

第六次-17377191-段秋阳

1. P183, 2

```
//P183 Q2
#include <stdio.h>
#include <stdlib.h>

int main()
{
    int count, MAXCOUNT;
    float num, total;

    printf("Please type in the total number of data values to be
added:\n\n");
    scanf("%d", &MAXCOUNT);

    count = 1;
    total = 0.0;

    while (count <= MAXCOUNT)
    {
        printf("Enter a number: ");
        scanf("%f", &num);
        total += num;
        printf("The total is now %f\n", total);
        count++;
    }

    printf("\n\nThe final total of the %d numbers is %f\n", MAXCOUNT,
total);

    system("pause");
    return 0;
}
```

```
d:\lovestudy\studybetter\C语言程序设计\C-Programming\Week07\01.c.exe
Please type in the total number of data values to be added:
5
Enter a number: 1.0
The total is now 1.000000
Enter a number: 2.0
The total is now 3.000000
Enter a number: 3.0
The total is now 6.000000
Enter a number: 4.0
The total is now 10.000000
Enter a number: 5.0
The total is now 15.000000

The final total of the 5 numbers is 15.000000
请按任意键继续. . .
```

2. P191, 7

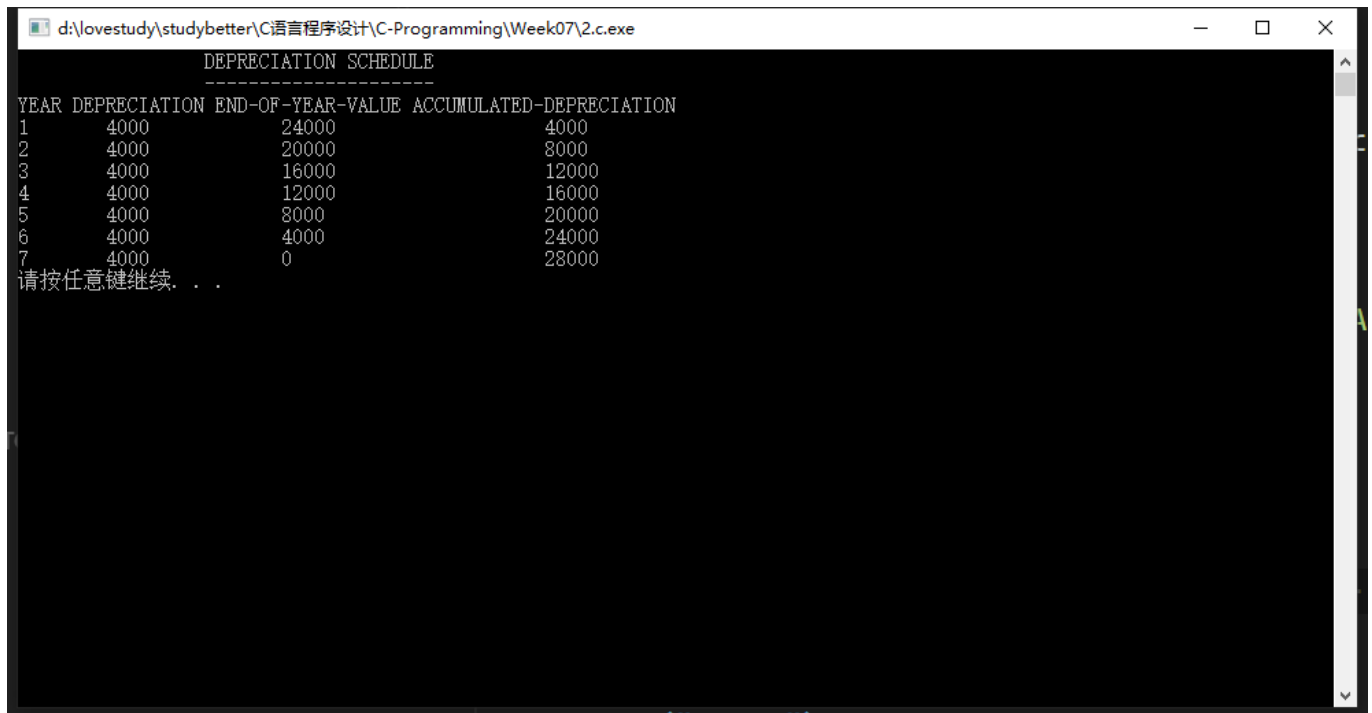
```
//P191 Q7
#include <stdio.h>
#include <stdlib.h>

int main()
{
    int total = 28000, years = 7, vel = 4000, acc_dep = 0;

    printf("\t\t DEPRECIATION SCHEDULE\n");
    printf("\t\t ----- \n");
    printf("YEAR DEPRECIATION END-OF-YEAR-VALUE ACCUMULATED-DEPRECIATION\n");

    for (int i = 1; i <= years; i++)
    {
        total -= vel;
        acc_dep += vel;
        printf("%d\t%d\t\t%d\t\t\t%d\n", i, vel, total, acc_dep);
    }

    system("pause");
    return 0;
}
```



