



J-Spring
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Mod4J

MODELING FOR JAVA

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JOS WARMER

- Evangelist for Model Driven Development
- One of the authors of the UML standard
- **Author of books:**
 - Praktisch UML
 - MDA Explained
 - Object Constraint Language
- **Partner at Ordina**
 - Responsible for MDD
 - Microsoft DSL Tools
 - Java Mod4j



ENTERPRISE JAVA APPLICATIONS

- **Layered architecture**
 - Complex
 - Error prone
- **Multi lingual**
 - Java +
 - SQL, XML, HTML, JSP, Spring, Hibernate, ...
 - Consistency
- **Agility**
 - Time consuming
 - Time to market



MODEL DRIVEN DEVELOPMENT

- Localization of concerns
- Ease of Use
- Consistency and Quality in Architecture
- Surviving Technology Changes
- Productivity
- Time to market



TRADITIONAL MDD

- **Traditional MDD**

- Top down
- Use of UML

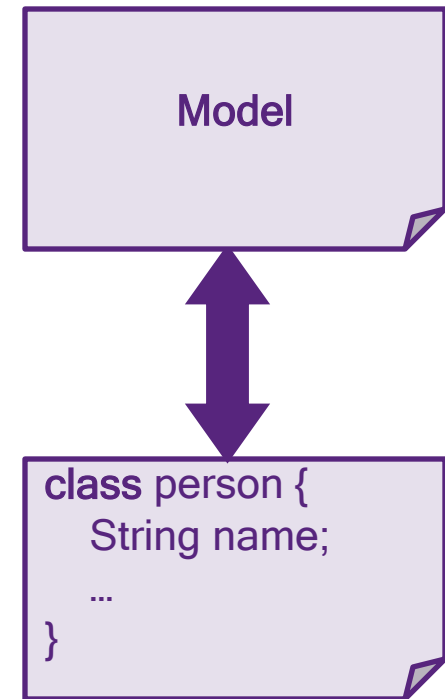
- **Problems**

- Model ⇔ code gap too large
- UML too complex
- UML is monolithical, i.e. “Main Model”
- Inflexible code generators



MODERN MDD

- **Modern MDD**
 - Bottom up
 - Domain Specific Languages
- **Advantages**
 - Model \Leftrightarrow code : close relationship
 - Small & simple models
 - Flexible



MOD4J

- **Many small DSLs**
- **Small and flexible code generators**
- **Open source**
 - Mandatory for flexibility
 - Change it yourself
 - Customer trust
- **We have done this before**
 - In other technology
 - Over two years of experience
 - Very successful
- **One year investment**
 - Three part-time developers, total 1 fte.

