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1BM22CS255

INFIX TO POSTFIX

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#include <stdio.h>

#include <conio.h>

#include <ctype.h>

#include <string.h>

#define MAX 100

char st[MAX];

int top = -1;

void infixtopostfix(char source[], char target[]);

int getpriority(char);

void push(char st[], char);

char pop(char st[]);

int main()

{

    char infix[100], postfix[100];

    printf("Enter any infix expression\n");

    gets(infix);

    strcpy(postfix, "");

    infixtopostfix(infix, postfix);

    printf("The corresponding postfix expression is:\n");

    puts(postfix);

    return 0;
```

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}

int getpriority(char op)
{
    if (op == '/' || op == '*' || op == '%')
        return 1;
    else if (op == '+' || op == '-')
        return 0;
}

void push(char st[], char val)
{
    if (top == MAX - 1)
        printf("Stack overflow\n");
    else
    {
        top++;
        st[top] = val;
    }
}

char pop(char st[])
{
    char val = ' ';
    if (top == -1)
    {
        printf("Stack Underflow\n");
    }
}

```

```

    }

    else

    {

        val = st[top];

        top--;

    }

    return val;

}

```

```

void infixtopostfix(char source[], char target[])

{

    int i = 0, j = 0;

    char temp;

    strcpy(target, "");

    while (source[i] != '\0')

    {

        if (source[i] == '(')

        {

            push(st, source[i]);

            i++;

        }

        else if (source[i] == ')')

        {

            while ((top != -1) && (st[top] != '('))

```

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    {
        target[j] = pop(st);

        j++;
    }

    if (top == -1)
    {
        printf("\n Incorrect Expression");
        exit(1);
    }

    temp = pop(st);

    i++;
}

else if (isdigit(source[i]) || isalpha(source[i]))
{
    target[j] = source[i];

    j++;

    i++;
}

else if (source[i] == '+' || source[i] == '-' || source[i] == '*' || source[i] == '/' || source[i] ==
'^')
{
    while ((top != -1) && (st[top] != '(') && (getpriority(st[top]) > getpriority(source[i])))
    {
        target[j] = pop(st);

```

```

        j++;
    }

    push(st, source[i]);

    i++;
}

else
{
    printf("\n Incorrect Element in Expression ");
    exit(1);
}
}

while ((top != -1) && (st[top] != '('))
{
    target[j] = pop(st);

    j++;
}

target[j] = '\0';
}

```

Output:

```

Enter any infix expression
a*b+c
The corresponding postfix expression is:
ab*c+

Process returned 0 (0x0)   execution time : 70.081 s
Press any key to continue.

```