

Design Patterns in ABAP

ABAP CODRETREAT 2017

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AGENDA

01

What are Design Patterns

02

Strategy Pattern

03

Factory Pattern

04

Template Method Pattern

05

Iterator Pattern

What are Design Patterns?

- General reusable solution for commonly occurring problem
- Language that helps talking about complex constructs
- Abstract design that has to be adjusted to your concrete problem

Benefits of Design Patterns

- They make complex code easier to change and understand
- They provide names that help others understand intent
 - FlightFactory
 - PassengerIterator
- You can google them ;)

Disadvantages of Design Patterns

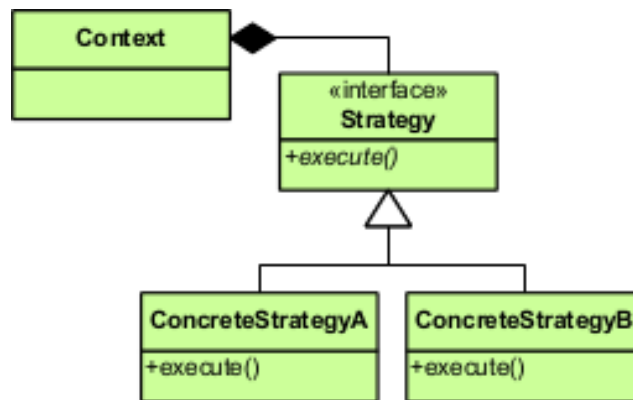
- They make easy code more complex
- There is not a pattern for every problem
- You can get pattern fever

The Strategy Pattern

- Most simple and most versatile pattern
- It defines a family of algorithms
- And makes them interchangeable

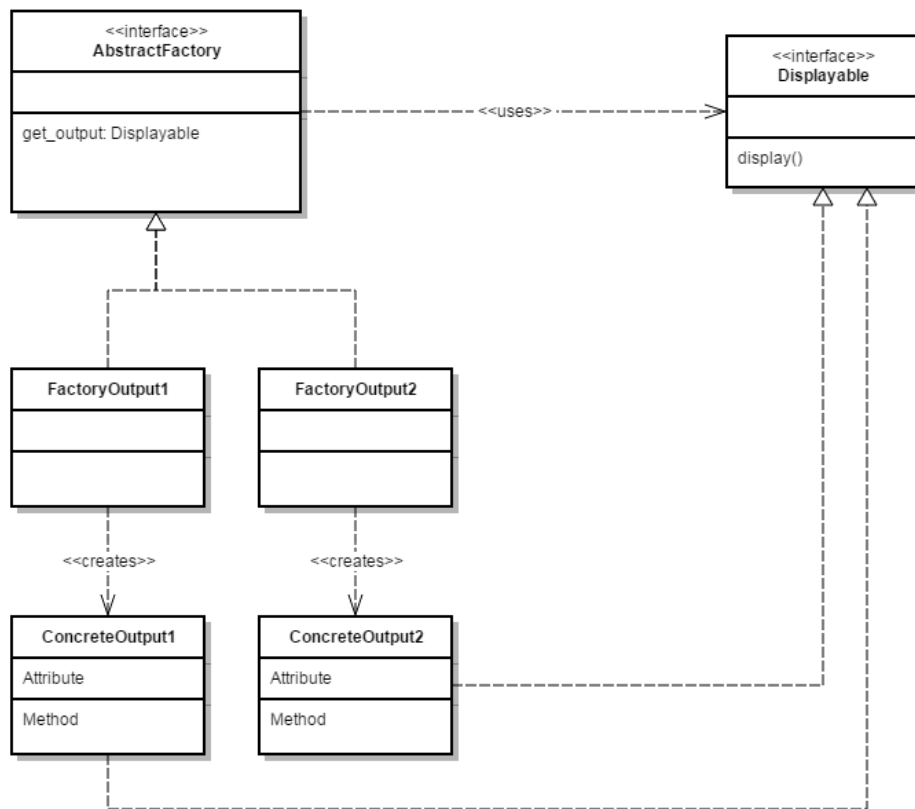
Strategy Pattern in UML

- The interface (or superclass) defines available actions (encapsulation)
- The Subclasses define the implementations (family of algorithms)
- The Context only knows the interface
- The Context does NOT know the subclass it is using



