Date: 18/01/2024

Indian Institute of Technology Patna
CS352: PPL and Compiler Lab

Assignment Questions **Time: 3 - 6PM**

Question 1: Implement a Lex program that identifies the following crucial components of C programming language:

Keywords: if, else, while, for, int, float, return, void, char, etc.
Identifiers: Any valid variable names.
Constants: Integers and floating-point numbers.
Operators: +, -, *, /, =, ==, !=, <, >, etc.
Comments: Both single- and multi-line comments.
Braces and Parentheses: {, }, (,).

Your program should output the original C-program (which has been taken as input) highlighting the above-mentioned lexemes, if found, in the code according to the following guidelines:

Keywords: Displayed in bold.
Identifiers: Displayed in italics.
Constants: Displayed in regular font.
Operators: Displayed in a red.
Comments: Displayed in blue color and underlined.
Braces and Parentheses: Highlighted with a yellow background color.

Question 2: Implement a Lex program to count the number of (1) positive and negative integers, (b) positive and negative fractions.

(**Note:** Take the input from: (1) Terminal, (2) Text file)

Question 3: Implement a Lex program to remove comments from a C-like source code, considering both single-line (//) and multi-line (/* ... */) comments.

For practice: Please extend your solution in Question 3 by considering the following requirement: Take multiple C-codes from multiple files as input, and write them together in a single file (different from the input files) after removing the comments from the input C-codes. In this case, you have to customize the function yywrap().