

Design Pattern

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Design Pattern - Beskrivelse

Navn – fælles betegnelsen – fag ord

Problem – beskrivelse af problemet

Løsning – KUN! Design løsning (UML diagrammer)

Design Pattern – GRASP (General Responsibility Assignment Software Patterns)

- Information Expert
- Creator Pattern
- Controller
- Low Coupling
- High Cohesion

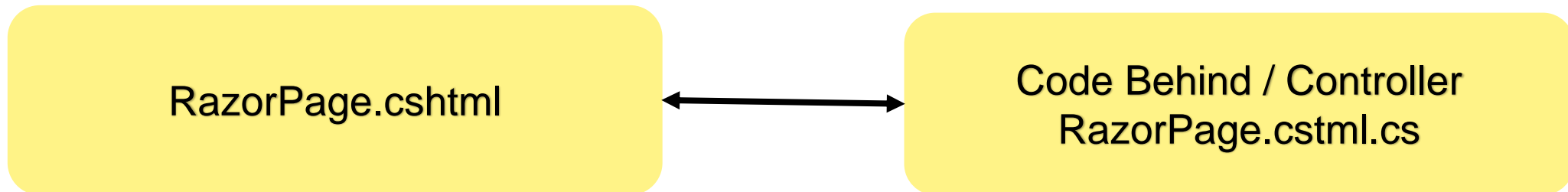
Design Pattern – GRASP (General Responsibility Assignment Software Patterns)

- **Information Expert**
Hvem skal man spørge for at få information → den klasse der har data
- **Creator Pattern**
Hvem kan oprette et objekt ->
 - a) Dem der har information til at initialisere objektet
 - b) Ved Komposite den klasse der består af objekterne

Design Pattern – GRASP (General Responsibility Assignment Software Patterns)

- **Controller**

What first object beyond the UI layer receives and coordinates ("controls") a system operation?



Design Pattern – GRASP (General Responsibility Assignment Software Patterns)

- **Low Coupling**

How to support low dependency, low change impact, and increased reuse? ->

Assign a responsibility so that coupling remains low

Indication of High Coupling– many relations in a DCD

- **High Cohesion**

How to keep objects focused, understandable, and manageable, and as a side effect, support

Low Coupling? ->

Assign a responsibility so that cohesion remains high.

Indication of Low Cohesion– few relations in a DCD

Design Pattern – Pattern fra 1.semester

- Singleton
 - kun ét objekt
- Controller
 - bag en RazorPage (view) er en Controller (code behind)

