

البرمجة ٢

اعداد المهندسة رود الأصفر

```

ConsoleApplication1.Program
Main(string[] args)
{
    using System;
    using System.Collections.Generic;
    using System.Linq;
    using System.Text;

    namespace ConsoleApplication1
    {
        class Program
        {
            static void Main(string[] args)
            {
                int[,] x = new int[3, 4];
                for (int i = 0; i < 3; i++)
                {
                    for (int j = 0; j < 4; j++)
                    {
                        x[i, j] = int.Parse(Console.ReadLine());
                    }
                }
                int min = x[0, 0];
                for (int i = 0; i < 3; i++)
                {
                    for (int j = 0; j < 4; j++)
                    {
                        if (x[i, j] < min) min = x[i, j];
                    }
                }
                Console.WriteLine("min=" + min);
                int max = x[0, 0];
                for (int i = 0; i < 3; i++)
                {
                    for (int j = 0; j < 4; j++)
                    {
                        if (x[i, j] > max) max = x[i, j];
                    }
                }
            }
        }
    }
}

```

```

ConsoleApplication1.Program
Main(string[] args)
{
    {
        if (x[i, j] > max) max = x[i, j];
    }
}
Console.WriteLine("max=" + max);
int sum=0;
for (int i = 0; i < 3; i++)
{
    for (int j = 0; j < 4; j++)
    {
        sum = sum + x[i, j];
    }
}
float f=(float)sum/12;
Console.WriteLine("aver=" + f);
}
}
}

```

برنامج يدخل مصفوفة ثنائية
ويقوم بحساب أعلى قيمة
وأدنى قيمة والمتوسط
الحسابي

```

int sum1=0;
for (int i = 0; i < 3; i++)
{
    for (int j = 0; j < 4; j++)
    {
        if (i == j) sum1 = sum1 + x[i, j];
    }
}
Console.WriteLine("vector=" + sum1);

```

حساب القطر الرئيسي للمصفوفة

```

C:\Windows\system32\cmd.exe
1
2
3
4
6
7
8
9
10
6
5
4
min=0
max=9
aver=4.583333
vector=13
Press any key to continue . . .

```

حساب مجموع عناصر السطر
الاول
وحساب عناصر القطر الثانوي

```
int sum2=0;
for (int i = 0; i < 3; i++)
{
    for (int j = 0; j < 4; j++)
    {
        if (i == 0)
            sum2 = sum2 + x[i, j];
    }
}
Console.WriteLine("equal=" + sum2);
int sum3=0;
int a =4;
for (int i = 0; i < 3; i++)
{
    sum3 = sum3 + x[i, a];
    a--;
}

Console.WriteLine("sum3=" + sum3);

    }
}
```

```

namespace ConsoleApplication2
{
    class Program
    {
        static void Main(string[] args)
        {
            int[,] y = new int[3, 3];
            for (int i = 0; i < 3; i++)
            {
                for (int j = 0; j < 3; j++)
                { y[i, j] = int.Parse(Console.ReadLine()); }
            }

            for (int i = 0; i < 3; i++)
            {
                for (int j = 0; j < 3; j++)
                {
                    Console.Write(y[i, j] + "  ");
                }
                Console.WriteLine();
            }
        }
    }
}

```

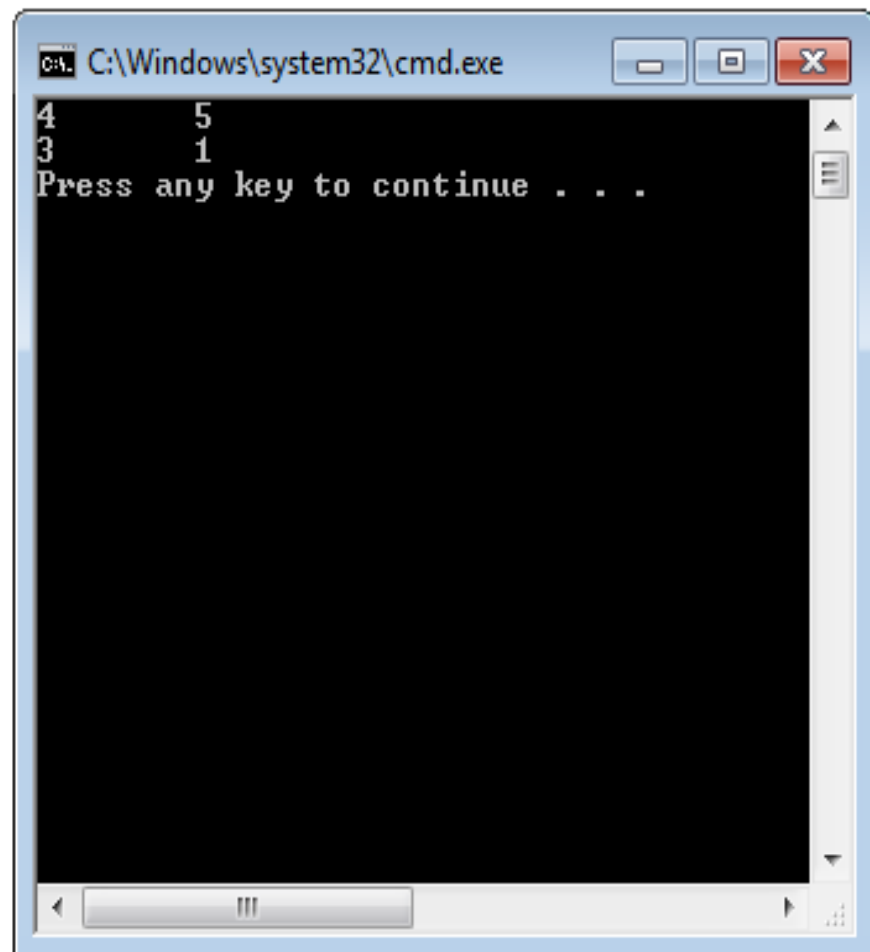
```

5
6
7
89
8
6
5
4
3
5 6 7
89 8 6
5 4 3
Press any key to continue . . .

```

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication3
{
    class Program
    {
        static void Main(string[] args)
        {
            int[,] x = { { 4, 5 }, { 3, 1 } };
            for (int i = 0; i < 2; i++)
            {
                for (int j = 0; j < 2; j++)
                {
                    Console.Write(x[i, j] + "\t");
                }
                Console.WriteLine();
            }
        }
    }
}
```

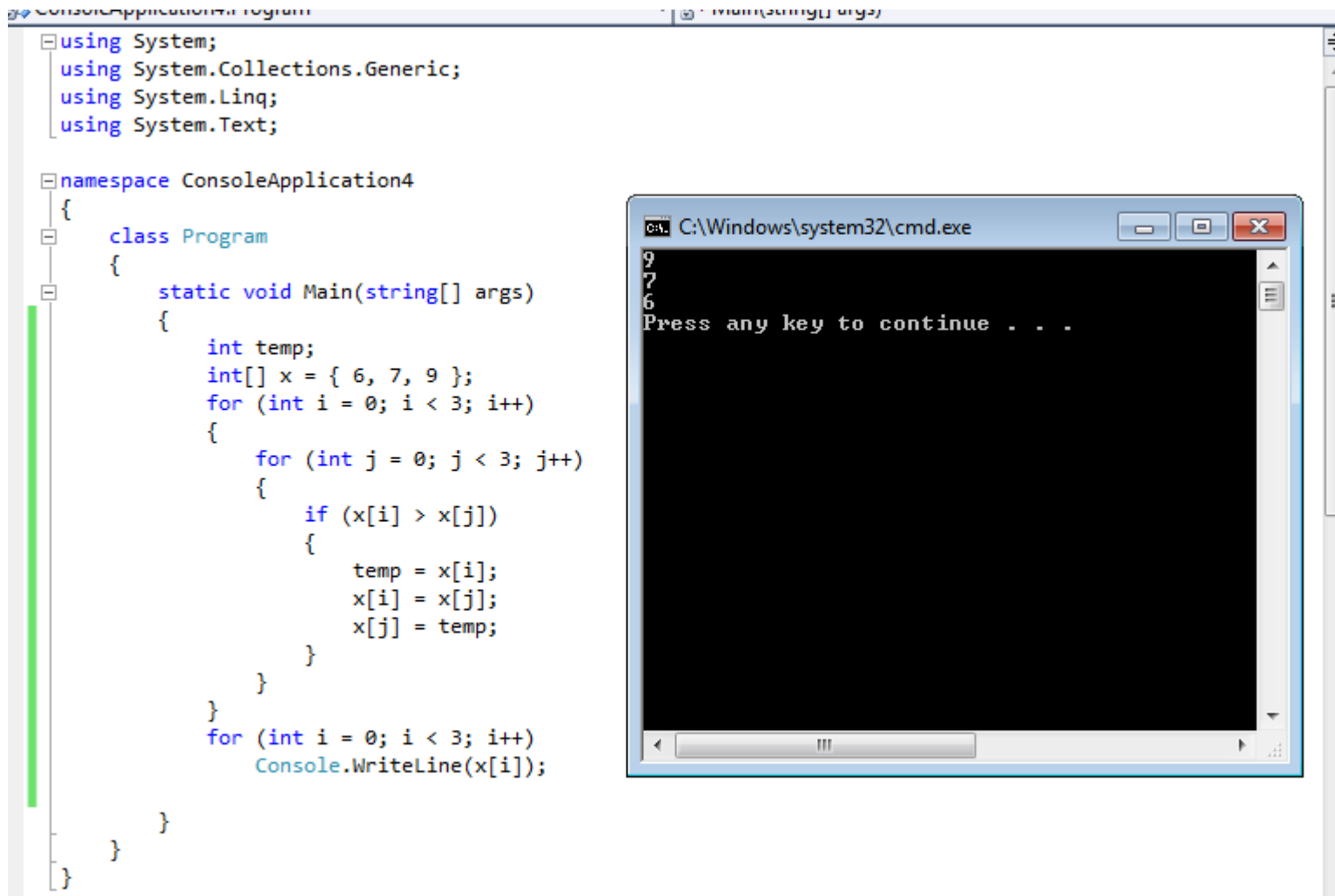


The screenshot shows a Windows command prompt window titled "C:\Windows\system32\cmd.exe". The window has a black background and white text. The output of the program is displayed as follows:

```
4      5
3      1
Press any key to continue . . .
```

The output shows a 2x2 grid of numbers: 4 and 5 on the first line, 3 and 1 on the second line. The numbers are separated by a tab character. Below the numbers, the prompt "Press any key to continue . . ." is displayed. The window has standard Windows window controls (minimize, maximize, close) in the top right corner and a scrollbar on the right side.

يقوم بترتيب عناصر مصفوفة
بشكل تنازلي



The image shows a Visual Studio IDE with a C# console application. The code implements a bubble sort algorithm to sort an array of integers in descending order. The array initially contains {6, 7, 9}. The output of the program, displayed in a separate console window, shows the sorted array: 9, 7, 6. The console window also displays the prompt "Press any key to continue . . .".

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication4
{
    class Program
    {
        static void Main(string[] args)
        {
            int temp;
            int[] x = { 6, 7, 9 };
            for (int i = 0; i < 3; i++)
            {
                for (int j = 0; j < 3; j++)
                {
                    if (x[i] > x[j])
                    {
                        temp = x[i];
                        x[i] = x[j];
                        x[j] = temp;
                    }
                }
            }
            for (int i = 0; i < 3; i++)
                Console.WriteLine(x[i]);
        }
    }
}
```

