

SOEN 387 Web-based Enterprise Application Design

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Outline

Introduction

Web Enterprise Applications

Stuart Thiel

Introduction

Web Enterprise
Applications

Credit Where Due

- ▶ Notes based on a course developed collaboratively with Dr. Patrice Chalin
- ▶ I'll occasionally borrow his slides

A Quick BIO: Stuart Thiel

- ▶ Currently working on a PhD in sorting
- ▶ P. Eng.
- ▶ Masters Thesis
 - ▶ will be used as reference for this course
 - ▶ offers improvements over techniques described in other course text (Fowler)
- ▶ SoenEA
 - ▶ Main author
 - ▶ Will be used in the course, simplifies implementation of WEAs

General Experience

- ▶ Over a decade of consulting in WEA development
- ▶ Active WEA development
- ▶ Currently working on a PhD (Sorting Algorithms)
- ▶ Pursuing an interest in game studies

Syllabus Course Web Site

- ▶ `http://users.encs.concordia.ca/~sthiel/soen387/`
- ▶ `http://users.encs.concordia.ca/~sthiel/soen387/CourseOutline.pdf`

Tutorials

- ▶ They Are **Mandatory!**
- ▶ **Tutorial Material Appears on Exams**
- ▶ **THEY START NEXT WEEK!**
- ▶ An important aspect of the material covered
- ▶ Material on Tutorials is fair game for midterm and final!

About the Course

- ▶ Previously taught in architecture and design courses
- ▶ Developed a web-specific course over a decade
- ▶ Mature course material
- ▶ You **will** see the material in industry

Course Context

- ▶ SOEN 287 Intro to Web Programming
- ▶ SOEN 387 Web Application Design
- ▶ SOEN 487 Web Application & Services

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- ▶ SOEN 287 Intro to Web Programming
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- ▶ You've learned about client-side web stuff
- ▶ You've learned about database stuff
- ▶ You've seen a bit of server-side
- ▶ This course will teach you the server side in detail
- ▶ ...including making use of a lot of that database stuff
- ▶ The next course teaches server communication

Pre-requisites

- ▶ COMP 353
 - ▶ learned enough basic SQL for simple queries
 - ▶ have a vague understanding of a transaction
 - ▶ be able to build simple tables
- ▶ SOEN 287
 - ▶ learned html/js/css, which we won't touch much
 - ▶ learned how web pages are requested
 - ▶ learned how servers respond to web requests
- ▶ COMP 354 or SOEN 341
 - ▶ learned about software process
 - ▶ learned how to manage a small software development process
 - ▶ learned about good practices, like TDD/revision control/Documentation
 - ▶ learned how to take requirements and move them to design, then implementation

Web in the Beginning?

- ▶ University/research web sites
- ▶ Personal web pages
- ▶ Some business Web Pages
- ▶ Mostly static content

Web in the Beginning?

- ▶ University/research web sites
- ▶ Personal web pages
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- ▶ Mostly static content
- ▶ Was complex design needed?

Modern Web?

- ▶ Social Media
 - ▶ Facebook
 - ▶ Twitter
 - ▶ Google
- ▶ Search
 - ▶ Google
 - ▶ Bing
 - ▶ Yahoo
- ▶ E-Commerce
 - ▶ Amazon
 - ▶ Ebay
 - ▶ Kijiji
 - ▶ Newegg...
- ▶ Games
 - ▶ Google
 - ▶ World of Warcraft
 - ▶ Eve Online ...
- ▶ Business Applications
 - ▶ Google (Google Apps)
 - ▶ Microsoft (Azure)
 - ▶ Amazon (Amazon Cloud)

Cloud Computing

- ▶ 21% estimated world-wide increase in 2009 (Gartner) to reach 56,3 billion \$
- ▶ June 2010 Gartner estimates will surpass \$68 billion
- ▶ Stopped checking statistics, all you hear about is the web

Modern Design

- ▶ Do we need complex design now?
- ▶ Do we need to be more explicit in describing things?

Enterprise Application Characteristics

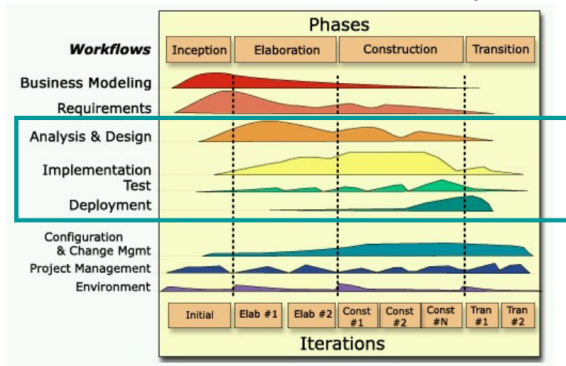
- ▶ Lots of data
- ▶ Lots of concurrent access
- ▶ Everyone is trying to hack you all the time

WEA Examples

- ▶ Bank Websites (online banking)
 - ▶ CIBC
 - ▶ Bank of Montreal (uses Servlets)
 - ▶ Desjardins
- ▶ Amazon
- ▶ Kijiji

Obligatory RUP Diagram

- ▶ Where does this course fit in the SE (RUP) disciplines?



SOEN 387 - RUP Context

The other disciplines are very involved in Web Applications, but outside the scope of this course.

Tools Base Technology

- ▶ Base Technology
 - ▶ Java Servlets & JSP
 - ▶ Excellent for developing robust WEAs
- ▶ Tools
 - ▶ Eclipse 4.x (some current version... Luna?)
 - ▶ Web Tools Platform (WTP (3.4?))
 - ▶ Tomcat 7 or 8
 - ▶ Firefox & Firebug **or** Chrome and Chrome's web-dev tools
 - ▶ JUnit, SoenEA, various Apache/java libraries