Web Development 101: Hacker Theory and Practice Version 1.0.1, August 2012

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Description In this 12-week course, you will explore the history and philosophy of hacker culture, while learning to program computers for yourself. You will begin to engage with the hacker praxis and open-source web community so that you can continue to develop programming skills beyond the scope of this brief course. The theoretical side will be based in Eric Raymond's book, *The Cathedral and the Bazaar*, and the practical side in the specifications and documentation for HTML, CSS, JavaScript, Python, jQuery and Aspen.

Schedule The course will be held on Tuesdays from 6:30 to 9:30 PM, running from September 4 through November 20. Class will meet at Voluto Coffee, 5467 Penn Avenue (across from Saxifrage School HQ).

Readings

Bos, Bert, et al. *Cascading Style Sheets Level 2 Revision 1 (CSS 2.1) Specification*. World Wide Web Consortium, 2011. 14 Aug. 2012 <http://www.w3.org/TR/CSS2/>.

Ecma International. *ECMAScript Language Specification*. Ecma International, 2011. 5.1 ed. Web. 14 Aug. 2012 <http://www.ecma-international.org/publications/files/ECMA-ST/Ecma-262.pdf>.

Orchard, Les, et al. *JavaScript Guide*. Mozilla Developer Network. Web. 14 Aug. 2012 <https://developer.mozilla.org/en-US/docs/JavaScript/Guide>.

Resig, John. *jQuery*. Web. 14 Aug. 2012 <http://docs.jquery.com/Main_Page>.

Raggett, Dave, Arnaud Le Hors, and Ian Jacobs. *HTML 4.01 Specification*. World Wide Web Consortium, 1999. Web. 14 Aug. 2012 <http://www.w3.org/TR/html401/>.

Raymond, Eric S. *The Cathedral and the Bazaar*. Sebastapol: O'Reilly, 2001. Print.

van Rossum, Guido. *The Python Language Reference*. The Python Software Foundation. Web. 14 Aug. 2012 <http://docs.python.org/reference/>.

Whitacre, Chad. *Aspen*. Web. 14 Aug. 2012 <http://aspen.io/>.

Assignments You will be responsible to imagine and implement example documents and programs that engage with the technical readings each week. Your work will be shared publicly on the GitHub code-sharing platform, and you will be expected to participate in discussions with classmates and the instructor during the week on GitHub. The target for students is six to nine hours of work outside the classroom each week.

Format The first half of each class session will be spent discussing your projects and the technical readings. We'll have a half-hour break for dinner (provided), and the second half will be spent discussing the readings from *The Cathedral and the Bazaar*.

Grading No grades will be given. Your activity on GitHub will serve as a public record of your accomplishments in the course.

Part I: Markup

1	September 4 56 pp.	*HTML*, “About,” “Introduction,” and “On SGML” (Sections 1-3; 37 pp.) *Cathedral*, “Appendix A: How to Become a Hacker” (pp. 195 - 213; 19 pp.) During the first meeting we will configure a development environment on your laptop. We will install the Sublime Text text editor, the GitHub version control client, the Python programming language, the Chrome web browser, and the Aspen web framework.
2	September 11 76 pp.	*HTML*, “The global structure of an HTML document” (Section 7; 20 pp.) *HTML*, “Text” (Section 9; 14 pp.) *HTML*, “Lists” (Section 10; 8 pp.) *HTML*, “Links” (Section 12; 14 pp.) *HTML*, “Including an image: the IMG element” (Section 13.2; 2 pp.) *Cathedral*, “A Brief History of Hackerdom” (pp. 1 - 17; 18 pp.)
3	September 18 83 pp.	*HTML*, “Style Sheets” (Section 14; 12 pp.) *CSS*, “Introduction” (Section 2; 8 pp.) *CSS*, “Values” (Section 4.3; 8 pp.) *CSS*, “Class selectors” (Section 5.8.3; 1 p.) *CSS*, “ID selectors” (Section 5.9; 1 p.) *CSS*, “Cascading and Inheritance” (Section 6; 8 pp.) *Cathedral*, “The Cathedral and the Bazaar” (pp. 19 - 63; 45 pp.)
4	September 25 92 pp.	*CSS*, “Box Model,” (Section 8; 16 pp.) *CSS*, “Visual formatting model” (Section 9; 44 pp.) *CSS*, “Visual formatting model details” (Section 10; 24 pp.) *CSS*, “Visual effects” (Section 11; 8 pp.) *Cathedral*, “The Cathedral and the Bazaar” (cont.)

Part II: Turing-Complete Languages

5	October 2 55 pp.	*Python*, “Introduction” (Chapter 1; 2 pp.) *Python*, “Top Level Components” (Chapter 8; 2 pp.) *Python*, “Lexical Analysis” (Chapter 2; 10 pp.) *Python*, “Execution Model” (Chapter 4; 5 pp.) *Python*, “Expressions” (Chapter 5; 16 pp.) *Python*, “Simple Statements” (Chapter 6; 12 pp.) *Python*, “Compound Statements” (Chapter 7; 8 pp.) *Cathedral*, “The Cathedral and the Bazaar” (cont.)

6	October 9 73 pp.	*Python*, “Data Model” (Chapter 3; 26 pp.) *Cathedral*, “Homesteading the Noosphere” (pp. 65 - 111; 47 pp.)
7	October 16 ~68 pp.	*HTML*, “Scripts” (Section 18; 10 pp.) *ECMAScript*, “Introduction” and “Overview” (Sections 1-4; 8 pp.) *JavaScript*, Sections 2-8 (approx. 50 pp.) *Cathedral*, “Homesteading the Noosphere” (cont.)
8	October 23 ~50 pp.	*JavaScript*, Sections 9-12, 14 (approx. 50 pp.) *Cathedral*, “Homesteading the Noosphere” (cont.)

Part III: Web Programming

9	October 30 ~50 pp.	*jQuery*, “How jQuery Works” *jQuery*, “Frequently Asked Questions” *jQuery*, “Types” *jQuery*, “jQuery()” *jQuery*, “Selectors” *Cathedral*, “The Magic Cauldron” (pp. 113 - 166; 54 pp.)
10	November 6 ~40 pp.	*Aspen*, “Documentation for Developers” (approx. 40 pp.) *Cathedral*, “The Magic Cauldron” (cont.)
11	November 13 32 pp.	*HTML*, “Forms” (Section 17; 32 pp.) *Cathedral*, “The Magic Cauldron” (cont.)
12	November 20	Lightning Talks! :-) Each student will have five minutes to present something they built during the course. *Cathedral*, “Revenge of the Hackers” (pp. 167 - 194; 28 pp.)