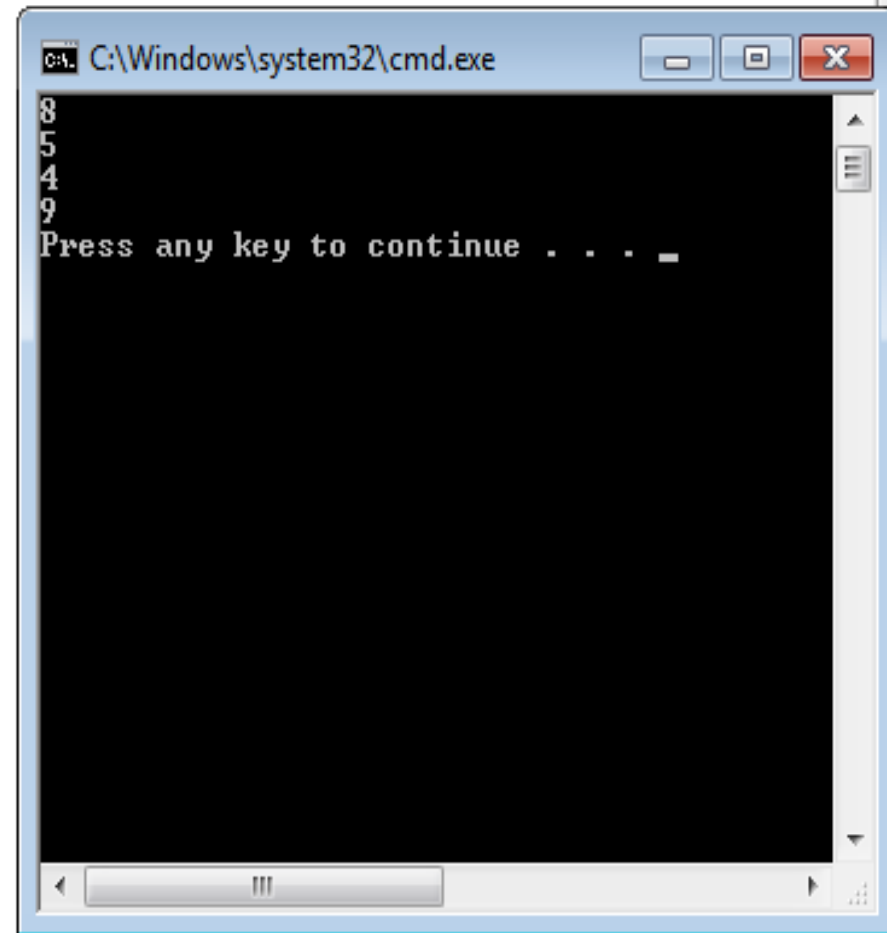
C:\Windows\system32\cmd.exe

9
7
6
Press any key to continue . . .

تابع لجمع عددين صحيحين

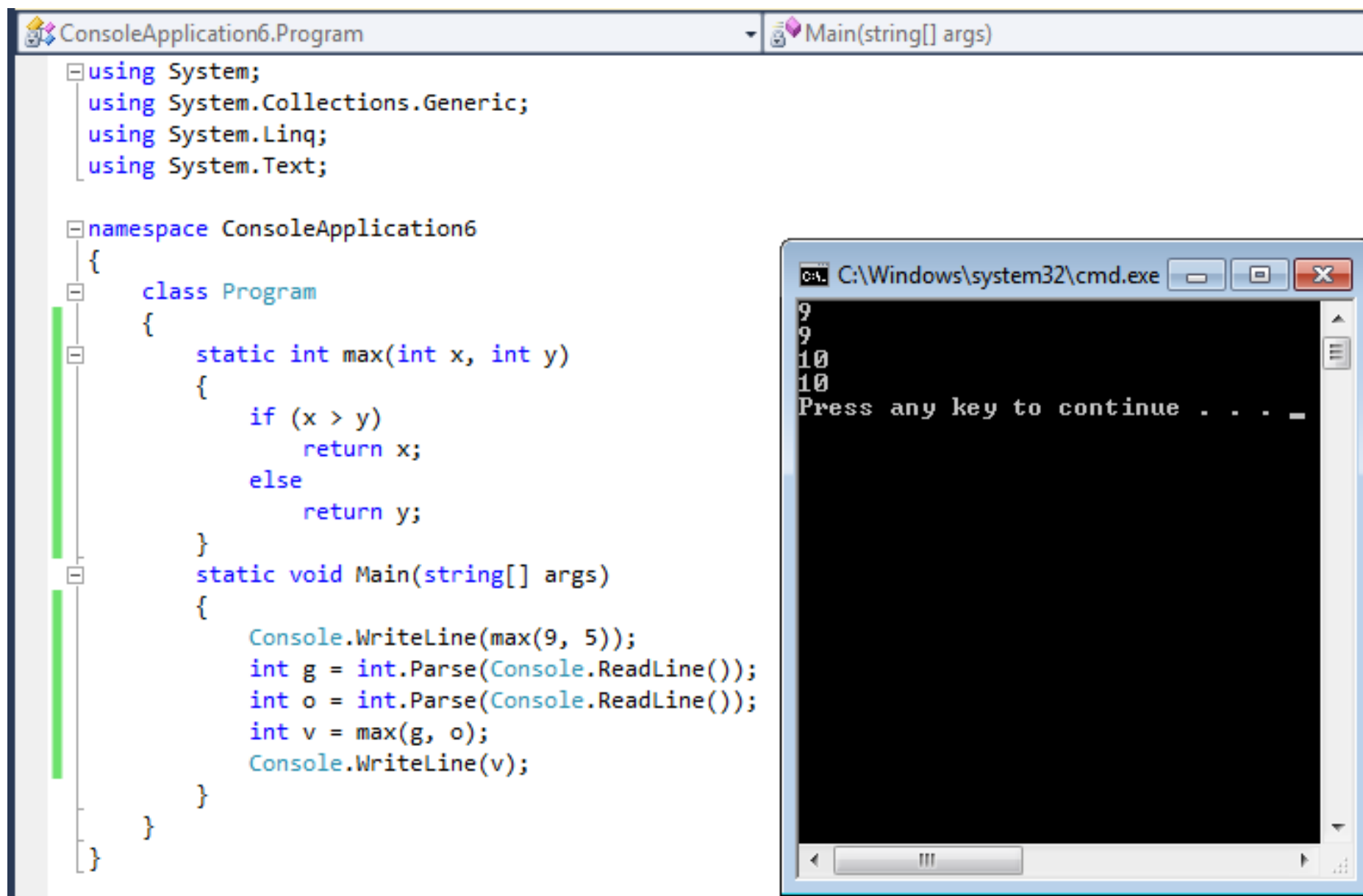
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication5
{
    class Program
    {
        static int sum(int x, int y)
        {
            int z = x + y;
            return z;
        }
        static void Main(string[] args)
        {
            Console.WriteLine(sum(5, 3));
            int x = int.Parse(Console.ReadLine());
            int y = int.Parse(Console.ReadLine());
            int z = sum(x, y);
            Console.WriteLine(z);
        }
    }
}
```



```
C:\Windows\system32\cmd.exe
8
5
4
9
Press any key to continue . . . _
```

تابع لإعادة القيمة الأكبر من عددين صحيحين



The image shows a Visual Studio IDE window titled 'ConsoleApplication6.Program' with a dropdown menu showing 'Main(string[] args)'. The code in the editor is as follows:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication6
{
    class Program
    {
        static int max(int x, int y)
        {
            if (x > y)
                return x;
            else
                return y;
        }
        static void Main(string[] args)
        {
            Console.WriteLine(max(9, 5));
            int g = int.Parse(Console.ReadLine());
            int o = int.Parse(Console.ReadLine());
            int v = max(g, o);
            Console.WriteLine(v);
        }
    }
}
```

To the right of the code editor is a console window titled 'C:\Windows\system32\cmd.exe'. It displays the output of the program:

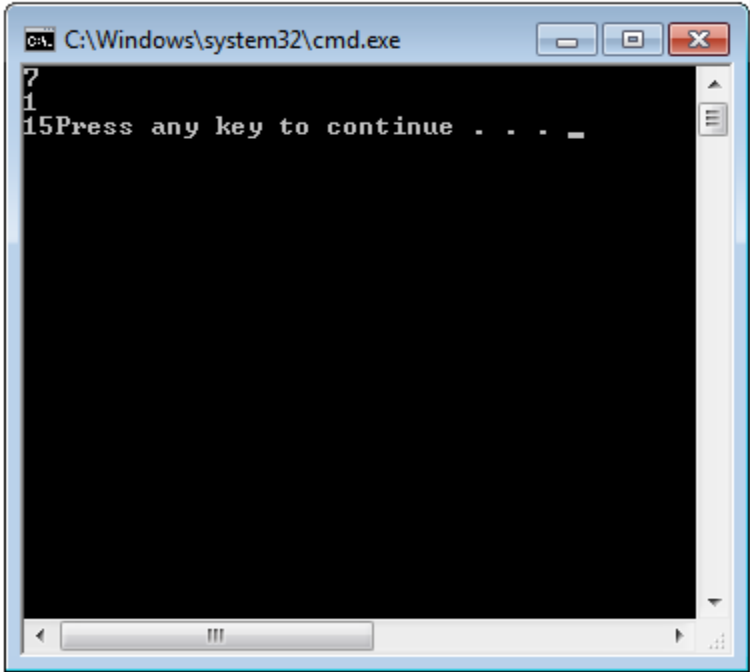
```
9
9
10
10
Press any key to continue . . .
```

تابع لحل المعادلة $z=3x+6y^2$

```
ConsoleApplication7/Program
Main(string[] args)
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication7
{
    class Program
    {
        static int f(int x, int y)
        {
            int z = (3 * x) - (6 * y * y);
            return z;
        }

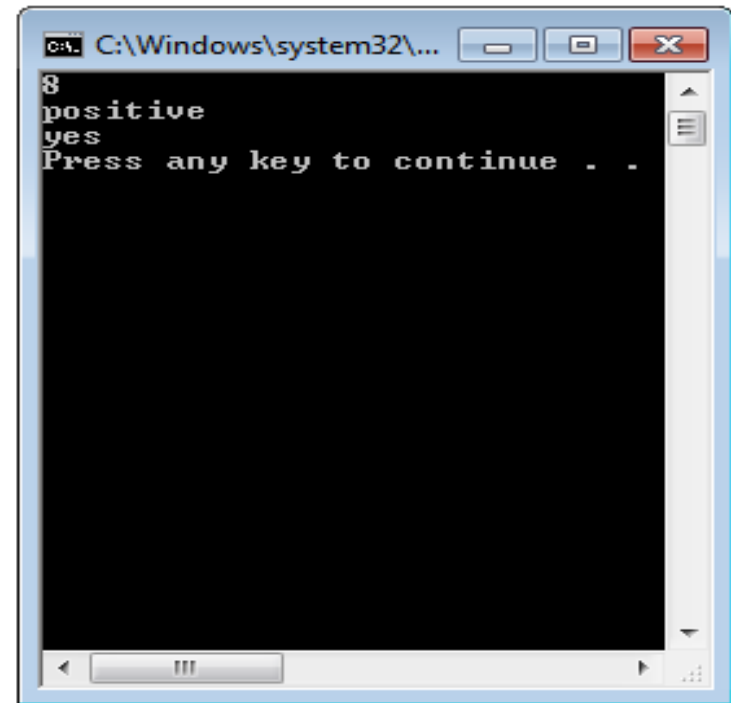
        static void Main(string[] args)
        {
            int v = int.Parse(Console.ReadLine());
            int w = int.Parse(Console.ReadLine());
            int z = f(v, w);
            Console.Write(z);
        }
    }
}
```



برنامج يحتوي تابعين الأول من أجل اختبار العدد موجب أم سالب.

