A Divide and Conquer Approach to Web Development

Gavilan Steinman
Research In Computer Science Seminar
9.8.06
Web Development Techniques

• Static HTML Files
  – Generated by editing programs
    • Dreamweaver
    • Frontpage
  – Generated by hand coding
    • HTML
    • Cascading Style Sheets
    • Scripting Languages

<body>
  <h1>RICSS</h1>
  <p>Research in Computer Science Seminar.</p>
</body>
Web Development Techniques

- Database-driven Techniques
  - Content Management Systems
  - Wikis
Separation Through Abstraction

- Design (or Theme)
  - Color scheme
  - Navigation
  - Layout and Style
- Logic
  - Interprets requests
  - Interprets content
- Content (or Data)
  - Text
  - Images
  - other
Benefits of Abstraction

• Independency
  – Design can change
    • New look, same information
  – Logic can be updated
    • Bugs can be fixed
    • More functionality can be added
  – Content is not affected
Benefits of Abstraction

• Ease of content entry
  – No more hand coding
  – Server side entry is faster
• Customized local search
  – Who needs Google?
• Central logic allows for testing and evaluation
Project Details

• Languages used
  – HTML, CSS
  – PHP, JavaScript
  – MySQL

• Investment
  – 400 hours
  – 4000 lines of code, 170KB

• Users
  – 11 websites
  – Roughly 1400 unique visitors each month
Testing and Evaluation

• Record click-streams
  – Pre-fetching
    • Download data before you need it

<link rel="prefetch" href="sweet_page.php">
Testing and Evaluation

- Web usage data mining for improved navigation
  - Page suggestions
  - Content and user analysis
    - More efficient click-streams
      - Click less, get more
      - find what you want faster
    - Grouping user by behavior
      - Know your audience
Testing and Evaluation

• Measuring throughput
  – What is the maximum number of users that should be allowed to request information?
Conclusion and Future Work

• A faster, more functional, and bug free product
• Better search algorithms
• Research in Web Usage Data-Mining
• Research in Pre-fetching techniques
• Measuring throughput
• And your suggestions…