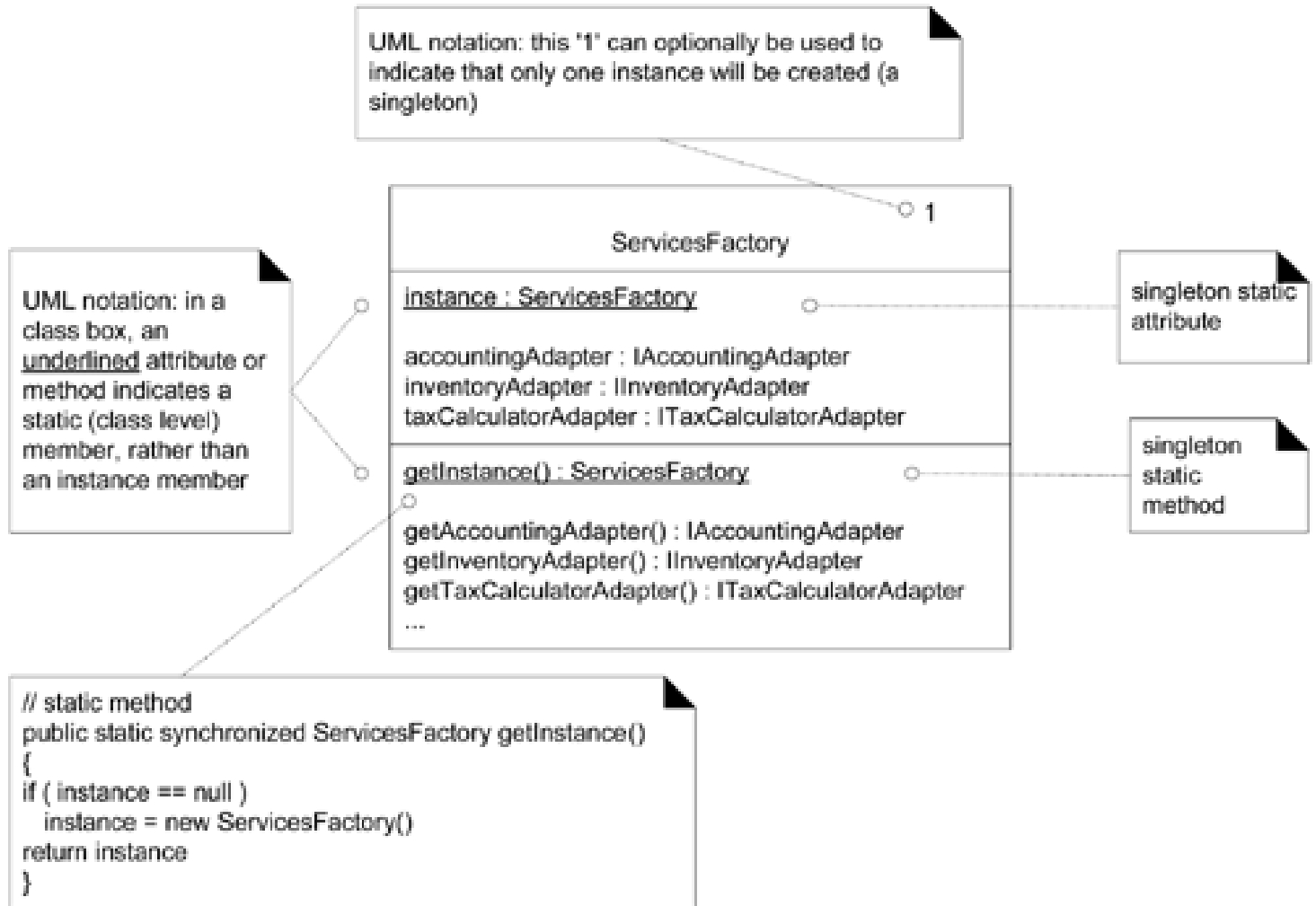
Design Pattern – Kategorier

- **Creational Patterns**
 - Factory, Abstract Factory, Singleton ...
- **Structural Patterns**
 - Adaptor, Proxy, Decorator ...
- **Behavioral Patterns**
 - Observer, Template, Chain of Responsibility, Strategi, State ...

Design Pattern – Creational Patterns

Singleton

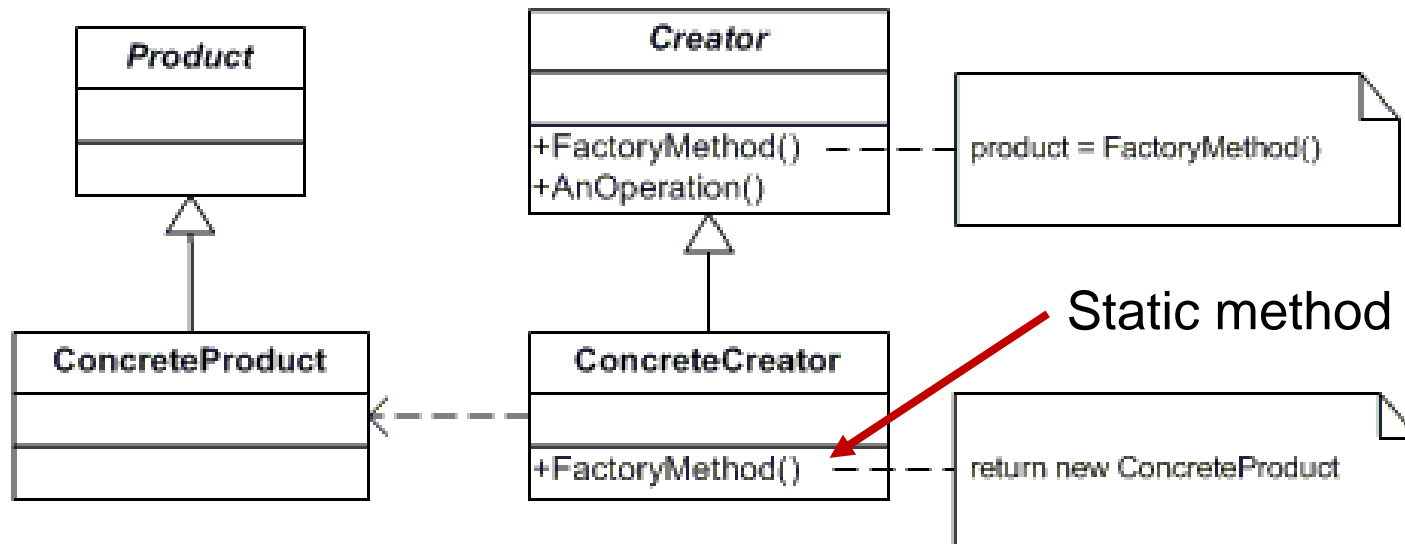
- Problem: Exactly one instance of a class is allowed.
- Løsning:
 1. PRIVATE constructor
 2. static instance field
 3. static read property



