Beau Badilla

Professor Le

CPSC 323 TR 4:00-5:15

18 February 2019

CPSC 323 Assignment 1 Documentation

1. Problem statement

   Write a lexical analyzer. Must implement a FSM. The program should read in a file, generate tokens, and output the results to an output file. Must past 3 test cases provided by the instructor.

2. How to use your program

   Linux

   Clone https://github.com/beaubadilla/lexical_analyzer.git
   Navigate your working directory to ./cpsc323_lexical_analyzer
   Contents inside working directory should be main.cpp, FSM.h, FSM.cpp
   Open command terminal
   Enter the command “sudo g++ main.cpp”
   Enter the command “./a.out”

3. Design of your program
   1) Read the file (source code) one line at a time, until the end of the file
   2) Given the current line of the file, read one character at a time
   3) Determine if the current character is a letter, digit, or special character
      a. If it is a special character, push a token corresponding to the character to a token vector (e.g. ‘(‘ pushes a separator token)
      b. If it is a letter, determine if it is a keyword, identifier, or neither using a FSM and push the corresponding token to a token vector
      c. If it is a digit, determine if it is a real number or not using a FSM and push the corresponding token to a token vector
   4) Print the tokens in the token vector
   5) Retrieve the next line of the file and repeat Steps 2-4
4. Any limitation

   No limitations have been noticed.

5. Any shortcomings

   Current iteration has not been implemented to handle comments. Every other requirement has been met based off the sample input and output.