



Noury Bouraqadi & Dave Mason

<http://pharojs.org>



Talking to



with



**Phar**

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**More**



**Ruled by**



*<http://car.mines-douai.fr>*



# Phar@JS





Noury Bouraqadi & Dave Mason

<http://pharojs.org>

Smalltalk  
All the Time  
& Everywhere

# Smalltalk All the Time?

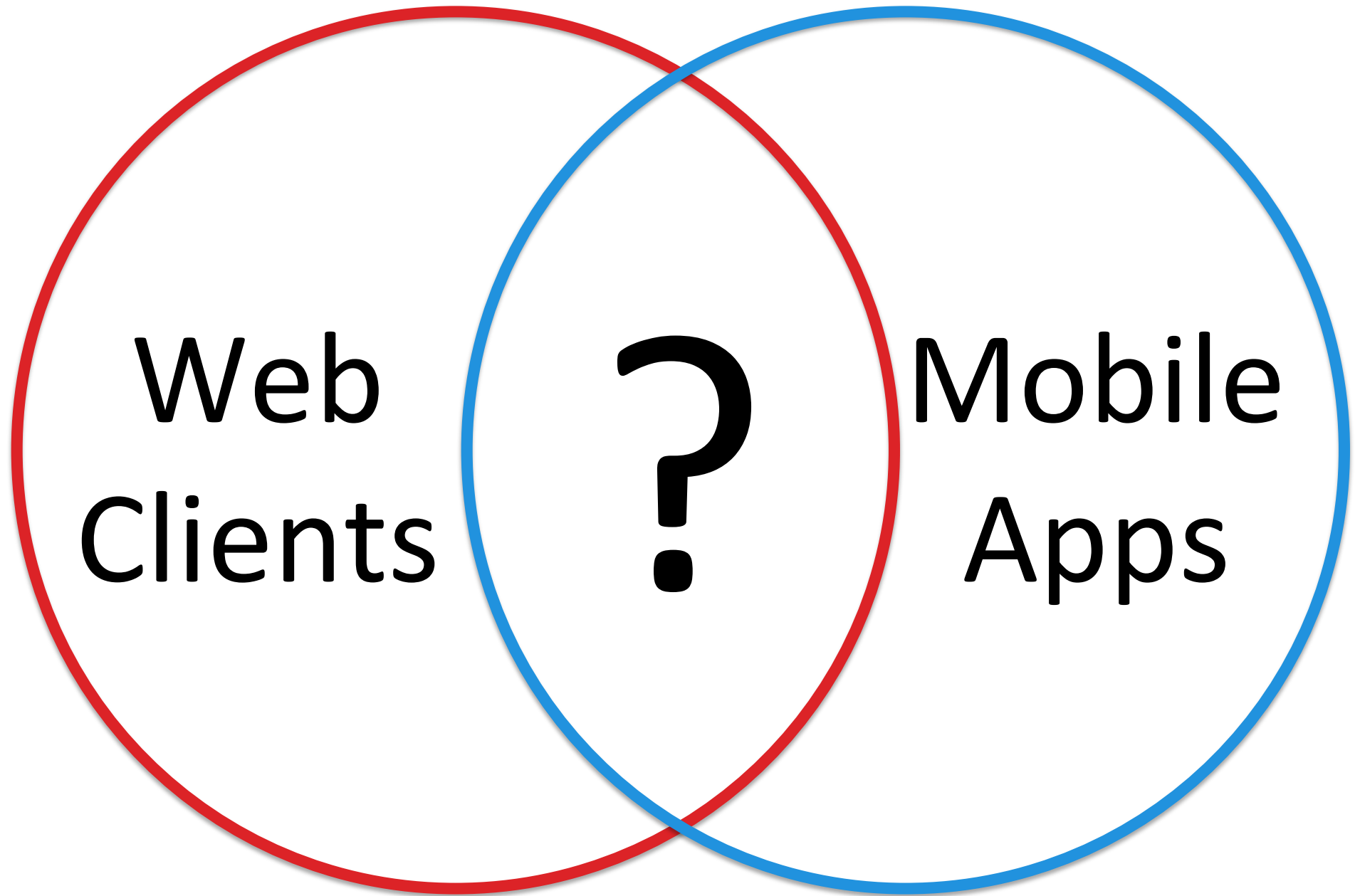
**Offline**

**Web Clients**



# Smalltalk Everywhere?

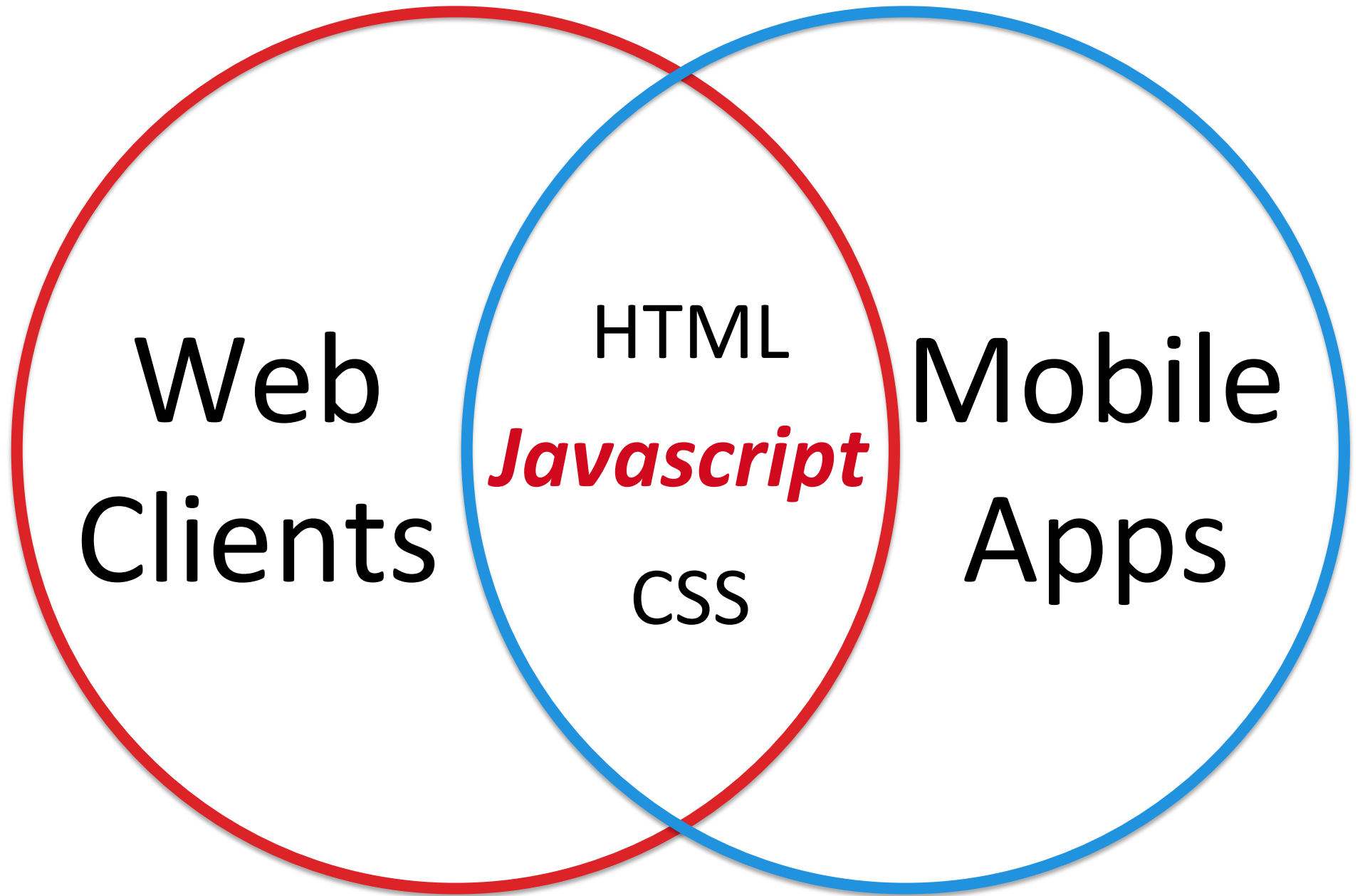
## Mobile Apps



Web  
Clients

?

