**Problem Statement:**

For the first assignment a lexical analyzer was designed that identifies each character. The program reads a file, identifies each character and write out the results to an output file. The characters that the program can identify are keywords, separators, operators, identifiers and numbers.

A test case would be:

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! Declare and assign a number !

int number;

number = 9;

output:

Tokens: Lexemes

Keywords = int

identifier = number

separator = ;

Identifier = number

Operator = =

Integer = 9

Separator = ;

**How to Use your Program:**

Tuffix was used for this assignment. Open terminal from the file lexical.cpp compile program by typing

“ g++ -o lexical lexical.cpp”

Execute by typing ./lexical

**Design of Program:**

Char arrays were used to stored different identifiers which are keywords, separators, operators. Bool was used in detecting different states. And the identification of comments was done with Boolean and an array to be able to store block comments !.

Useful Algorithms used

Isdigit checks whether value is a digit character

Isalnum checks whether value is alphanumerical meaning uppercase, lowercase or number

**Limitation/Shortcomings:**

Program is only capable of identifying predefine characters.

Program does not identify floating point numbers