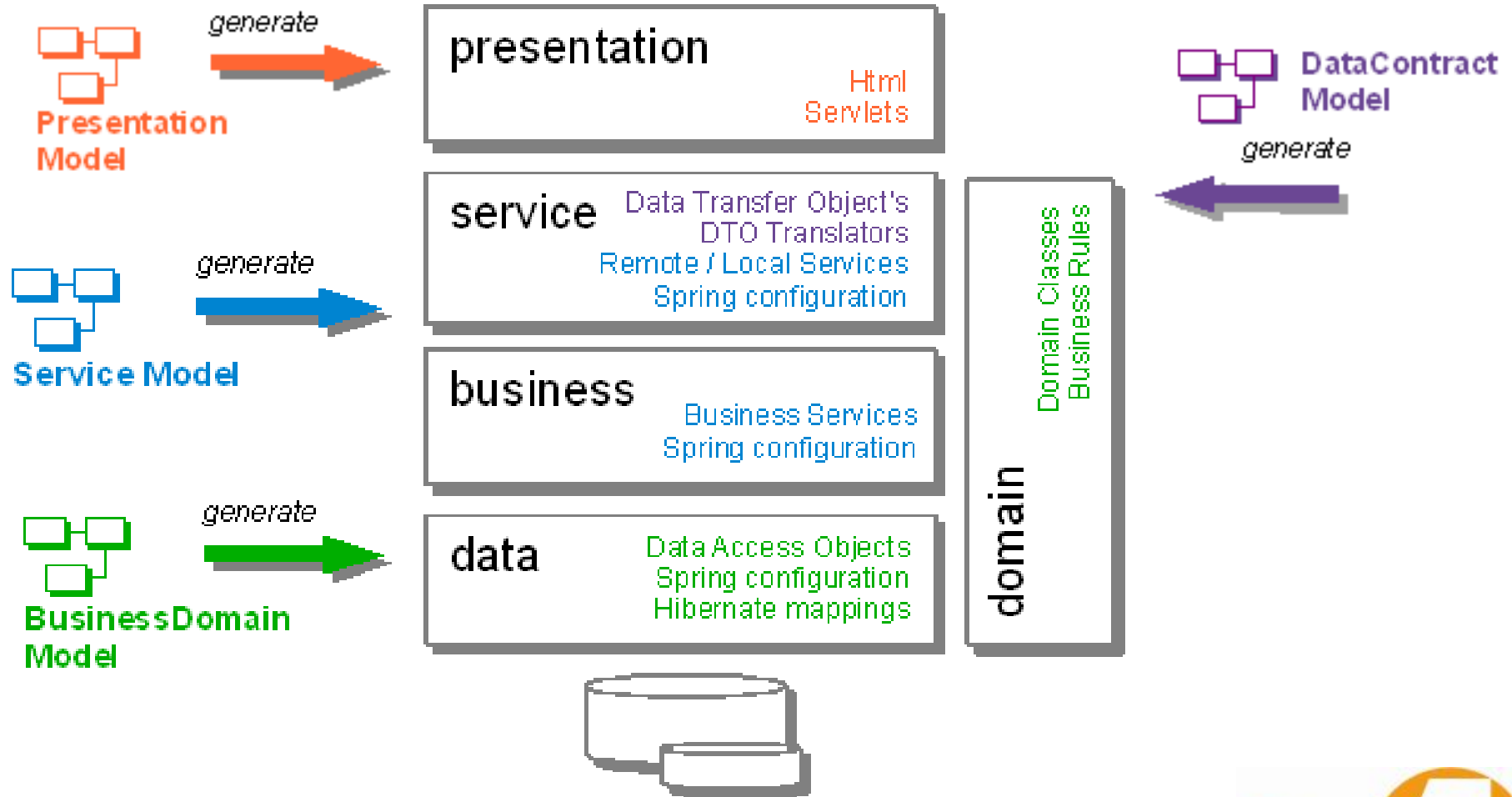




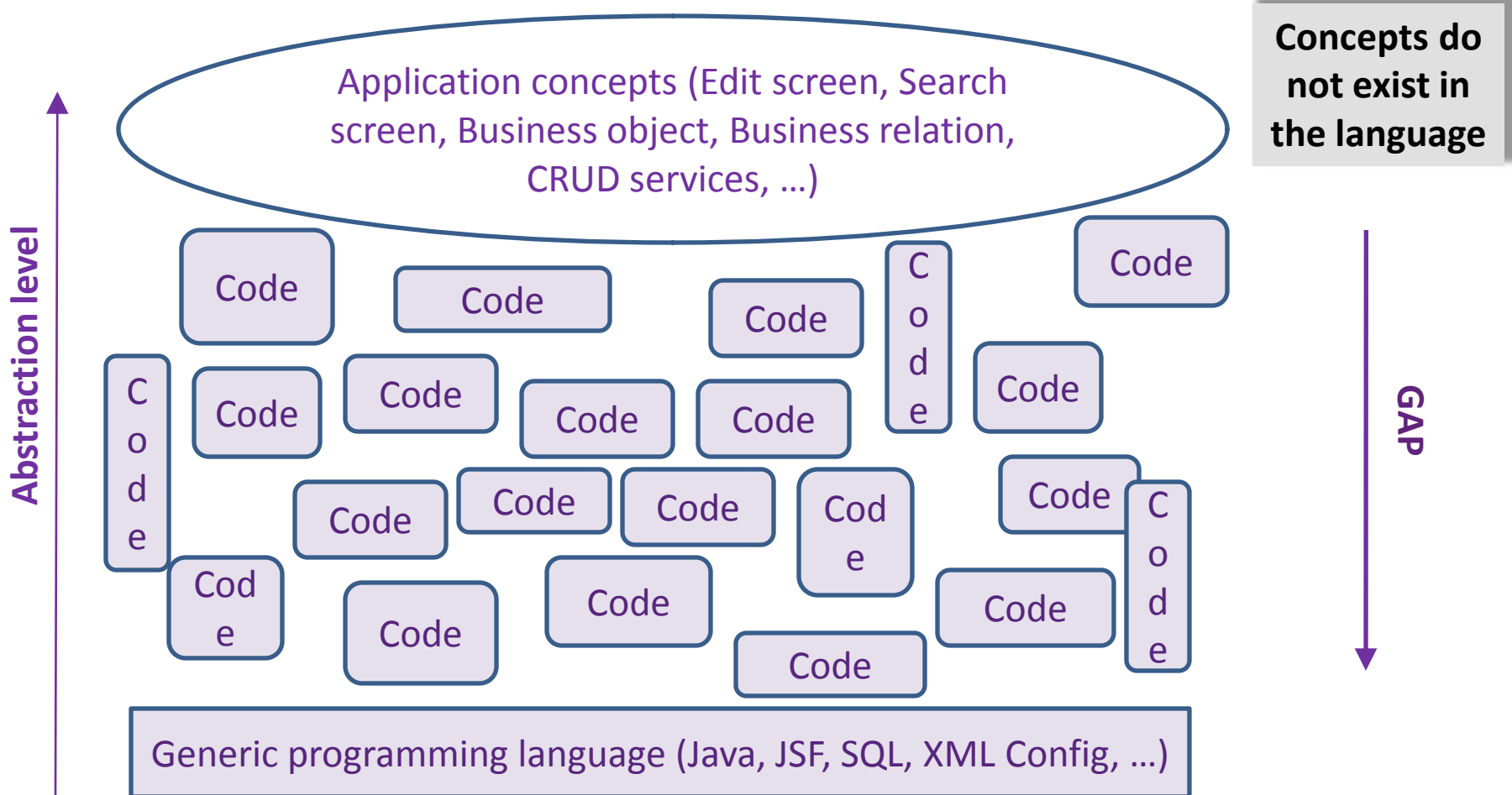
MOD4J ARCHITECTURE



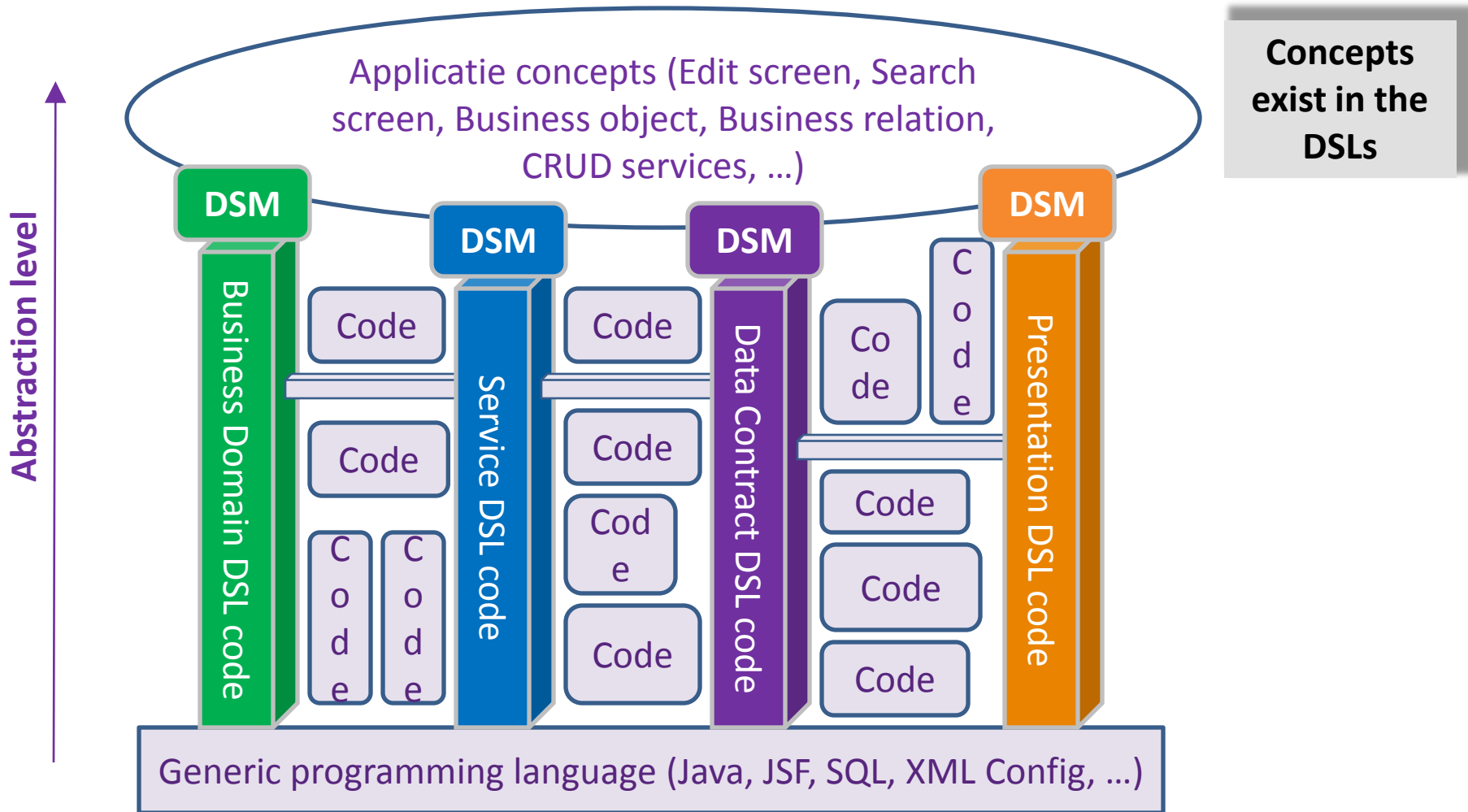
REFERENCE ARCHITECTURE



CODING ONLY



DSL AND CODING COMBINED





MOD4J PRINCIPLES



MOD4J PRINCIPLES

- **DSL's are used by developers**
 - Not by business people
- **Modeling should be easier than coding**
 - Usable by “average” developer
- **Models are used in combination with code**
 - Best of both worlds approach
- **Many small DSLs that can be used independently**
 - Flexible usage
 - No “all-or-nothing”



