Course: **CSC 340.02** 

Student: Abbas Mahdavi SFSU ID: 918345420 Teammate: Berke Melisa Sever SFSU ID: 921662115

Assignment Number: 03

Assignment Due Date & Time: Jul 5, 2022 at 11:59pm

## PART A: Tik Tac Toe

```
0
       X
Enter a row (0, 1, 2) for player 0 : 2
Enter a column (0, 1, 2) for player 0 : 2
 X O
       X
           0
Enter a row (0, 1, 2) for player X : 1
Enter a column (0, 1, 2) for player X : 0
      0 |
 X
      X
           0
Enter a row (0, 1, 2) for player 0 : 2
Enter a column (0, 1, 2) for player 0 : 0
 X
      0
  X
 0
         0
Enter a row (0, 1, 2) for player X : 1
Enter a column (0, 1, 2) for player X : 2
 x | 0 |
```

Part B: Credit Card Number Validation

Microsoft Visual Studio Debug Console

```
371449635398431 is valid
2 444444444444448 is valid
3 4444424444444440 is valid
4 4110144110144115 is valid
5 4114360123456785 is valid
6 4061724061724061 is valid
   5500005555555559 is valid
8 5115915115915118 is valid
   555555555555557 is valid
10
  6011016011016011 is valid
11
    372449635398431 is not valid
l2 4444544444444448 is not valid
l3 4444434444444440 is not valid
l4 4110145110144115 is not valid
l5 4124360123456785 is not valid
l6 4062724061724061 is not valid
17
   5501005555555559 is not valid
l8 5125915115915118 is not valid
   555655555555557 is not valid
19
  6011116011016011 is not valid
20
21
    372449635397431 is not valid
22 4444544444444448 is not valid
23 4444434444544440 is not valid
24 4110145110184115 is not valid
25
  4124360123457785 is not valid
   4062724061724061 is not valid
26
27
   5541005555555559 is not valid
28 5125115115915118 is not valid
29 5556551555555557 is not valid
30 6011316011016011 is not valid
```

## Part C: Dictionary 340 C++

In C++, I implemented a simple dictionary program based on the given text file Data.CS.SFSU.txt. This dictionary is slightly different from the Java program as it was primarily hard coded. The difference between this dictionary and the Java dictionary is that this program can read and store different kinds of text files without ever needing to implement more code in the program physically. This is super important in making the program flexible as the dictionary program can receive different kinds of text files. In C++, Enum stores data in the same way a structure is made in C++, where you have to create a structure outside of the main and declare it before the main. I used a map data structure in this program that stores the data in associated containers. The reason why I used this is because of the way that a key-value can return multiple addresses of values. This is critical because a word can have multiple words in English literature. Definitions depend on what type of speech; that is why a map (dictionary) is implemented, as it can store multiple definitions of a word.

The dictionary works by first loading the data from the text file into the program. The first part of the program starts by reading the text file, and while iterating through the file, it implements the text file into the map data structure; after loading, the program prompts the user to enter a keyword and type of speech. If nothing is entered, the program prompts the user to try to enter again. The user can enter one or two things, either the name of the word or the part of the speech. If the user enters one word, the program will print the definitions that are associated with the keyword entered. If the user enters two words, the program will print definitions associated with the keyword and part of speech.

The program is complete and working.

All of our optional inputs such as parts of verb, functions such as reverse, distinct, and any capitalization works perfectly fine. And outputs the expected results. Enter anything unexpected such as "ok" will also print out proper errors and outputs.

The only issue we have in this program, is that when we input all the optional functions, they do not work together fully. For example, placeholder noun distinct reverse, will print all the functions separately rather than combing them.

It will first print all nouns of keyword placeholder, the all distinct definitions, then reverse of all definitions. Rather than getting distinct nouns, and reversing them.

We have an idea of how to fix this, but did not get the chance to. Other wise is program is complete to best of our knowledge. So, one way we can improve is this printing issue.

Below are outputs of our program.

NOTE: For this program to run, the use must first input the path of the data txt file. In our code the path is: ../Data.CS.SFSU.txt .

