

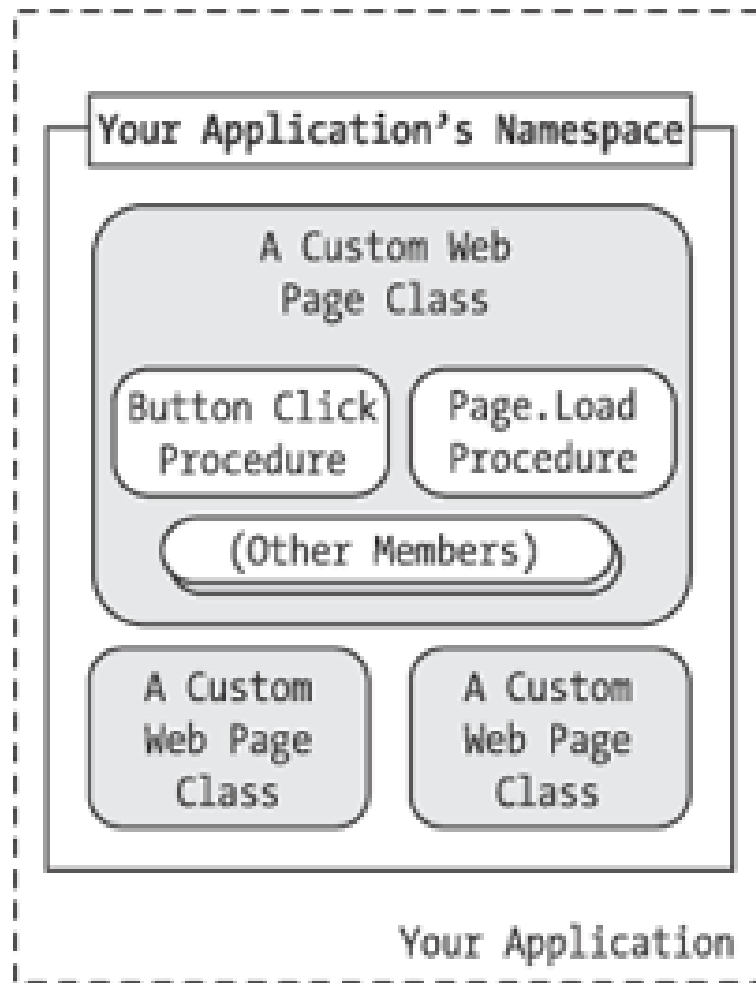
ویژوال استودیو



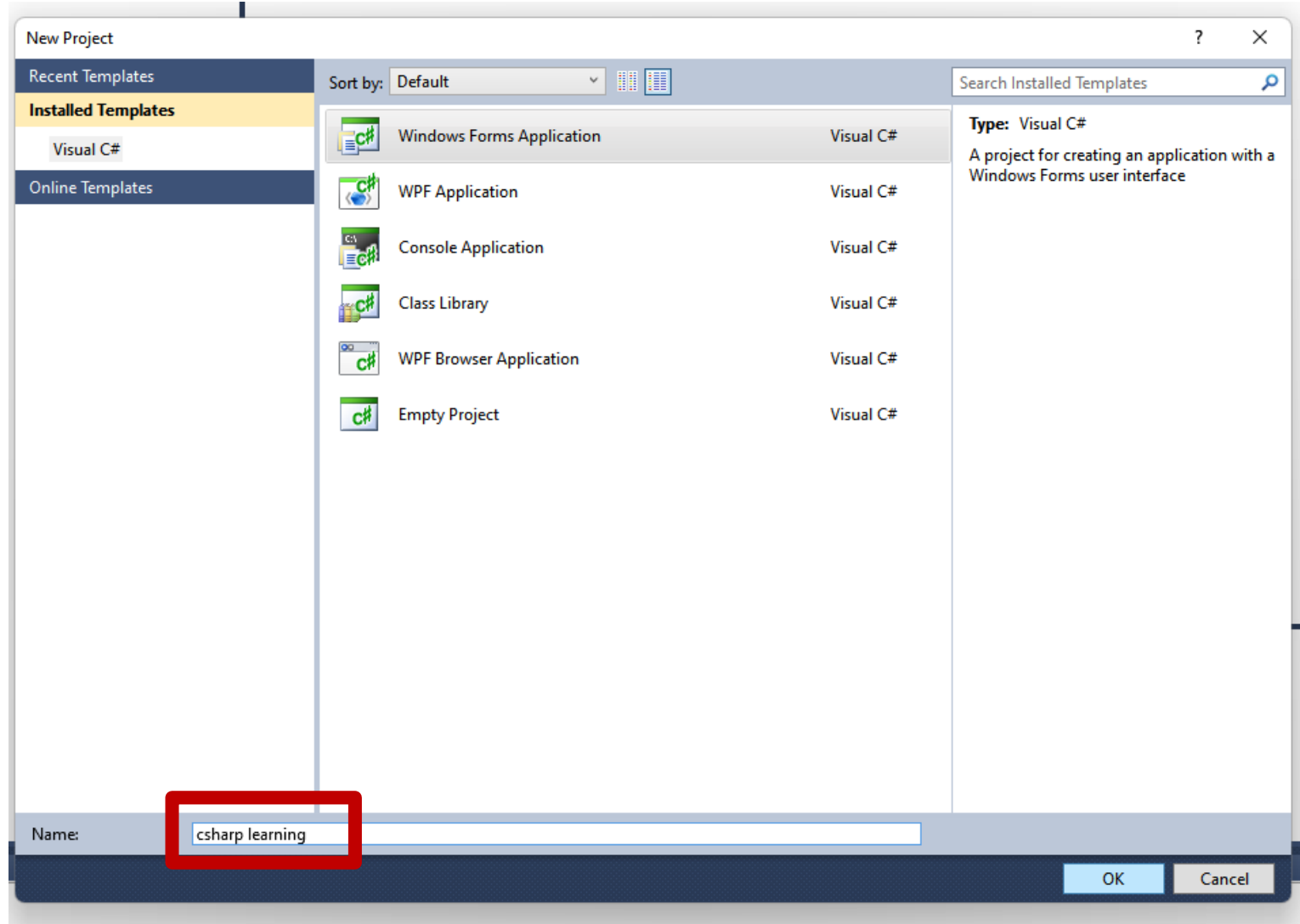
Visual
Studio

کاوه حقیقی

C# Project namespace

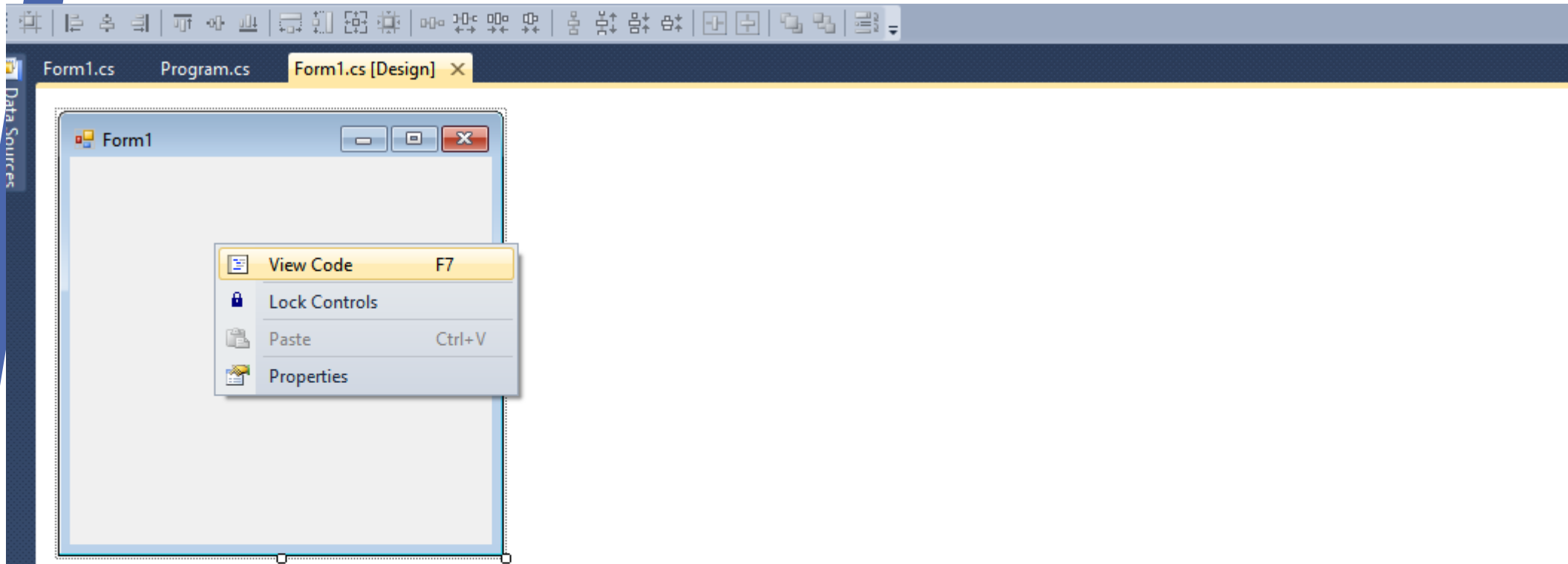


