Frank Ngo & Yifei Feng

Project Assignment 2

**CS323 Documentation**

1. **Problem Statement**

*Rewrite the grammar Rat18F to remove any left recursion*

*Use the lexer() generated in the assignment 1 to get the token*

*The parser should print to an output file the tokens, lexemes, and the production rules used*

*Error handling: if a syntax error occurs, the parser should generate a meaningful error message*

1. **How to use your program**

*Run the executable file Rat18F\_Frank Ngo & Yifei Feng.exe*

*Windows Defender SmartScreen may prevent the executable file from running. Click “More info” and “Run anyway”*

*If the computer doesn’t have Visual Studio installed, the system may throw an error saying MSVCP140.dll is missing. Either install the dll file or Microsoft Visual C++ Redistributable to fix the issue*

*Enter the input file name (e.g.: input.txt) and output file name (e.g.: output.txt)*

*The program will read from input.txt and write to output.txt*

1. **Design of your program**

*All of the functions for assignment 2 are put into SA.h*

*void passVector1(vector<string>, vector<int>) and void passVector2(vector<string>) are used to pass the vectors from main.cpp into SA.h and vice versa*

*string getToken() gets the token elements from token vector*

*29 bool functions correspond to 29 syntax rules*

*When a comparison condition is met, the corresponding syntax rule is pushed into an output vector for display, then the bool function returns true*

*If and error is detected, the parser generates a message, then the program terminates*

1. **Any Limitation**

*None*

1. **Any shortcomings**

*None*