The screenshot shows a Windows command prompt window titled "d:\lovestudy\studybetter\C语言程序设计\C-Programming\Week07\2.c.exe". The program output is as follows:

```
DEPRECIATION SCHEDULE
-----
YEAR DEPRECIATION END-OF-YEAR-VALUE ACCUMULATED-DEPRECIATION
1      4000      24000      4000
2      4000      20000      8000
3      4000      16000     12000
4      4000      12000     16000
5      4000       8000     20000
6      4000       4000     24000
7      4000        0     28000
请按任意键继续. . .
```

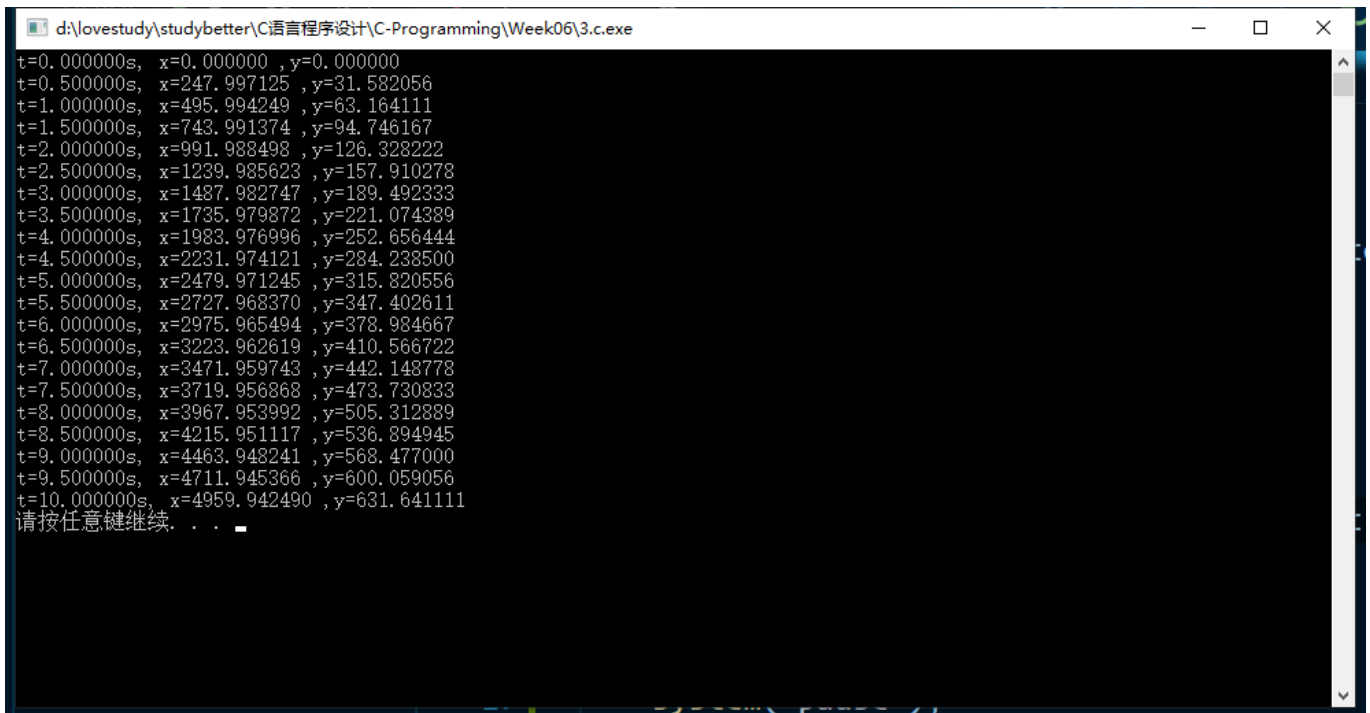
3. P198, 11

```
//P198 11
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
#define delta 0.5

int main()
{
    double v = 500.0, theta = 22.8 / 180, totalTime = 10.0, t = 0;

    while (t <= totalTime)
    {
        double x = v * t * cos(theta);
        double y = v * t * sin(theta);
        printf("t=%lfs, x=%lf ,y=%lf \n", t, x, y);
        t += delta;
    }

    system("pause");
    return 0;
}
```



```
d:\lovestudy\studybetter\C语言程序设计\C-Programming\Week06\3.c.exe
t=0.000000s, x=0.000000, y=0.000000
t=0.500000s, x=247.997125, y=31.582056
t=1.000000s, x=495.994249, y=63.164111
t=1.500000s, x=743.991374, y=94.746167
t=2.000000s, x=991.988498, y=126.328222
t=2.500000s, x=1239.985623, y=157.910278
t=3.000000s, x=1487.982747, y=189.492333
t=3.500000s, x=1735.979872, y=221.074389
t=4.000000s, x=1983.976996, y=252.656444
t=4.500000s, x=2231.974121, y=284.238500
t=5.000000s, x=2479.971245, y=315.820556
t=5.500000s, x=2727.968370, y=347.402611
t=6.000000s, x=2975.965494, y=378.984667
t=6.500000s, x=3223.962619, y=410.566722
t=7.000000s, x=3471.959743, y=442.148778
t=7.500000s, x=3719.956868, y=473.730833
t=8.000000s, x=3967.953992, y=505.312889
t=8.500000s, x=4215.951117, y=536.894945
t=9.000000s, x=4463.948241, y=568.477000
t=9.500000s, x=4711.945366, y=600.059056
t=10.000000s, x=4959.942490, y=631.641111
请按任意键继续. . .
```

