Class Methods At Work

Damien Cassou, Stéphane Ducasse and Luc Fabresse

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

Parser >> parse: line
  self documentClasses
  detect: [:subclass |
    (subclass canParse: aLine)
    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
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