Lexical Analysis

Due : 25th January, 2023

Design a lexical analyzer using Flex to accept the tokens mentioned below. The designed lexical analyzer is expected to print the token names on the console. The analyzer should remove white spaces from the input code, ignore the text within comments (anything enclosed within /* */) and recognize the token. The description of the lexeme patterns are the following

- Identifier : A string starting with an underscore or a letter and followed by any number of underscores, letters and digits.

- Keywords : short, float, double, bool, char, signed, unsigned, for, while, do, return, void, switch, break, case, continue, goto, long, static, union, default, class, public, private, protected

- Integer constants: 12, 0, 3456, -234, etc.

- Floating point constant: 1.2, 4.25, -0.35, etc.

- Arithmetic operators: $=, +=, -=, *=, /=$

- Relational operators: $<, >, <=, >=, ==$

- Special symbols: ;, (,), $comma$, [,], {, }

After identifying the identifiers, the lexical analyzer should insert them into a symbol table. The symbol table should contain the entry for each variable only once. Note that only variable names will be kept in the symbol table. Also, show an error if the length of a variable is more than 31 characters.