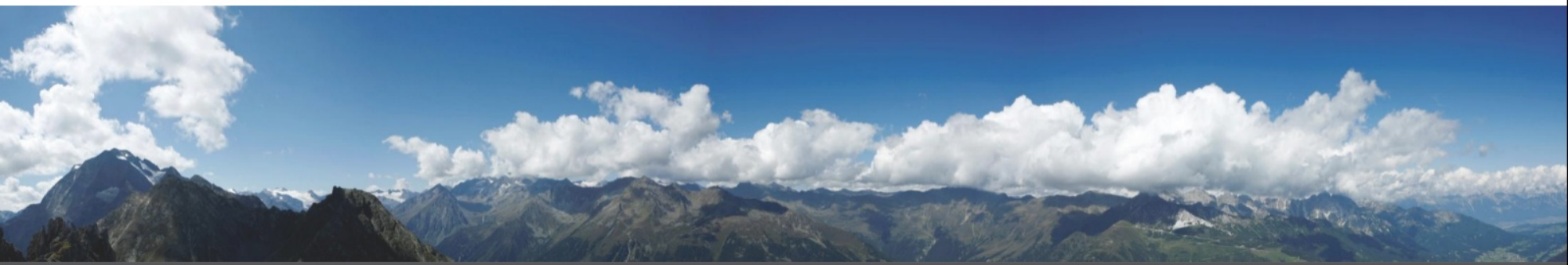
STI · INNSBRUCK

703657 PS/2 Web Engineering

Task 4 - Web Application Modeling II

Wednesday, 2015-04-22



Schedule - Where are we now?

STI · INNSBRUCK

Session	Date	Task
1	Wed, 2015-03-11	Project idea
2	Wed, 2015-03-18	Requirements engineering
3	Wed, 2015-03-25	Web Application Modeling
4	Wed, 2015-04-15	Progress / Presentation
5	**Wed, 2015-04-22**	**Web Application Modeling II**
6	Wed, 2015-04-29	-
7	Wed, 2015-05-06	Mid-Term Report / Presentation
8	Wed, 2015-05-13	-
9	Wed, 2015-05-20	-
10	Wed, 2015-05-27	-
11	Wed, 2015-06-03	Progress / Presentation
12	Wed, 2015-06-10	-
13	Wed, 2015-06-17	-
14	Wed, 2015-06-24	Final Report / Presentation

Recap (1)

STI · INNSBRUCK

The three levels used when modeling web applications:

