Fat classes are bad

a.k.a. a large class vs. a class hierarchy

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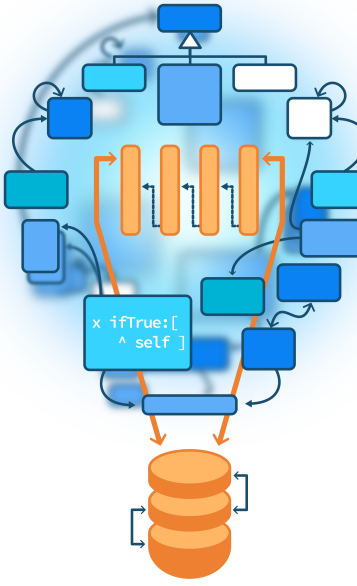


Pharo

Goal

- Remember the *Implementing Not* Lectures
- Transform Self Type Check Reengineering pattern

Example: BibTeX

```
@inproceedings{Scha03a,
 author = {N. Schaerli and S. Ducasse and O. Nierstrasz and A. P. Black},
 title = {Traits: Composable Units of Behavior},
 booktitle = {ECOOP},
 publisher = {Springer Verlag},
 year = {2003}}

@article{Teso20b,
 author = {P. Tesone and S. Ducasse and G. Polito and L. Fabresse ...},
 title = {A new modular implementation for Stateful Traits},
 journal = {Science of Computer Programming}, ...}

@book{Duca22a,
  author = {S. Ducasse and G. Rakic and  ...},
  title = {Pharo by Example},
  publisher = {Keepers of the lighthouse},
  url = {http://books.pharo.org}}
```

Example: BibTeX

- Different entries: inproceedings, book, article, techreport, phd....
- Different fields: key, year, institution, booktitle, title...

A single class in Citezen :(

```
CZScoped << #CZEntry
  slots: { #type . #key . #fields };
  sharedVariables: { #ExtendedFieldKeys . #FieldKeysToRemove };
  sharedPools: { CZFieldPool };
  package: 'Citezen-Model'
```

isSomething methods

```
isArticle
  ^ self type = #article
```

```
isBook
  ^ self type = #book
```

- It is always worth to have a look at users of these isSomething methods.

Another example: CZField

```
CZScoped << #CZField
  slots: { #key . #value };
  package: 'Citezen−Model'
```

```
CZField >> isDoi
  ^ key = #doi
```

Consequence

```
CZField >> visitField: aField
  self outputStream nextPutAll: '<span class="', aField key,'">'.
  aField isPDF
      ifTrue: [outputStream nextPutAll: '<a href="'].
  aField isURL
    ifTrue: [outputStream nextPutAll: '<a href="'].
  aField isDoi
    ifTrue: [outputStream nextPutAll: '<a href="https://doi.org/'].
  aField dispatchVisitor: self.
  aField isURL
    ifTrue: [outputStream nextPutAll: '">URL</a>'].
  aField isDoi
    ifTrue: [outputStream nextPutAll: '">DOI</a>'].
  aField isPDF
      ifTrue: [outputStream nextPutAll: '">PDF</a>'].
  outputStream nextPutAll: '</span>'.
```

When using a Fat class

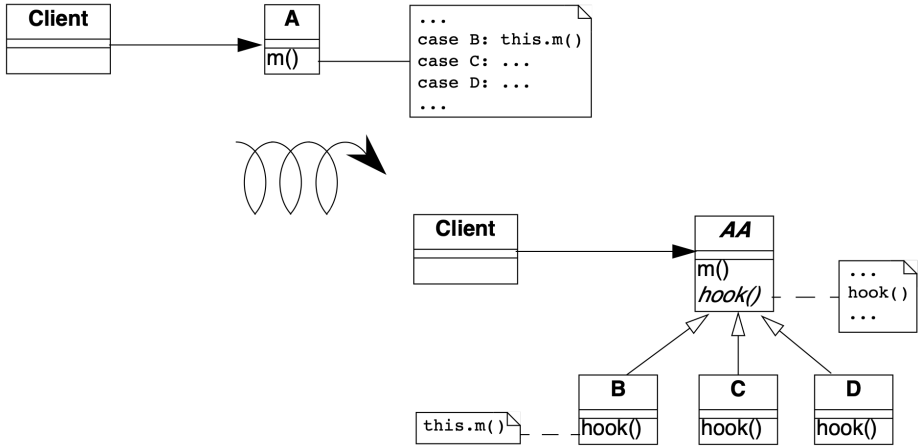
Not having a class hierarchy:

- Not **possible to dispatch** logic because there is **only one** class
- Simple extensions require **many changes** to the conditional code
- Difficult subclassing **without duplicating/adapting** the methods containing the conditional code
- Adding a new behavior always **results in changes** to the same set of methods and always results in adding a new case to the conditional code.
- Remember the Implementing Not Lectures

Two kinds of type checking conditionals

- Self type checks
  - check some internal values to invoke self methods
  - not that bad
- Client type checks
  - violate **do not ask, tell**
  - defeat late binding and inverse the flow of control
  - not necessary in a large class

Transform self type transformation



Conclusion

- Favor dispatch
- Create classes to encapsulate knowledge
- **Do not ask, tell**

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Advanced Object-Oriented Design and Development with Pharo

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