

**Software Cluster**  
**Coding and Development Project (CDEV) &**  
**Database Application Development (DBAV)**  
**Project Specification**

## Introduction

The purpose of this assignment is to understand and apply the knowledge of website development to develop a working web application that stores and retrieve data to/from a database server. The theme of the project is **Games Review** and should contain the following basic features:

Feature	Description
User registration and updating of user information	Allows users to register and update user information through the use of database. (hint: create a class for "user")
User Login with database	Allows users to login to their account. (hint: <i>if-else</i> statements can be used)
Displaying of game list	Retrieve game title and cover image from the database and display on the webpage. (hint: use <i>for-loop</i> and <i>array</i> )

In addition to the above basic features, you are also required to include at least ONE additional feature for the website (refer to Part 5).

This project consists of five parts:

1. Part 1 is to produce a proposal for your website user interface and develop a low fidelity prototype and a site navigation map.
2. Part 2 is to produce a database design for the data that will be stored into the database server.
3. Part 3 is to develop the SQL and web API to integrate the database with the web application.
4. Part 4 is to develop the website screen interactivity based on the proposed project design.
5. Part 5 is to present your work in PowerPoint slides and submit the completed Web Application.

Notes:

- a) This is an individual project.
- b) You are to propose, design, develop, test and implement a web application using HTML, CSS, JavaScript, Node.js and MySQL. You need only to submit one integrated web

application with suitable user interface that enhances the user experience.

- c) You are free to be as creative as you can but do ensure that you can complete the web application within the specified timeframe. However, as a MINIMUM requirement, your application **MUST** apply the knowledge that you have learnt in the studio sessions (see marking criteria in the sections below on how you will be graded) with at least ONE additional feature.
- d) You are **not allowed** to use full website templates that are available on the internet. Substantial marks will be deducted if you are discovered doing so.

### Part 1 (CDEV - 20%)

You are to produce a proposal for your web application user interface and develop a low fidelity prototype.

The delivery for this part of the project includes the following UXID components:

- a) Report
  - *Storyboard*
  - *User Journey Map*
  - *Site Navigation Map*
- b) Low-fidelity prototype and storyboard Presentation

You will also be required to do a stand-up presentation of your prototype to your tutor. This part of the project constitutes 20% of the grade for the Coding and Development Project subject. The grading criteria for Part 1 (CDEV) will be based on the following:

Grade	Criteria
A	Delivered all the required items with relevance to the project theme. Site navigation map is clear, well structured, and organized. Validated a feasible solution with a prototype and use case scenario that supports the users' need.
B	Delivered all the required items with relevance to the project theme. Site navigation map is clear, structured, and organized. Demonstrated a probable solution and scenario that can address the users' need.
C	Delivered all the required items with relevance to the project theme. Site navigation map is less clear, somewhat well structured, and less organized. Proposed a probable solution and scenario that might address the users' need.

D	Partially delivered all the required items with relevance to the project theme. Navigation Map is unstructured and unorganized. Demonstrated improbable solution that does not consider the context of the user.
F	Non-submission of all the required items.

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## Part 2 (DBAV - 40%)

Part 2 of the project consists of the following components on Database Design:

- a) Data Dictionary (20%)
- b) Entity Relationship (ER) Diagram (20%)

The grading criteria will be based on the following:

Grade	Criteria
A	Extensive Data Dictionary that contains appropriate data items and all relevant details of each data item. Extensive ER Diagram that contains appropriate tables and constraints used. All data items in the Data Dictionary are reflected in the tables.
B	Data Dictionary that contains appropriate data items and correct details of most of the data items. ER Diagram that contains most correct tables and constraints used. All data items in the Data Dictionary are reflected in the tables.
C	Partial Data Dictionary that contains some appropriate data items and some correct details of each data item. Partial ER Diagram that contains some correct tables and constraints used. Some data items in the Data Dictionary are reflected in the tables.
D	Limited Data Dictionary that contains few appropriate data items and few or no correct details of each data item. Sparse ER Diagram that contains few correct tables and constraints used. Few data items in the Data Dictionary are reflected in the tables.
F	Incorrect or incomplete or no data and details in Data Dictionary. ER Diagram that consists of incorrect tables and constraints used. Few or no data items in the Data Dictionary are reflected in the tables. Or Non-submission of Data Dictionary or ER Diagram or both.