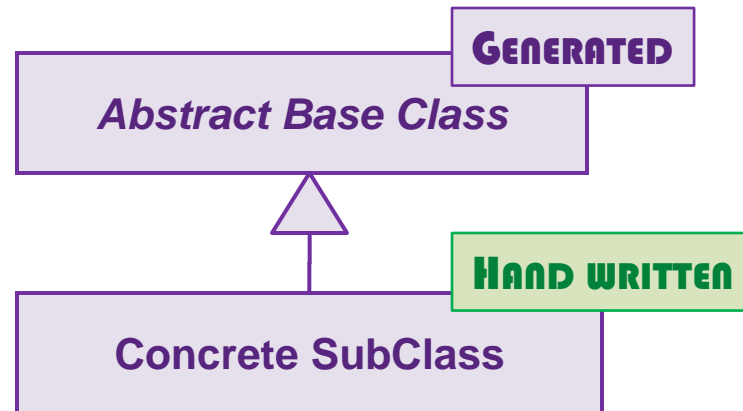
MOD4J PRINCIPLES (2)

- **Generated code is never changed manually**
 - DSLs used in full application lifecycle
 - Can be extended / overridden at defined extension points
- **Generated code must be readable**
 - Quality, understanding, minimizing risk, debugging
- **Resulting code is a “normal” Java application**
 - Use of DSLs has no effect on production environment
- **Flexibility: the world isn't static**
 - DSLs will change, new DSLs will be created
 - New code generators for existing DSLs
 - Extension points