والتابع الثاني من أجل معرفة العدد زوجي أم فردي

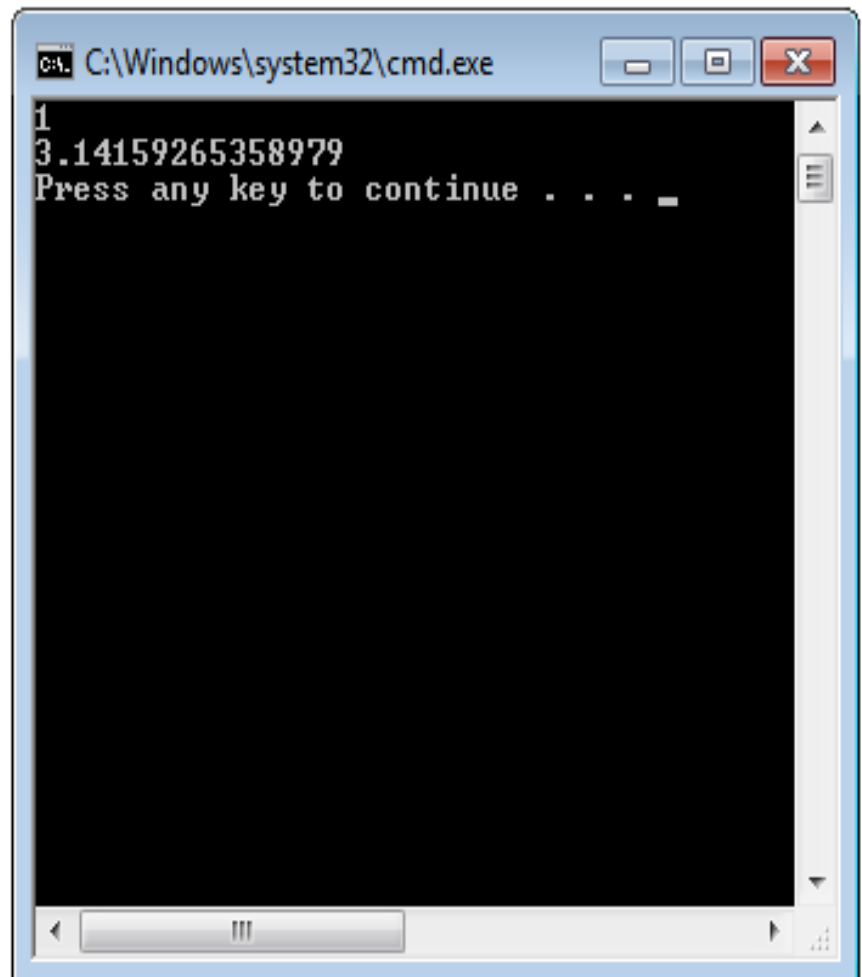
```
class Program
{
    static bool f(int x)
    {
        if (x > 0)
            return true;
        else
            return false;
    }
    static int z(int x)
    {
        if (x % 2 == 0)
            return 1;
        else
            return 0;
    }
    static void Main(string[] args)
    {
        int x = int.Parse(Console.ReadLine());
        bool t = f(x);
        if (t==true)
            Console.WriteLine("positive");
        else
            Console.WriteLine("negative");
        int v = z(x);
        if (v == 1)
            Console.WriteLine("yes");
        else
            Console.WriteLine("no");
    }
}
```



تابع من أجل حساب مساحة دائرة

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication9
{
    class Program
    {
        static double circle(int r)
        {
            double z = Math.PI * r*r;
            return z;
        }
        static void Main(string[] args)
        {
            int r = int.Parse(Console.ReadLine());
            double z = circle(r);
            Console.WriteLine(z);
        }
    }
}
```



```
C:\Windows\system32\cmd.exe
1
3.14159265358979
Press any key to continue . . . _
```

تابع للبحث ضمن مصفوفة : هنا وضعنا العنصر المطلوب وعناصر المصفوفة المطلوب البحث فيها، يمكن وضعها بادخال من المستخدم

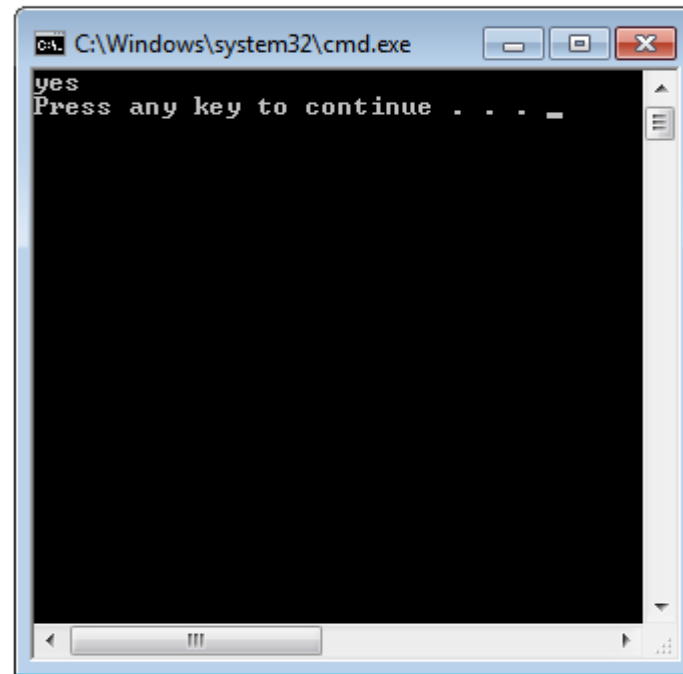
mespace ConsoleApplication10

```
class Program
{
    static int search(int[] x, int z, int y)
    {
        int w = 0;

        for (int i = 0; i < y; i++)
        {
            if (x[i] == z)
                w = 1;
        }
        if (w == 1)

            return 1;
        else
            return 0;
    }

    static void Main(string[] args)
    {
        int[] x = { 7, 8, 5, 9 };
        int z=search(x, 5, 4);
        if (z == 1)
            Console.WriteLine("yes");
        else
            Console.WriteLine("no");
    }
}
```

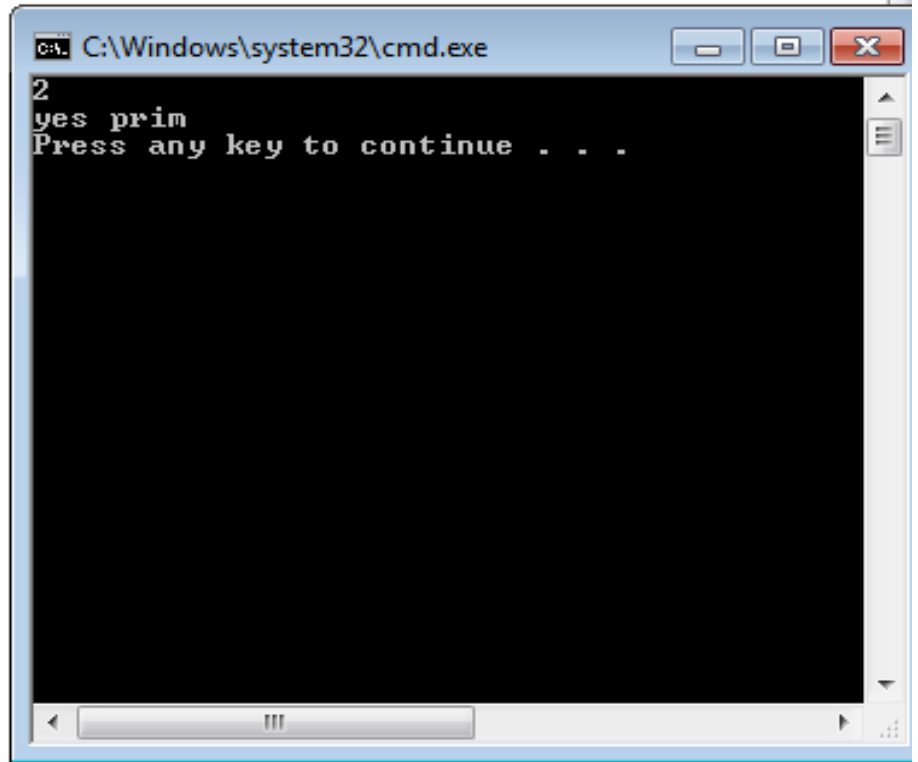


تابع لاختبار العدد أولي

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication11
{
    class Program
    {
        static bool prim(int x)
        {
            for (int i = 2; i < x; i++)
            {
                if (x % i == 0)
                    return false;
            }
            return true;
        }

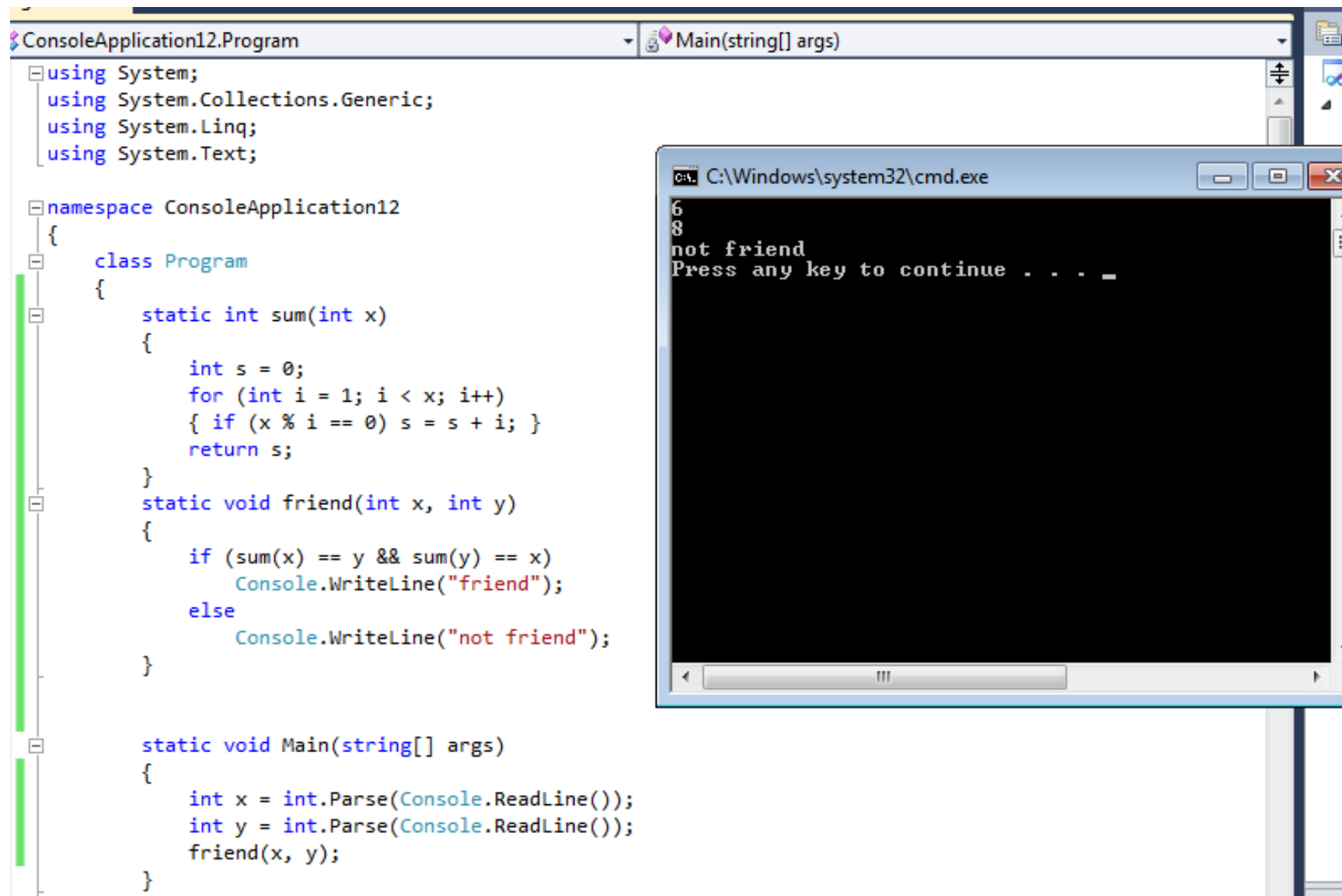
        static void Main(string[] args)
        {
            int v = int.Parse(Console.ReadLine());
            bool z = prim(v);
            if (z == true)
                Console.WriteLine("yes prim");
            else
                Console.WriteLine("no");
        }
    }
}
```



