



The Art of code:Pharo

Immersive OOP system



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01

OOP, what is it?



4 basic concepts

Apstraction

Hides complex implementation details, exposing only essentials

Encapsulation

Bundles data and methods into a class, restricting direct access

Polymorphism

Enables a single action to be performed in different ways

Inheritance

Allows a class to inherit properties and methods from another class, promoting code reuse

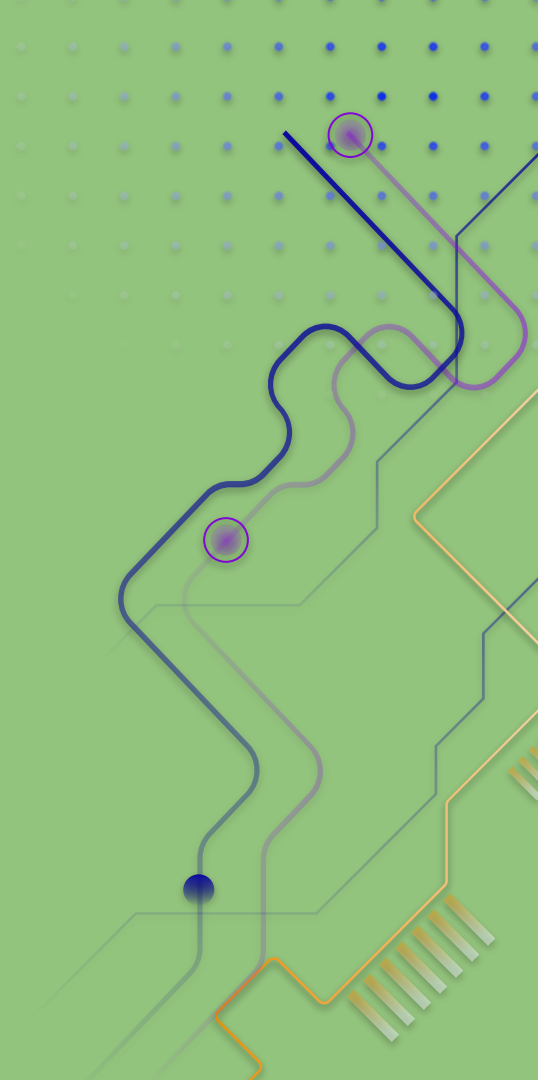


**Make a rock-paper-scissors game,
conditionals are forbidden!**



02

Pharo intro



Pharo

- **Pure object language + IDE**
- **Inspired by SmallTalk**
- **Powerful and fun to program with**
- **Works on Mac OSX, Windows, Linux, Pi, Android**

Pharo syntax: on a postcard





method name
exampleWithNumber: x

pragma
<syntaxOn: #postcard>
comment
"A ""complete"" Pharo syntax"
local variable
| y |
boolean literals
true & false not & (nil isNil)
binary message
nil literal
unary message
block
keyword message
self perform: #add: with: x].
assignment
pseudo variables
y := thisContext stack size + super size.
instance variable
integer literals
byte array
byteArray := #[2 2r100 8r20 16rFF].
array generated at runtime
literal array
{ -42 . #(\$a #a #'I'm' 'a' 1.0 1.23e2 3.14s2 1) }
local block variable
block parameter
| var |
symbol
character
string
floating point
scaled decimal
global variable
var := Transcript
show: each class name;
show: each printString].
keyword message
x < y
return instruction

other method definition examples:
unary
+ binaryMessageArgument
keyword: arg
keyword: arg1 withTwo: arg2

PLACE
STAMP
HERE

<https://www.pharo.org>

Full model

- **Dynamically typed**
- **Everything is an instance of a class**
- **All methods are public**
- **All attributes are protected**
- **Single inheritance**