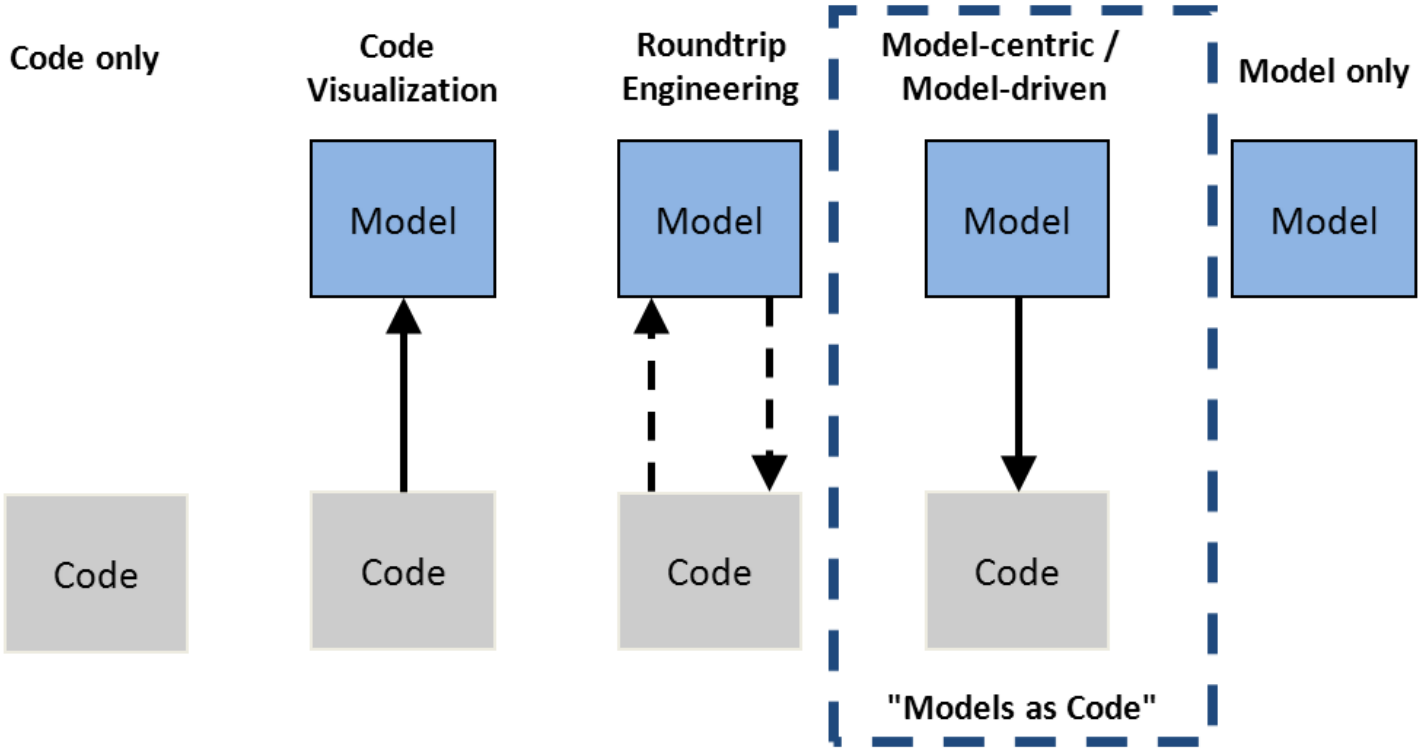
1. Content $\rightarrow$ the information and application logics underneath the web application
2. Hypertext (Navigation) $\rightarrow$ the structuring of the content into nodes and links between these nodes
3. Presentation $\rightarrow$ the user interface or page layout

A clear separation of these three levels allows reuse and helps to reduce complexity

