

4: Communication Protocols

Contact

1. Overview

Messages

- Game Server
 - Exit game(leave an existing game)
 - Stop game(pause a game in progress)
 - Start game(start or resume playing a game with current players)
- Lobby
 - Refresh game list(allow a player client to request a fresh game list from the lobby)
 - New Game(start a new game and game server)
 - Join game(join an existing game and game server)
- Secret Keeper
 - Create secret (choose a word to be your secret word)
- Players
 - Guess (submit a word matching the revealed letters of the secret word, and a definition)
 - Contact (submit a word matching the definition of the guess word)
- General Communication
 - Hello(allow a player client to register with a game lobby and receive an id)

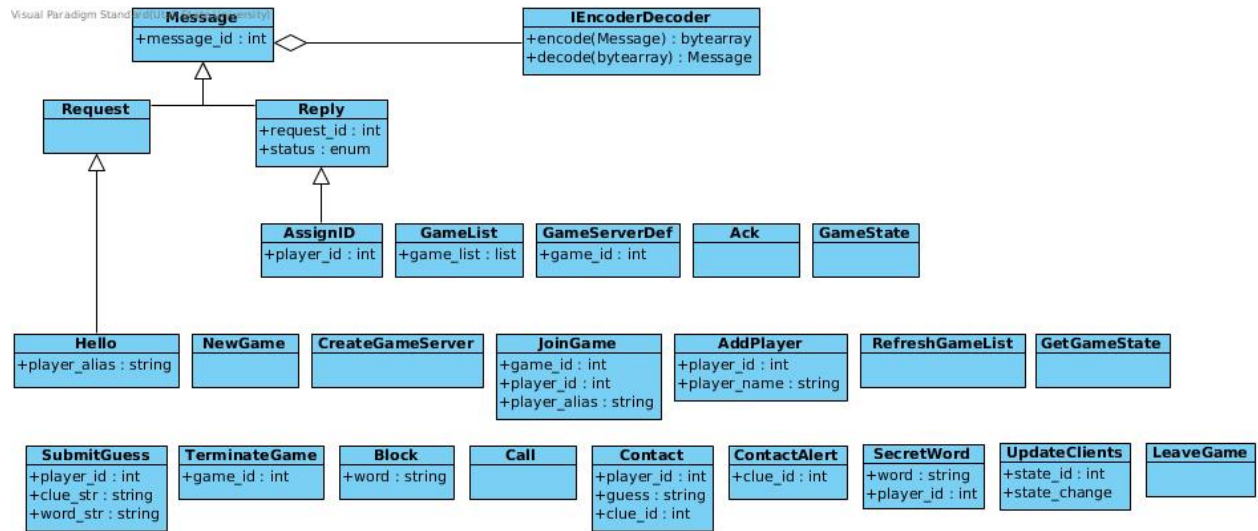
Table 1 - Protocol List

Purpose	Initiator	Other Processes	Pattern
Join a game	Player Client	Lobby, game server	
Connect to Lobby	Player client	Lobby	
Submit guess	Player client	Game server	
Block a contact	Player client	Game server	
Declare contact	Player client	Game server	
Update clients	Game server	Player clients	
Set secret word	Player client	Game server	
Request clue	Player client	Game server	

suggestions			
Create Game Server	Lobby	Game Server	
Leave Game	Player Client	Game Server	
Terminate Game	Game Server	Lobby	

2. Messages and Shared Objects

Join Game	type_id:player_id:game_id:player_alias
Hello	type_id:player_alias
Submit guess	type_id:player_id:clue_str:word_str
Block a contact	type_id:block_str
Declare contact	type_id:player_id:clue_id:guess_str
Update clients	type_id:serialized_state
Set secret word	type_id:player_id:word_str
Request clue suggestions	type_id:player_id
Create Game Server	type_id:player_id
Leave Game	type_id:player_id
Terminate Game	type_id:game_id

