Communication protocol

Software engineering project 2022 – GC5 – Marco Ronzani, Marco Riva, Alice Portentoso

Message	[type] Attribute 1	[type] Attribute 2	[type] Attribute 3	Sender -> Recipient	Reply to	Purpose
hello	[int] 0: client has no ID yet ≠0: previous client ID	[String] nickname	Not used	Client -> Server	ASYNC	Sent by the client upon connection to request an ID or to reconnect to its previous state
ack	[int] ID for the client	Not used	Not used	Server -> Client	**hello**	Acknowledges the client's connection and gives to it its ID
error	[String] error message	[int] error code	Not used	Server -> Client ServerLobby -> Client	*Potentially everything*	Sent whenever the server can't satisfy a client's request
create lobby	[int] Lobby size	[boolean] Expert mode flag	Not used	Client -> Server	ASYNC	Requests the creation of a new lobby, with the associated options
join lobby	[int] Lobby ID	Not used	Not used	Client -> Server	ASYNC	Allows the sender to join the specified lobby, if possible
get lobbies	Not used	Not used	Not used	Client -> Server	ASYNC	Requests a list of all the server's lobbies
set lobby	[LobbyData] Current lobby	Not used	Not used	Server -> Client	**create lobby, join lobby,** ASYNC	Allows the client to know his current lobby
lobbies list	[List<LobbyData>] Lobby list	Not used	Not used	Server -> Client	**get lobbies**	Contains a list of all the currently active lobbies on the server, both full and not
leave lobby	Not used	Not used	Not used	Client -> ServerLobby	ASYNC	Allows the client to leave its current lobby and go back to choosing/creating one
toggle ready	Not used	Not used	Not used	Client -> ServerLobby	ASYNC	Allows the client to let the lobby know when it is ready to start the game
readiness	[boolean[]] Ready array	Not used	Not used	ServerLobby -> Client	**toggle ready,** ASYNC	Returns to every client a list of flags, each one indicating if a member of the lobby is currently ready or not
card played	[int] Client ID	[int] Card index	Not used	Client -> ServerLobby ServerLobby -> Client	ASYNC	Allows the currently playing player to play the selected card during its turn (playCard). The message is also used by the server to send the update to the other clients.
student set to hall	[int] Client ID	[int] Student index	Not used	Client -> ServerLobby ServerLobby -> Client	ASYNC	Allows the current playing client to set a student to its hall. The message is also used by the server to send the update to the other clients.
student set to island	[int] Client ID	[int] Student index	[int] island	Client -> ServerLobby ServerLobby -> Client	ASYNC	Allows the current playing client to set a student to an island. The message is also used by the server to send the update to the other clients.
mother nature moved	[int] Client ID	[int] Moves	Not used	Client -> ServerLobby ServerLobby -> Client	ASYNC	Allows the client to move mother nature of his desired number of steps. The message is also used by the server to send the update to the other clients.
cloud chosen	[int] Client ID	[int] Cloud index	Not used	Client -> ServerLobby ServerLobby -> Client	ASYNC	Allows the client to move the students form a cloud to his entrance on its dashboard. The message is also used by the server to send the update to the other clients.
npc activated	[int] Client ID	[int] NPC index	[EffectParameters] Effect Parameters	Client -> ServerLobby ServerLobby -> Client	ASYNC	Allows the client to activate an NPC effect. The message is also used by the server to send the update to the other clients.
move successful	Not used	Not used	Not used	ServerLobby -> Client	**Card played, student set, mother nature moved, cloud chosen**	Used by the server to notify the successfulness of the move to the client.
clouds updated	[List<Colors>[]] Clouds	Not used	Not used	ServerLobby -> Client	**cloud chosen**	Returns the currently available clouds (and their students).
npc updated	NPC index	[List<Colors>] List of students	Not used	ServerLobby -> Client	**npc activated**	Specific massage to propagate the updated students on those npcs that have some student on it.
skip turn	Not used	Not used	Not used	ServerLobby -> Client	ASYNC	Signals to clients that due to a disconnected player, the current turn must be skipped.
game started	[Game] Model	Not used	Not used	ServerLobby -> Client	**toggle ready**	Indicates to the clients in a lobby the beginning of a match.
game ended	[int] WinnerID	Not used	Not used	ServerLobby -> Client	ASYNC	Indicates to the clients in a lobby the end of a match, with the winner.
revert	Not used	Not used	Not used	ServerLobby -> Client	ASYNC	Instructs the clients to revert the game at the previous valid state.
ping	Not used	Not used	Not used	Client -> Server	ASYNC	Informs the player that this client is still properly connected.

