1. What’s character of these Collection, List, Set and Map? ArrayList and LinkedList? HashMap and TreeMap?

* Collections are groups multiple elements and is used to store, and manipulate multiple data.
* Collection is the base interface in the collection hierarchy.
* List is a collection of elements by an ordered sequence which can contain duplicate elements
* Set is a collection of items that does not have any order and these items are unique to each other.
* Map is also a collection of unordered items wherein it uses keys so that it can manipulate data easily instead of indexes.
* ArrayList is a list of items that can be added from the front, back, or elsewhere. Unlike from Arrays, Arraylist does not have a definite number of items. Linkedlist is also a list of items similar to ArrayList. The difference is that when adding items at the end, Arraylist is performs faster that LinkedList, but when adding items at the beginning, Linkedlist does better compared to Arraylist.
* TreeMap is a map wherein the order of the keys can be sorted. A good example of TreeMap is SortedMap. HashMap, on the other hand, makes no guarantee that the keys will be ordered

(2.2)



(2.3) When changing ArrayList to LinkedList, or vice versa, you just need to change the class ArrayList into LinkedList when declaring a list. When it comes to performance and manipulating data, LinkedList is better that ArrayList since LinkedList items are linked to each other whenever an item is deleted or added. However, when displaying and getting the value and has many search operations, ArrayList is faster.

(2.4) When changing ArrayList to Vector, or vice versa, you just need to change the class ArrayList into Vector when declaring a list. The difference is that Vector is synchronized while ArrayList is not synchronized

(3)



(4) 3. Compile and run well, and output 3