

Exp 3: Evaluate Postfix Expression using Stack ADT.

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

```
#include <ctype.h>
```

```
int stack[20];
```

```
int top = -1;
```

```
void push(int x)
```

```
{
```

```
    stack[++top] = x;
```

```
}
```

```
int pop()
```

```
{
```

```
    return stack[top--];
```

```
}
```

```
int main()
```

```
{
```

```
    char exp[20];
```

```
    char *e;
```

```
    int n1,n2,n3,num;
```

```
    printf("Enter the expression :: ");
```

```
    scanf("%s",exp);
```

```
    e = exp;
```

```
    while(*e != '\0')
```

```
{
```

```
    if(isdigit(*e))
```

```
{
```

```
        num = *e - 48;
```

```
    push(num);
}
else
{
    n1 = pop();
    n2 = pop();
    switch(*e)
    {
        case '+':
        {
            n3 = n1 + n2;
            break;
        }
        case '-':
        {
            n3 = n2 - n1;
            break;
        }
        case '*':
        {
            n3 = n1 * n2;
            break;
        }
        case '/':
        {
            n3 = n2 / n1;
            break;
        }
    }
    push(n3);
}
```

```
    e++;  
}  
printf("\nThe result of expression %s = %d\n\n",exp,pop());  
return 0;  
}
```