

March 21, 2025

### Letter to the Reviewed Team

Dear Lima team,

We hope this message finds you well. After reviewing your project, we have compiled our findings, which we believe will help improve your design and overall functionality. Please find our summary, feedback, and suggestions below:

#### General Critique of the Design:

Overall, your design showcases several positive aspects, particularly in terms of complexity and coverage of key features. However, there are also areas that could benefit from refinement:

- **Strengths:**
  - **Comprehensive use case coverage:** You've done well to identify and document multiple important use cases, especially related to game features and matchmaking.
  - **Logical organization of actors:** Your identification of actors and their roles (e.g., player, game platform) in most cases is clear and well-thought-out.
- **Weaknesses:**
  - **Lack of clarity in relationships:** In some areas, relationships between use cases and actors are vague, leading to confusion. Specifically, in your **GUI diagrams** and **matchmaking** sections, the flow could be simplified for better clarity.
  - **Inconsistencies in diagram directionality:** Arrows indicating relationships in use case diagrams sometimes point in the wrong direction, which could lead to misunderstandings about the interactions between actors and use cases.

## Diagram Corrections/Changes:

Here are a few corrections and suggestions to improve the diagrams:

### 1. Authentication Use Case:

- It seems that the **Authentication** use case diagram is either missing or merged with the **GUI** diagram. Please create a separate diagram for **Authentication** to better isolate the flow for logging in, signing up, and password recovery.

### 2. Database and Actor Relationships:

- **Database** should be listed as an actor in your use case diagrams, rather than a use case. It's an external system that supports several actions (e.g., storing player data, retrieving leaderboard information).

### 3. Extends Arrows:

- The **extends** arrows in your diagrams are often pointing the wrong way (e.g., **Sign-up** should extend **Log-in**, not the other way around). Adjust these to follow the proper UML standards, where an extension action happens only after the base use case.

### 4. Missing Actors:

- Several critical actors are missing, including the **Game Host Server** and **Game Logic Server**, which are referenced in your descriptions but not included in the diagrams. These should be added for better clarity and accuracy.

## Feature Requests:

Based on our review, we'd recommend considering the following two changes to improve functionality and user experience:

### 1. Matchmaking Enhancement:

- Add a **Matchmaking** feature that includes a way to calculate **session intensity** and **player levels**. This will ensure more accurate and balanced matches for players. A new use case can be added for **Calculating Session Intensity**, which would help in adjusting the matchmaking process dynamically.

### 2. Profile Management:

- Improve the **Profile Management** functionality. As of now, it lacks detailed actions, such as **searching for profiles**, **challenging a player**, and **editing profile details**. Implementing these features will provide users with a more interactive experience.

### **Constructive Feedback:**

To enhance the overall quality and readability of the design, we suggest the following improvements:

- **Consistency in Naming:** Ensure consistent naming conventions throughout the diagrams, particularly between classes and actors. For example, "Player" and "Game" should be uniformly referenced in all related components to avoid confusion.
- **Simplification of Complex Use Cases:** Some of your use cases, especially around **Matchmaking** and **Leveling**, are overly complex and could benefit from being broken down into simpler, smaller components. This will improve readability and make it easier for developers to implement and maintain.
- **Clearer Visual Hierarchy:** Improve the visual structure of your diagrams by grouping related elements together and using more distinct separation between different system components. This will help stakeholders quickly grasp the design and its relationships.

### **Conclusion:**

Your project is on the right track, but there are areas that can be refined to improve clarity, consistency, and functionality. We believe these adjustments will help ensure a smoother implementation process and a better user experience. We encourage you to revise the diagrams and consider the feature suggestions to further enhance the system.

Best regards,

Lima review team