### Part 3 (DBAV - 60%)

Part 3 of the project consists of the following DBAV components:

- a) Demonstrate API implementations of all SQL queries for all CRUD operations using Postman. There should be at least one SQL query each for Create, Update, Retrieve, and Delete operations. SQL codes for all CRUD operations to be submitted in MS Word document via LMS.

The grading criteria will be based on the following:

Grade	Criteria
A	Efficient SQL implementation for ALL CRUD operations, including use of complex SQL queries.
B	Efficient SQL implementation for all CRUD operations, including use of advanced SQL queries.
C	Correct SQL implementation for all CRUD operations.
D	Partially correct SQL implementation for all CRUD operations.
F	Incorrect SQL codes. Implementation failed to function. Or Non-submission of Part 3.

## Part 4 (CDEV - 40%)

Part 4 of the project consists of the following CDEV components:

- GUI of the web application. You will be assessed by transferring the wireframes into actual web screens with navigation and interactivity.

The grading criteria will be based on the following:

Grade	Criteria
A	Screen Layouts that is based on the wireframes diagram with full working navigation and enhanced interactivity.
B	Screen Layouts that is based on the wireframes diagram with full working navigation.
C	Screen Layouts that is based on the wireframes diagram with partial working navigation.
D	Screen Layouts that is based on the wireframes diagram with little or no navigation.
F	Incomplete or broken Screen Layouts that does not comply with wireframes. Or Non-submission of Part 3.

## Part 5 (CDEV - 40%)

Part 5 of the project consists of a presentation with demonstration of the final application; and submission of Self Directed Learning (SDL) report with the implementation of at least ONE additional feature, and the source codes of the final application.

### PowerPoint Presentation Slides

You are required to submit in the LMS your project PowerPoint presentation slides (to be submitted in **Week 17**) that includes but is not limited to the following information:-

#### Project details

- Name and matriculation number
- Class
- Application Name
- Application Icon
- Application description. Briefly describe your concept in terms of how end user uses the application.

#### Reflection

- What difficulties did you encounter in developing the application and how did you go about resolving them?
- Did you seek help from anyone? If yes, state what kind of help they have offered you.
- What grade do you expect to get for the assignment? Why?
- After completing the assignment, what are your thoughts about the skills you have just learnt?

#### References (books, encyclopedia, web pages, etc)

- List of resources you have used as research materials to help you in the development.

### Presentation

You are to do a 10 min presentation and demonstration of your final application. You must be prepared to show and explain your codes when requested during the presentation.

### Project Source Codes

Submit the entire project folder as a zip file into the LMS under the Assignment folder. Please ensure that you have a backup copy of your application in case there is a problem with the online submission.

### Submission

You should zip up the Word document together with the zipped project file and submit to the LMS in **Week 17**. The exact date and time will be announced in the LMS near to submission date. Your zipped document file should be named according to the following format:

StudentID\_YourName\_YourClass.zip

e.g.: 1234567D\_Teo\_Ch Chu\_P01.zip

The grading criteria of the FINAL web application will be based on this:

Grade	Criteria
A	Polished Web App – Implementation of Web App with multiple advance features that are robust and fully tested. Web site is also professionally designed.
B	Functional App – Implementation of Web App with multiple advance features. Website is also well designed.
C	Functional App – Implementation of Web App with multiple features. Website design adheres to UXID principles.
D	Minimum App – Implementation of Web App based on lab + at least <u>ONE</u> additional feature, with minimum broken links to pages/images.
F	Non-functional App with major bugs and runs a high possibility of runtime Error

**\* Sample additional features can be found on the next page.**



Sample Additional Features
<ul style="list-style-type: none"><li>- Search for games</li><li>- Add games to favourites</li><li>- Categorisation of games</li><li>- Upload image file to change game image</li><li>- Create new game, Update game, Delete game</li><li>- Use of third-party API (not taught) for certain functionality</li></ul> <p>You will need to explain your codes for the advanced features very well.</p>

**Note: Do not compress in RAR format.**

### Penalty for Late Submission

late and < 1 day : 10% deduction from absolute mark given for the assignment  
late  $\geq 1$  and < 2 days : 20% deduction from absolute mark  
late  $\geq 2$  days : No marks awarded

Note that “day” includes ~~non-working days~~ (Sat, Sun and public holidays).

General MC/LOA is NOT considered as valid reason for extended assignment submission.

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