4. P202, 5

```
//P202 5
#include <stdio.h>
#include <stdlib.h>
#include <math.h>

#define DUE 10
#define COUNT 7
#define delta 0.01

int main()
{
    double init = 1000.0;

    for (int i = 0; i < COUNT; i++) //Outer loop 7
    {
        double rate = 0.06 + i * delta;
        printf("rate:%lf", rate);

        for (int year = 1; year <= DUE; year++) //Inner loop 10
        {
            printf("\t %lf", init * pow(1 + rate, year));
        }

        printf("\n");
    }

    system("pause");
    return 0;
}
```

File Edit View Help

Path: d:\lovestudy\studybetter\C语言程序设计\C-Programming\Week06\4.c.exe

rate:0.060000	1060.000000	1123.600000	1191.016000	1262.476960	1338.225578	1418.519112	1503.630259	1593.848075	1689.478959	1790.847697
rate:0.070000	1070.000000	1144.900000	1225.043000	1310.796010	1402.351731	1500.730352	1605.781476	1718.186180	1838.459212	1967.151357
rate:0.080000	1080.000000	1166.400000	1259.712000	1360.489960	1469.330777	1586.874323	1713.324269	1850.830210	1999.004627	2158.924987
rate:0.090000	1090.000000	1188.100000	1295.029000	1411.581610	1538.623955	1677.100111	1828.039121	1992.562642	2171.893279	2367.363675
rate:0.100000	1100.000000	1210.000000	1331.000000	1464.100000	1610.510000	1771.561000	1948.717100	2143.538810	2357.947691	2593.742460
rate:0.110000	1110.000000	1222.100000	1367.531000	1512.070410	1685.659155	1870.414552	2076.150153	2294.537770	2558.036924	2839.420936
rate:0.120000	1120.000000	1254.400000	1404.928000	1573.519360	1762.341683	1973.822685	2210.681407	2475.963176	2773.078757	3105.848208

请按任意键继续. . .

