Assignment 4

Due Nov 30, 2015 by 11:59pm **Points** 100 **Submitting** a file upload
Available after Nov 16, 2015 at 9pm

Implement an integrated compiler and virtual machine driver for PL/0.

Assignment

Your program reuses code from all three previous assignments to create a unified compiler and virtual machine for executing PL/0 programs. Your program must:

- Read a PL/0 source code file from **input.txt**
- Execute the scanning step. On error, print the error with line number, and exit. Otherwise, produce:
  - The source code file without comments in **cleaninput.txt**
  - The lexeme table in **lexemetable.txt**
  - The token list in **tokenlist.txt**
- Execute the parsing step. On error, print the error and exit. Otherwise, produce:
  - The symbol table in **symboltable.txt**
  - Machine code suitable for execution in the virtual machine in **mcode.txt**
- Execute the virtual machine. Produce (in split files, whereas previously they were one file):
  - The disassembled code in **acode.txt**
  - The execution stack trace in **stacktrace.txt**

Your program must accept any or all of the following command line switches. Each switch prints its corresponding type of output to the screen, *as well as* writing it to its corresponding file. You must accept the switches in any order, but the order of the switches does not change the order of output.

- -t The token list
- -s The symbol table
- -m The machine code
- -a The disassembled code
- -v The virtual machine execution stack trace

Submissions

Submit to Webcourses (inside a single zip file):

1. Your complete source code.
2. Instructions to compile *and use* your program in a readme document. **Indicate the names of all team members in this file.**
3. The record of one successful run, including the input source file and all output files.
4. The record of two unsuccessful runs, including:

1. A source program causing a scanning error
2. A source program causing a parsing error
3. A screenshot of your compiler's output of each error

Compile these into a Microsoft Word or PDF document and include it in the zip file.