

CHALLENGE: WordCensusWithMap
COSC 3327 Algorithms and Data Structures
Due: See Canvas
Late Deadline: See Canvas

Instructions

Your mission is to implement the `WordCensus` interface below, use the `Map<String, Integer> wordToCountMap` as an instance variable, and get all the test cases to pass (see `WordCensus_STARTER_KIT.zip` (or similar) in Canvas > Files). In addition, ensure that you can pass all of the test cases that I did **not** give you.

WordCensus interface

```
public interface WordCensus
{
    //pre: nothing
    public int getCount(String word);
    //part of pre: i > 0
    //part of post: i < getDistinctWords().size() ==>
    getCount(getWordWithRank(i)) >= getCount(getWordWithRank(i + 1))
    //part of post: [((i < j) && (word_i == getWordWithRank(i)) &&
    //                (word_j == getWordWithRank(j)) &&
    //                (getCount(word_i) == getCount(word_j)))] ==>
    //                (getWordWithRank(i) < getWordWithRank(j))
    //Student: What is not being considered here?
    public String getWordWithRank(int i);
    public Set<String> getDistinctWords();
}
```

WordCensus implementation

```
public class WordCensusImpl_Skeleton implements WordCensus
{
    private Map<String, Integer> wordToCountMap;
    //other instance variable(s) of your choosing

    //pre: nothing
    public WordCensusImpl_Skeleton(List<String> wordList)
    {
        .
        .
        .
    }
    .
    .
    .
}
```

Internal Representation

Your internal representation must properly initialize and then use the instance variable `wordToCountMap`.

Deliverables

- A .zip file containing your `WordCensusImpl_LastName.java` file and any supporting files that I don't already have (e.g., I already have `WordCensus.java` and all of the test cases---don't submit these).