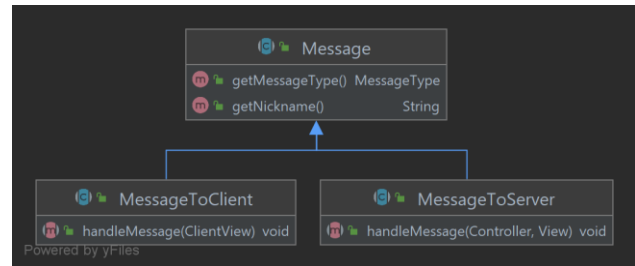


GRUPPO AM 37 - AIELLI, BISIGNANO, CERASANI

The implemented communication protocol is based on the sending of JSON string, serialized using the GSON library. The protocol is asynchronous.

Each message extends one between the two abstract classes (MessageToServer and MessageToClient) and overrides the method handleMessage() with the desired behaviour.



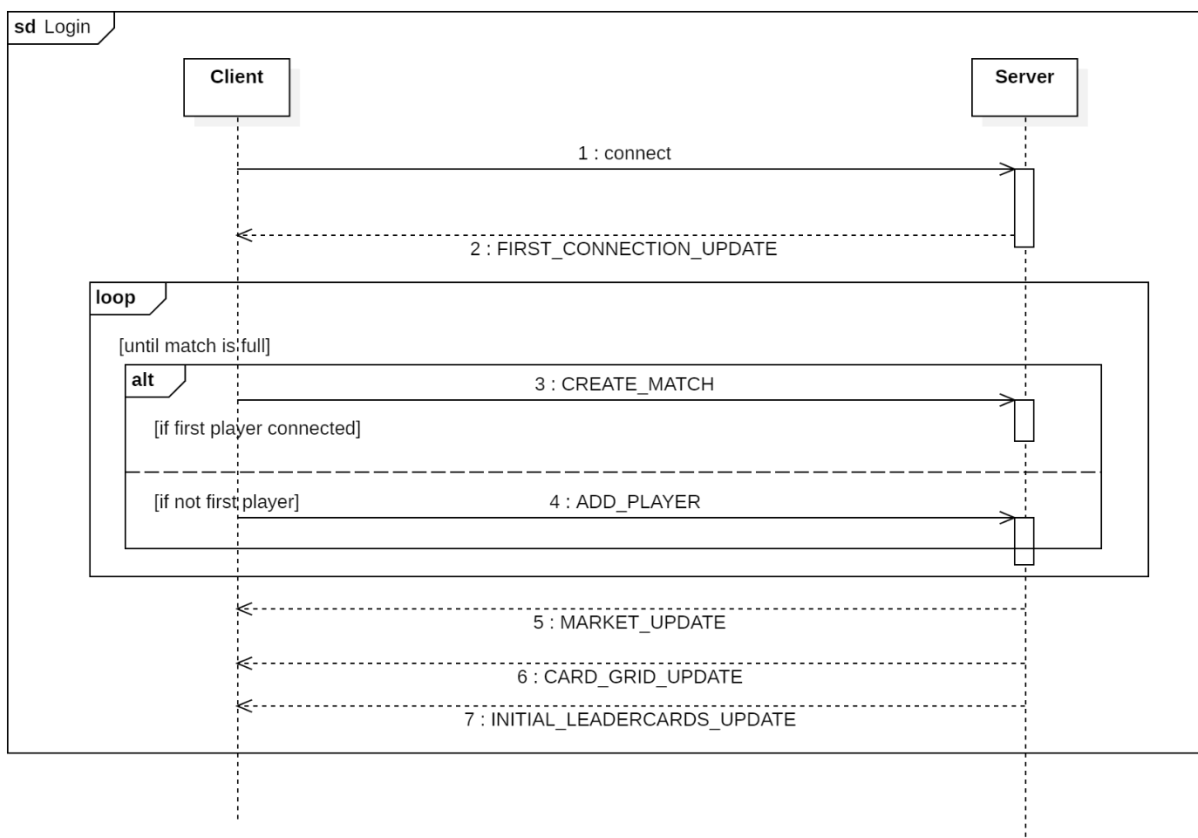
LOG-IN

The client connects to server, the server answers with a **FIRST_CONNECTION_UPDATE** message, communicating if the client is the first connected player of the match.