5. P205, 3

```
//P205 3
#include <stdio.h>
#include <stdlib.h>
#define MAXLEN 20

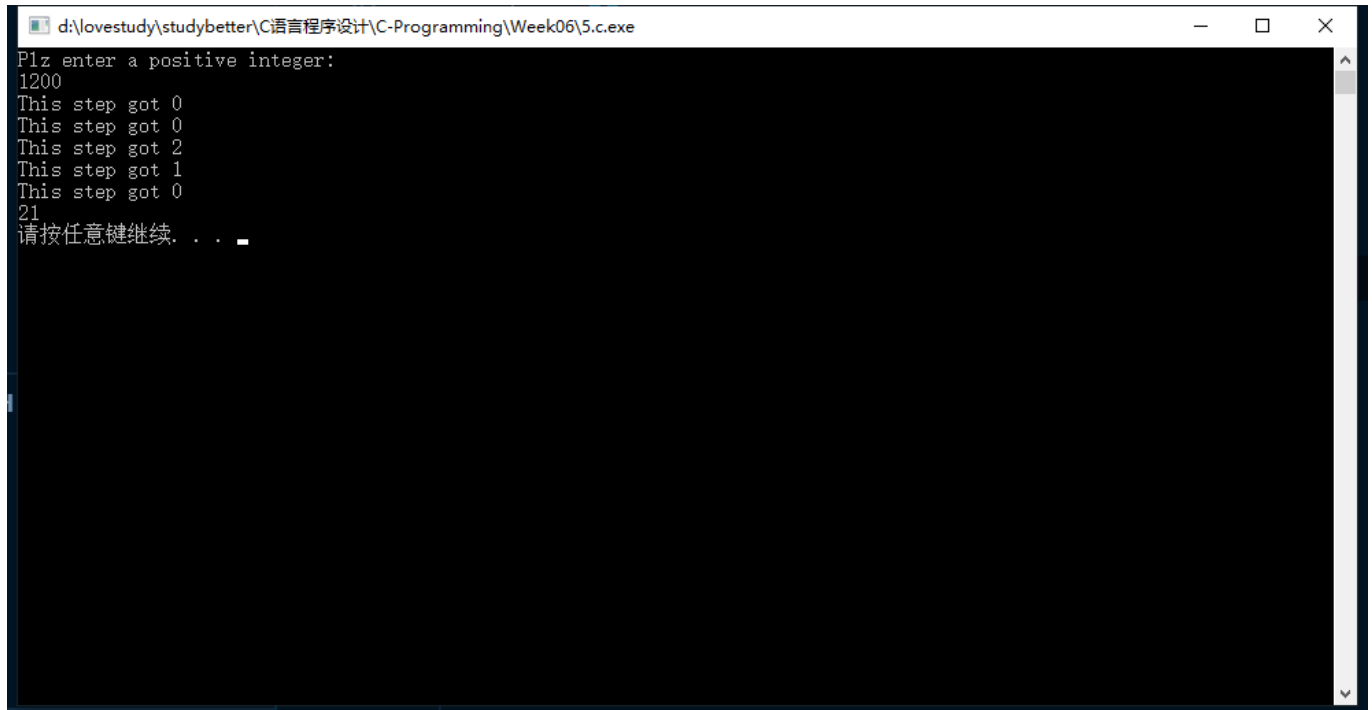
int main()
{
    int res[MAXLEN];
    int num, q, r, top = -1;
    printf("Plz enter a positive integer:\n");
    scanf("%d", &num);

    if (num <= 0)
    {
        printf("Error!\n");
        return -1;
    }
    else
    {
        do
        {
            r = num % 10;
            printf("This step got %d\n", r);
            num = (int)(num / 10);
            res[++top] = r;
        } while (!(r == 0 && num == 0));
    }

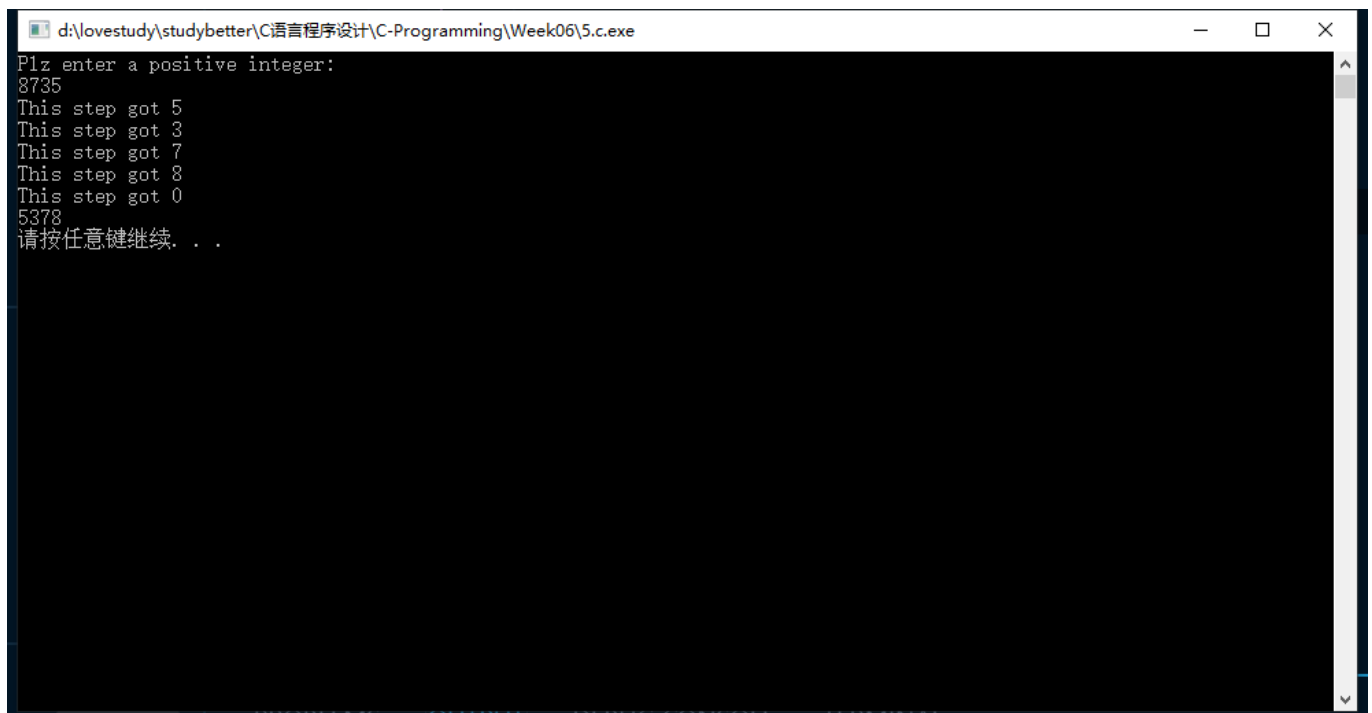
    for (int i = 0; i < top; i++)
    {
```

```
        if (res[i] != 0)
            printf("%d", res[i]);
    }

    printf("\n");
    system("pause");
    return 0;
}
```