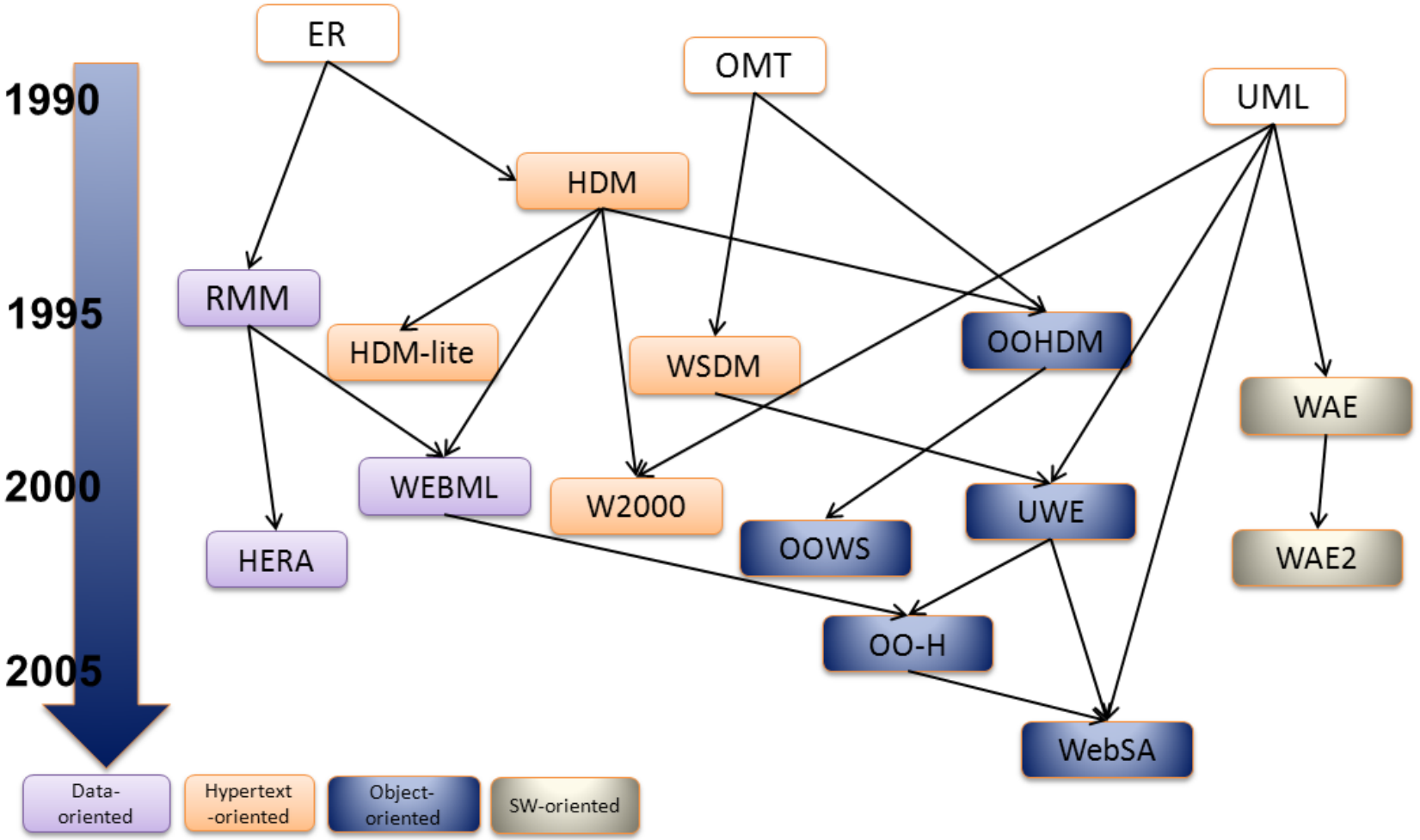
Recap (2)

STI · INNSBRUCK

1. Models as sketch, communicate ideas and alternatives
2. Models as blueprint, lay out all design decisions
3. Models as program, generate applications automatically



Recap (3)


1990
1995
2000
2005
ER
OMT
UML
HDM
RMM
HDM-lite
WSDM
OOHDM
WAE
WEBML
W2000
UWE
HERA
OOWS
WAE2
OO-H
WebSA
Data-oriented
Hypertext-oriented
Object-oriented
SW-oriented

Modeling Methods

STI · INNSBRUCK

Modeling Method	Modeling Paradigm	Notation	Evolving	Requirements Modeling	Content Modeling	Hypertext Modeling	Presentation Modeling	Customization Modeling	Structure and Behavior	Process / Approach	Tool Support	Generation	Strengths
UWE	OO	UML	✓	✓	✓	✓	✓	pers	s + b	RUP	extended UML tool & generation tools	semi	UML-based method, model-driven development, aspect-oriented customization
WebML	DB	ER, UML	✓	✓	✓	✓	✕	pers	s + b	own	modeling- & generation tool	auto	well-elaborated notation, database integration, generation