Mobile  
Apps



Web  
Clients

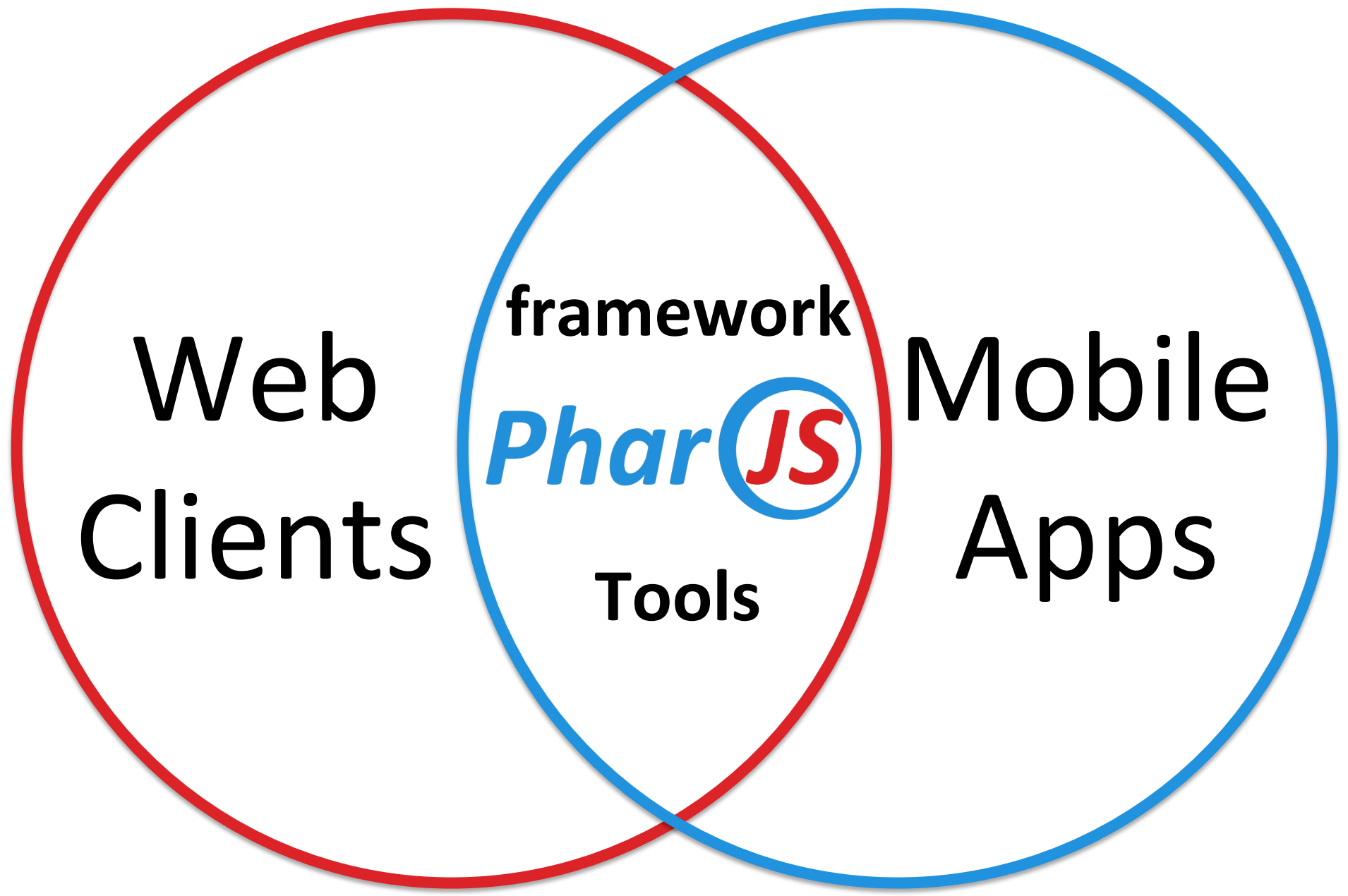
HTML  
*Javascript*  
CSS

Mobile  
Apps

Web  
Clients

*Phar* JS

Mobile  
Apps



Web  
Clients

framework  
*Phar*JS  
Tools

Mobile  
Apps

# Lifecycle with *Phar*

*100%*

*Pharo*

*0%*

Development

Production

*0%*

*Javascript*

*100%*



# Lifecycle with *Phar* JS

**100%**

**Pharo**

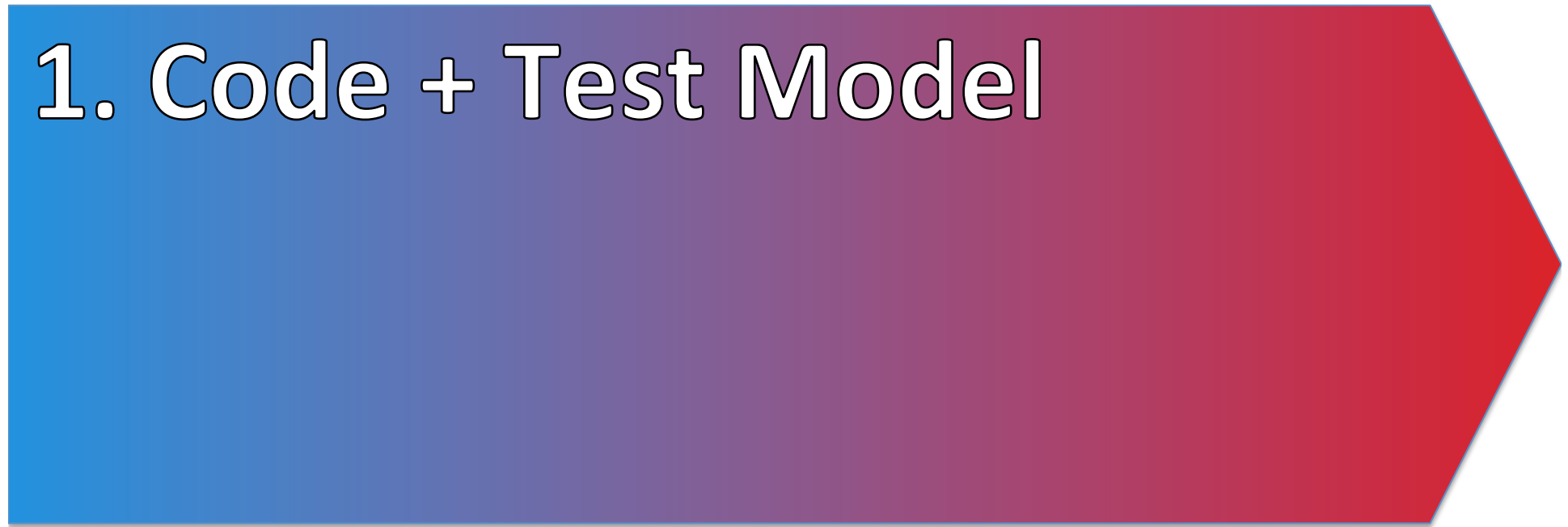
**0%**

**1. Code + Test Model**

**0%**

**Javascript**

**100%**



# Lifecycle with *Phar*JS

**100%**

**Pharo**

**0%**

1. Code + Test Model

2. Code + Test Integration

**0%**

**Javascript**

**100%**



# Lifecycle with *Phar*JS

**100%**

**Pharo**

**0%**

1. Code + Test Model
2. Code + Test Integration
3. Test Portability

**0%**

**Javascript**

**100%**

# Lifecycle with *Phar*JS

**100%**

**Pharo**

**0%**

1. Code + Test Model
2. Code + Test Integration