If the client is the first connected player, the client sends a **CREATE_MATCH** message, containing his nickname and the number of players for the match.

If the client is not the first connected player, the client sends an **ADD_PLAYER** message, containing his nickname which is validated server side.

When all the players are connected the match starts and the servers updates every client with the random game elements for that game (**MARKET_UPDATE**, **CARD_GRID_UPDATE**, **INITIAL_LEADERCARDS_UPDATE**)



LEADER CHOICE AND RESOURCE CHOICE

In this phase

PLAYERS CHOOSES LEADER CARDS:

Every client sends a DISCARD_INITIAL_LEADER message containing the discarded leaders. The server updates the other clients with INITIAL_LEADER_DISCARDED_UPDATE after a client has discarded leader cards.

SERVER CHOOSES THE FIRST PLAYER:

The server randomly chooses the order of players and sends a broadcast PLAYERS_ORDER_UPDATE message.

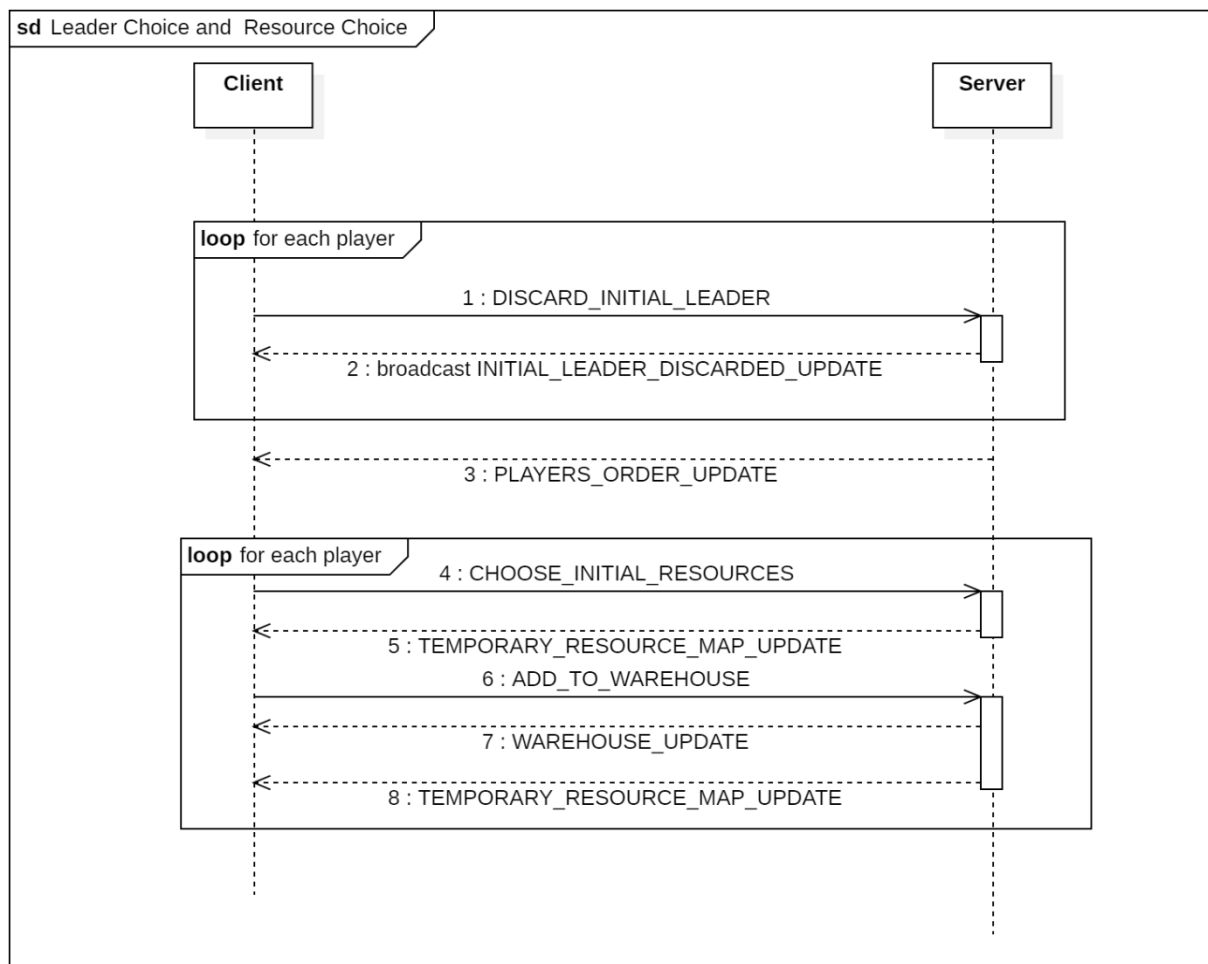
PLAYERS CHOOSES INITIAL RESOURCES:

