

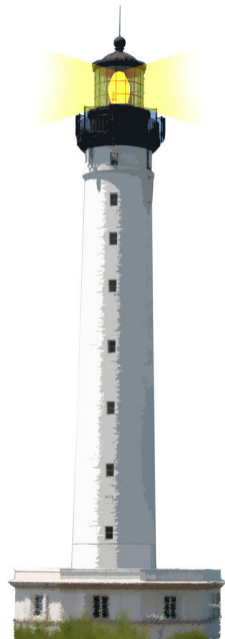
Class Methods At Work

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W4S06



<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

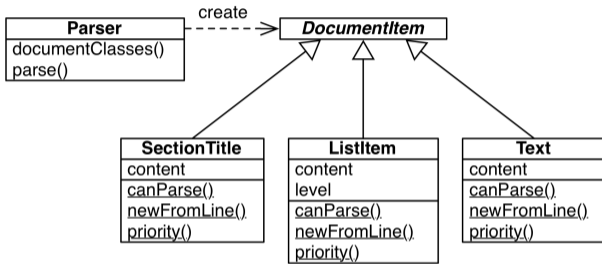
– list item

-- subitem

Any text here

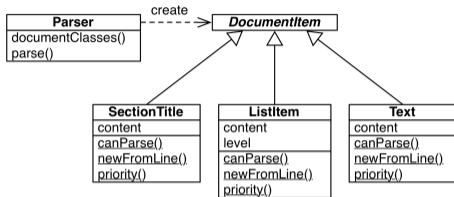


A Possible Design



- 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: 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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