Java in Real Life

Eugene Dzhurinsky

March 9, 2012

Thinking in Object-Oriented way

Benefits of encapsulation

- Keep code and data together.
- Single point of modification.
- One class - one responsibility.
- Easy maintenance.
- Unit tests.

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Prefer composition over inheritance. Is-a versus has-a principle.

- Problems with having complex data hierarchy when modifying superclasses.
- Tightly coupling children class with ancestor one.
- Hierarchy design bugs makes it hard to refactor.
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- Ad-hoc polymorphism, method overloading.
- Subtype polymorphism. Liskov substitution principle.
- Parametric polymorphism. Generics.

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Abstract classes and interfaces

- Abstract class definition. Purpose. **Is-a** versus **Has-a**
- Interface definition. Contracts.
- Multiple inheritance - safe way. Diamond problem.

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- Program to interfaces - not implementations.
- Prefer composition over inheritance.
- Open-close principle.

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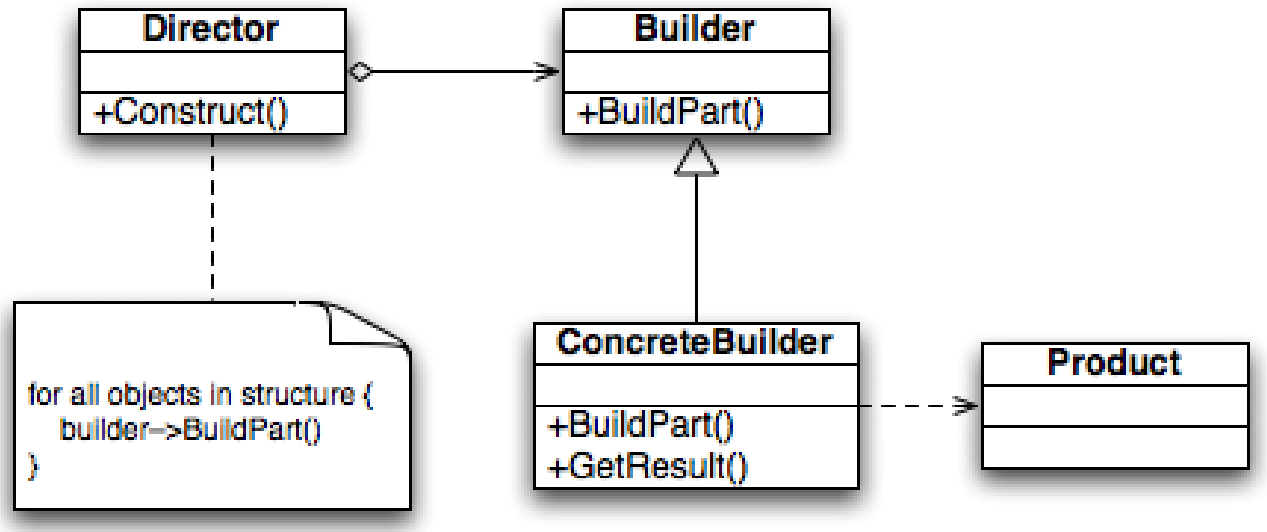
Types of design patterns :: Creational patterns.