The screenshot shows a Windows command prompt window titled "d:\lovestudy\studybetter\C语言程序设计\C-Programming\Week06\5.c.exe". The program prompts the user to "Plz enter a positive integer:". The user enters "1200". The program then outputs the following steps: "This step got 0", "This step got 0", "This step got 2", "This step got 1", "This step got 0", and "21". Finally, it displays "请按任意键继续. . .".



The screenshot shows the same C program execution window. The user enters "8735". The program outputs the following steps: "This step got 5", "This step got 3", "This step got 7", "This step got 8", "This step got 0", and "5378". Finally, it displays "请按任意键继续. . .".

6. 编写程序，找出用户输入一串数中的最大数和最小数。程序需要提示用户一个一个地输入数，当用户输入0或负数时，程序停止输入，并显示已输入的最大非负数和最小非负数。注意：输入的数不一定是整数。

```
//Find max and min
#include <stdio.h>
#include <stdlib.h>
#define MAXLEN 100

int main()
{
    float nums[MAXLEN];
    int i = 0;
    float num, max, min;

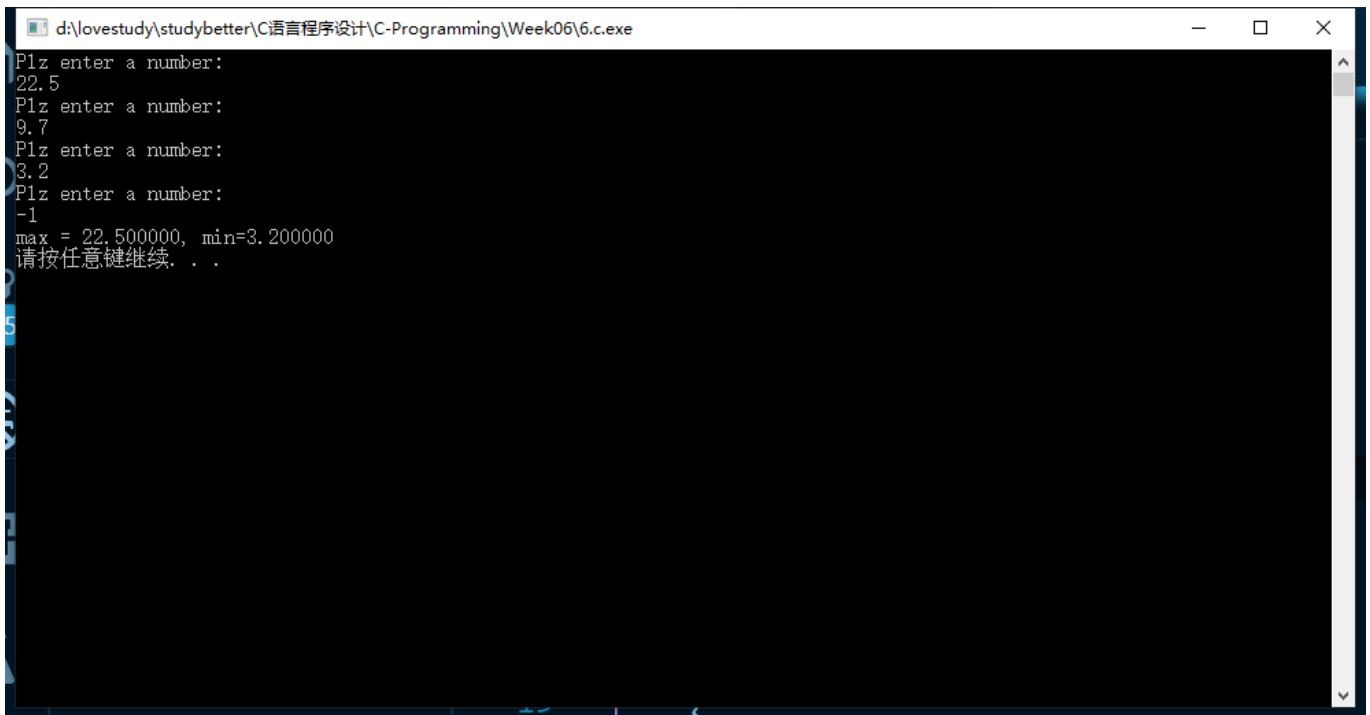
    do
    {
        printf("Plz enter a number:\n");
        scanf("%f", &num);
        if (num > 0)
        {
            nums[i] = num;
            i++;
        }
    } while (num > 0);

    if (nums != NULL)
    {
        max = nums[0], min = nums[0];
    }
    else
    {
        printf("Empty!\n");
        return -1;
    }

    for (int j = 0; j < i; j++)
    {
        double temp = nums[j];
        if (temp > max)
            max = temp;
        if (temp < min)
            min = temp;
    }

    printf("max = %f, min=%f\n", max, min);

    system("pause");
    return 0;
}
```



```
d:\lovestudy\studybetter\C语言程序设计\C-Programming\Week06\6.c.exe
Plz enter a number:
22.5
Plz enter a number:
9.7
Plz enter a number:
3.2
Plz enter a number:
-1
max = 22.500000, min=3.200000
请按任意键继续. . .
```