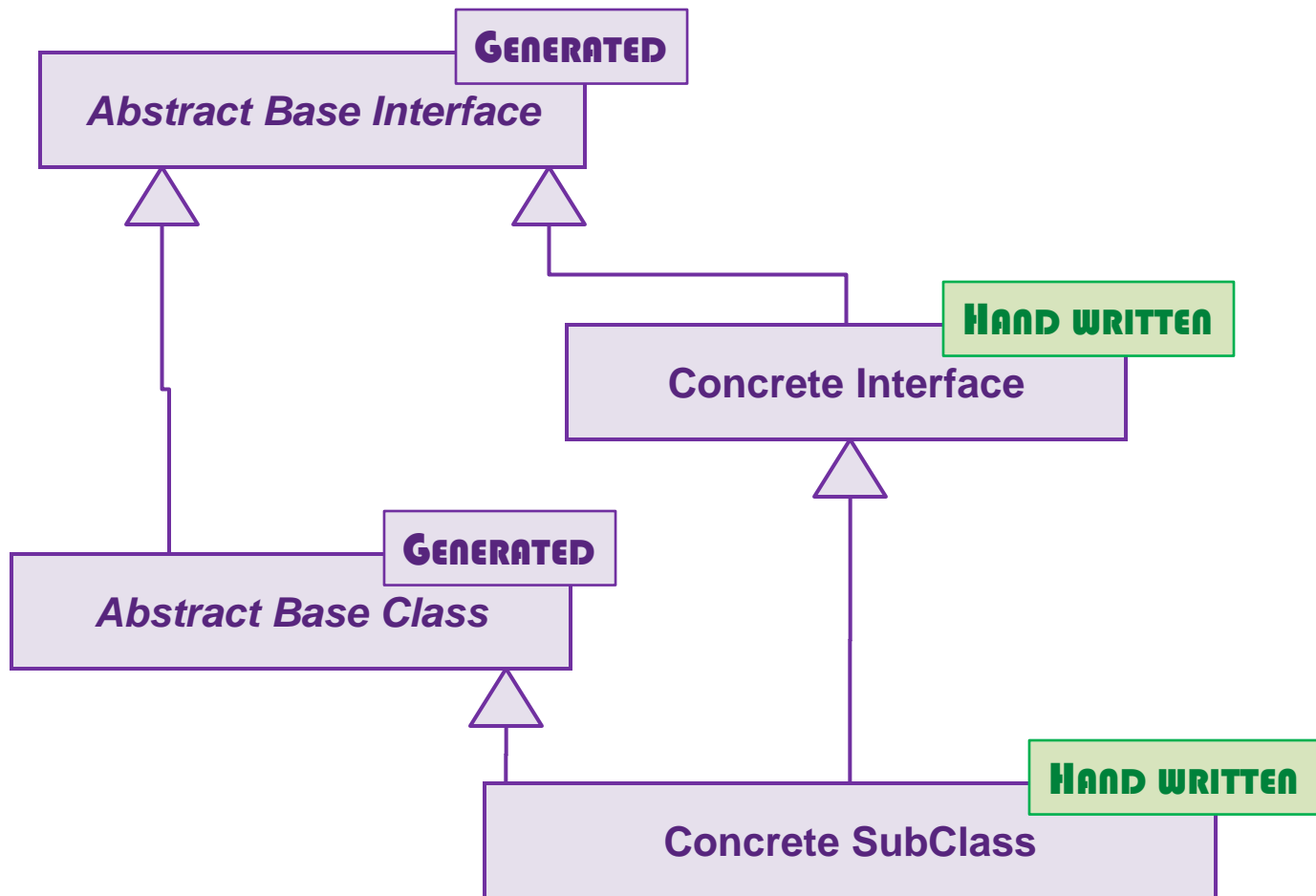
CODE GENERATION FLEXIBILITY

- Extension Points



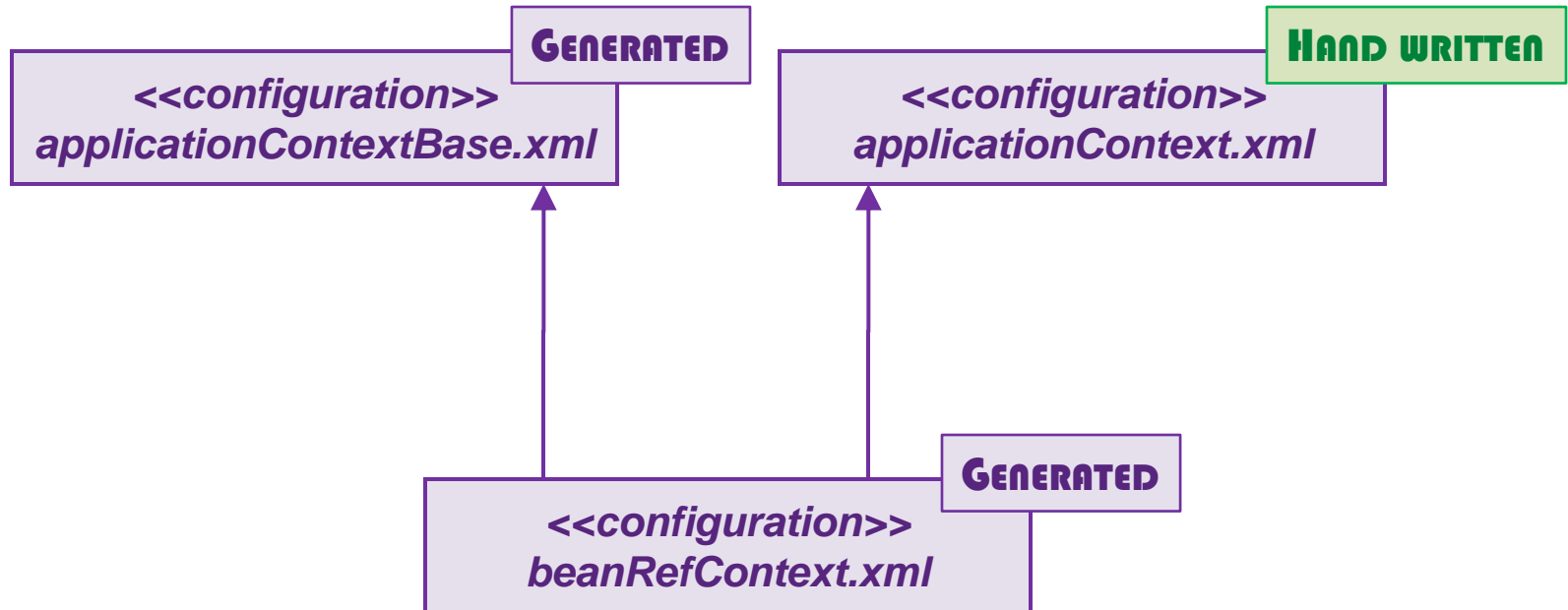
- Generation Gap Pattern

CODE GENERATION FLEXIBILITY



- Generation Gap Pattern

CODE GENERATION FLEXIBILITY



- Generation Gap Pattern



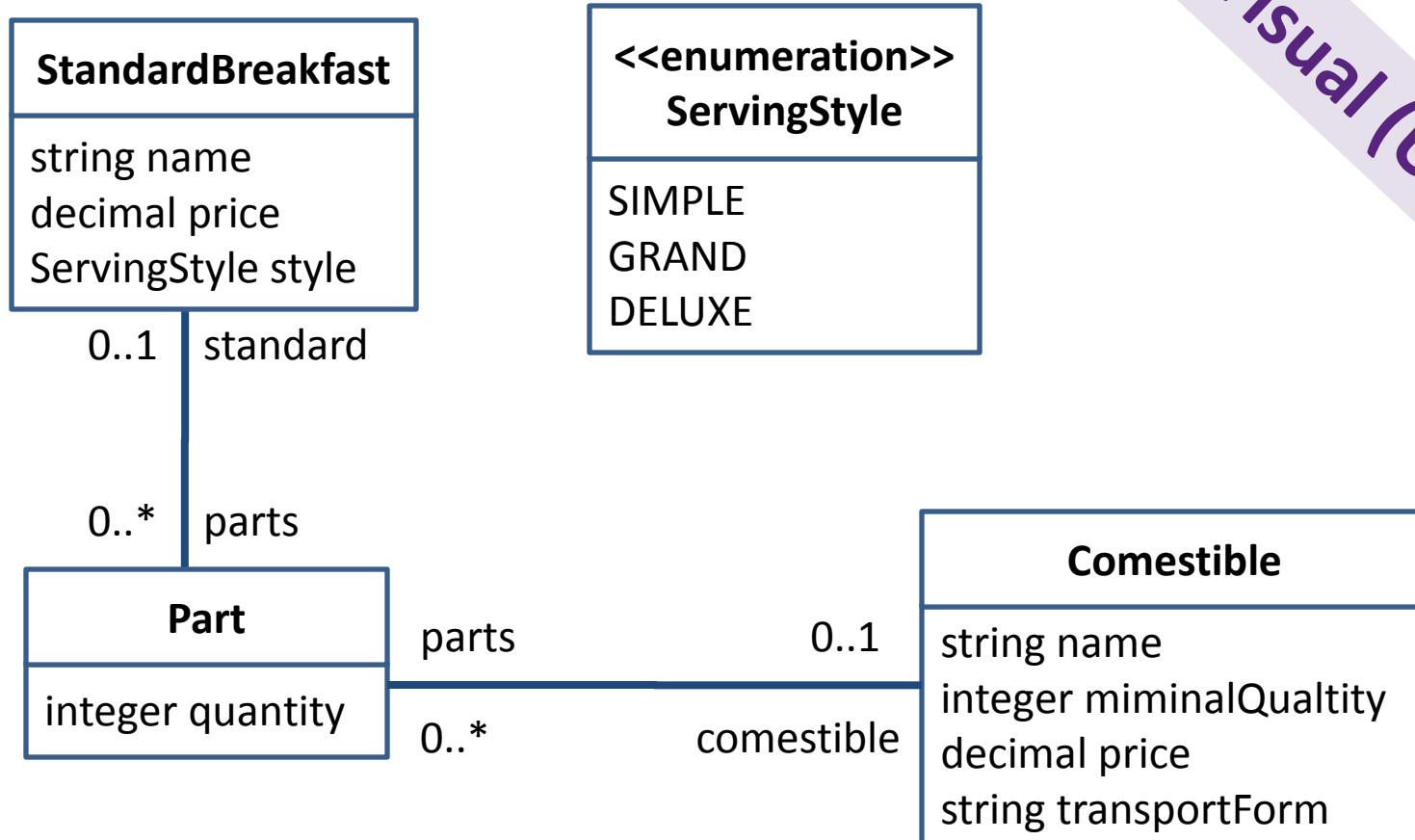
MOD4J DSLs

The Current DSLs
&
The Eclipse Integration



BUSINESS DOMAIN DSL

Visual (UML)



BUSINESS DOMAIN DSL

```
class StandardBreakfast [  
    string name;  
    decimal price;  
    ServingStyle style;  
]
```

```
class Part [  
    integer quantity;  
]
```

