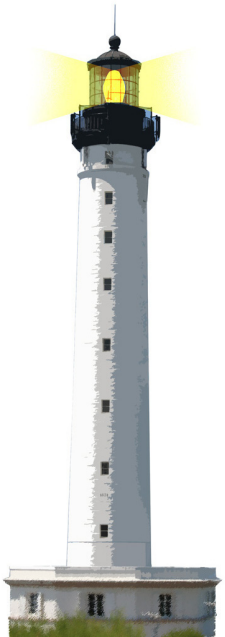
Class Methods At Work

Damien Cassou, Stéphane Ducasse and Luc Fabresse

W4S06

Pharo

http://www.pharo.org



What You Will Learn

- Class methods are normal methods
- Most class methods create new instances
  - but they can be used for other things



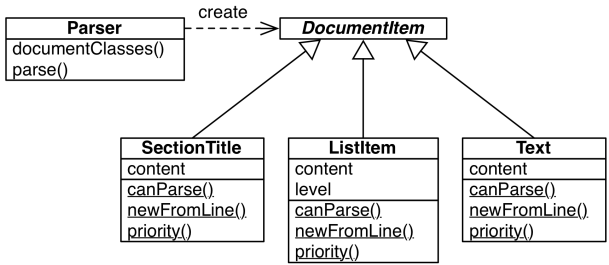
Parsing Lines

Imagine we want to parse

```
!Section Title
– list item
–– subitem

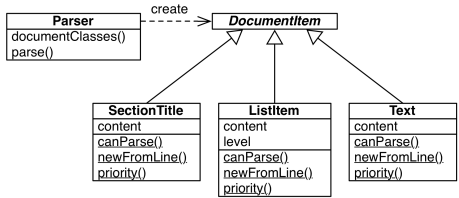
Any text here
```

A Possible Design



- Document item **classes** know
  - if they can parse a line (canParse:)
  - how to create instances (newFromLine:)

Parsing Lines




```
Parser >> documentClasses
  ^ DocumentItem allSubclasses
    sorted: [ :class1 :class2 | class1 priority < class2 priority ]

Parser >> parse: line
  self documentClasses
    detect: [ :subclass |
      (subclass canParse: line)
        ifTrue: [ ^ subclass newFromLine: line ] ]
```

The Command-Line Handler

- the Pharo command-line interface (CLI) uses the same approach
- each subclass of CommandLineHandler knows how to deal with one command
- the correct subclass is selected by sending messages to the class

```
$ pharo Pharo.image eval "10 factorial"
3628800
```

The Command-Line Handler

```
CommandLineHandler class >> isResponsibleFor: arguments
  ^ arguments includesSubCommand: self commandName

EvaluateCommandLineHandler class >> commandName
  ^ 'eval'

CommandLineHandler class >> allHandlers
  ^ self allSubclasses
    reject: [ :handler| handler isAbstract ]

CommandLineHandler class >> handlersFor: arguments
  ^ self allHandlers
    select: [ :handlerClass |
      handlerClass isResponsibleFor: arguments ]
```

Conclusion

- Classes are objects and can be sent messages
- Method lookup is exactly the same as for all objects:
  - go to the class of the receiver
  - follow inheritance chain
- More during the lecture Understanding Metaclasses
- Pharo makes it easy to iterate over subclasses



A course by



and



in collaboration with











Inria 2020

Except where otherwise noted, this work is licensed under CC BY-NC-ND 3.0 France
https://creativecommons.org/licenses/by-nc-nd/3.0/fr/