Bangladesh Army International University of Science and Technology
Department of Computer Science and Engineering
Lab Report

Lab Report No	:	2
Lab Report Name	:	Write a Program to Identify Whether a Given Line is a Comment or Not.
Course Title	:	Compiler Design and Construction Sessional
Course Code	:	CSE-414
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Level	:	4	**Term** : 1	**Section** : B	**Group** :
Date of Submission	:	08/01/26	**Semester** : FALL	**Year** : 2026	

Key Learnings:
- Implement string pattern matching to detect comment starters.
- Handle edge cases such as nested comments or strings containing comment-like patterns.

Code Implementation:

```c
Lab Works > C lab2.c > ⊗ main()
1    #include <stdio.h>
2    #include <string.h>
3    #include <stdbool.h>
4
5    bool isComment(char *line){
6        int i = 0;
7        int len = strlen(line);
8        bool inString = false;
9        bool inChar = false;
10       bool escapeNext = false;
11
12       while(i < len){
13           if(escapeNext){
14               escapeNext = false;
15               i++;
16               continue;
17           }
18
19           if(line[i] == '\\'){
20               escapeNext = true;
21               i++;
22               continue;
23           }
24
25           // handling string literals
26           if(line[i] == '"' && !inChar){
27               inString = !inString;
28               i++;
```

```c
 5 ∨ bool isComment(char *line){
12 ∨     while(i < len){
24
25             // handling string literals
26             if(line[i] == '"' && !inChar){
27                 inString = !inString;
28                 i++;
29                 continue;
30             }
31
32             // handle character literals
33             if(line[i] == '\'' && !inString){
34                 inChar = !inChar;
35                 i++;
36                 continue;
37             }
38
39             if(!inString && !inChar){
40                 if(i < len-1 && line[i] == '/' && line[i+1] =
41                     return true;
42                 }
43             }
44             i++;
45         }
46         return false;
47     }
48
49     int main(){
```

```c
48
49     int main(){
50         char line[1000];
51
52         printf("Enter a line of code: ");
53         fgets(line, sizeof(line), stdin);
54
55         line[strcspn(line, "\n")] = '\0';
56
57         if(isComment(line)){
58             printf("This line is a comment....\n");
59         }
60         else{
61             printf("The line is not a comment....\n");
62         }
63         return 0;
64     }
65
```

Input Sample:

Enter a line of code: // This is a comment

Enter a line of code: int a = 5;

Output Sample:

```
joha546@joha546:~/Projects/Compiler-Design-and-Construction/Lab Works$ ./lab2
Enter a line of code: // This is a comment
This line is a comment....
joha546@joha546:~/Projects/Compiler-Design-and-Construction/Lab Works$ ./lab2
Enter a line of code: int a = 5;
The line is not a comment....
joha546@joha546:~/Projects/Compiler-Design-and-Construction/Lab Works$
```