Frank Ngo & Yifei Feng

Project Assignment 3

**CS323 Documentation**

1. **Problem Statement**

*Create symbol table handling*

*Generate an assembly code for the simplified version of Rat18F*

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**

*Two structs holding the symbol table and the instruction table, utilized by 2 vectors of corresponding data types*

*One stack for operation, one for jumping*

*Two counters for symbol address and instruction address*

*void add\_var(string) add tokens of int type to the symbol table*

*void add\_bool(string) add tokens of bool type into the symbol table*

*int get\_address(string) gets the address of the symbol*

*int address() gets the address of the instruction*

*void push\_jumpstack(int) adds the jump address*

*void get\_instr(string, int) generates the instruction*

*void back\_patch(int) goes back to the address of jump*

1. **Any Limitation**

*None*

1. **Any shortcomings**

*None*