Programmer Name: Param Chordiya
Batch: E5
Problem Statement: Write a program in C to evaluate of postfix expression (input will be postfix expression)

INPUT:

```
#include<stdio.h>
#define size 5
struct stack
{
   int a[size];
   int top;
};
void evaluate(char postfix[]);
void main()
{
                        printf("\n=======================================\n\t
POSTFIX EVALUATION\n=======================================\n");
                        printf("\t                                                ROLL
NO:22119\n=======================================\n");
   struct stack s;
   int choice,data,x;
   char postfix[30];
                        printf("\nENTER THE POSTFIX EXPRESSION: ");
                        gets(postfix);
                        evaluate(postfix);
   getch( );
}
void initialise(struct stack *s)
{
   s->top=-1;
}
int isfull(struct stack *s)
{
   if(s->top==size-1)
```

```
   {
      return(1);
   }
   else
   {
      return(0);
   }
}
int isempty(struct stack *s)
{
   if(s->top==-1)
   {
      return(1);
   }
   else
   {
      return(0);
   }
}
void push(struct stack *s,int data)
{
   s->top=s->top+1;
   s->a[s->top]=data;
}
int pop(struct stack *s)
{
   int data;
   data=s->a[s->top];
   s->top=s->top-1;
   return(data);
}


void evaluate(char postfix[])
{
                        struct stack s;
                        int o1,o2,val=0,i;
```

```
    initialise(&s);
    for(i=0; postfix[i]!='\0'; i++)
    {
        if(isalpha(postfix[i]))
        {

        printf("\nENTER THE VALUE OF %c: ",postfix[i]);
        scanf("%d",&val);
        push(&s,val);
                        }
    else
    {
        o2=pop(&s);
        o1=pop(&s);
        switch(postfix[i])
        {
                case'+': push(&s,o1+o2);
                break;
                case'-': push(&s,o1-o2);
                break;
                case'*': push(&s,o1*o2);
                break;
                case'/': push(&s,o1/o2);
                break;
        }
    }
    }
    val=pop(&s);
    printf("\nRESULT IS = %d",val);
}
```

OUTPUT:

```
========================================
          POSTFIX EVALUATION
========================================
             ROLL NO:22119
========================================

ENTER THE POSTFIX EXPRESSION: abc*+d-

ENTER THE VALUE OF a: 10

ENTER THE VALUE OF b: 2

ENTER THE VALUE OF c: 8

ENTER THE VALUE OF d: 3

RESULT IS = 23
```