Design Pattern – Creational Patterns

Factory

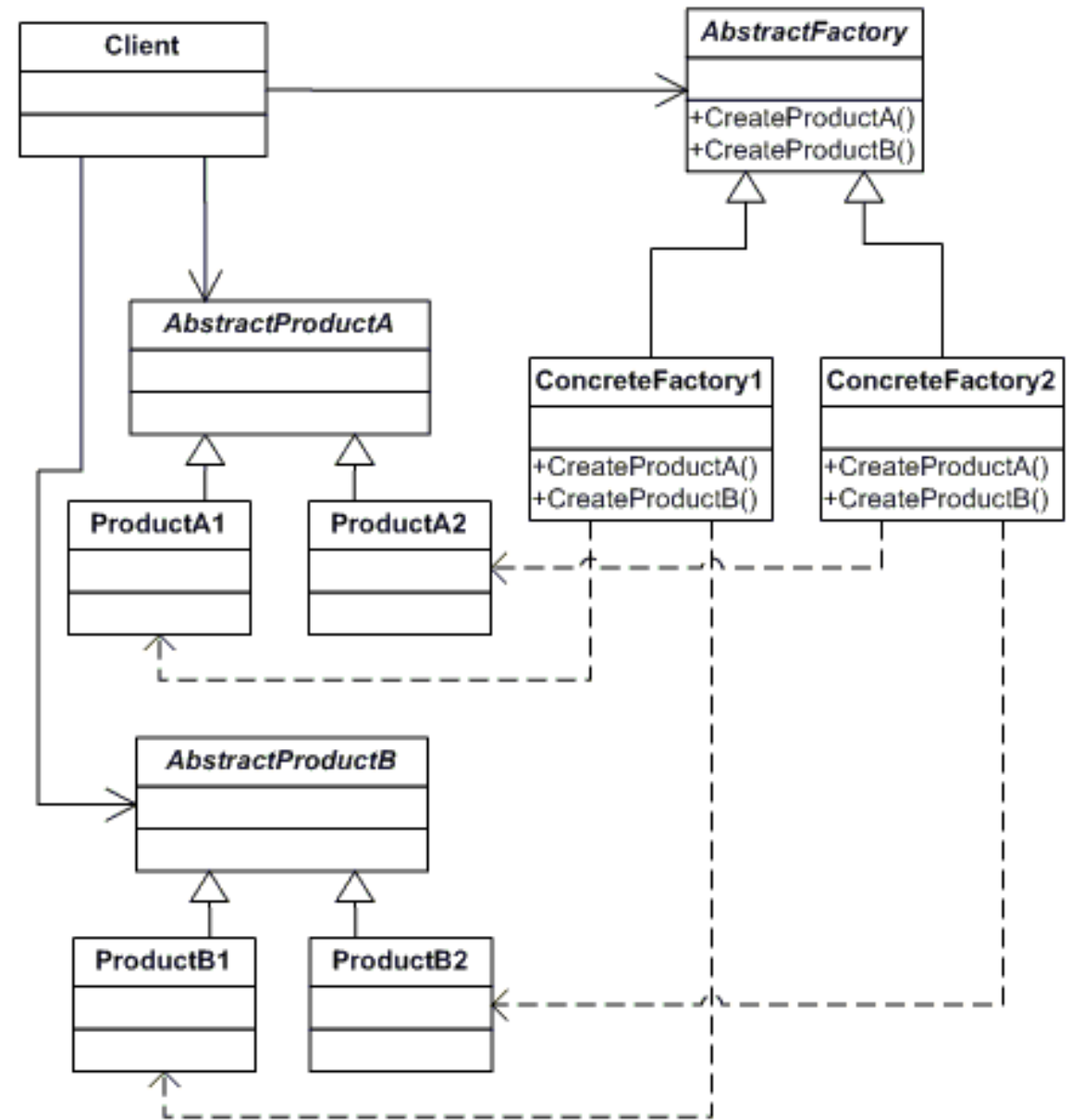
- **Problem:** Who should be responsible for creating objects when there are special considerations, such as complex creation logic, a desire to separate the creation responsibilities for better cohesion, and so forth?
- **Løsning:**



