1:Conceptual Overview

Contact

1. **Introduction and Context**
   There is a somewhat well known word game called Contact that exercises vocabulary and empathy, however it's commonly played in person. We intend to implement a version of the game that will allow players to connect to different games and play over the internet.

   Game Cycle
   1. Secret keeper starts by deciding on a word (secret word)
   2. First letter of secret word is revealed
   3. A guesser decides on a word that matches what's been revealed of the secret word (guess)
   4. Guesser announces a clue that implies the guess and either:
      a. other guessers infer the word and say contact
         or
      b. the secret keeper infers the word and if it does not match the secret word, can block by saying "it's not [guess]"
   5. If the secret keeper can't block, they call and the two guessers compare guesses. If the guesses match, another letter of the secret word is revealed
   6. Game continues until guess word is the secret word, or all the secret word is revealed

   Requirements
   - 3 different resources
     a. List of active and pending game instances
     b. List of players and player data
     c. Game state and data
   - 3 different kinds of processes, at least 2 of which are resource managers
     a. Player
     b. Lobby (Manages list of active/pending games)
     c. Server (Manages current game and users)
   - At least one program must be able to spawn multiple processes
     a. Multiple server and player processes.
   - 6 different communication protocols
     a. Join a game (UDP)
     b. Set a secret word (UDP)
     c. Submit a clue (UDP)

d. Declare contact (UDP)
e. Block a contact (UDP)
f. Request clue suggestions (UDP request TCP response)
g. Request list of available games (UDP request TCP response)

Resources

- A server
- A dictionary of valid words

Data Resources

- list of active and pending games
  - shared between players and lobby
- list of players
  - is shared between
- game state
  - shared between game process and client processes
- clue-guess-success database
  - is shared with players when asking for a recommendation
- static list dictionary of valid secret words

2. **Actors and their Goals**
   - multiple (N) players
     - one secret keeper
     - N-1 guessers
   - game server
     - Manages contact game state data
     - Receive messages from players, update the game state, and broadcast the game state back to the players
   - Lobby
     - serves as directory of games not yet started

All 3 actors are probable processes, multiple game servers and player clients will be running, likely only 1 lobby process.