3. Test Portability
4. Export for Production

**0%**

**Javascript**

**100%**

# 1. Code + Test Model

## 100% Pharo

The screenshot displays the Pharo IDE interface. The main window is titled "PjCounter>>#increment". On the left, a browser shows the project structure with "PharoJsEsug201" expanded to "Counter-Model". The central pane shows the source code for the `increment` method:

```
increment
self count: self count + 1
```

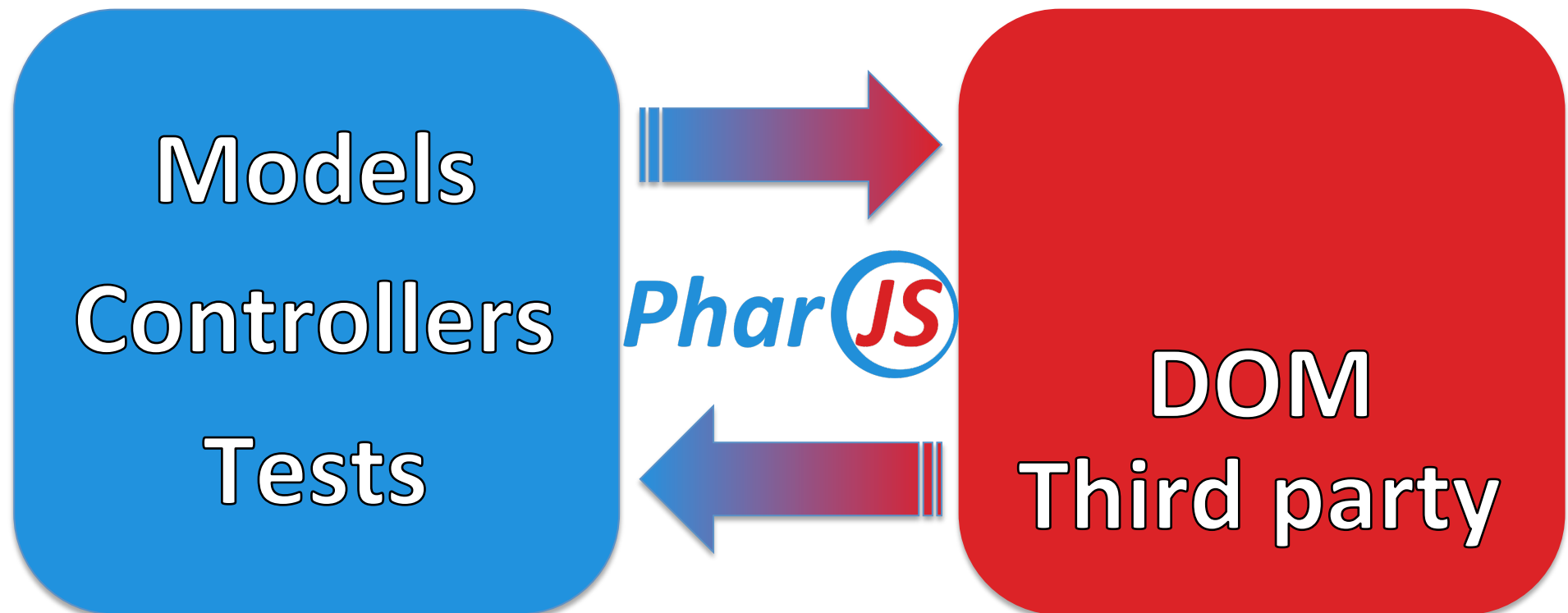
On the right, a "Test Runner" window is open, showing the results of running tests for `PjCounterTest`. The results are displayed in a green box:

```
3 run, 3 passes, 0 skipped, 0
expected failures, 0 failures, 0
errors, 0 unexpected passes
```

At the bottom of the Test Runner window, there are buttons for "Run Selected", "Run Profiled", "Run Coverage", "Run Failures", and "Run Errors".

