Homework 3 – Due Mar. 27th 23:59, KST

Instructions: Complete the implementation and turn it in before the due date. Any deviations from the instructed deliverable format will result in a deduction of grade. DO NOT COPY OTHER'S WORKS!

In this assignment, you will be implementing a deck of playing cards using an ArrayList. This is just the standard 52 playing cards that you see every day (https://en.wikipedia.org/wiki/Standard_52-card_deck).

Your task is to fill in the methods provided in CardDeck.java so that the class can perform the deck management operations. Carefully read all comments given in the skeleton code before proceeding with the homework. The instructions in the comments are also part of the official requirements.

The grading will be done in the following manner:

- Documentation (40 points): You should provide a header comment that provides a big-O time complexity analysis for each of the required methods. Notice that I'm not providing the variable of complexity: You must clearly identify with respect to what variable the time complexity will be. In addition to the big-O's, provide a brief explanation of how you arrived at that conclusion.
- Correctness (60 points): Your code should behave as required. We will use our own grading script to assess the correctness.
- Miscellaneous: Do not change the method and class names. Two or more unhandled exceptions will result in a score of 0 for correctness. The final implementation should not be part of a package structure. Declaring a package will result in an automatic deduction of 10 points.

Deliverable: A single CardDeck.java source file with no package structure. DO NOT provide a zip file.