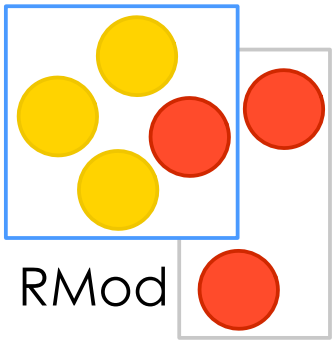
INRIA



Elements of Design - Inheritance/Composition

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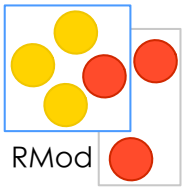
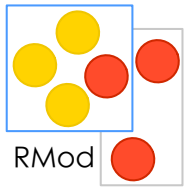
A Formating Text Editor



With several possible algorithms

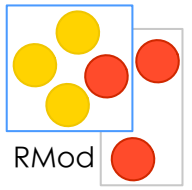
formatWithTex
formatFastColoring
formatSlowButPreciseColoring

Identify your own criterias



Define criterias to compare your solutions?

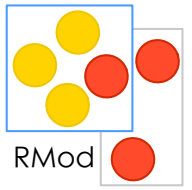
Code Smells




```
Composition>>repair
    formatting == #Simple
        ifTrue: [ self formatWithSimpleAlgo]
        ifFalse: [ formatting == #Tex
                    ifTrue: [self formatWithTex]

                ....]
```

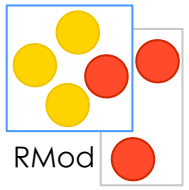
Inheritance?



May not be the solution since:

- you have to create objects of the right class
- it is difficult to change the policy at run-time
- you can get an explosion of classes bloated with the use of a functionality and the functionalities.
- no clear identification of responsibility

Inheritance vs. Composition



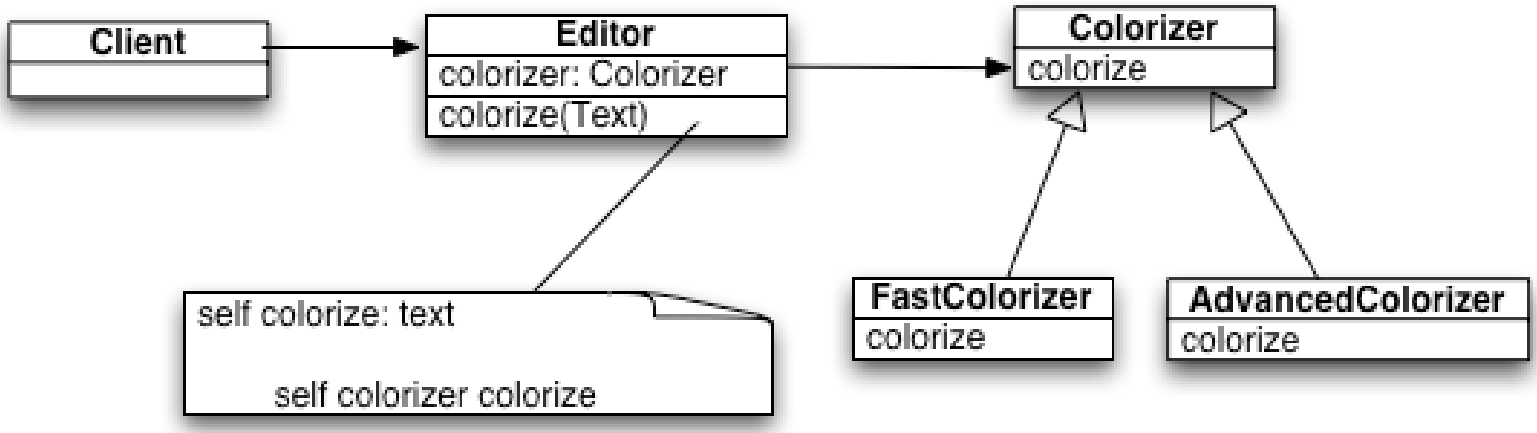
Inheritance is not a panacea

- Require class definition
- Require method definition
- Extension should be prepared in advance
- No run-time changes

Ex: editor with spell-checkerS, colorizerS, mail-readerS….

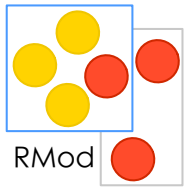
- No clear responsibility
- Code bloated
- Cannot load a new colorizers

Delegating to other Objects



myEditor setColorizer: FastColorizer new.
myEditor setColorizer: AdvancedColorizer new.
Strategy design pattern

Composition Analysis



- Pros
  - Possibility to change at run-time
  - Clear responsibility
  - No blob
  - Clear interaction protocol
- Cons
  - New class
  - Delegation
  - New classes