

Summer 2005 CS 438/631/731 Distributed Computing
Homework-3

300 points. Due August 2, 2005 before class. Individual work only.

The goal of this homework is to develop a multi-tier distributed application using the Java 2 Enterprise Edition (J2EE) framework. Use one of the freely available application servers (e.g., Blazix, JBoss, Orion, SUN J2EE, etc.).

The application consists of a database in the backend, a web-based front-end, and a JSP-based middle-tier that provides the business logic. The database will contain information about the various courses that you have taken at UAB along with the text book used for these courses. The course information and text book details will be stored in two separate tables. The following two tables indicate the records that must be present in the Course table and Book table. The Course Code will be the primary key for the Course table and the BookId will be the primary key for the Book table.

| Field | Type | Example |
|------------|--------|---|
| Code | String | CS201 |
| Name | String | Object Oriented Programming |
| Instructor | String | Purushotham Bangalore |
| Semester | String | Spring |
| Year | int | 2004 |
| TextBook | int | 101 (primary key for the book) |
| Reference | int | |
| Webpage | String | http://www.cis.uab.edu/cs201/oldfiles/spring2004/ |
| Keywords | String | Java, Object-oriented, programming |
| Comments | String | My first real programming course, it was fun! |

| Field | Type | Example |
|-----------------|--------|--|
| BookId | int | 101 |
| Title | String | Java Software Solutions: Foundations of Program Design |
| Authors | String | John Lewis, William Loftus |
| ISBN | String | 0321286111 |
| Publisher | String | Addison-Wesley |
| Edition | int | 3 |
| PublicationYear | int | 2004 |
| Price | float | 90.80 |

A web-interface must be provided through which users will be able to perform the following operations:

1. add a course and the corresponding text book information
2. edit/update a course and the corresponding text book information
3. delete a course and the corresponding text book information
4. display all course information in chronological order
5. add a textbook to the database
6. edit/update a textbook entry in the database
7. delete a textbook entry in the database
8. display all text book information (no specific order required)

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You must also restrict access to the website to registered users using a username and password for authentication. A web form must be provided to support user registration and a login page must be provided for registered users to login. User information must be stored in a separate table, the following table shows the various fields required in the user table. Assume that you have user called “guest” with the password “guest” already stored in the database.

| Field | Type | Example |
|----------|--------|--|
| UserId | String | Puri |
| Password | String | Mypasswd |
| Username | String | Purushotham Bangalore |
| Email | String | puri@cis.uab.edu |
| Address | String | CH 130, 1300 University Blvd |
| City | String | Birmingham |
| State | String | AL |
| Zipcode | String | 35294-1170 |
| Phone | String | 205 934 8604 |
| Status | String | ACTIVE |

The course information display should have the following format:

CS201 Object Oriented Programming Spring 2004
Instructor: Purushotham Bangalore
Text: Java Software Solutions: Foundations of Program Design. Authors: John Lewis, William Loftus.
Edition: 3. Publisher: Addison-Wesley. ISBN: 0321286111. Year: 2004. Price: \$90.80
Reference: None
URL: <http://www.cis.uab.edu/cs201/oldfiles/spring2004/>
Comments: My first real programming course, it was fun!

The text book information should be displayed in the following format:

Java Software Solutions: Foundations of Program Design
Authors: John Lewis, William Loftus. Edition: 3.
Publisher: Addison-Wesley. ISBN: 0321286111. Year: 2004. Price: \$90.80

For Graduate Students:

Provide an option for registering new users by providing a user registration form and assigning a special user “admin” to approve user requests. When a new user completes the registration form the user entry must be added to the database with the status field is set to “pending” after checking if the same UserId exists. When the user “admin” logs in a list of users and their current status is displayed. “admin” can select an user entry and change the status from “pending” to “active” and then the new user can login.

Submission:

A separate sign-up sheet will be passed during the last week of class to schedule the demo.

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The following activity diagram shows the different actions performed and the information displayed.

