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Blackjack and Poker

Update for TP3:

The game has been changed so that the user cannot play the game against the AI for poker. There is no AI for poker but there is an AI for blackjack. Furthermore, there is no "Fold" functionality for poker, so it is assumed that the user will have to play every hand. Furthermore, there is no all-in functionality for poker, as it would force every user to go all-in. These are the major updates that are in TP3.

Project Proposal:

The game that I plan on creating is a computer based version of blackjack and two card Texas Hold 'Em Poker. Not only will the user be able to play with other users, but the user has the option to play alone against the computer, in which the computer will use artificial intelligence to make the most appropriate move contextually. As mentioned before the user will be able to play against other users, however, this doesn't have to be on the same laptop. Using sockets, different users can play on their own device in a group of a specified size, thus potentially being able to play competitive poker online from their own rooms. The game can be broken into three main tasks - initial game, multiplayer, and AI.

The first main task is to get a functional game going, in which the user will be able to play rounds of blackjack or poker and be able to make wagers and win or lose money. The cards will be created randomly and stored in decks - when shuffled, the cards will be put in random order to ensure that there is no systematic way to win the game. As in usual games, the player will be able to win or lose money, and when the time has come when they have no money left, the game will end.

The second main task is to get a multiplayer going. To make sure that the user can play on the same port as their friends, an option will be presented at the beginning of the game to enter a port that the user will like to play too. If the user opts to play multiplayer, at least two people have to sign up to play, or else the game will not start. As mentioned before, there is still an option for single player.

The last task is the AI for single player. For blackjack, it won't be considered AI - like casinos, the dealer has to hit (draw another card) if his total is below 17, and can hold if otherwise. The meat of the algorithms come in the poker AI. The user will be considered another player that will be at the table. Each computer generated player will be evaluating on whether to fold based on the strength of their cards - if they have two low cards, like a 3 of hearts and a 7 of spades, then it will fold. It will allot a number of points to each type of hand, and based on a threshold, it will then decide on whether to fold or to play. This will keep on happening as the round progresses. If it doesn't find any matches or potential pairs, then it will fold. Else it will keep playing. This will continue for the majority of the round, until the cards have to be shown. Then using the poker game logic, this will determine a winner. The hardest part is determining when to fold.

Modules in Table Games

- Sockets
- Threading
- Queue
- Pygame (potentially)
- Random