✓	supported
✕	not supported

pers	personalization

s	structure modeling
b	behavior modeling

RUP	Rational Unified Process
own	own process model / approach

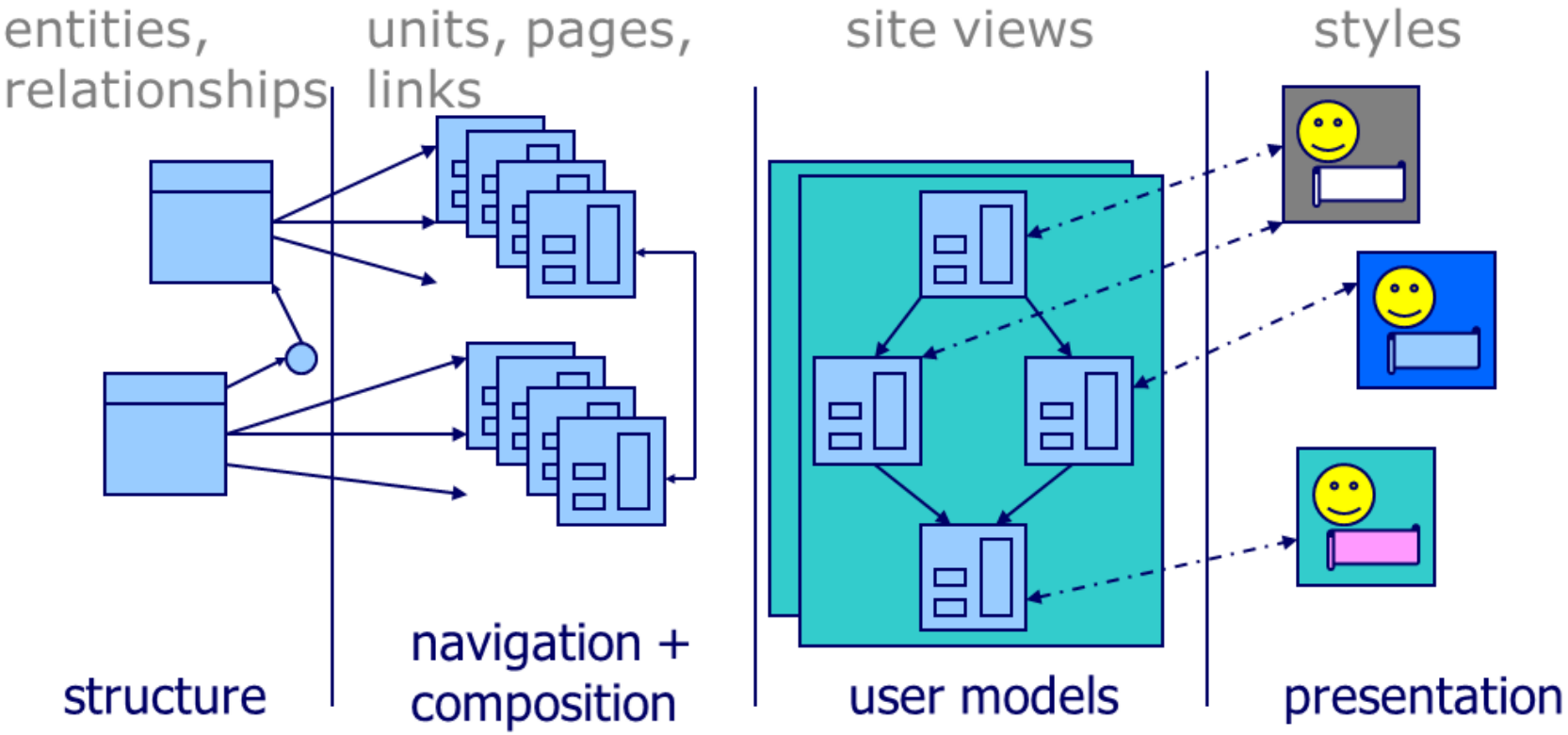
auto	automatic generation
semi	semi-automatic generation

DB	data-oriented
HT	hypertext-oriented
OO	object-oriented
SW	software-oriented

WebML Concepts

STI · INNSBRUCK

Site = Structure + Composition + Navigation + Presentation



WebML Models

STI · INNSBRUCK

i) Structure model - data organization

ii) Derivation model - redundant data definition

iii) Composition model - definition of site pages as set of sub-pages and elementary publishing units

iv) Navigation model - definition of links between pages and between units

v) Presentation model - positioning of the units in the page and definition of graphical appearance

More in the lectures...