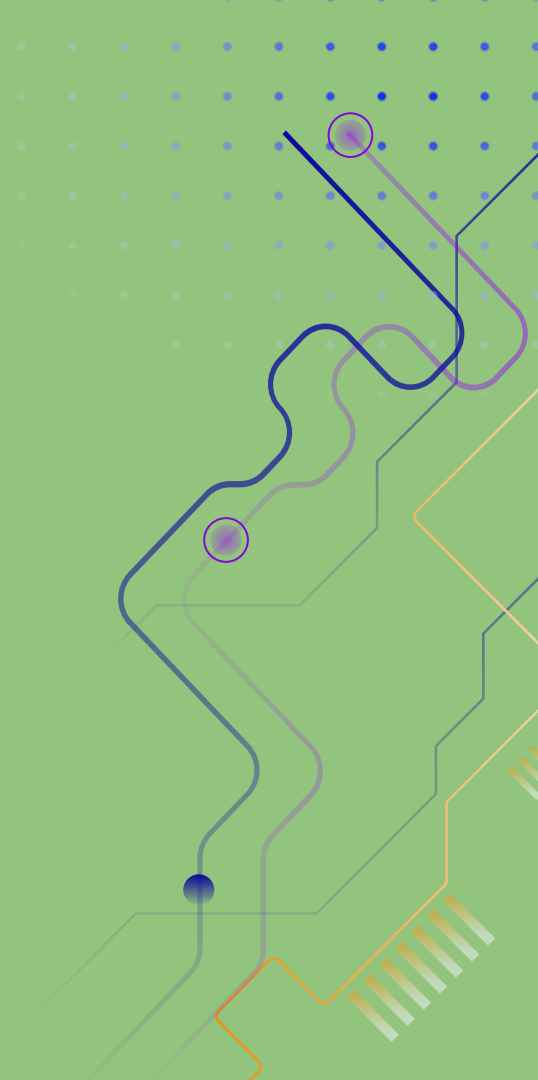
Fully written in itself





03

Immersive



Why is it immersive?

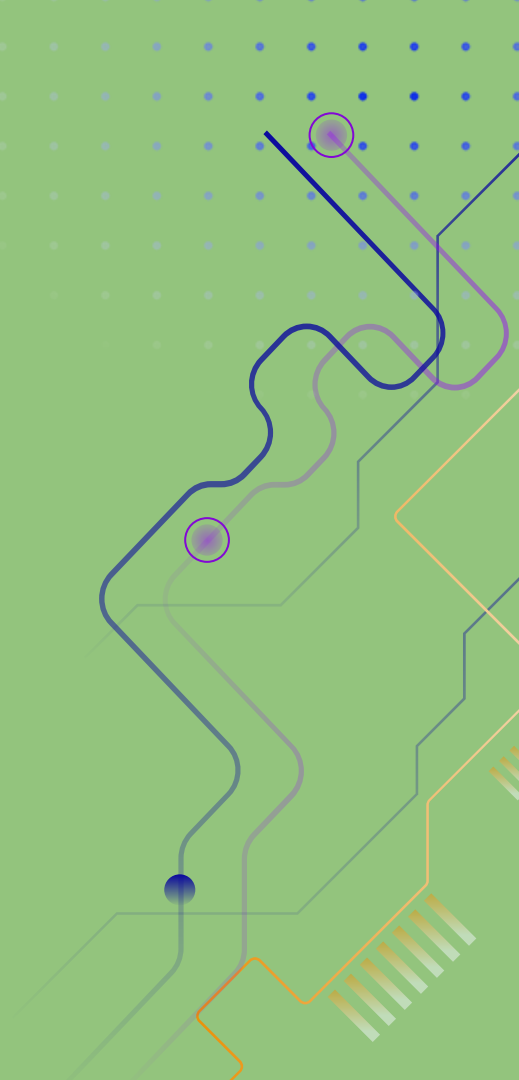
- **Not a blackbox**
- **Fully inspectable and reflective**
- **You can get immersed into the objects**
- **Fish tank metaphore**

Video: [link to video](#)



04

What after?



Books



By Example

Basic concepts



Deep Into Pharo

More complex concepts



Enterprise

Web applications, servers



Numerical methods

Data mining, clustering, analysis...



Testing

Writing tests



Others

Other resources and courses



Pharo Mooc

First released



Advanced Mooc

Released few days ago



Discord

More than 1k participants



Thanks!

Do you have any questions?