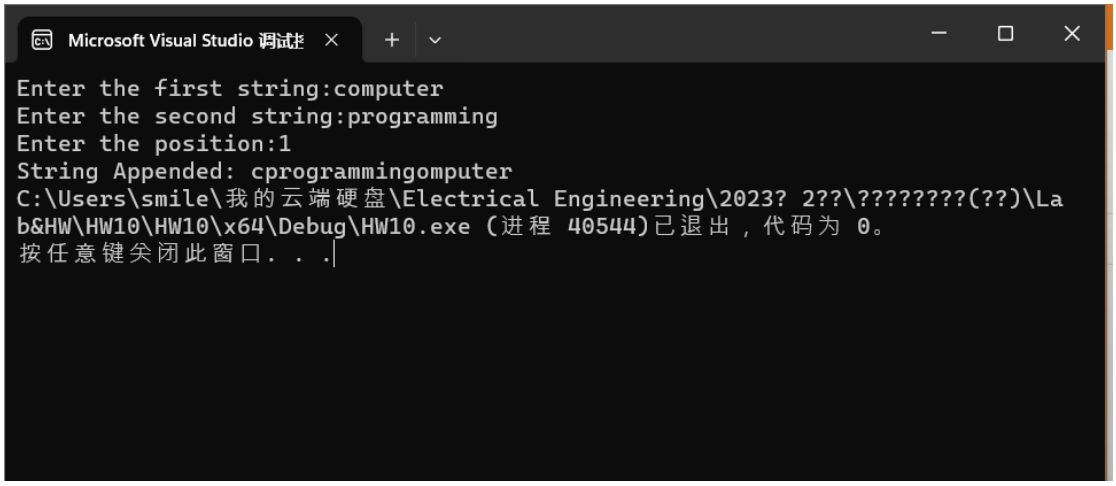
main.c*

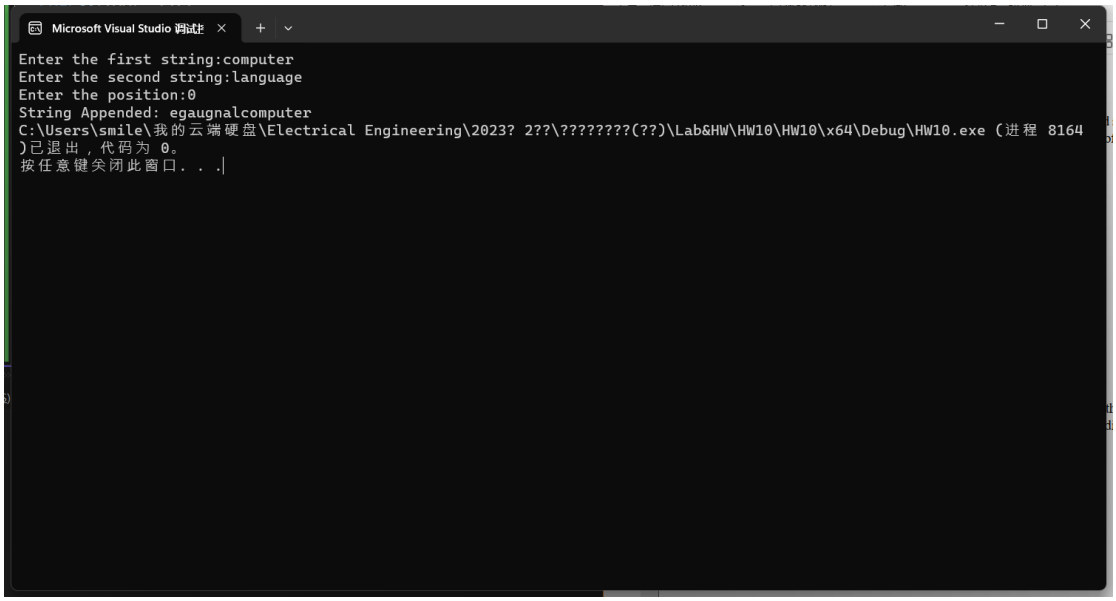
HW10 (全局范围)

```c
#define _CRT_SECURE_NO_WARNINGS
#include<stdio.h>
#include<string.h>
// ...

void apped(char* s1, char* s2, int pos);
int main()
{
    char s1[100] = { 0 };
    char s2[100] = { 0 };
    int pos = 0;

    printf("Enter the first string:");
    scanf("%s", s1);
    printf("Enter the second string:");
    scanf("%s", s2);
    printf("Enter the position:");
    scanf("%d", &pos);

    apped(s1, s2, pos);

    printf("String Appended:");
    printf("%s",s1);

    return 0;
}
```

```c
void apped(char *s1,char * s2,int pos)
{
    int length1 = strlen(s1);
    int length2 = strlen(s2);
    if (length1 < length2)
    {
        int i = length1;
        while (i >= pos)
        {
            *(s1 + i +length2) = *(s1 + i);
            i--;
        }
        int j = 0;
        while (++i <= length2)
        {
            s1[i] = s2[j++];
        }
    }
    else
    {
        int i = length1;
        while (i >= pos)
        {
            *(s1 + i + length2) = *(s1 + i);
```

```c
        {
            *(s1 + i + length2) = *(s1 + i);
            i--;
        }
        int j = length2-1;
        while (0 <= j)
        {
            s1[++i] = s2[j--];
        }
    }
}
```