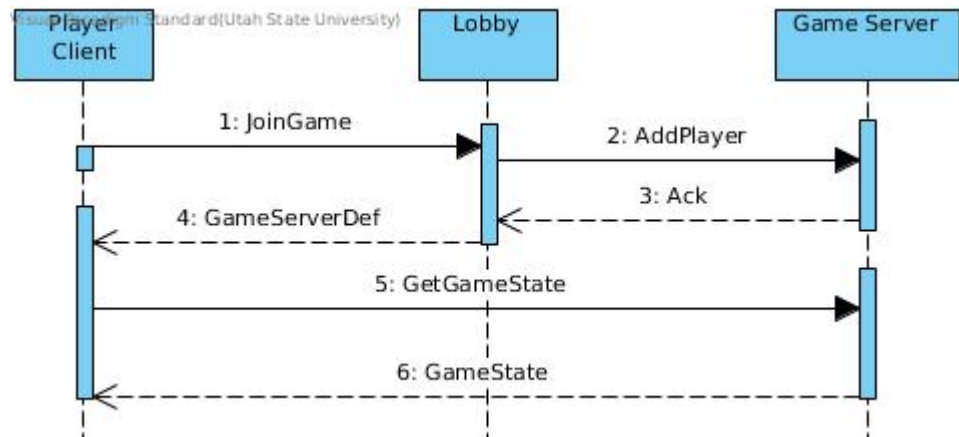


3. Communication Patterns

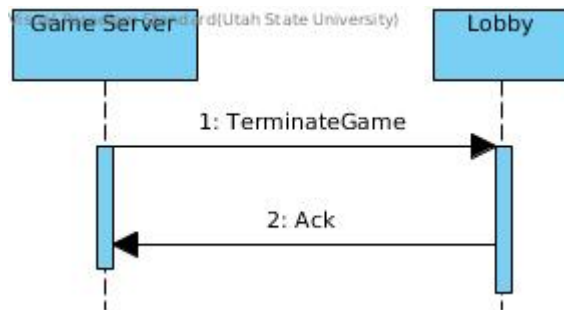
(Identify and briefly any application-level communication patterns that your system will use. See course notes or commdp.serv.usu.edu for a list.)

4. Communication Protocols

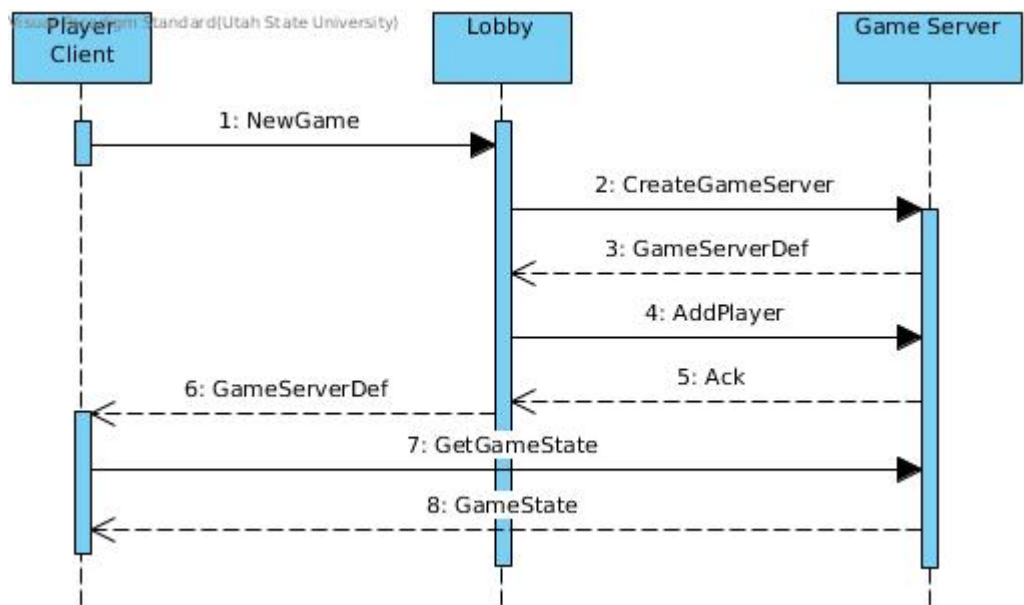
- Join a game



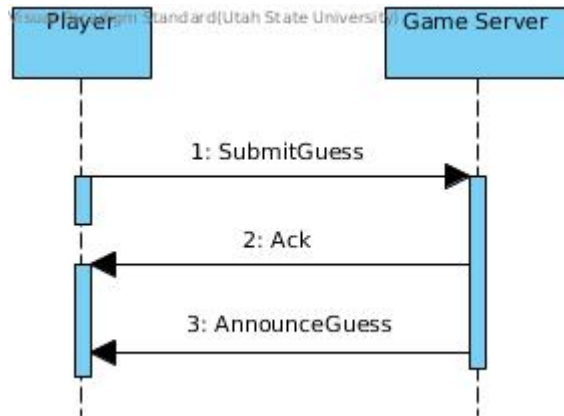
- Player joins an existing game
 - Lobby sends player data to the game server
 - Lobby returns the stored game server def to the player client
 - The player then connects to the game server to participate in the game
- Terminate Game



