

7_parser.c

```
1  #include <stdio.h>
2  #include <ctype.h>
3  #include <string.h>
4  #include <stdlib.h>
5
6  char input[100];
7  int i = 0;
8  char lookahead;
9
10
11 void error() {
12     printf("Syntax Error at position %d\n", i);
13     exit(1);
14 }
15
16 void match(char t) {
17     if (lookahead == t) {
18         lookahead = input[++i];
19     } else {
20         error();
21     }
22 }
23
24 void E() {
25     T();
26     Eprime();
27 }
28
29 void Eprime() {
30     while (lookahead == '+' || lookahead == '-') {
31         char op = lookahead;
32         match(op);
33         T();
34     }
35 }
36
37 void T() {
38     F();
39     Tprime();
40 }
41
42 void Tprime() {
43     while (lookahead == '*' || lookahead == '/') {
44         char op = lookahead;
45         match(op);
46         F();
47     }
48 }
49
50 void F() {
51     if (isalpha(lookahead)) {
```

```
52     match(lookahead);
53 } else if (isdigit(lookahead)) {
54     match(lookahead);
55 } else if (lookahead == '(') {
56     match('(');
57     E();
58     match(')');
59 } else {
60     error();
61 }
62 }
63
64 int main() {
65     printf("Enter expression: ");
66     scanf("%s", input);
67     strcat(input, "$");
68     lookahead = input[i];
69     E();
70     if (lookahead == '$')
71         printf("Parsing successful!\n");
72     else
73         printf("Parsing failed!\n");
74     return 0;
75 }
76
```