The Factory Pattern

- Abstracts the process of object creation, so the consumer does not have to bother about injecting dependencies
- Provides a factory method either by an Interface or an Abstract Factory Class and Inheritance
- Factories can be grouped into abstract Factories that can create families of related or dependent objects without specifying their concrete classes

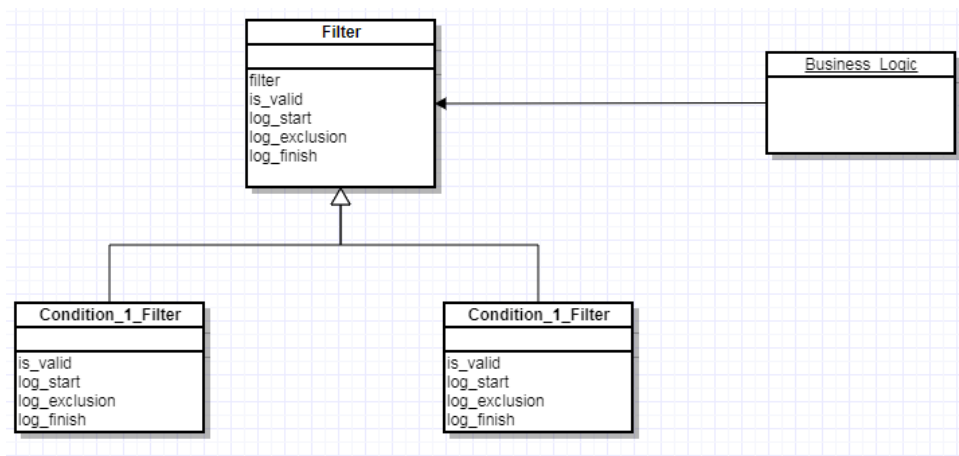


The Template Method Pattern

- Defines the steps of an algorithm
- Allows subclasses to provide the implementation

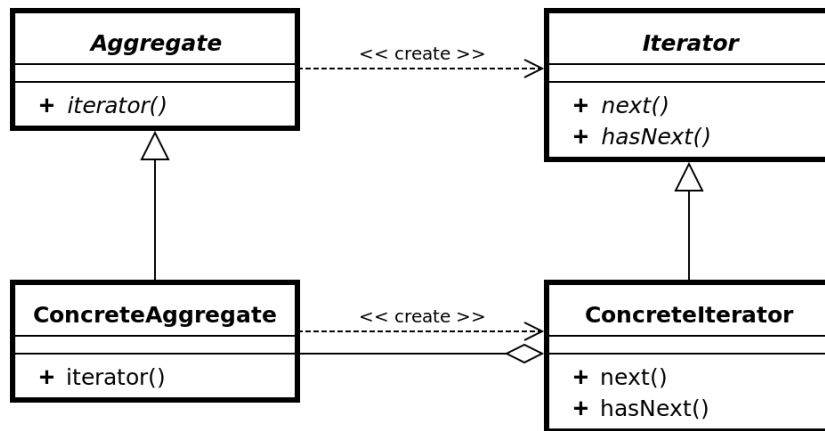
Template Method UML

- Template Method in this case: filter
- It uses the other methods in the Filter Class
- The other methods are abstract in Filter
- The subclasses only implement the other methods



The Iterator Pattern

- Provides access to the elements of an aggregation without exposing the underlying representation
- Commonly used in other languages like Java, but rarely seen in ABAP
- Benefits on filtering collections of Objects rather than simple data types in ABAP



Ressources

- The Code and presentation can be found at:
 - https://github.com/kaufland/abap_oo_patterns
 - Pull Request and Issues are very welcome 😊
- Recommended read:
 - Head First Design Patterns: A Brain-Friendly Guide
By Bert Bates, Kathy Sierra, Eric Freeman, Elisabeth Robson

THANK YOU FOR YOUR ATTENTION