

# LIS651

## Active Web Site Architecture

2010-01-21

See the course web site at <http://openlib.org/home/krichel/courses/lis651n10s> for the latest online version of this file.

### Course Description

This course focuses on the construction of active web sites. Such web sites change contents depending on what the user does with them. Many times, such sites involve users filling in a form, which is then processed. For an example, think of a query in a web-based library catalog. But active sites may also be as simple as saying "Merry Xmas" before 25 December, and leave it out afterwards. Students will learn how build simple active web sites. There are two aspects to this process. The first is the information itself. It is usually held in relational databases. The course therefore studies relational databases. It introduces the mySQL database software. The second aspect is the interface between the data in the database and the web. This is achieved with a procedural computing language. The course studies PHP, a purpose-built language for active web sites. Finally the course also examines PHP as a general purposes language for the transformation of data from one format into another. This is a very common task in digital librarianship. Therefore, the final web site done in the class does not necessarily have to features active user interaction. It could also be any other site that has been built from a set of data that is kept in a separate format in a separate set of files.

### Course objectives

After taking this course the students

- will be able to interact with a UNIX based server for the construction of active web sites;
- will understand fundamental concepts of computer programming, such as variables and functions;
- will have a basic grounding in PHP that allows them to build PHP-based sites;
- will have elementary knowledge of SQL that will allow for simple database management.
- will understand some basic elements of interactive interface design;
- will have been introduced to the regular expressions as a tool for textual data manipulation;
- will have been seen how to run

### Prerequisites

Student normally must have passed LIS650 before taking this course. Students must be comfortable with the LIS650 material. The course contains a lot less material than LIS650. But it trains analytical thinking ability further. Students who wish to qualify for an exception should contact the instructor prior to registering.

### Instructor

Thomas Krichel

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## Class structure

Classes will be held on Sundays between 16:30 and 18:20 in the PC1 lab of Bobst Library.

Each class will have a lengthy presentation by the instructor. For some small part of class time the students will work directly with their computers under the supervision of the instructor. However, given the hefty weight of the class material, students are expected to do much of the work on the web site at home. The instructor will closely work with students on their sites on a one-to-one basis, if required.

These slides are drafts from the previous edition of the course.

Class details:

2010-01-21	16:30 to 18:20	forms
2010-01-28	16:30 to 18:20	introduction to PHP and string variables
2010-02-04	16:30 to 18:20	numbers, Booleans, control structures
2010-02-11	16:30 to 18:20	functions and arrays
2010-02-18	16:30 to 18:20	multiple arrays and database tables
2010-02-25	16:30 to 18:20	fun with arrays
2010-03-04	16:30 to 18:20	SQL
2010-03-11	16:30 to 18:20	PHP SQL functions
2010-03-18	16:30 to 18:20	PHP functions
2010-03-25	16:30 to 18:20	lecture 9
2010-04-08	16:30 to 18:20	lecture 10
2010-04-15	16:30 to 18:20	lecture 11
2010-04-22	16:30 to 18:20	lecture 12
2010-04-29	16:30 to 18:20	

Slides for all classes are downloadable from the course web site.

## Readings

PHP is documented on its web site at <http://www.php.net>. Students will probably find all gobbledigook when they first look at it. But by the end of the course students should be able to use the site to get help from it.

Students may find Ullman (2004) as reasonably priced introductory books on the topics of the course. The instructor found that Sklar (2004) did bring much good material. Lea, Choi, Kent, Prasad, and Ullman (2001) as an introduction that is probably suitably paced for the beginner. Meloni (2000) receives favorable reviews as a beginners' book.

Most books on PHP also cover some relational database theory and practice. But Welling and Thomson (2005) do more than most.

Finally there a bunch of home-grown resources <http://openlib.org/home/krichel/courses/lis651>.

## Assessment

Before each class except the first, there will be a quiz on the issued covered in the previous class. The average of all the quiz results will count for 13/30 of the assessment. The weakest quiz grade is discounted. For the fifth class meeting, the students will prepare a one-page web site that will state web site that they want to build. This statement should cover both the purpose of the web site and the interactive components that it will contain, including all user interactions. The assessment of this statement will as 1/30 of the total. In the last class, the students and-in a two-page description of the architecture of the site. This covers a brief description the files, and overview on how information is flowing through the pages. If database tables are used, it covers a list of all tables with all columns, and the relationship that the columns have to user input or to an external source of data. This paper counts for 1/15 of the course. The remaining 7/15 will be assessed through the final web site. This site has to be handed one week after the date of the last class meeting.

## Mailing list

There is a mailing list for the course at <https://lists-1.liu.edu/mailman/listinfo/cwp-lis651-krichel>. All students are encouraged to subscribe. As a rule, answers to email sent to the instructor will be copied to the list. There are exceptions to this rule

- if the question writer requests the answer not to be posted
- if the question is a purely private matter

## Students

Erin Petrella and her beer  
Garph Graeper and his beer  
Chris Pulakos and his beer  
Michael P. Hughes and his beer  
Steven Zweibel and his beer  
Joe Micavige and his beer

## References

- Lea, Chris, Wankyu Choi, Allan Kent, Ganesh Prasad, and Chris Ullman (2001). *Beginning PHP 4*. Wrox Pres.
- Meloni, Julie C. (2000). *PHP Essentials*. Prima Publishing.
- Sklar, David (2004). *Learning PHP*. O'Reilly.
- Ullman, Larry (2004). *PHP for the World Wide Web: Visual QuickStart Guide, 2nd Edition* (2nd ed.). Peachpit Pless.
- Welling, Luke and Laura Thomson (2005). *PHP and MySQL Web Development* (3rd ed.). Sams Publishing.