**What are the differences between Lists, Sets, and Maps in Java?**

List – Can have duplicates preserves insertion order allows positional access and insertion of elements.

Set – Elements inserted are not ordered. Duplicates are ignored.

Map – Elements consist of a key and value. Can have duplicates. Values can be found later by looking for the key linked to the value.

**List at least two different implementations for each collection (List, Set, and Map). When would you use one of the implementations over the other?**

**ArrayList** – Great overall useage form of list which is fast and offers constant- time positional access.

**LinkedList** – Great if you are constantly deleting elements from the interior of the list. For the most part it is better to use Array list.

**HashSet**- The default choice for Set. Often the best choice when a Set is needed. Unordered and often chaotic insertion.

**LinkedHashSet**- Provides insertion-ordered iteration. Not as fast as HashSet but close.

**HashMap** – HashMap is fast but does not have iteration order.

**LinkedHashMap** – Almost as fast as HashMap but has iteration ordering.

**Write a line of code that shows how you would instantiate an ArrayList of String.**

List<String> stringList = new ArrayList<>();

**Write a line of code that shows how you would instantiate a HashSet of StringBuilder.**

Set<Integer> integerSet = new HashSet<>();

**Write a line of code that shows how you would instantiate a HashMap of String, String.**

Map<Integer, String> employeeMap = new HashMap<>();

Sources: <https://docs.oracle.com/javase/tutorial/collections/implementations/list.html>

<https://www.geeksforgeeks.org/difference-between-list-set-and-map-in-java/>

**What is your favorite thing you learned this week?**

I liked learning about collections. They are so much more versatile and useful than arrays.