ELEC 2543 Object-Oriented Programming and Data Structures

Programming Exercise 8 (Part II)

Topics: Polymorphism

Released on: March 28, 2025 (Friday)

Due Date: 9:30am, April 7, 2025 (Monday)

Overview: In this exercise, you will introduce a cheating player in the card game you developed in Lab 8 Part I. This player swaps his/her smallest card with a random card in the deck in the beginning of each round.

class CheatPlayer

This class represents players who cheat. Define this class according to the following:

1. there is an instance variable representing the deck of cards the player is playing.
2. constructor public CheatPlayer(String name, Deck deck) is available to initialize instance variables appropriately.
3. method public void cheat() replaces the smallest card with a random card in the deck if the deck is not empty. The smallest card will not be put back into the deck.
4. In each round, the largest card will be played

No other method/instance variable is allowed. You should apply object-oriented design in developing this class.

class CardGameWithCheater

The details of the players can be found in InitializePlayer.java. Augment CardGame2.java that you developed in Lab 8a so that the cheating player swaps his/her smallest card with a random card in the deck before playing a card. Use instanceof to check whether a Player object is a CheatPlayer object. Refer to the sample output to understand what messages have to be printed out.

Testing

CardGameWithCheaterDriver.java has been provided to test your program. **Please make sure you use InitializePlayer.java of this lab (do not use the Lab8a version)**.

Handin

Follow the instructions on Moodle.