Final Project – ECE 350 – Logan Kramer

Durak Card Game

Start of Game (player goes first because they have lowest trump card):

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sunlab.cse.lehigh.edu - PuTTY
miranda:~/ece350/ECE350Final% Durak
Trump card:
J of diamonds

First Player: You!

Choose a card for attack (trump: D).
Your Hand:
1. K of spades
2. J of spades
3. J of hearts
4. 10 of diamonds
5. 9 of diamonds
6. 7 of clubs
Choose a card:
2
Attack:
J of spades
Defense:
Q of spades
would you like to continue the attack? (y/n)
n
Attack ends. Replenish to six cards.

Attack:
Q of hearts
Choose a card to defend with (trump: D)!
Your Hand:
1. K of spades
2. J of hearts
3. 10 of diamonds
4. 9 of diamonds
5. 7 of clubs
6. K of diamonds
Choose a card:
3
Defense:
10 of diamonds
Computer ends attack. Replenish to six cards.

Choose a card for attack (trump: D).
Your Hand:
1. K of spades
2. J of hearts
3. 9 of diamonds
4. 7 of clubs
5. K of diamonds
6. A of hearts
Choose a card:
```

Asking for another attack. This also checks the card to be played is a value already on the table.

```
Choose a card:
3
Attack:
J of diamonds
Defense:
A of clubs
would you like to continue the attack? (y/n)
y

Choose a card for attack (trump: S).
Your Hand:
1. 7 of hearts
2. 10 of clubs
3. K of hearts
4. J of clubs
5. 8 of spades
Choose a card:
2
Card must be a value on the table!
Choose a card:
4
Attack:
J of clubs
Computer failed to defend and picks up cards.
```

Asking for a defense. This checks that the card played beats the attacking card.

```
Attack:
10 of spades
Choose a card to defend with (trump: H)!
Your Hand:
1. 9 of hearts
2. A of clubs
3. 8 of clubs
4. 10 of diamonds
5. 6 of diamonds
6. 6 of clubs
Choose a card:
2
Card must beat the 10 of spades !
Choose a card:
1
Defense:
9 of hearts
Computer ends attack. Replenish to six cards.
```

Finding a winner. The player defends, but there are no cards remaining and the computer has zero cards and wins.

```
You have no valid cards for an attack and pick up the cards.
Attack:
6 of hearts
Choose a card to defend with (trump: H)!
Your Hand:
1. 8 of diamonds
2. 8 of hearts
3. 6 of diamonds
4. 7 of diamonds
5. J of hearts
6. 9 of diamonds
7. 10 of diamonds
Choose a card:
4
Card must beat the 6 of hearts !
Choose a card:
7
Card must beat the 6 of hearts !
Choose a card:
6
Card must beat the 6 of hearts !
Choose a card:
1
Card must beat the 6 of hearts !
Choose a card:
2
Defense:
8 of hearts
Computer ends attack. Replenish to six cards.
No more cards in deck.
The computer won :(
```

In this case, I keep playing high trump cards that the computer cannot beat until I run out of cards and win.

```
Choose a card for attack (trump: C).
Your Hand:
1. K of clubs
2. A of clubs
Choose a card:
1
Attack:
K of clubs
Computer failed to defend and picks up cards.
No more cards in deck.

Choose a card for attack (trump: C).
Your Hand:
1. A of clubs
Choose a card:
1
Attack:
A of clubs
Computer failed to defend and picks up cards.
No more cards in deck.

You won!!!!!!!
```

This project is made up of multiple classes, functions, and a loop inside main() to repeat the plays until a winner is found. There is a Card class, which is basically just a suit and value, as well as a Deck class that has many useful functions.

Deck holds a stack of cards and can easily modify its contents as required. There are functions to generate a deck, shuffle the deck, draw, add, and remove cards. It can also find the highest card in the Deck and automatically ask for a card that matches a list of values. All functions are included in the header file Deck.h and implemented in Deck.cpp.

The computer's strategy is:

- On attack, choose highest card. If there are cards on the table, it must match one of those values.
- On defense, choose next valid card that beats the attacking card. It will first choose one of that suit before trying a trump card.
- When given the choice to continue an attack, the computer always ends the attack, and a new turn begins.