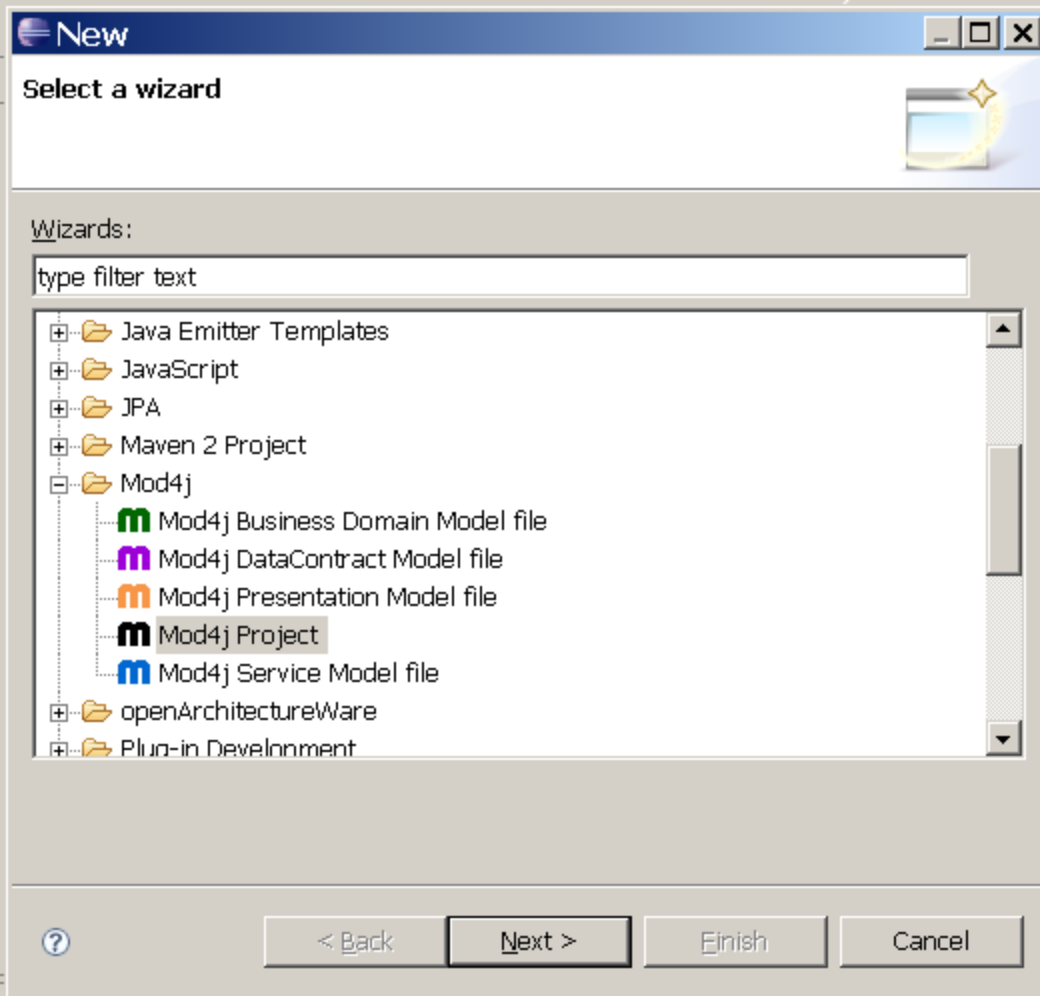
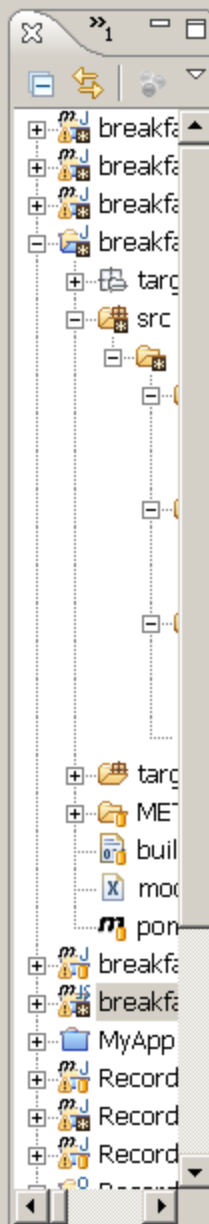
```
association StandardBreakfast standard one -> many Part parts;
```

```
enumeration ServingStyle [  
    SIMPLE = 1;  
    GRAND = 2;  
]
```

Textual (Mod4j)

Model is a text file

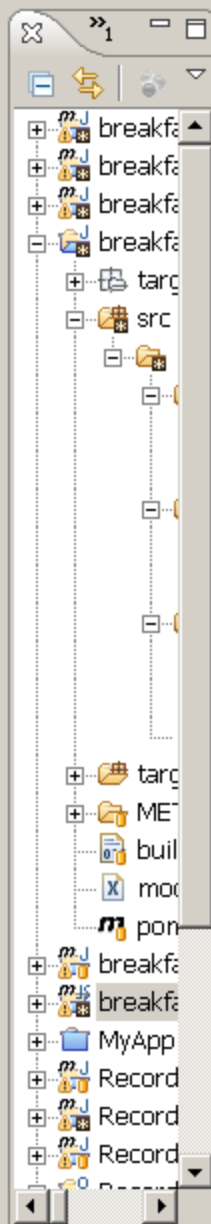
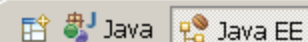




Problems Mod4j FileTracker Crossx Console Servers


mod4j.projectbuilder

```
[D:/codehaus/demos/breakfast/breakfast-data/src/main/java/com/rosa/breakfast/
MOD4J INFO: Running Business Domain Maven generator on model [breakfastDM]
writeProjectTracker [D:/codehaus/demos/breakfast/breakfast-dslModels/mod4jpro
```



Mod4j Project

Mod4j Project



Application name

Root package

☒ Use default location

Location:

Choose file system:

Problems Mod4j FileTracker Crossx Console Servers

mod4j.projectbuilder

```
[D:/codehaus/demos/breakfast/breakfast-data/src/main/java/com/rosa/breakfast/
MOD4J INFO: Running Business Domain Maven generator on model [breakfastDM]
writeProjectTracker [D:/codehaus/demos/breakfast/breakfast-dslModels/mod4jpro
```

Business Domain editor

Mod4j project

Attribute Constraints

```
domain breakfastDM;
```

```
    StandardBreakfast [
        name minlength 5 maxlength 30 ;
        price nullable ;
        ServingStyle style default SIMPLE;
        rules [
            unique name [ name ]
        ]
    ]
association StandardBreakfast standard one -> many Part part
association Part part many -> one Comestible comestible;

enumeration ServingStyle [
    SIMPLE = 1;
    GRAND = 2;
    DELUXE = 3;
]
```

Problems

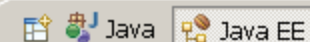
Mod4j FileTracker

Crossx

Console

Servers

```
D:/codehaus/demos/breakfast/breakfast-dslModels
+ /src/model/businessdomain/breakfast.busmod
+ /src/model/datacontract/breakfast.dtcmod
+ /src/model/service/breakfast.sermod
D:/codehaus/repository/Examples/RecordShop-ExampleProject/RecordShop-dslModels
```



Outline

```
domain breakfastDM;  
  
class StandardBreakfast [  
    string name;  
    decimal price;  
    ServingStyle style;  
    rules [  
        unique name [ name ]  
    ]  
]  
  
association StandardBreakfast standard one -> many Part part;  
association Part part many -> one Comestible comestible;  
  
enumeration  
    SIMPLE =  
    GRAND =  
    DELUXE =  
]
```

Code Completion

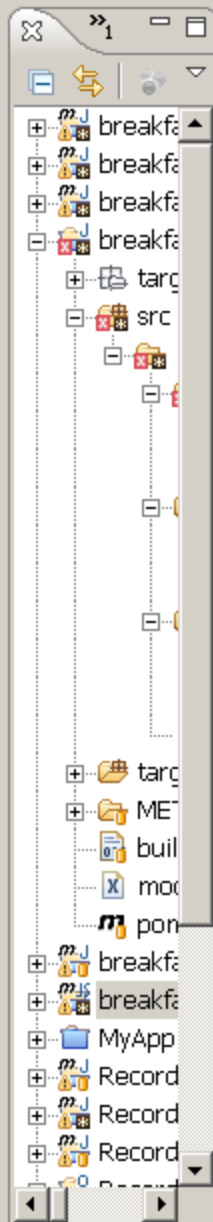
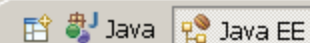
- BreakfastOrder
- Part
- Customer
- Comestible
- StandardBreakfast
- Breakfast
- Address
- Change

Outline

- ServingStyle
- StandardBreakfast
- Comestible
- Part
- Address
- Customer
- BreakfastOrder
- Breakfast
- Change
- ⇒ standard <-> part
- ⇒ part <-> comestible
- ⇒ customer <-> address
- ⇒ customer <-> order
- ⇒ order <-> delivery
- ⇒ order <-> breakfast
- ⇒ breakfast <-> serving style
- ⇒ breakfast <-> comestible
- ⇒ change <-> comestible

Problems Mod4j File

- D:/codehaus/demos/RecordShop-ExampleProject/RecordShop-dslModels
- /src/model/businessdomain/breakfast.busmod
- /src/model/datacontract/breakfast.dtcmod
- /src/model/service/breakfast.sermod
- D:/codehaus/repository/Examples/RecordShop-ExampleProject/RecordShop-dslModels



