CS401 Lab 4: Method Writing Exercises

1. Write a static method that checks if a word is a palindrome. The method should take a String input parameter and return a boolean.

2. Write a static method that randomly selects a card from a standard deck of 52 playing cards. This method does not take any input parameters and returns a String representation of the card (e.x. “Ace of Spades”). The following can be used to generate a random number between 0 (inclusive) and n (exclusive).

   // We use the current time to initialize the random number generator.
   Random rand = new Random(new Date().getTime());

   int randomNumber = rand.nextInt(n);

3. Write a static method that calculates and returns the minimum number of coins needed to represent a given amount of money in U.S. currency. This method should take one input parameter (the amount of money) and return an integer (the number of coins).

4. Write a static method named dateToDay that calculates and returns the day of the week for a given date. This method takes two input parameters, both of which are integers. The first parameter is the calendar day. The second parameter is the day of the week on which the month begins (0 for Sun., 1 for Mon., etc.). The following example corresponds to Tuesday November 25, 2012. November 2012 begins on Saturday (i.e. day 6), so we call dateToDay(25, 6) which returns the String “Tuesday”.

5. Write a static method that takes a word and returns the pig latin version of the word. The rules for pig latin are as follows:
   (a) If the word begins with a vowel add “way” to the end.
       Ex. almost becomes almostway
   (b) If the word begins with a consonant, move all of the initial consonants (consonants that appear before the first vowel) to the end and add “ay” after them.
       Ex. document becomes ocumentday
       Ex. what becomes atwhay

   The method should take an input String and return a String.

6. Write a static method that returns the reversed version of a string.
   Ex. hello becomes olleh
   The method should take an input String and return a String.