Object Oriented Development

# Collections Exercise

# What does this exercise cover?

# This exercise asks you to explore the Java Collections Framework.

# How long will the exercise take to complete?

# 2-3 hours

# What should you have already completed?

Java Collections Lecture

Solve the exercises below. Make sure you use TDD for each coding exercise.

1. Write a method that takes a variable argument of multiple first names and eliminates duplicates by storing them in a Set. It should return the Set.
2. Write a method, which returns a HashMap that can be used for choosing one of the 13 predefined colors in class java.awt.Color. The names of the colors should be used as keys, and the predefined java.awt.Color objects should be used as values.
3. Write a method to count the number of occurrences of each letter in a string. For example, the string "HELLO THERE" contains two Hs, three Es, two Ls, one O, one T and one R. It should return an object that contains the results – what kind of class is best suited for this?
4. Write a method that returns the number of duplicate words in a sentence. Treat uppercase and lowercase letters the same. Ignore punctuation. For example, “The the THE dog is brown BrOwN.” Would return 2 as the words ‘the’ and ‘brown’ are both duplicated.
5. Write a method that takes in a LinkedList and returns a LinkedList object containing a copy of the first list, but in reverse order.
6. Write a method that uses a String method split to tokenize a line of text input by the user and places each token in a TreeSet. It should return the TreeSet. To tokenize a line of text means to split up a line into its individual words.  
     
   *Note:* Printing the TreeSet should output the elements ascending sorted order.