Microsoft Visual Studio 调试控
Enter the first string:computer
Enter the second string:programming
Enter the position:1
String Appended: cprogrammingomputer
C:\Users\smile\我的云端硬盘\Electrical Engineering\2023? 2??\????????(??)\Lab&HW\HW10\HW10\x64\Debug\HW10.exe (进程 40544)已退出，代码为 0。
按任意键关闭此窗口. . .


Microsoft Visual Studio 调试控
Enter the first string:computer
Enter the second string:language
Enter the position:0
String Appended: egaugnalcomputer
C:\Users\smile\我的云端硬盘\Electrical Engineering\2023? 2??\????????(??)\Lab&HW\HW10\HW10\x64\Debug\HW10.exe (进程 8164)已退出，代码为 0。
按任意键关闭此窗口. . .

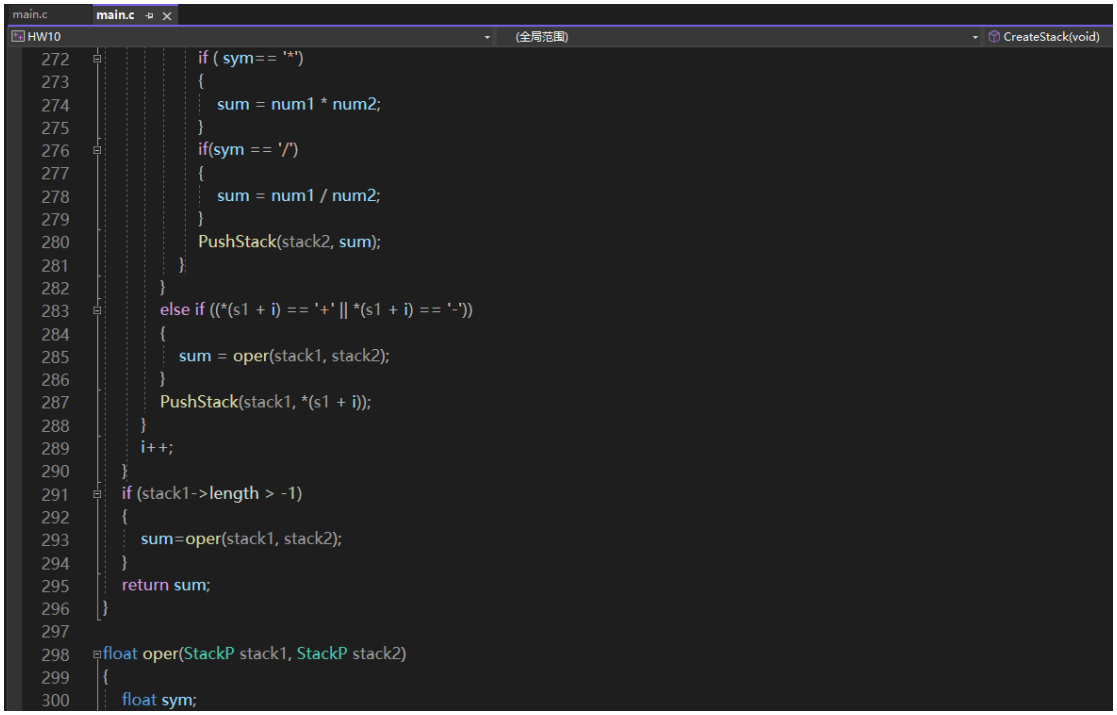
main.c main.c

HW10 (全局范围) PushStack(Stack

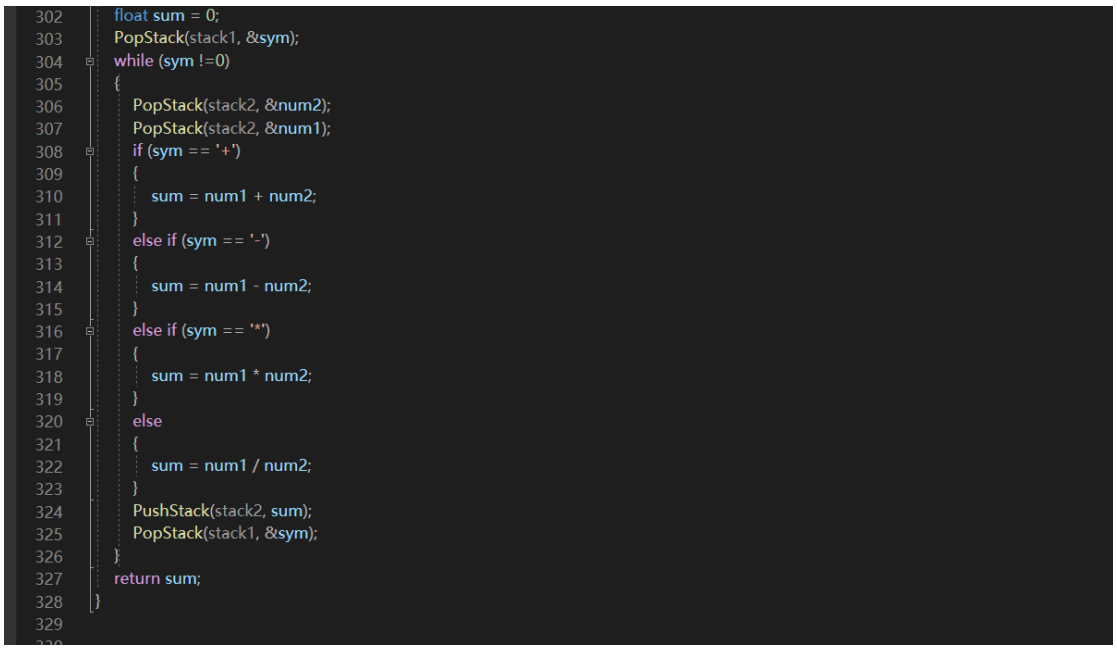
```
1   #define _CRT_SECURE_NO_WARNINGS
2   #include<stdio.h>
3   #include<string.h>
4   #include <malloc.h>
5   #include <assert.h>
6   // ...
101
102 // ...
156 #define Maxsize 20
157
158 typedef struct {
159     int length;
160     float array[Maxsize];
161 }Stack, * StackP;
162
163 StackP CreateStack(void);
164 void InitStack(StackP s);
165 void PushStack(StackP s, float num);
166 void PopStack(StackP s, float* num);
167 float calcula(float* s2, StackP stack1, StackP stack2);
168 float oper(StackP stack1, StackP stack2);
169
170 int main()
171 {
172     char s1[100] = { 0 };
173     float s2[100] = { 0 };
174     StackP stack1=CreateStack();
175     StackP stack2 = CreateStack();
176     InitStack(stack1);
```

```
175     StackP stack2 = CreateStack();
176     InitStack(stack1);
177     InitStack(stack2);
178
179     printf("Enter a formula:");
180
181     int i = 0,j=1,z=0;
182     int sum1 = 0;
183     scanf("%s", s1);
184     while (*(s1+i)!='\0')
185     {
186         if (*(s1 + i) == '+'|| *(s1 + i) == '-'|| *(s1 + i) == '*'|| *(s1 + i) =='/')
187         {
188             s2[z++] = sum1;