The server automatically updates the red cross position based on the game.

In turn each client chooses the resources in a quantity based on his order and adds the resources to his warehouse depot.

The server sends broadcast TEMPORARY_RESOURCE_MAP_UPDATE after the player has chosen his resources and WAREHOUSE_UPDATE after the player has added the resources to his warehouse.

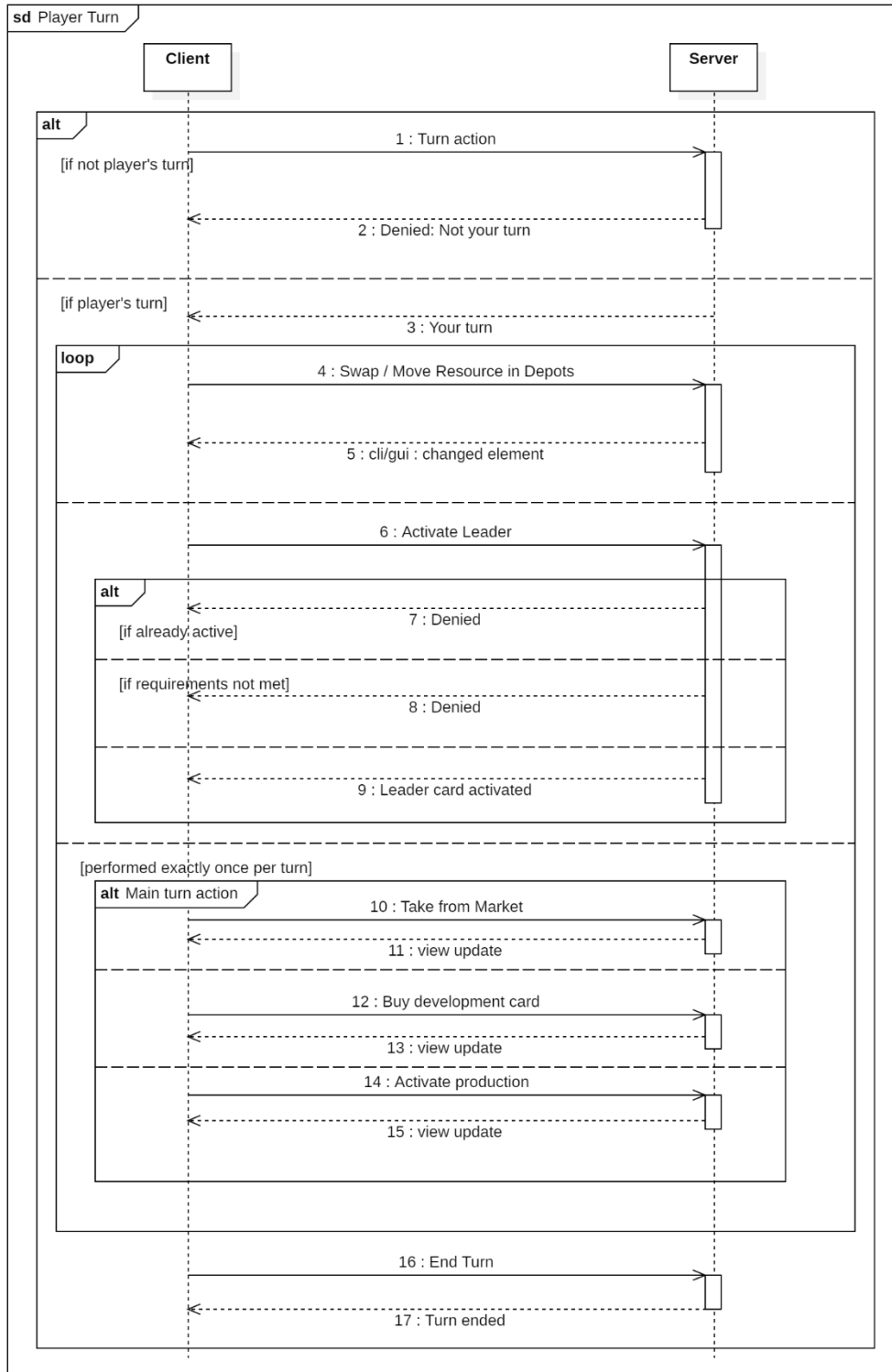
After all players choose their resources a standard game round starts.



