 

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:   
 oIf the character is a whitespace (' ' or '\t'), increment whitespace\_count.

oIf 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:

 



 