# TPL 6213- PROGRAMMING LANGUAGE CONCEPT
# GUIDELINES FOR GROUP PROJECT

## A. Description

Form a group of **4 persons** This is a **milestone-based submission** of group project. Firstly, you are required to choose **ONE** programming language from the list below and demonstrate the language based on the framework/ library and functionalities.

| Language | Framework/ Library | System Functionalities |
|---|---|---|
| 1. **PHP**-HTML-CSS | CodeIgniter | Web hosting (free server), connecting database, error handling, file uploading, email, form validation, session management, etc. |
| 2. **PHP**-HTML-CSS | Laravel | |
| 3. **Dart** | Flutter | Connecting database, user interface controls, data table, calendar, regular expression, error handling, progress bar, timer control, etc. |
| 4. **Python**-Gradio | CrewAI | Agentic AI, Web hosting (free server), multimodal AI, email drafting, report generation, scheduling, machine learning, etc. |
| 5. **Python**-HTML-CSS | Streamlit | Web hosting (free server), live prediction, forecasting, Interactive data dashboards, Exploratory data analysis (EDA), etc. |
| 6. **JavaScript**-HTML-CSS | jQuery | Web hosting (free server), AJAX, JSON, sortable list, resizable elements, drag & drop behaviours, calendar, progress bar, autocomplete, etc. |
| 7**. JavaScript**-HTML-CSS | React | |
| 8**. R**-HTML-CSS | Shiny | Agentic AI, Web hosting, web scraping, data science, summarize text, data visualization, etc. |
| 9. **C# - Blazor** | Microsoft Agent | Agentic AI, Web hosting (free server), streaming responses, authentication, etc. |
| 10. **Node.js** | LangChain | Retrieval Augmented Generation (RAG), lightweight LLM, text summarization, memory management, etc. |

Each group has to learn the selected language and publish your research report on a **web page**. Compile your web page into softcopy documentation (pdf) and submit on **12 JAN 2026**.

Other than web page, each group is given an opportunity to conduct a short training (video recording with practical hands-on) on your project to other students in class by Week 12-13.

## B. Topics of Research

Prepare a website to describe the following topics:

1. Background of **language/ Framework/ library** – *refer Lecture 1*
   - History of the language/ Framework/ library – Why was it invented?
   - Language category, programming styles (*may support more than one style*)
   - What types of applications are mostly used by this language/ Framework/ library? Show samples.
   - Is the language/ Framework/ library currently popular? (Prove with graph or statistics)
   - What is the implementation method? (*may support a combination of two or more)*
   - What are the programming environments available for this language/ Framework/ library?

2. Explain basic elements of the language, with the source codes from **Sample Application**
   - Names and Bindings – *refer Lecture 6*
   - Expressions and Assignment – *refer Lecture 7*
   - Control Structures – *refer Lecture 8*
   - Subprograms – *refer Lecture 9*

3. Sample Application
   - **Find a sample application (source code)** based on your selected language/ framework/ library and system features.
   - Show the design of the system features with flowchart and description.
   - Describe the output of each system feature in the application.

4. Short training in **less than 15 minutes**
   - Demonstrate the basic elements of your selected language/ Framework/ library with your sample application.

5. Website
   - References - APA style and readability and layout design of webpage

## C. BEWARE of Plagiarism

If you take an illustration or more than a few words of text from a book or other source you **must quote it and provide the source**. Using the words or pictures of others without explicitly acknowledging them is **plagiarism**, a serious violation of scientific ethics. A complete reference to the document is included in the **Bibliography** at the end of your report. Multimedia University will be using the **APA** (American Psychological Association) citation style.

Please make sure your web pages are neat and readable. The Web pages don't have to be fancy. You may include any graphics or links from other web pages (**must quote it and provide the source**). Don't put up all topics in a single page. Divide into different pages for better readability.

 **ENJOY YOUR TEAMWORK!** 

# PROJECT MARKSHEET

| Description | Max (%) | Score (%) |
|---|---|---|
| ***PLAGIARISM*** | -40 | |
| Report Content (4 marks for each topic)<br>• Background of language – *refer Lecture 1*<br>• Names and Bindings – *refer Lecture 6*<br>• Expressions and Assignment – *refer Lecture 7*<br>• Control Structures – *refer Lecture 8*<br>• Subprograms – *refer Lecture 9*<br>*** 0-fail 1-unsatisfactory 2-meet requirement 3-above requirement 4-excellent* | 20 | |
| Sample Application (4 marks for each criteria)<br>• Develop/ get a sample application (source code) developed based on your selected language, framework/ library and system features.<br>• Show the design of the system features with flowchart and description.<br>• Describe the output of each system feature in the application.<br>*** 0-fail 1-unsatisfactory 2-meet requirement 3-above requirement 4-excellent* | 12 | |
| Short Training (2 marks for each criteria)<br>• Deliver well-structured training<br>• Provide accurate and relevant content<br>• Show interaction with the participants<br>*** 0-fail 0.5-unsatisfactory 1-meet requirement 1.5-above requirement 2-excellent* | 6 | |
| Website (1 mark for each criteria)<br>• References - APA style<br>• Readability and layout design of webpage<br>*** 0-fail 0.5--meet requirement 1-excellent* | 2 | |
| **TOTAL** | **40** | |