BAIT2113 Web Application Development
Group Assignment

ADVICE: Read the assignment specifications and requirements **thoroughly**. Start to work on the assignment **as early as possible**. Complete the parts that you know first. Do self study and research on the areas which have not yet been covered in the formal lesson.

1.0 General Information

Objective:
At the end of this assignment, the student should be able to:

(i.) Demonstrate skills to create, debug, optimize, and maintain a secured Web application using appropriate tools. (P4, PLO3)

(ii.) Use server-side Web application development to solve business problems. (C3, PLO2)

Assessment Weight: This project contributes **80%** to the **coursework** component.

Group Size: 3 - 4 members in a team.

Submission Mode: Both hardcopy and softcopy. Refer to Section 4.0.

Submission Date: Prototype and Database Demo Week 4 (Practical)
System Submission and Presentation Week 7 (Practical)

Feedback to Student: Week 7.

2.0 Web Technologies

- The web application must be developed by using **ASP.NET**.
- The database must be implemented by using **SQL Server Express**.
- Other relevant web technologies can be used as needed.
- Do not use any online ASP templates.

2.0 Assignment Specifications

You are required to propose a **SPECIFIC web application development project title** (subject to the approval of your tutor) and to perform the necessary stages to design and implement the targeted web application of your choice. The **BASIC** and **MANDATORY REQUIREMENTS** of the web application are:

3.1 System Prototype

There are **NO** minimum and maximum limits to the number of web pages you should create. The system prototype should show the complete usability and the functioning of the system with ASP.NET web form controls even though it's not workable during prototype demo.

3.2 Database

Design and implement a database (by using **SQL Server Express**) to store and maintain the relevant data tables and records required by your web application. Design your database carefully based on the basic requirements as well as any additional features you plan to implement into your web application.

3.3 Core Business Processes

Identify the relevant business processes (or modules) specific to your proposed project title. For example, if you propose a simple reservation system, it should include modules for the allocation of tickets, seats, rooms, timeslots, etc. Examples of other possible sub-processes include confirmation of reservations, cancellation of reservations, calculation of reservation validity period, payment of reservation fees, generation of reservation references, issuing reminders, etc.

Difference project titles involve different business processes (or modules). You should carry out the necessary study, analysis, and research to identify the business processes (or modules) that best suit to your proposed project title. This also includes experiencing and learning how some of the real-life web applications work.

3.4 Data Maintenance Modules

Depending on the nature of the selected project title, this can be bus schedules and seats maintenance (for bus ticket reservation), rooms and allocations maintenance (for hotel room reservation), consultation hours and time-slots maintenance (for consultation hour reservation), book maintenance (for book reservation), etc. You are required to identify and implement the appropriate data maintenance modules and sub-modules for the system.

You web application should produce the relevant onscreen data reports, in either tabular or chart format, for the relevant users to examine the performance of the underlying business activities (or their areas of concern). For example, you may want to produce a monthly sales report if you are developing an online shopping system. Or a monthly reservation report for an online reservation system.

3.5 Web Application Security

Authentication and authorization should be implemented to grant different access privileges to different users based on their roles (e.g., CUSTOMER, STAFF, MANAGER, etc.). You should identify the different user roles your web application should have.

In other words, create the necessary login, logout, and other security functions to detect user identity and role, as well as to prevent unauthorized users from accessing protected pages, functions, and data. User accounts maintenance should also be included.

3.6 Input Validations and Exception Handling

All input data must be validated by using both client-side and server-side input validation techniques. It is essential for your web application to ensure that all input data are logically valid, and the data integrity are always be maintained.
Any potential error from data input, function calls, custom error, page error, and application error must be handled using proper exception handling.

3.8 Additional Features

You may also want to implement some additional features, functionalities, or modules to enhance and improve your web application (i.e., in the aspect of user experience, system functionality, system performance, web application security, etc.). Please ensure that the additional features you plan to implement are relevant to your project title. For example, it is a good option to implement a product rating feature if you are developing an online shopping system.