The screenshot shows a Windows command prompt window titled "C:\Windows\system32\cmd.exe". The window has a black background with white text. The first line shows the number "2" entered. The second line shows the output "yes prim". The third line shows the prompt "Press any key to continue . . .".

```
C:\Windows\system32\cmd.exe
2
yes prim
Press any key to continue . . .
```

تابع لفحص عددين هل هما صديقين ام لا



The image shows a Visual Studio IDE with a C# console application. The code defines a static method `sum` to calculate the sum of divisors of a number `x`. It also defines a static method `friend` that checks if two numbers `x` and `y` are amicable (friendly) numbers by comparing the sum of divisors of each to the other number. The `Main` method reads two integers from the console and calls the `friend` method. The console window shows the program's output for inputs 6 and 8, which are not amicable numbers.

```
ConsoleApplication12.Program
Main(string[] args)

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication12
{
    class Program
    {
        static int sum(int x)
        {
            int s = 0;
            for (int i = 1; i < x; i++)
            { if (x % i == 0) s = s + i; }
            return s;
        }

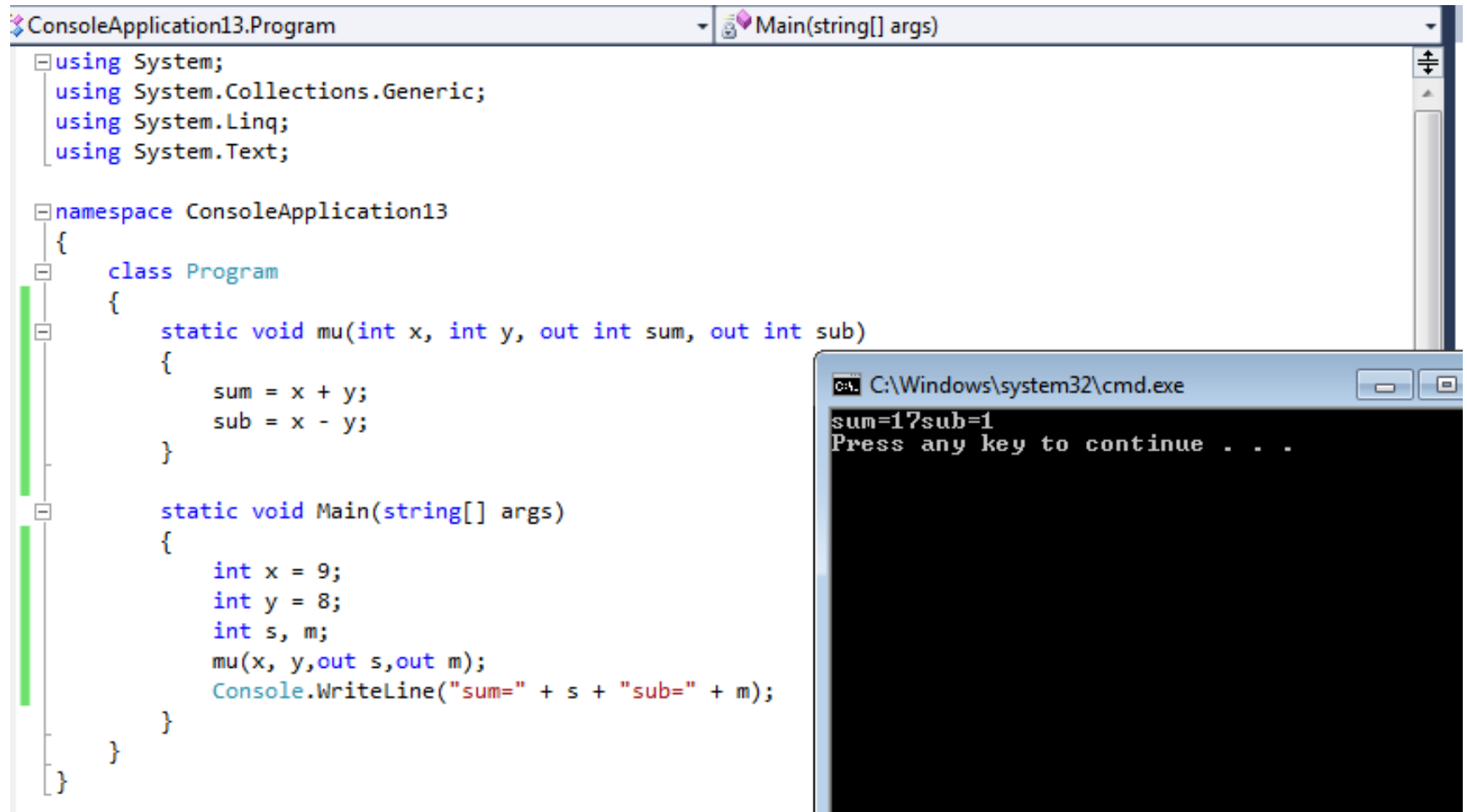
        static void friend(int x, int y)
        {
            if (sum(x) == y && sum(y) == x)
                Console.WriteLine("friend");
            else
                Console.WriteLine("not friend");
        }

        static void Main(string[] args)
        {
            int x = int.Parse(Console.ReadLine());
            int y = int.Parse(Console.ReadLine());
            friend(x, y);
        }
    }
}
```

C:\Windows\system32\cmd.exe

```
6
8
not friend
Press any key to continue . . . _
```

تابع لجمع وطرح عددين



The image shows a Visual Studio code editor window with a C# program and a Windows command prompt window running the program.

Visual Studio Code Editor:

- File: ConsoleApplication13.Program
- Method: Main(string[] args)
- Code:

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication13
{
    class Program
    {
        static void mu(int x, int y, out int sum, out int sub)
        {
            sum = x + y;
            sub = x - y;
        }

        static void Main(string[] args)
        {
            int x = 9;
            int y = 8;
            int s, m;
            mu(x, y, out s, out m);
            Console.WriteLine("sum=" + s + "sub=" + m);
        }
    }
}
```

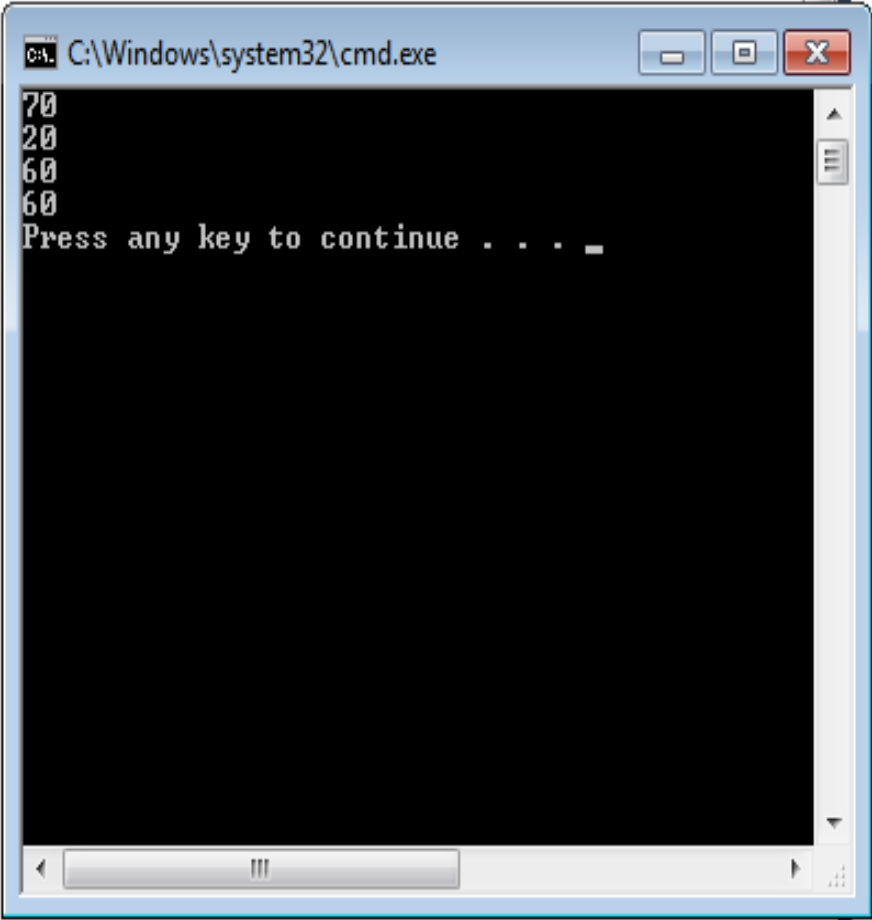
Windows Command Prompt (C:\Windows\system32\cmd.exe):

```
sum=17sub=1
Press any key to continue . . .
```

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication14
{
    class Program
    {
        static int sum(ref int x, int y)
        {
            int z = x + y;
            x = 20;
            return z;
        }

        static void Main(string[] args)
        {
            int x = 30; int y = 40;
            Console.WriteLine(sum(ref x, y));
            Console.WriteLine(x);
            Console.WriteLine(sum(ref x, y));
            Console.WriteLine(sum(ref x, y));
        }
    }
}
```



A screenshot of a Windows command prompt window titled "C:\Windows\system32\cmd.exe". The window has a black background with white text. The output of the program is displayed as follows:

```
70
20
60
60
Press any key to continue . . .
```

The window includes standard Windows window controls (minimize, maximize, close) in the top right corner and a scrollbar on the right side.

