

ASSIGNMENT 6 – USER DEFINED CLASS

We often heard about Former President Donald Trump having certain mannerism of his speech that appeals to his fans.

<https://www.cnn.com/2017/04/21/politics/donald-trump-president-speeches-favorite-phrases-trnd/index.html>

This assignment is to develop a program that analyzes a speech in text for its word count, and phrase (one to five adjacent words) frequencies.

The assignment is to use your knowledge of Chap 1-14 to implement a user defined string class, MyString with all the necessary overloaded operators (not limited to the following examples). So, its application can be used to count frequency of the phrases (multiple adjacent words) in a text file. Your submission will follow the following example (partial code is provided here) in the header file:

```
// Author: John Doe
// Assignment 6

#ifndef HEADER_H
#define HEADER_H

#include <iostream>
#include <fstream>
#include <iomanip>

using namespace std;

const int STRING_SIZE = 100;
class MyString
{
private:
    char strval[STRING_SIZE]; // c_string
    int strln;                // length of string value
    int frequency;            // frequency of the strval

public:
    //constructors
    MyString() : strln(0), frequency(1) // default constructor
    {
        strcpy_s(strval, "");
    }
}
```

```

MyString(char s[]);           // initialize string value to s

MyString(const MyString& s)// copy constructor

// modifier
void ToUpper(); // change all letters into upper case

// operators overload
bool operator ==(MyString s) const;
bool operator >(MyString s) const;
bool operator <(MyString s) const;
MyString operator +(MyString s) const;
MyString operator =(MyString s);
MyString operator ++(int);

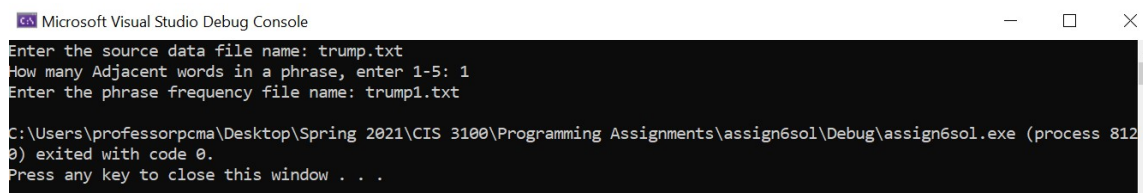
// file input/output functions
friend ifstream& operator >>(ifstream &i, MyString &str);
friend ofstream& operator <<(ofstream &o, MyString str);
};
#endif

```

Your program shall be able to let user enter file names and the number of adjacent words to be combined into a phrase. In the output file, the phrases shall be sorted according to the descending order of the frequency. Within the same frequency, the phrases shall be sorted according to the alphabetical order.

In this program, you need to use an array of MyString objects, linear search, and selection sort. Be sure that you remove all the punctuations from the text for analysis.

The following are five example runs using the same input file, *trump.txt* (*Trump's inauguration speech*), and there are five respective outputs for phrases containing a single word, two adjacent words, three adjacent words, four adjacent words, and five adjacent words. They are *trump1.txt*, *trump2.txt*, *trump3.txt*, *trump4.txt* and *trump5.txt*.



```

Microsoft Visual Studio Debug Console
Enter the source data file name: trump.txt
How many Adjacent words in a phrase, enter 1-5: 1
Enter the phrase frequency file name: trump1.txt

C:\Users\professorpcma\Desktop\Spring 2021\CIS 3100\Programming Assignments\assign6sol\Debug\assign6sol.exe (process 8120) exited with code 0.
Press any key to close this window . . .

```

```
Microsoft Visual Studio Debug Console
Enter the source data file name: trump.txt
How many Adjacent words in a phrase, enter 1-5: 2
Enter the phrase frequency file name: trump2.txt

C:\Users\professorpcma\Desktop\Spring 2021\CIS 3100\Programming Assignments\assign6sol\Debug\assign6sol.exe (process 17752) exited with code 0.
Press any key to close this window . . .
```

```
Microsoft Visual Studio Debug Console
Enter the source data file name: trump.txt
How many Adjacent words in a phrase, enter 1-5: 3
Enter the phrase frequency file name: trump3.txt

C:\Users\professorpcma\Desktop\Spring 2021\CIS 3100\Programming Assignments\assign6sol\Debug\assign6sol.exe (process 17648) exited with code 0.
Press any key to close this window . . .
```

```
Microsoft Visual Studio Debug Console
Enter the source data file name: trump.txt
How many Adjacent words in a phrase, enter 1-5: 4
Enter the phrase frequency file name: trump4.txt

C:\Users\professorpcma\Desktop\Spring 2021\CIS 3100\Programming Assignments\assign6sol\Debug\assign6sol.exe (process 18236) exited with code 0.
Press any key to close this window . . .
```

```
Microsoft Visual Studio Debug Console
Enter the source data file name: trump.txt
How many Adjacent words in a phrase, enter 1-5: 5
Enter the phrase frequency file name: trump5.txt

C:\Users\professorpcma\Desktop\Spring 2021\CIS 3100\Programming Assignments\assign6sol\Debug\assign6sol.exe (process 292) exited with code 0.
Press any key to close this window . . .
```