5.Design a lexical Analyzer to find the number of whitespaces and newline characters using C.

#include <stdio.h>

void countWhitespacesAndNewlines(const char \*str, int \*whitespaceCount, int \*newlineCount);

int main() {

const char \*code = "int main() {\n int a = 5; \n // This is a comment\n printf(\"Hello, world!\");\n}\n";

int whitespaces = 0, newlines = 0;

countWhitespacesAndNewlines(code, &whitespaces, &newlines);

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

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

return 0;

}

void countWhitespacesAndNewlines(const char \*str, int \*whitespaceCount, int \*newlineCount) {

while (\*str) {

if (\*str == ' ' || \*str == '\t') {

(\*whitespaceCount)++;

} else if (\*str == '\n') {

(\*newlineCount)++;

}

str++;

}

}