*breakfast.busmod *breakfast.dtcmod breakfast.sermod

```
domain breakfastDM;  
  
class StandardBreakfast [  
    string name;  
    decimal price;  
    ServingStyle style;  
    rules [  
        unique name [ name, ]  
    ]  
]  
association StandardBreakfas  
association Part part many -  
  
enumeration ServingStyle [  
    SIMPLE = 1;  
    GRAND = 2;  
    DELUXE = 3;  
]
```

price
style

Code
Completion

Problems Mod4j FileTracker Crossx Console Servers

D:/codehaus/demos/breakfast/breakfast-dslModels

/src/model/businessdomain/breakfast.busmod

/src/model/datacontract/breakfast.dtcmod

/src/model/service/breakfast.sermod

1-1-70 1:00 [false,false] breakfast-business/pom.xml

1-1-70 1:00 [false,false] breakfast-business/src/main/java/com/rosa/breakfast/business/BreakfastDomainService.java

Data Contract editor

```
datacontract breakfast;
```

```
from breakfastDM import StandardBreakfast;
from breakfastDM import ServingStyle;
from breakfastDM import Part;
from breakfastDM import Comestible;
from breakfastDM import Customer;
from breakfastDM import Address;
from breakfastDM import BreakfastOrder;
from breakfastDM import Breakfast;
from breakfastDM import Change;
```

```
enumeration ServingStyleDto represents ServingStyle
```

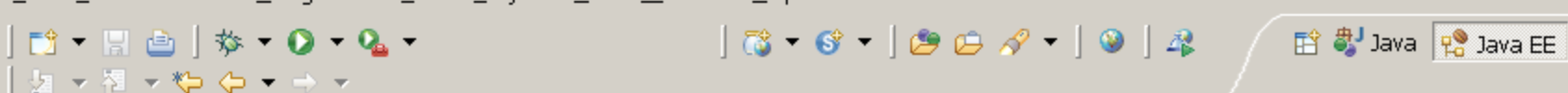
```
class StandardBreakfastDto represents StandardBreakfast [
    name; price ; style ;
    references [
        parts as PartListDto;
    ]
]
```

Outline

- StandardBreakfast
 - name
 - price
 - style
 - parts
- PartDto
- ComestibleDto
- CustomerDto
- AddressDto
- BreakfastOrderDto
- BreakfastDto
- ChangeDto
- IsComestibleUse
- StandardBreakfast
- PartListDto
- BreakfastListDto
- BreakfastOrderL
- ChangeListDto
- ServingStyleDto
- StandardBreakfast
- ServingStyle

Problems Mod4j FileTracker Crossx Console Servers

- D:/codehaus/demos/breakfast/breakfast-dslModels
 - /src/model/businessdomain/breakfast.busmod
 - /src/model/datacontract/breakfast.dtcmod
 - /src/model/service/breakfast.sermod
- D:/codehaus/repository/Examples/RecordShop-ExampleProject/RecordShop-dslModels



The image shows the Eclipse IDE interface with the following components:

- Left Panel (Project Explorer):** Displays the project structure for 'breakfast-dslModels'. It includes a 'src' folder with sub-packages like 'breakfastDM', 'breakfastDTC', and 'breakfastSVC'. Other visible packages include 'target', 'ME', 'build', 'mod', and 'pon'.
- Top Panel (Tabs):** Shows three open tabs: '*breakfast.busmod', 'breakfast.dtcmod' (active), and 'breakfast.sermod'.
- Central Editor:** Contains the DSL code for 'breakfast.dtcmod'. The code is as follows:

```
datacontract breakfast;

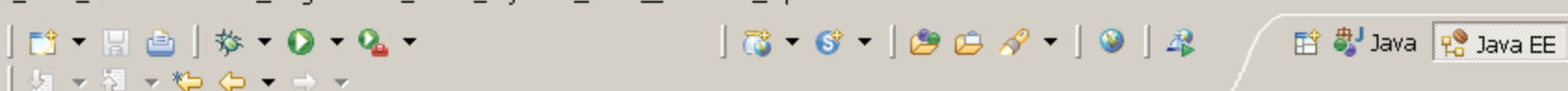
from breakfastDM import StandardBreakfast;
from breakfastDM import
from breakfastDM import
from breakfastDM import
from breakfastDM import
from breakfastDM import
from breakfastDM import
from breakfastDM import

enumeration ServingStyle

class StandardBreakfastDto represents StandardBreakfast [
    name; price ; style ;
    references [
        parts as PartListDto;
    ]
]
```
- Right Panel (Outline):** Shows the 'StandardBreakfast' class with its attributes: 'name', 'price', 'style', and 'parts'.
- Bottom Panel (Problems, Console, Servers):** Displays the project path structure:
 - D:/codehaus/demos/breakfast/breakfast-dslModels
 - /src/model/businessdomain/breakfast.busmod
 - /src/model/datacontract/breakfast.dtcmod
 - /src/model/service/breakfast.sermod
 - D:/codehaus/repository/Examples/RecordShop-ExampleProject/RecordShop-dslModels

A callout box labeled **Code Completion from Domain DSL** points to the 'StandardBreakfast' class in the import statement, highlighting the list of available classes for completion:

- Comestible
- Part
- Change
- StandardBreakfast
- ServingStyle
- Address
- BreakfastOrder
- Customer
- Breakfast



*breakfast.busmod breakfast.dtcmod breakfast.sermod

```
datacontract breakfast;
```

```
from breakfastDM import StandardBreakfast;
from breakfastDM import ServingStyle;
from breakfastDM import Part;
from breakfastDM import Comestible;
from breakfastDM import Customer;
from breakfastDM import Address;
from breakfastDM import BreakfastOrder;
from breakfastDM import Breakfast;
from breakfastDM import Change;
```

```
enumeration ServingStyleDto represents ServingStyle
```

```
class StandardBreakfastDto represents S
    name; price ; style ;
    references [
        parts as PartListDto;
    ]
```

ServingStyle

Outline

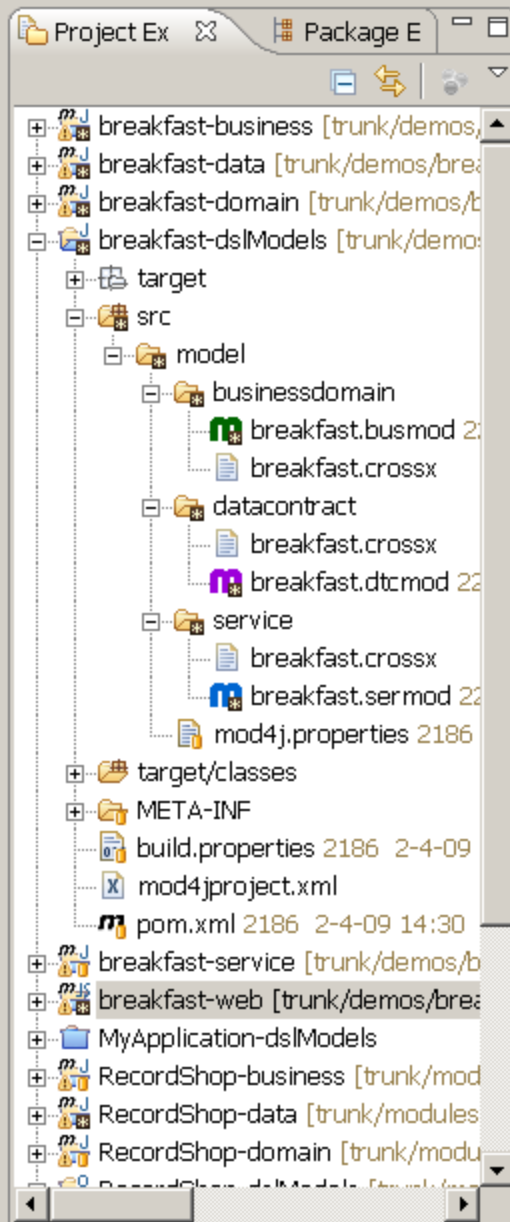
- StandardBreakfast
- name
- price
- style
- parts
- PartDto
- ComestibleDto
- CustomerDto
- AddressDto
- BreakfastOrderDto
- BreakfastDto
- ChangeDto
- IsComestibleUse
- StandardBreakf

