**Card and Deck - Classes**

Card Class – (already completed) – Just use the Card class provided on the weebly

**Deck class**

**Data Field**

cards – ArrayList<Card>

**Constructor**

No-arg Constructor will build an ArrayLists of 52 Cards, From Ace of Clubs to King of Spades

**Methods**

1. *isEmpty* – Boolean method returns true if *cards* is empty
2. *size* – Integer method returns the number of *cards* left in the deck
3. *deal* – returns the first Card object from cards ArrayList
4. *shuffle* – Will scramble the *cards* ArrayList into random order
5. *perfectShuffle*(int num) – Will perform a perfect shuffle on the deck *n* times.

Use the PerfectShuffle Results document from the weebly to check your perfectShuffle method.

A “perfect shuffle” happens when the deck is cut into two equally sized halves. One card from the first half is placed in the deck, then the first card from the second half is placed in the deck. Then the second card from each half is placed, etc…

Example:

Assume you had 6 cards in a deck, labeled A, B, C, D, E and F. After 1 perfect shuffle the card order would change to:

Original order - A B C D E F

After 1st Perfect Shuffle A D B E C F

After 2nd Perfect Shuffle A E D C B F