

Design Patterns: Future Networking

In a hypothetical future, our game would be modified to support online multiplayer gameplay: up to 4 human players can play a game of Ricochet Robots, but each would be doing so behind their respective computers. Three things must be considered and/or adjusted to make this possible:

- **Game Setup:** The settings for a new game will have to include functionality that allows the computer of every human player to be connected. A multiplayer feature for connecting to an active game must be added to the MainMenu user interface; this will be used by the human players 2 through 4, while the person who initiates will create a new game in the settings UI.
- **Storing the Game State:** That is, during a game being currently played. Assuming we use the peer-to-peer model, each computer should have all information for the state (i.e. players' current scores and placed bids, who has the current turn, etc.) so that any player can rejoin the game if their connection is lost for a moment. A message indicating a lost connection will be displayed on all computers should this happen.
- **Controlling Turn Order:** Assuming the aforementioned conditions for storing a game state, the only change to this scenario is that during a player's turn, only their controls of the game are enabled. After which, their controls will be disabled and the controls of the board for the next player will be enabled.