189             s2[z++] = *(s1 + i);
190             sum1 = 0;
191             j = 1;
192         }
193         else
194         {
195             sum1 *= j;
196             sum1 =sum1+ (*(s1 + i) -48);
197             j *= 10;
198         }
199         i++;
200     }
201     s2[z] = sum1;
202
```

```
203
204     float sum=calcula(s2, stack1, stack2);
205
206     printf("Output:%f",sum);
207
208     return 0;
209 }
210
211 StackP CreateStack(void) { ... }
217 void InitStack(StackP s) { ... }
226 void PushStack(StackP s, float num)
227 {
228     if (s->length >= Maxsize - 1)
229     {
230         printf("Error,the stack is full!\n");
231     }
232     else
233     {
234         s->array[++s->length] = num;
235     }
236 }
237 void PopStack(StackP s, float* num)
238 {
239     if (s->length <= -1)
240     {
241         *num = 0;
242     }
243     else
245         *num = s->array[s->length--];
246     }
247 }
248
249 float calcula(float *s1, StackP stack1, StackP stack2)
250 {
251     float sum;
252     int i = 0;
253     while (*(s1 + i) != 0)
254     {
255         if (*(s1 + i) != '+' && *(s1 + i) != '-' && *(s1 + i) != '*' && *(s1 + i) != '/')
256         {
257             PushStack(stack2, *(s1 + i));
258         }
259         else
260         {
261             if (stack1->length <= -1);
262             else if ((*(s1 + i) == '*' || *(s1 + i) == '/'))
263             {
264                 while (stack1->array[stack1->length] == '*' || stack1->array[stack1->length] == '/')
265                 {
266                     float sym;
267                     float num1, num2;
268                     float sum = 0;
269                     PopStack(stack2, &num2);
270                     PopStack(stack2, &num1);
271                     PopStack(stack1, &sym);
272                     if ( sym== '*')
273                     {
```