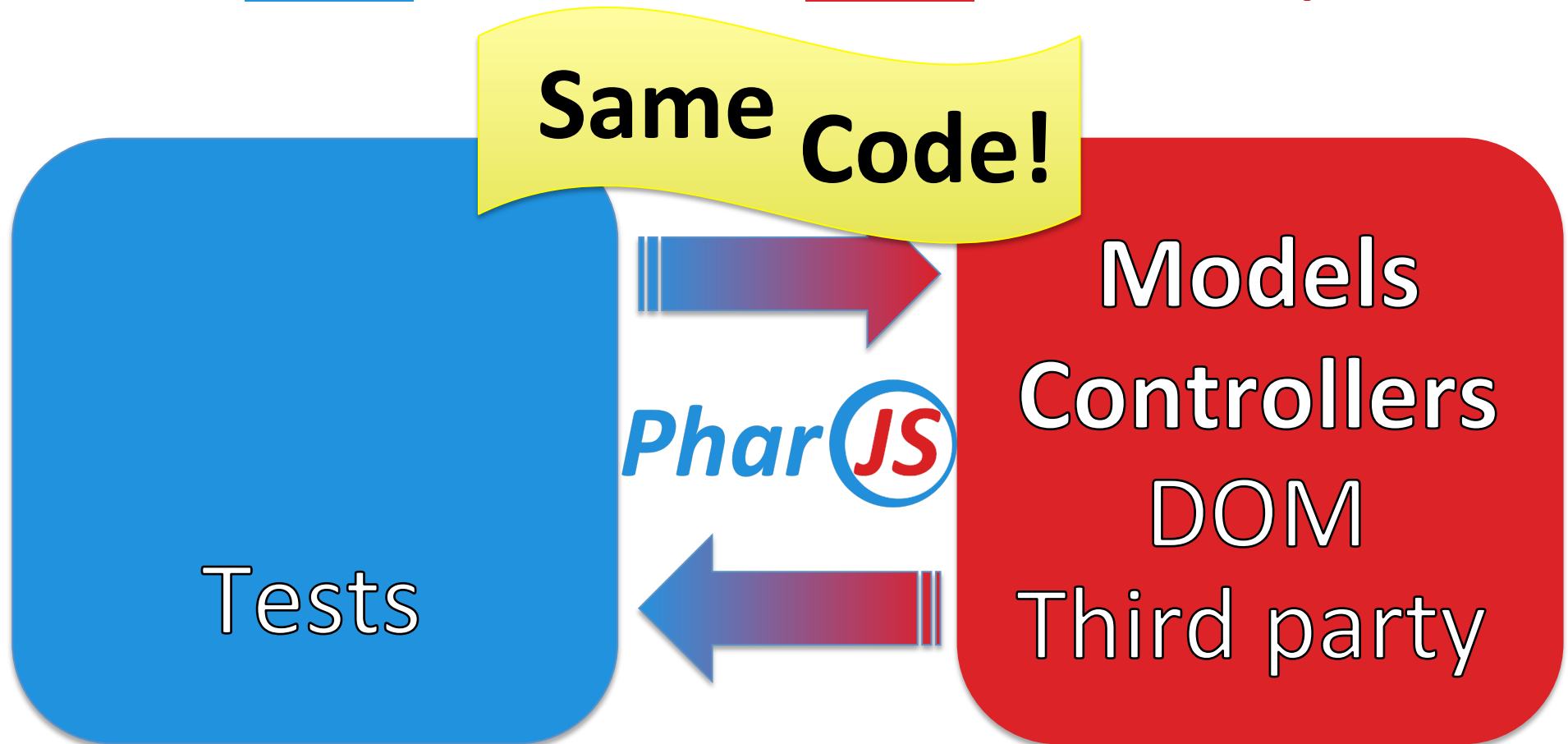
## 2. Code + Test Integration

~80% Pharo + ~20% Javascript



### 3. Test Portability

~20% Pharo + ~80% Javascript



### 3. Test Portability

~20% Pharo + ~20% JavaScript

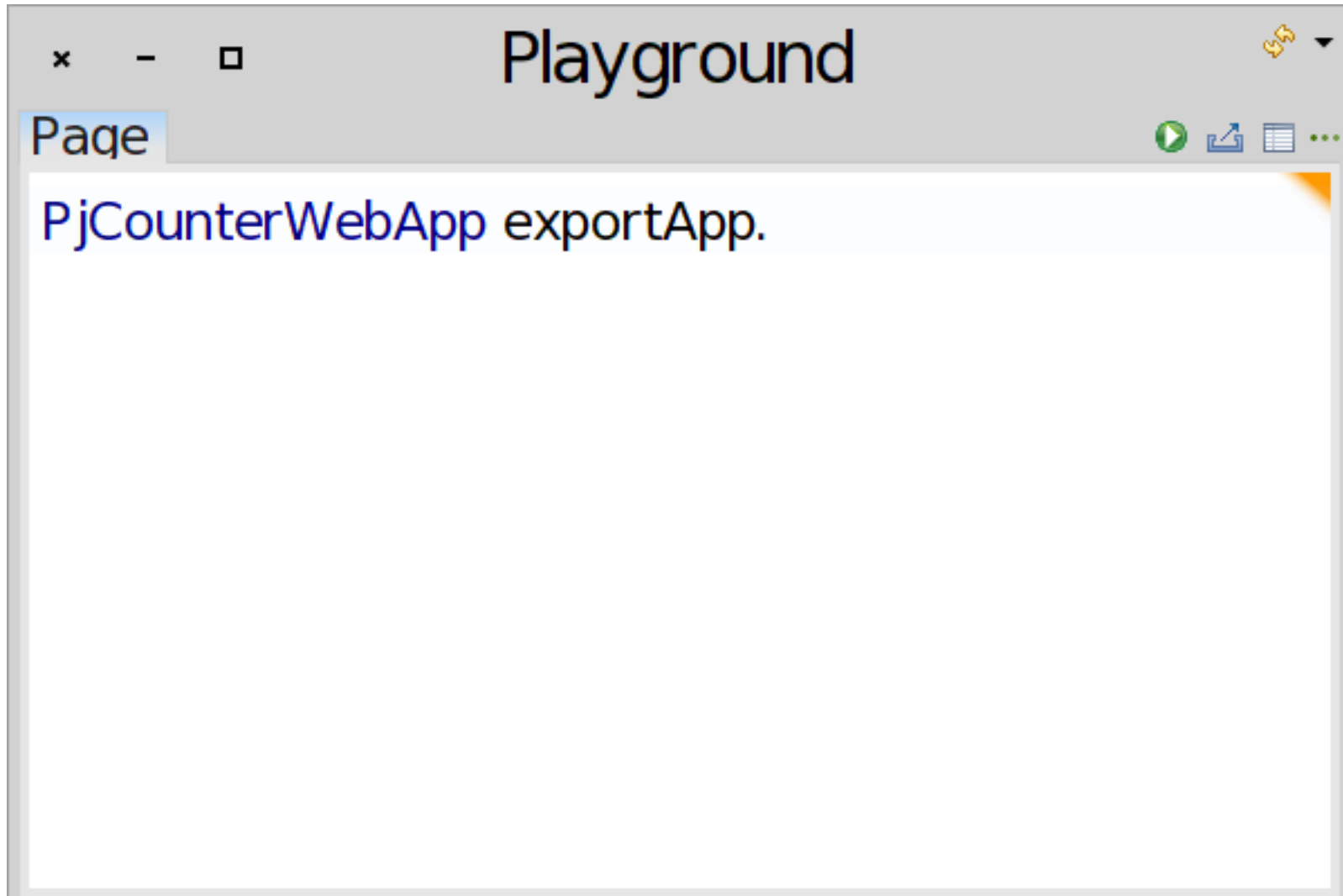
**Tomorrow  
IWST Talk  
PharJS  
Proxies**

