

## 2.

WAP to convert a given valid parenthesized infix arithmetic expression to postfix expression. The expression consists of single character operands and the binary operators + (plus),

- (minus), \* (multiply) and / (divide)

The screenshot shows the Dev-C++ IDE interface. The main window displays a C++ source code file named p2.cpp. The code implements a stack-based algorithm to convert an infix expression to postfix. It includes declarations for stdio.h and ctype.h, defines a stack of size 50, and implements push and pop operations. It also defines precedence levels for operators +, \*, and /, and handles the main loop where it reads an infix expression from the user and prints the resulting postfix expression. The status bar at the bottom shows the current line (Line: 23), column (Col: 1), and total length (Length: 1092). The taskbar at the bottom right shows various application icons and the system clock (0644 PM 20-11-2025).

```
1 #include <stdio.h>
2 #include <ctype.h>
3
4 char stack [50];
5 int top = -1;
6
7 void push (char x) {
8     stack [++top] = x;
9 }
10
11 char pop () {
12     return stack [top--];
13 }
14
15 int precedence (char x) {
16     if (x == '+') || x == '-')
17     if (x == '*') || x == '/')
18         return 1;
19     return 0;
20 }
21
22 int main () {
23     char infix [50], postfix [50];
24     int i = 0, j = 0;
25     printf ("enter the expression");
26     scanf ("%s", infix);
27     while (infix [i] != '\0') {
28         char ch = infix [i];
```

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\apurv\Documents\c\_programs\p2.exe
- Output Size: 129.076953125 KiB
- Compilation Time: 0.33s

Line: 23 Col: 1 Sel: 0 Lines: 57 Length: 1092 Insert Done parsing in 0.016 seconds

C:\Users\apurv\Documents\c\_programs\p2.cpp - [Executing] - Dev-C++ 5.11

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TDM-GCC 4.9.2 64-bit Release

(globals)

Project Classes Debug [\*]Untitled1.cpp p1.cpp p2.cpp

```
30     if (isalnum(ch)) {
31         postfix[j++] = ch;
32     }
33     else if (ch == '(') {
34         push(ch);
35     }
36     else if (ch == ')') {
37         while (stack[top] != '(')
38             postfix[j++] = pop();
39         pop();
40     }
41     else {
42         while (top != -1 && precedence(stack[top]) >= precedence(ch))
43             postfix[j++] = pop();
44         push(ch);
45     }
46     i++;
47 }
48
49 while (top != -1)
50     postfix[j++] = pop();
51
52 postfix[j] = '\0';
53 printf("%s", postfix);
54
55 return 0;
56 }
```

Compiler Resources Compile Log Debug Find Results Close

Compilation results...

- Errors: 0  
- Warnings: 0  
- Output Filename: C:\Users\apurv\Documents\c\_programs\p2.exe  
- Output Size: 129.876953125 KiB  
- Compilation Time: 0.33s

Line: 23 Col: 1 Sel: 0 Lines: 57 Length: 1092 Insert Done parsing in 0.016 seconds

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C:\Users\apurv\Documents\c\_programs\p2.exe

enter the expressionA-B/C\*D/E

AB+CD/EF-----

Process exited after 57.64 seconds with return value 0

Press any key to continue . . .

26°C Clear 06:46 PM 20-11-2025