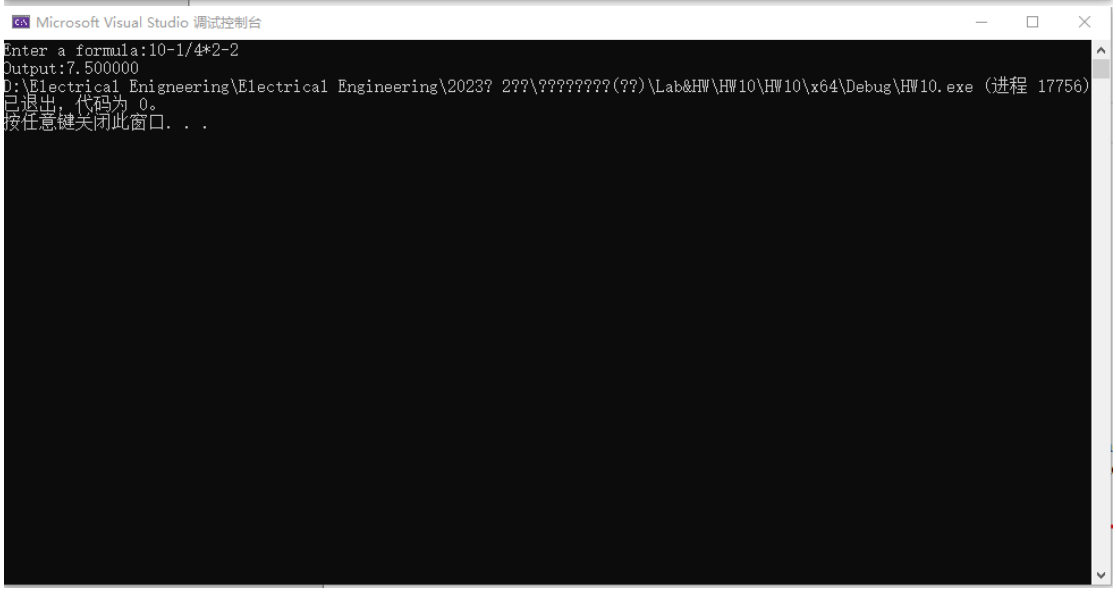


```
main.c    main.c
HW10                                    (全局范围)                    CreateStack(void)
272                     if ( sym== '*')
273                     {
274                         sum = num1 * num2;
275                     }
276                     if(sym == '/')
277                     {
278                         sum = num1 / num2;
279                     }
280                     PushStack(stack2, sum);
281                 }
282             }
283             else if ((*(s1 + i) == '+' || *(s1 + i) == '-'))
284             {
285                 sum = oper(stack1, stack2);
286             }
287             PushStack(stack1, *(s1 + i));
288         }
289         i++;
290     }
291     if (stack1->length > -1)
292     {
293         sum=oper(stack1, stack2);
294     }
295     return sum;
296 }
297
298 float oper(StackP stack1, StackP stack2)
299 {
300     float sym;
```



```
302     float sum = 0;
303     PopStack(stack1, &sym);
304     while (sym !=0)
305     {
306         PopStack(stack2, &num2);
307         PopStack(stack2, &num1);
308         if (sym == '+')
309         {
310             sum = num1 + num2;
311         }
312         else if (sym == '-')
313         {
314             sum = num1 - num2;
315         }
316         else if (sym == '*')
317         {
318             sum = num1 * num2;
319         }
320         else
321         {
322             sum = num1 / num2;
323         }
324         PushStack(stack2, sum);
325         PopStack(stack1, &sym);
326     }
327     return sum;
328 }
329
```