WebRatio (1)

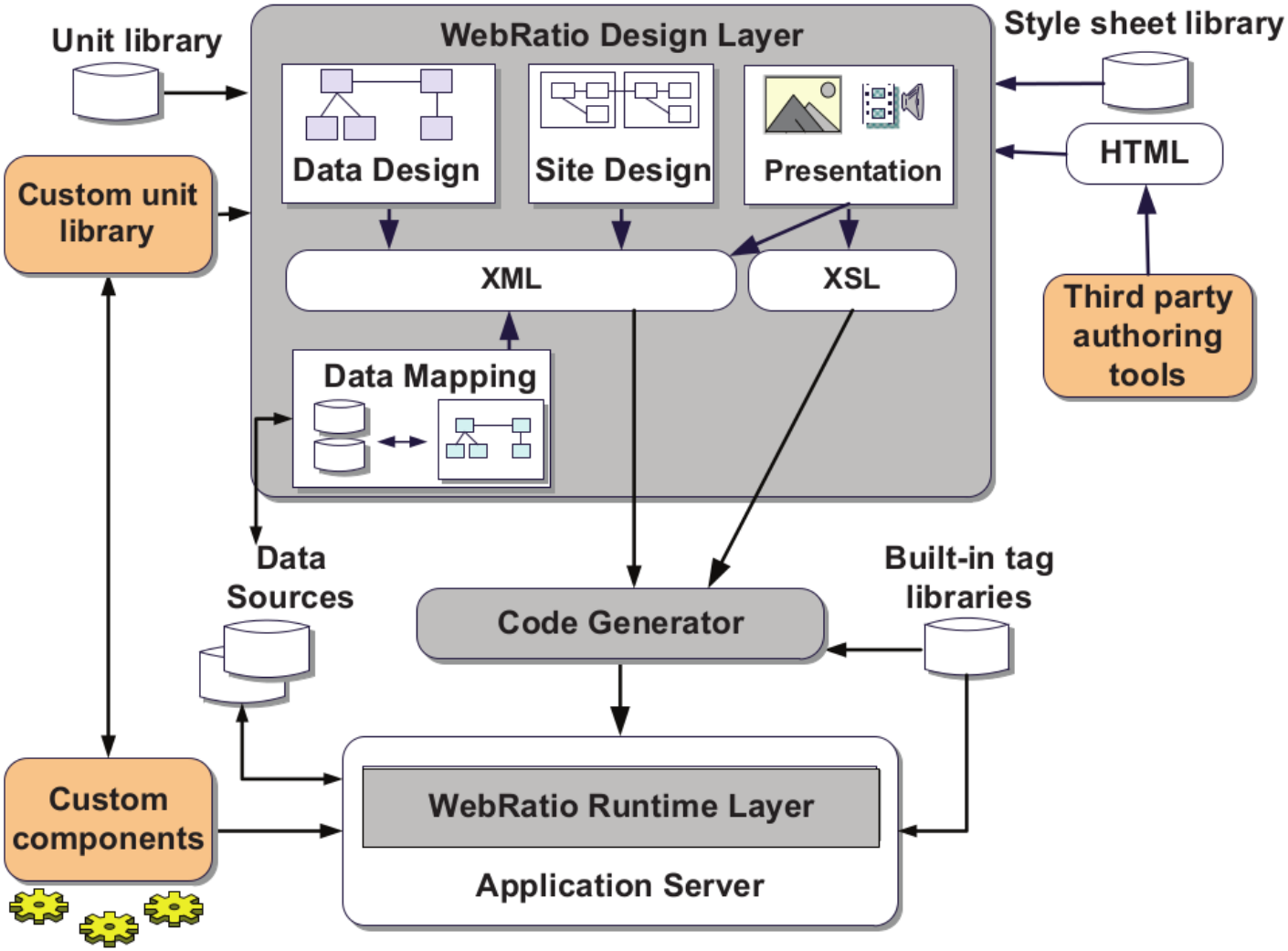
STI · INNSBRUCK

- WebML is now converging into IFML (Interaction Flow Modeling Language) [1]
- Application development is assisted by WebRatio [2]
- The architecture of WebRatio:
  1. a design layer, providing functions for the visual editing of specifications
  2. a run-time layer, implementing the basic services for executing WebML units on top of a standard Web application framework

