“Modeling” Phase

Week 4
Announcement

• Midterm I
  – Monday March, 7\textsuperscript{th}

• Scope
  – Ch. 1, 2, 3, 4 and Ch. 6 of the text book
  – Ch. 1, 2 and 3 of the lab book
Agenda (Lecture)

• “Modeling phase” or equivalent phase
Agenda (Lab)

• Weekly progress report

• Lab/homework assignments
Team Homework Assignment #5

• Study the analysis modeling for WebApps (Ch 7 or related materials) and prepare for presentation slides.
• Due date is 7:00 pm, February 21\textsuperscript{th}
Team Lab Assignment #4

• Submit the first version of analysis modeling diagrams for your group project
  – Make slides for presentation

• Due date
  – The beginning of the 2/21 lab session
WebE Process Activities & Actions
Chapter 6: The Modeling Activity

• **Analysis modeling** helps you to understand the nature of the problem being addressed and the “shape” of the WebApp that will allow you to address that problem.

• **Design modeling** is about understanding the internal structure of the WebApp being developed and how this creates the shape of the WebApp that was identified by the analysis model.
Modeling Languages

• A *modeling language* (ML) incorporates a set of notations, terms, and/or symbols, as well as the rules for establishing associations between them

• A *modeling language* often has a formally structured representation as well as a set of graphical elements

• Some MLs are general purpose (e.g., UML) and others are more specific (e.g., WebML)
Modeling Languages

• What Capabilities Should Exist to Model Functionality?
  – Ability to model integration and connectivity.
  – Ability to support pattern modeling.
  – Ability to represent concepts in a technology-neutral fashion.
  – Ability to model sophisticated system functionality.

• What Capabilities Should Exist to Model Information Content?
  – Ability to model presentation-level concepts.
  – Ability to model navigational structure and behavior.
  – Ability to model user interactions with the information.
  – Ability to model user roles and user groups.
  – Ability to model content.

• What Generic Capabilities Should Exist in a Modeling Language?
  – Ability to model business domain concepts.
  – Ability to link business models with the technical architecture.
  – Ability to link information with functionality.
  – Ability to maintain system integrity.
  – Ability to support understanding and communication.
  – Ability to support Web system life cycle management.
Web Application Modeling

Content = information + application logic
(hypertext-oriented vs. presentation-oriented)

Consider the context: users’ preference, device characteristics, bandwidth restrictions, etc.

Agile vs. RUP

Static information driven vs. high interaction driven
Web Methodologies

<table>
<thead>
<tr>
<th>Model</th>
<th>Notation</th>
<th>Exploring</th>
<th>Requirement Modeling</th>
<th>Content Modeling</th>
<th>Presentation Modeling</th>
<th>Customization Modeling</th>
<th>Structure and Behavior</th>
<th>Tool Support</th>
<th>Approach</th>
<th>Generation</th>
<th>Strengths</th>
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<tbody>
<tr>
<td>HDM-lite</td>
<td>HT</td>
<td>ER + own notation</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>s</td>
<td>own generation tools</td>
<td>auto</td>
<td>process for model transformation, automatic generation</td>
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<tr>
<td>Hera</td>
<td>DB</td>
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<td>s + b</td>
<td>own authoring &amp; generation tool</td>
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<td>model-driven development</td>
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<td>pers s + b</td>
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<td>RUP extended UML tool &amp; generation tools</td>
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<td>UML-based method, model-driven development, aspect-oriented customization</td>
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<td>user-centric approach for analysis</td>
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- ✓ supported
- x not supported

- pers personalization
- RUP Rational Unified Process
- s structure modeling
- b behavior modeling
- auto automatic generation
- semi semi-automatic generation
- DB data-oriented
- HT hypertext-oriented
- OO object-oriented
- SW software-oriented

(Kappel, Proll, et al 2003/2006, pg. 60)
Web Modelling Languages: the gap between requirements and current exemplars, Gu et. al. 2002
References

• [www.csun.edu/~twang/595WEB/Slides/WebAppsModeling.pdf](http://www.csun.edu/~twang/595WEB/Slides/WebAppsModeling.pdf)

• [www.csun.edu/~twang/595WEB/Slides/UWE.pdf](http://www.csun.edu/~twang/595WEB/Slides/UWE.pdf)

• [www.csun.edu/~twang/595WEB/Slides/WebML.pdf](http://www.csun.edu/~twang/595WEB/Slides/WebML.pdf)