

Dec 15, 2011

## Web Technologies Assignment 8

Please hand in your homework by email to pgiarrusso@informatik. We will do group exercises after the hand-in. **The deadline for this assignment, exceptionally, is Jan 08.**

If at all possible, please bring your laptop to the following exercises.

### G8.1 Arithmetic Server

1. Write a simple imperative program which reads two integers, one at a time, and adds them.
2. How would a servlet look like that implements the same functionality, i.e. reading two integers from a submitted input form, one at a time, adding them and returning a page with the result. You do not have to implement that servlet now.

Compare the control and data flow of the imperative program to the servlet.

3. Consider the implementation of SimpleServer from the slides on HTTP (slides 31-32). How could this server be adapted to function alike to the above servlet? Compare the two approaches.

### H8.1 Library Management Shopping

In this exercise, you are supposed to write a servlet which implements a shopping cart for buying programming libraries. You are welcome to ask me questions by e-mail if the text is not clear.

Your job consists of the following steps:

1. Set up a web server which is able to run servlets; in next homework, you will be required to program with JSP, so you are encouraged to set up the web server to run JSP, too.
2. Write a servlet which transfers an XML library data file (in the format from exercise H4.2) to the client browser.

The client browser should apply an XSLT stylesheet transformation to show the received XML; therefore, the received XML must contain appropriate markup associating it to the XSLT file. The servlet must allow selecting which document and which XSLT transformation to use through query string parameters; the default XML document is your last handed-in library collection (ex. H4.2-3), and the default XSLT is the one from H4.2.

please turn the page!

3. Extend the default XSLT transformation from above to include one button “add to cart” per library that triggers a POST request parameterized over the respective library ID. Furthermore, add a button “check out” which triggers an appropriate POST request.
4. Extend your servlet to handle “add to cart” and “check out” requests. To this end, you need to keep track of the user’s shopping cart using session management. A “add to cart” request adds the respective item to the shopping cart and shows again the original page, to allow the user to buy more products, while a “check out” request clears it and displays an order confirmation to the user (including a list of the bought libraries).

**Note:** Please hand-in both the source code (as an exported Eclipse project, like last time) and a WAR file to try directly, together with necessary instructions (including at least the initial URL to contact).