UNIVERSITY OF TECHNOLOGY, JAMAICA
SCHOOL OF COMPUTING AND INFORMATION TECHNOLOGY

ADVANCED PROGRAMMING – CIT 3009
LAB 1.1
TOPIC COVERAGE: COLLECTIONS & GENERICS
DATE GIVEN: Week one

INSTRUCTION: Students are required to complete all items listed under the lab activity heading during the first hour of the class session, items listed under the independent class activity are to be completed within the final two hours of the class and items listed under the independent class investigation should be completed during student's free time and submitted in the first ten minutes of the next lab class, explanations will be required with the code to show full understanding.

Independent Class Activity

1. Create a class named Vehicles which should contain five (5) private attributes: make, model, color, year, fourWD. Create the constructors, mutators, ccessors and toString method for this class.
2. Create a Driver class containing the main method.
3. In the main method, create a List as an ArrayList, that will store only Vehicle Objects.
4. Using the List object, add the data for three (3) vehicles to the list.
5. Using the foreach loop, display all the data stored on vehicles in the list.
6. Create a second List; this time as a LinkedList, that will also store only Vehicle objects.
7. Using the List object, add the data for three (3) vehicles to the list.

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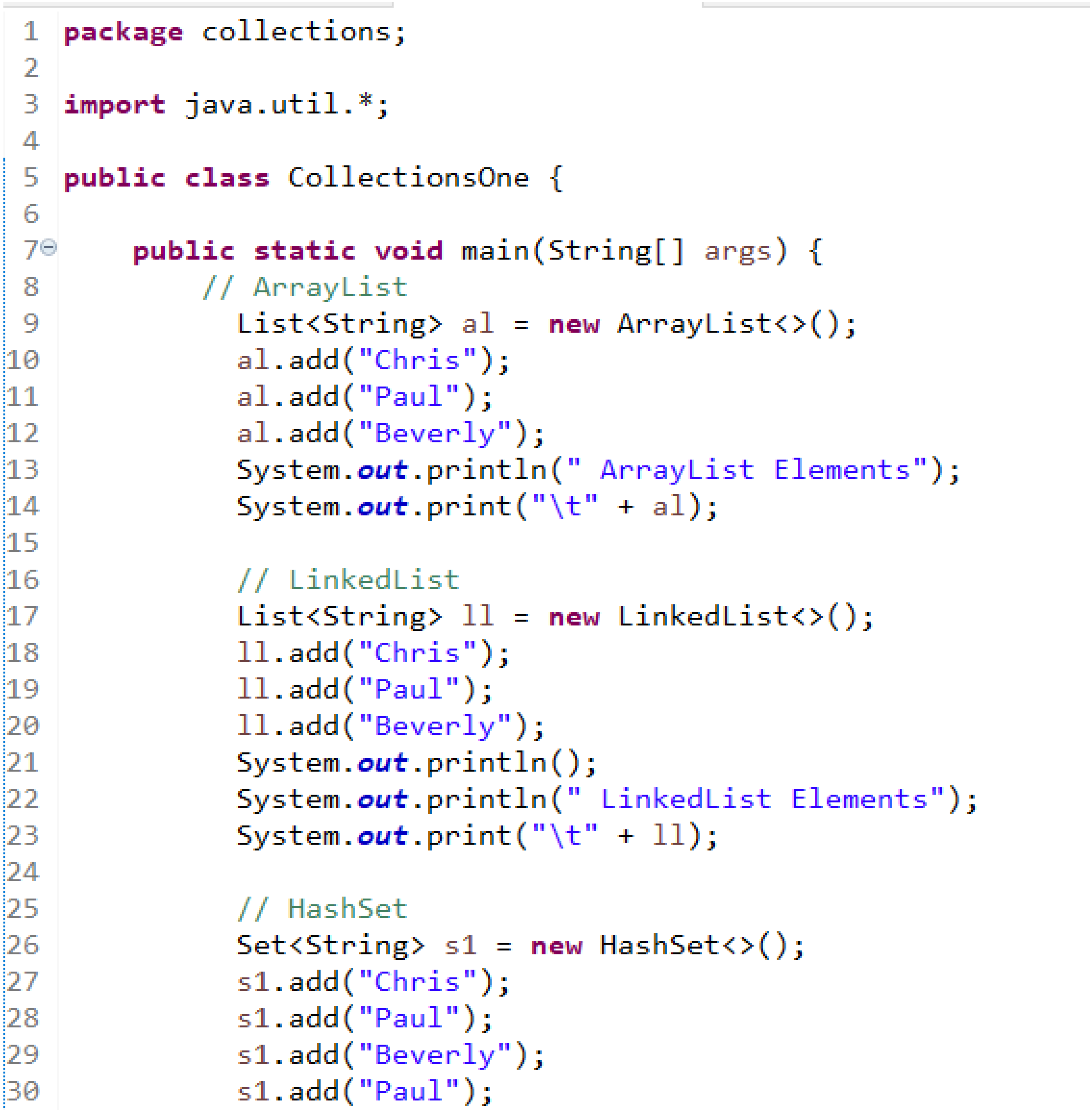
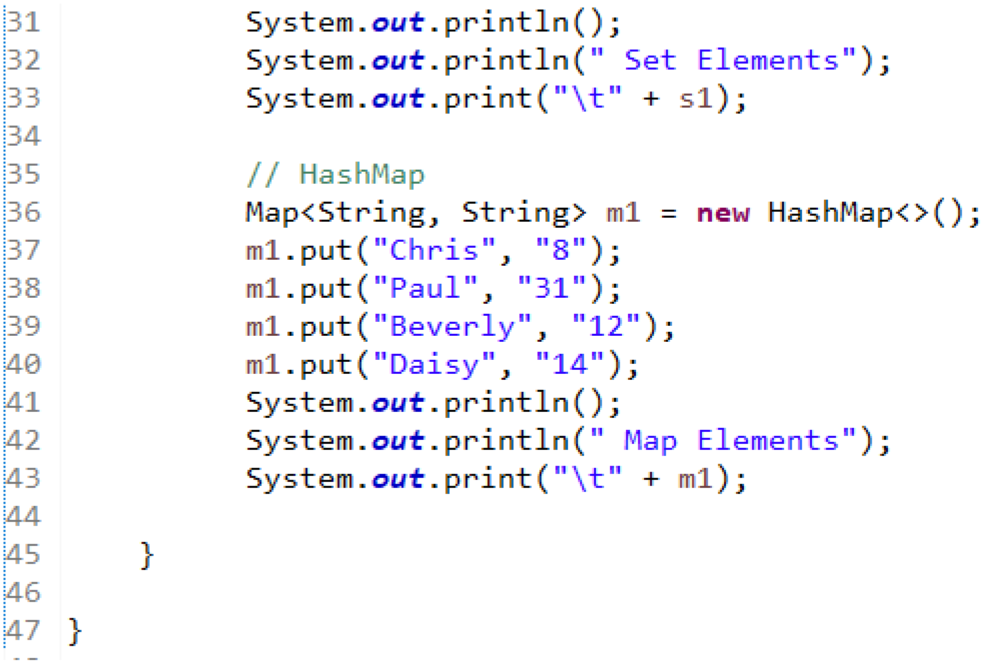