Design Pattern – Creational Patterns

Abstract Factory

- Problem: How to create a family of related or dependent objects without specifying their concrete classes
E.g. language specification (UK, DK)
- Løsning:



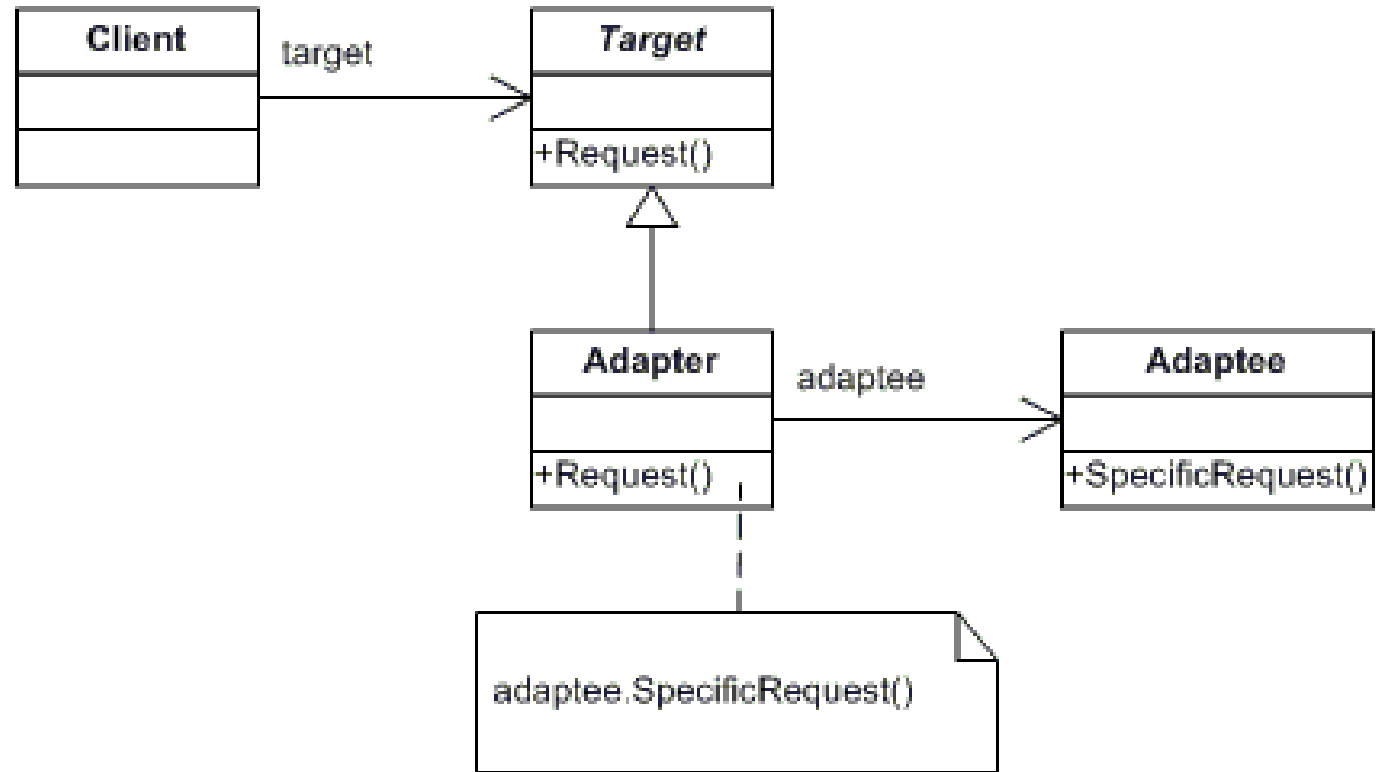
Demo og opgaver

- Demo af Factory, Singleton og Abstract Factory