4.0 Project Title

You are encouraged to **propose your own project title**. Be creative! However, it is important that the selected project title will allow you to fulfil the basic and mandatory requirements as stated in **Section 3.0**. It is also essential for you to ensure that the project scope is not too small or too big for a development team of 3 to 4 students. Please obtain advice from your tutor whenever necessary.

Ideally, **NO** team within the same tutorial group should work on the same project title.

5.0 Assessment Criteria

Part 1 – Prototype and Database

No	Criteria	Marks
1.	Web and Navigation Design, ASP.NET Web Form Controls, System Prototype	30%
2.	Database	10%
TOTAL:		**40%**

Part 2 – Web System

No	Criteria	Marks
1.	Core Business Processes	20%
2.	Data Maintenance Modules	10%
3.	Web Application Security	10%
4.	Error handling and Input Validations	10%
5.	Additional Features	10%
TOTAL:		**60%**

4.0 Deliverables

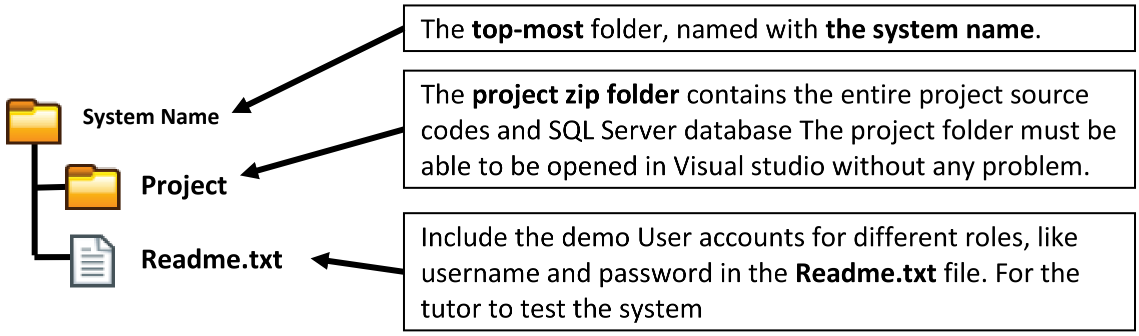
Assignment documentation
Include a user manual with print screens of your web application.

The final report should be arranged as follows:

1. Cover page
2. Sitemap
3. ERD Diagram
4. Error Handling
5. Web Application User Manual
6. Marking Rubric

Include page header and footer in your report.
Page header: System name
Page footer: Page number of total page number (e.g., Page 1 of 10)

The project source codes. Arrange and submit your files according to the following file and folder structure:



The **top-most** folder, named with **the system name**.

The **project zip folder** contains the entire project source codes and SQL Server database The project folder must be able to be opened in Visual studio without any problem.

Include the demo User accounts for different roles, like username and password in the **Readme.txt** file. For the tutor to test the system

Web Projects that **<u>CANNOT</u>** be opened in Visual studio and interpreted successfully will be **<u>REJECTED</u>**. You are advised to **comment out** the section contains errors which you cannot solve, so that your application can run successfully. Indicate those errors left unsolved in the **Readme.txt** file so that the tutor is aware of it.

5.0 Student Ethics

5.1 Plagiarism

Works submitted must be **<u>ORIGINAL</u>**. You can discuss with your friends. You can research from web resources. However, the program must be **your own work**. You can teach your friends how to solve a certain programming problem, but not to program for them. **Do not share** your program and source codes with other teams.

The student who copies **<u>AND</u>** the student who provides an opportunity for others to copy his/her programs, will both be penalized. **<u>BOTH PARTIES</u>** will receive **<u>ZERO (0) MARK</u>** for this assignment. The matter will also be brought to the school for further disciplinary action.

5.2 Late Submission

Late submission which does not supported by **VALID** and **CONCRETE** reason will be penalized according to the following:

No. of Day Late	Deduction
1 to 3 days	**10%** from the assignment marks earned
4 to 7 days	**20%** from the assignment marks earned
more than 7 days	**100%** from the assignment marks earned