Isaac Cardello

Mrs. Awde

AP CS

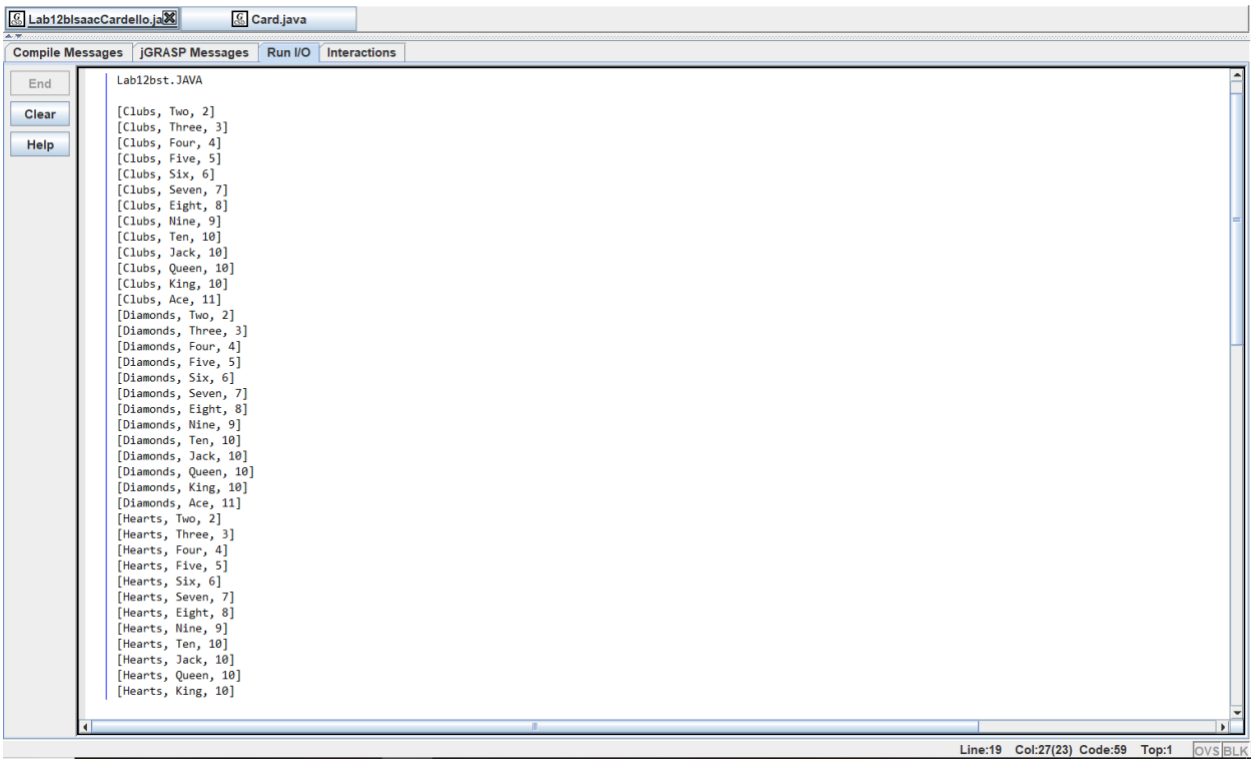
10 February 2019

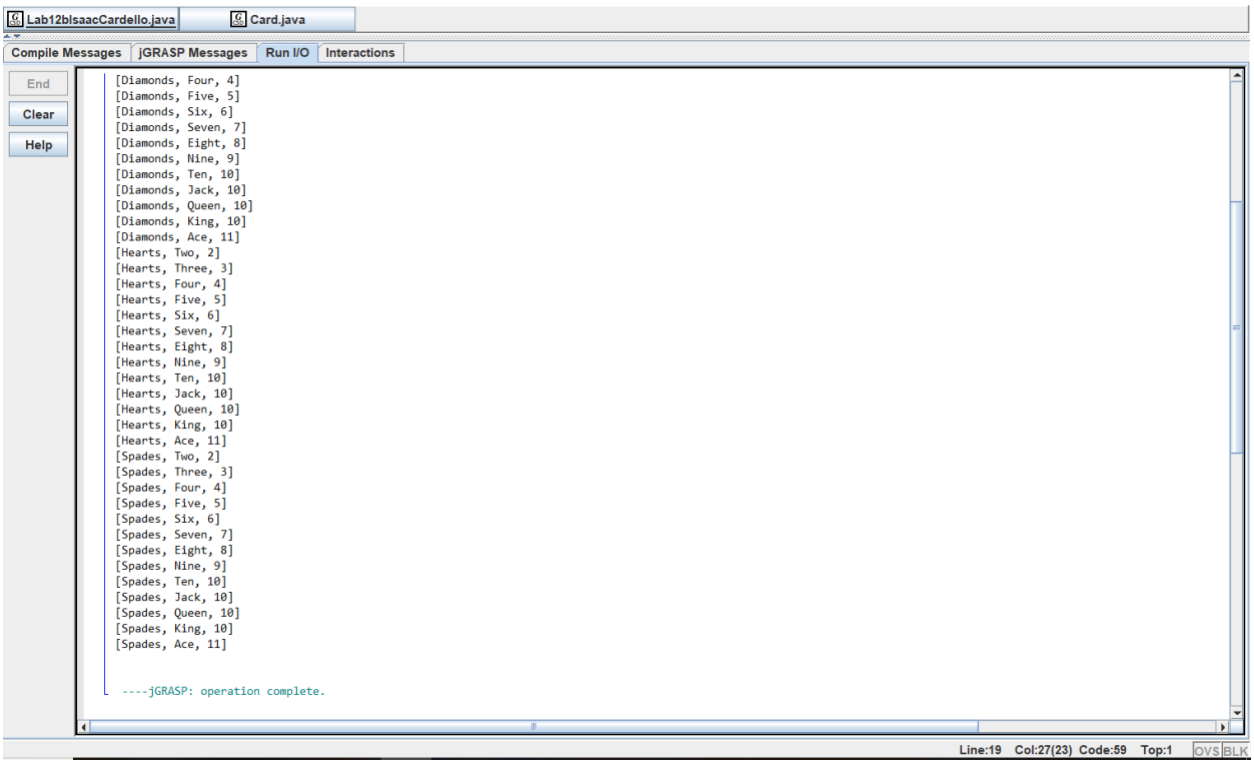
Lab12-b

```
// Lab12bvst.java     This is the Student-Starting file.
// This version is implemented with "Dynamic Arrays"
// This assignment pertains to some of the "Elevens" AP Lab Materials
//*************************************************************************
// The "Elevens" AP Lab is created for the College Board APCS
// curriculum by Michael Clancy, Robert Glen Martin and Judith Hromcik.
// Leon Schram has altered some of the "Elevens" files to focus on
// specific CS topics as the "Elevens" Lab is integrated into the curriculum.



import java.util.ArrayList;

public class Lab12bIsaacCardello
{
  public static void main(String[] args)
  {
    System.out.println("Lab12bst.JAVA");
    System.out.println();
    Deck deck = new Deck();
    System.out.println(deck);
  }
}


class Deck
{
  private ArrayList<Card> cards;
  private int size;

  public Deck()
  {
    size = 52;
    cards = new ArrayList<Card>();
    add("Clubs", "Two", 2);
    add("Clubs", "Three", 3);
```

```
add("Clubs", "Four", 4);
add("Clubs", "Five", 5);
add("Clubs", "Six", 6);
add("Clubs", "Seven", 7);
add("Clubs", "Eight", 8);
add("Clubs", "Nine", 9);
add("Clubs", "Ten", 10);
add("Clubs", "Jack", 10);
add("Clubs", "Queen", 10);
add("Clubs", "King", 10);
add("Clubs", "Ace", 11);