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

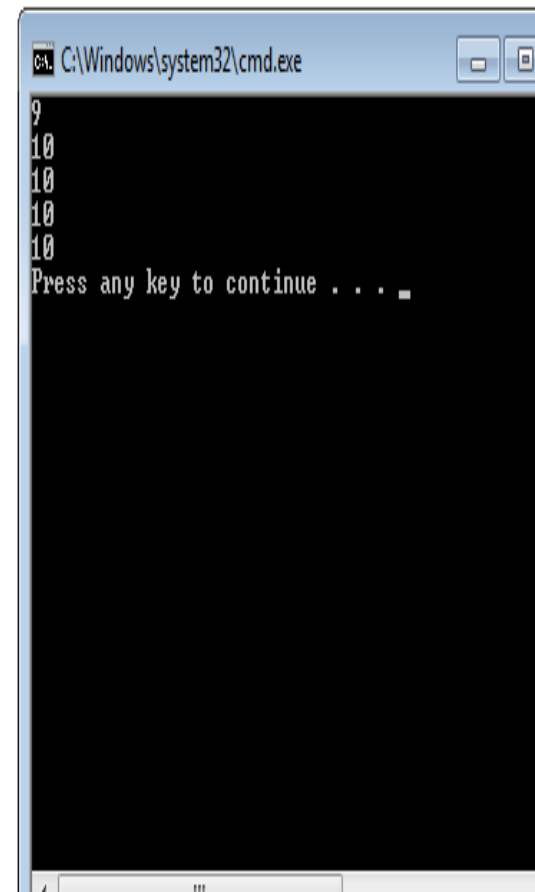
namespace ConsoleApplication15
{
    class Program
    {
        static int sum(ref int x)
        {
            x++;
            return x;
        }
        static void Main(string[] args)
        {
            int x = 9;
            Console.WriteLine(x);
            Console.WriteLine(sum(ref x));
            Console.WriteLine(sum(ref x));
            Console.WriteLine(sum(ref x));
            Console.WriteLine(sum(ref x));
        }
    }
}
```



```
C:\Windows\system32\cmd.exe
9
10
10
10
10
Press any key to continue . . . .
```

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication15
{
    class Program
    {
        static int sum( int x)
        {
            x++;
            return x;
        }
        static void Main(string[] args)
        {
            int x = 9;
            Console.WriteLine(x);
            Console.WriteLine(sum( x));
            Console.WriteLine(sum( x));
            Console.WriteLine(sum( x));
            Console.WriteLine(sum( x));
        }
    }
}
```



```
C:\Windows\system32\cmd.exe
9
10
10
10
10
Press any key to continue . . . .
```

ConsoleApplication16.Program

Main(string[] args)

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication16
{
    class Program
    {
        static double circle(ref double r)
        {
            double w = 2 * Math.PI * r;
            r = 5;
            return w;
        }

        static double cir(ref double r){
            double z=Math.PI*r*r;
            r=6;
            return z;
        }

        static void Main(string[] args)
        {
            double r = 2;
            Console.WriteLine(circle(ref r));
            Console.WriteLine(cir(ref r));
            Console.WriteLine(r);
            Console.WriteLine(circle(ref r));
            Console.WriteLine(r);
        }
    }
}
```

C:\Windows\system32\cmd.exe

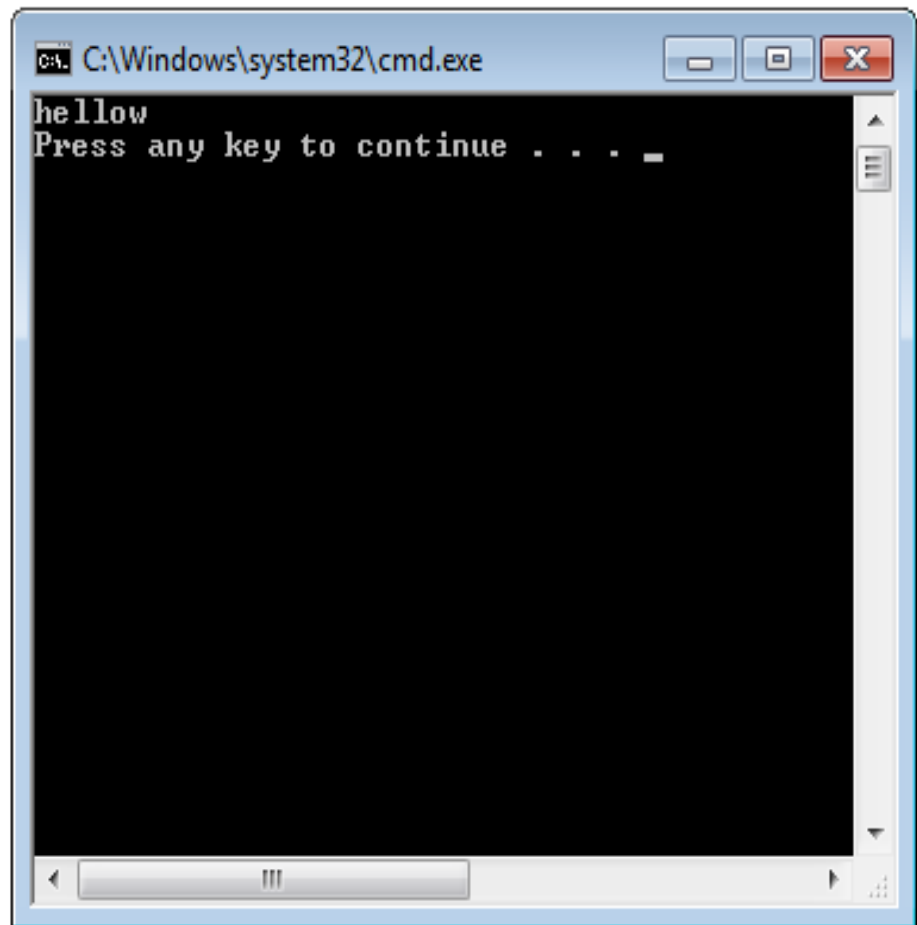
```
12.5663706143592
78.5398163397448
6
37.6991118430775
5
Press any key to continue . . .
```

ConsoleApplication17.Program

Main(string[] args)

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication17
{
    class time
    {
        public void display()
        {
            Console.WriteLine("hellow");
        }
        int s;
        int y;
    }
    class Program
    {
        static void Main(string[] args)
        {
            time t = new time();
            t.display();
        }
    }
}
```



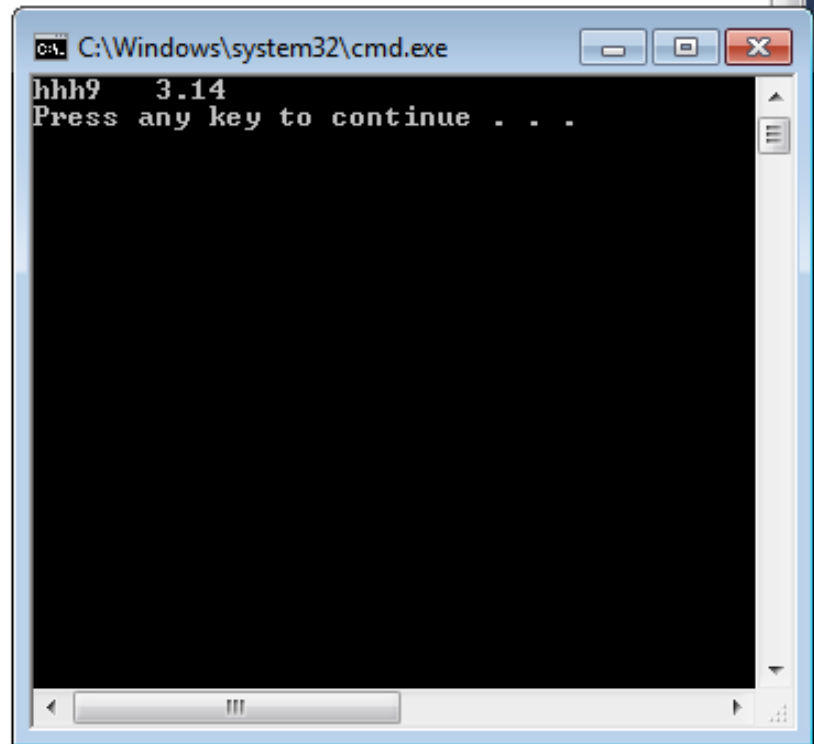
The screenshot shows a Windows command prompt window titled "C:\Windows\system32\cmd.exe". The window has a black background and white text. The text displayed is "hellow" on the first line and "Press any key to continue" on the second line. The window has standard Windows window controls (minimize, maximize, close) in the top right corner and a scrollbar on the right side.

```
C:\Windows\system32\cmd.exe
hellow
Press any key to continue . . . .
```

استدعاء كلاس بتمرير بارامترات من الmain

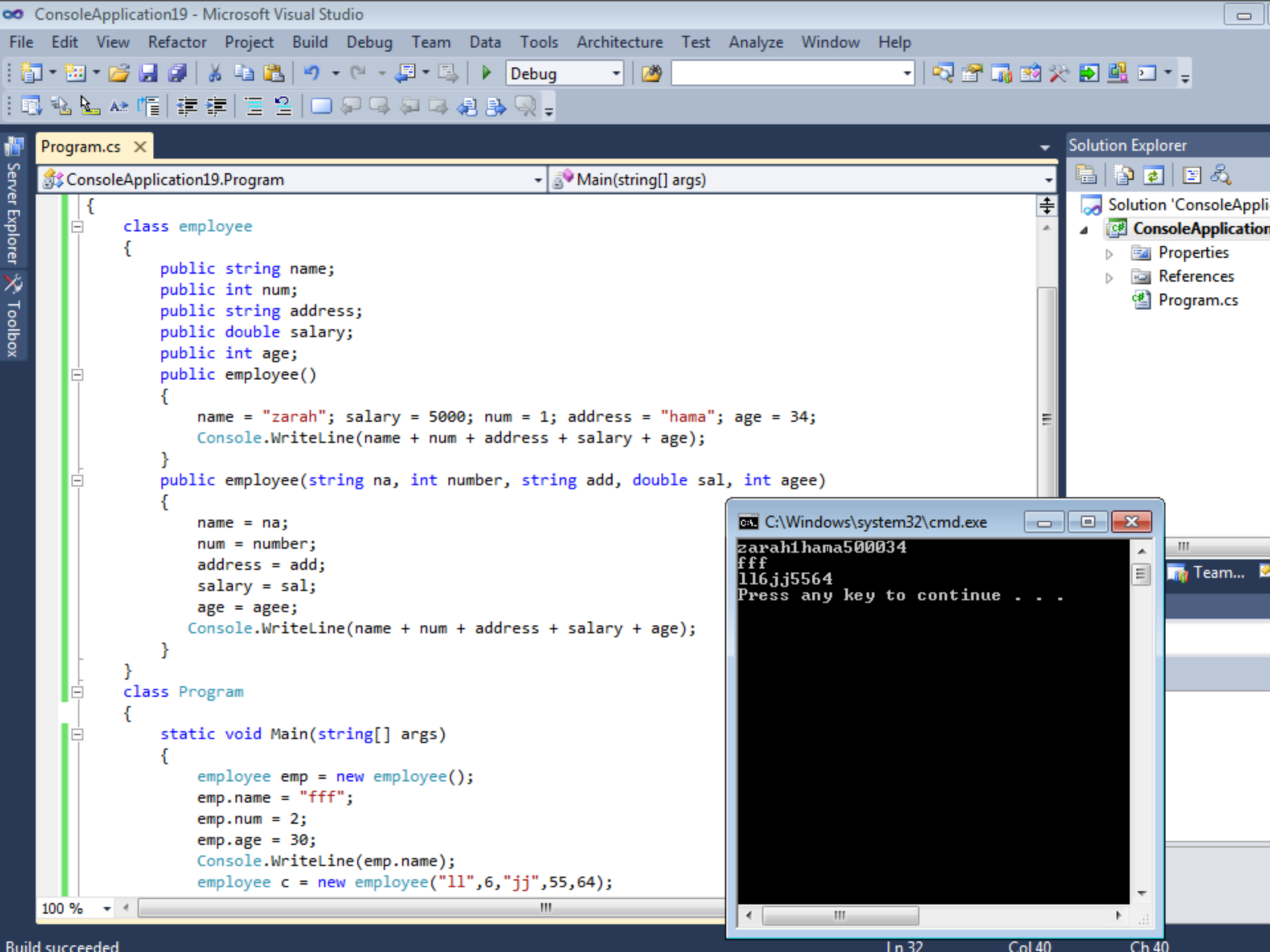
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication18
{
    class myclass
    {
        public void some(int f, float s)
        {
            Console.WriteLine("hhh" + f + "    " + s);
        }
    }
    class Program
    {
        static void Main(string[] args)
        {
            int c = 9;
            float g = 3.14f;
            myclass v = new myclass();
            v.some(c, g);
        }
    }
}
```



The screenshot shows a Windows command prompt window titled "C:\Windows\system32\cmd.exe". The window has a black background with white text. The first line of output is "hhh9 3.14", which corresponds to the output of the `some` method in the code. The second line is "Press any key to continue . . .", which is a standard prompt for the user to press a key to keep the window open. The window has standard Windows window controls (minimize, maximize, close) in the top right corner.

