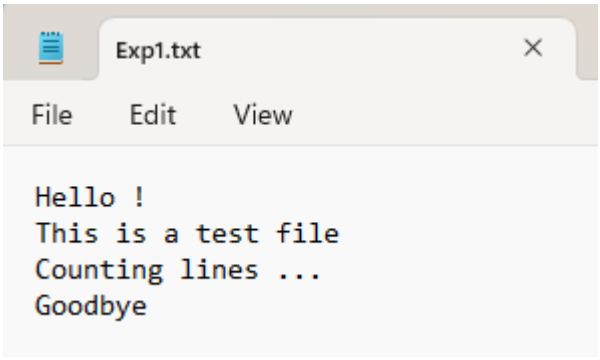
Program:

```
%{
#include <stdio.h>
int line_count = 0;
int is_file_empty = 1;  // Flag to check if the file is empty
%}

%%

\n      { line_count++; is_file_empty = 0; }  // Increment line count on encountering a newline character
.       { is_file_empty = 0; }                // Mark file as not empty if any character is encountered

<<EOF>> {
    if (!is_file_empty) {
        line_count++;  // Increment line count for the last line if the file is not empty
    }
    return 0;  // End of input
}

%%

int yywrap() {
    return 1;  // Indicates end of input
}

int main(int argc, char *argv[]) {
    if (argc < 2) {
        printf("Usage: %s text.txt\n", argv[0]);
        return 1;
    }

    FILE *file = fopen(argv[1], "r");
    if (!file) {
        perror("Error opening file");
        return 1;
    }

    yyin = file;  // Set the input file for Lex
    yylex();      // Start the Lex analysis

    fclose(file);
```

```
    printf("Number of lines: %d\n", line_count);
    return 0;
}
```



Output:

```
PS C:\Users\WebTech\Documents\POC Lab> lex exp1_count_lines.l
PS C:\Users\WebTech\Documents\POC Lab> ls


    Directory: C:\Users\WebTech\Documents\POC Lab


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a----        13-01-2025     10:26             57 Exp1.txt
-a----        13-01-2025     10:13           1022 exp1_count_lines.l
-a----        13-01-2025     10:33          38167 lex.yy.c


PS C:\Users\WebTech\Documents\POC Lab> gcc lex.yy.c -o count_lines
PS C:\Users\WebTech\Documents\POC Lab> ./count_lines.exe Exp1.txt
Number of lines: 4
```

Conclusion: Lex program to count the number of lines in a file implemented successfully.