PLAYER TURN - Overview

The round starts when a player ends his turn and the server sends a broadcast `PLAYER_TURN_UPDATE` containing the next player, every request of turn action from other players gets rejected.

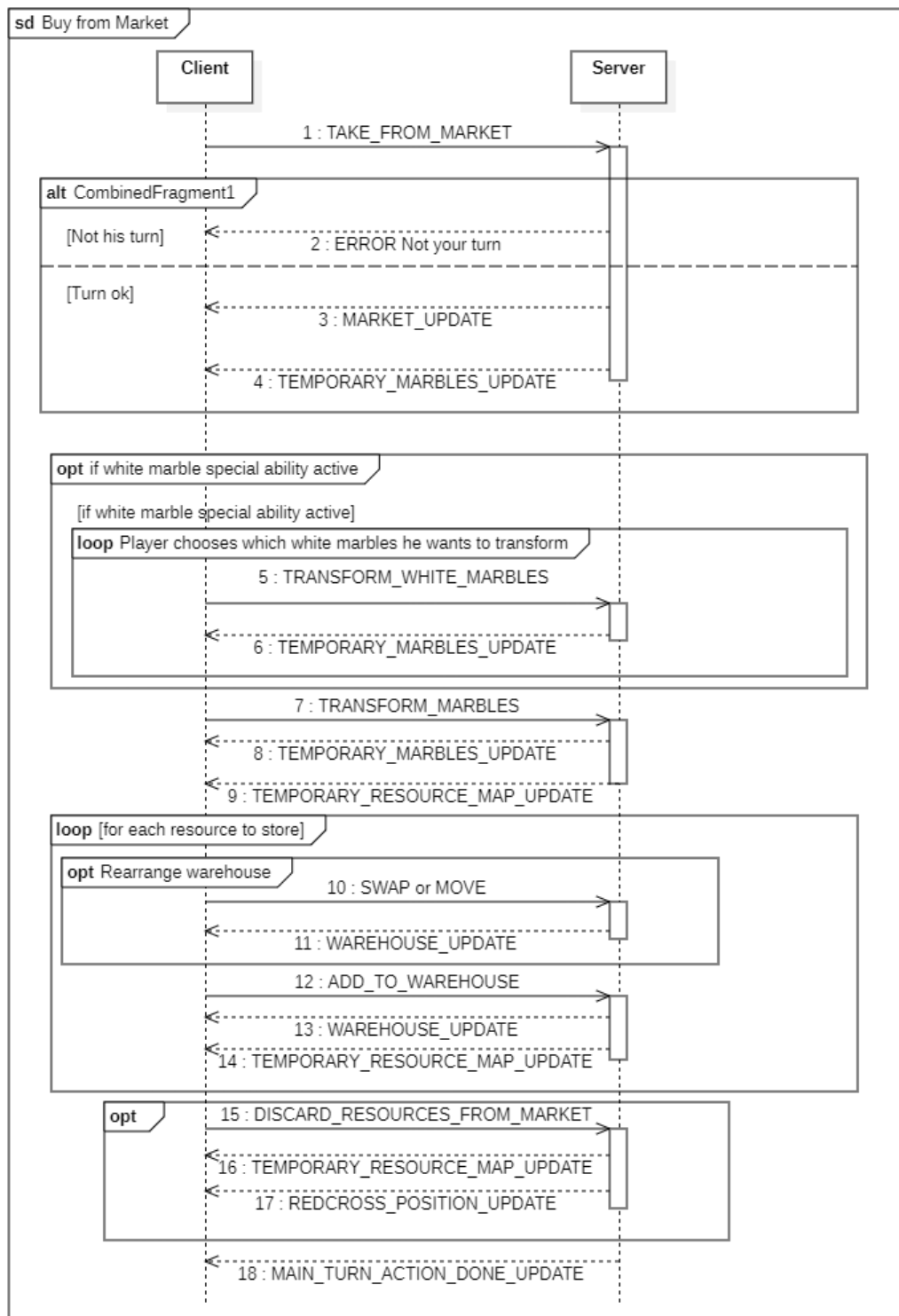
Every turn a player can activate one or two leader cards in any moment, do as many swaps as he wants and he must do a turn action between: take resources from the market, buy one development card and activate the production. The turn ends when the client sends an end turn message.



