Intro to Java Week 4 Research Assignment

**Points possible:** 30

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| Category | Criteria | % of Grade |
| Accuracy | Is the information accurate? | 25 |
| Organization | Is the essay clean and organized? Ideas are presented in a logical order. | 25 |
| Citations | Students reference and cite at least 5 sources. | 25 |
| Completeness | All requirements of the assignment are complete. | 25 |

**Instructions:** In however many words necessary, write a thorough essay response to each of the below prompts. Be sure to include at least 5 references for this assignment. Do not copy and paste text from the internet or any other source; use the information you find in your research, summarize, in your own words, the concepts. Plagiarism will result in a zero for the assignment as well as disciplinary actions. Push this document to your GitHub repository for this week. Add the URL for this week’s repository to this document where instructed and submit this document to your instructor when complete.

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

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

For a list it allows duplicates, it also keeps elements ordered by index, as well as allows null values. (your useful videos). For a set it does not allow duplicates, and for this one it is unordered. The set does allow null values but only one (your useful videos). For a map it is a key value pair aka it’s like a dictionary. The values in this set can be duplicated but not the keys (your useful videos).

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

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

dogs.add(“Lulu”);

dogs.add(“Rumble”);

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

HashSet<Integer> ids = new HashSet<Integer>();

ids.add(435);

ids.add(328);

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

Map<String, String> dogMap = new HashMap <String, String>();

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

I enjoyed learning about maps, lists, and HashSets. I think its cool how you can combined the two if you want.

**References:**

1. [**http://www.java67.com/2013/01/difference-between-set-list-and-map-in-java.html**](http://www.java67.com/2013/01/difference-between-set-list-and-map-in-java.html)
2. [**https://stackoverflow.com/questions/1005073/initialization-of-an-arraylist-in-one-line**](https://stackoverflow.com/questions/1005073/initialization-of-an-arraylist-in-one-line)

**URL to GitHub Repository:**

[**https://github.com/samsquanch27/Week4Homework**](https://github.com/samsquanch27/Week4Homework)