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Infix to Postfix.

Q Write a program to convert a given valid parenthesized infix arithm
expression to postfix expression.

```
#include <stdio.h>
#include <string.h>
#include <conio.h>

int i=0, pos=0, top=-1, length;
char symbol, temp, infix[20], postfix[20], stack[20];

void infixtopostfix();
void push(char symbol);
char pop();
int pred(char symb);

int main()
{
        printf("Enter infix expression: \n");
        scanf("%s", infix);

        infixtopostfix();

        printf("\n Infix Expression: \n %s", infix);
        printf("\n Postfix Expression: \n %s", postfix);
        return 0;
}

void infixtopostfix(){
        length = strlen(infix);
        push('#');
```

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```
while (i< length){
        symbol = infix [i];
        switch( symbol) {
                case '(' :
                        push( symbol);
                        break;

                case ')' :
                        temp = pop();
                        while (temp != '(') {
                                postfix [pos ++] = temp;
                                temp = pop();
                        }
                        break;

                case '+' :
                case '-' :
                case '*' :
                case '/' :
                case '^' :
                        while (pred(stack[top]) >= pred(symbol))
                        {
                                temp = pop();
                                postfix [pos++ ] = temp;
                        }
                        push( symbol);
                        break;
                default :
                        postfix [pos ++] = symbol;
        }
        i++;
}   }
```

```
        while (top >0){
                temp = pop();
                postfix [pos ++]= temp;
        }
        postfix[pos]= '\0';
}

void  push(char symbol){
            top = top+1;
            stack[top]= symbol;
}

char  pop (){
        return stack[top--];
}

int  pred (char symbol){
        int p;
        switch (symbol){
            case '^' :  p=3;
                        break;
            case '*'  :
            case '/'  :   p=2;
                          break;
            case '+' :
            case '-' :  p=1;
                        break;
            case'(':  p=0;
                      break;
        default:  p=-1;
                  break;
    }
```

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```
        return p;
}
```

Output

```
Enter Infix Expression:
 A^B*C-D+E/F/(G+H)

Infix Expression:
A^B*C-D+E/F/(G+H)
Postfix Expression:
 AB^C*D-EF/GH+/+
```

[illegible]
8/10/24