Winner Management in Case of Parity

The game determines the winner at the end of the game through the ‘declareWinner‘ method in the ‘EndGameState‘ class. This method is responsible for identifying the player(s) with the highest score. In case of a tie, additional criteria are used to declare the winner. Below is a detailed description of how this process is managed.

Method: declareWinner

The ‘declareWinner‘ method iterates through all the players to determine the winner based on the following criteria:

- The player with the highest score.
- In case of a tie in scores, the player with the most satisfied objective is declared the winner.
- If there is still a tie, all tied players are declared as co-winners.

Process Flow

1. Initialize ‘max‘ to 0 and ‘currentWinner‘ as an empty list.
2. Iterate through all players to determine their scores.
3. Compare each player’s score to the current ‘max‘ score.
    - If a player’s score is greater than ‘max‘, update ‘max‘ and set this player as the current winner.
    - If a player’s score equals ‘max‘, compare the number of satisfied objective cards.
        - If the player’s satisfied objective cards are greater, update the current winner.
        - If the number of satisfied patterns is equal, add the player to the list of winners.
4. Determine if there is a single winner or multiple winners.
5. Create and send an ‘EndGameEvent‘ with the results.

Flowchart

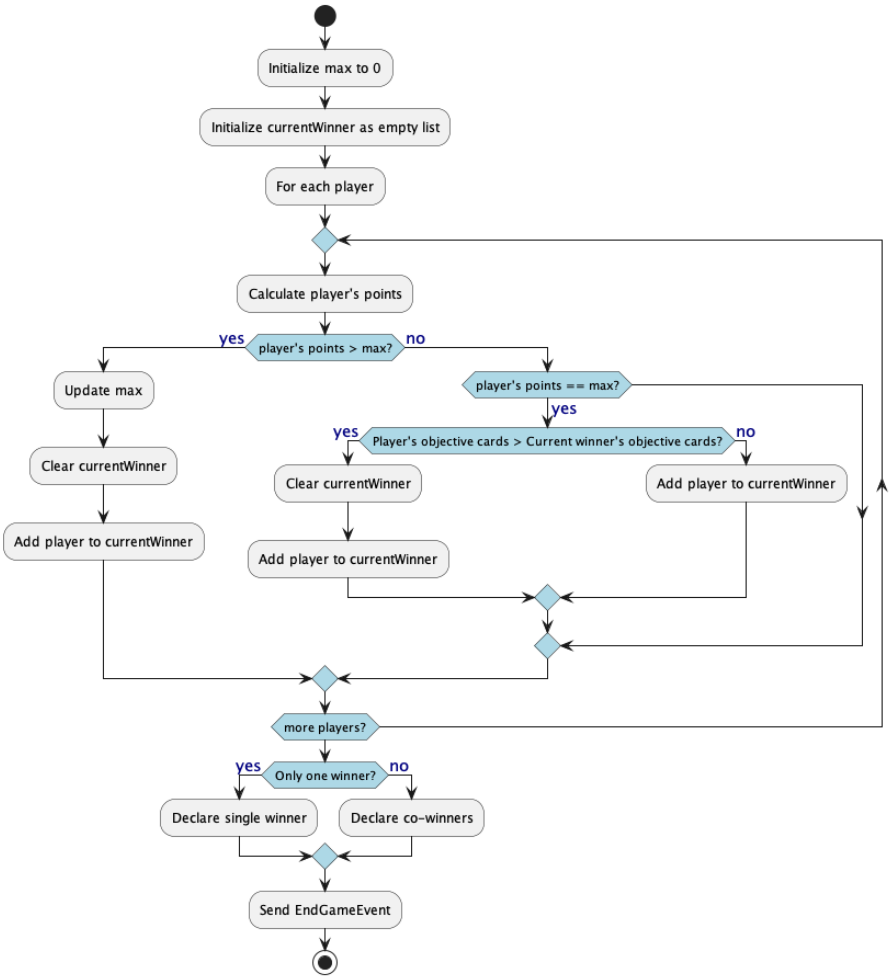

Figure 1: Flowchart of the declareWinner Method