Tests

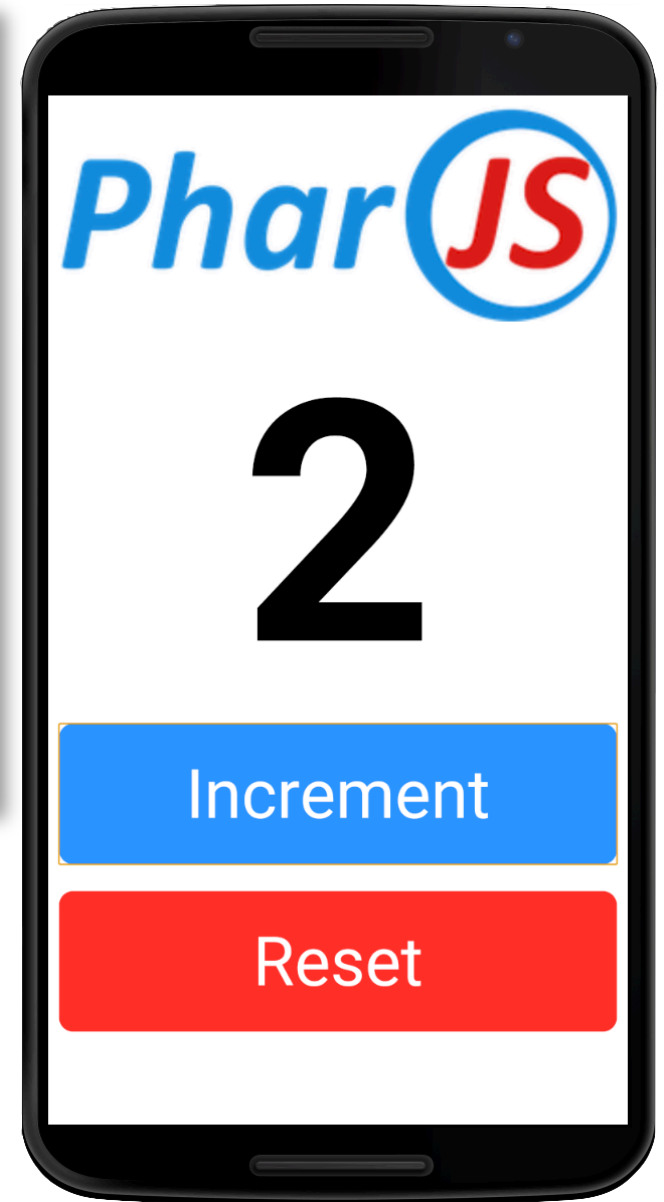
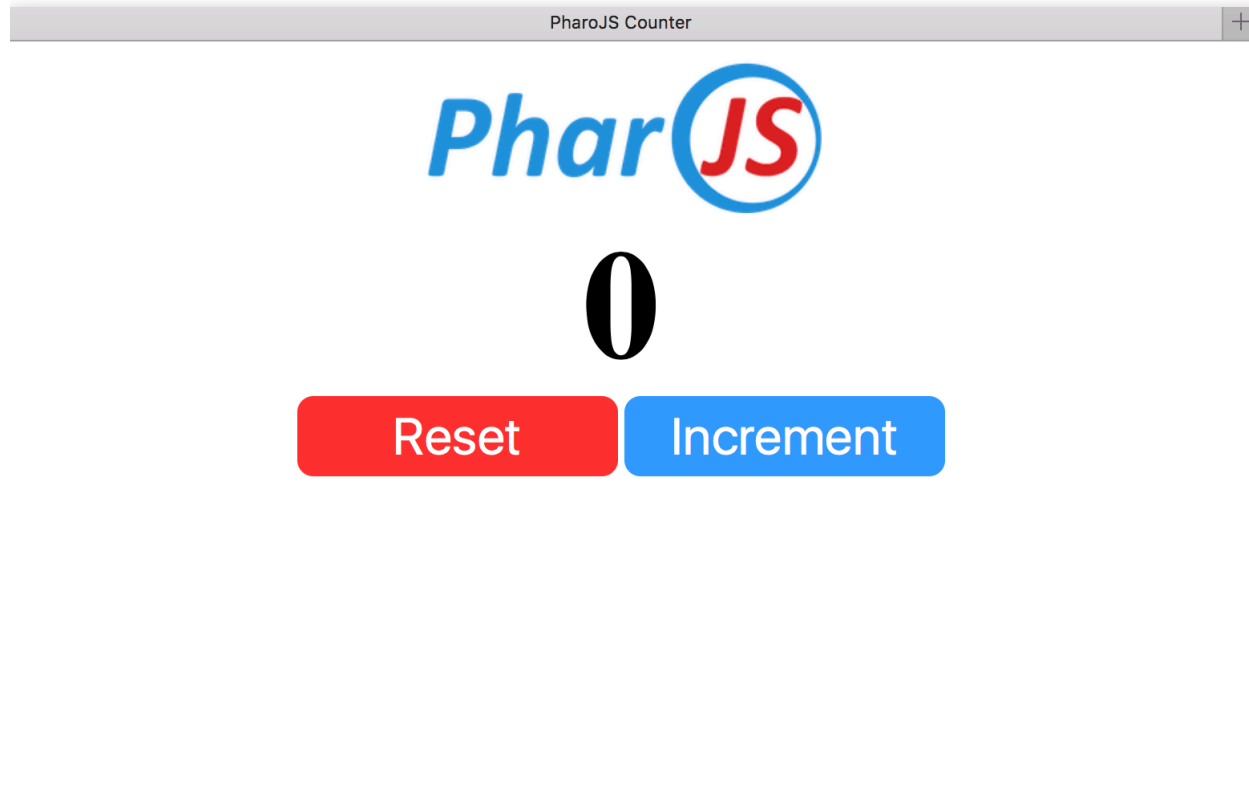
third party