Notice that there is two dots before /Data.CS.SFSU.txt , and not 1. Please enter two dots, then

/Data.CS.SFSU.txt so that the file can be loaded and program to work properly.

```
C:\Users\abbas\OneDrive\Desktop\1Test\cmake-build-debug\1Test.exe
! Opening data file... :C:\Users\MickeyNouse\AbsolutePath\DB\Data.CS.SFSU.txt
<!>ERROR<!> ===> File could not be opened.
<!>ERROR<!> ===> Provided file path: C:\Users\MickeyMouse\AbsolutePath\DB\Data.CS.SFSU.txt
Enter CORRECT data file path (hit: '../Data.CS.SFSU.txt') :../Data.CS.SFSU.txt
! Loading data...
! Loading completed...
! Closing data file... ../Data.CS.SFSU.txt
==== DICTIONARY 340 C++ =====
---- Keywords: 19
---- Definitions: 61
Search [1] : !help
      PARAMETER HOW-TO, please enter:
      1. A search key -then 2. An optional part of speech -then
       3. An optional 'distinct' -then 4. An optional 'reverse'
Search [2]:
      PARAMETER HOW-TO, please enter:
       1. A search key -then 2. An optional part of speech -then
       3. An optional 'distinct' -then 4. An optional 'reverse'
Search [3] : aRRow
       Arrow [noun]: Here is one arrow: <IMG> </IMG>...
Search [4] : adverb
       Adverb [noun]: Ad[verb]: is a word that adds more information about place, time, manner, cause or degree to a
or a thing, a quality or an activity (such as plant, sorrow or tennis).
or a thing, a quality or an activity (such as plant, sorrow or tennis).
Search [6] : cSc220
      Csc220 [adjective] : Ready to create complex data structures.
       Csc220 [noun] : data Structures.
       Csc220 [verb] : To create data structures.
```

```
Search [7] : CSc340 noun distin
      Csc340 [noun] : a CS upper division course.
      Csc340 [noun] : many hours outside of class.
      Csc340 [noun]: Programming Methodology.
      Csc340 [adjective] : = C++ version of CSC210 + CSC220 + more.
      Csc340 [noun]: Programming Methodology.
      Csc340 [noun] : a CS upper division course.
      Csc340 [noun]: many hours outside of class.
      Csc340 [noun] : many hours outside of class.
      Csc340 [noun] : a CS upper division course.
      Csc340 [noun]: Programming Methodology.
      Csc340 [adjective] : = C++ version of CSC210 + CSC220 + more.
Search [8] :book NOUN distinct reverse
      Book [noun]: A set of pages.
      Book [noun]: A written work published in printed or electronic form.
      Book [noun]: A set of pages.
      Book [noun]: A written work published in printed or electronic form.
      Book [verb]: To arrange something on a particular date.
      Book [verb] : to arrange for someone to have a seat on a plane.
      Book [verb]: to arrange for someone to have a seat on a plane.
      Book [verb]: To arrange something on a particular date.
      Book [noun]: A written work published in printed or electronic form.
      Book [noun]: A set of pages.
Search [9] :placeHOLDER
      Placeholder [adjective] : To be updated...
      Placeholder [adjective] : To be updated...
      Placeholder [adverb] : To be updated...
      Placeholder [conjunction] : To be updated...
      Placeholder [interjection] : To be updated...
      Placeholder [noun] : To be updated...
      Placeholder [noun] : To be updated...
      Placeholder [noun] : To be updated...
      Placeholder [preposition] : To be updated...
      Placeholder [pronoun] : To be updated...
      Placeholder [verb] : To be updated...
```

```
Search [10] :placeholder distinct
      Placeholder [adjective] : To be updated...
      Placeholder [adverb] : To be updated...
      Placeholder [conjunction] : To be updated...
      Placeholder [interjection] : To be updated...
      Placeholder [noun] : To be updated...
      Placeholder [preposition] : To be updated...
      Placeholder [pronoun] : To be updated...
      Placeholder [verb] : To be updated...
      Placeholder [adjective] : To be updated...
      Placeholder [adjective] : To be updated...
      Placeholder [verb] : To be updated...
      Placeholder [pronoun] : To be updated...
      Placeholder [preposition] : To be updated...
      Placeholder [noun] : To be updated...
      Placeholder [noun] : To be updated...
      Placeholder [noun] : To be updated...
      Placeholder [interjection] : To be updated...
      Placeholder [conjunction] : To be updated...
      Placeholder [adverb] : To be updated...
      Placeholder [adjective] : To be updated...
      Placeholder [adjective] : To be updated...
      Distinct [adjective] : Familiar. Worked in Java.
      Distinct [adjective]: unique. No duplicates. Clearly different or of a different kind.