Builder



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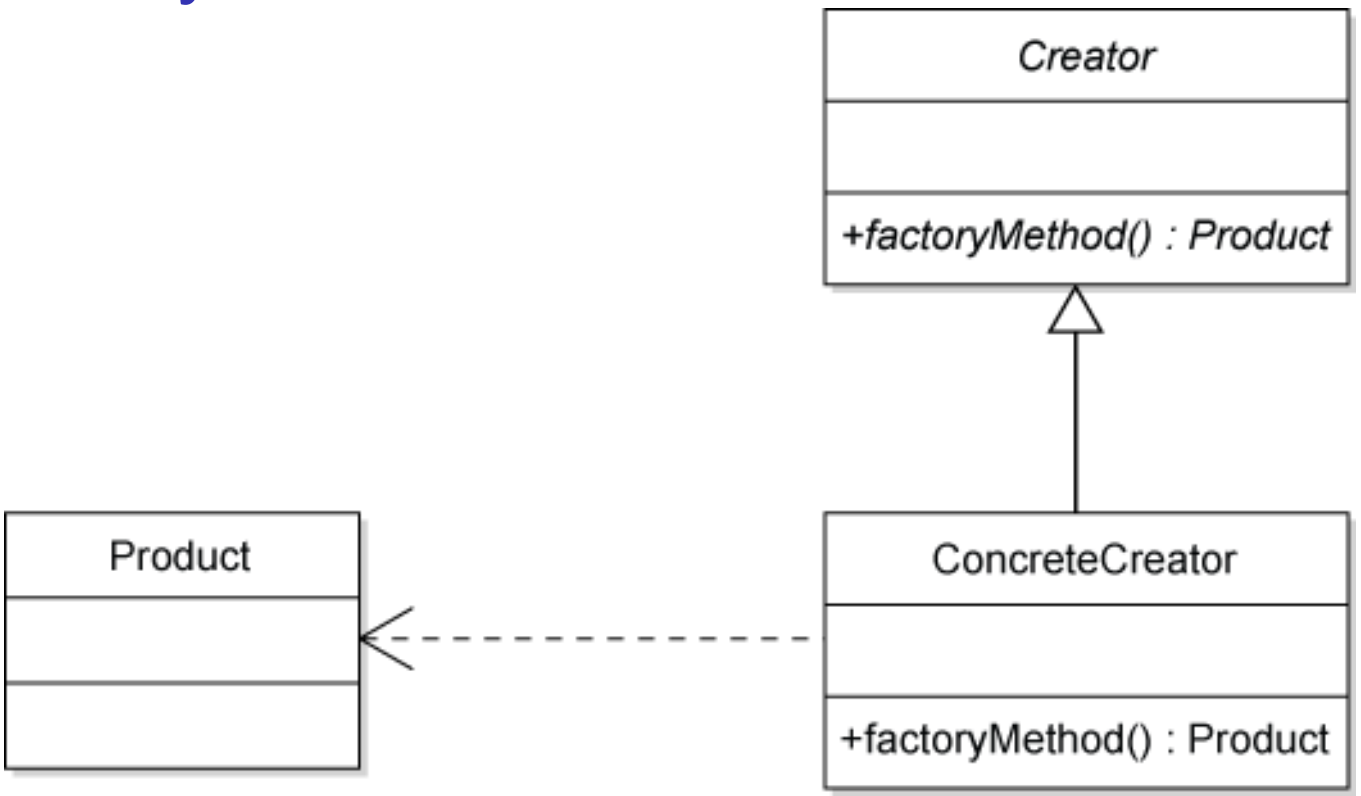
Factory method



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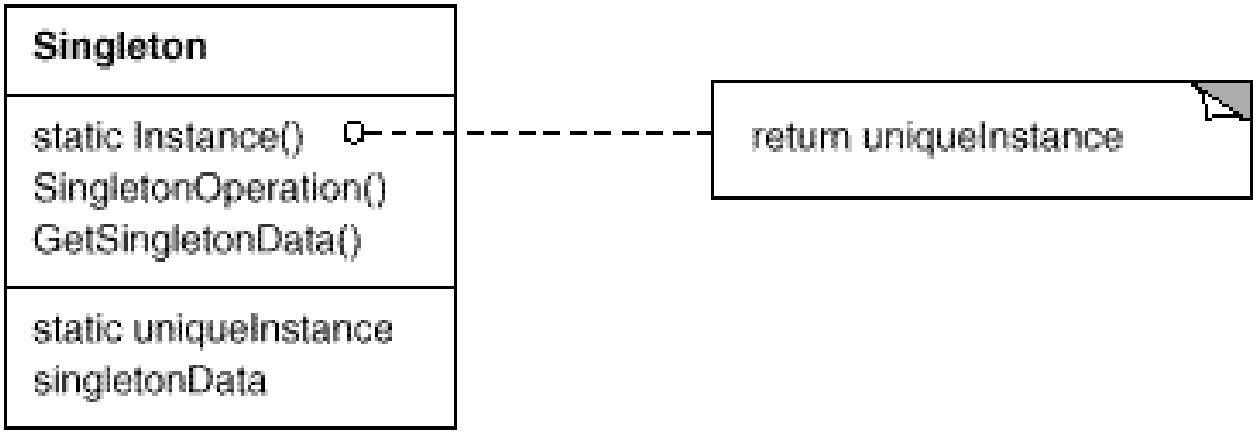
Singleton