```
C:\Windows\system32\cmd.exe
hhh9    3.14
Press any key to continue . . .
```



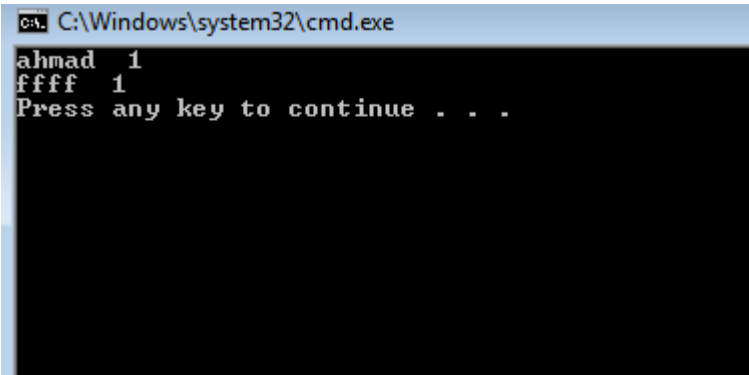
```

ConsoleApplication20.Program
Main(string[] args)

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication20
{
    class student
    {
        public string name;
        public int number = 0;
        public student()
        {
            name = "ahmad"; number++;
            Console.WriteLine(name + number);
        }
        public student(string na)
        {
            name = na; number++;
            Console.WriteLine(name + number);
        }
    }
    class Program
    {
        static void Main(string[] args)
        {
            student ss = new student();
            ss.name = "11";
            student ee = new student(ss.name);
        }
    }
}

```



بنية معطيات
من أجل اسم
ورقم متسلسل
للطالب لاحظ
بدون وجود
static للرقم

Build succeeded

Program.cs

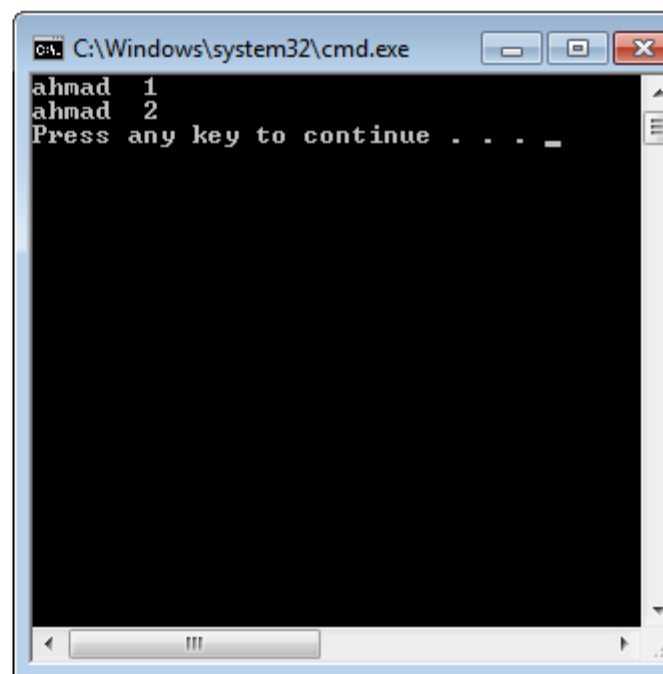
ConsoleApplication20.student

student()

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication20
{
    class student
    {
        public static string name;
        public static int number = 0;
        public student()
        {
            name = "ahmad"; number++;
            Console.WriteLine(name + " " + number);
        }
        public student(string na)
        {
            name = na; number++;
            Console.WriteLine(name + " " + number);
        }
    }
    class Program
    {
        static void Main(string[] args)
        {
            student ss = new student();

            student ee = new student(student.name);
        }
    }
}
```



```
C:\Windows\system32\cmd.exe
ahmad 1
ahmad 2
Press any key to continue . . . .
```

نفس بنية
المعطيات
السابقة لكن
مع وجود
static للرقم

ConsoleApplication21 - Microsoft Visual Studio

File Edit View Refactor Project Build Debug Team Data Tools Architecture Test Analyze Window Help

Debug

Program.cs

ConsoleApplication21.Program

Main(string[] args)

```
namespace ConsoleApplication21
{
    class employee
    {
        private string name;
        private int age;
        public void setname(string n)
        {
            name = n;
        }
        public string getname()
        {
            return name;
        }
        public void setage(int a)
        {
            if ((a >= 25) && (a < 50))
                age = a;
        }
        public int getage() { return age; }
    }
    class Program
    {
        static void Main(string[] args)
        {
            employee emp = new employee();
            emp.setname("ahmad");
            Console.WriteLine(emp.getname());

            emp.setage(int.Parse(Console.ReadLine()));
            Console.WriteLine(emp.getage());
        }
    }
}
```

100 %

Solution Explorer

Solution 'ConsoleAppli'

ConsoleApplication21

Properties

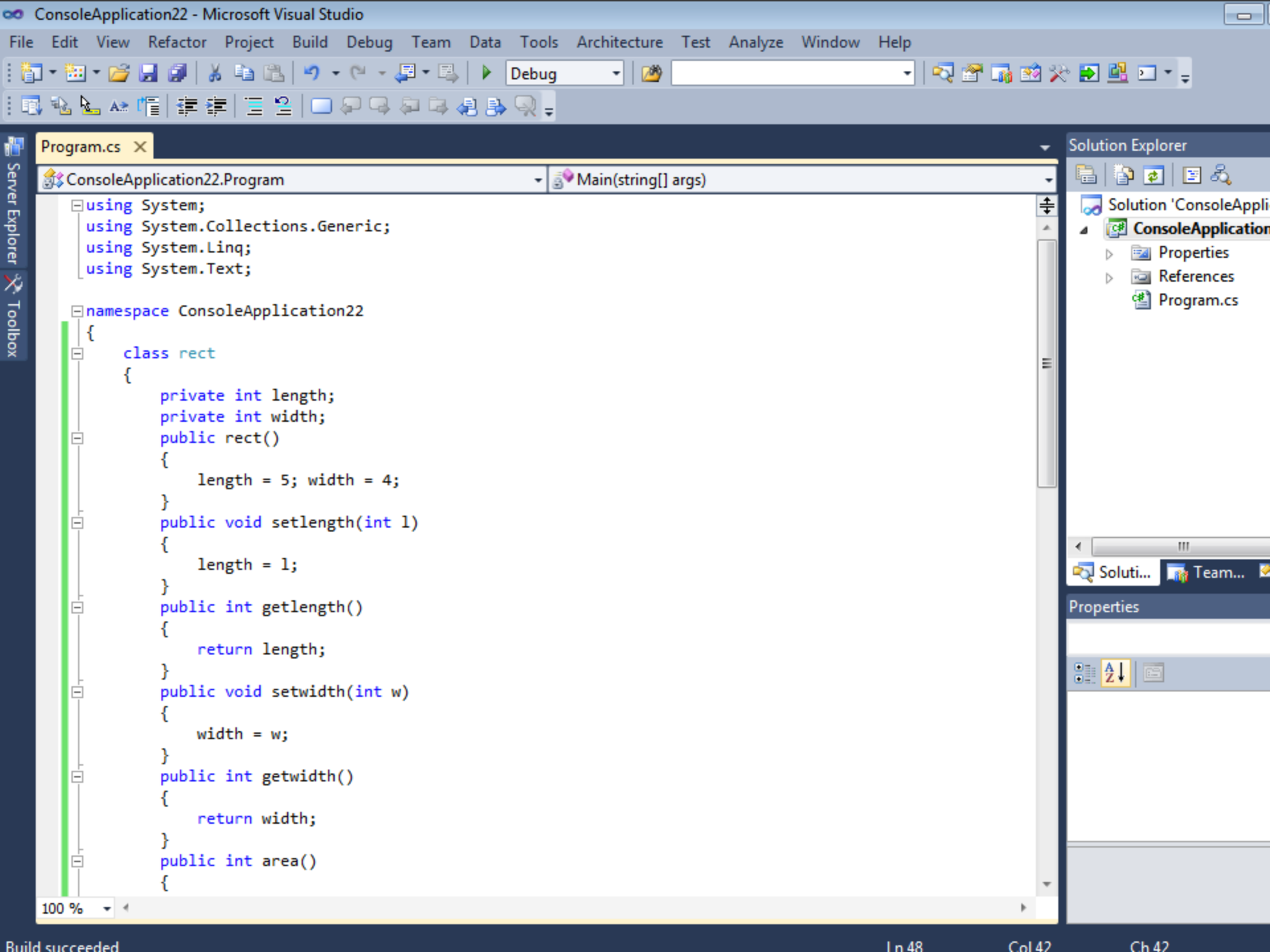
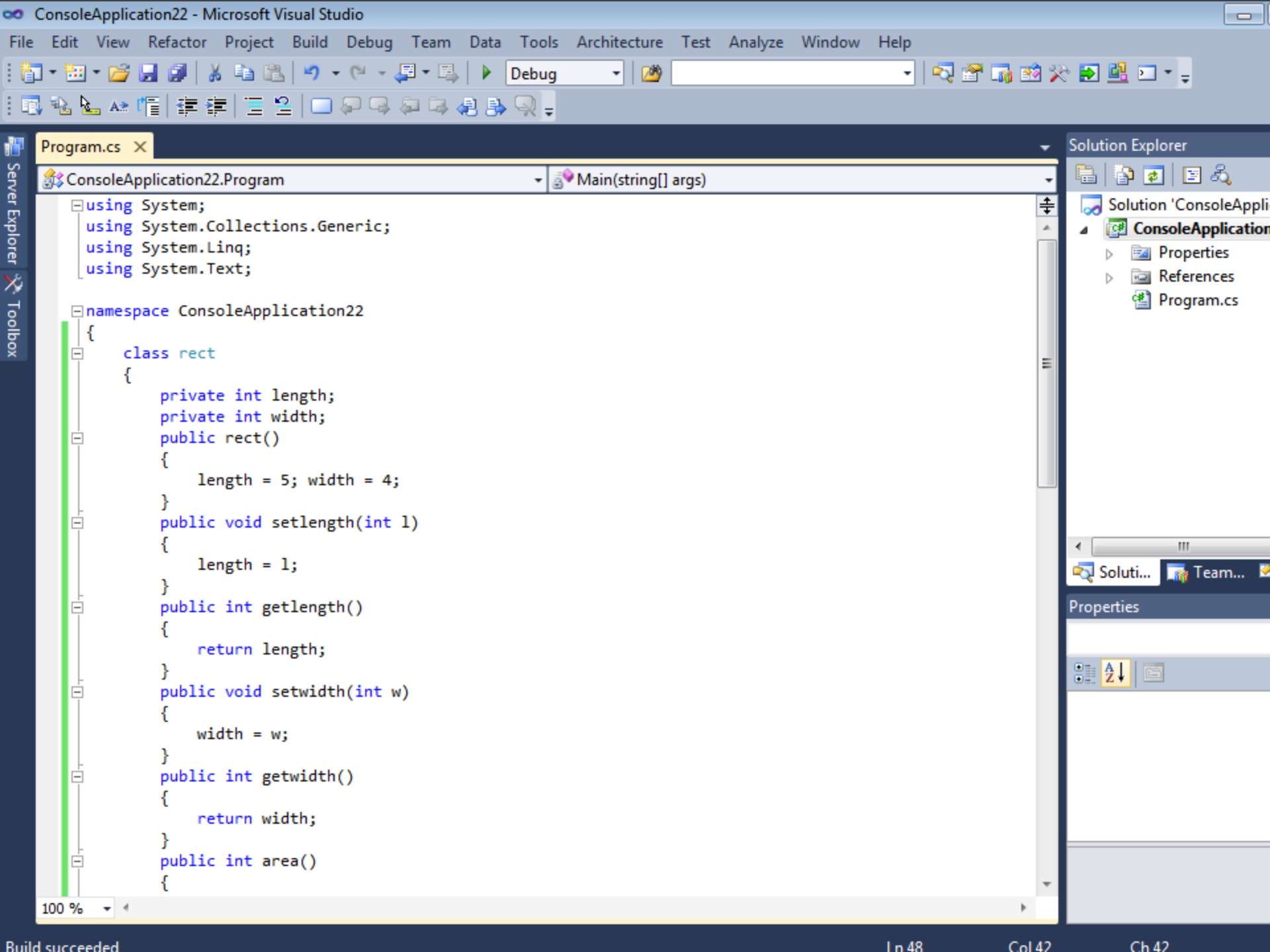
References

