

Distributed Programming (03NQVOC)

Distributed Programming I (03MQPOV)

Laboratory exercise n.8

Objectives: writing pages using AJAX; using XML for data exchange; XML validation.

Exercise 8.1

Modify the solution of Exercise 7.2.2 so that the AJAX technology is used to speed-up data loading in the browser, as explained here. After showing the first 10 rows, the next 10 rows are downloaded in the background and kept in memory. When the user clicks on the “Next” button, the next 10 rows are immediately displayed. At this time, the download in background of the next 10 rows starts, and the process is repeated every time the “Next” button is pressed.

Exercise 8.2

Modify the previous exercise using XML rather than HTML to download the data from the server. The client is requested to perform HTML formatting.

Warning: the default database file provided in Lab 7, containing the “books” table, includes some special characters in the description (“Descrizione”) field for some books, e.g., the “é” character for book with id=3. Make sure to handle them correctly. Initially, remove them from the database to make sure your application is working correctly. Then, handle them in some way, e.g., using the `htmlentities()` function.

Exercise 8.3

Create a web page that can be used to upload a set of data related to some products (e.g., books with an ISBN, one or two authors, title, price) into the database. The only aim of the page is to allow the upload of an XML file. The XML file format is not specified and must be designed. The server side should validate the document (using either DTD or schema, to be designed) before accepting it, then it transfer the data from the XML document to the database inserting them into the appropriate tables and columns (to be designed).

Exercise 8.4

Modify the data structure of the previous exercise inserting an additional product description, and a list of options for each product, such as “cover type” in case you are considering books or “colors” for other generic products, and delivery method, with values taken from a predefined list. The XML data model and validation documents should be modified accordingly. When the list of products is presented (as done in Exercise 8.2), it must be possible to select a product (e.g. by clicking on a radio button associated with it) to show the description and options. The description and options should be loaded only when necessary, i.e., after clicking on the product, without reloading the whole page.