CT 310, Web Development
Things Covered in the Second Third of CT
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Last Update March 29, 2016

Here is a list derived from a review of the material covered prior to the first Midterm. Please keep two things in mind when using this list. First, it is intended to be relatively complete and a useful study guide. Second, it is **not** a contract. **Material covered in lecture or recitation not explicitly listed below may of course appear on the midterm**.

1. Often it is preferable to store information that changes in a database rather than a spreadsheet. However, you should be able to argue both sides of this choice.
2. You can now explain to anyone who asks the essential difference between a flat database, a hierarchical database, and a relational database.
3. You can intelligently address hierarchical design issues as they pertain to web sites and file systems.
4. You can quickly name at least one key distinction between MySQL and SQLite.
5. You can reconcile the following statement. "MySQL databases are comprised of tables, and tables are themselves a flat database structure, therefore MySQL being nothing more than a set of tables, is a flat database."
6. You can explain to a colleague, that for security reasons, the very first thing they will do after downloading a clean install of the MySQL server is the following (explain).
7. Five of the most common database commands are: CREATE, INSERT, SELECT, UPDATE and DROP. You are comfortable now explaining each of these and using each of these
8. In integrated suite of webpages illustrating different basic operations on SQLite database were presented as part of lecture. Familiarity with these examples means that you now are comfortable creating a database through a webpage, retrieving data from a database, modifying a database, etc. Note this one item is covering a lot of ground -- you are presumed to know thoroughly every operation illustrated in these examples.
9. You understand the built in PHP support for uploading images from a client's machine to a server.
10. You now have a simplified example of what not to do relative to SQL injection attacks. Therefore, you can certainly explain clearly to others what is involved in such attacks along with the common steps to minimize this vulnerability. *
11. You understand the function of AS, FROM, JOIN, NATURAL JOIN, ORDER BY, ASC, LIKE, LIMIT, OFFSET and WHERE in the context of a SQL query.
12. You understand the importance of stripping tags out of user supplied input as well as the precise PHP command that makes this easy to accomplish.
13. If someone asks you to protect a page with a Whitelist you understand what they mean and how to accomplish it in PHP.

14. You are comfortable reading and writing data from a SQLite database through the PHP Data Object interface.

15. Thanks to the numerous examples provided in this course of webpages that process their own form data, you can clearly explain to another person where exactly in the flow of the page to place the code for capturing user input as well as for generating user-input through a form.

16. In the webpage examples involving the music database, an issue arose that complicated the process of adding a new CD. You can use this example if called upon to explain some of the trickier aspects of working with a relational database.

17. You now understand what advice to give should you ever see a fellow web developer retrieving thousands of records from a database merely to count them and display the number.

18. You can now explain the DOM as it relates to the JavaScript Namespace.

19. Early on we said the distinction between CSS class and CSS id was important to JavaScript, you now understand how and why.

20. You can correct mistakes in JavaScript programs, such as a 'hello world' program, or programs that dynamically populate lists and tables.

21. You can now debug and explain the operation of simple JavaScript event handling such as encountered with 'onChange' or 'onMouseover'.

22. You know whether JavaScript is case sensitive.

23. You know how to create a JavaScript function.

24. You are comfortable defining and using JavaScript Objects and JavaScript array of Objects.

25. You know the syntax for specifying a JavaScript function by name when establishing linkages to event callback functions. You also know who to create an anonymous JavaScript function.

26. You know name of the root of a document in JavaScript.

27. The keyword 'innerHTML' now has immediate and practical meaning for you.

28. The practical value of 'onload' in JavaScript is now clear to you.

29. Someone new to web programming may be surprised that developer tools show different page content when showing source versus showing the DOM. You now understand why and can provide and or interpret examples.

30. You have a basic understanding of how to debug at run-time JavaScript running in a browser, including how to set break points are inspect variables.

31. Events in JavaScript need not come from I/O devices, and of course you understand how to use internally timed events to produce pages with animation.

32. In JavaScript, you now understand how to collect sets of objects representing elements on a page and operate over these sets.

33. Recall that in the context of the animated Spinny. You now have a working example of how to place objects using absolute coordinates relative to an internal page element that may itself move around as the page is resized.