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Project 2 Report

For the design of the program I went through different ideas on how best to implement this program (and not lose points for it being wrong), but the basic design implementation for my program is as follows:

* First the Main function initialized everything that will be needed.
* The Main function then creates the threads: Dealer and Players 0-2. Having the players numbered this way helps avoid starting at position 1 in the arrays and is easy to change for display purposes.
* The Main will then wait for Dealer to exit.
* Dealer will then shuffle the deck and then signal for the players to start their round. The Dealer will then wait.
* The players will player in order based on the turn value.
* The players will draw and then check for a pair.
* If the player doesn’t win then they will randomly discard a single card.
* This will repeat until there is a winner.
* If a player gets a match then they will set isWinner to be true and then signal the other players.
* The other players will check for the ready status of the players and once they are ready they will signal the Dealer. They will then wait for dealing to be equal to false.
* The Dealer will then shuffle again and increment the round.
* This will repeat until the round is equal to three and then the threads will exit.
* Main will wait for everybody in order of creation and then close the program.

The deck itself is implemented as a linked list of card structs. The cards structs simply contain a value and next pointer. The hands are implemented as an array of card pointers, one for each player. This way the cards can be moved from the deck to the hand easily.

I have added additional documentation inside the program, hopefully this will fill in the gaps that this brief outline missed (that’s I said last time though).