**EX 4:** **Design a lexical Analyzer to find the number of whitespaces and newline characters.**

**AIM:**

Design and implement a lexical analyzer to find the number of whitespaces and newline characters in a given input text.

**Algorithm**

1. Start
2. Initialize counters whitespace\_count = 0 and newline\_count = 0.
3. Read the input text character by character.
4. For each character:
   * If the character is a whitespace (' ' or '\t'), increment whitespace\_count.
   * If the character is a newline ('\n'), increment newline\_count.
5. Display the counts of whitespace and newline characters.
6. End

**CODE:**

#include <stdio.h>

#include <ctype.h>

int main() {

FILE \*file;

char ch;

int whitespace\_count = 0;

int newline\_count = 0;

file = fopen("input.txt", "r");

if (file == NULL) {

printf("Error opening file.\n");

return 1;

}

while ((ch = fgetc(file)) != EOF) {

if (isspace(ch)) {

whitespace\_count++;

if (ch == '\n') {

newline\_count++;

}

}

}

fclose(file);

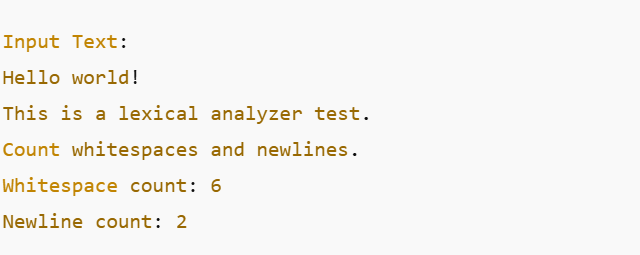
printf("Number of whitespace characters: %d\n", whitespace\_count);

printf("Number of newline characters: %d\n", newline\_count);

return 0;

}

**OUTPUT:**

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