

### LAB3: INFIX TO POSTFIX

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)

```
#include<stdio.h>
#include<string.h>
int A(char symbol)
{
    switch(symbol)
    {
        case '+':
        case '-':return 2;
        case '*':
        case '/':return 4;
        case '^':
        case '$':return 5;
        case '(':return 0;
        case '#': return -1;
        default : return 8;
    }
}
int B(char symbol)
{
    switch(symbol)
    {
        case '+':
        case '-':return 1;
        case '*':
        case '/':return 3;
        case '^':
        case '&':return 6;
        case '(':return 9;
        case ')':return 0;
        default:return 7;
    }
}
void infix_postfix(char infix[],char postfix[])
{
    int top,j,i;
    char s[30],symbol;
    top=-1;
    s[++top]='#';
```

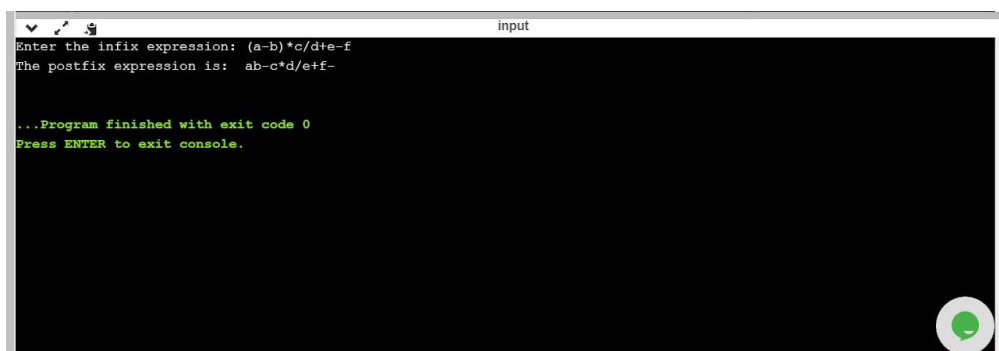
```

j=0;
for(i=0;i<strlen(infix);i++)
{
    symbol=infix[i];
    while(A(s[top])>B(symbol))
    {
        postfix[j]=s[top--];
        j++;
    }
    if(A(s[top])!=B(symbol))
        s[++top]=symbol;
    else
        top--;
}
while(s[top]!='#')
{
    postfix[j++]=s[top--];
}
postfix[j]='\0';
}

void main()
{
    char infix[20];
    char postfix[20];
    printf("Enter the infix expression: ");
    scanf("%s",infix);
    infix_postfix(infix,postfix);
    printf("The postfix expression is: ");
    printf("%s\n",postfix);
}

```

OUTPUT::



The screenshot shows a console window titled 'input'. The text inside the window is as follows:

```

Enter the infix expression: (a-b)*c/d+e-f
The postfix expression is: ab-c*d/e+f-

...Program finished with exit code 0
Press ENTER to exit console.

```

The console window has a standard Windows-style title bar and a green circular icon in the bottom right corner.

```
input
Enter the infix expression: (((a/b)+(c-d))/g*h)
The postfix expression is: ab/cd-tg/h*

...Program finished with exit code 0
Press ENTER to exit console.
```