

Unit Eight Assignment Three:

Create a Card class that implements Comparable. Remember Comparable is an interface in the java.lang package.

This Card class is going to be used for a card game called Hearts. The order of the cards, from low to high, for the suit that was lead is 2 - Ace. Any card from a suit other than the suit that was lead cannot win the hand. All Hearts have a value of 1 point and the Queen of Spades has a value of 13 points.

The Card class should have 3 instance fields, one for the suit of the card ("Clubs", "Spades", "Hearts", "Diamonds"), one for the value of the card (2 - 14), and one for the point value of the card.

This class should have a parametric constructor with two parameters, the suit and the card value. The point value instance field should be initialized by calling a private mutator method setPoints(). There should be accessor methods for each of the 3 instance fields and a toString method that would take Clubs 13 and return "King of Clubs".

Because this class is implementing the Comparable interface, it must also have a **public int compareTo(Object obj)** method. This method returns a positive integer if the object referenced by *this* is greater than the object referenced by *obj*, a negative integer if the opposite is true, and 0 if the objects are identical.

Also, create a class called Trick. This class will have 2 instance fields, one will be an ArrayList of Card objects and the other will be an int variable to keep track of the total points in the trick.

There should be a parametric constructor that receives an ArrayList of Card objects as the one parameter. The total points instance field should be initialized by calling a mutator method setTotalPoints().

There should be an accessor method for the total points instance field and a toString() method that returns all the cards listed vertically.

There should also be a method called getWinner() that returns the Card object that wins the trick.

In the driver class, you may assume there are 5 people playing the game. Each card played will be entered into a JOptionPane.showInputDialog box (i.e. Diamonds 8). The first card entered is the lead.

The driver class must add each new Card to an ArrayList. This ArrayList should be used when declaring the Trick object. You should use this Trick object to determine the winner of the trick and to determine the total points in the trick.

After all cards of the trick have been entered, the output for this project, should be placed in a console window and should look like this...

The Trick:

**4 of Diamonds
8 of Diamonds
Ace of Spades
King of Clubs
Ace of Diamonds**

Winning Card = Ace of Diamonds

Points in Trick = 0

The project should be executed 3 times. The second and third tricks are listed below.

Trick #2

7 of Spades
3 of Spades
10 of Spades
Ace of Hearts
9 of Spades

Trick #3

5 of Clubs
8 of Hearts
2 of Clubs
Queen of Spades
Jack of Hearts

To complete this assignment, you must turn in the code for Card.java, Trick.java, U9A3.java, and copies of the 3 console windows.