



Elevens Game Graphics: GUI #02

(designed to accompany the AP® Computer Science A Elevens Lab)



- Consider and address the following questions:

1. Thinking back to the last lab (Basic game graphics), what additional information do you need to create Elevens?
2. What actions (methods) does this game utilize? How do you think you might code these actions?

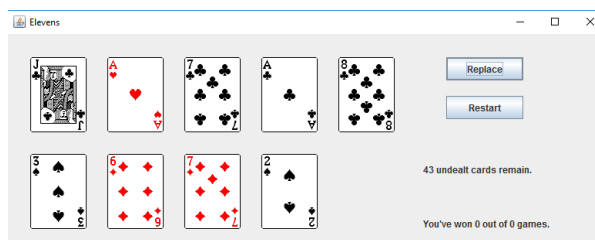
- Edits needed in existing classes to make things work:

1. Board objects for the Elevens game will now need to be able to return the size of the board (how many cards are used for the game). Return to your Board class and write a method called `size()` that does this (using a variable, NOT just the number 9).
2. The Board will also need to return the size of the current deck that is being used in the game (to know how many cards are left to use ... remember, the game tells the player how many cards remain in the deck). Return to the Board class and write a method called `deckSize()` that does this (using a variable reference, not simply by typing a number).
3. The Board will also need the ability to look to see what card is sitting in any location on the game board. Write a method called `cardAt(int k)` that performs this action (returning the Card object that is located at index k).

- The GUI code for this lab:

1. Download the Elevens_Lab11_GUI02_Code file and copy all the code (or simply open it and copy all of the code).
2. Paste all of the code into the GUI Class (replacing all code from Lab #10 ... WARNING: If you still want the GUI code from Lab #10 be sure to place it into a new class).
3. Create a GUITester Class and use the following code:

```
public class GUITester {
    public static void main(String[] args) {
        Board setBoard = new Board();
        GUI newGame = new GUI(setBoard);
    }
}
```



4. Run the GUITester Class ... you WILL get an error! That is OK for now, you will debug this.
5. Is the following the error you see (card may vary)? (If a different error, you probably need to fix something)

run:

```
Exception in thread "main" java.lang.RuntimeException: Card image not found: "cards/AClubs.GIF"
```

6. The error lies in a mistake in how the file is named (notice the file AClubs.GIF listed in the error?). The name of the file WAS NOT constructed properly as the name of the Ace of Clubs GIF file in our cards package is "aceclubs.GIF". This is simply an unintended mistake that we have made as our cards are not called ace, nor are they called clubs. When we defined attributes of Cards, we used "A" for ace and "Clubs" for clubs.
7. Return to the Elevens_Lab11_GUI02_Code and skim for the comment `/* CARD FILE NAME CONSTRUCTION */`. This is where the file name gets constructed. No error here, but can you read the code and understand it?
8. There are two solutions to the current error
 - Rename every card graphic file to the new naming convention ... that means renaming 152 files!
 - Change card attributes to meet the naming convention of the file names (this will be done in this lab).
9. The card attributes were defined in the Deck class. Can you find them? Can you edit them to match the card graphic naming convention? Perform this process.
10. Re-run the GUITester Class ... if done correctly, CONGRATULATIONS! You have the Elevens Game Board!!!