C# Project namespace



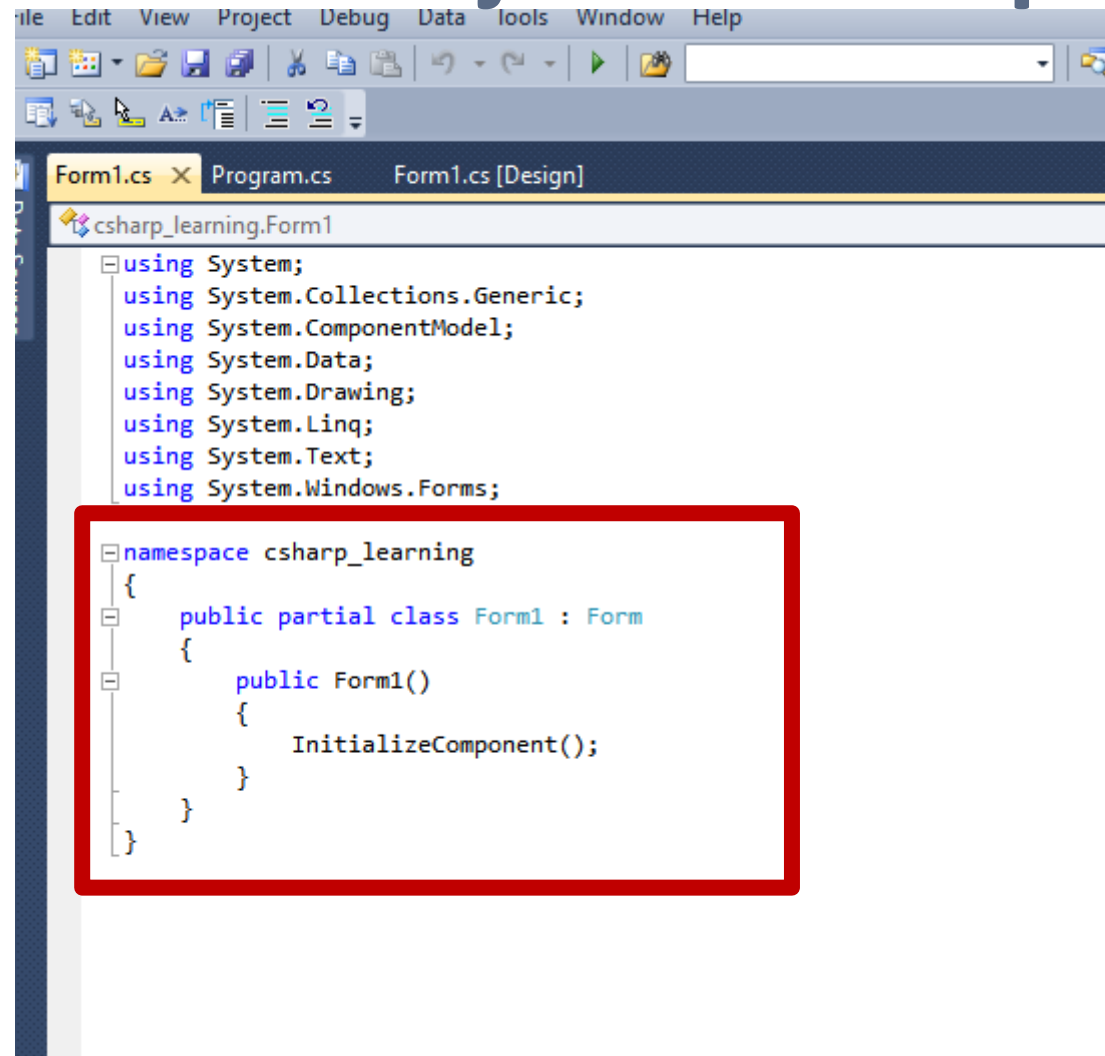
کاوه حقیقی - ویژوال استودیو

C# Project namespace



کاوه حقیقی - ویژوال استودیو

