

1. `/*`
2. **At line number 33 Reasons for why to subtract 48 from e in above program:**
3. If I type value as 8, it will read it as the character ASCII value of 56. If I also type value 9, it will read it as the character ASCII value of 57.

4. If you add them, the program will do $58 + 59$ and give you the wrong answer. So to actually get to 8 from 56, you subtract 48. $58 - 48 = 8$. And $57 - 48 = 9$.
5. So after converting the ASCII values to the actual integer value, you can proceed with $8 + 9 = 17$.

```
6. */
7.
8. //program to demonstrate postfix evaluation
9. #include<stdio.h>
10. #include <ctype.h>
11. int stack[20];
12. int top = -1;
13. void push(int x)
14. {
15.     stack[++top] = x;
16. }
17. int pop()
18. {
19.     return stack[top--];
20. }
21. int main()
22. {
23.     char exp[20];
24.     char *e;
25.     int n1,n2,n3,num;
26.     printf("Enter the expression :: ");
27.     scanf("%s",exp);
28.     e = exp;
29.     while(*e != '\0')
30.     {
31.         if(isdigit(*e))
32.         {
33.             num = *e - 48;
34.             push(num);
35.         }
36.         else
37.         {
38.             n1 = pop();
39.             n2 = pop();
40.             switch(*e)
41.             {
42.                 case '+':
43.                 {
44.                     n3 = n1 + n2;
45.                     break;
46.                 }
47.                 case '-':
48.                 {
49.                     n3 = n2 - n1;
50.                     break;
51.                 }
52.                 case '*':
53.                 {
```

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54.             n3 = n1 * n2;
55.             break;
56.         }
57.         case '/':
58.         {
59.             n3 = n2 / n1;
60.             break;
61.         }
62.     }
63.     push(n3);
64. }
65.     e++;
66. }
67.     printf("\nThe result of expression %s = %d\n\n",exp,pop());
68.     return 0;
69. }

```

70. Output:

71.

72. yasar@yasar-Lenovo-G50-80:~/Desktop/DataStructures/lords/lab\$ gcc postfixEval.c -o pe

73. yasar@yasar-Lenovo-G50-80:~/Desktop/DataStructures/lords/lab\$./pe

74. Enter the expression :: 245+*

75.

76. The result of expression 245+* = 18