

Lab Assignment #3: Card, Deck, and GUI Full Documentation

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Class Card

```
public class Card
```

Title: The Card class

Description: This class will represent a single playing card that has a value between 1 and 13, and a suit (Clubs, Diamonds, Hearts, or Spades). A card can return its value, suit, point value, or reference to a String containing the card's value and suit. It can check to see if two cards have the same value or the same suit, as well as if a third card's value is between two other cards' values.

Author: CSC 120 Instructors

Constructor Detail

Card

```
card( int num )
```

Parameterized Card constructor. Gets called when an object of the Card class is instantiated, sending a number as an argument. It determines the value and suit of the card, based upon the number received.

Parameters:

num - a number that gets converted to a value between 1 and 13 and one of the four suits (clubs, diamonds, hearts, or spades)

Method Detail

getValue

```
int getValue()
```

Returns what's stored in the instance variable value

Returns:

the state of the instance variable value

getSuit

```
String getSuit()
```

Returns what's stored in the instance variable suit

Returns:

a reference to a String that contains the state of the instance variable suit

equalValue

```
boolean equalValue( Card otherCard )
```

Determines if the otherCard's value is the same as this card's value

Parameters:

otherCard - a reference to the Card object to compare to this Card object

Returns:

true if the values are equal, false if the values are not equal

equalSuit

```
boolean equalSuit( Card otherCard )
```

Determines if the otherCard's suit is the same as this card's suit

Parameters:

otherCard - a reference to the Card object to compare to this Card object

Returns:

true if the suits are equal, false if the suits are not equal

getPointValue

```
int getPointValue()
```

This method returns the point value for the card – 1 for an Ace, 10 for a face card (Jack, Queen, or King), and face value for cards 2 through 10

Returns:

the point value of the card

toString

```
String toString()
```

Returns the state of the card object

Returns:

a reference to a String object that contains the value and the suit of the card

Class Deck

```
public class Deck
```

Title: The Deck class

Description: This class provides the basic operations for a deck of cards, including creating the deck, shuffling it, and dealing cards from it.

Author: CSC 120 Instructors

Constructor Detail

Deck

```
deck ( )
```

Default Deck constructor. Gets called when an object of the Deck class is instantiated.

Method Detail

shuffleDeck

`void shuffleDeck()`
Shuffles the deck

dealCard

`Card dealCard()`
If there are cards in the deck, return a reference to the top card object in the deck and decrease the number of cards in the deck by 1; return null otherwise to indicate an empty deck

Returns:

a reference to a Card object

Class GUI

`public class GUI`

Title: The Graphical User Interface class

Description: This class provides a graphical user interface that can display playing cards.

Author: CSC 120 Instructors

Constructor Detail

GUI

`GUI ()`

Default GUI constructor. Gets called when an object of the GUI class is instantiated. Provides space for five cards.

Method Detail

showCard

`void showCard(Card theCard)`

Determines the value and suit of theCard and displays the appropriate card image

Parameters:

`theCard` - a reference to a Card object. Assumes the card has been instantiated.