

Black Jack: Part 2 – The Deck

Card.java BlackJackCard.java Deck.java DeckTestOne.java

Write the Deck class. Deck is a collection of Card references stored in an ArrayList. Each of the Card references in the ArrayList will refer to some type of Card object. You should use your already written Card and BlackJackCard class.

Complete the Deck class

```
public class Deck
{
    public static final int NUMFACES = 13;
    public static final int NUMSUITS = 4;
    public static final int NUMCARDS = 52;

    public static final String SUITS[] = {"CLUBS", "SPADES", "DIAMONDS", "HEARTS"};

    private int topCardIndex;
    private ArrayList<Card> stackOfCards;

    // constructor
    public Deck()
    {
        //initialize the data

        //one loop to go through all SUITS
        //one loop to go through all FACES
        //add in each new Card() to the Deck
    }

    public int size() { return 0; }

    public int numCardsLeft(){
        return 0;
    }

    public void shuffle(){
        //add code to shuffle deck - Collections has a shuffle
    }

    public Card nextCard(){ return stackOfCards.get(topCardIndex--); }

    public String toString(){
        return stackOfCards + "    topCardIndex = " + topCardIndex;
    }
}
```

Use DeckTestOne.java to test the Deck class' functionality.

```
import static java.lang.System.*;
public class DeckTestOne
{
    public static void main( String args[] )
    {
        Deck deck = new Deck();
        for( int i=0; i<Deck.NUMCARDS; i++ ) {
            out.println(deck.nextCard());
        }
        out.println("\n\n");

        out.println("num cards left in the deck == " +
            deck.numCardsLeft());
    }
}
```

```

        out.println("\n\nshuffling");
        deck.shuffle();
        out.println("num cards left in the deck == " +
                    deck.numCardsLeft());
        out.println("\n\ntoString");
        out.println(deck);
    }
}

```

Predicted output, maybe different because of the randomization

```

KING of HEARTS | value = 10
QUEEN of HEARTS | value = 10
JACK of HEARTS | value = 10
TEN of HEARTS | value = 10
NINE of HEARTS | value = 9
EIGHT of HEARTS | value = 8
SEVEN of HEARTS | value = 7
SIX of HEARTS | value = 6
FIVE of HEARTS | value = 5
FOUR of HEARTS | value = 4
THREE of HEARTS | value = 3
TWO of HEARTS | value = 2
ACE of HEARTS | value = 11
KING of DIAMONDS | value = 10
QUEEN of DIAMONDS | value = 10
JACK of DIAMONDS | value = 10
TEN of DIAMONDS | value = 10
NINE of DIAMONDS | value = 9
EIGHT of DIAMONDS | value = 8
SEVEN of DIAMONDS | value = 7
SIX of DIAMONDS | value = 6
FIVE of DIAMONDS | value = 5
FOUR of DIAMONDS | value = 4
THREE of DIAMONDS | value = 3
TWO of DIAMONDS | value = 2
ACE of DIAMONDS | value = 11
KING of SPADES | value = 10
QUEEN of SPADES | value = 10
JACK of SPADES | value = 10
TEN of SPADES | value = 10
NINE of SPADES | value = 9
EIGHT of SPADES | value = 8
SEVEN of SPADES | value = 7
SIX of SPADES | value = 6
FIVE of SPADES | value = 5
FOUR of SPADES | value = 4
THREE of SPADES | value = 3
TWO of SPADES | value = 2
ACE of SPADES | value = 11
KING of CLUBS | value = 10
QUEEN of CLUBS | value = 10
JACK of CLUBS | value = 10
TEN of CLUBS | value = 10
NINE of CLUBS | value = 9

```

```
EIGHT of CLUBS | value = 8
SEVEN of CLUBS | value = 7
SIX of CLUBS | value = 6
FIVE of CLUBS | value = 5
FOUR of CLUBS | value = 4
THREE of CLUBS | value = 3
TWO of CLUBS | value = 2
ACE of CLUBS | value = 11
```

```
num cards left in the deck == 0
```

```
shuffling
num cards left in the deck == 52
```

```
toString
[FIVE of HEARTS | value = 5, FIVE of SPADES | value = 5, EIGHT of DIAMONDS | value =
8, SIX of DIAMONDS | value = 6, NINE of SPADES | value = 9, NINE of CLUBS | value =
9, SEVEN of HEARTS | value = 7, KING of HEARTS | value = 10, NINE of HEARTS | value =
9, KING of SPADES | value = 10, ACE of CLUBS | value = 11, TWO of DIAMONDS | value =
2, JACK of SPADES | value = 10, SEVEN of CLUBS | value = 7, ACE of HEARTS | value =
11, THREE of DIAMONDS | value = 3, THREE of CLUBS | value = 3, SEVEN of DIAMONDS |
value = 7, TEN of SPADES | value = 10, FOUR of HEARTS | value = 4, ACE of SPADES |
value = 11, FOUR of CLUBS | value = 4, EIGHT of HEARTS | value = 8, THREE of SPADES |
value = 3, SIX of HEARTS | value = 6, FIVE of CLUBS | value = 5, KING of DIAMONDS |
value = 10, TWO of SPADES | value = 2, ACE of DIAMONDS | value = 11, EIGHT of CLUBS |
value = 8, TEN of CLUBS | value = 10, TWO of CLUBS | value = 2, JACK of DIAMONDS |
value = 10, SIX of CLUBS | value = 6, FOUR of SPADES | value = 4, QUEEN of SPADES |
value = 10, FIVE of DIAMONDS | value = 5, SIX of SPADES | value = 6, JACK of CLUBS |
value = 10, QUEEN of DIAMONDS | value = 10, QUEEN of CLUBS | value = 10, NINE of
DIAMONDS | value = 9, FOUR of DIAMONDS | value = 4, TEN of HEARTS | value = 10, QUEEN
of HEARTS | value = 10, TEN of DIAMONDS | value = 10, THREE of HEARTS | value = 3,
JACK of HEARTS | value = 10, SEVEN of SPADES | value = 7, KING of CLUBS | value = 10,
TWO of HEARTS | value = 2, EIGHT of SPADES | value = 8] topCardIndex = 51
```