

Homework #3

In this homework, you will create a concordance. A concordance is a book that gives you a listing of another book's words and where they appear. You will implement such a thing as a class.

You will write the following classes:

A Token class. This will store information about a word and where it can be found within a file. It will have 3 data members:

- A String for the file name

- A String for the word

- An int that remembers which word in the file it is (i.e. how many words into the file it is).

- a toString() method that creates a String representation for the Token.

You will need a constructor, and whatever getters and setters you need for the upcoming parts. (Please do not write more getters/setters than you really need).

A Tokenizer class. This will be able to open up a file and parse the file into individual words. You will need to implement the following methods:

- A constructor that accepts the name of a file and opens it.

- A method called next() that returns the next Token.

- A method called hasNext() that returns whether or not the file has any more Tokens.

- whatever data members you need to accomplish this.

A Concordance class. This will have a Map<String, List<Token>> as the underlying structure (i.e. you will map a word to a list of Tokens representing where that word can be found). You will need the following methods:

- add(). This opens up a file and adds all Tokens to the map.

- a toString() method that creates a String representation of the Concordance.

- a method called count() that returns how many times a String occurs.