



AARHUS UNIVERSITET

# **Software Engineering and Architecture**

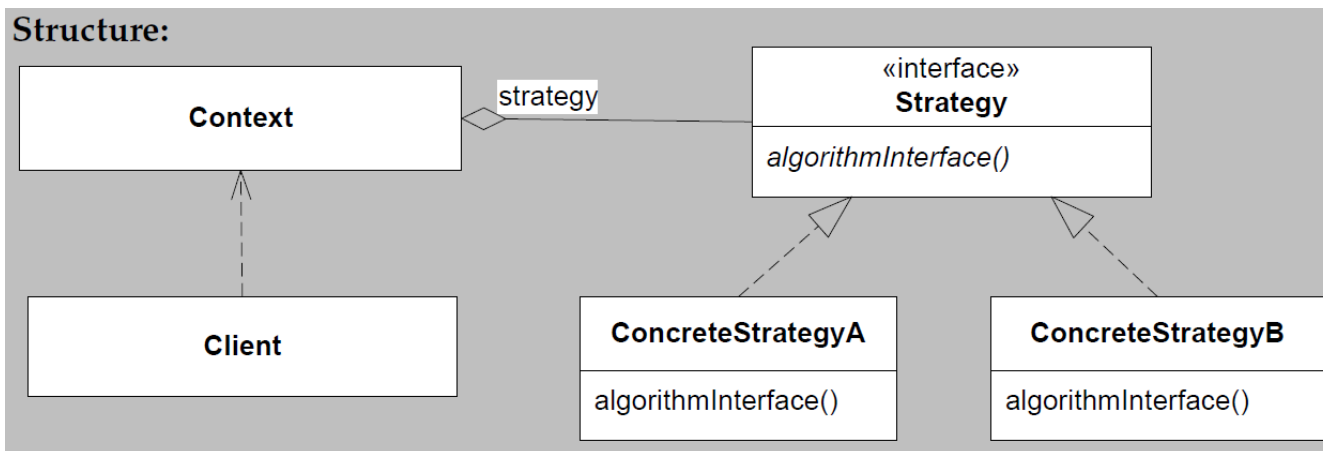
Design Patterns I

# Gamma et al.'s definition

## Definition: Design Pattern (Gamma et al.)

Patterns are descriptions of communicating objects and classes that are customized to solve a general design problem in a particular context.

- Exercise: How does it relate to...



# Beck et al.'s Definition

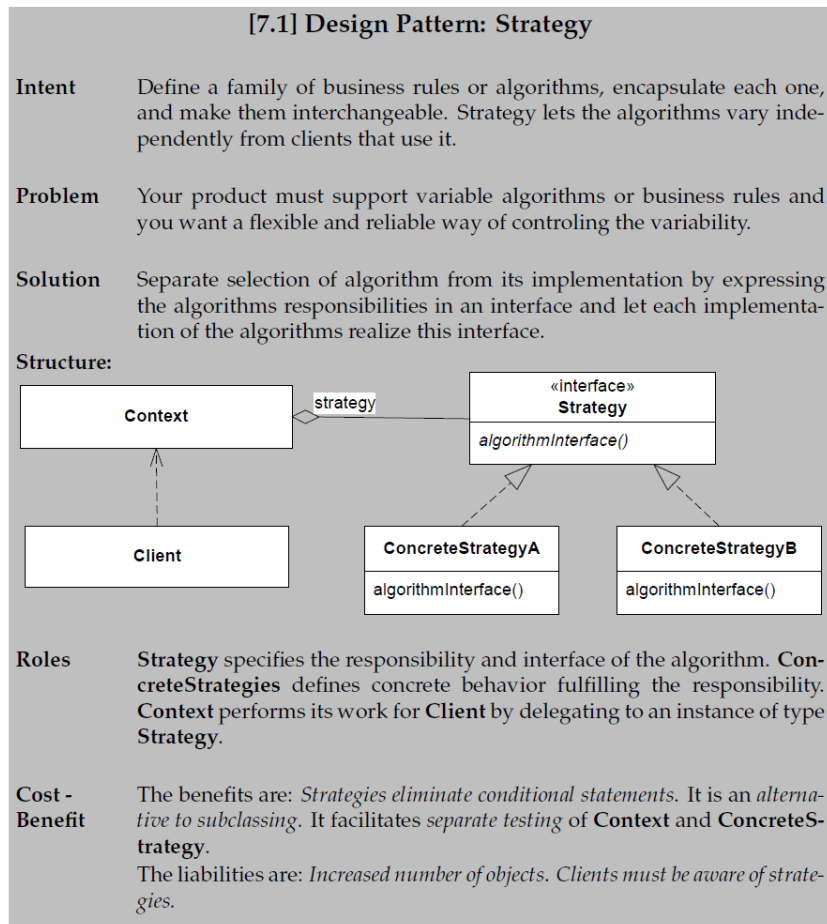
## Definition: Design Pattern (Beck et al.)