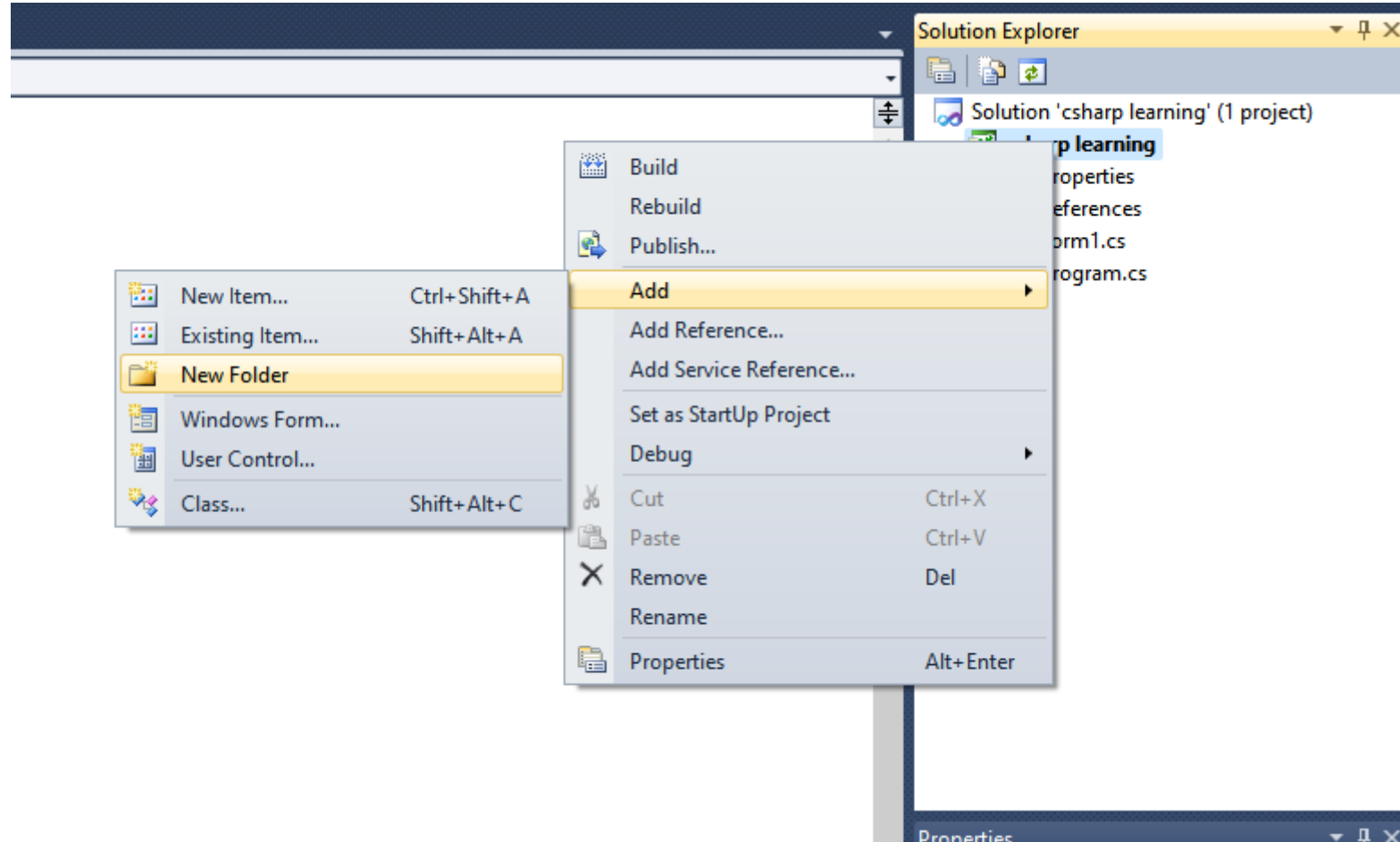
C# Project namespace



```
File Edit View Project Debug Data Tools Window Help
Form1.cs x Program.cs Form1.cs [Design]
csharp_learning.Form1
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;

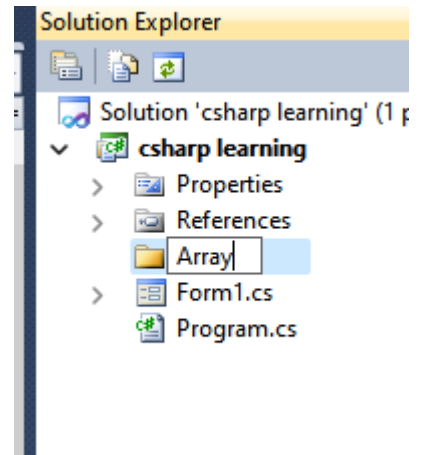
namespace csharp_learning
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }
    }
}
```