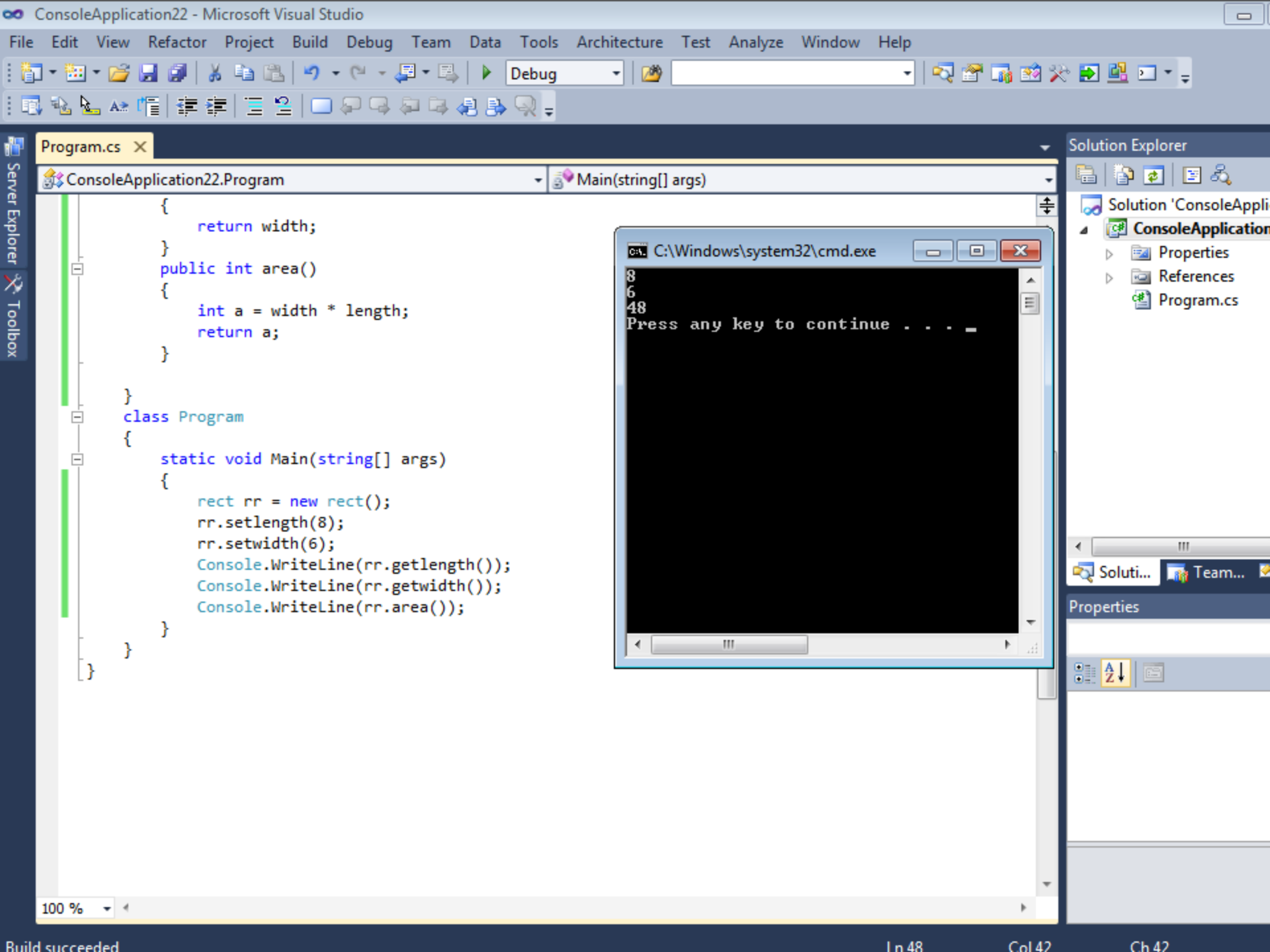
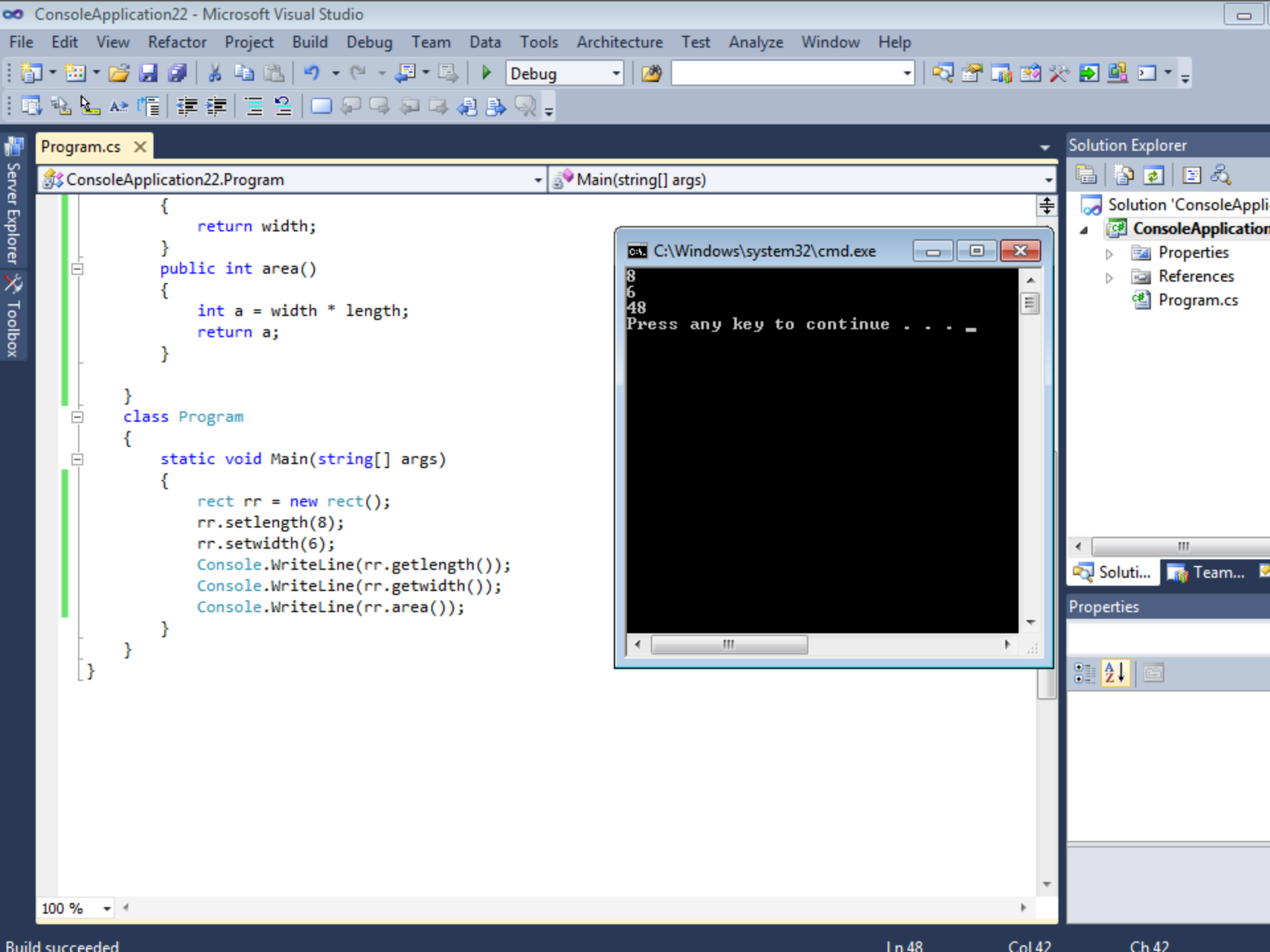
Program.cs

