PROGRAM 5:

1) Design a lexical Analyzer to find the number of whitespaces and newline characters using C.  
  
  
CODE: #include <stdio.h>

void countWhiteSpaceAndNewlines(char \*input) {

int whitespaceCount = 0;

int newlineCount = 0;

for (int i = 0; input[i] != '\0'; i++) {

if (input[i] == ' ' || input[i] == '\t') {

whitespaceCount++;

} else if (input[i] == '\n') {

newlineCount++;

}

}

printf("Number of whitespaces: %d\n", whitespaceCount);

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

}

int main() {

// Hardcoded input

char input[] = "This is a test.\nThis line has a newline.\n This line has spaces and tabs.";

printf("Input Text:\n%s\n\n", input);

countWhiteSpaceAndNewlines(input);

return 0;

}  
  
OUTPUT:

Input Text:

This is a test.

This line has a newline.

This line has spaces and tabs.

Number of whitespaces: 16

Number of newline characters: 2