Design a lexical Analyzer to validate operators to recognize the operators +,-,\*,/ using regular arithmetic operators using C

**#include <stdio.h>**

**#include <ctype.h>**

**#include <string.h>**

**#define MAX\_LEXEME\_LEN 100**

**void analyze(char \*lexeme) {**

**if (isalpha(lexeme[0])) {**

**printf("%s is an identifier\n", lexeme);**

**} else if (isdigit(lexeme[0])) {**

**printf("%s is a constant\n", lexeme);**

**} else if (strcmp(lexeme, "+") == 0 || strcmp(lexeme, "-") == 0 ||**

**strcmp(lexeme, "\*") == 0 || strcmp(lexeme, "/") == 0) {**

**printf("%s is an operator\n", lexeme);**

**} else {**

**printf("%s is an unknown token\n", lexeme);**

**}**

**}**

**int is\_comment(char \*str, int \*index) {**

**if (str[\*index] == '/' && str[\*index + 1] == '\*') {**

**\*index += 2;**

**while (str[\*index] != '\0' && !(str[\*index] == '\*' && str[\*index + 1] == '/')) {**

**(\*index)++;**

**}**

**if (str[\*index] == '\*') {**

**\*index += 2;**

**}**

**return 1;**

**}**

**return 0;**

**}**

**int main() {**

**char input[1000], lexeme[MAX\_LEXEME\_LEN];**

**int i = 0, j = 0;**

**printf("Enter the input string: ");**

**fgets(input, 1000, stdin);**

**while (input[i] != '\0') {**

**if (isspace(input[i])) {**

**if (j != 0) {**

**lexeme[j] = '\0';**

**analyze(lexeme);**

**j = 0;**

**}**

**} else if (is\_comment(input, &i)) {**

**continue;**

**} else {**

**lexeme[j++] = input[i];**

**}**

**i++;**

**}**

**if (j != 0) {**

**lexeme[j] = '\0';**

**analyze(lexeme);**

**}**

**return 0;**

**}**