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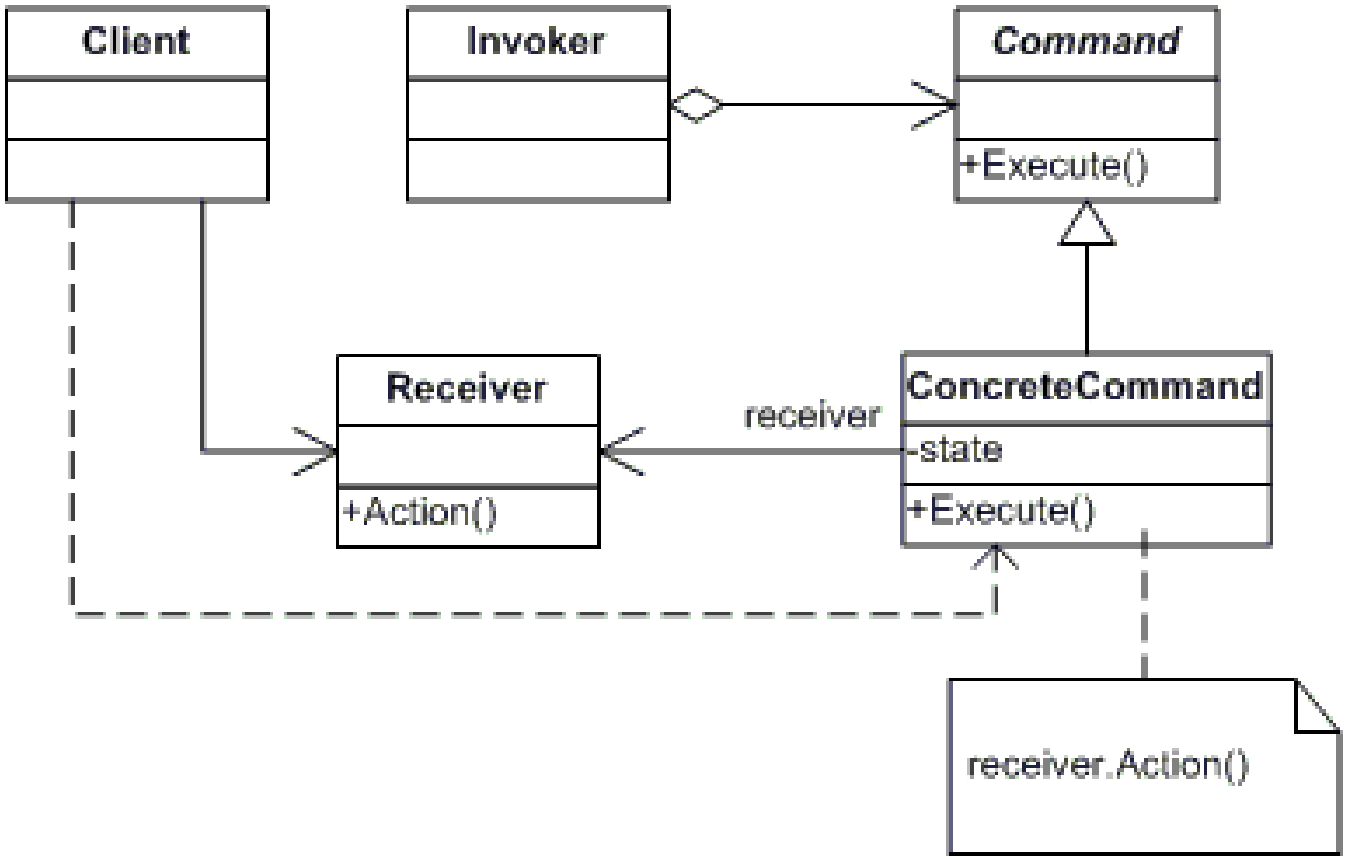
Types of design patterns :: Behavioral patterns.

