

SCHOOL OF COMPUTING (SOC)
DIPLOMA IN INFOCOMM SECURITY MANAGEMENT
ST0510 J2EE Application Development

AY2023/2024 SEMESTER 1
ASSIGNMENT 1

A: Instructions and Guidelines:

1. The assignment must be submitted by **19 June 2023 (Mon), 0800 hrs.** You are required to submit your source codes to the BrightSpace LMS. Remember to provide your Class, Group, Admission Number(s) and Name(s) on the softcopy.
2. Students are to work in a group consisting of 2 members.
3. Marks will be given separately for each student in the group, depending on his contribution to the assignment. The assignment will account for **15%** of your final grade.
4. The assignment should be implemented using JSPs, HTML, Apache Tomcat, Eclipse and MySQL.
5. An interview will be conducted in the week of **19 June 2023 (or as scheduled by your tutor).** You are expected to explain the program logic and modify the program during the interview. **Note that marks will be deducted if you are absent from the Demo + Q&A.**
6. **No marks will be awarded**, if the work is copied or you have allowed others to copy your work.
Warning: Plagiarism means passing off as one's own the ideas, works, writings, etc., which belong to another person. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turning it in as your own, even if you would have the permission of that person.
Plagiarism is a serious offence, and if you are found to have committed, aided, and/or abetted the offence of plagiarism, disciplinary action will be taken against you. If you are guilty of plagiarism, you may fail all modules in the semester, or even be liable for expulsion.
7. 50% of the marks will be deducted for assignments that are received within ONE (1) calendar day after the submission deadline. No marks will be given thereafter.
Exceptions to this policy will be given to students with valid LOA on medical or compassionate grounds. Students in such cases will need to inform the lecturer as soon as reasonably possible. Students are not to assume on their own that their deadline has been extended.

B: Problem Statement

A local bookstore wants to develop a web application to manage their book inventory and make it available for online purchase. They want customers to be able to browse books, search by title or author, add books to their cart, and check out with a secure payment system. The bookstore owners want the application to keep track of their inventory levels, sales, and customer data. They also want to be able to update the inventory and add new books to the database. To achieve this, the application needs to provide the following features:

1. A user-friendly interface for browsing and searching books by title or author.
2. Displaying book details, including title, author, price, quantity, publisher, publication date, ISBN, genre, rating, and description.
3. *Adding books to the cart and checking out with a secure payment system.
4. An admin interface for managing the bookstore's inventory, including adding new books, updating inventory levels, and viewing sales reports*.
5. *Ability to track customer orders and generate reports on sales and inventory levels.

* Not included in Assignment#1. To be completed as a basic requirement in Assignment#2

1. Web Application Specification

The objective of the project is to provide a convenient and user-friendly way for customers to purchase books online and for the bookstore owner to manage their inventory and orders with the following main features:

1. Allow customers to browse books, add books to their shopping cart, and purchase books.
2. Provide an administrative interface to manage books, orders* and customers.
3. Use JavaServer Pages (JSP) for the user interface and data persistence using a database.
4. Use a MySQL database with tables for books, customers, orders, and order items.
5. Deploy the web application on a web server.
6. Use cookie and session objects to manage the user's shopping cart and login session.
7. Design the user interface using JSP tags and expressions to display dynamic content.

* Not included in Assignment#1. To be completed as a basic requirement in Assignment#2

For the time being (Assignment #1), the web app should cater to the following USER roles:

- Business owner (login is required)
- Registered member (login is required)
- General Public (does not require login)

Minimally, the web app should have the following features:

- (a) A home (landing) page
- (b) Books category/genre page

- (c) Books details page
- (d) A customer registration page
- (e) An administrator page to allow the admin user login to maintain books inventory such as Create, Read, Update and Delete (CRUD) product info.
- (f) Apply session management to prevent public from accidentally or intentionally accessing the pages that they are not authorized.

2. **Functional Specification**

The following describes the various roles and their functions:

2.1 **Administrator**

- 2.1.1 **Administrator** can maintain the databases. The login credentials are to be stored in a database table and you are required to use this table to authenticate the administrator.
- 2.1.2 Session management must be applied to all pages accessible only by the administrator.
- 2.1.3 The Administrator must be able to Create, Read, Update and Delete (CRUD) books in the database.
- 2.1.4 MySQL database tables has to be created to store the above tour package information with the following basic requirement:
 - (a) Each book category contains a number of books.
 - (b) Each book should have an image associated with it. By default, the system will assign a default image.
Example: You can provide the file name in your web folder e.g. “images\p101.png” as a text field in the Image location in the database
 - (c) Minimally there should be at least **3 book categories/genre** containing minimally 3 books each (i.e. **9 books** in total) in the database

2.2 **General Public and Registered Members**

- 2.2.1 Login is not required for General Public.
- 2.2.2 Public can view tour packages by category.
- 2.2.3 Public can register as members through the customer registration page.
- 2.2.4 Once registered as members, they should be able to login to retrieve their own records for updates or make changes.

3. **System Specification**

3.1 Web Application Design and Development

- 3.1.1 There should be a menu that caters to users with different roles.
- 3.1.2 Navigation should be easy and intuitive.
- 3.1.3 The website must be reasonably attractive, especially for the public.

3.2 Database Design

- 3.2.1 The database design should be well thought of and laid out in a ER-diagram.
- 3.2.2 The database must be designed for easy and efficient CRUD PROGRAMMATICALLY based on the above Functional Spec.

4. Assessment Guidelines

The assignment will be assessed based on the following criteria:

Marks breakdown (Marks will be awarded based on depth, level of difficulty in implementation as well as relevancy to the project)		Marks (max)
A – Main website (For public and customers)		28
1. A home (landing) page	6	
2. Books category/genre page	8	
3. Books details page	6	
4. A customer registration page	8	
B – Administration (For administrator or authorized users)		20
1. An administrator page to allow the admin user login to maintain books inventory such as Create, Read, Update and Delete (CRUD) books info as well as registered member's information	14	
2. Apply session management to prevent public from accidentally or intentionally accessing the pages that they are not authorized	6	
C – Registered Member's Page		18
1. To allow Registered Members to manage their personal information such as Create, Read, Update and Delete (CRUD) personal info.	12	

2. Apply session management to prevent public from accidentally or intentionally accessing the pages that they are not authorized	6	
C – Innovation, Creativity & Advance features		10
D – PowerPoint (PPT) documentation & Interview		24
1. Powerpoint containing the screen shots of Main, Admin and extra features are clearly shown	6	
2. Documentation (a) Task List, (b) Wireframe sketch (c) ER-diagram	8	
3. Demo + Q&A	10	
TOTAL		100

- Documentation
 - Task list
 - To list down all JSP or HTML pages developed by the respective members in a table format:

EXAMPLE:

S/N	HTML or JSP pages	Done by	Signature/date
1	home.jsp	John	
2	books.jsp	Mary	
3	register_member.jsp	Mary	
4	header.html	John	
5	footer.html	John	
6			
7			

- Wireframe sketch of the website
 - see: <https://www.linkedin.com/learning/user-experience-ux-for-non-designers/sketching-your-ideas?u=2122804>
- ER-diagrams of the database design
 - see: <https://www.linkedin.com/learning/relational-databases-essential-training/develop-a-model-of-the-real-world?u=2122804>

-- End --