CSIS 4495 - Section 071

**Applied Research Project**

Group - Sep 08, 2025

Instructor

#### Bambang Sarif

Douglas College



World rebalance

**Group - Project Proposal**

A multiplayer game project with backend integration and real-time analytics

#### Group

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**Introduction**

Our team of three students is developing a multiplayer game for our CSIS 4495 Applied Research Project. The project is divided into three major parts: game itself, game backend, and website portal. Online multiplayer games generate massive amounts of gameplay data (kills, wins, time spent, item usage). However, most games only provide in-game statistics and show, lacking post-game analysis for players and stakeholders.

Although some popular online games, such as World of Warcraft and League of Legends, provide websites where players can view statistics, these platforms are often limited in scope. For example, Blizzard provides an online portal for game statistics, but it only shows limited data and updates are often delayed. Similarly, Riot Games offers match history for League of Legends, but players cannot customize or compare data outside the built-in system. These limitations highlight a research gap: the lack of a real-time external analytics portal that allows players to access and compare gameplay data more flexibly.

The purpose of our project is to design and implement such a portal, which provides players and stakeholders with clear and interactive access to game statistics, performance indicators, and comparative data. We assume that this platform can perform real-time analysis of match data and provide live player rankings.

# Objectives

The objectives of this project are to enable players to access game statistics such as win rates, kill/death ratio, and game time without logging into the game itself. The website will provide data analysis and visualization to help users better understand performance trends. In addition, the platform will allow users to search and filter information related to other players, matches, or equipment data. A basic user login system with secure authentication will also be implemented to provide controlled access to personalized features.

# Scope

* The website will connect to the backend API developed by other teammates.
* Data will be presented in the form of tables and charts.
* The website will offer interactive visualization of game statistics using libraries such as D3.js.
* The website will be implemented in PHP and a MySQL database.

# Methodology

# The website will be connected to the backend API that my teammates are developing, I will use PHP to request and process the data, and a MySQL database will be set up. Furthermore, the main focus will be showing the information in tables and charts, and I plan to use a JavaScript library such as D3.js for visualization. The site will be deployed a simple cloud platform so it can be accessed during testing and presentation.

# Justification of Methodology

# We chose PHP and MySQL because we already learned them in our previous courses, and our team is more familiar with them. PHP is simple to use for building a website, and MySQL is a database for storing game data. Using these two together also makes the project easier to finish within the time limit.

# For data visualization, we plan to use D3.js. This library is good for making interactive charts and can update data in real time. Since our project is about showing match results and player rankings, D3.js fits with our goals well.

# We will also deploy the system on a simple cloud platform. This makes the website easier to test and show to others, because it can be accessed from anywhere, not only one computer. We also plan to use Firebase authentication, so that users can log in safely and access their own data.

# Expected Results

# The expected result of this project is a web portal that can connect to the game backend and show real-time gameplay statistics. It will also provide interactive charts and live player rankings, so players can easily access and compare their game performance.

# Research Planning and Timeline

# The project timeline is illustrated in the Gantt chart below. It shows the planned start and duration of each major task in the website portal development.

# A graph on a computer screen AI-generated content may be incorrect.

# Project Contract

# Weekly Meeting: Thursday during the class break and Sunday afternoon via Zoom

# Meeting Format: Review completed tasks, discuss blockers, and revise tasks as needed

# Communication: Whatsapp for daily updates, email for formal discussions

# Workflow: Tasks are assigned and tracked through the schedule tab in the group’s Google Doc

# Contributions: spend at least 10 hours/week to finish assigned tasks and reports

# We, the undersigned, agree to the above terms and commit to our responsibilities.

# Hao SUO Yaolong Liu Muye Li

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# Work Logs

**Hao SUO**

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| **Date** | **#Hours** | **Description of Work Done** |
| Sep 07, 2025 | 1 | Reviewed the document *General Guidelines and Deliverables* provided by the instructor |
| Sep 08, 2025 | 3 | Reading the *A Guide to Technical Report Writing* to be familiar with the rules |
| Sep 08, 2025 | 2 | Drafted the proposal for my part of the project, which focuses on the development of the website portal for displaying and analyzing game data |
| Sep 09, 2025 | 3 | Worked on project planning and created the Gantt chart for the website portal tasks using Tableau. Updated the proposal with the timeline section. |

**Yaolong Liu**

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| **Date** | **#Hours** | **Description of Work Done** |
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**Muye Li**

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| **Date** | **#Hours** | **Description of Work Done** |
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