CMSC 131 Quiz 5 Worksheet

The next quiz for the course will be on Wed, Nov 7. The following list provides additional information about the quiz.

- The quiz will be a written quiz (no computer).
- The quiz will be in lab session.
- Closed book, closed notes quiz.
- Answers must be neat and legible.
- Quiz instructions can be found at http://www.cs.umd.edu/~nelson/classes/utilities/examRules.html.
- Make sure you know your section number and your TA’s name.

The following exercises cover the material to be included in this quiz. Solutions to these exercises will not be provided, but you are welcome to discuss your solutions with the TAs or instructor during office hours. It is recommended that you try these exercises on paper first (without using the computer).

Exercises

1. How many objects are associated with the following declaration?
   
   String[] a;

2. Write a static method that returns true if the string parameter represents a valid phone number. A valid phone number has the format DDD-DDD-DDDD where D is a digit (value between 0 and 9). Use the Character.isDigit() method to determine whether a character is a digit or not. The method’s prototype is:
   
   public boolean validPhoneNumber(String phone)

3. Write a static method that will shift all the elements in the array by one position to the left. The leftmost element must become the last element in the array. For example, if the original array has the strings “a”, “b”, “c”, calling the method will update the array with the values “b”, “c”, “a”.
   
   public void shiftLeftOnce(String[] elems)

4. Write a static method that will shift all the elements in the array n times to the left. Feel free to use the shiftLeftOnce method previously defined. The method’s prototype is:
   
   public void shiftLeftN(String[] elems, int n)

5. Write a static method that returns a new array with copies of the strings in the words array that have at most maxLength characters. The method’s prototype is:
   
   public static String[] getWordsMaxLength(String[] words, int maxLength)

6. The Scanner class method nextInt() throws the InputMismatchException exception when the value entered does not represent an integer. Write a static method readValue() that reads an integer value using nextInt() and keeps asking the user for a value as long as the value provided does not represent an integer value. The method returns the integer value provided by the user.
   
   public static int readValue()

**Note:** You can find out which exceptions a method throws by checking the Java API (https://docs.oracle.com/javase/8/docs/api/). For example, information about the Scanner class can be found at https://docs.oracle.com/javase/8/docs/api/java/util/Scanner.html