

1. **Use Case:** Start Matchmaking

Primary Actor: Player

Goal in Context: To allow players to enter a matchmaking queue and find a suitable match

Preconditions:

- Player is logged on
- Internet Connection is stable
- Player has reached a rank high enough

Trigger: Player clicks "Start Game"

Scenario:

- Player navigates to the matchmaking menu
- Player selects game mode (Casual, Ranked, and etc)
- System searches opponents depending on factors such as rank, preference, region, and etc.
- System finds a match and displays confirmation
- System adds player into the lobby

Postconditions:

- Player is delivered into the game lobby with an opponent of a similar rank

Exception(s):

- No match is found for a player
- Network connection is unstable, system cannot proceed
- Player disconnects mid-process

Priority: High

When Available: Within 1 to 2 sprints

Channel to Actor:

- Through physical interaction using a touch screen on the players device or input devices (keyboard/mouse)
- Game UI

Secondary Actors: Player Database (To access ranks)

Channel to Actor: System Communication

Open Issues:

- If a player leaves a match mid process, do they suffer consequences?
- Should there be a confirmation before a player is placed into a game lobby with the opponent?

2. Use Case: Leave Matchmaking

Primary Actor: Player

Goal in Context: To allow players to leave a matchmaking process before being placed in a game lobby

Preconditions:

- Player is logged on
- Internet Connection is stable
- Payer has initiated the matchmaking process

Trigger: Player clicks "Cancel"

Scenario:

- Player has initiated the matchmaking process.
- **Case 1:** Player does not want to play the game anymore and does not want to suffer consequences of leaving mid game
- **Case 2:** Player does not have good network connection and risks disconnecting mid game

Postconditions:

- Player is removed from the matchmaking queue and delivered back to select game interface

Exceptions:

- System has already found a match for the player and does not let player cancel
- Player has weak network and cancel request is not sent fast enough

Priority: High

When available: 1 to 2 sprints

Channel to Actor:

- Through physical interaction using a touch screen on the players device or input devices (keyboard/mouse)
- Game UI

Secondary Actors: None

Channel to Actor: N/A

Open Issues:

- Should a timeout be a consequence of frequently cancelling matchmaking requests

3. **Use Case:** Match Confirmation

Primary Actor: System

Goal in Context: To display confirmation of match found

Preconditions:

- Player is logged on
- Internet Connection is stable
- Payer has initiated the matchmaking process

Trigger: System has found an appropriate match

Scenario:

- Player has initiated the matchmaking process.
- System finds an appropriate match and displays the opposition players name on the game interface

Postconditions:

- The system displays opposition players ranking and name

Exceptions:

- System does not find any appropriate match
- Player has weak network

Priority: High

When available: 1 to 2 sprints

Channel to Actor:

- Game UI

Secondary Actors: None

Channel to Actor: N/A

Open Issues:

- Should the system display a timeout message if there are no matches found

4. Use Case: Timeout

Primary Actor: Player

Goal in Context: Repercussion for players who have left ongoing matches

Preconditions:

- Player has left one less than minimum number of matches in progress

Trigger: Player leaves a minimum number of matches in progress

Scenario:

- Player has initiated the matchmaking process.
- System finds an opponent
- Match begins
- Player leaves ongoing match

Postconditions:

- System displays a message, showing the penalty for leaving an on-going match: A period of time for which the player will not be able to play any games

Exceptions:

- Player has weak network signal and the game disconnects

Priority: High

When available: 1 to 2 sprints

Channel to Actor:

- Game UI

Secondary Actors: None

Channel to Actor: N/A

Open Issues:

- Should the timeout period be increased if the player leaves matches over and over again
- Should the first time be a warning
- Should only ranked matches have this timeout consequence or even casual game mode have it too

5. Use Case: Finding Opponent

Primary Actor: System

Goal in Context: Pairing two similar ranking opponents

Preconditions:

- Player has a minimum rank

Trigger: Player clicks Start Game

Scenario:

- Player has initiated the matchmaking process.
- System goes through the queue list of players waiting to matched with an opponent in the same game
- System finds an opponent with a ranking within a range of the with the pairs ranking

Postconditions:

- System displays a "Match Found" confirmation

Exceptions:

- Player has weak network signal
- There are no players in queue

Priority: High

When available: 1 to 2 sprints

Channel to Actor:

- Game UI
- Leaderboard database and Queue data structure

Secondary Actors: Players

Channel to Actor: Game UI

Open Issues:

- What if the system cannot find an opponent player with ranking within the range? Should the algo. expand its range each time it fails?
- What if the player does not have a minimum rank