IE4727 Web Application Design – Project List for Selection

Theme 1: A web portal for online food ordering/catering services

You may choose the type of catering service for your application such as NTU canteen, Pizza shops, catering for events and so on. The customer visit the website, browse through the menu and then place orders. Upon finalizing orders, your web application needs to acknowledge the order and provide a means to update the customer on the status of the order, for example, via email. You may also add customer feedback options.

Examples: The Burger House
NTUCan – Online Order/Comment System for NTU Canteens
Blossom Buffet Catering
The Pizaria

Theme 2: A web portal for online purchase of fashion clothes/shoes/bags/watches

You may choose the type of fashion clothes or shoe shop such as those designer shops. Your web site should allow a potential customer to browse the goods in the online shop. Allow the customer to purchase online. Upon finalizing orders, your web application needs to acknowledge the order via email and provide a means to allow the customer to verify the mock-up design and add final changes to the order.

Examples: A Web Portal for Online Shopping of Shoes
ShoeVille (A web portal for online purchase of fashion shoes)
A web portal for Fashion Bags
Online Fashion Store

Theme 3: A web portal for online purchase of consumer electronics / IT products

You may choose the types of consumer electronics or IT products and accessories. Your web site should allow a potential customer to browse different categories of products and product details in the online shop, and allow the customer to purchase online. Upon finalizing orders, your web application needs to acknowledge the order and provide a means to update the customer on the status of the order, via email.

Examples: The IT Warehouse

Best Consumer Electronics Online
The Harvey Electronics Shops Online

Theme 4: A web portal for online appointment of family/dental clinic visit

You may choose the family clinic or dentist clinic. Your web site should allow patient to browse the background of the doctors and make appointment. Patient registration is needed. When booking an appointment with the doctor, the doctor's schedule must be shown and the booking is allowed when the doctor is free and available. Once an appointment is made, an email notification will be sent to the patient. Both doctor and patient can also reschedule the appointment.

Examples: A web portal for online appointment of dental clinic visit
Wong & Lim Clinic Online Appointment Booking System
Orange Clinic Online Booking System

Theme 5: A web portal for booking cinema tickets/theatre shows

You may choose either a cinema or a theatre application. Your web site should show the details of the shows and the schedule of screening or performance. A customer can make multiple bookings in order of his/her preferences. The list of available bookings will be presented to the customer for final selection of one or more bookings. Upon confirmation of the final booking(s), an email acknowledgement on the booking details will be sent to the customer.

Examples: A web portal for online booking of cinema tickets
Silver Village Cinema Booking System
The Opera House

Theme 6: A web portal for online library

Your website should offer visitors the ability to explore various categories of books and view detailed information about each title in the online library. Registered users will have additional privileges, such as searching for books by serial number and related product details, as well as adding new books to the library's database.

Examples: A web portal for online purchasing of books
National Library Board

In all the above project themes, payment is assumed to be handled by a third-party portal and you do not have to implement the redirection. You simply consider the actions to take when the payment is successful or not successful.

After selecting the above project theme, <u>work on a project title that best describes your web application</u>. Then, brainstorm the project scope and application requirements with your project partner to design, develop and publish your web application as per project guidelines given in the course.

Guidelines on Web Application Design Project

The web application design project aims to give you a hands-on practice of what you learned from exercises and examples covered in the class. You are expected to design, develop, and publish a web application proposed by you using recommended design practices. Hence, your Project should demonstrate your hands-on experience of the web application development lifecycle and concepts learned in this course.

The project must be based on your own design and completed by you in a group of two students (or a single student in case there is an odd number of students in the class group). The use of free or purchased web site templates is not permitted. These include those found in Dreamweaver, purchased or free, blog or social networking templates from the Internet as well as the examples and case studies in textbooks.

Also, you cannot re-use this design project as part of your Final Year Project or for any other courses in which it is assessed.

What is a "page" ? To be considered as a "page" in your project, a web document must be consistent with your design and contain dynamic content for the target audience such as text and images with respective styling and data validation where applicable. A web page that has little or no dynamic content or consists only of a static image or a PDF will NOT be counted as a "page".

Project Overview

You are required to design, develop, test, and publish a fully functional web application that follows the complete web development lifecycle. The project will be assessed in two parts:

Base Version (85% of the grade): Must be implemented using traditional technologies such as HTML, CSS, JavaScript, PHP, and MySQL.