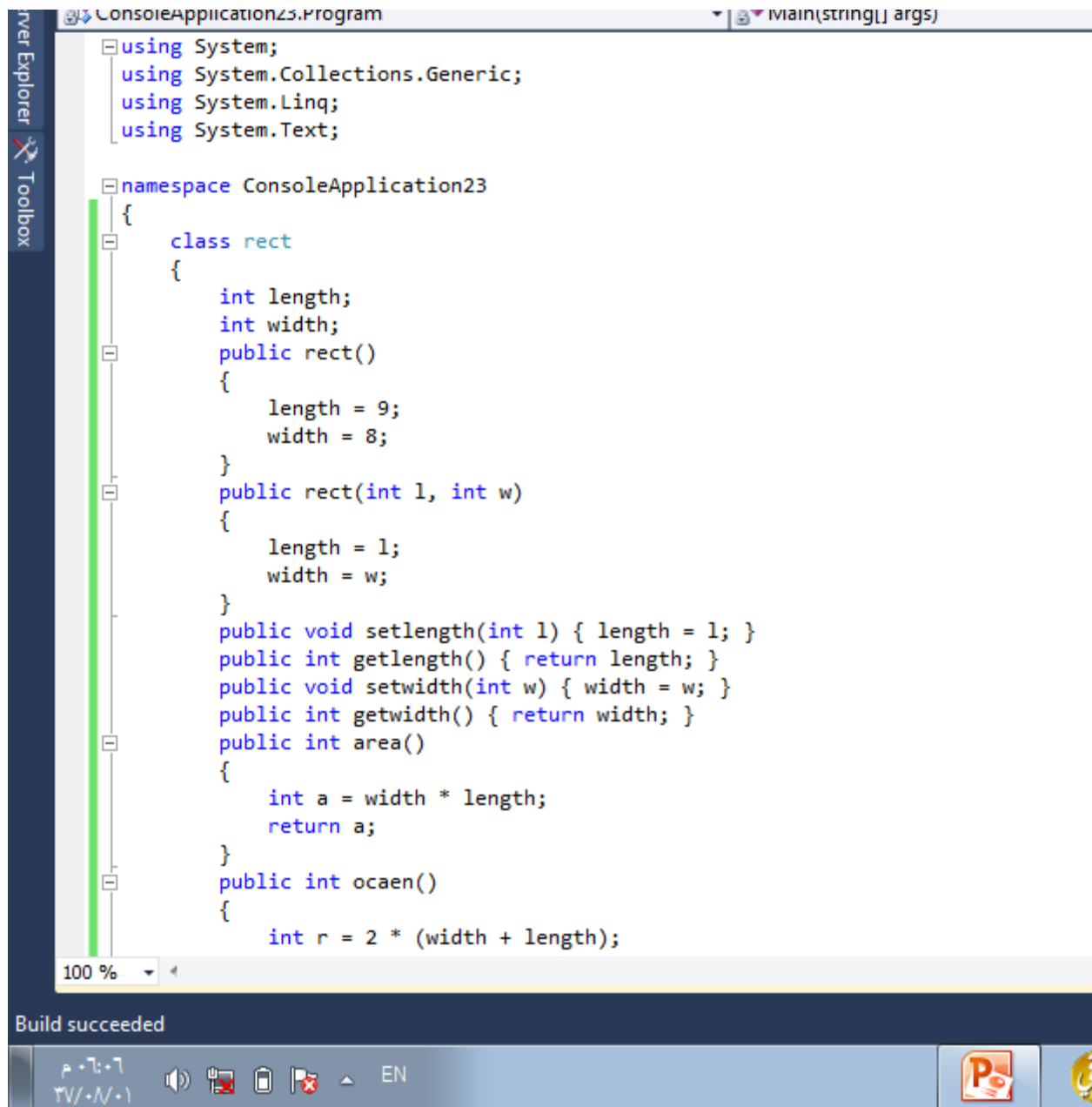
Properties

Build succeeded

In 37 Col 53 Ch 53





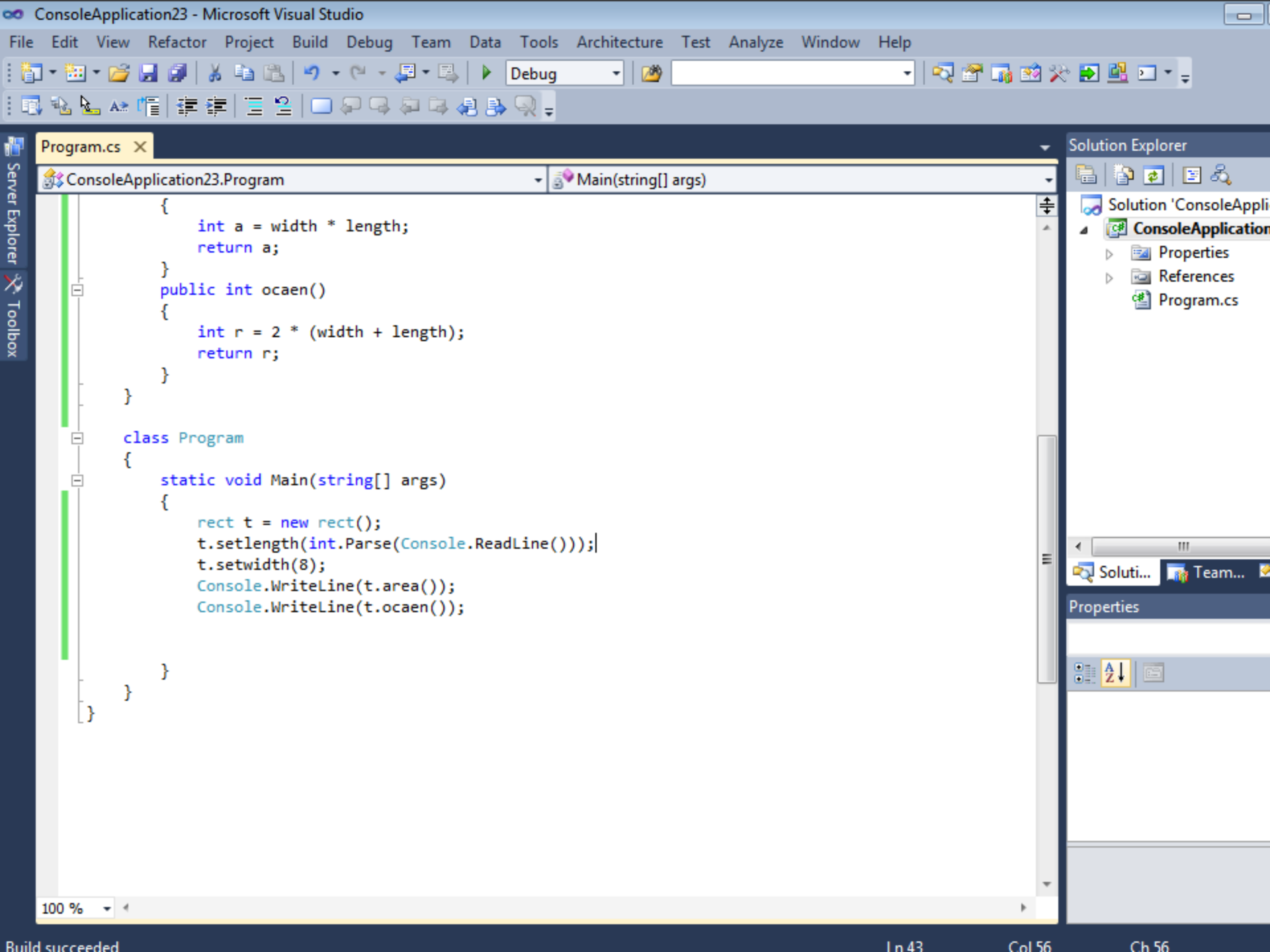
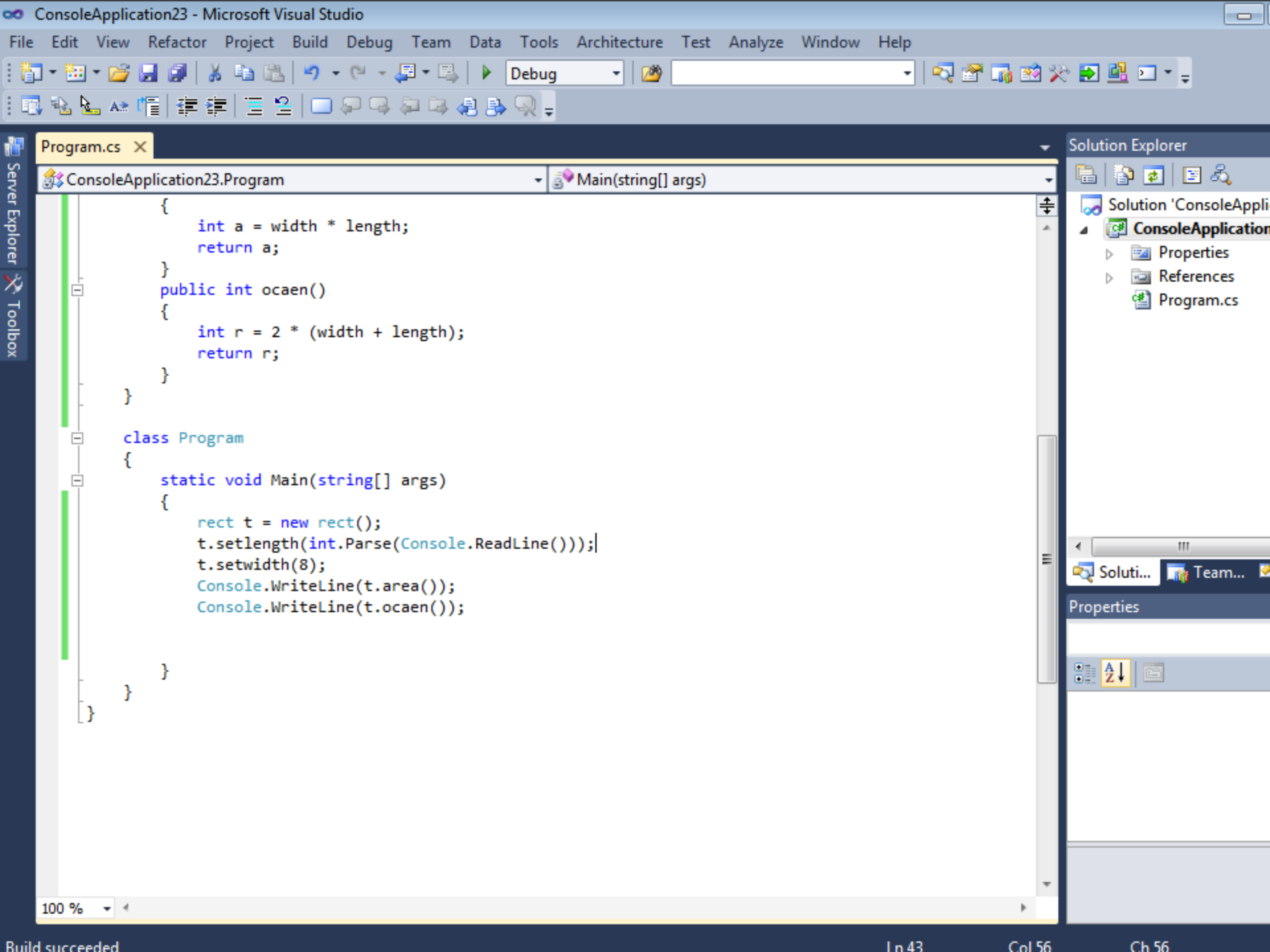


```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication23
{
    class rect
    {
        int length;
        int width;
        public rect()
        {
            length = 9;
            width = 8;
        }
        public rect(int l, int w)
        {
            length = l;
            width = w;
        }
        public void setlength(int l) { length = l; }
        public int getlength() { return length; }
        public void setwidth(int w) { width = w; }
        public int getwidth() { return width; }
        public int area()
        {
            int a = width * length;
            return a;
        }
        public int ocaen()
        {
            int r = 2 * (width + length);
        }
    }
}
```

Build succeeded

استخدام بنية معطيات تعبر
عن المستطيل ولكن
المتحولات private



```

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace ConsoleApplication24
{
    class time
    {
        public int hour;
        public int min;
        public int sec;
        public time(int hour, int min, int sec)
        {
            this.hour = hour;
            this.min = min;
            this.sec = sec;
        }
        public time()
        {
            this.hour = 9; min = 78; sec = 7;
        }
        ~time() { Console.WriteLine("goodbyeeee"); }
    }
    class Program
    {
        static void Main(string[] args)
        {
            time t = new time(6, 5, 3);
            Console.WriteLine(t.hour+ ":"+ t.min+ ":"+ t.sec);
        }
    }
}

```

```

C:\Windows\system32\cmd.exe
6:5:3
goodbyeeee
Press any key to continue . . . _

```

كلاس الوقت حيث
 تم استخدام this
 و التابع الهادم~