C# Project namespace

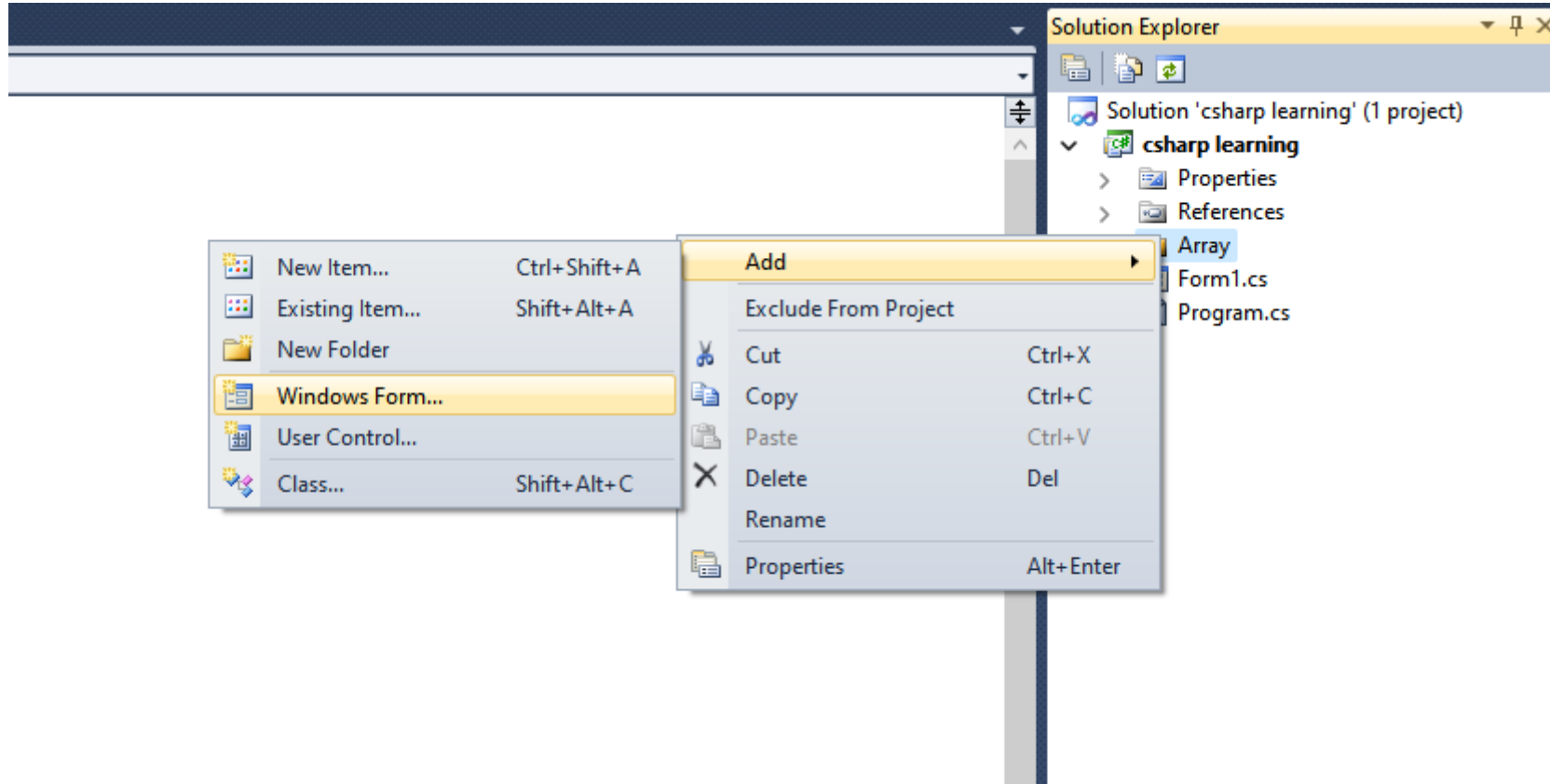


کاوه حقیقی - ویژوال استودیو

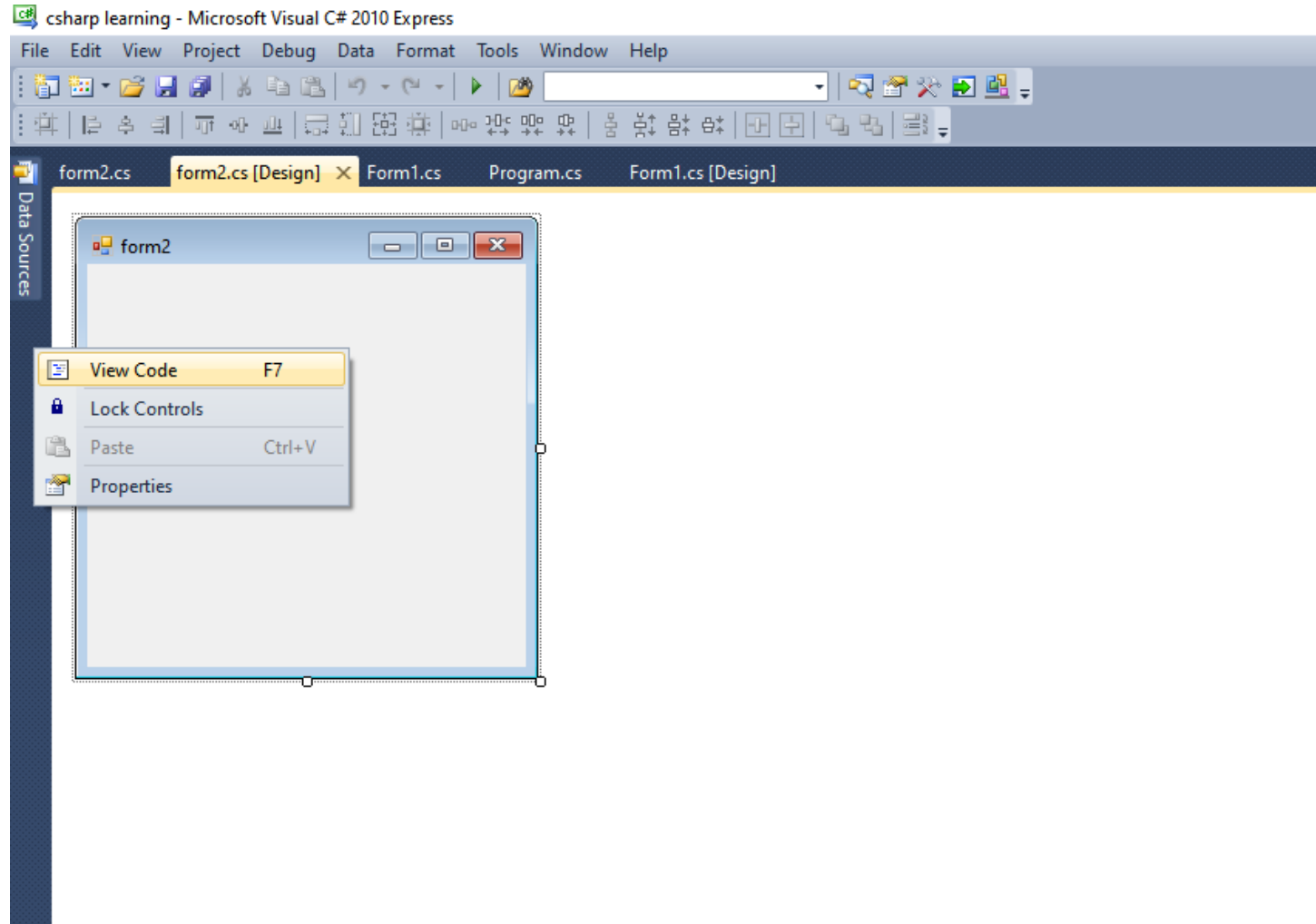
C# Project namespace



C# Project namespace

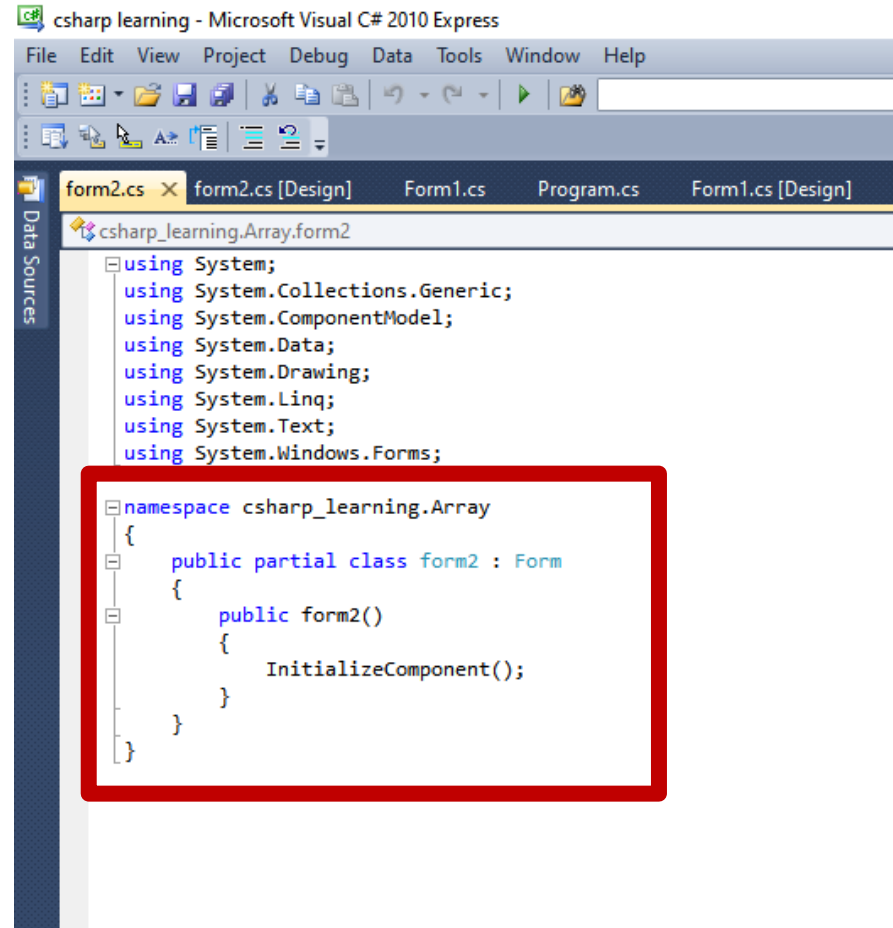


C# Project namespace



کاوه حقیقی - ویژوال استودیو

C# Project namespace



The screenshot shows the Microsoft Visual C# 2010 Express IDE. The title bar reads "csharp learning - Microsoft Visual C# 2010 Express". The menu bar includes File, Edit, View, Project, Debug, Data, Tools, Window, and Help. The toolbar contains various icons for file operations and development. The Solution Explorer on the left shows a project named "csharp_learning.Array.form2". The Code window displays the following C# code:

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;

