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Game Description:

A card game usually played by players in a circle, passing cards to their right until one has completed a set of cards of the same rank in different suit. Card passing is done in the signal of "1, 2, 3, Pass!" Once a player has completed a set, he/she will place his hand in the middle of the table or the game area, and everyone will follow. The last player to put his hand in the middle loses the game.

Programming Language: Python
Github Repository: https://github.com/mcmonroy/CMSC137-Project-123Pass

Gameplay:

Server:
- Get number of players
- Accept connections
- Check number of connections
- Start game
- Send game info to clients (game board, actions, and cards)
- Implement game rules
- Identify end game

Client:
- Connect to game
- Get user input
- Send to and receive from the server

Each player will connect to the server to start a game. The server handles the ordering of each player and once the maximum amount of players is reached, unless indicated to start immediately by another player, the game starts.

As the game begins, players will see the cards given to them. Each player will choose a card that will be passed, and enter the specified code for passing the card. The game will wait until all players have entered the code and then the server will print "1-2-3-pass". The server will determine the order of rotation in passing and the players will see their cards again, with the card passed from the other player.

There will be a code that the player will enter to indicate that they have completed a set. The server will check if the player has indeed completed the winning conditions and end the game. Otherwise, the server will just send "Invalid Move!" and continue from where it left off.

Board will look like this upon initialization:

```
*****************************
P1      P2      P3      P4
0       0       0       0
----------------------------------
You are P1
----------------------------------
2D      4S      AH      3C

Enter code: __
*****************************
```

If one player has completed a set already, the 0 under the player will be changed to 1:

```
*****************************
P1      P2      P3      P4
1       0       0       0
------------------------------------
*****************************
```

Once confirmed that a player has finished a set, the remaining players must input a code to end the game and the last player to enter the code loses.

Protocol:

The first parameter of the code will be the action, which is as follows:
        P - Pass a card
        F - Finish (the player has completed a set)
        T - Tap (someone has already completed a set, enter for end game)
        G - Give passed card to client (to be used by the server)
The second parameter will be the number of the player.
Finally, the third parameter is the card being passed, rank of the card first then followed by the suit. This parameter is omitted in cases where the player enters finish or tap in the code.

        Suit code:
                S - Spades
                C - Clubs
                H - Hearts

D - Diamonds

Rank code:
2-10 - number ranks
J - Jack
Q - Queen
K - King
A - Ace

Sample input code for client: P1AH (player 1 will pass Ace of Hearts)
Sample code to be sent by server: G2AH (Ace of Hearts will be given to player 2)

When the F code is sent to the server, it checks the cards of that player to see if they completed all the suits for a rank then it sends a notification to the other players. After all other clients had sent T for tapping, it will identify the last one to send T as the losing player and the game will end.