Learning Object-Oriented
Programming and Design with TDD

A Simple HTTP Server

As a pretext to revisit Pharo Syntax

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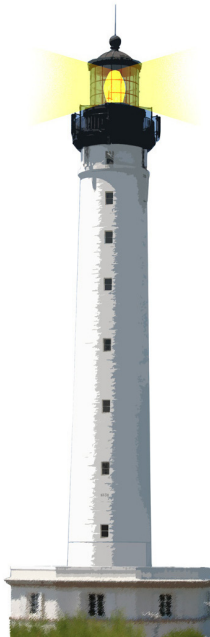
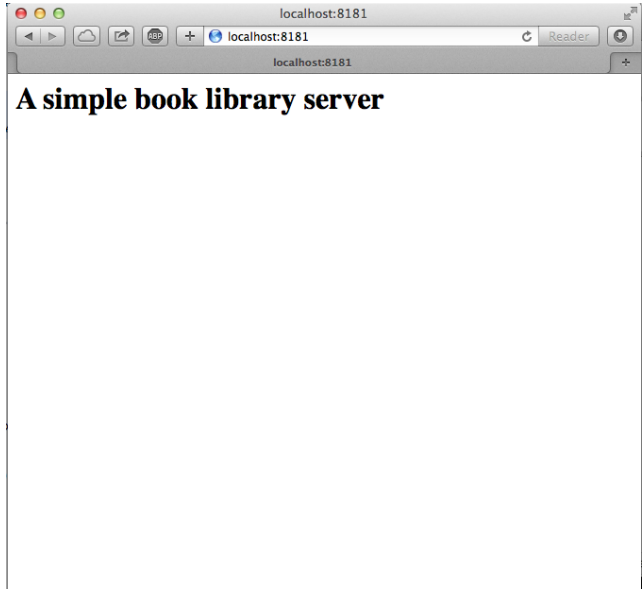


Pharo
http://www.pharo.org

W3S04

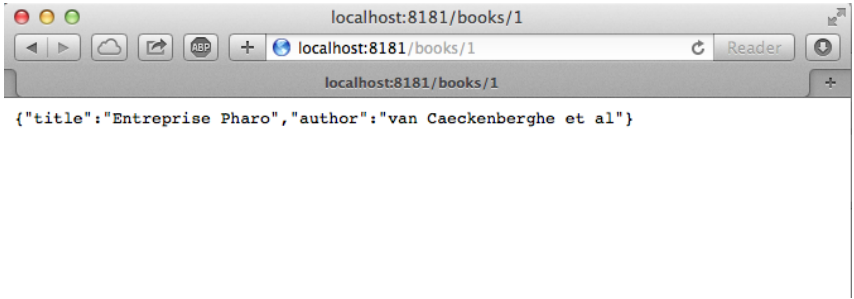
A Tiny Book Server



Getting a Book

```
ZnClient new
  url: 'http://localhost:8181/books/1';
  get
```

- Class name starts with an uppercase
- new is a message sent to the class ZnClient
- url: and get are both sent to the instance of ZnClient



Adding a Book

```
ZnClient new
  url: 'http://localhost:8181/books/1';
  formAt: 'author' put: 'van Caekenberghe et al';
  formAt: 'title'  put: 'Entreprise Pharo';
  post
```

formAt: 'author' put: 'van Caekenberghe et al'
is equivalent to
formAtput('author' , 'van Caekenberghe et al')

The Full Server in One Page

```
books := Dictionary new.
teapot := Teapot configure: {
  #defaultOutput –> #json. #port –> 8181 }.
teapot
 GET: '/' –> '<h1>A simple book server</h1>'; output: #html;
 GET: '/books' –> books;
 GET: '/books/<id:IsInteger>'
  –> [ :request | books at: (request at: #id) asString];
 POST: '/books/<id>'
  –> [ :request | | book |
       book := { 'author' –> (request at: #author).
       'title'  –> (request at: #title) } asDictionary.
       books at: (request at: #id) put: book ];
 start.
```

Configuring a Server

```
| books teapot |
books := Dictionary new.
teapot := Teapot configure: { #defaultOutput –> #json.  #port –> 8181 . #debugMode
    –> true }.
```

- | | delimits local variable definition
- := assignment
- #port is a symbol (aka unique string)
- configure: is a message sent to the class Teapot
- In configure:, : means that the message is expecting an argument
- { . . } is an array of three elements
- -> creates a key-value pair

Defining The Server Routes

```
teapot
 GET: '/'
   –> '<h1>A simple book server</h1>'; output: #html;
 GET: '/books'
   –> books;
 GET: '/books/<id:IsInteger>'
   –> [ :request | books at: (request at: #id) asString];
 POST: '/books/<id>'
   –> [ :request | | book |
     book := { 'author' –> (request at: #author) .
       'title' –> (request at: #title) } asDictionary.
     books at: (request at: #id) put: book ];
 start.
```

More About Syntax

Processing URIs such as: http://localhost:8181/books/1

```
teapot
 GET: '/books/<id:IsInteger>'
  –> [ :request | books at: (request at: #id) asString];
```

- [:request | books at: (request at: #id) asString] is a block
- acts as an anonymous method
  - :request is an argument
  - at: is a message accepting one argument

Conclusion

- Teapot is a cool package http://smalltalkhub.com/#!/~zeroflag/Teapot
- A web server in one page
- Based on Zinc a really strong and well designed HTTP client/server

Resources

- Pharo Mooc - W3S04 Videos `http://mooc.pharo.org`
- Web Perspective `http://books.pharo.org`

A course by Stéphane Ducasse

http://stephane.ducasse.free.fr

Reusing some parts of the Pharo Mooc by

Damien Cassou, Stéphane Ducasse, Luc Fabresse

http://mooc.pharo.org