TAKE RESOURCES FROM MARKET

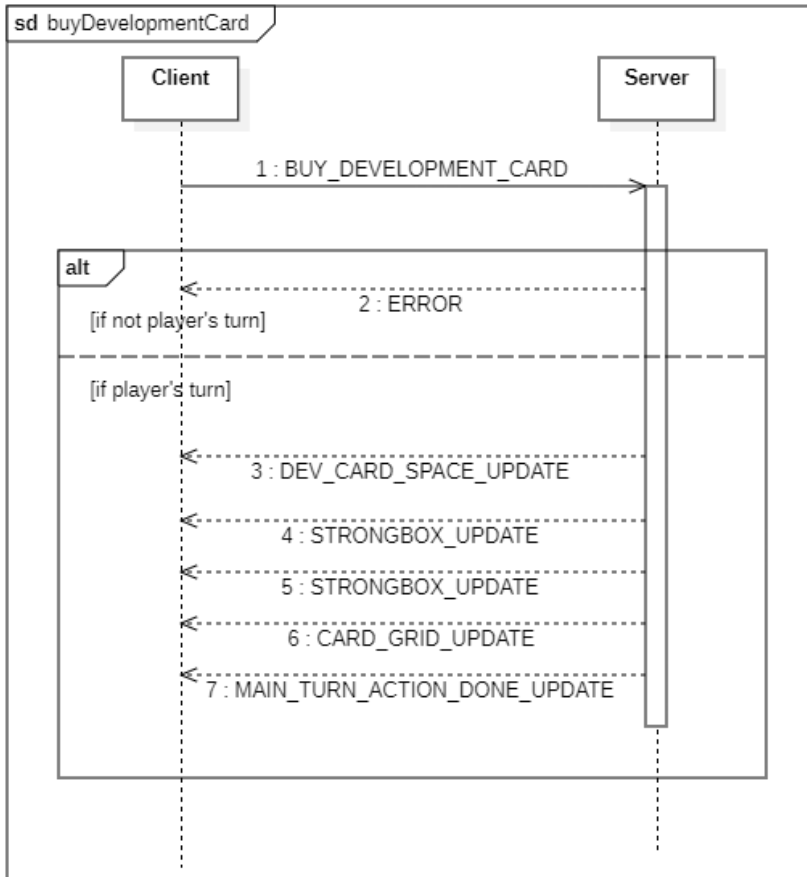
The client asks to take resources from the market, then it must send the coordinates of the row or column it wants to take marbles from and if it wants to use a leader power (specifying how many white marbles he wants to transform).

