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CS021 Final Project Summary

This Python program simulates the card game Uno played between the user and a computer. I wrote this code because of my familiarity with the game and because I thought it would be an interesting test of my skills. Over the past two weeks I put together a file containing a string value of every card in an Uno deck, wrote functions to draw a starting hand and individual cards, and built the rest of the program around those functions. When run, the program displays a starting screen including some clarifications on the rules. User information displays on the left while computer information displays on the left for readability. The card at the top of the discard pile displays in the middle of the application window. The body of the code falls under a while loop to allow multiple games, then another while loop to repeat turns until either the user or computer wins. The user and computer turn are each a while loop to account for either the user's or computer's turn being skipped by an action card, a player running out of cards and winning the game, or the deck running out of cards. When the deck runs out of cards, whoever has the least cards in their hand wins. I decided to not shuffle discarded cards back into the deck because, with only two players, the game could take quite a long time. Each card string in the deck file has two significant features when split into a list, the 0 and 1 index. The 0 index tells the program what color the card is, or if it is a wild, and the 1 index tells the program what number the card is or what action it performs. The program splits the contents of the user's hand into lists to compare this information with that of the card at the top of the discard pile, then tells the user what cards can be played. If the 0 and 1 index of the card in play dictate that no cards in the user's hand can be played, cards are added via a function until a card can be played. The computer's turn works on the same principles, but the choice of what to play comes from a random integer generation. I used while loops in favor of try/except because they worked better contextually, and I found no use for dictionaries or sets. Regardless, the program took considerable effort to write. To run the program, download the folder containing the program and deck file, or download the program and deck file individually and put them in the same folder. Then, run the program, follow the prompts, and enter choices.

Gaddis, Tony (2018). *Starting Out with Python* (4th Ed.). Pearson.