Additional Version (15% of the grade): Enhance the project using modern web development tools or techniques beyond the traditional stack. (Applies to case study 04, case study 05, and final project design).

Base Version Project MUST contain _at least_

- One (1) home page and four(4) but no more than ten(10) additional content pages
  - Every page must contain appropriate text and images to convey the desired messages to the target audience
  - Every page must contain appropriate page titles
- One (1) table display content effectively
- One (1) form (four (4) fields minimum), together with server-side processing of form data and transactions with database.
- Transactions with database must involve SQL commands such as Select, Insert, Update.
- One (1) server-side generated web page.(a web page that is dynamically created by the web server using server-side scripting language, like PHP).
- Data entries not validated by HTML5 should be validated by JavaScript except for those which can only be validated by server-side scripts together with the database.
- Data entries not validated on client-side must be validated on the server-side using PHP.
- Form must reside on project site (link to an external form is not allowed)
- One (1) external style sheet (CSS) file which contains a minimum of four (4) styles should be found in the web folders

Base Version Project must NOT contain

- Mailto or handlers as the FORM action. FORM action should invoke a php script.
- < FRAMES > based page layout, e.g. divides browser into independent sections using the old <frameset>/<frame> tags.
- < IFRAME > based page layout, e.g. embed another HTML document inside the current page.
- JQuery, JSON, AJAX, etc. which are not covered in this module
- Purely image-based page (where the page contains little or no text or content other than images)
- Templates or features from Dreamweaver, Bootstrap, Foundation, GitHub, or any other web site development tools
- Links to Paypal, Facebook, Twitter Hotmail, Gmail, Yahoo mail, etc. external web sites

Additional Version Project: This version is about extending your project using modern web technologies, tools that go beyond the standard stack. Modern Approach Examples:

React.js/Vue.js : A modern frontend framework for a more dynamic UI.

Tailwind CSS/ Bootstrap: Replace traditional CSS with utility-first or responsive design frameworks.

Node.js with Express: Use a JS-based backend instead of PHP.

Firebase/ MongoDB: Use NoSQL or cloud-based databases.

Your project will be evaluated on the following criteria

- Application of Design Principles
- Accomplishment with respect to your design documents
- Visually Appealing
- Your mastery of web programming languages.

Important Notes:

- You are strictly required to fully implement the Base Version of your web design project before attempting any modern enhancements.

- Failure to complete the Base Version will result in your project being assessed only on the Modern Enhancement component, which carries a maximum of 15% of the total grade.

- No partial credit from the Base Version will be awarded if it is incomplete or missing, regardless of the quality of the modern features implemented.

In the design project report, following must be seen:

- **Application requirements:** describe the overall expectations for the web application — not just its functionality, but also how it performs, its structure, its look and feel, and user experience. Typical Application Requirements include: Usability, Responsiveness, Security, Scalability, Maintainability and Accessibility of the web design. Focus on Overall system behavior and quality.

- **Functional Requirements:** describe what the system should do — they are the specific features, interactions, and operations that your web application must support to meet user needs. Focus on Specific features and functions.

- **Storyboard:** create a flowchart (storyboard) that outlines the structure and navigation flow of your website. This is often called a site map or site hierarchy, and it visually shows how all your web pages are connected.

- **Wireframe**: wireframe is a visual blueprint or skeleton of a web page layout. It shows what goes where on a page before any actual design, colors, or content is added. Think of it as the architectural floor plan of your website. It helps you plan the structure and user interface clearly before you start coding or designing.

- **Implementation details:** This section should describe how the web applications are implemented and coding techniques used. It should correspond to the design.

- **Testing of web application:** Test cases should be part of the design and these test cases must be presented with the test methods and test results. The tests should show that all the application requirements are met.

A test case is a specific scenario or condition used to verify that the application behaves as expected. Test cases help ensure that all features are functioning correctly and meet the required application specifications.

Test cases include:

Input Data: What data will be used for the test.

Expected Output: What result is expected from the application.

Test Method: The approach used to execute the test.

Test Result: What actually happened when the test was executed.

- **Summary of Modern Enhancements with Justification (if any modern enhancements except from the base version):** Clearly describe each modern technique or tool you added to your project beyond the traditional base version. Provide a rationale (justification) for each enhancement—explaining why you chose to implement it, and how it improves your project.

Note that you must not send email to any email account except your own web account in your local web server.