Now the client can activate the transformation of the marbles into resources and then choose for each type of resource a depot to store it, during this operation it can always swap or move the resources in the depots.



BUY DEVELOPMENT CARD

The client asks to buy a development card and then sends the coordinates of the card it wants to buy, the resources it wants to take from the warehouse depot and the resources it wants to take from the strongbox. The client can also ask to apply a leader discount power to the cost of the card.



ACTIVATE THE PRODUCTION

The client asks to activate the productions and then specifies every production it wants to use one by one, for each production it must specify the type of production it wants to activate between: basic production, development production and leader production. A production cannot be done more than one time in the same turn.

BASIC PRODUCTION:

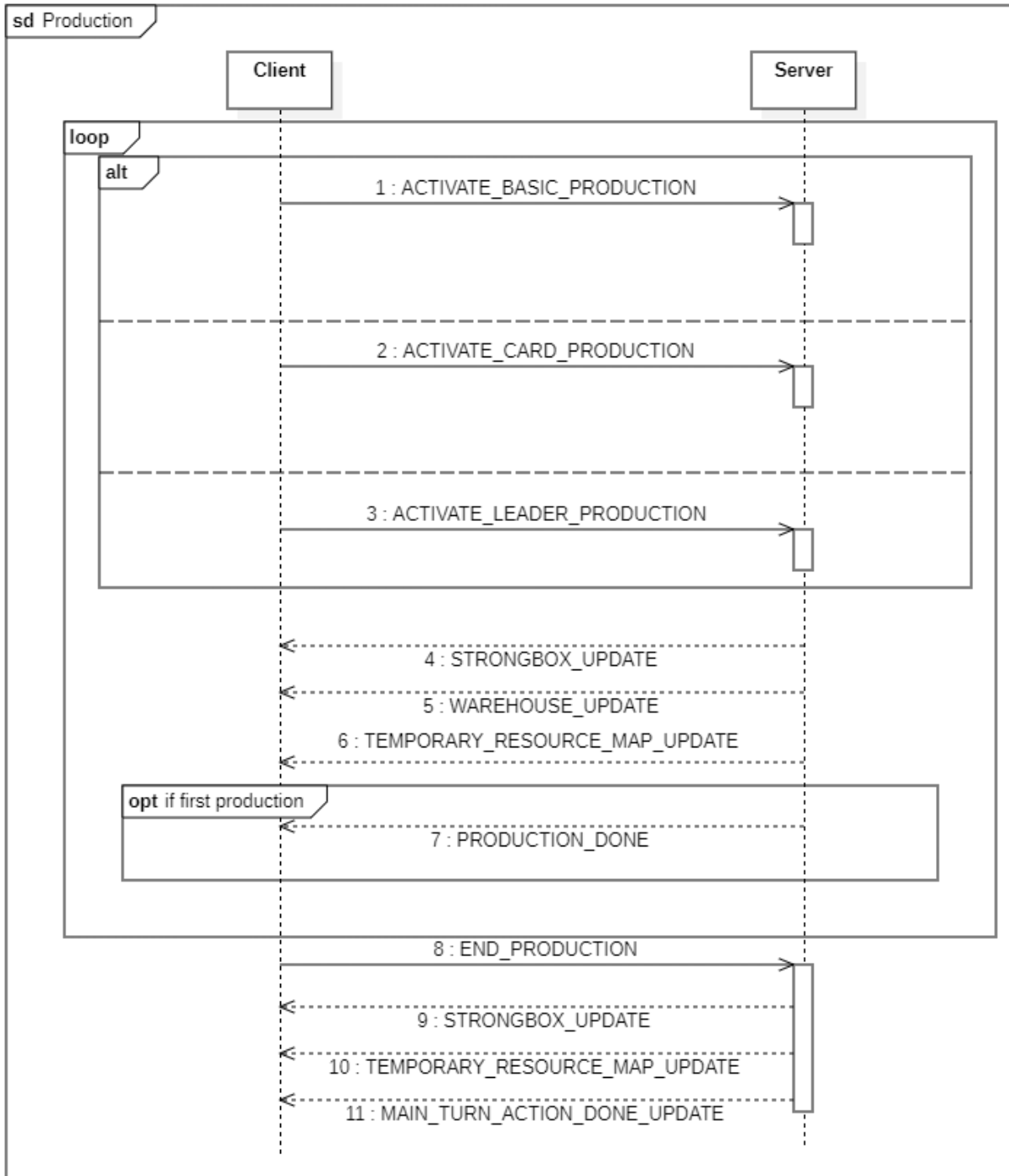
The client sends the two resources it wants to spend and the resource to produce.

