**Lab 10**

**Exercise 1**

1. Create an arraylist of strings using a combination of the List reference and the ArrayList reference to hold the following elements:

Red, Green, Yellow, Blue, Pink

1. Write a counter controlled for loop to iterate through the arraylist and remove the contents. Print out the contents. Make sure you understand why all the elements don’t get deleted.

Before you move on, place comments around the counter controlled for loop

1. Write an enhanced for loop to iterate through the elements and call the remove() method to remove every element from the ararylist. Note the error you get and look up the particular of the exception and why it occurs.

Definition: An enhanced for loop can be used when you wish to step through the elements of a collection in first-to-last order, and you do not need to know the index of the current element.

Before you move on, place comments around the enhanced for loop.

1. Use an iterator in a while loop to empty the arraylist

Before you move on, place comments around the while loop.

1. Use an iterator in an enhanced for loop to empty the arraylist
2. Look in the List API and see if there is any method we can use to empty the arraylist

**Exercise 2**

1. Create a hashset of strings using a combination of the Set reference and the HashSet reference to hold the following elements:

Red, Green, Yellow, Blue, Pink

Print out the collection.

A hashset is unordered. Write Java code to sort the collection. In order to do this you need to convert the collection into a list (ArrayList) and then call on the Collections.sort() method. Print out the contents to show the sorted list.

**Exercise 3**

Write a program to use a HashMap to implement a dictionary:

* Define a HashMap with type String for both the Key and Value
* Add some K,V pairs to the hashmap using the put method.
* E.g.
  + render", "to cause to be or become; make:"
  + "immoderate", "exceeding just or reasonable limits"
  + "foliaceous","pertaining to or consisting of leaves"
  + "insubordinate", "not submitting to authority; disobedient:"
  + "creek", "a stream, brook, or a minor tributary of a river"
* Write some code to ask the user to enter a word, look up the definition of the word and print them to the screen. Use a loop for multiple entries and display an appropriate if the word is not in the collection. See output below.

Sample Output:

Please enter a word or X to exit:

f

Sorry, word not in dictionary

Please enter a word or X to exit:

creek

The definition of creek is: a stream, brook, or a minor tributary of a river

Please enter a word or X to exit:

render

The definition of render is: to cause to be or become; make:

Please enter a word or X to exit:

fff

Sorry, word not in dictionary

Please enter a word or X to exit:

x