

## Week 4 Research

**1. What are the differences between Lists, Sets, and Maps in Java?** The differences between [Lists, Sets, and Maps](#) are as follows:

- a. *list*: **List<E> exList = new ArrayList<>();**
  - Keeps index order.
  - Allow null values.
  - ArrayList<E>() most popular
- b. *set*: **Set<E> exSet = new HashSet<>();**
  - Duplicates not allowed.
  - Order not enforced on return.
  - Uses exSet.contains().
- c. *map*: **Map<E, E> exMap = new HashMap<>();**
  - (Key, Value) pair.
  - Duplicate values allowed, Duplicate keys not allowed.
  - Uses exMap.get<E> method.

**2. Write a line of code that shows how you would instantiate a HashMap of String, String.** Something I had plenty of work trying to use this week was a HashMap. While trying to create a Key of assignments, and Values dictating completion of assignment or not, I ran into a learning curve accessing and assigning values. I scrapped the approach and opted for use of 2 lists instead which made the assignment much easier and solvable in 10 minutes.

**HashMap<String, String> exampleHashMap = new HashMap<String, String>;**

The previous line's code will instantiate a new instance of [HashMap](#) called *exampleHashMap* with parameters(**String, String**). You would then use the *exampleHashMap.put(**String, String**)* method to add entries. *exampleHashMap.get(**String**)* would get the Value held by that Key's String. Lastly *exampleHash.remove(**String**)* would remove the Key.