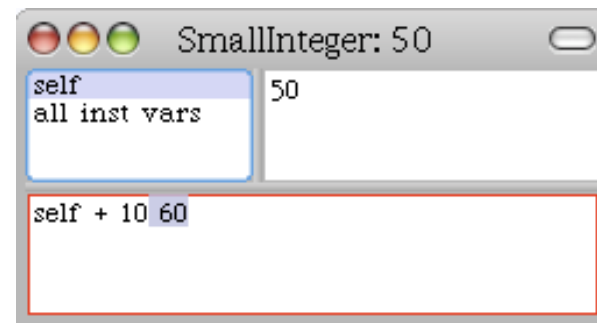
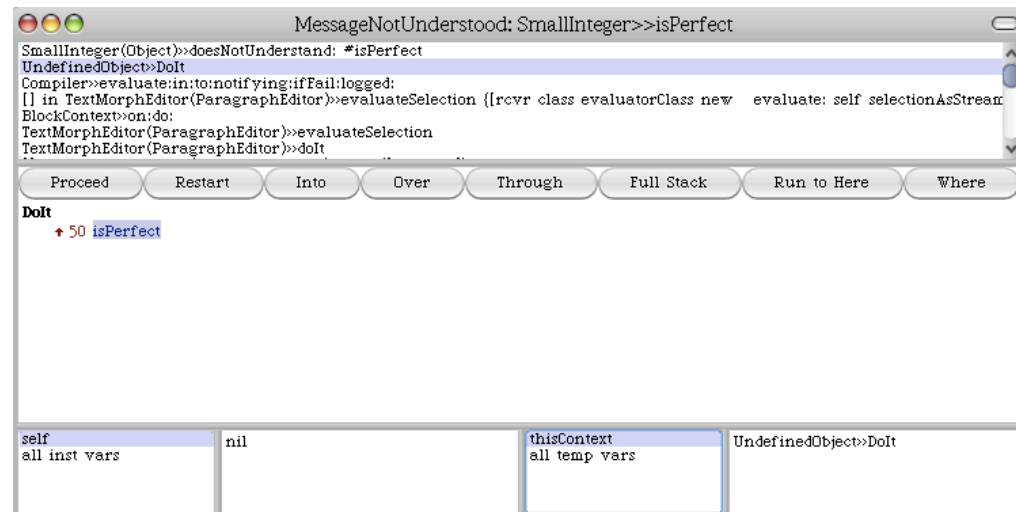
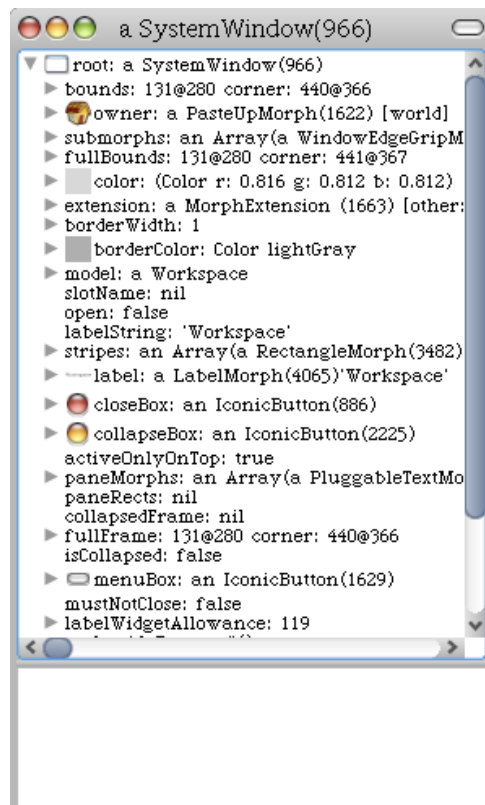
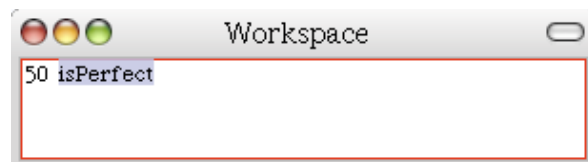
Standard development tools



