CS 1520 Final Review
Final Review

• Structure
  – Short answers
  – T/F and fill in the blanks
  – Code tracing
  – Code writing
    • Will be asked to write a simple web app using AJAX and DOM accesses (jQuery allowed)
    • Review JavaScript, jQuery, XML code examples
Final Review

• Database
  – Review quiz
  – Basic Concepts
    • Schema, Keys, Joins
  – Database Security
    • Encrypting sensitive information in databases
    • SQL injection
  – SQL queries / PHP MySQL API
    • Learn how to write code using both
Final Review

• Web Security
  – Authorization / Authentication
  – HTTPS

• JavaScript
  – Basic language characteristics
    • Distributed in source form / interpreted on browser
    • Dynamic Typing (similar to PHP)
    • Duck Typing (different from PHP)
    • JavaScript Objects / JavaScript Arrays
    • Inheritance through prototypes
Final Review

• JavaScript (cont’d)
  – Document Object Model
    • Tree Structure
    • Access / Modification
    • Event handling
  – AJAX (Asynchronous JavaScript And XML)
    • Implementation using asynchronous call backs
    • Consistency issues between client and server
    • XML / JSON
    • Learn how to code using AJAX
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• **JavaScript (cont’d)**
  – JQuery Library
    • The $() function
      – Returns a JQuery object for further method calls
    • $(document).ready(function)
      – Registers given function as call back for ready event
    • $(selector)
      – Returns JQuery object representing element collection
      – each() iterator
  • DOM access / modification / event methods
  • AJAX convenience functions: load / get / post
Final Review

• XML (eXtensible Markup Language)
  – A metalanguage with which you can define other markup languages (MathML, RSS, XSLT)
  – Philosophy: separate out content from formatting
    • Enables content to be processed in myriad ways
    • Enables end consumer of data to visualize it various ways according to preference
  – Document model specification
    • Defines the markup language you are using
    • Well-formed vs. valid
    • Specification through DTD (Document Type Definition)
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• XML (cont’d)
  – Stylesheets
    • CSS (Cascading Style Sheet)
      – CSS Inheritance
    • XSL (eXtensible Stylesheet Language)
      – Combination of XSLT / XPath / XSL-FO
      – XSLT processor interprets XSL namespace tags and leaves the rest (e.g. HTML code) alone
      – Applying templates using XPath selectors
      – XSL in conjunction with AJAX for on-the-fly translations
    • Learn how to read and use stylesheets in code
Final Review

• Client-side Storage
  – Storage using cookies
    • document.cookie and JQuery wrapper plugin
    • Downsides in usability / scalability
  – Alternative solutions (with HTML5)
    • sessionStorage: temporary browser session data
    • localStorage: persistent data