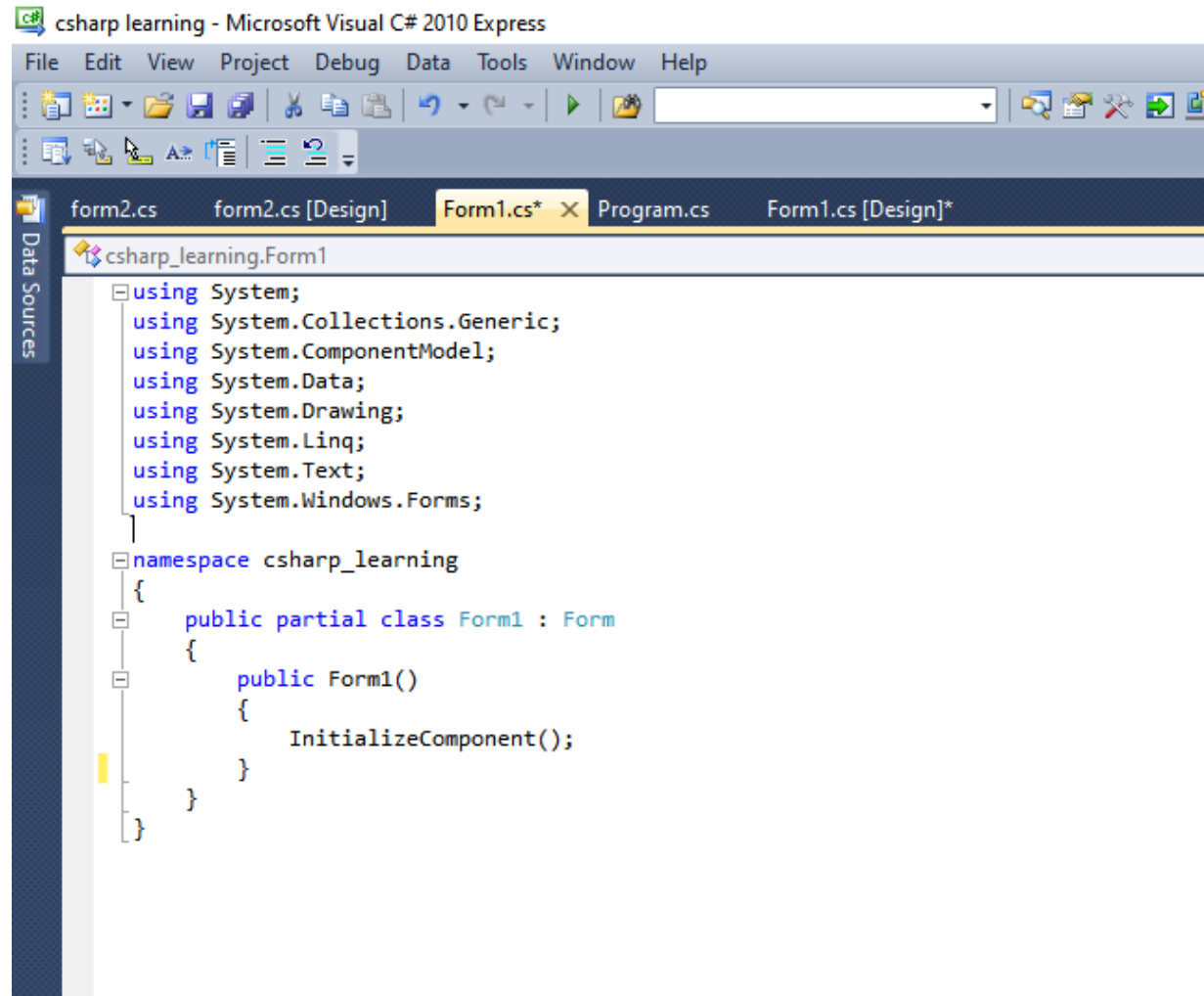
namespace csharp_learning.Array
{
    public partial class form2 : Form
    {
        public form2()
        {
            InitializeComponent();
        }
    }
}
```

The code is enclosed in a red rectangular box. The namespace is "csharp_learning.Array" and the class is "form2", which inherits from "Form". The class has a constructor "form2()" that calls "InitializeComponent()".

C# Project namespace

معمولا هر فضای نام از یک یا چند کلاس تشکیل شده است.

