Course: CSC340-03 Tic

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Assignment 3 Report

Assignment Due Date: 03/09/2022 at 11:59pm

Assignment 03: Program Analysis and Program Design:

In assignment 2, I encountered several issues. My biggest issue was unfamiliarity with Java and how its data structures operate. While I picked up on Java and some of its data structures from the review, I needed more practice and foundation to improve. My greatest takeaway from Java review was Enum. I've heard about Enum before but never had the chance to use it in an assignment. Exposure to Enum was a good learning experience since it is such a powerful data structure and was very efficient for our dictionary assignment. Aside from unfamiliarity with Java, I also faced problems with printing, reverse, and distinct functions. I could not get my program to print the entire data for parts of speech or any other keyword. The distinct and reverse functionality also did not work. My program did not perform what I was hoping for it to do. From experience, I think my biggest mistake was using Enum for three strings such as keyword, part of speech, and definition. That was a bad approach which eventually led to a lot of hiccups in the program much closer to deadline.

Moving on to assignment 3, I have better foundation in CPP since my lower division courses were taught in CPP. Even though many would argue Java is easier to learn and more programmer friendly but that's where CPP wins. Its primitiveness allows programmer to not take things for granted and learn about every single element.

Though I had more confidence with my abilities in CPP I did not underestimate our assignment. I realized this a bit late into assignment 2 that sample output made the program look easy, but the most challenging part came when I started coding without a plan about what approach I was going to take and how I will use my data structures. The lesson learned here was to plan your solutions ahead and decide what data structures to use so the program will mimic the same behavior as that of sample output provided.

For implementation of dictionary in CPP, I used a wide variety of data structures. I started by creating a class named word, used string vector to store data, and wrote its member functions. Later I moved this to header file for modularity and professional purposes. I used vector string over array. Even though arrays are better for memory allocation but due to the nature of our program vector is a better choice because it allows us to add or delete data and store multiple types of data. In addition, with vectors I was able to use vector methods such as begin(), size(), end(), and push back in functions. I also used map to match the corresponding value of keyword and definition. In the main program, I'm using the text file but opening it using fstream library and getline.

The biggest improvement for me in implementing dictionary in CPP was my organization. My approach was clearer, organized, and I used data structures that worked for the program. With Java, my biggest concerns were Enum and ability to extract data from using hash map was a challenge for me. However, this time I'm

happy to report that my program works properly, the distinct, reverse, lower, and uppercase features work as shown in the screenshots provided below.