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Computer Science II

June 26, 2014

Requirements Specification

My final project is creating an UNO game. I used to use the Card Game code uploaded on GitHub as a starting point, however, UNO has a very different deck of cards and pattern of play. I decided to create the deck by using a file. This allowed me to create a more accurate UNO deck with the 108 cards rather than 112 cards. There are two of every type of card except for the number 0 and Wild Cards. There are only 4 zero cards (one of each color) and eight Wild Cards (which are colorless). The file allowed me to enter cards in a less structured manner than a loop.

The game begins with a Welcome function which, using a switch statement, gives the user three options: to begin the game, a tutorial of UNO, or to quit the game. This repeats until the user chooses to exit the game. Once the user chooses to play, the game begins using the playGame function. The deck is created and shuffled. Each user is dealt seven cards. The program outputs the player’s hand, the top card on the discard pile, and another menu function that allows the user to play a card in their hand or draw a card. This process continues until one player runs out of cards. Once there is a winner, a congratulations message appears.

| PlayerHand |
| --- |
| - vector <Card> cards |
| + size() |
| + discard(int) |

| Card |
| --- |
| - color, int |
| - value, int |
| + Red |
| + Yellow |
| + Green |
| + Blue |
| + getColor() |
| * setColor() |
| + getValue() |
| + setValue() |

All the functions necessary to play the actual game will be found in Source.cpp. This includes the functions Welcome(), fillDeck(), deal(), playGame(), cleanup(), and UNO(). The Reverse, Skip, Draw Two, and Wild commands are found in the function PlayGame and will allow the card that is played to carry out its intended purpose.

The program currently will not run because of an “unresolved external.” After doing some serious research and reorganizing my code about twenty times I could not figure out what the problem is. That was the biggest challenge of the project, second to figuring out how to build the card deck.