#include<stdio.h>

#include<string.h>

#include<math.h>

#include<malloc.h>

#include<stdlib.h>

#define BLANK ' '

#define MAX 50

#define TAB '\t'

//function declarations

void push(long int symbol);

long int pop();

void infix\_to\_postfix();

int priority(char symbol);

int isEmpty();

long int eval\_post();

int white\_space(char);

char infix[MAX],postfix[MAX];

long int stack[MAX];

int top;

int main()

{

long int value;

top=-1;

printf("Enter postfix : ");

gets(postfix);

printf("Evaluation is = %d ",eval\_post());

return 0;

}

int priority(char symbol) //returns the priority value of a symbol

{

switch(symbol)

{

case '(':return 0;

case '+':

case '-':return 1;

case '\*':

case '/':

case '%':

return 2;

case '^':

return 3;

default:

return 0;

}

}

void push(long int symbol) //push element in to stack

{

if(top>MAX)

{

printf("Stack overflow\n");

exit(1);

}

stack[++top]=symbol;

}

long int pop() //pop element from stack

{

if(isEmpty())

{

printf("Stack underflow\n");

exit(1);

}

return (stack[top--]);

}

int isEmpty() //checks if stack is empty

{

if(top==-1)

{

return 1;

}

else

{

return 0;

}

}

int white\_space(char symbol) //checks if it is a white space or a tab

{

if(symbol==BLANK||symbol==TAB)

return 1;

else

return 0;

}

long int eval\_post() //function evaluates the postfix expression

{

long int a,b,temp,result;

unsigned int i;

//iterates through the postfix expression

for(i=0;i<strlen(postfix);i++)

{

if(postfix[i]<='9'&&postfix[i]>='0')

push(postfix[i]-'0');

else

{

a=pop();

b=pop();

switch(postfix[i])

{

case '+':

temp=b+a;break;

case '-':

temp=b-a;break;

case '\*':

temp=b\*a;break;

case '/':

temp=b/a;break;

case '%':

temp=b%a;break;

case '^':pow(b,a);

}

push(temp);

}

}

result=pop();

return result;

}

OUTPUT:

Enter postfix : 3454+\*+93/-2+1-

Evaluation is = 37