Assignment P8

Due Date: May 7

Purpose
In this last project (hurray!!), you will use STL queues to simulate a child’s card game. This is a shorter project; some starting code is given. As in the last project, you may work with a partner; only one submission is necessary. Be sure that both names are on what you turn in.

Problem
Many, many apps are simple games. However, it’s not always so simple to translate a game to a computer program. In this project, you will write a program that simulates the card game “War.” The rules for this simple child’s game is described at www.bicyclecards.com/how-to-play/war/. Note that cards held by a player are often described as a “stack,” when really they are used as in a queue: the front (or top of the stack) is where the next card is taken from, and the rear (or bottom of the stack) is where cards that are won are placed.

The computer will automatically play the game between two players. The only thing the players have to do is type in their names and press the return key for each hand (round of play). Cards for each player will be saved in a queue. Cards will be drawn from the front of the queue, and cards won will be placed in the rear of the queue.

Input
The program should prompt for the two players' names. The only other input is the enter key that will be used to continue the game to the next hand (round); see below.

Output
At each hand, the cards of each player are shown plus the player who won the hand. Play continues until the winner has all of the cards.

A sample portion of two hands in the middle of the game might look like this:

Hand: 3

Mike Austin

3 of Clubs 8 of Hearts

Wins hand!

Press <enter> to continue...

Hand: 4

Mike Austin

10 of Spades -WAR- 10 of Clubs

secret card secret card

7 of Diamonds Queen of Clubs

Wins hand!

Press <enter> to continue...
Your output does not have to look like this, and in fact I encourage nicer output. However, your output should contain the same amount of information at a minimum.

Specifics

- To help you with this project, I have created a class that sets up a deck of cards. The file, deckOfCards.cpp, is on the course web page. This class can be used as an ADT; it should **not be altered**! The code also includes a global `card` type, which you will use to get and display individual cards. Rename this file as your own to build your project.

- Your game should be created in its own class, with its own methods. In one of these methods, you should create a `deckOfCards` object and call the `deckOfCards` method whenever necessary.

- You will need two queues to simulate each player’s hand. Use the Standard Template Library (STL) for this purpose. Do **not** write your own queue code!

- The value of each card in this game follows what is coded in the `deckOfCards` class. Note that the Ace is the highest-valued card.

Notes

- Start by understanding the given code. It has a small `main()` that you can modify for testing purposes. Delete this `main()` before writing your own program.

- This is not a terribly long or difficult project. I suggest you complete it before the deadline so that you can concentrate on studying for other finals (although working on this project is **studying** for this course).

- Submit your source code via email with the usual naming conventions. Put a hard copy version of your program in the envelope on my office door sometime on May 8th. Note that only one copy is necessary if you are part of a pair.

*One should always play fairly when one has the winning cards.*

– Oscar Wilde