# 4. Export for Production

## **100% Javascript**

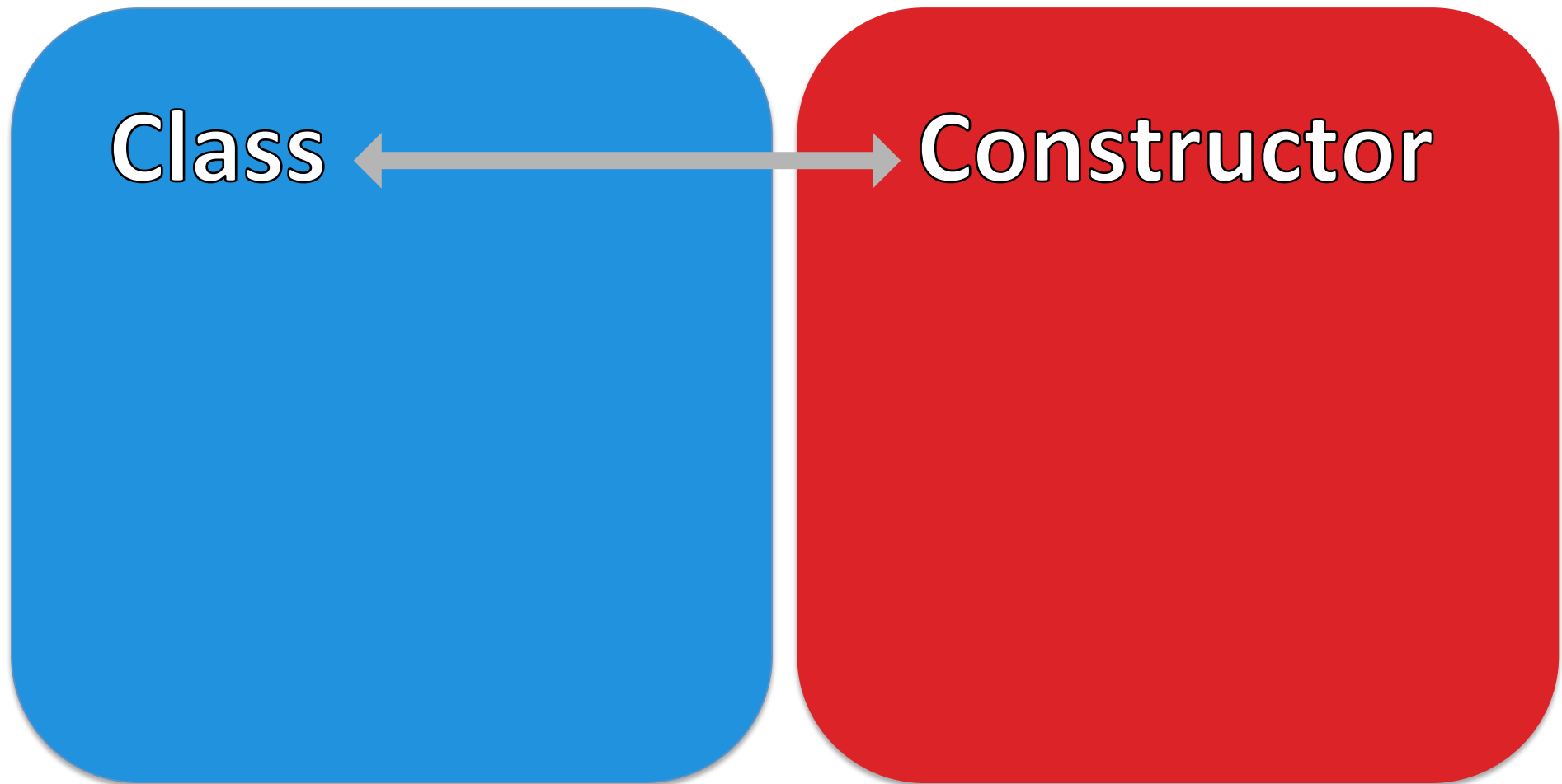


# Demo

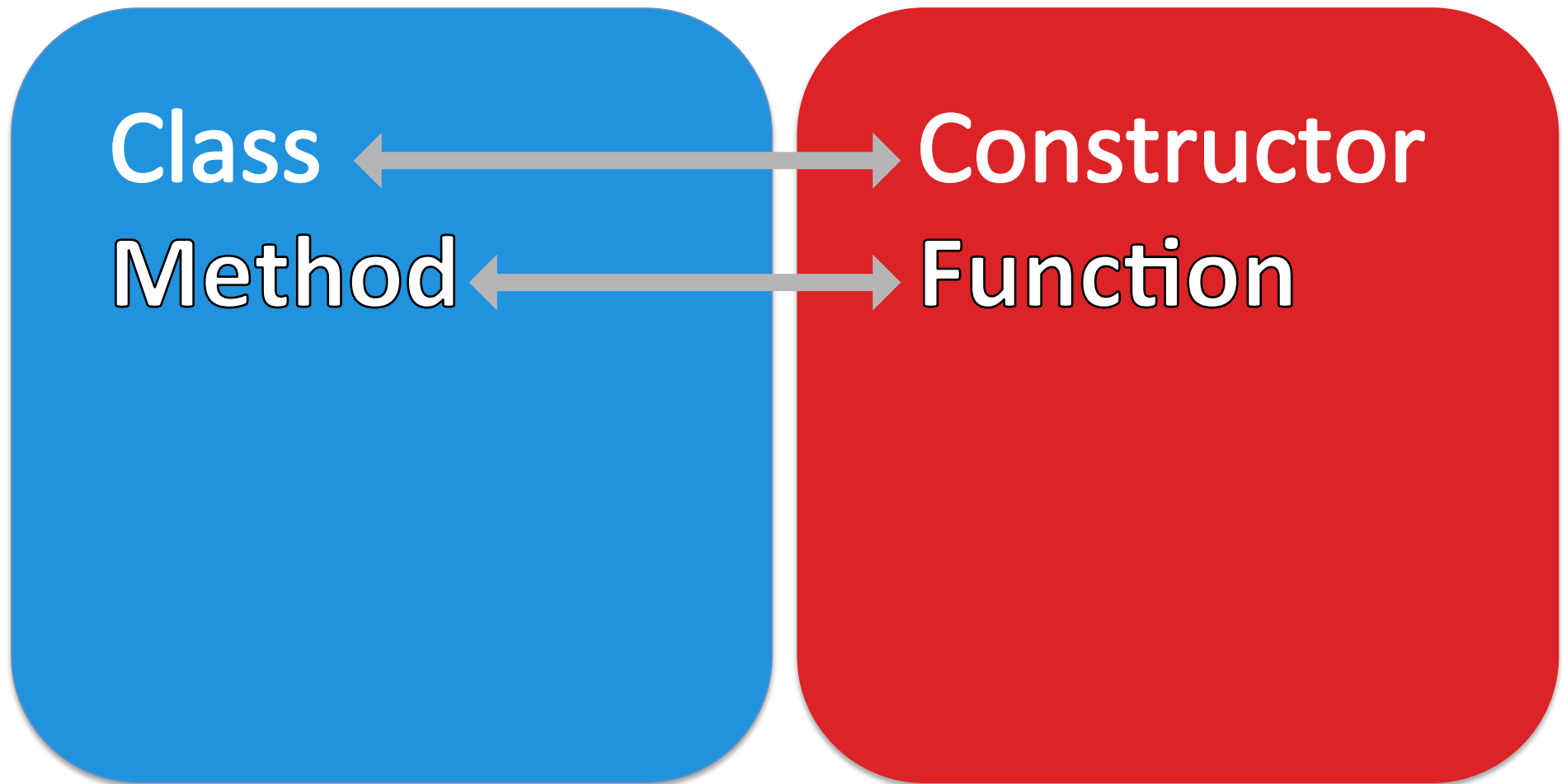




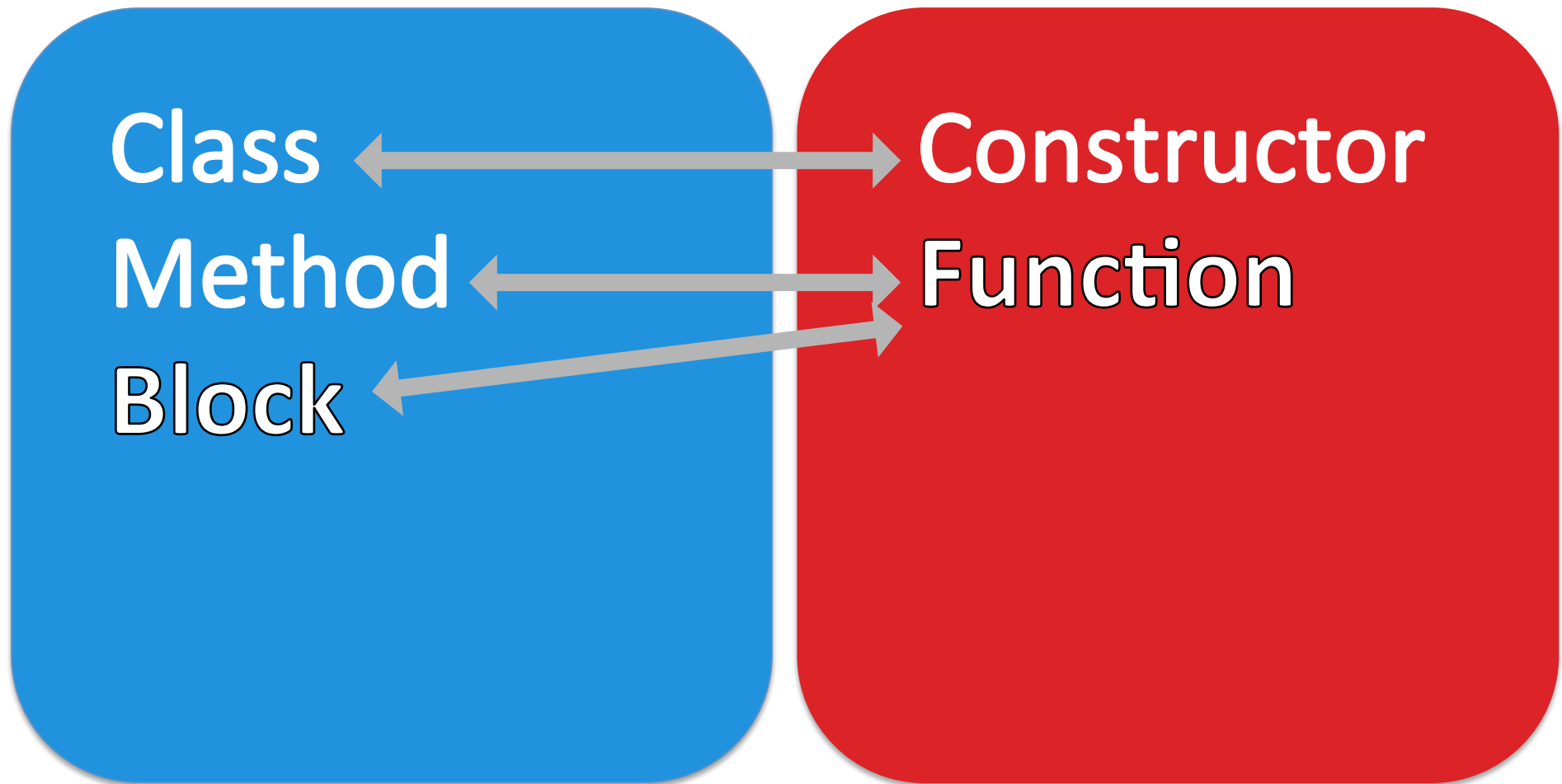
# Mapping Pharo to Javascript



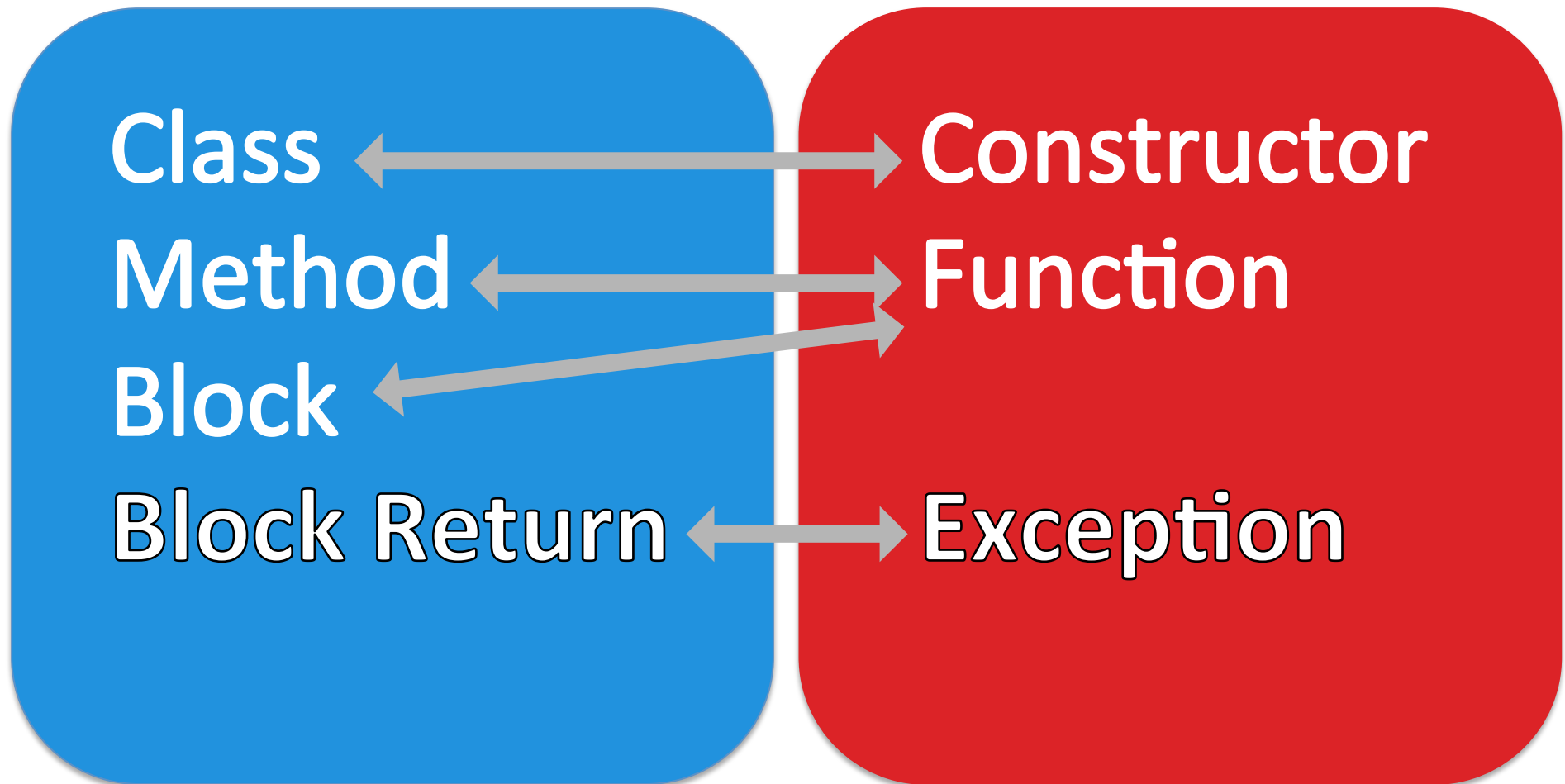
# Mapping Pharo to Javascript



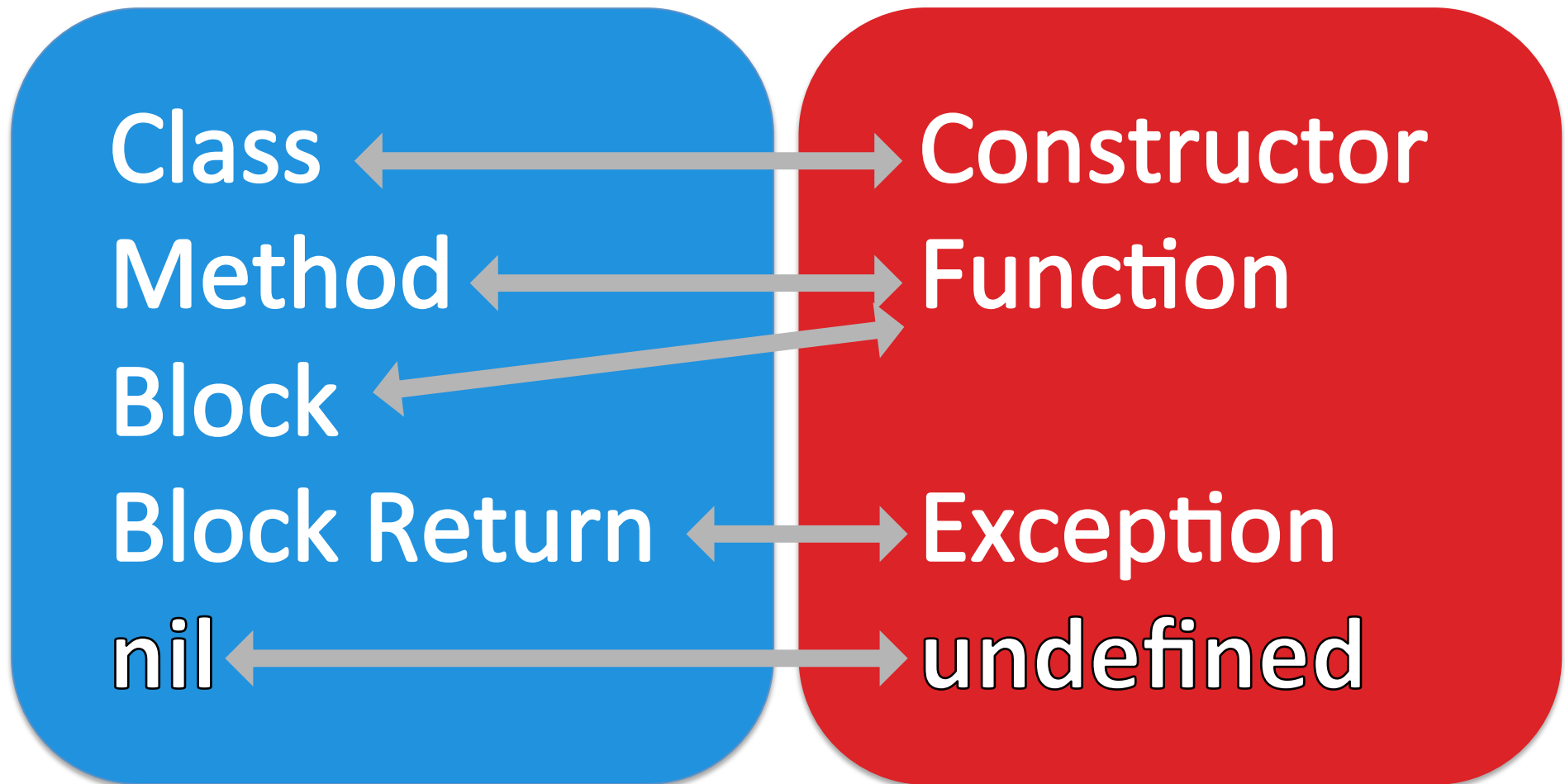
# Mapping Pharo to Javascript



# Mapping Pharo to Javascript



# Mapping Pharo to Javascript



# Support JS Integration

- Class extensions
