# COMPILER DESIGN

# ASSIGNMENT 03

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- **Implement LEX/FLEX code to count the number of characters, words and lines in an input file.**

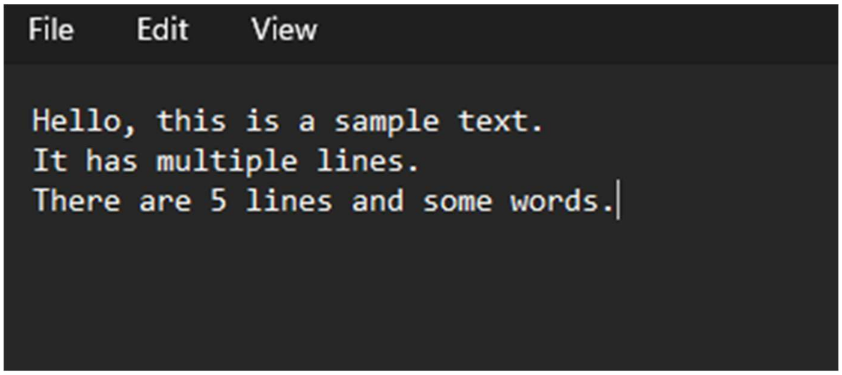
Code:

```
%{
#include <stdio.h>

int num_chars = 0;     // To count characters
int num_words = 0;     // To count words
int num_lines = 0;     // To count lines

int yywrap(void) {
    return 1; // Indicate end of input
}
%}

%%

\n                  { num_lines++; }
[ \t\r]+            { /* Ignore whitespace characters */ }
[A-Za-z0-9_]+       { num_words++; num_chars += yyleng; }
.                   { num_chars++; }

%%

int main() {
    // Hardcoded file name
    FILE *input_file = fopen("word.txt", "r");
    if (input_file) {
        yyin = input_file;
        yylex();
        fclose(input_file);
    } else {
        printf("Error: Unable to open file word.txt\n");
        return 1;
    }

    // After lexing, print the counts
    printf("Lines: %d\n", num_lines);
    printf("Words: %d\n", num_words);
    printf("Characters: %d\n", num_chars);

    return 0;
}
```

**Explanation:**

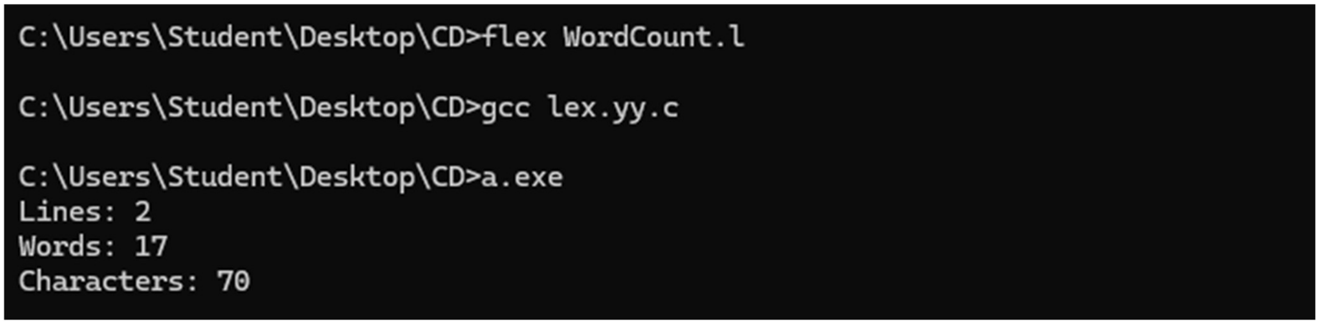
**Hardcoded File Name: Input File (word.txt)**

- **The main() function no longer takes command-line arguments (argc and argv).**
- **It directly opens the file word.txt using fopen("word.txt", "r");.**



```
Hello, this is a sample text.
It has multiple lines.
There are 5 lines and some words.
```

Output:



```
C:\Users\Student\Desktop\CD>flex WordCount.l

C:\Users\Student\Desktop\CD>gcc lex.yy.c

C:\Users\Student\Desktop\CD>a.exe
Lines: 2
Words: 17
Characters: 70
```