

DC2410 Internet Applications and Techniques Coursework

Submission Deadline: 11:59PM 11th July 2016 Monday

Introduction

This coursework asks you to demonstrate your ability to design and develop a three-tier dynamic database-driven website. It contributes 25% toward DC2410 mark.

Scenario

A system is required that allows Aston students to maintain an account for purchasing books from an Aston book store. The account can be topped up by cash payment to stores. Books are identified by their IDs (you can use the ISBN as ID) and categorised by its type (e.g. Computing, Business, Multimedia, Mathematic, Languages, etc.). The books in the store are associated with the book category. One book can appear in more than one category (for example, a book can be in both Computing and Business category). Each book has its price and quantity in stock. Students can access a web-based catalogue of these items, and add any book to their shopping basket. When an item is added to the basket, the quantity of that item in stock should be reduced accordingly. When they wish to complete the purchased they must visit stores where they may collect these items – provided there is sufficient money in the student's account. The store staff who manage this system also use a web-based interface. They can add a book in the system and associate it to appropriate categories. When students visit the store, they can view the orders in the students' shopping basket and completes the purchase.

Requirements

Below is a list of functionalities of the Aston book store system.

User account management:

U1. Student register

U2. Student/Staff login

U3. Student/Staff logout

Students using this system can:

S1. View all books in the catalogue, including the amount in stock and price.

S2. View book items by Category including the amount in stock and price.

S3. Add an item to their shopping basket.

S4. Remove an item from their shopping basket.

S5. View their basket and account balance.

Store staff in stores can:

T1. Allow students to top up their account with a cash payment.

T2. Add new book items to the stock as they arrive.

T3. View a student's basket and account balance.

T4. Complete a purchase by providing a given student with the items in their shopping basket and the system will deduct the total from their account.

To reduce the need for repetitive coding, you are required to implement the general user account management (**U1,U2, U3**), TWO students' functions (**S1, S3**) and TWO of the staff functions (**T2 and T4**). However, you can implement more if you wish as part of the stretchers.

Stretcher

You could get some credit for implementing other extra functions including the following:

- The other requirements listed above but not S1, S3, T2 and T4;
- Sorting the book list based on certain attributes
- Search books using certain attributes

- Any other relevant functions you can think.

Security

Security is important for all web-based software, so some basic validation is required in forms as well as the followings:

- Restrict file upload to only images
- Hash password
- Ensure that HTML injection is handled
- Ensure that SQL injection is handled
- Do not allow a user to log in with a normal user account and access staff only pages

Database information

Your database could use the following four tables to represent the information held in the system.

- User (userID, password, type, balance)
- Books (bookID, title, authors, catID, quantity, price, description, photo)
- Basket (orderID, userID, bookID, quantity, cost, date)
- category(catID, name)

You could change/extend this database design according to your development. You should populate the tables (manually or automatically) fill these tables with some entries for testing purposes.

Implement Requirements

Your implementation must be in PHP, HTML and MySQL. You are free to choose whether to use object-oriented programming or other relevant techniques. It is recommended to develop your system on your own computer. You could download wampserver or xampp which includes Apache, PHP, MySQL etc. in one package. But you need to make sure your software is upload to and could be run on our remote webserver.

Your web server should be `www.<username>.eas-dc2410-1516.aston.ac.uk` (please check the email ISA sent to you), and you should not change any settings/database name/user account on the host server. It is recommended to transfer your development to the host server and test it well **ahead of the deadline**.

You need include a suitable and easy to use interface although no mark will be given to the interface design.

Submission Requirements

You need to submit your work to the Blackboard as well as to the host server.

For Submission to Blackboard, you could go to Blackboard, click **Coursework** menu of DC2410 and then follow the instruction to submit your coursework. The following documents are required to submitted to Blackboard:

- **You should submit a zipped file containing all your files to Blackboard.**
 - o HTML files, PHP files, JavaScript (if any), CSS, etc.
 - o Exported .sql file of your database
 - o A short report (see below)
- **Your short report includes the following:**
 - o A short summary of your system.
 - o Details of at least two type users which can be used to assess your system including one student user and one staff user. If password is needed to login in the system, this should be provided clearly in your report.
 - o A **HTTP link** which links to the entry page of your website, normally index.html or index.php
 - o Identify each of your stretchers which have been implemented.

- o Identify each of your security measures which have been implemented.
- o Any assumption of using the system should also be described.
- o **Do not** include screen-shots, UML diagrams, nor any other graphical material.

For submission to the university host server, you should do the submission before the deadline as well. You should have received an email with the server (<user>.eas-DC2410-1516.aston.ac.uk) information and your login detail. Please reference the host server documents on blackboard on how to use the server. Your website need be hosted on our remote server (<user>.eas-dc2410-1516.aston.ac.uk). You should test your system on the host server well ahead of the submission deadline.

Important Submission Notes:

- Without source code submitted through Blackboard, your coursework will not be marked.
- If you do not put your website/database on the host server, your mark will be deducted by **40%**.
- If your website on the host server is not working, up to **20%** deduction of the total mark can be applied since we need to examine your source code.
- Late submission will incur a penalty of 10% of the available marks for each day.
- Your submission must be your own effort. Copying and sharing work is forbidden. If you are found to have copied or shared part or all of your submission your mark may be reduced or set to zero (or worse).
- The coursework will be checked using the Google **Chrome** browser. You need to make sure all your system working in it.

Submission deadline

You should submit your ZIP file through Blackboard and transfer your files to the remote web server by **Midnight 11th July 2016**

Marking Scheme

Marks will be awarded as follows:

- S1. View all Books - 10%
- S3. Add a book to basket - 12%
- T2. Add a book into stock - 10%
- T4. Complete a transaction - 13%
- User account management - 10%
- Security - 10%
- Stretchers (up to five stretchers, 2 marks each) – 10%
- Good coding style and practice - 5%
- Report – Clear and well written report including all the requirements. - 10%