CPI 220 Homework 3 Instructor: Dianne Hansford
Word Play with Symbol Tables

Big Picture:

Write a Symbol Table (ST) client that examines the performance of the following symbol table (ST) implementations: sequential search, binary search, BST, and red black BST from the algs4 library. Several text files will be provided for testing. You will construct two STs, one with
(key, value) = (word, frequency) and one with (frequency, word), where frequency is the number of times the word appears in the file.
You will output timing and other statistics about the symbol tables. Instructions are provided in the java file in the assignment. A summary of results will be recorded in a spreadsheet along with observations.

Homework Objectives:

- Write your own search client
- Test search/ST implementations
- Practice communicating your work
- Gain experience using APIs
- Practice debugging/critical thinking, planning

Specifications

Start with WordPlay.java. See comments in this file for more guidance on completing this homework.

Compare the four ST implementations by running the given text files. Document the results in the Excel file provided, complete the additional columns in the Excel file, and summarize your findings in the Analysis area provided. You should make at least three observations, each of which should be written in a professional manner.

When reading a text file, you may read the strings and leave them as they are. In other words, you do not need to extract punctuation (commas, periods, etc.), but you are welcome to do this.

No command line input allowed. Output is directed to the console.

When you turn in your code, there should be no print statements other than the ones you have been asked to produce.

Submitting Your Assignment

Add your name to the top of your java and Excel files. Submit a zip folder to Canvas named Lastname.zip. This zip folder must include WordPlay.java and TextAnalysis.xlsx. Do *not* add the input files or algs.jar files in the zip folder.