      Distinct [adverb]: Uniquely. Written "distinctly".
      Distinct [noun] : A keyword in this assignment.
      Distinct [noun] : An advanced search option.
      Distinct [noun]: Distinct is a parameter in this assignment.
```

```
Reverse [verb] : turn something inside out.
      Reverse [verb] : revoke ruling.
      Reverse [verb]: go back.
      Reverse [verb]: To be updated...
      Reverse [verb] : To be updated...
      Reverse [verb] : Change something to opposite.
      Reverse [noun]: To be updated...
      Reverse [noun]: To be updated...
      Reverse [noun]: To be updated...
      Reverse [noun] : To be updated...
      Reverse [noun]: The opposite.
      Reverse [noun]: Change to opposite direction.
      Reverse [noun] : A dictionary program's parameter.
      Reverse [adjective]: Opposite to usual or previous arrangement.
      Reverse [adjective] : On back side.
      <The entered 2nd parameter 'ok' is NOT a part of speech.>
      <The entered 2nd parameter 'ok' is NOT 'distinct'.>
      <The entered 2nd parameter 'ok' is NOT 'reverse'.>
      <The entered 2nd parameter 'ok' was disregarded.>
      <The 2nd parameter should be a part of speech or 'distinct' or 'reverse'.>
      Reverse [adjective] : On back side.
      Reverse [adjective] : Opposite to usual or previous arrangement.
      Reverse [noun] : A dictionary program's parameter.
      Reverse [noun]: Change to opposite direction.
      Reverse [noun]: The opposite.
      Reverse [noun]: To be updated...
      Reverse [noun] : To be updated...
      Reverse [noun]: To be updated...
      Reverse [noun]: To be updated...
      Reverse [verb]: Change something to opposite.
      Reverse [verb] : To be updated...
      Reverse [verb]: To be updated...
      Reverse [verb]: go back.
      Reverse [verb] : revoke ruling.
      Reverse [verb]: turn something inside out.
Search [17] : reverse noun ok
      <The entered 3rd parameter 'ok' is NOT 'distinct'.>
      <The entered 3rd parameter 'ok' is NOT 'reverse'.>
      <The entered 3rd parameter 'ok' was disregarded.>
      <The 3rd parameter should be 'distinct' or 'reverse'.>
      Reverse [noun] : The opposite.
      Reverse [noun]: Change to opposite direction.
      Reverse [noun] : A dictionary program's parameter.
      Reverse [noun]: To be updated...
      Reverse [noun] : To be updated...
      Reverse [noun]: To be updated...
      Reverse [noun] : To be updated...
```

```
Search [21] : reverse ok ok
      <The entered 4th parameter 'ok' is NOT 'reverse'.>
      <The entered 4th parameter 'ok' was disregarded.>
      <The 4th parameter should be 'reverse'.>
      <The entered 3rd parameter 'ok' is NOT 'distinct'.>
      <The entered 3rd parameter 'ok' is NOT 'reverse'.>
      <The entered 3rd parameter 'ok' was disregarded.>
      <The 3rd parameter should be 'distinct' or 'reverse'.>
      <The entered 2nd parameter 'ok' is NOT a part of speech.>
      <The entered 2nd parameter 'ok' is NOT 'distinct'.>
      <The entered 2nd parameter 'ok' is NOT 'reverse'.>
      <The entered 2nd parameter 'ok' was disregarded.>
      <The 2nd parameter should be a part of speech or 'distinct' or 'reverse'.>
      Reverse [adjective]: On back side.
      Reverse [adjective] : Opposite to usual or previous arrangement.
      Reverse [noun] : A dictionary program's parameter.
      Reverse [noun]: Change to opposite direction.
      Reverse [noun]: The opposite.
      Reverse [noun]: To be updated...
      Reverse [noun]: To be updated...
      Reverse [noun]: To be updated...
      Reverse [verb]: Change something to opposite.
      Reverse [verb] : To be updated...
      Reverse [verb]: To be updated...
      Reverse [verb]: revoke ruling.
      Reverse [verb]: turn something inside out.
      <The entered 4th parameter 'ok' is NOT 'reverse'.>
      <The entered 4th parameter 'ok' was disregarded.>
      <The 4th parameter should be 'reverse'.>
      <The entered 3rd parameter 'ok' is NOT 'distinct'.>
      <The entered 3rd parameter 'ok' is NOT 'reverse'.>
      <The entered 3rd parameter 'ok' was disregarded.>
      <The 3rd parameter should be 'distinct' or 'reverse'.>
      Reverse [verb]: turn something inside out.
      Reverse [verb]: revoke ruling.
      Reverse [verb] : go back.
      Reverse [verb]: To be updated...
      Reverse [verb] : To be updated...
      Reverse [verb] : Change something to opposite.
      Reverse [noun]: To be updated...
      Reverse [noun] : To be updated...
```