7. 编写程序，要求用户输入一个分数，然后将其约为最简形式。如输入 6/12，输出 1/2；输入 12/6，输出 2。提示：先计算出分子、分母的最大公约数。

```
//Simplify fraction
#include <stdio.h>
#include <stdlib.h>

int MaxPrime(int, int);

int main()
{
    int numerator, denominator;
    printf("plz enter a fraction:\n");
    scanf("%d/%d", &numerator, &denominator);

    if (denominator == 0)
    {
        printf("Input error!\n");
        return -1;
    }

    int prime = MaxPrime(numerator, denominator);
    numerator /= prime;
    denominator /= prime;

    if (denominator == 1)
        printf("%d\n", numerator);
    else
        printf("%d/%d\n", numerator, denominator);

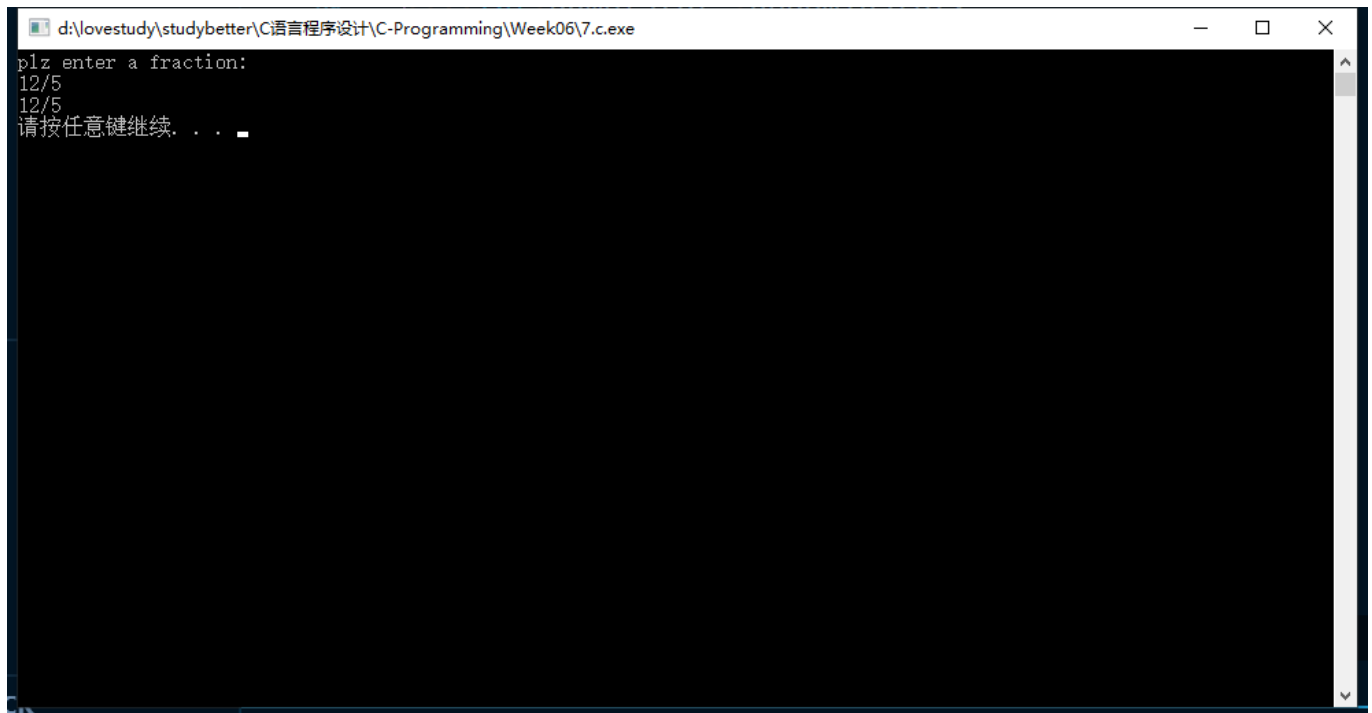
    system("pause");
}
```



```
        return 0;
    }

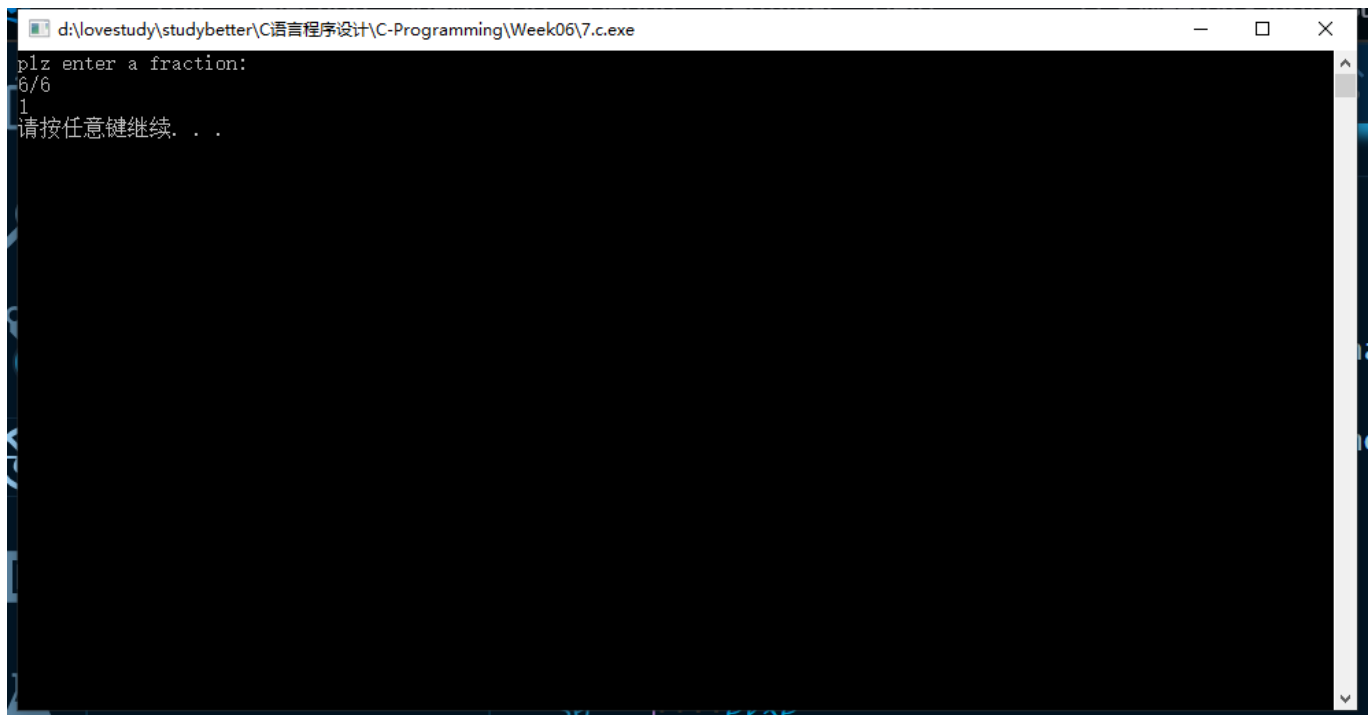
    int MaxPrime(int m, int n)
    {
        int i;
        i = (m < n) ? m : n;

        while (i > 0)
        {
            if (m % i == 0 && n % i == 0)
                return i;
            i--;
        }
    }
}
```



