Spell Checker: Design Doc

CS 3505 – Homework 2

TEAM NAME: Reality Version 2

MEMBERS: Adam Nieman

Sarah Spall

Theresa Krause

Victor Siu

DATE: 1-25-2012

The Design Plan

<u>OVERVIEW</u>
      The objective of the Spell Checker program is to: (1) create a dictionary utility that will take in a set of words to establish the dictionary, then allow words to be compared to the established dictionary for correct spelling, or options for possible spelling corrections. (2) create a word counting utility that will count the total words in a given text, and also a tally of the number of times each word is used. (3) provide some ability to process multiple texts with consideration for the published era of the text, so as to provide an analysis of changes from era to era within the language of the texts.

<u>GOALS AND EXPECTATIONS: The Team and the Engineering Process</u>
      Our team will begin the process of development by discussing briefly our experiences with our last project, and our concerns regarding team interaction and meeting availability, while establishing some sense of team identity and what elements of the development process are important to us.
      We will then, as a team, analyze the project requirements, pointing out areas we feel might be difficult and areas we determine are core to the operation of the project. We will attempt to be on the same page in our understanding of what we hope to accomplish with our design, and how the major areas of our design will be related to one another. This analysis will result in a list of expected classes and interfaces, and a rough schedule of what we need done, when we need it, and who will work on it.
      We intend to work as a whole team as often as possible, with pairs being assigned different segments of the project. Our priorities will be to create core, basic functionality, keeping each module of our design as self-contained as possible, so that it can be tested once it is complete.
      We will allow ourselves to add features if our schedule permits.

<u>GOALS AND EXPECTATIONS: Program Functionality</u>
      Our goals for the functionality of the Spell Checker are listed here as bullet points, and also prioritized, with Primary goals taking precedence over Secondary goals and so on.
      <u>Primary Goals:</u>
- Create a working hash table that will store strings.
- Create a working binary search tree that will store strings.
- Create a dictionary utility that will read a file of words and store them as the established dictionary.
- The dictionary utility can take in a word and compare it for spelling.
- Create a word count utility that will count all words in a file.
- The word count utility can tally the use of each word in a file.
- Create a file writing utility or function that will output a list of observable data from the dictionary.
- Create a file-writing utility or function that will output a list of observable data from the word count utility.

      <u>Secondary Goals:</u>
- The dictionary can take in a word and find similar words for spelling.
- The word count can provide a list of the top X used words.
- Create an analysis class that will use the dictionary and word count to provide analysis data.
  Create a file-writing utility or function that will output a list of observable data from the analysis class.

      <u>Tertiary Goals:</u>
Additional ideas for implementation.

<u>THE PROGRAM STRUCTURE</u>
      The following is a list of classes we expect to create, along with a listing of basic responsibilities for each class.

Class	Responsibilities
Class_1	Item_1

Team Scheduling

The following is a list of times the team intends to meet during the week. Each team member is listed, along with scheduled meet times during the week for that individual. We expect to meet as a full team for at least X hours over X days, with additional time based on our schedules and division of project responsibilities.

Member	~~Mon (23)~~	~~Tue (24)~~	Wed (25)	Thur (26)	Fri (27)	Sat (28)	Sun (29)
Adam	X	X	3:00 – 6:00	3:30 – 6:30	1:00 - Anytime	X	All Day
Sarah	X	X	12:00 – 6:00	x	All Day	x	All Day
Theresa	X	X	12:00 – 6:00	x	11:30-4:00	x	All Day
Victor	X	X	12:00 – 6:00	3:30 - Anytime	9:30 - Anytime	X	X
	Mon (30)	**Tue (31)**	**Wed (1)**	**Thur (2)**	**Fri (3)**	~~Sat (4)~~	**Sun (5)**
Adam	3:00 - Anytime	3:30 – 6:00	12:00 – 3:00 2	3:30 - Anytime	1:00 - Anytime	X	X
Sarah	All Day	X	12:00 – 6:00	X	11:30 – 4:00	X	X
Theresa	11:30 – 6:00 7:00 - Anytime	3:30- Anytime	12:00 - Anytime	3:30 - Anytime	11:30 - Anytime	X	X
Victor	All Day	3:30-Anytime	All day	3:30 - Anytime	All day	X	X

Development Schedule

The following is a list of segments of our Spell Checker, who is responsible for each segment, and when we expect that segment to be completed.

<u>Classes</u>

Output Class
Dictionary Class : #includes: BST, Hash Table
BST Class
Hash Table Class
File Reader Class
Histogram Class
(Possibly) Word Class

Everything will be hopefully modular.

Segment	Members Working On It	Expected Completion
Bst	Sarah Theresa	**Day.** Monday

Hash Table	Adam Victor	**Day.** Monday
File Writer(Output)	Theresa Sarah	**Day.** Tuesday
File Reader	Adam Victor	**Day.** Tuesday
Dictionary (Needs Item_1)	Sarah Theresa Adam Victor	**Day.** Tuesday
Histogram(Word Count)	Sarah Theresa Adam Victor	**Day.** Wednesday
Debugging & Testing	Sarah Theresa Adam Victor	**Day.** Thursday
Documentation	Sarah Theresa Adam Victor	**Day.** Friday