On completion of the assignment you should be able to demonstrate the following learning outcomes:

CLO2: Construct an effective and interactive web application by using the scripting languages. (C3, PLO2).

CLO3: Demonstrate an understanding of the process of using web connections to gather and process information in a secure and compatible way. (A3, PLO5)

No.	Course Learning Outcomes	Assessment
1	Explain the principles and technologies of the Internet and World Wide Web. (C2, PLO1)	Final Exam
2	Construct an effective and interactive web application by using the scripting languages. (C3, PLO2)	Essay
3	Demonstrate an understanding of the process of using web connections to gather and process information in a secure and compatible way. (A3, PLO5)	Presentation

Project Problem Scenario:

Problem Scenario 1:

Agricultural development is critically important to improving food security and nutrition. Its roles include: increasing the quantity and diversity of food; driving economic transformation; and providing the primary source of income for many of the world's poorest people. Numerous empirical studies across many countries over many years show that both agricultural development and economy-wide growth are needed to improve food security and nutrition, and that the former can reinforce the latter.

Digital technology enables farmers and other people to connect with institutions and information that eventually help in decreasing risk and uncertainty. With access to markets, data, and financial services with the help of specific digital technologies, the efficiency of fertilizing, planting, harvesting, and selling products increases. At present, most of the hunger-alleviation strategies do not prominently feature such types of technologies. However, the ratio is gradually increasing with an increase in the number of people showing their interest in emerging economies.

Thus, as one of the web development teams of the APU Web Solution Sdn. Bhd. , your manager asks your team to design and develop a good web application that is useful for achieving sustainable agricultural development, to provide assistance with food security issues.

The topic of the web application used to resolve the above problem may be one of the following, but it is not limited to these:

- Online Management System For Livestock Industry
- Online Order Management System For Agrochemical And Seed Companies.
- Online Monitoring / Management System For Fishery Industry
- Online Fishery Market / Online Organic Food Market
- Online Agricultural Sharing Information Community
- Online Monitoring System For Farm Sanctuary

Problem Scenario 2:

The Elderly Home's Club is a social welfare organization that offers shelter, support and medical services to poor seniors. It is a non-profit organisation. By establishing homes for the elderly, the organisation hopes that the poor and the homeless can now have a place where they can call their homes, where they can also enjoy a better quality of life. This association consists of several departments, such as the *Shelter Department, the Spiritual Support Department, the Medical Care Department and the Home Repair Department.* Consequently, there is a need to develop appropriate web-based applications to simplify communication between seniors and these services. As a member of this association, you wish to contribute an appropriate and useful website to one of the departments listed above.

The topic of the web application used to resolve the above problem may be one of the following, but it is not limited to these:

- Online Home Repair Appointment System
- Online Shelter Management System
- Online Medical Care Appointment System
- Online Elderly Health Monitoring System
- Online Elderly Mental Monitoring System
- Online Chat and Helper System for Elderly's Spiritual Problem

Problem Scenario 3:

During the early stages of the pandemic, the business-to-business logistics market came almost to a standstill. Impacts were profound as supply chains were seriously disrupted and new regulations rapidly introduced. Now, as the journey to recovery begins, some companies are looking to diversify and relocate their supply chains closer to home with, for example, countries such as Mexico as alternatives to China for US companies.

Meanwhile, the business-to-consumer market has exploded as people in lockdown turned to the internet to make their purchases. And not only did volumes grow; the profile of goods being shipped changed, with more consumers ordering even the largest purchases online. In response, logistics companies start to utilize the web technology to cope with the huge delivery demand.

Below are some main challenges were faced by the logistic companies during the COVID-19:

1. **Air and Sea Freight Limitations**
   With the blockade happening in most of the countries, the cargo industry was the first to experience the impact of the pandemic. Since most flights have been cancelled, the market is facing a lack of air transportation services. While most companies have converted their air cargo to marine cargo, the same stringent sanitary inspections will also cause more delays in the marine cargo sector.

2. **Land Transport Takes a Hit**
   In a bid to meet the required demand, many logistics businesses have ended up overworking the drivers. Moreover, the consumers also face delays due to the increased state border health checkups. Upon reaching their destinations, the companies that relied on drivers signing on their goods on delivery can no longer rely on this methods. This is due to the quarantine and social distancing regulations set by the government to curb the spread of the virus.

3. **Workforce and Labour Shortage**
   With the limited supply and demand, most companies have resorted to retrenching most of their workers to meet their operational costs. Besides, also most of the workers in quarantine following their exposure to the COVID-19 disease. The remaining percentage has opted to stay at home for fear of their lives. As a result, the shortage of labour supply has put a strain on logistics and delivery of goods.

As a web developer, the Logistics Association invites you to design and develop an interactive web application that suit them, so that they can solve all/almost all of the above challenges.

If you are unable to provide any suitable topic for this problem scenario, you may consider the following topics, and not limited to these:

- Online Delivery Cargo Workforce Scheduling and Route Planning System
- Online Customer Inspection and Tracking of Delivered Goods System
- Online Workforce Monitoring and Management System
- Online Customer Service Record System

Rules of Project

- From the three (3) problem scenarios listed above, select **ONE (1)** of them, and develop an appropriate web application for resolving it.
- *Every problem scenario can only have a maximum of 5 groups to implement their solution.* Consequently, the first-come, first-served strategy will be used in the scenario / topic selection section.
- ***Maximum of 3 students*** in a group.
- Even this is a group assignment, all the marks will be given based on individual circumstances. Thus, all the ***THREE (3) students*** must involve in every section, where start from design to web development *(include database implementation)* until filing to the documentation.
- The exact topic must be agreed with the lecturer before commencing.