Details regarding the codes in **error** message:

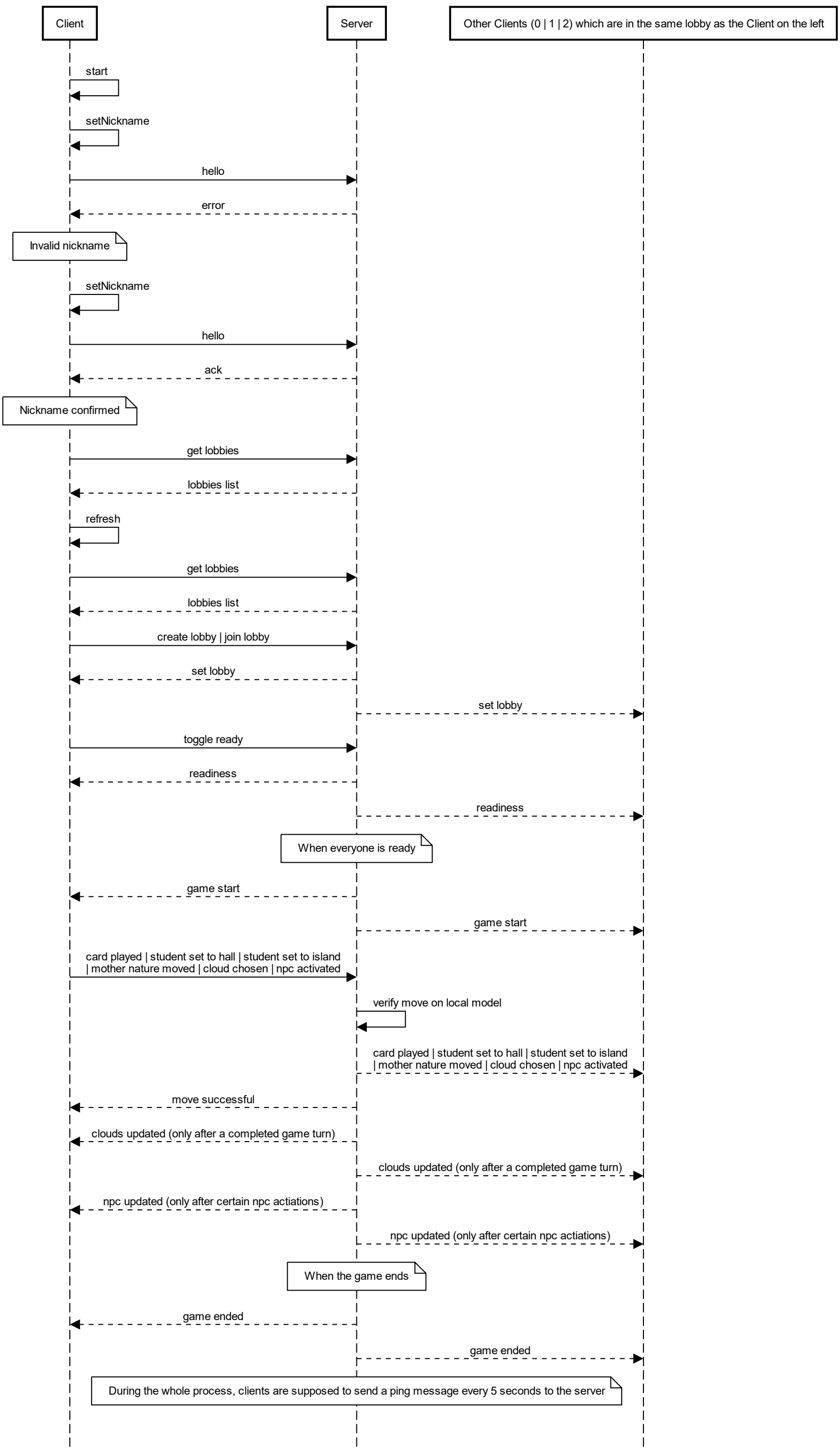
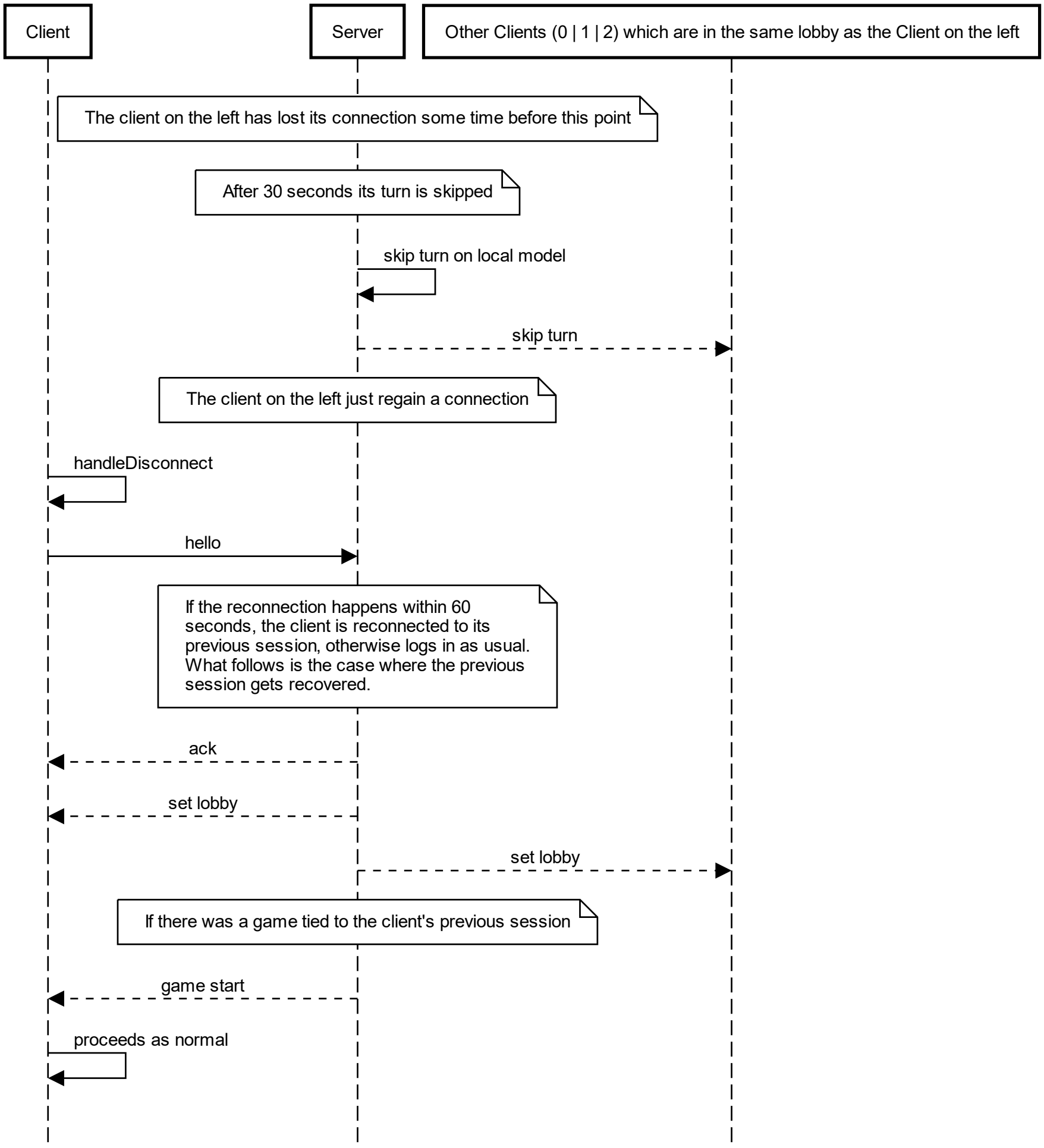
Error code	Description
0	Default error code, not normally used.
1	Unneeded action, nothing has changed.
2	Error during reconnection.
3	Login error.
4	Invalid arguments.
5	Action not permitted.
6	Server error, request not fulfilled, nothing has changed.
7	Invalid move.

Description of the terms used:

- ASYNC in "reply to" means that a message with that keyword may arrive at any given time, without being expected, on the contrary, if there is a specific message in that column, the message row's message can be effectively awaited as a reply to that one. If both a keyword an ASYNC are present together, the message can both arrive as a reply, but also without any prior notice.

Interaction diagrams

Fresh Session



Reconnection