# Quiz 4

Subject: Collections

**Due Date:** 07.05.2023 12:00

### 1 Introduction

In this quiz, you are expected to learn collections. We expect you to sort the verses of a poem whose verses are given randomly with different data structures. Read input file poem.txt and store it to various data structures using java Collection classes, then store back to a file following the directions below.

- Store verses of poem to an ArrayList, then write the verses to file poemArrayList.txt iterating the ArrayList
- Create class idComparator that implements Comparator to sort verses by id. Use class idComparator to sort ArrayList using Collections.sort. Then write the verses to file poemArrayListOrderByID.txt.
- Store verses to a HashSet, then write the verses to file poemHashSet.txt iterating the HashSet
- Store verses to a TreeSet, then write the verses to file poemTreeSet.txt iterating the TreeSet.
- Use class idComparator to store verses in the order of id with TreeSet. Then write the verses to file poemTreeSetOrderByID.txt.
- Store verses to a HashMap using a id as a key and a verse as a value. Then write the songs to poemHashMap.txt iterating the HashMap.
- You are expected to produce the output for each store type as specified above, separately.
- You must submit your work with the file hierarchy as stated below:
  - $\langle studentid \rangle .zip(example: 1234567.zip)$
  - [src]
    - Main.java
    - \*.java

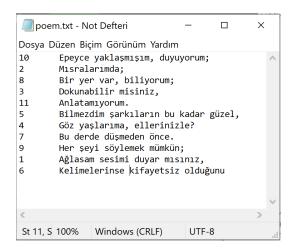
# 2 Input and Output Format

You will be given verses of a poem with different ids in the input file. Each line has an id and a verse. The format of the input and output file is the same and is as follows:

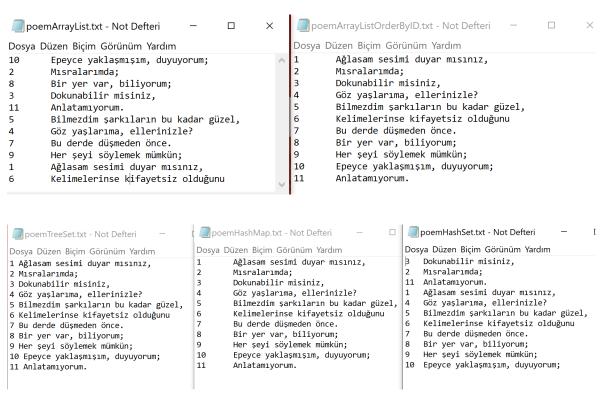
id<TAB>verse

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# **Example Input**



# **Example Output**



#### 3 Execution and Test

The input file is going to be given as program argument. In order to test your program, you should follow the following steps:

- Upload your java files to your server account (dev.cs.hacettepe.edu.tr)
- Compile your code (javac Main.java or javac \*.java)

- Run your program (java Main poem.txt)
- Control your output data and format.

#### 4 Notes

- You have to design your application in complete object oriented design approach. You are expected to define a java class for everything that is suitable for a class.
- The quiz must be original, individual work. Downloaded or modified source codes will
  be considered as cheating. Also the students who share their works will be punished in
  the same way.
- We will be using the Measure of Software Similarity (MOSS) to identify cases of possible plagiarism. Our department takes the act of plagiarism very seriously. Those caught plagiarizing (both originators and copiers) will be sanctioned.
- You can ask your questions through course's piazza group and you are supposed to be aware of everything discussed in the piazza group. General discussion of the problem is allowed, but DO NOT SHARE answers, algorithms, source codes and reports .
- Don't forget to write comments of your codes when necessary.
- The names of classes', attributes' and methods' should obey to Java naming convention.
- Do not submit your project without first compiling it on dev machine.
- Save all work until the assignment is graded.
- Do not miss the deadline. Submission will be end at 06/05/2023 12:00.

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