CS3035 Programming Language Paradigms
Lab 11: Advanced War Card Game (November 12)

Total Points: 10

Note: Complete Lab10 Part 2 (War Card Game) if you haven't done so already.

In this assignment, we will improve the War card game (implemented in Lab10 Part 2) and use a 52 card deck. Here's what a 52 card deck looks like (read https://en.wikipedia.org/wiki/Standard_52-card_deck if you are unfamiliar with this deck):

Example set of 52 playing cards; 13 of each suit clubs, diamonds, hearts, and spades

This video (https://calstatela.zoom.us/rec/share/ig4Sh2-0D-0jheq6rDDwsYXNmJpTie5uBfgqxL7imvACLchQH4_yMPNyvGCRKEdh.k_0o76-NA3WprYD7) illustrates a play round of my implementation. You may take it as a reference.

Requirements: use functions to make code more readable: any function with more than 20 lines will result in a deduction of 2pts for each infraction!

Modify the game of War as follows:

1. (3pts) Create a **Deck class** that has:

- A constructor that creates an instance variable named cards that holds a list of cards

- To help with shuffling and creation, consider using numbers to represent each of the cards, and a dictionary to map integers to specific Card objects (Note: this is up to you, it's not required)
- A method that draws a card from the deck (returns a card)
- A method that returns whether or not the deck is empty
- A method that shuffles the deck
- A method that resets the deck (creates a new list of cards and shuffles them)

2. (2pts) Create a **Card class** with

- a variable for the rank (2,3,4,5,6,7,8,9,10,J,Q,K,A)
- a variable for the suit (clubs, diamonds, hearts, spades)
- a value (suits are irrelevant in this game). For our game, it will be:

Rank	Value	Rank	Value	Rank	Value	Rank	Value
2	2	6	6	10	10	Ace	14
3	3	7	7	Jack	11		
4	4	8	8	Queen	12		
5	5	9	9	King	13		

- a key number: each Card object will have a unique number associated with it

3. (5pts) Play the game as before, but this time the scores will be sums of values, not card counts. Have it go **5 rounds** before ending, declaring which player won, or if it's a tie, that there is a tie. **Use these classes to play the game (-5pts if you don't)!**

- Print out which cards are drawn by each player for each hand, rank and suit, and which player won that particular round (or that there is a tie, if neither win). - **2pts if you don't do this!**