[1] http://www.ifml.org/

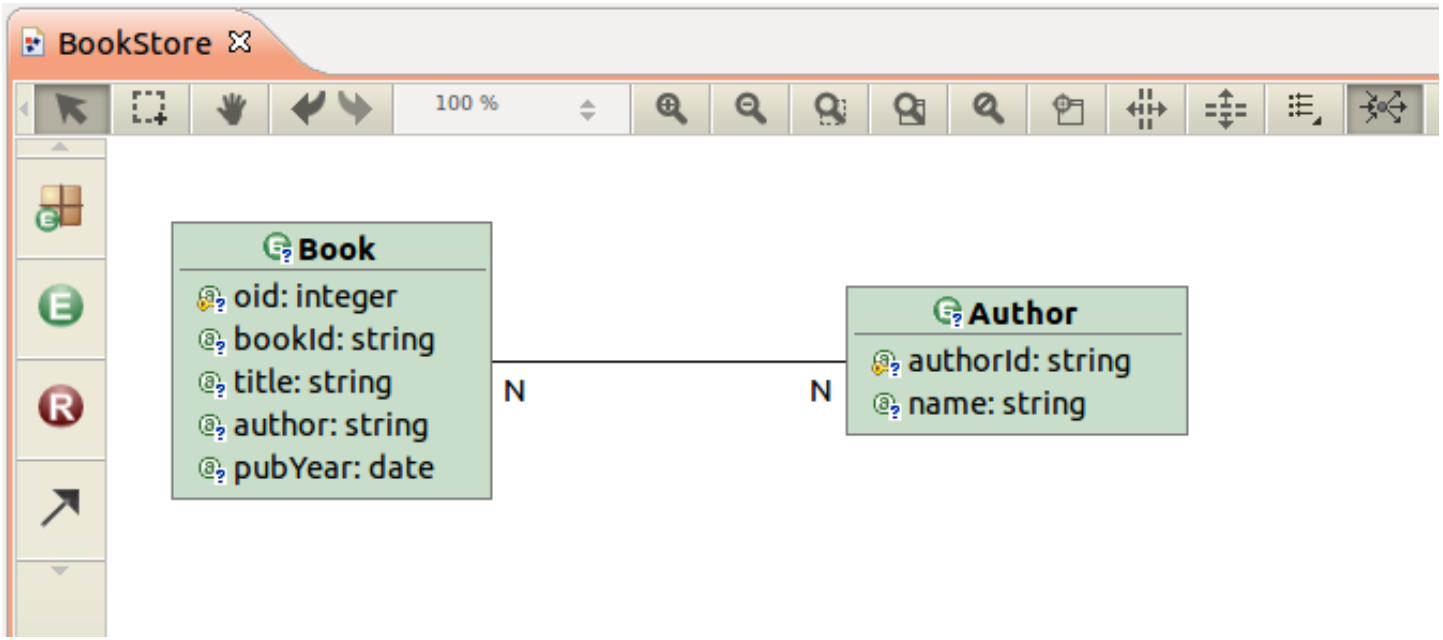
[2] http://www.webratio.com/

WebRatio (2)


Unit library
WebRatio Design Layer
Style sheet library
Data Design
Site Design
Presentation
HTML
Custom unit library
XML
XSL
Third party authoring tools
Data Mapping
Data Sources
Built-in tag libraries
Code Generator
Custom components
WebRatio Runtime Layer
Application Server