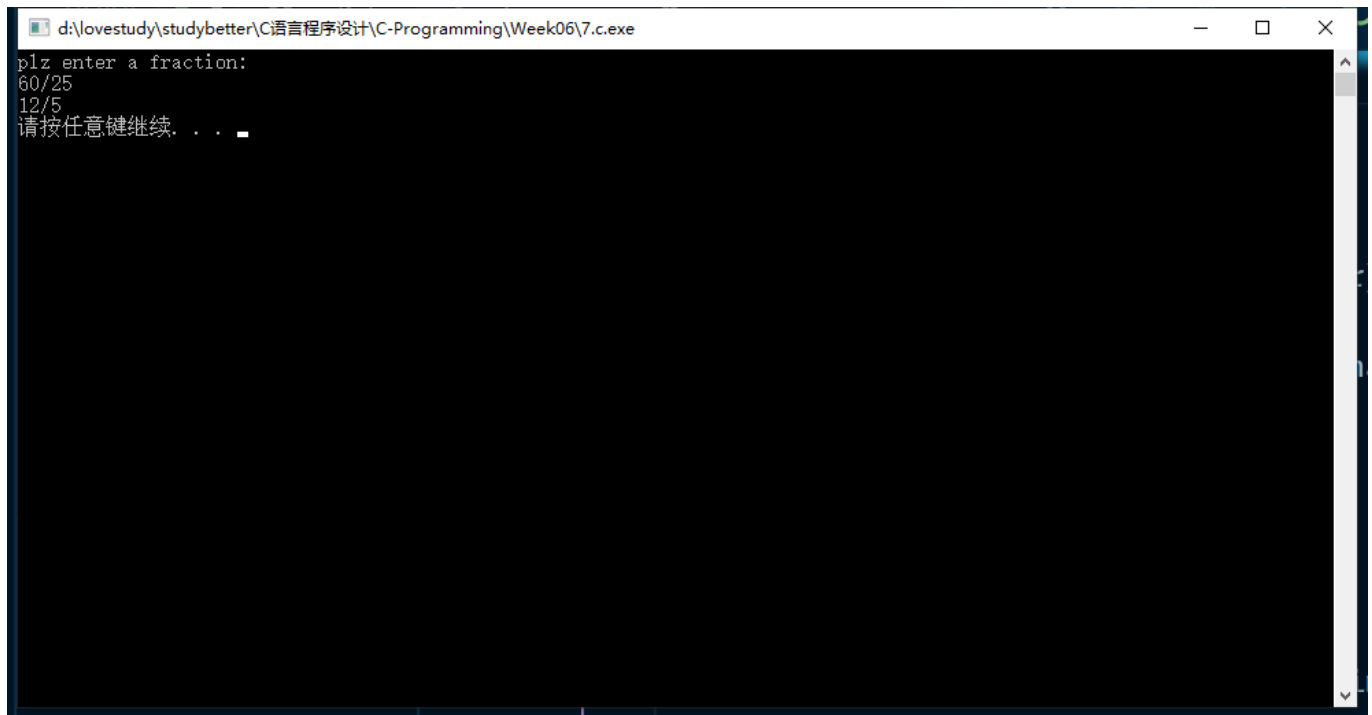
A screenshot of a Windows command prompt window titled "d:\lovestudy\studybetter\C语言程序设计\C-Programming\Week06\7.c.exe". The window has a black background with white text. The text shows the program's execution: it prompts "plz enter a fraction:", the user enters "12/5", the program outputs "12/5", and then displays "请按任意键继续. . .".

```
d:\lovestudy\studybetter\C语言程序设计\C-Programming\Week06\7.c.exe
plz enter a fraction:
12/5
12/5
请按任意键继续. . .
```



A second screenshot of the same command prompt window, showing the program being run again. The text shows the prompt "plz enter a fraction:", the user entering "6/6", the program outputting "1", and then displaying "请按任意键继续. . .".

```
d:\lovestudy\studybetter\C语言程序设计\C-Programming\Week06\7.c.exe
plz enter a fraction:
6/6
1
请按任意键继续. . .
```



```
d:\lovestudy\studybetter\C语言程序设计\C-Programming\Week06\7.c.exe
plz enter a fraction:
60/25
12/5
请按任意键继续. . .
```

Gotta try my best to finish every exercise. But C-lang is boring enough... Expecting the JAVA course in next semester! Whatever, every line of code deserves to be respected, just stick to it and keep making progress, I will. 😊