Compiler Design Lab (CS 511)

Autumn 2021

Assignment 3

Write a program using flex to tokenize a c code segment.  
Then write a c program that will take output of flex program as input and find out the following lexical and syntactical errors.

Error 1: (; expected) if semicolon is missing at the end of a line where it is expected to be there

Error 2: (} expected) if a curly bracket is not closed for a corresponding starting curly bracket

Error 3: () expected) if a first bracket is not closed for a corresponding starting first bracket

Error 4: (invalid id 'X') if the format of id is not matched

Error 5: (Operator 'X' not recognized) If an operator is +, -, \*, /, ^, &&, ||, etc.

Error 6: (Operation format is incorrect) Parse the operation and check the format

Example:  
**Input file to flex program**  
int abc  
float b;  
char 4c;  
for(i=1;i<=4; i++)  
{  
i++;  
b=5++-6;

**Output of flex program and input of the C program**

* <keyw\_datatype><id-abc>
* <keyw\_datatype ><id-b><delim;>
* <keyw\_datatype ><id-4c><delim;>
* <keyw\_for><delim(><id-i><op\_assign><id\_constant><delim;><id-i><op\_comp><id\_constant><delim;><id-i><op\_incdec><delim)>
* <delim{>
* <id-i><op\_incdec><delim;>
* <id-b><op\_assign><id-5++-6><delim;>

**Output of C program**  
Line 1: ; expected  
Line 3: invalid id '4c'  
Line 7: Operator '++-' not recognized  
Line 8: '}' Expected

-------------------------------------------------------------------------

Assignment-3 submission instruction.  
Input c file name: sample.c  
  
  
output file (containing output of lex program) name:  output.txt -> it will be input of parser c program.  
  
  
flex file name <reg no>.3.l  
parser file name <reg no>.3.parser.c  
  
  
submit only lex file and parser c file. Do not zip it.