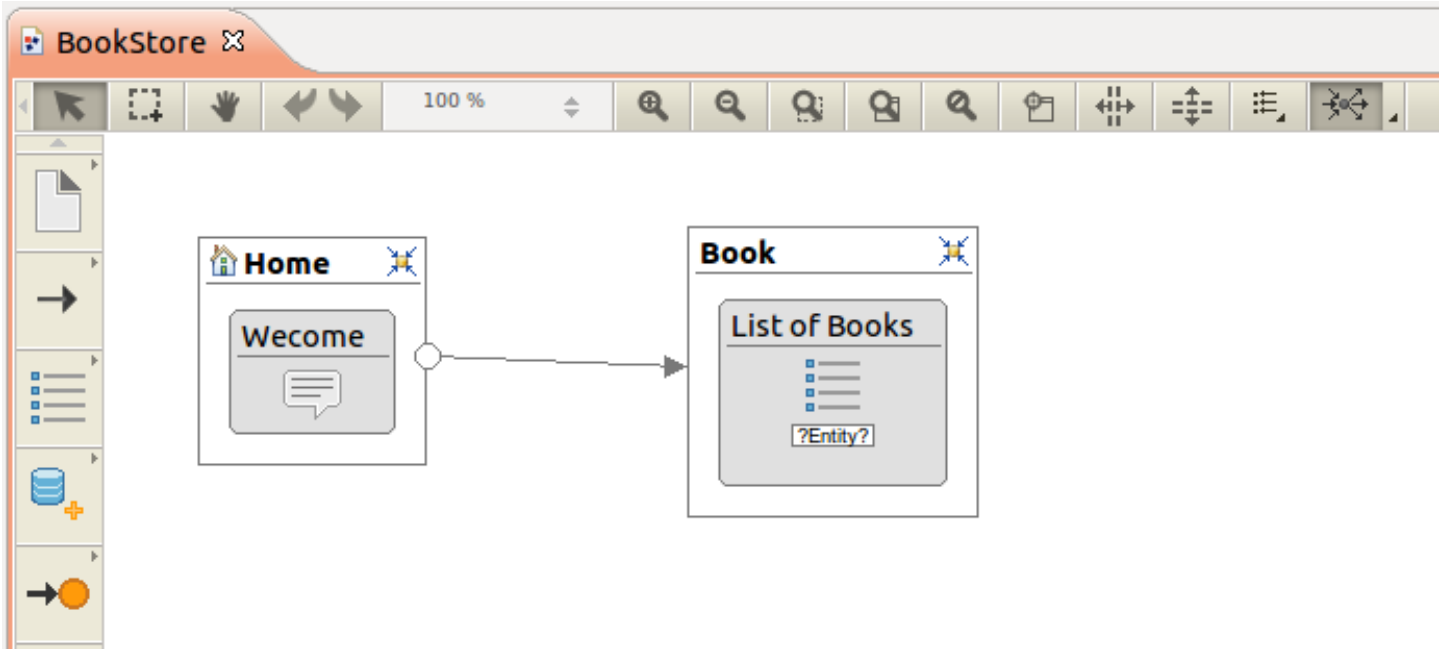
WebRatio - Domain Model

- Conceptual description of the data, like ER and UML
- Describes the conceptual data organization of the WebRatio applications



WebRatio - Site Views

- Modules representing pages and units
- A self-contained portion of an interaction flow model supporting the use cases of a specific user role or device



Service Views:

- Means to expose Web Services
- A container of web services and scheduled operations models made available by the application

Module Definitions:

- Collection of modules
- A container of reusable portions of an interaction flow model

Task 4 - Web Application Modeling II

STI · INNSBRUCK

Group assignment:

1. Use WebRatio [3] to model your project.
   i) Domain Model
   ii) Site Views
2. Export your WebRatio's project as a "Single Project File"
3. Send the files to the tutor by the next session (Wednesday, 2015-04-29, 08.15) at the latest

[3] http://www.webratio.com/