- Opgaverne Patterns.1 + Patterns.2
- Fortsætter med Structural Patterns kl 12:15

Design Pattern – Structural Patterns

Adaptor

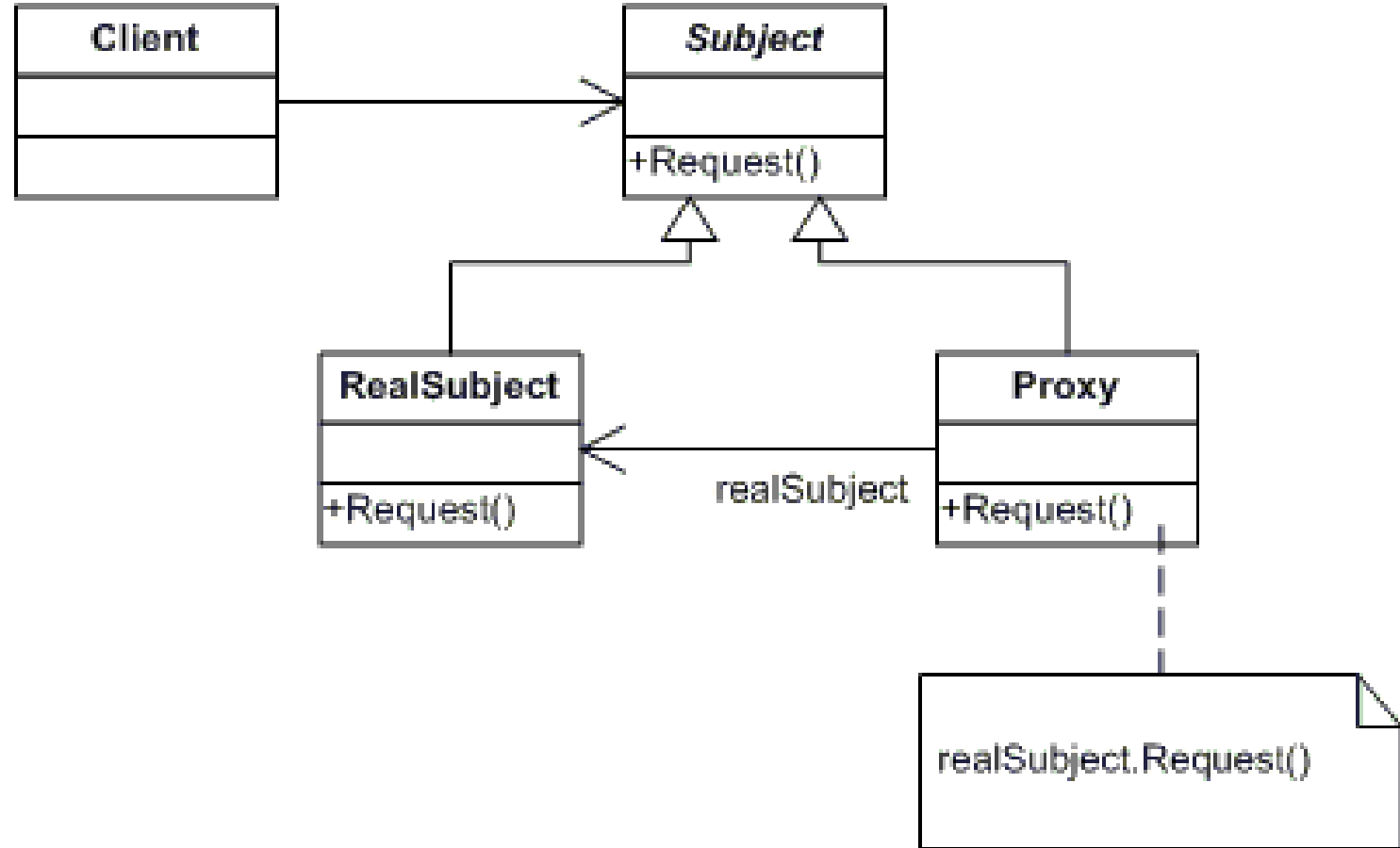
- Problem: How to resolve incompatible interfaces, or provide a stable interface to similar components with different interfaces?
- Løsning:



