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CS172

Final Project Proposal

Idea:

For my final project, I plan on recreating the *Hand-and-Foot* card game. This card game is a game that my family and I are very familiar with and it would be interesting for me to apply what I learned this summer to recreate a game that is often a pastime for my family.

NOTE: According to <https://www.pagat.com/rummy/handfoot.html>, *Hand-and-Foot* has no standard set of rules due to the existence of numerous variations on how the game is played and the rules that they are played by. Because there are no universal, standardize rules for the game in general, I will be programming the game based on the unique rules that my family plays the game by. (You can look at the website provided to learn a set of rules, but keep in mind that version that my family plays is the way that I am going to code it and it will have some different rules than what the website describes. I will provide the rules in my program).

Potential Challenges:

1. One issue I anticipate is keeping track of what cards each player (there will be 2) has in their hands and in their foots, the cards in the main pile, the cards in the discard pile, and the cards that each player puts down in order to try to make books of the cards.
2. Keeping track of the cards as they move between different card piles as the game progresses (Especially when discarding a specific card from their hand or their foot).
3. Getting different cards to represent different number values.
4. Transitioning from hand to foot (and making sure that it only uses the foot) once the hand is used up.
5. Distinguishing drawing two cards from the main deck and picking up cards from the discard pile.
6. Distinguishing between clean and dirty books while placing restrictions on the make-up of the dirty books.
7. Totaling up the total number of points (at the end of the game) and determining who won.
8. Making sure that the player has to put down three cards of the same kind (or 2 of a kind with a wild card) to play them. As well as giving them the ability to puts cards of the same kind into a complete book.
9. Making sure that at the start of every round, the number of times that the cards are shuffled does not end up being the same amount for every round (which will cause the exact same cards to be played in the same order for multiple consecutive rounds.

Solution:

1. I can use vectors to keep track of the kind of cards that are in their respective piles.
2. I can use push\_back to try to make sure that specific card, of the user’s choice, is moved and subsequently replaced by the next values in the original vector.
3. I can use integers to represent the values that they represent and then use a string for outputting the card name.
4. By using vectors I can check to see if the Hand vector is empty, wand then it will use the foot if Hand is deemed to be empty.
5. I can give the player a choice between drawing from the deck or taking form the discard pile.
6. I can test the contents of the books to see if it has values that correspond with the value of a “2” or a “Joker”. If it doesn’t find them, the book is clean; if it does find them, the book is dirty.
7. I can use an integer to act as an overarching point tracker for the entire game.
8. I can use an integer that can test for the occurrence of a card type and make sure that the user can’t put down cards in a way that is against the rules.
9. I can use a randomized integer, whose value will be between 50 and 100, to set the number of times that a number is shuffled to ensure that the order of cards in each round is not the same as previous rounds.