UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY (PERAK)

BACHELOR OF BUSINESS INFORMATION SYSTEMS/BACHELOR OF COMPUTER SCIENCE/BACHELOR OF COMMUNICATION AND NETWORKING/BACHELOR OF INFORMATION SYSTEM ENGINEERING

YEAR THREE

UCCD3243 Server-Side Web Applications Development – Assignment

GROUP ASSIGNMENT ***[3 or 4 members in a group]***

Assignment Guidelines

***DUE DATE: (WEEK 8 – Exact date to be confirmed later)**
Total Marks: 15%

UCCD 3243 Server-Side Web Application Development Jan Semester 2021

This assignment is worth 15% of the overall assessment of the course.
Submission date of assignment - will be informed in WBLE

This **group assignment** requires developing a web application using **Servlet and JSP technologies** ***(and other related technologies)*** with the integration of **relational database** where the application will have a set of classes to facilitate for the **3-tier architecture** web application. Although the assignment carries 100%, it is worth only 15% of the overall assessment of this course. Your final deliverable will be a **Web based application** incorporating object-oriented principles with a good design.

1. Project Background:

Assume that you are a member of Web Application Development team at **Atlas Software House**, which is, a premier system development company in Petaling Jaya. Recently, several local companies have approached the company to develop web applications for them. Since your team has done so well on previous assignments, your superior has decided to allow your team to choose the client that you would like to work with.

You have to design and implement a web application for the client that you choose from the list below. You and your team will be developing a web-based application based on the following specification/configuration.

Business Domain (JNDI – java:/classicmodels; JDBC Connection Pool – classicmodelsPool; database name – classicmodels; schema name – classicmodels; postgresql → username:postgres; password:postgresql)

- **Online Order Management Monitoring System** – is a system which allows business premises whose nature of business is to sell classic and modern vehicles *(cars, motorcycles, ships, planes, trucks and etc)* via online to customers and monitors effectively the order information of vehicles around the globe. The database provides information from customers, orders, products to payment. ***(refer to the classicmodels database – there are several modules in the database scheme and each member in the team is required to take up at least 1 module or a maximum of 2 modules)*** [*students are required to use the data set provided by instructor for developing database schema, for identifying the possible functionalities of web application and for testing the application]*

- **Assignment group –** 3 or 4 members in a group.
  - If 3 members → product module, order module, payment module *[staff module is not required and it is not available for a group with 3 members]*
  - If 4 members → product module, order module, payment module, staff module
  - Not allowed to have 1 or 2 members in a group even the member(s) is willing to work on all the required modules

- Each member MUST choose one module to work on and it MUST not be shared *(for example: 2 students work on product module)* **X**
- Integration work between modules should be group effort and not an individual effort
- A group leader has to be elected for each group and the leader is expected to coordinate with other group members and to take charge at all costs in completing the assignment work. Any issues (related to management) that crop up among group members are collective responsibility of all the members to solve it amicably.
- As for database connection approach, you are required to use either ***JDBC pooling approach or JPA JDBC pooling approach.***

Important Notes:

- You must hand in the soft copy of your work. You will be expected to demonstrate *(*presentation – depends on the availability of time/updating your assignment progress in the lab)* your work from the soft copy. The demonstration will be used to:
  - assess both the work and your understanding
  - ensure that the work is all your own

- Failure to be able to answer questions relating to the work will result in a loss of marks; you must attend presentation session to explain your design and implementation.

- The following software must have been used to develop the desired web application:

1. Eclipse 2019-06 (Java EE IDE)
2. WildFly (17.0.1)
3. PostgreSQL DBMS (ver 12)
4. Visual Paradigm Community Edition
5. JDK 11

- Your assignment must include a suitable design; typically, annotated UML diagrams for the application and classes.

- **Maximum marks** will only be awarded for a **well designed, fully implemented system working with several suitable technologies, well tested and implemented set of classes.** Marks for design and documentation are included in the marks allocation table and they must be completed to achieve a good mark.

2. You must include the following items in your report (follow the order given below):

1. A title page showing the unit code and title, your course, your name, tutorial group and assignment title. You also need to include the marking scheme at the front page of your report.

2. The **content of the report of assignment** would include the following areas. *(Marks will be deducted if your report is similar with others):*

- *Structure/Functional charts (web pages)*
  - *Students are expected to come up with the all the required charts to view the organization of web pages in a web application.*
- *UML diagrams*
  - *Use case diagram [compulsory], activity diagram [optional] – (one activity diagram per use case and must cover happy path, alternate paths and exception paths), analysis class diagram (one class diagram) [compulsory], design class diagram (one class diagram) [compulsory], database diagram [compulsory] and package diagram [compulsory] must be implemented.* ***Other UML diagrams apart from the diagrams mentioned above are optional.***
  - *The usage of notations in the UML diagrams must be accurately specified*
  - *Consistency in terms of mapping from one diagram to another is essential*
- *Functional Requirements*
  - *Students are expected to come up with a brief write up on the overall functional requirements of the web application. This part is useful when developing forms in your application. Example: Event management company; Add Reservation, Print Management Report, Add Customer, Modify Customer and etc* ***Basic operations – CRUD [Create, Read, Update, Delete] must be implemented.***
- *Strengths and Limitations*
- *Operational requirements (if necessary)*
  - *You need to specify clearly in your report if your developed application needs certain plug-*

ins/libraries/username & password required in order to run and test it.

You have to submit the softcopy of your developed web application files with the report.

Table 1: Marks Allocation

Attribute	Actual Marks	Student 1	Student 2	Student 3	Student 4
Report Section (Group)	**20**				
Analysis – Application Level – Functional charts	15				
Analysis – Application Level – UML diagrams					
Design – Functional Requirements					
Strengths and Limitations	5				
Application Section (Individual)	**60**				
Application – Functional Requirements	20				
Application – Design/Architecture	20				
Application – Technologies	20				
Application Section (Group)	**20**				
Professional Outlook (Front End and Back End)	5				
Overall Quantity and Quality	15				
Total	**100**				

3. Format of report: APA Referencing System

4. Deliverables

You are required to submit the softcopy of the following items:

- Documentation of the system (report), that incorporates basic documentation standards such as header and footer, page numbering and which includes:
  - Cover page
  - Table of contents
  - *Please refer to the page 4*

- A softcopy of the program coded in Java – submitted via email/E-Learning platform. The web application should include the following:
  - The working codes (all source files) of the entire web application

- The file for web application deployment (WAR extension)

(Ensure that you use the data/records provided by your instructor and you must comply with the given JNDI, Schema/Database, Data Source Pool names – failing which may result in rejecting assignment or deducting assignment marks)

5. Submission & Plagiarism Policies

All assignments are due on the specific day of week as specified in the teaching plan. If, for whatever reasons you are unable to make the date, a written explanation is required with a substantial penalty on obtained marks will be imposed. If there is no written explanation from the group leader exceeding 24 hours from the actual submission date, assignment would be rejected.

All work must be original and if, taken from any works other than yours must be properly referenced using **APA Referencing System**.

Submission of assignment will be done in two stages; you will be required to hand in the **complete assignment report** first followed by the **web application** that you have developed.

Submission of report (assignment report): Week 5 (*subject to changes)
The sections that should be included in your report – please refer to content of the report. (refer to Table 1 as shown above)
Submission of complete workable system (web application): Usually two weeks after the submission of report
(If there are any changes in the report after submitting your report, then you are required to reflect it in the report (new report submission would be required)