

## CC LAB 02 | Lex Program

**Aim:** Count the number of comments, keywords, identifiers, words, lines and spaces from input file.

### Implementation:

```
%option noyywrap
%{
#include <stdio.h>
int comments = 0;
int keywords = 0;
int identifiers = 0;
int words = 0;
int lines = 0;
int spaces = 0;
}%

%%

"//"(.*[ \t]*.)* { comments = comments + 1; }

"if" |
"else" |
"int" |
"class" { keywords = keywords + 1; }

^[a-zA-Z][a-zA-Z]* {words = words + 1;}
^[a-zA-Z][a-zA-Z0-9_]* {identifiers = identifiers + 1; }
[\n] { lines = lines +1; }
[ \t] { spaces = spaces + 1;}

%%

int main(int argc, char *argv[])
{
if (argc==2) {
yyin=fopen(argv[1],"r");
}
else {
printf("\nEnter the input:\n");
yyin=stdin;
}
yylex();
}
```

```
printf("\n\nComments Encountered: %d", comments);
printf("\nKeywords Encountered: %d", keywords);
printf("\nIdentifiers Encountered: %d", identifiers);
printf("\nWords Encountered: %d", words);
printf("\nSpaces Encountered: %d", spaces);
printf("\nLines Encountered: %d", lines);
printf("\n");
return 0;
}
```

## Input File

```
input.txt
Assignment 02 > input.txt
1 // this is a comment
2 this is a sentence
3 id_entifier
4 int class
5 // another comment
6
```

## Output:

The screenshot displays the Visual Studio Code interface with three main components:

- EXPLORER:** Shows the project structure with folders for Assignment 02, 03, and 04. The file `count.l` is selected under Assignment 02.
- EDITOR:** Displays the source code for `count.l`. It includes a preprocessor directive for `noyywrap`, standard library includes, and variable declarations for counts. It also features a series of `if`, `else`, and `int` tokens, and a `class` token, each followed by an increment operation. A regular expression is used to match identifiers and increment the word count.
- TERMINAL:** Shows the command `./a.out input.txt` being executed. The output is as follows:

```
Comments Encountered: 2
Keywords Encountered: 2
Identifiers Encountered: 1
Words Encountered: 1
Spaces Encountered: 4
Lines Encountered: 5
```