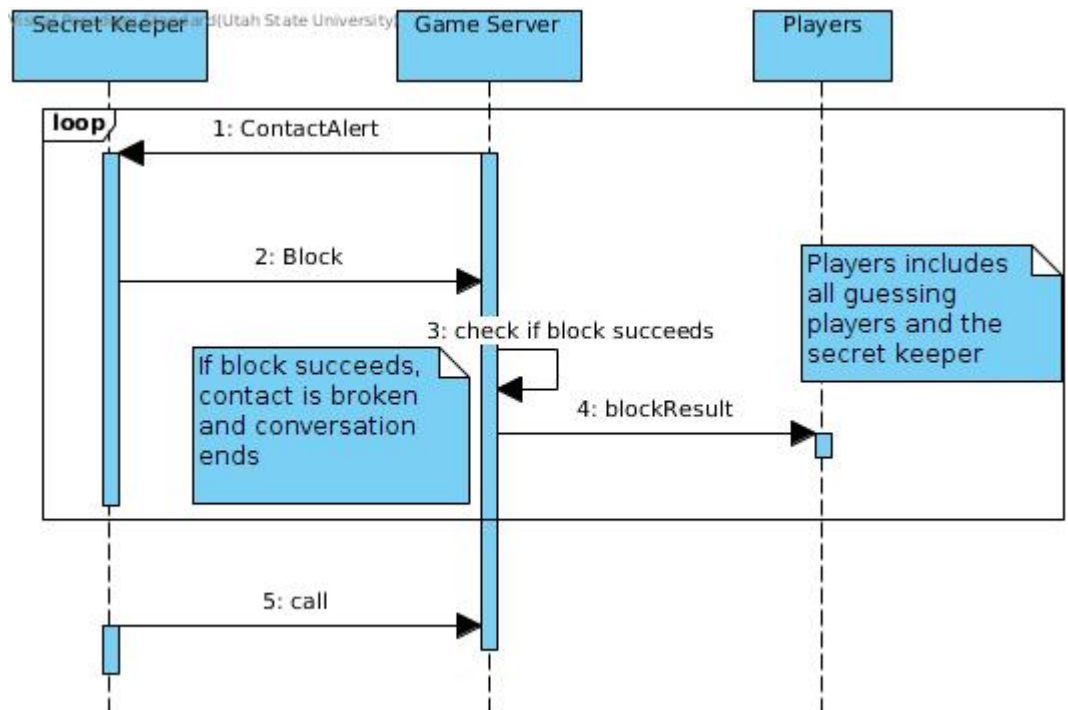
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- Game server decides when it is time to terminate, for example when the server has no active players for 5 minutes. light vs electricity speed
- Game server sends its id to the Lobby
- Lobby removes the game server from its internal list, and responds with an ack
- New Game



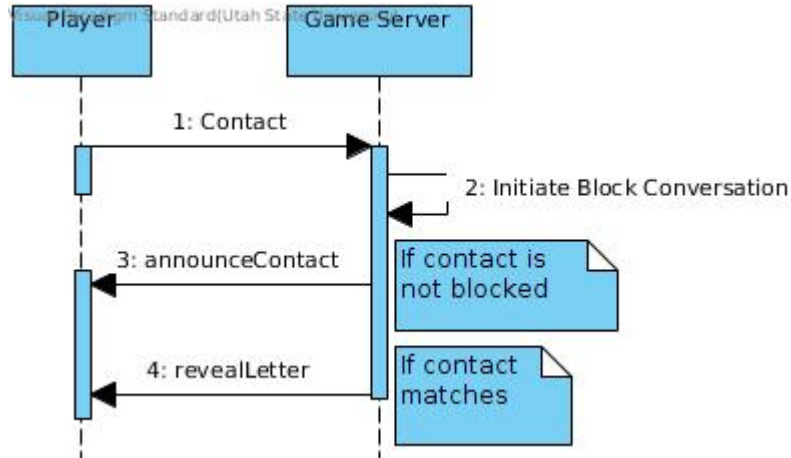
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- Player decides to create a new game instance
- Lobby spawns a new game server to handle the new game instance
- Lobby automatically adds the player to the new game instance
- Lobby returns the new game server definition to the client
- Client then communicates with the game server to participate in the game.
- Submit guess