Standard development tools



Debugger, explorer, inspector



Syntax in a nutshell

3 kinds of messages

Unary messages

```
5 factorial  
Transcript cr
```

Binary messages

```
3 + 4
```

Keywords messages

```
3 raisedTo: 10 modulo: 5  
  
Transcript show: 'hello world'
```

A typical method in Point

Method name Argument Comment

```
<= aPoint  
  "Answer whether the receiver is neither  
  below nor to the right of aPoint."  
  
^ x <= aPoint x and: [y <= aPoint y]
```

Return Instance variable Binary message Keyword message Block

```
(2@3) <= (5@6)
```

```
true
```

Statement and cascades

Temporary variables

Statement

```
| p pen |  
p := 100@100.  
pen := Pen new.  
pen up.  
pen goto: p; down; goto: p+p
```

Cascade

Control structures

Every control structure is realized by message sends

```
4 timesRepeat: [Beeper beep]
```

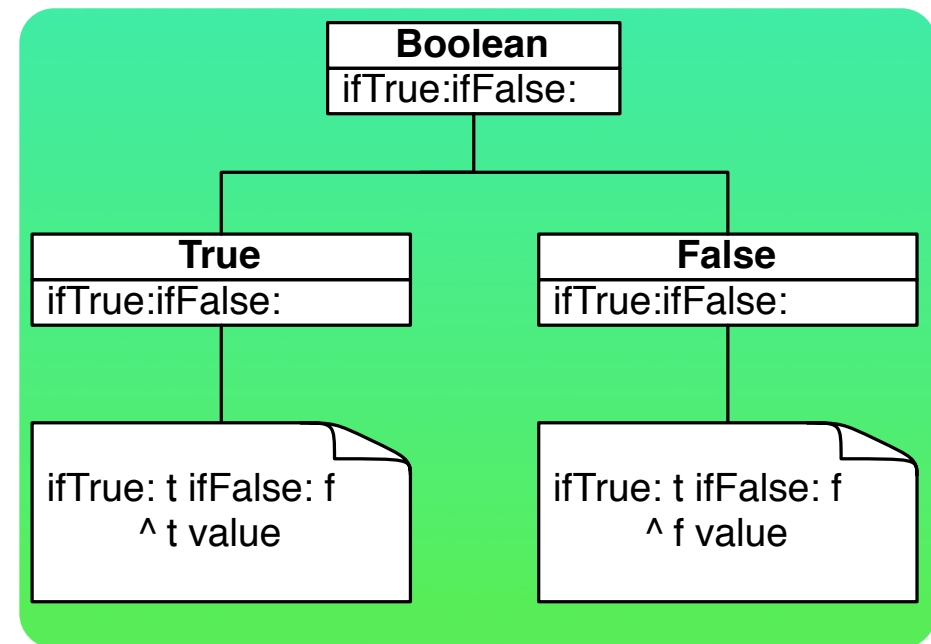
```
max: aNumber  
  ^ self < aNumber  
    ifTrue: [aNumber]  
    ifFalse: [self]
```

Control structures

Every control structure is realized by message sends

```
4 timesRepeat: [Beeper beep]
```

```
max: aNumber  
  ^ self < aNumber  
  ifTrue: [aNumber]  
  ifFalse: [self]
```



Creating classes

Send a message to a class (!)

```
Number subclass: #Complex
  instanceVariableNames: 'real imaginary'
  classVariableNames: ''
  poolDictionaries: ''
  category: 'ComplexNumbers'
```

Be involved! Join Pharo

- Strong community
- Goal: learning and having fun
- We need forces on several topics: graphics programming, compilation, virtual machines

Links

- Webpage: <http://www.pharo-project.org>
- Download: <http://www.pharo-project.org/download>
- Mailing list: http://gforge.inria.fr/mail/?group_id=1299

Exercise for today and Thursday 9, Aug, 2012

- Take Pharo by example (available on u-cursos)
- Read chapter 2, 3, 4
- Show me your light outs game!



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