Problems Mod4j FileTracker Crossx Console Servers

- D:/codehaus/demos/breakfast/breakfast-dslModels
 - /src/model/businessdomain/breakfast.busmod
 - /src/model/datacontract/breakfast.dtcmod
 - /src/model/service/breakfast.sermod
- D:/codehaus/repository/Examples/RecordShop-ExampleProject/RecordShop-dslModels



Service
editor



breakfast.busmod breakfast.dtcmod breakfast.sermod

```
service breakfast;
```

```
from breakfast import StandardBreakfastDto;  
from breakfast import PartDto;  
from breakfast import PartListDto;  
from breakfast import Comestible;  
from breakfast import IsComestibleUsed;
```

```
crud StandardBreakfastDto;  
crud PartDto;  
crud ComestibleDto;
```

```
listall listAllStandardBreakfastDto;  
listall listAllComestible for
```

```
find findBreakfast for StandardBreakfastDto ;
```

```
for StandardBreakfastDto reference parts add PartDto;  
for StandardBreakfastDto reference parts remove PartDto;
```

Shortcut for CRUD
methods

Mod4j
FileTracker

Problems Mod4j FileTracker Crossx Console Servers

```
D:/codehaus/demos/breakfast/breakfast-dslModels  
  /src/model/businessdomain/breakfast.busmod  
  /src/model/datacontract/breakfast.dtcmod  
  /src/model/service/breakfast.sermod  
D:/codehaus/repository/Examples/RecordShop-ExampleProject/RecordShop-dslModels
```

Files generated from this model



/src/model/businessdomain/breakfast.busmod

- 1-1-70 1:00 [false,false] breakfast-data/pom.xml
- 1-1-70 1:00 [false,false] breakfast-data/src/main/java/com/rosa/breakfast/data/ComestibleDao.java
- 1-1-70 1:00 [false,false] breakfast-data/src/main/java/com/rosa/breakfast/data/hibernate/spring/ComestibleDaoImpl.java
- 1-1-70 1:00 [false,false] breakfast-data/src/main/resources/environment.properties
- 1-1-70 1:00 [false,false] breakfast-data/src/main/resources/com/rosa/breakfast/data/applicationContext.xml
- 1-1-70 1:00 [false,false] breakfast-domain/pom.xml
- 1-1-70 1:00 [false,false] breakfast-domain/src/main/java/com/rosa/breakfast/domain/Part.java
- 1-1-70 1:00 [false,false] breakfast-dslModels/pom.xml
- 1-1-70 1:00 [false,false] pom.xml
- 14-4-09 9:45 [false,false] breakfast-data/generated-resources/com/rosa/breakfast/data/applicationContextBase.xml
- 14-4-09 9:45 [false,false] breakfast-data/generated-resources/com/rosa/breakfast/data/beanRefContext.xml
- 14-4-09 9:45 [false,false] breakfast-data/generated-resources/com/rosa/breakfast/domain/Address.hbm.xml
- 14-4-09 9:45 [false,false] breakfast-data/generated-resources/com/rosa/breakfast/domain/Breakfast.hbm.xml
- 14-4-09 9:45 [false,false] breakfast-data/generated-resources/com/rosa/breakfast/domain/BreakfastOrder.hbm.xml
- 14-4-09 9:45 [false,false] breakfast-data/generated-resources/com/rosa/breakfast/domain/Change.hbm.xml
- 14-4-09 9:45 [false,false] breakfast-data/generated-resources/com/rosa/breakfast/domain/Comestible.hbm.xml
- 14-4-09 9:45 [false,false] breakfast-data/generated-resources/com/rosa/breakfast/domain/Customer.hbm.xml
- 14-4-09 9:45 [false,false] breakfast-data/generated-resources/com/rosa/breakfast/domain/Part.hbm.xml
- 14-4-09 9:45 [false,false] breakfast-data/generated-resources/com/rosa/breakfast/domain/StandardBreakfast.hbm.xml
- 14-4-09 9:45 [false,false] breakfast-data/generated-sources/com/rosa/breakfast/data/AddressDaoBase.java
- 14-4-09 9:45 [false,false] breakfast-data/generated-sources/com/rosa/breakfast/data/BreakfastDaoBase.java
- 14-4-09 9:45 [false,false] breakfast-data/generated-sources/com/rosa/breakfast/data/BreakfastDMDaoBase.java
- 14-4-09 9:45 [false,false] breakfast-data/generated-sources/com/rosa/breakfast/data/BreakfastOrderDaoBase.java
- 14-4-09 9:45 [false,false] breakfast-data/generated-sources/com/rosa/breakfast/data/ChangeDaoBase.java
- 14-4-09 9:45 [false,false] breakfast-data/generated-sources/com/rosa/breakfast/data/ComestibleDaoBase.java
- 14-4-09 9:45 [false,false] breakfast-data/generated-sources/com/rosa/breakfast/data/CustomerDaoBase.java
- 14-4-09 9:45 [false,false] breakfast-data/generated-sources/com/rosa/breakfast/data/GenericEnumUserType.java
- 14-4-09 9:45 [false,false] breakfast-data/generated-sources/com/rosa/breakfast/data/hibernate/spring/AddressDaoImplBase.java
- 14-4-09 9:45 [false,false] breakfast-data/generated-sources/com/rosa/breakfast/data/hibernate/spring/BreakfastDaoImplBase.java
- 14-4-09 9:45 [false,false] breakfast-data/generated-sources/com/rosa/breakfast/data/hibernate/spring/BreakfastOrderDaoImplBase.java



D:/codehaus/demos/breakfast/breakfast-dslModels

/src/model/businessdomain/breakfast.busmod

/src/model/datacontract/breakfast.dtcmod

1-1-70 1:00 [false,false] breakfast-service/pom.xml

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/AddressDto.java

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/BreakfastDto.java

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/BreakfastOrderDto.java

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/ChangeDto.java

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/ComestibleDto.java

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/CustomerDto.java

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/IsComestibleUsed.java

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/PartDto.java

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/ServingStyleDto.java

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/StandardBreakfastDto.java

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/translators/AddressDtoTranslator.java

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/translators/BreakfastDtoTranslator.java

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/translators/BreakfastOrderDtoTranslator.java

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/translators/ChangeDtoTranslator.java

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/translators/ComestibleDtoTranslator.java

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/translators/CustomerDtoTranslator.java

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/translators/IsComestibleUsedTranslator.java

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/translators/PartDtoTranslator.java

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/translators/ServingStyleDtoTranslator.java

