PROGRAM :-

#include <stdio.h>

#include <ctype.h>

#include <string.h>

#define MAX\_IDENTIFIER\_LENGTH 100

void analyze(const char \*input) {

char identifier[MAX\_IDENTIFIER\_LENGTH];

int i = 0, j = 0;

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

// Ignore spaces, tabs, and new lines

if (isspace(input[i])) {

i++;

continue;

}

// Ignore comments

if (input[i] == '/' && input[i + 1] == '/') {

break; // Ignore everything after //

}

// Identify identifiers

if (isalpha(input[i]) || input[i] == '\_') {

j = 0;

while (isalnum(input[i]) || input[i] == '\_') {

if (j < MAX\_IDENTIFIER\_LENGTH - 1) {

identifier[j++] = input[i];

} else {

printf("Error: Identifier too long\n");

break;

}

i++;

}

identifier[j] = '\0';

printf("Identifier: %s\n", identifier);

continue;

}

// Identify constants

if (isdigit(input[i])) {

j = 0;

while (isdigit(input[i])) {

if (j < MAX\_IDENTIFIER\_LENGTH - 1) {

identifier[j++] = input[i];

}

i++;

}

identifier[j] = '\0';

printf("Constant: %s\n", identifier);

continue;

}

// Identify operators

if (strchr("+-\*/=<>!&|", input[i])) {

printf("Operator: %c\n", input[i]);

i++;

continue;

}

printf("Error: Unrecognized character '%c'\n", input[i]);

i++;

}

}

int main() {

const char \*code = "float x = 3.14; // This is a comment\n x += 2;";

analyze(code);

return 0;

}

OUTPUT:-