DEVELOPMENT PRODUCTION:

The client sends the development card to produce from.

LEADER PRODUCTION:

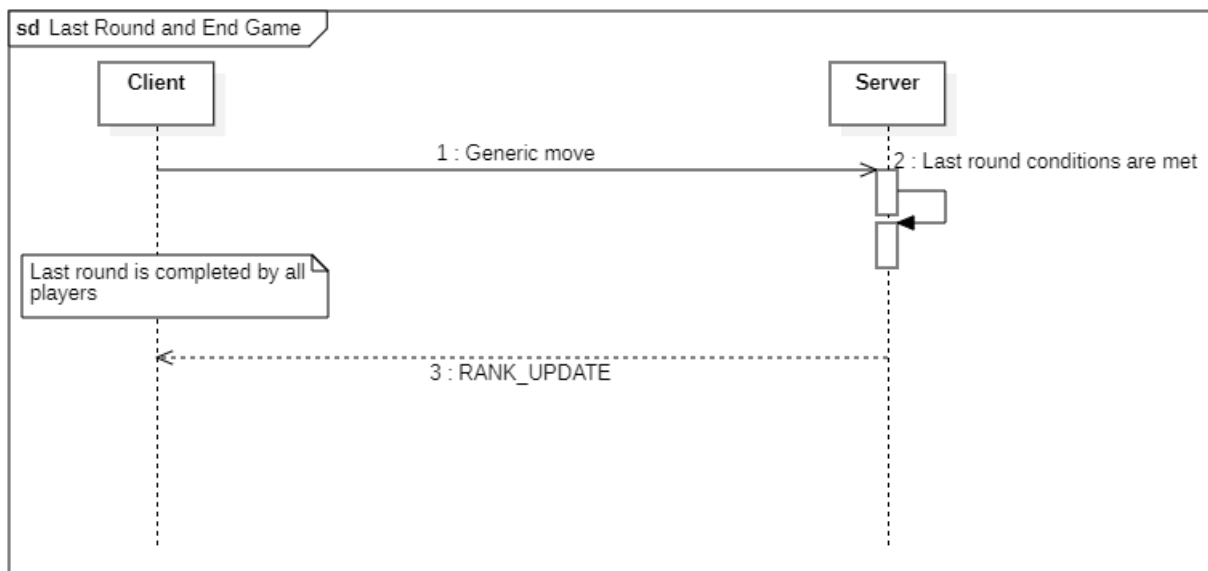
The client sends the resource it wants to spend, the resource to produce and the leader card to produce from.



LAST ROUND AND END GAME

The last round phase starts when a player with an action triggers the last round conditions. Then, after all the players remaining have played their last round, the server broadcast the leader boards with every player's victory points.

When a client does not answer to a ping message the server considers this client disconnected and when the client reconnects with the same nickname the server checks it and put it back in the game. While a client is disconnected the match continues and the player disconnected skips its turns.



MULTIPLE MATCHES

It is possible to create multiple matches. The same nickname is not allowed in the same match but allowed in different matches.

If a client connects while another client is choosing the number of players, the client is put in a waiting list and is notified when the number of players is chosen.

If the number of players chosen excludes the player waiting, a new match is created for him and for those connected after him.