

CSI 3140 / CSI 3540
WWW Structures, Techniques and Standards

Assignment #2:
Server-Side Programming

Due: Week of March 11, in the tutorial (for the printouts) and by email to the TA

Goal: Build server-side functional modules for AmazonLite. These modules will include a search engine, access control through a login mechanism, a shopping cart, and checkout. **This assignment will be about search engines using servlets and JDBC.** Assignments 3 and 4 will be about a login mechanism (along with sessions) and a shopping cart, as well as checkout (pseudo e-payment), respectively.

Mark: 25% of the project's total mark

By now, you have identified a number of functionalities that were implemented on the client side, and others to be implemented on the server side. You have given and implemented client-side functionalities in Assignment 1. From now on, you need to implement the server-side functionalities using Java servlets.

In the present Assignment 2, you must ensure that AmazonLite incorporates search functionalities including at a minimum a quick search and category search.

To do in this assignment

You must implement two main functionalities:

1. **Search:** The objective here is to have a **simple search** functionality based on keywords, as well as an **advanced search** based on a mix of different attributes such as book title, author name, and so on.
2. **Category search:** The objective here is to be able to search for books under different categories.

Both functionalities should be implemented using separate servlets that use the JDBS interface. As a hint, the main steps for these functionalities can be as follows: First, get the user search criteria; second, build the appropriate SQL statement to be send to the backend database engine; third, collect the answers to these SQL statements; Fourth, format these answers in XHTML for display to the user.

Further hints

1. The simple search servlet performs simple keyword searches by getting user-entered keywords and searching in the AmazonLite database for books which have the user keywords in the database attributes such as book titles, author names, publisher, price, etc.
2. The category search should be based on a simple XHTML page where users can search for books under different categories. This search is done by inspecting the category attribute of books.

You should provide an implementation of all the functionalities that were identified for the server side. It should normally simply integrate with the pages that you have already developed, making sure that client-side programming you already have works well. Do not hesitate to modify your client pages if you think that it is necessary.

Your code must be strong and not crash if the user makes an error (hence make sure to improve form validations !). It should also be well written, without confusing “coding short cuts”, meaningful function and variable names and **useful** comments (pointless comments are no better than lack of comments).

Deliverables

You must provide an electronic version of your **working** program, and a short report describing what you have done and how you have done it, including a description of the architecture of your code. Explain what techniques seen in class you have used, where and why. Your deliverable should be easy to deploy. Do use databases for storage. If you make use of libraries, make it very clear: we should be able to know what code is yours.

Check your documents for spelling and grammatical mistakes. Poorly written projects will receive poor mark.