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PROGRAM: Evaluating Arithmetic Expression.

Write a C program to evaluate Arithmetic expression using stack.

```
#include<stdio.h>
#include<string.h>
#define size 20
char post[size];
char stack[size];
int top=-1;

int isEmpty();
void push(char);
char pop();
int isFull();
void eval();

int isFull(){
   if(top==size-1)
      return 1;
   else
   return 0;
}

void push(char ch)
{
   if(isFull()){
      printf("\nOverflow");
   }
   else{
   top=top+1;
   stack[top]=ch;
   }
}

char pop()
{
   int temp;
   if(isEmpty()){
      printf("\nNo data in stack");
```

```
    }
    else{
    temp=stack[top];
    top=top-1;
    return temp;
}
}

int isEmpty()
{
    if(top==-1)
    return 1;
    else
    return 0;
}
void eval()
{
    int j,x,y,eval;
    char ch;
    for(int i=0;i<strlen(post);i++)
    {
        ch=post[i];
        if(ch>='a' && ch<='z'){
            printf("\nEnter the value of %c : ",ch);
            scanf("%d",&ch);
            push(ch);
        }
        else
        {
            x=pop();
            y=pop();
            switch(ch)
            {
                case '^':
                    eval=y^x;
                    push(eval);
                    break;
                case '/':
                    eval=y/x;
                    push(eval);
                    break;
                case '*':
```

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```
                eval=y*x;
                push(eval);
                break;
            case '+':
                eval=y+x;
                push(eval);
                break;
            case '-':
                eval=y-x;
                push(eval);
                break;
        }
      }
   }
   printf("\nThe value of the postfix expression is : ");
   printf("%d",pop());
}

int main()
{
   printf("\nEnter postfix expression: ");
   gets(post);
   eval();
   return 0;
}
```