add("Diamonds", "Two", 2);
add("Diamonds", "Three", 3);
add("Diamonds", "Four", 4);
add("Diamonds", "Five", 5);
add("Diamonds", "Six", 6);
add("Diamonds", "Seven", 7);
add("Diamonds", "Eight", 8);
add("Diamonds", "Nine", 9);
add("Diamonds", "Ten", 10);
add("Diamonds", "Jack", 10);
add("Diamonds", "Queen", 10);
add("Diamonds", "King", 10);
add("Diamonds", "Ace", 11);
add("Hearts", "Two", 2);
add("Hearts", "Three", 3);
add("Hearts", "Four", 4);
add("Hearts", "Five", 5);
add("Hearts", "Six", 6);
add("Hearts", "Seven", 7);
add("Hearts", "Eight", 8);
add("Hearts", "Nine", 9);
add("Hearts", "Ten", 10);
add("Hearts", "Jack", 10);
add("Hearts", "Queen", 10);
add("Hearts", "King", 10);
add("Hearts", "Ace", 11);
add("Spades", "Two", 2);
add("Spades", "Three", 3);
add("Spades", "Four", 4);
add("Spades", "Five", 5);
add("Spades", "Six", 6);
add("Spades", "Seven", 7);
add("Spades", "Eight", 8);
add("Spades", "Nine", 9);
add("Spades", "Ten", 10);
```

```
    add("Spades", "Jack", 10);
    add("Spades", "Queen", 10);
    add("Spades", "King", 10);
    add("Spades", "Ace", 11);


  }

  public void add(String suit, String rank, int value)
    {
        Card temp = new Card(suit,rank,value);
        cards.add(temp);
        size++;
    }

  public String toString()
    {
      String temp = "";
      for (int k = 0; k < cards.size(); k++)
        temp = temp + cards.get(k).toString() + "\n";
      return temp;
    }



}
```


