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**Final Project Summary**

For our final project, we decided to make a card game suite for the user to play. The game consists of three separate card games: solitaire, Blackjack, and Gin Rummy. To build this game, each of our group members tackled a different game, and we all collaborated together to create the main menu interface. Paul and Couby wrote the code for Blackjack and Gin Rummy, respectively, while James, who has some coding experience, coded the solitaire game. In addition, James introduced the group to using a graphical user interface and set up the basic framework for the visual component of our game. We chose to build a visual card game because we thought it would be cool to have card games that we can play on our computers.

James:

 For the program to work correctly, you may have to install the python library pygame. This can be easily done by following the getting started section of this page (<https://www.pygame.org/wiki/GettingStarted>). After that everything should run correctly.

My portion of the solitaire code, while not able to simulate a complete game of solitaire lays the foundation for a gui based solitaire game. Given some more time, I have no doubt that this could be a fully functional game, however I had to make some cuts as to what I should include based on functionality.

Essentially in its current state, the game demonstrates what the interface would look like, how moving cards around would feel, and what the motion of flipping the deck would look like. In the future I am going to finish adding the game logic as well as allowing the user to place cards in the top pile and manipulate cards from the discard pile.

The easiest way to test this program is to hit the play button and go crazy.

Paul:

My code will play a game of Blackjack with the user, state who won, and then return to the main menu when the game is over. Blackjack is a game between a player and the dealer, where both are trying to get a hand that totals as close as possible to 21 with only a few basic rules; face cards are worth 10, aces can be worth either 1 or 11, all other cards hold their value, and players have the option to ‘split’ their hand into 2 separate hands when dealt a pair. To start, each player is dealt 2 cards and will be asked if they would like to ‘hit’ or ‘stand’. To ‘hit’ means to add a card to your hand, while to ‘stand’ means to keep your hand unchanged. This code got very complicated, and to simplify it a bit I decided to not give the user the option to split their hand. My game uses a series of if/elif/else statements to check and see if either the user or the dealer (computer) had won or lost the game; if they did, a print off will state the user and dealer hand, as well as who won. If nobody won the game, the user will be asked to either hit or stand. If they want to ‘stand’, the computer will autohit for the dealer and print off stating who won the game. If the user wants to ‘hit’, the computer will draw a card for the user, autohit for the dealer, and check to see if anyone won/lost the game. If no one won/lost the game, it will again ask the user if they would like to ‘hit’/’stand’. To test my code, the user will simply have to select Blackjack from the main menu, and play it. The user’s hand will be displayed, as well as the option to ‘hit’ (enter ‘Y’ to hit and ‘N’ to stand). After the user selects a choice, the computer will either print off stating if anyone won the game, or if not, another option to ‘hit’. The user will continue to select to either ‘hit’ or ‘stand’ until the game is finished, and a print off states who won. After the game is finished, the user will be brought back to the main menu where they can choose to play any of the games or quit the suite entirely.

Couby:

The game of gin rummy is a card game that requires two players and a standard 52 playing card deck. Cards value range from 1 to 10 with ace being the lowest and K,J,Q and 10 being the highest. The objective of the game is to obtain 100+ points before your opponent does. In order to win each player must try to improve their hand by forming “melds” and eliminating “deadwoods”. Melds are sets of 3 or more cards with the same rank and 3 or more cards with the same suit but with values in an increasing order, whereas deadwoods cards are cards that do not belong in any of the melds. After each round, player’s points are calculated by taking the difference of deadwoods cards between both players. If player 1 deadwoods counts are greater, then player 1 is not awarded any points and player 2 is awarded the difference of the deadwoods count, same goes for player 2. The game will continue and keep a running total score for both players until there are only two cards left in the stock pile or until one player decides to knock, going in to end the game.

In this program, two players will play against each other. The program will start by asking the first player if they would like to draw the first upcard, if they decide to draw the card, then that player must input an index to discard a card to the discard pile. However, if the first player decides to pass on drawing the first upcard, the option of drawing the first upcard is given to the second player. If the second player decides to draw the upcard, then that player must input an index to discard a card to the discard pile. However if the second player also decides to pass on drawing the upcard, a random card will be drawn from the stockpile to the first player’s hand and the first player must discard a card from their hand to the discard pile by inputting a number from 0 to 10 and it is the second player’s turn to chose the upcard or draw a random card from the stockpile. Everytime a player draws a card either from the discard pile or from the stockpile they must remove one card to the discard pile. The game will continue until there are less than 2 cards in the deck or a player input knocking, in order to end the game. Once the game has ended, a winner will be declared and the players will be brought back to the main menu to choose a game to play again.

Citations:

* <https://acbl.mybigcommerce.com/52-playing-cards/> (For card game assets)