Design Pattern – Structural Patterns

Proxy

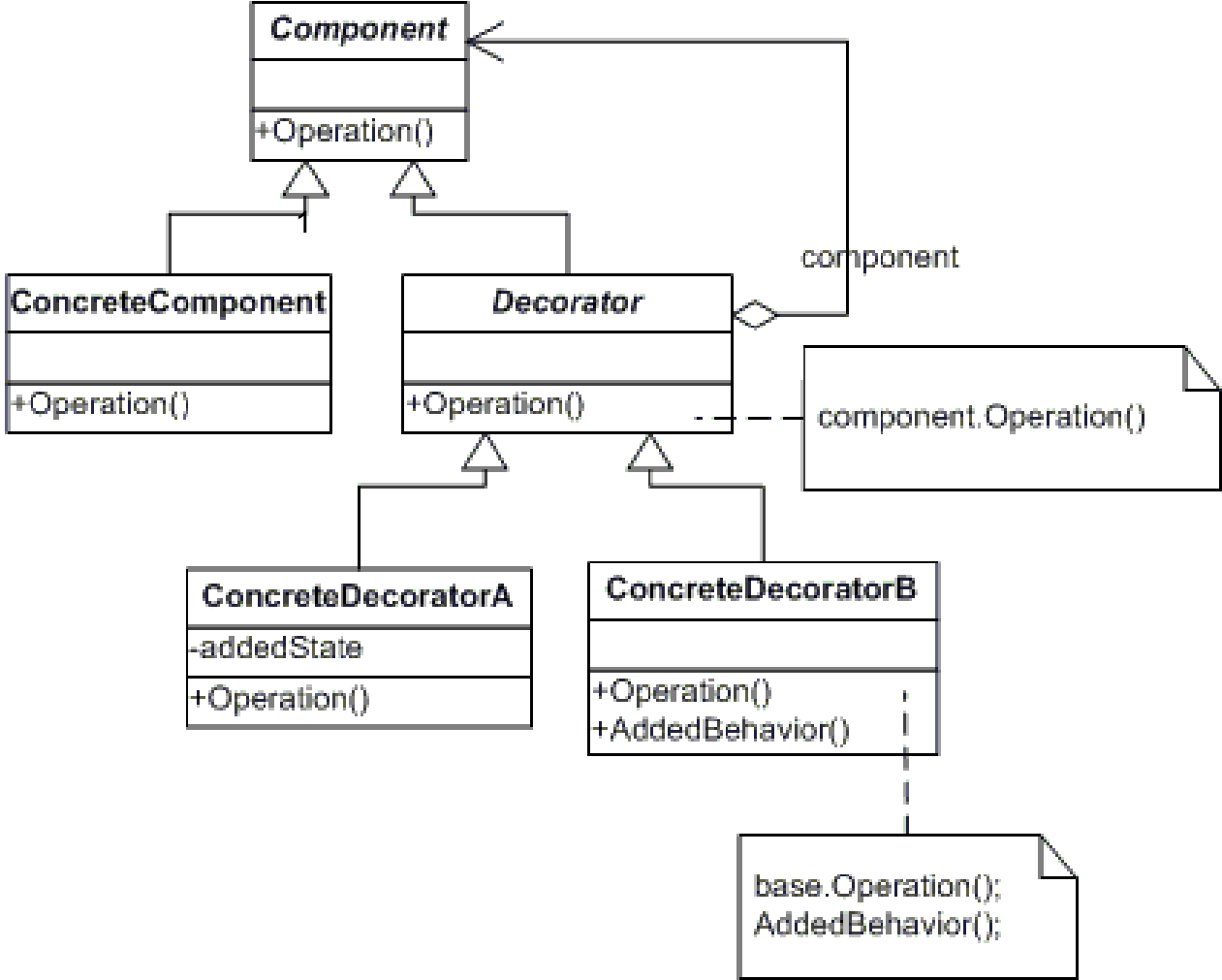
- Problem: How to provide a placeholder for another object to control access to it.
- Løsning:



