Software Engineering Final Project

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1 Client-Server Communication Protocol

We planned to implement a communication protocol based on the serialization and exchange of Java Objects (events) through socket object streams. When one of them between client and server receives an object it was processed with the technique of overloading that specifies, for each method, which behaviour the receiving has to have based on what it received (visitor pattern). Every action the player could do is covert by an event from client-to-server and in the opposite way. In the following paragraphs we present the main protocol and actions in detail.

2 Setup Phase

2.1 Connection
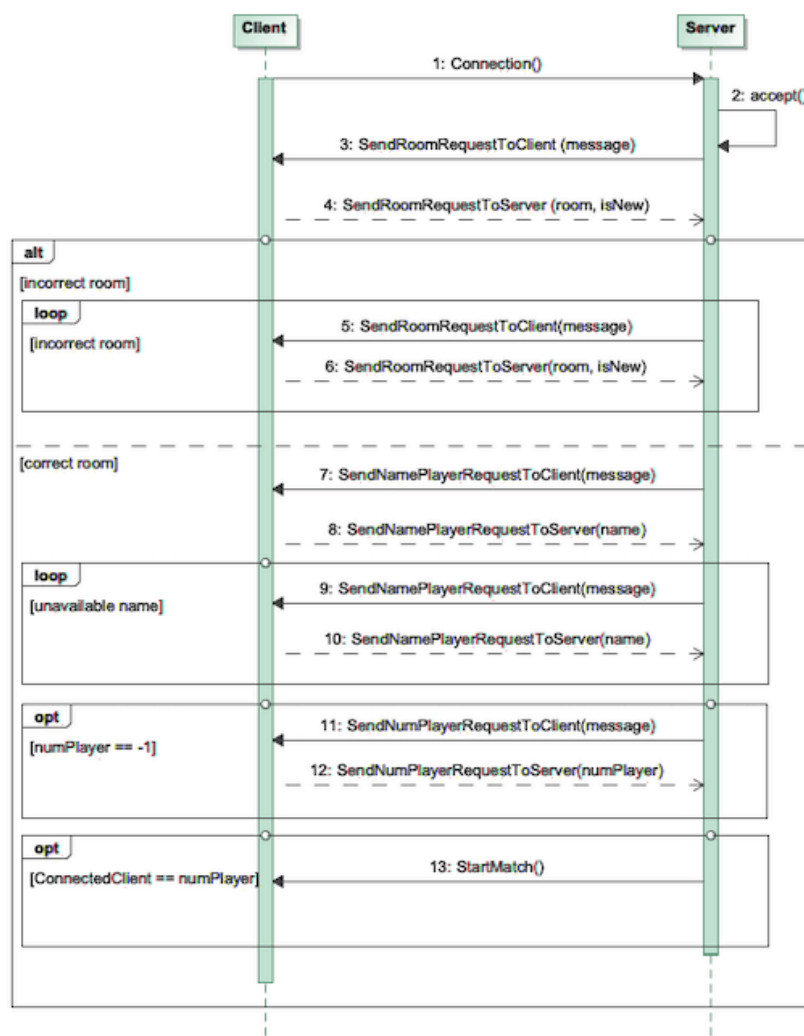
At the beginning the client do a connection request and Server accept, if it can, and after that proceeds with a room request. So, the player has to choose the room in which play the match. If the room is available the Server do an insert name request and only if the client is the first client asking for connection the Server also ask the number of the players are going to join. When all the player (declared from the first connected client) join, the game can start.

3 Turn Logic

3.1 Play Leader Card Turn
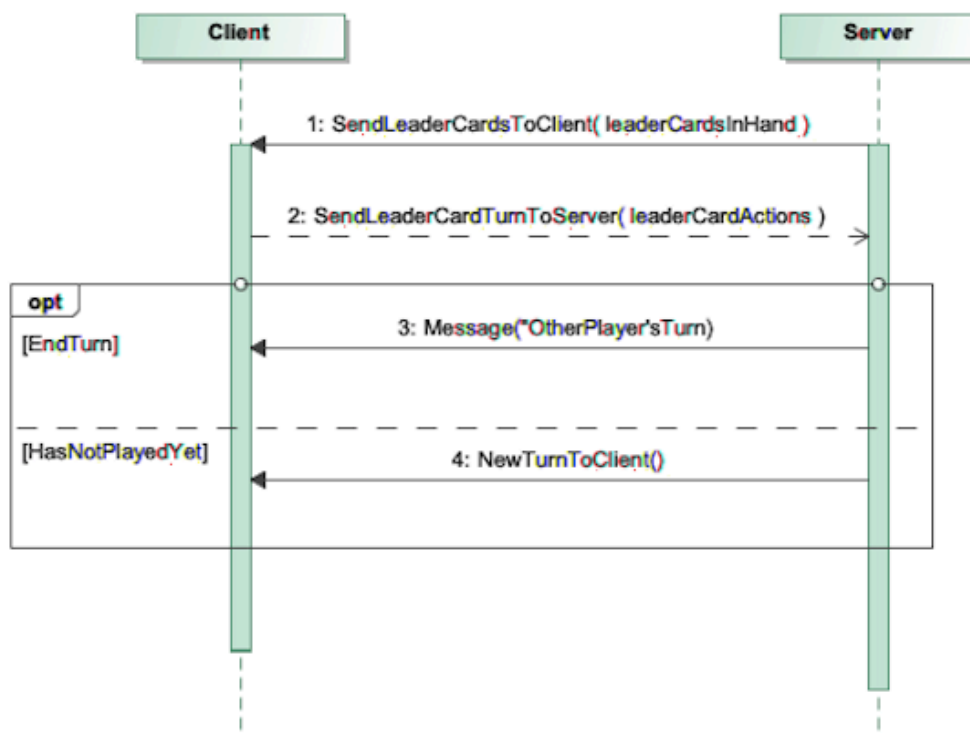
At the beginning and at the end of the turn the Server asks if the player want to play or discard a Leader Card, so the Server send to the client the list of the available Leader

and the player can choose to activate or to discard each of that Leaders. A player can always discard a Leader from the available ones only if it is not active, and can activate a Leader only if respects the specified requirements different for each Leader Card. If the player hasn't got Leader Card from the available Leader or if the Player cannot play a Leader, the turn go on, skipping the turn PlayLeader phase. Otherwise if the player has at least one available leader and has also the requirements to activate the leader, this will be activate from the server and the Player will obtain the Leader Card benefits. After decided the action to provide for each leader the client send to server the action to provide for each one and next send the new turn event to che client who has to play.

3.2 Market Turn

Every turn, the server sends the client the new turn events with the main state of the game, and the player choose which type of turn wants to provide. If the player chooses to acquire resources to the market, the player chooses a line sending it to the server and the controller grants to him the acquired resources. At this point the player can reorganise the

depot and, if he presents a wrong disposition, the server reply making its able to reorganise the depots again as long as the player presents a correct disposition of the resources. In the event with the status of the depots the client also send to the server the amount of the discarded resources and move his opponents on the faith-track through as much boxes as discarded resources. After the played turn, the controller passes to the next player.