

CONVERT THE EXPRESSION FROM INFIX TO POSTFIX: -

```
1 #include <stdio.h>
2 #include <ctype.h>
3 #include <string.h>
4
5 #define SIZE 50
6
7 char stack[SIZE];
8 int top = -1;
9
10 void push(char elem) {
11     if (top >= SIZE - 1) {
12         printf("Stack overflow\n");
13         return;
14     }
15     stack[++top] = elem;
16 }
17
18 char pop() {
19     if (top == -1) {
20         printf("Stack underflow\n");
21         return '#';
22     }
23     return stack[top--];
24 }
25
26 int pr(char symbol) {
27     if (symbol == '^') {
28         return 3;
29     } else if (symbol == '*' || symbol == '/') {
30         return 2;
31     } else if (symbol == '+' || symbol == '-') {
32         return 1;
33     } else {
34         return 0;
35     }
36 }
```

```

37
38     int main() {
39         char infix[SIZE], postfix[SIZE];
40         char ch, elem;
41         int i = 0, k = 0;
42
43         printf("Enter infix expression: ");
44         if (fgets(infix, sizeof(infix), stdin) == NULL) {
45             printf("Error reading input\n");
46             return 1;
47         }
48         infix[strcspn(infix, "\n")] = '\0';
49
50         push('#');
51
52         while ((ch = infix[i++]) != '\0') {
53             if (ch == '(') {
54                 push(ch);
55             } else if (isalnum(ch)) {
56                 postfix[k++] = ch;
57             } else if (ch == ')') {
58                 while (stack[top] != '(') {
59                     postfix[k++] = pop();
60                 }
61                 elem = pop();
62             } else {
63                 while (pr(stack[top]) > pr(ch) || (pr(stack[top]) == pr(ch) && ch != '^')) {
64                     postfix[k++] = pop();
65                 }
66                 push(ch);
67             }
68         }
69
70         while (stack[top] != '#') {
71             postfix[k++] = pop();
72         }
73         postfix[k] = '\0';
74
75         printf("\nPostfix Expression = %s\n", postfix);
76
77         return 0;
78     }
79

```

OUTPUT:-

```

Enter infix expression: A+B*C-D

Postfix Expression = ABC*+D-

Process returned 0 (0x0)  execution time : 7.112 s
Press any key to continue.

```