Microsoft Visual Studio 调试控制台
Enter a formula:5*4-6/2+1
Output:18.000000
D:\Electrical Enigneering\Electrical Engineering\2023? 2??\????????(??)\Lab&HW\HW10\HW10\x64\Debug\HW10.exe (进程 9632)
已退出，代码为 0。
按任意键关闭此窗口. . .


Microsoft Visual Studio 调试控制台
Enter a formula:10-1/4*2-2
Output:7.500000
D:\Electrical Enigneering\Electrical Engineering\2023? 2??\????????(??)\Lab&HW\HW10\HW10\x64\Debug\HW10.exe (进程 17756)
已退出，代码为 0。
按任意键关闭此窗口. . .

main.c

HW10 (全局范围) main()

```c
#define _CRT_SECURE_NO_WARNINGS
#include<stdio.h>
#include<string.h>
#include <malloc.h>
#include <assert.h>
// ...

// ...

// ...
void calculatestring(char* s, int* shortest);

int main()
{
    int count = 0 , shortest=0;
    char s1[100] = { 0 };
    char s2[100][100] = {0};
    printf("Enter the number of strings(N):");
    scanf("%d", &count);

    int j = 0;
    while (count--)
    {
        printf("Enter a string:");
        getchar();
        gets(s1);
        int i = 0;
        while (*(s1 + i) != '\0')
        {
            if (*(s1 + i) == '#')
            {
                int z = 0;
                i++;
                while (*(s1 + i) != '#'&& *(s1 + i) != '\0')
                {
                    s2[j][z] = *(s1 + i);
                    i++;
                    z++;
                }
                j++;
            }
            if (*(s1 + i) != '\0'&& *(s1 + i) != '#')
            {
                i++;
            }
        }
    }

    int flag = 0;
    for (j = 0; s2[j+1][0] != '\0'; j++)
    {
        if (strlen(s2 + flag) > strlen(s2 + j + 1))
        {
            flag = j + 1;
        }
        else
        {
            flag = flag;
        }
    }

    printf("Shortest hashtag:          #%s", s2 + flag);
    return 0;
}
```

Microsoft Visual Studio 调试控制台

```
Enter the number of strings(N):4
Enter a string:Its coming #love
Enter a string:Save lives #EveryonCounts
Enter a string:My favorite workout day. #fitness #motivation
Enter a string:All eyes on this showdown @BrayntPark
Shortest hashtag:          #love
D:\Electrical Enigneering\Electrical Engineering\2023? 2??\????????(??)\Lab&HW\HW10\HW10\x64\Debug\HW10.exe (进程 18696)
已退出，代码为 0。
按任意键关闭此窗口. . .
```