

# EXPERIMENT 6

## Postfix Evaluation

### Program:

```
#include<stdio.h>

int
stack[10];

int top = -1;

//defining two function for
push and pop void push(int x);
int pop(); void main()
{
    char exp[20];          //store expression
    char *p;               //pointer to point symbols in
the expression    int n1,n2,n3,num;

    printf("\n\t Enter Postfix Expression to solve:"); // accepting the
expression from the user and storing it    scanf("%s",exp);    p =
exp;                      //assigning base address to the pointer    while(*p
!= '\0')                // till symbols in exp is not null
    {
        if(isdigit(*p))    //checking condition for value or operator
        {
            num = *p - 48;    //ASCII value of '0' is 48 so after entering
a number eg; 5 , we get
```

$$53-48 = 5$$

```

        push(num);          // if scanned symbol is value -> push into
stack
    }
    else                    // if scanned symbol is operator, do 2 pops,
perform operation and store
    {                      // result back
to the stack          n2 = pop();

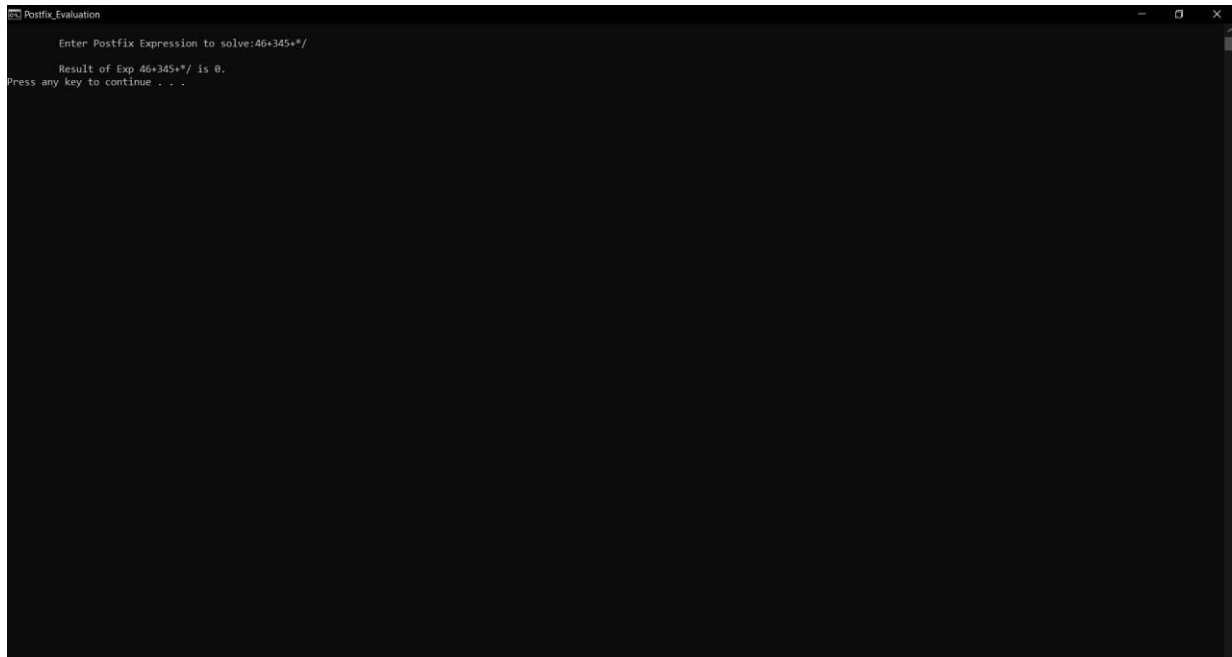
        n1 = pop();        switch(*p)
// 4 cases for 4 different operations
    {
        case '+': n3 = n1 +
n2;break;          case '-': n3
= n1 - n2;break;    case
'*': n3 = n1 * n2;break;
case '/': n3 = n1 / n2;break;
    }
    push(n3);          // result stored back to stack
    }
    p++;              // pointer incremented to point next symbol
}

printf("\n\t Result of Exp %s is %d.",exp,pop());
}

```

```
//pushing the value in the
stack void push(int x)
{
    top = top + 1;
    stack[top] = x;
}
// returns value which is at top of
the stack int pop()
{
    return stack[top--];
}
```

# Output:



```
Postfix_Evaluation
Enter Postfix Expression to solve:46+345+*/
Result of Exp 46+345+*/ is 0.
Press any key to continue . . .
```

Enter Postfix Expression to solve: 46+345+\*/

Result of Exp 46+345+\*/ is 0.