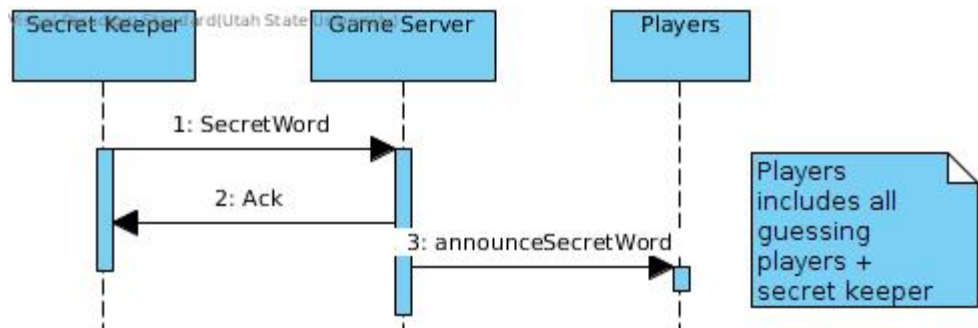
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- Player submits a guess word and a clue
- Game server returns an acknowledgement
- Game server announces the new guess to all players, making the clue available for making contact with
- Block a contact



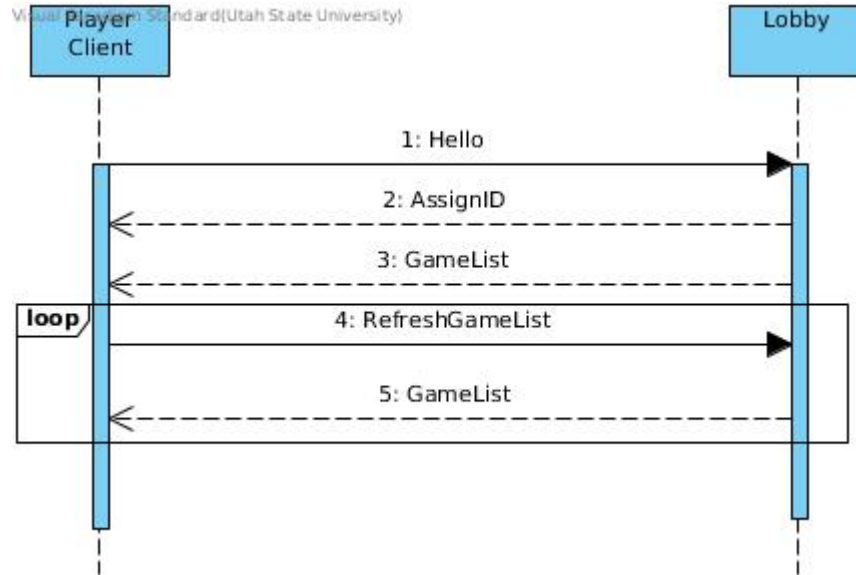
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- Game server announces a potential contact to the secret keeper.
- Secret keeper attempts 0 or more blocks.
- If a block succeeds, the contact is broken and the conversation ends.
- The result of the block is announced to the guessing players and the secret keeper.
- The secret keeper calls when finished attempting to block.
- Declare contact



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- Player submits a contact with an existing clue
- Game server checks to see if the contact is valid (ie matches a clue)
- Game server initiates block protocol with secret keeper
- If contact is not blocked, announce the results of the contact to the players
- If at least 1 contact matches successfully, reveal another letter of the secret word to all the players.
- If the matched word is the secret word, reveal the entire secret word.
- Update Clients
- Set secret word



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- Secret keeper sends a secret word to the game server
- Game server validates the secret word and acknowledges the result
- If word is valid, Game server broadcasts that the secret word has been set, revealing the first letter to all players, and starts the game.
- Request clue suggestions
- Connect to lobby



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- After this conversation, a player will have a unique ID assigned by the lobby, and will have access to an up-to-date list of games.