Minimum requirements of the system:

- Minimum 2 user roles should be included in the system.
- **Inclusion expected in the system:**
  1. **HTML and Cascading Style Sheet (CSS)**
     - Bootstrap templates are allowed to use. However, modification on the templates should be done and evident.
  2. Use **appropriate graphics** in the system.
  3. Create adequate **JavaScript** by own.
  4. Create dynamic web pages **using PHP**
  5. Pages should be working with Database technology (**using MySQL**)
     - Perform create, read, update and delete together with login (and sign up) functionality to access the pages
  6. Form Validation and User Authentication.

Step by step guidelines to complete the Project:

To ensure all the requirements and components are completed at the end of this module, students are suggested to follow the stages as listed below:

Stage	Activities
One	▪ Form a group. ▪ Identify the topic and concepts of the website. ▪ Construct a wireframe and navigational structure for your team website. Your team should start thinking about the look and feel of the pages at this stage. – *Investigate some other websites for ideas on structure, colors and information layout.* ▪ Construct the database related diagrams. – *Identify the data that need to be stored in the database.*
Two	▪ Develop the website based on the wireframe that has been done in Stage One. ▪ Provide the initial stages of a login facility – *With username and password text fields.* – *Connect the login form to a simple debug PHP script that just provides feedback, so your team members can check whether the form does what they expect*. – *Your system are not expected to connect to a database at this stage.*
Three	▪ Complete a basic Login page and allow a user named ***test*** with the password ***pass*** to log into your system site. ▪ Read the data from the database and show it in a form that your team would expect, depends on the topic that has been selected. ▪ This means that your team members will need to be able to: – *Write code to step through database tables. E.g. read data* – *Write the data out in a simple HTML table for viewing.*
Four	▪ Upgrade the login capabilities from stages one and two to include session-based security. ▪ Use the database to check usernames and passwords. ▪ Get your system initial screens working (including the Register new user page) and linked together. ▪ The login and registration pages must be fully working but do not have to have finalized user interfaces (artwork, color schemes, layout).
Five	▪ Complete the application. Ensure that all of the elements. ▪ Get your short report finished and checked.

Assessment Components and Criteria

1. Part 1: Report (35%) – [CLO2 – PLO2]

- Write a report (***approximately 3500 words***) which includes the following:
  1. Cover Page and Table of Contents (inclusive of actual page numbers)
  2. Gantt chart (project plan)
  3. Introduction and objectives of the project
     - An introduction of your topic including project background, problem statements, objectives, and a reflection on the web application that your team have built stating how it has met the objectives set out.
     - Justification of your style design choice and targeted audience.
  4. System design
     - Produce ***wireframes, navigational structure, flowchart / activity diagram, and Entity Relationship diagrams (ERD)***.
     - ***Give explanation for each of the above diagrams except navigational diagram and ERD.***
  5. Implementation (scripting, database connectivity, etc.)
     - Each of the group members should include code snippets for below operations:
       1. Create - HTML Form, PHP
       2. Read - HTML Form, PHP
       3. Update - HTML Form, PHP
       4. Delete - HTML Form, PHP
       5. Login - HTML Form, PHP
       6. Signup – HTML Form, PHP
       7. Self-created CSS and JavaScript
     - Attach an appropriate explanation for each of the CRUD and login operations.
  6. Main section (user guidance & sample screens)
  7. References (in APA Format) – Refer to https://library.apiit.edu.my/apa-referencing/ for more details.

(Total: 100 Marks)

2. Part 2: Presentation (25%) – [CLO3 – PLO5]

- ***30 - 45 minutes*** presentation time will be given to each group of students.
- ***System Demonstration: Q&A and Evaluation***
  - **Appropriate graphics**
  - Good usage of **Cascading Style Sheet (CSS)** and **JavaScript**
  - Dynamic web pages (**using PHP**)
  - Working with Database technology (**using MySQL**)
  - Form Validation and User Authentication

(Total: 100 Marks)

Remarks:

The soft copy of the project should include ***ALL*** the source (***HTML, PHP, JavaScript and CSS***), database and media files (***images, video, and audio***) used in the production of the project. Database with all related table and existing data must be exported into ****.sql file format***.

All the softcopies must submit to the Moodle System before of Week #12.

Code Reuse

You may use the code you find from research in your assignment. However, you must reference this code whenever you use it. Code taken from the work of other students is plagiarism, as is working together to produce code – this is not group work. Your code will be checked using specialist checking software, any instances of plagiarism will be taken very seriously.

Plagiarism is a serious offence and will be dealt with APU's regulations on plagiarism.

Good Luck!

Grading Criteria

Marking Key		Equivalent Marks
A+	**Distinction** Superior achievement in assignment, outstanding quality; complete in every way	**80 - 100**
A	**Distinction** Very high achievement in all objectives, excellent quality assignment.	**75 - 79**
B+	**Credit** Very good/High achievement in most objectives, high quality assignment**.**	**70 - 74**
B	**Credit** Good/High achievement in most objectives, shows some of the qualities but lacks, comprehensiveness nevertheless quality assignment**.**	**65 - 69**
C+/C/C-	**Pass** Satisfactory/competent achievement in most objectives, all essential points covered plus some of the minor ones.	**50 - 64**
D/F+/F/F-	**Marginal Fail / Fail** Unsatisfactory, Improvement essential/poor achievement; poor quality assignment, some essential objectives not covered.	**Below 49**