  - e.g. for constructors `Object()`, `Function()`, `Number()`...
- Class placeholders
  - e.g. for Dictionary
- Alternative JS code for methods
  - Typically for primitives e.g. `basicNew`
- Special messages
  - Read/Write JS Slot access
  - Call JS native methods

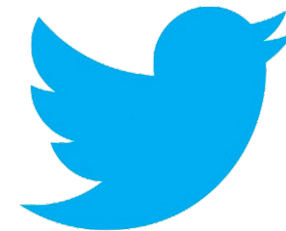
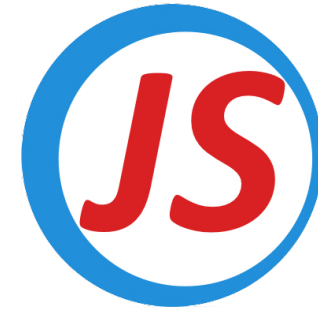
# What Next?

- Migrate to Pharo 5 (Ongoing)
- Coverage for Core Pharo Libraries
- Improve Tools
  - Code Extraction
  - Debugging
  - Generate HTML



# Learn more about PharoJS

- Web: <http://pharojs.org>
  - Thanks ESUG for the support
- Slack: <https://pharojs.slack.com/>
  - Discussions
- Twitter: <https://twitter.com/pharojs>
  - News
  - Subscription to PharoJS Slack







**Develop in Pharo, Run on Javascript**

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