

2. C PROGRAMM FOR INFIX TO PREFIX EXPRESSION

The image shows a C program in Dev-C++ that converts an infix expression to a prefix expression. The program uses a stack to store operators and processes the input expression '5 3 +'. The output shows the prefix expression '5 3 +' and a message indicating the process exited after 43.83 seconds.

```
1 #include<stdio.h>
2 #include<ctype.h>
3
4 char stack[100];
5 int top = -1;
6
7 void push(char x)
8 {
9     stack[++top] = x;
10 }
11
12 char pop()
13 {
14     if(top == -1)
15         return -1;
16     else
17         return stack[top--];
18 }
19
20 int priority(char x)
21 {
22     if(x == '(')
23         return 0;
24     if(x == '+' || x == '-')
25         return 1;
26     if(x == '*' || x == '/')
27         return 2;
28     return 0;
29 }
30
31 int main()
32 {
33     char exp[100];
34     char *e, x;
35     printf("Enter the expression : ");
36     scanf("%s", exp);
37     printf("\n");
38     e = exp;
39
40     while(*e != '\0')
41     {
42         if(isalnum(*e))
43             printf("%c", *e);
44         else if(*e == '(')
45             push(*e);
46         else if(*e == ')')
47         {
48             while((x = pop()) != '(')
49                 printf("%c", x);
50         }
51         else
52         {
53             while(priority(stack[top]) >= priority(*e))
54                 printf("%c", pop());
55             push(*e);
56         }
57         e++;
58     }
59
60     while(top != -1)
61     {
62         printf("%c", pop());
63     }
64     return 0;
65 }
```

Enter the expression : 5 3 +

5 3 +

Process exited after 43.83 seconds with return value 0
Press any key to continue . . .