Command



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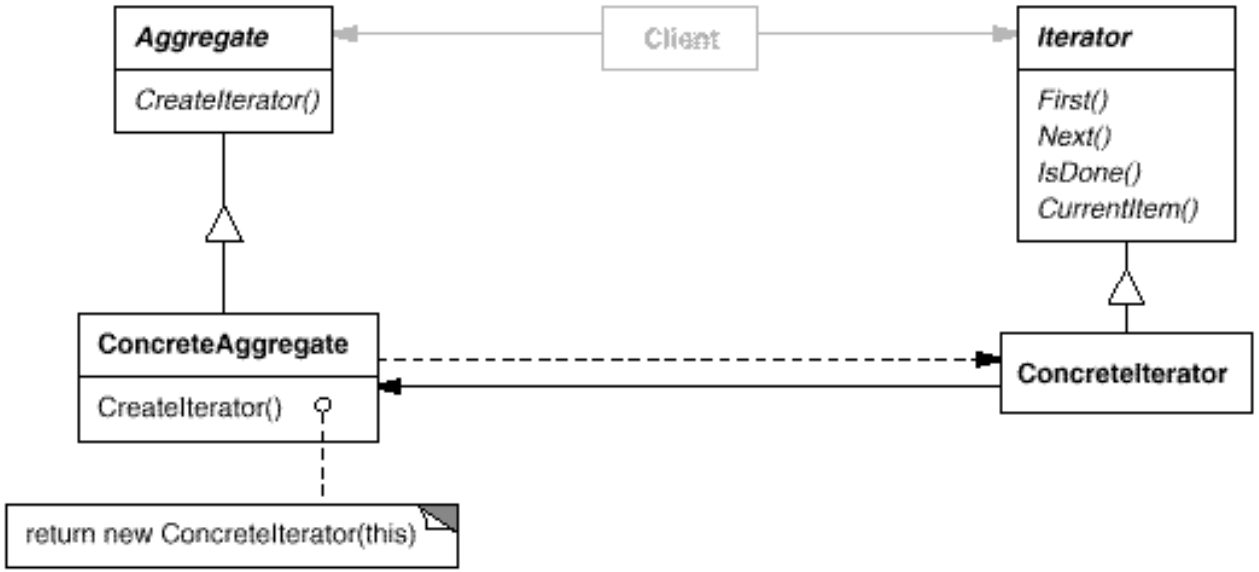
Iterator



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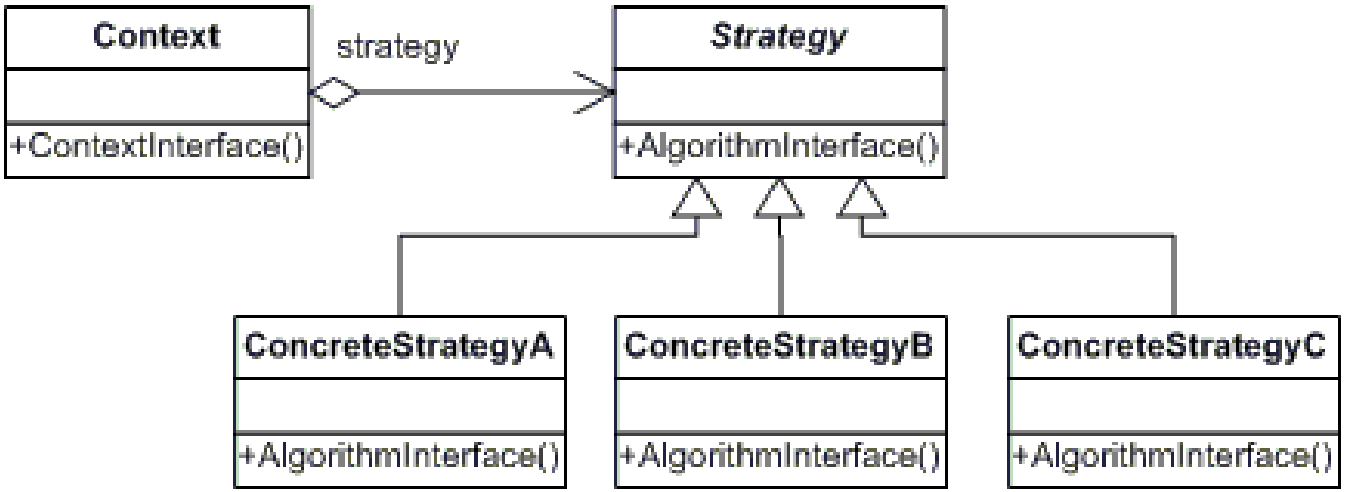
Strategy



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HTTP Protocol.

HTTP protocol overview

- Request / response model
- Stateless
- Request headers
- Response headers
- Cookies
- Web sockets

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- Tables.
- Indexes. Unique indexes. Primary keys.
- Views.

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- javax.servlet.http.HttpServletRequest and javax.servlet.http.HttpServletResponse
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- JSP Model 1 and JSP Model 2. Scriplets, JSTL and Expression Langiage.
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- Entry point.
- Request forwarding and including.

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Real life development

- Metodologies (Waterfall, Agile, RUP, XP)
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- Freelancing. Scriptlance, Elance, Odesk, Rentacoder.
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