14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/translators/StandardBreakfastDtoTranslator.java

7-4-09 13:07 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/ComestibleListDto.java

7-4-09 13:07 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/PartListDto.java

7-4-09 13:07 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/StandardBreakfastListDto.java

7-4-09 13:07 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/translators/ComestibleListDtoTranslator.java

7-4-09 13:07 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/translators/PartListDtoTranslator.java

7-4-09 13:07 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/dto/translators/StandardBreakfastListDtoTranslator.java

/src/model/service/breakfast.sermod



D:/codehaus/demos/breakfast/breakfast-dslModels

- /src/model/businessdomain/breakfast.busmod
- /src/model/datacontract/breakfast.dtcmod
- /src/model/service/breakfast.sermod
 - 1-1-70 1:00 [false,false] breakfast-business/pom.xml
 - 1-1-70 1:00 [false,false] breakfast-business/src/main/java/com/rosa/breakfast/business/BreakfastDomainService.java
 - 1-1-70 1:00 [false,false] breakfast-business/src/main/java/com/rosa/breakfast/business/BreakfastDomainServiceImpl.java
 - 1-1-70 1:00 [false,false] breakfast-business/src/main/resources/com/rosa/breakfast/business/applicationContext.xml
 - 1-1-70 1:00 [false,false] breakfast-service/src/main/java/com/rosa/breakfast/service/BreakfastLocalServiceImpl.java
 - 1-1-70 1:00 [false,false] breakfast-service/src/main/resources/com/rosa/breakfast/service/applicationContext.xml
 - 14-4-09 9:45 [false,false] breakfast-business/generated-resources/com/rosa/breakfast/business/applicationContextBase.xml
 - 14-4-09 9:45 [false,false] breakfast-business/generated-resources/com/rosa/breakfast/business/beanRefContext.xml
 - 14-4-09 9:45 [false,false] breakfast-business/generated-sources/com/rosa/breakfast/business/BreakfastDomainServiceBase.java
 - 14-4-09 9:45 [false,false] breakfast-business/generated-sources/com/rosa/breakfast/business/BreakfastDomainServiceImplBase.java
 - 14-4-09 9:45 [false,false] breakfast-service/generated-resources/com/rosa/breakfast/service/applicationContextBase.xml
 - 14-4-09 9:45 [false,false] breakfast-service/generated-resources/com/rosa/breakfast/service/beanRefContext.xml
 - 14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/BreakfastLocalService.java
 - 14-4-09 9:45 [false,false] breakfast-service/generated-sources/com/rosa/breakfast/service/BreakfastLocalServiceImplBase.java

D:/codehaus/repository/Examples/RecordShop-ExampleProject/RecordShop-dslModels

A DSL MODEL $\approx \approx$ CODE FILE

- **Multi user aspects**
 - Is the unit of multi-user access and version control
 - Use familiar and proven version control systems (e.g. SVN)
 - Can use standard text merging tools
- **Code generation aspects**
 - Is separately transformed to code
 - Integrates in Eclipse build mechanism
 - Is the source for continuous builds
- **User interface aspects**
 - Behaves very much like Java code in Eclipse
 - Syntax highlighting
 - Code completion
 - Full validation over all DSL models



MOD4J

- **Uses the Eclipse Modeling Project and oAW**
 - Ecore / EMF, Xpand, Xtext / TMF, Checks / OCL, ...
- **Fully “Mavenized”**
 - No need for Eclipse
 - DSL models are the source for the continuous build
 - Everything runs under Maven



CURRENT STATUS

- **Release 1: three DSL's:**
 - Business Domain
 - Data Contract
 - Service
- **Next release**
 - Presentation DSL (Jim van Dam)
 - First version already at Codehaus
 - ... and what is contributed by the community
- **Committer on Eclipse “EMF Index” project**
 - Mod4j Crossx component
 - Collaboration of independent DSLs
 - Essential for scaling up modeling
- **Collaboration of emfvisualization project**





AND THEN

Mod4j is open source ...

Where do we go from here ...



Mod4J FAQ

Is Mod4j finished?

No !

When will Mod4j be finished?

Never !

Can everyone join Mod4j?

Yes !

How can we collaborate on Mod4j?

- Use Mod4j & give feedback
- Enhance the current DSLs
- Write new code generator for current DSLs
- Develop new DSLs
- Make the Eclipse integration even better





→ News

- > Mod4j at JSpring 2009
- > Mod4j at Code Generation 2009
- > Mod4j 1.0.0 released
- More news ...

→ About Mod4j

Home

- Releases
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→ User Docs

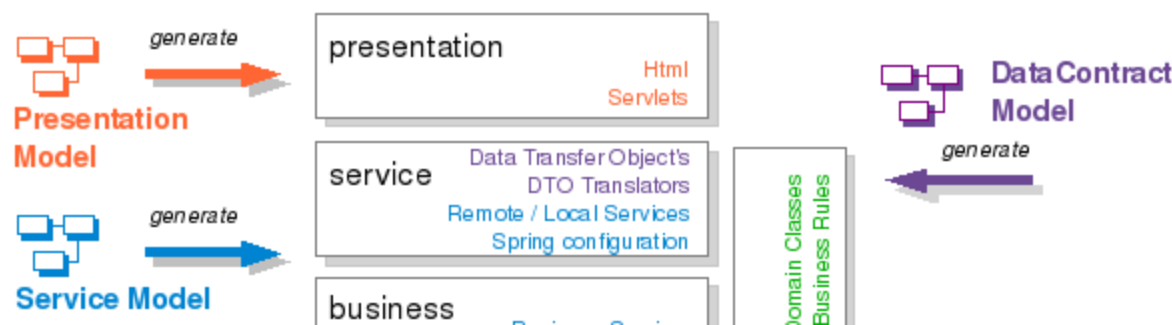
- Getting Started
- User Guide - PDF
- User Guide - HTML
- Application Architecture - PDF
- Application Architecture - HTML
- All versions

→ Mod4j Developer Docs

- Developer Guide
- Release Guide

Mod4j (Modeling for Java) is an open source DSL-based environment for developing administrative enterprise applications. It uses a collection of DSL's to model different parts of the architecture, combined with manually written code. Currently Mod4j consists of four DSLs: the Business Domain DSL, Service DSL, Data Contract DSL and Presentation DSL. The modeling environment is seamlessly integrated into the Eclipse IDE which gives the developers one environment where they can easily switch back- and forth between models and code. The different DSL's used in Mod4j can be used independently, but if they are used in collaboration they will be fully validated with each other. Apart from integration in the Eclipse IDE, Mod4j also supports the use of Maven. That is, using the DSL models as the source, the complete code generation process can be run automatically on a build server without the need for Eclipse.

The Mod4j DSLs and the corresponding code generators are based on a reference architecture. This allows developers to model various aspects of the application and generate code that strictly follows this reference architecture. The reference architecture is described in a separate document. For a good understanding of the generated code it is useful to read this document -> [PDF](#) or [HTML](#)



DEMO? KOM NAAR DE MOD4J STAND

Tweede verdieping links



Eric Jan Malotaux



Johan Vogelzang



OF NAAR DE INNOVEERJIJMEE SESSIE

- Maandag 27 April, 's avonds
- Ordina Nieuwegein
- Gratis
- Inschrijven via www.innoveerjijmee.nl



INNOVEER JIJ MEE

Mod4j





J-Spring
15 april 2009 Spant!



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