W2D1 Homework

1 **Answer:**

A collection is a container that can be used to store and manipulate data. It can have several implementations such as Lists and Sets. A List is a collection that stores in an *ordered sequence*. The purpose of lists and sets are almost the same but it has its difference in behavior. Set is a collection of items that stores in an *unordered sequence* and *does not* *allow duplicates*. A Map is an unordered collection that makes use of keys to associate relationship to its values.

An ArrayList is similar to the function of LinkedList, they both function as a list storage wherein values can be added, removed, and accessed. Their main difference is their performance when it comes to different functions. When accessing data, it is more advisable to use ArrayList, while for manipulating data, it is better to use LinkedList because when an element is removed, only the next/neighboring element is shifted.

A HashMap is much preferred over TreeMap because it is faster in performance; however, the hashmap follows no ordering sequence (unordered), while the tree map follows the natural order sequence.

2. **Answer:**

1. Write the output of the code.

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1. Where and how to modify if change Arraylist with LinkedList? What’s the difference between ArrayList and LinkedList?

ArrayList uses dynamic array, it is faster in terms of performance if removal of element is on the last part of array. While, if the element to be removed is in the middle or beginning, it is advisable to use LinkedList

1. Where and how to modify if change Arraylist with Vector? What’s the difference between ArrayList and Vector?

Vector is synchronized while the ArrayList is not.

3. **Answer:**

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4. **Answer:** 3