A design pattern is a particular prose form of recording design information such that designs which have worked well in the past can be applied again in similar situations in the future.

- Prose form = “writing template”
- The template varies from author to author.
- However, must contain
  - Name
  - Problem
  - Solution
  - Consequences

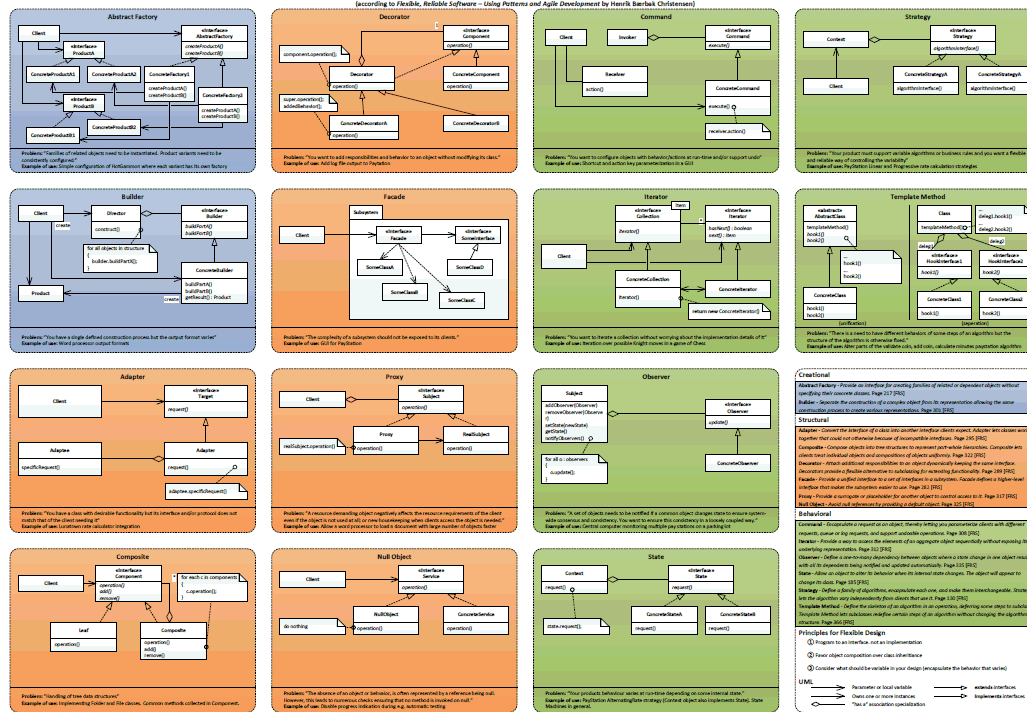
# FRS's template

- Intent
  - Short description
- Roles
  - Responsibilities of each participating object/abstraction in the pattern



- Simon Kracht: FRS Design Pattern Poster

## Design Patterns



# Differentiating Patterns

- Be aware that many patterns are *structurally equal* – their UML class diagrams are more or less identical!
- Patterns are defined by the *problem they solve!*
- Strategy is the problem of
  - *Handling variability of algorithms / business rules, making them interchangeable.*