

Project Timeline: Matchmaking System

The timeline will cover the planning, development, and implementation of the MATCHMAKING branch. Each team member is expected to contribute 3 x 45 minutes per week.

Objective: Implement a matchmaking system for pairing players, tracking scores, win/loss statistics, and ranking systems.

Planning and Design

- **Create planning documents for MATCHMAKING branch**
 - Outline tasks, assign responsibilities, and set rough completion dates.
 - **DEADLINE:** March 6, 2025
- **Design use case diagrams**
 - Create a draft, review, and finalize use case diagrams for matchmaking.
 - **DEADLINE:** March 6, 2025
- **Design class structure diagrams**
 - Create a general class structure diagram for matchmaking-related classes.
 - **DEADLINE:** March 6, 2025
- **Create use case descriptions document**
 - Identify and detail use cases for matchmaking (e.g., finding players, creating matches, etc.)
 - **DEADLINE:** March 6, 2025
- **Review and submit documents for Iteration 1**
 - Team review, proofread, and submit to D2L dropbox.
 - **DEADLINE:** March 6, 2025

Milestones

- **Team 5: Iteration 1 Submission:** March 7, 2025

Development and Implementation

- **Objective:** Develop and implement a Matchmaking System to pair players based on skill level, preferences, and availability. The system will integrate with the game lobby and other systems.

- **Duration:** March 8, 2025 - April 11, 2025 (Post-Iteration 1 to Iteration 3 deadline)
 - **Key Features:**
 - Pair players based on skill level (e.g., ELO rating)
 - Allow players to set preferences (e.g., game mode)
 - Integrate with the game lobby and other systems
 - Handle match creation and player assignment
 - Provide real-time matchmaking status updates
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Phase 1: Setup

- **Duration:** March 8, 2025 - March 12, 2025
- **Goal:** Establish rough skeleton code and finalize design for MATCHMAKING

Task List:

- **Git Repository Setup**
 - Set up a Git repository for the MATCHMAKING branch.
 - **Start Date:** March 8, 2025
 - **End Date:** March 8, 2025
 - **Estimated Time:** 1 hour.
- **Finalize class structure design**
 - Adjust class diagram based on feedback.
 - **Start Date:** March 9, 2025
 - **End Date:** March 10, 2025
 - **Estimated Time:** 3 hours.
- **Stub MATCHMAKING logic**
 - Simulate player pairing and match creating.
 - **Start Date:** March 10, 2025
 - **End Date:** March 11, 2025
 - **Estimated Time:** 3 hours.
- **Plan GUI integration**
 - Create a sketch for the matchmaking interface.
 - **Start Date:** March 11, 2025
 - **End Date:** March 12, 2025
 - **Estimated Time:** 3 hours.

Milestone: Setup complete by March 12, 2025.

Phase 2: Core Development

- **Duration:** March 13, 2025 - March 25, 2025
- **Goal:** Implement core systems for MATCHMAKING.

Task List:

- **Implement ranking logic**
 - Develop logic to calculate player skill levels (e.g., ELO).
 - **Estimated Time:** TBD
 - **Start Date:** March 13, 2025
 - **End Date:** March 16, 2025
- **Implement match creation logic**
 - Develop logic to create matches based on player preferences.
 - **Estimated Time:** TBD
 - **Start Date:** March 17, 2025.
 - **End Date:** March 20, 2025.
- **Implement real time status updates**
 - Develop logic to provide real time updates on matchmaking progress.
 - **Estimated Time:** TBD
 - **Start Date:** March 21, 2025.
 - **End Date:** March 23, 2025.
- **Implement player preference handling**
 - Develop logic to handle player preferences (e.g., game mode).
 - **Estimated Time:** TBD
 - **Start Date:** March 24, 2025
 - **End Date:** March 25, 2025

Milestone: Core development complete by March 25, 2025.

Phase 3: Integration

- **Duration:** March 26, 2025 - April 1, 2025
- **Goal:** Integrate MATCHMAKING with other systems (e.g., game lobby, leaderboard).

Task List:

- **Integrate with game lobby**
 - Ensure the matchmaking system communicates with the game lobby.
 - **Estimated Time:** 6 hours
 - **Start Date:** March 26, 2025
 - **End Date:** March 28, 2025
- **Integrate with leaderboard**
 - Ensure the matchmaking system updates player rankings in the leaderboard.
 - **Estimated Time:** 6 hours
 - **Start Date:** March 29, 2025
 - **End Date:** March 31, 2025
- **Test end to end integration**
 - Test the entire system for seamless integration.
 - **Estimated Time:** 3 hours
 - **Start Date:** April 1, 2025
 - **End Date:** April 1, 2025

Milestone: Integration complete by April 1, 2025.

Phase 4: Testing

- **Duration:** April 2, 2025 - April 7, 2025
- **Goal:** Test the matchmaking system for functionality, performance, and edge cases.

Task List:

- **Unit Testing**
 - Test individual components of the matchmaking system.
 - **Estimated Time:** 6 hours
 - **Start Date:** TBD
 - **End Date:** TBD
- **Integration Testing**
 - Test interactions between matchmaking and other systems.
 - **Estimated Time:** 6 hours
 - **Start Date:** TBD
 - **End Date:** TBD
- **Performance Testing**
 - Test system performance under high load.
 - **Estimated Time:** 6 hours
 - **Start Date:** TBD
 - **End Date:** TBD

Milestone: Testing complete by April 7, 2025.

Phase 5: Review

- **Duration:** TBD
- **Goal:** Review and refine the matchmaking system.

Task List:

- **Code review**
 - Review code for quality, readability, and adherence to design.
 - **Estimated Time:** 6 hours
 - **Start Date:** TBD
 - **End Date:** TBD
 - **Refactor and optimize**
 - Refactor code and optimize performance.
 - **Estimated Time:** 6 hours
 - **Start Date:** TBD
 - **End Date:** TBD
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Final Notes:

- Start coding on March 8, 2025 (the earlier, the better).
 - Hold weekly meetings with other team leaders working on different features.
 - Conduct scrum meetings with your team to track progress.
 - Branch early and often, and commit frequently to GitLab.
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