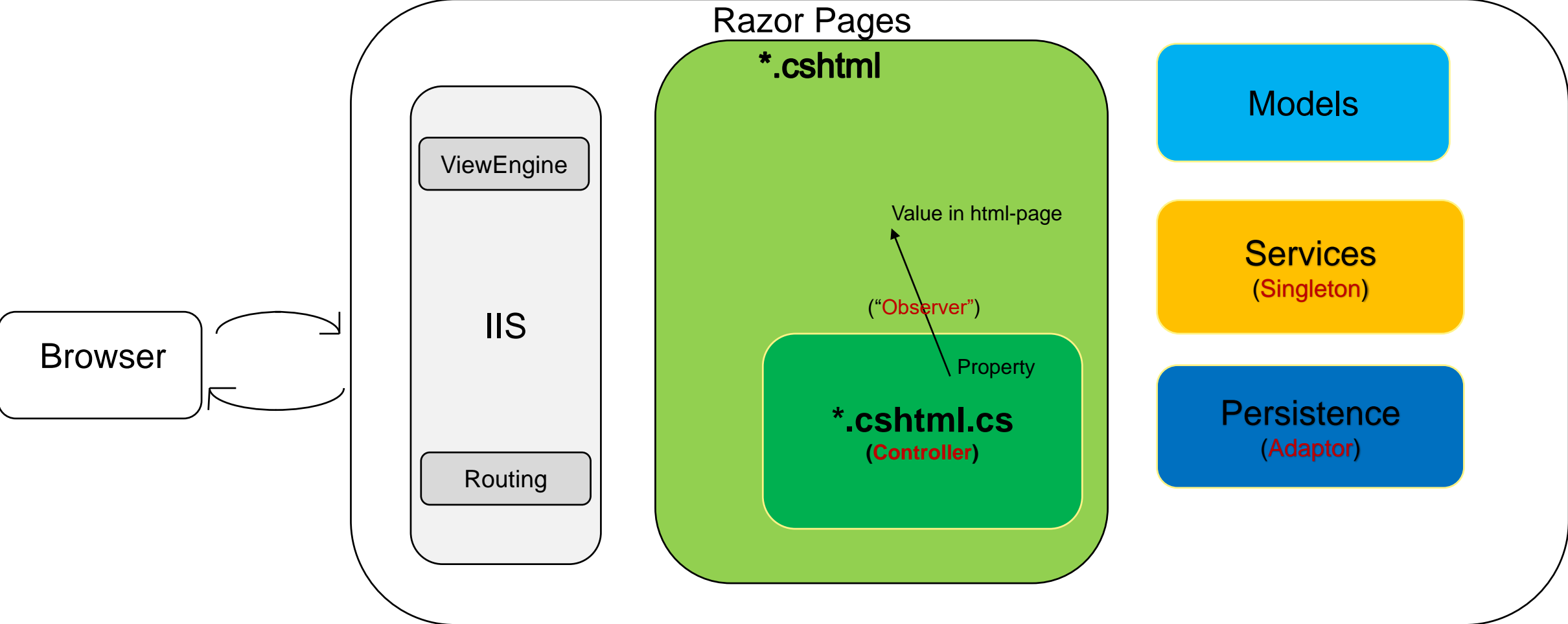
Design Pattern – Structural Patterns

Decorator

- Problem: How to Attach additional responsibilities to an object dynamically
- Løsning:



Det kommende 2 semester system



Demo og opgaver

- Demo af Adaptor, Facade, Proxy
- Opgaverne Patterns.3 + Patterns.4