8. Create a **static** method called printListElements that takes a list of vehicles as a parameter argument. Inside the printListElements method, use a foreach loop to display all the vehicles' data stored in the LinkedList

Below is a sample program showing the usage of Generics and Collections.



```java
package collections;

import java.util.*;

public class CollectionsOne {

    public static void main(String[] args) {
        // ArrayList
          List<String> al = new ArrayList<>();
          al.add("Chris");
          al.add("Paul");
          al.add("Beverly");
          System.out.println(" ArrayList Elements");
          System.out.print("\t" + al);

          // LinkedList
          List<String> ll = new LinkedList<>();
          ll.add("Chris");
          ll.add("Paul");
          ll.add("Beverly");
          System.out.println();
          System.out.println(" LinkedList Elements");
          System.out.print("\t" + ll);

          // HashSet
          Set<String> s1 = new HashSet<>();
          s1.add("Chris");
          s1.add("Paul");
          s1.add("Beverly");
          s1.add("Paul");
```



```java
          System.out.println();
          System.out.println(" Set Elements");
          System.out.print("\t" + s1);

          // HashMap
          Map<String, String> m1 = new HashMap<>();
          m1.put("Chris", "8");
          m1.put("Paul", "31");
          m1.put("Beverly", "12");
          m1.put("Daisy", "14");
          System.out.println();
          System.out.println(" Map Elements");
          System.out.print("\t" + m1);

    }

}
```