Reflection Report

Describe my Ada program:

When first saw this assignment, I knew there were 4 functions that I need to write. The first one was asking user for input string. This function is easy, I used unbounded string because I did not know how many character the user will input. That was the reason that why I could not declare a string variable. The second function is to generate anagrams. Lucky, I have done this before when I was in CIS 2500. However, I used C that time but now I need to use Ada. I simply searched the algorithm for generate anagrams in C and converted it to an Ada function. The third function was read the dictionary file. Since we only need to read dictionary one time after program runs, so I decided to use a data structure to hold all strings. I decided to use array (it is actually an array of string) because it is easy to use than list or tree. The last function is just compare the strings. In Ada it is easy, since we can just use '=' to compare string, unlike C we need to use strcmp(). However, the hardest part for this assignment was to figure out the relationship between string and unbounded string.

What structures did you select?

I used array structures. More specially, I created an array string to store the dictionary and generated anagrams. In the beginning, I thought I could used list just like in C to store the information. But I changed my mind since create a list requires lots of operations, such as addFron(). addBack() and etc. However, when I read the course material, I realized that there is a 2d string in C. Then I decided to use a 2d array to store the strings, which is much easier than using list.

Was Ada well suited to solving the problem?

Since Ada is mainly used by United States Military, I think it supposed to be well suited to solving the problem. However, since I have strong background of C and I have used Java and Python. So I personally will not use Ada for program-solving. Since the higher level languages have more build-in functions.

What particular structures made Ada a good choice?

Coding in Ada is good because I found his logical is more like C, the old day languages. Unlike Java or other OOP languages, Ada is easily to understand how it works. More specially, when I was doing the assignment, I could literally start to coding function by function. However, for OOP languages, since it designed for the object oriented programming, you need to have an overall idea before you start to coding.

Benefits / limitations?

The benefits of Ada is it is easy to understand and easy to hands on. I think what we did in the assignment is just a tiny part of Ada. Personally, I think a good programming language should be easy to hands on but hard to master. For example, in C, it is really easy to understand the structure of the program because it is concept of structures. However, when you go deep into C, you will find it is hard to dealing with seg fault and play with memory. So I think C is a programming language that easy to hands on but hard to master.

I also think there are couple limitations of Ada. First of all, it is an OOP language. Nowadays, OOP languages are more popular than others. Secondly, due to the background of Ada (United States Military) it also makes Ada as not popular as Java or other languages.