

**COVER PAGE**  
**CS323 Programming Assignments**

**Fill out all entries 1 - 7. If not, there will be deductions!**

1. Names [ 1. Andrew Lee                      ] Section [ 21737 ]
  
2. Assignment Number [    3    ]
  
3. Due Date                      [ 12/13/2024 ]
  
4. Submission Date        [ 12/06/2024 ]
  
5. Executable File name [ main.exe ]  
**(A file that can be executed without compilation by the instructor, such as .exe, .jar, etc - NOT a source file such as .cpp )**
  
6. Names of the testcase files -        input test file                      output test file  
test 1. [       test.txt                      ]        [       assemblyCode.txt                      ]
  
7. Operating System        [   Window    ]  
**(Window – preferred)**

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**To be filled out by the Instructor:**

Comments and Grade:

**Problem:** Generate assembly code from Rat24F simplified language and show symbols table.

### **Execution**

The script is executed with `main.exe`, but may have dependencies on the `std c++6` library.

This will analyze a *test.txt* file by default, producing output file *assemblyCode.txt*. The output file contains the assembly directions as well as the symbol table at the bottom.

### **Design**

*LR Parser* is the parser chosen in order to sort through each significant lexeme.

The code generator will throw an error into the console/terminal when a symbol is used without declaring or if a symbol is declared a second time.

The memory addresses start from 9000 and increment by one.

### **Limitations**

The symbol table and assembly instructions table can only hold up to 1000 objects as the instructions requested. If the code requires more than this, the program will throw an error.

### **Shortcomings**

None