Lab12blsaacCardello.ja
Card.java
Compile Messages
jGRASP Messages
Run I/O
Interactions
End
Clear
Help
Lab12bst.JAVA
[Clubs, Two, 2]
[Clubs, Three, 3]
[Clubs, Four, 4]
[Clubs, Five, 5]
[Clubs, Six, 6]
[Clubs, Seven, 7]
[Clubs, Eight, 8]
[Clubs, Nine, 9]
[Clubs, Ten, 10]
[Clubs, Jack, 10]
[Clubs, Queen, 10]
[Clubs, King, 10]
[Clubs, Ace, 11]
[Diamonds, Two, 2]
[Diamonds, Three, 3]
[Diamonds, Four, 4]
[Diamonds, Five, 5]
[Diamonds, Six, 6]
[Diamonds, Seven, 7]
[Diamonds, Eight, 8]
[Diamonds, Nine, 9]
[Diamonds, Ten, 10]
[Diamonds, Jack, 10]
[Diamonds, Queen, 10]
[Diamonds, King, 10]
[Diamonds, Ace, 11]
[Hearts, Two, 2]
[Hearts, Three, 3]
[Hearts, Four, 4]
[Hearts, Five, 5]
[Hearts, Six, 6]
[Hearts, Seven, 7]
[Hearts, Eight, 8]
[Hearts, Nine, 9]
[Hearts, Ten, 10]
[Hearts, Jack, 10]
[Hearts, Queen, 10]
[Hearts, King, 10]
Line:19 Col:27(23) Code:59 Top:1
OVS BLK


Lab12blsaacCardello.java
Card.java
Compile Messages
jGRASP Messages
Run I/O
Interactions
End
Clear
Help
[Diamonds, Four, 4]
[Diamonds, Five, 5]
[Diamonds, Six, 6]
[Diamonds, Seven, 7]
[Diamonds, Eight, 8]
[Diamonds, Nine, 9]
[Diamonds, Ten, 10]
[Diamonds, Jack, 10]
[Diamonds, Queen, 10]
[Diamonds, King, 10]
[Diamonds, Ace, 11]
[Hearts, Two, 2]
[Hearts, Three, 3]
[Hearts, Four, 4]
[Hearts, Five, 5]
[Hearts, Six, 6]
[Hearts, Seven, 7]
[Hearts, Eight, 8]
[Hearts, Nine, 9]
[Hearts, Ten, 10]
[Hearts, Jack, 10]
[Hearts, Queen, 10]
[Hearts, King, 10]
[Hearts, Ace, 11]
[Spades, Two, 2]
[Spades, Three, 3]
[Spades, Four, 4]
[Spades, Five, 5]
[Spades, Six, 6]
[Spades, Seven, 7]
[Spades, Eight, 8]
[Spades, Nine, 9]
[Spades, Ten, 10]
[Spades, Jack, 10]
[Spades, Queen, 10]
[Spades, King, 10]
[Spades, Ace, 11]
----jGRASP: operation complete.
Line:19 Col:27(23) Code:59 Top:1
OVS BLK

Articulation Statement:

For Lab12b, I was required to use a dynamic array to store 52 Card objects and print the attributes of each card object passed into the array. To start, I copy and pasted the add method of the Deck class from the Unit 12 PowerPoint. Calling on the add method would create a new Card obect called temp and pass the in the parameters that were passed into the add method, for the Card constrcutor. Then the cards array would call on the add method of the ArrayList class and pass in the parameter temp. Finally, the size attribute of the Deck class would increment by 1. I then copy and pasted the redefined toString method for the Deck class which created a new object of the String class called temp and set it to the string literal “”. Then a for loop iterates 52 times and with each iteration, temp is set equal to temp plus the cards array calling on the get method passing through k as the index position, calling on the toString method of the Card class. This will essentially return the 3 attributes of the object stored in the element of each index position on a new line. Finally, I call on the add method 52 times, passing through varying suites, String literal ranks, and integer ranks, for each element until all 52 cards of a regular deck has been arrived.

Overall, I found this lab to be of no difficulty, except when I had to call on the add method of the ArrayList class with no object.