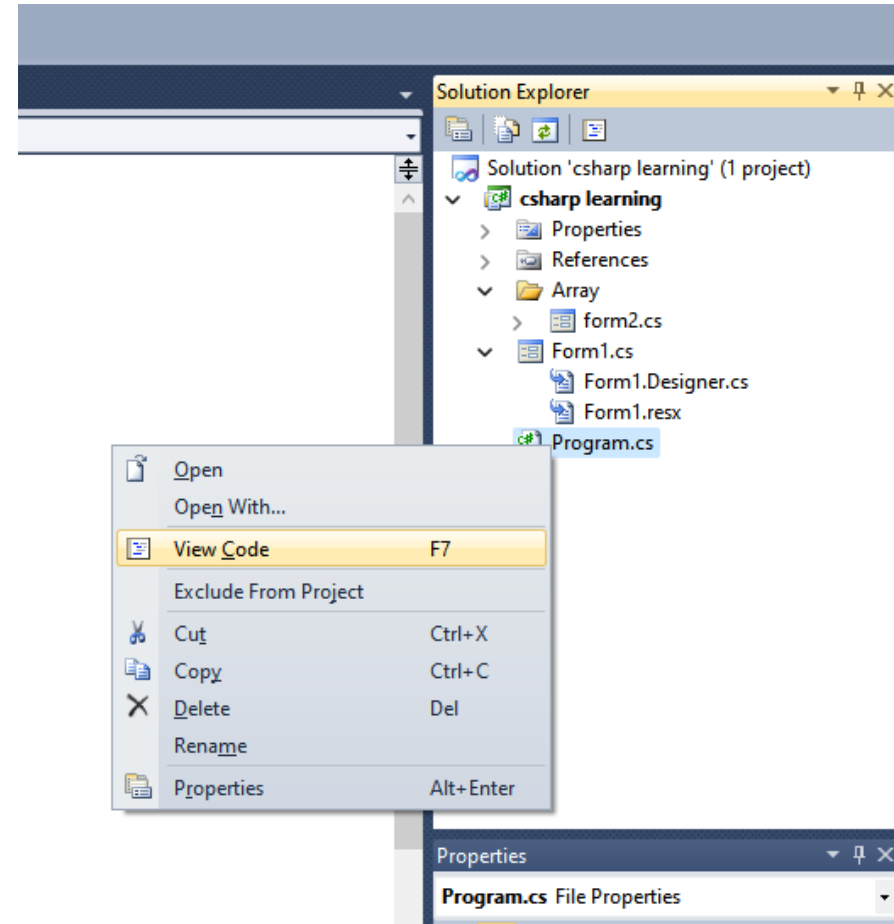
C# Find Namespaces



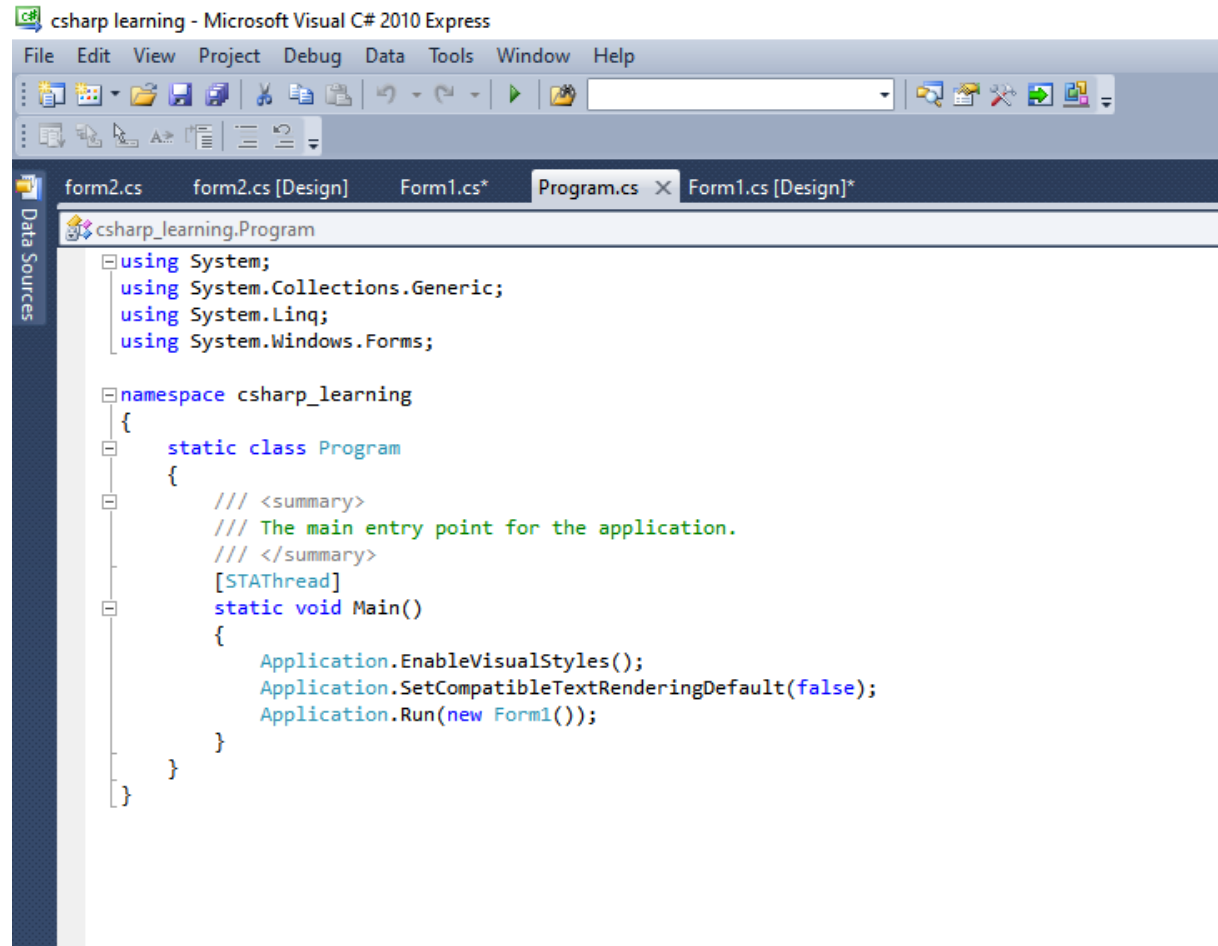
```
csharp learning - Microsoft Visual C# 2010 Express
File Edit View Project Debug Data Tools Window Help
form2.cs form2.cs [Design] Form1.cs* X Program.cs Form1.cs [Design]*
Data Sources
csharp_learning.Form1
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;
namespace csharp_learning
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }
    }
}
```

کاوه حقیقی - ویژوال استودیو

C# Find Namespaces



C# Find Namespaces

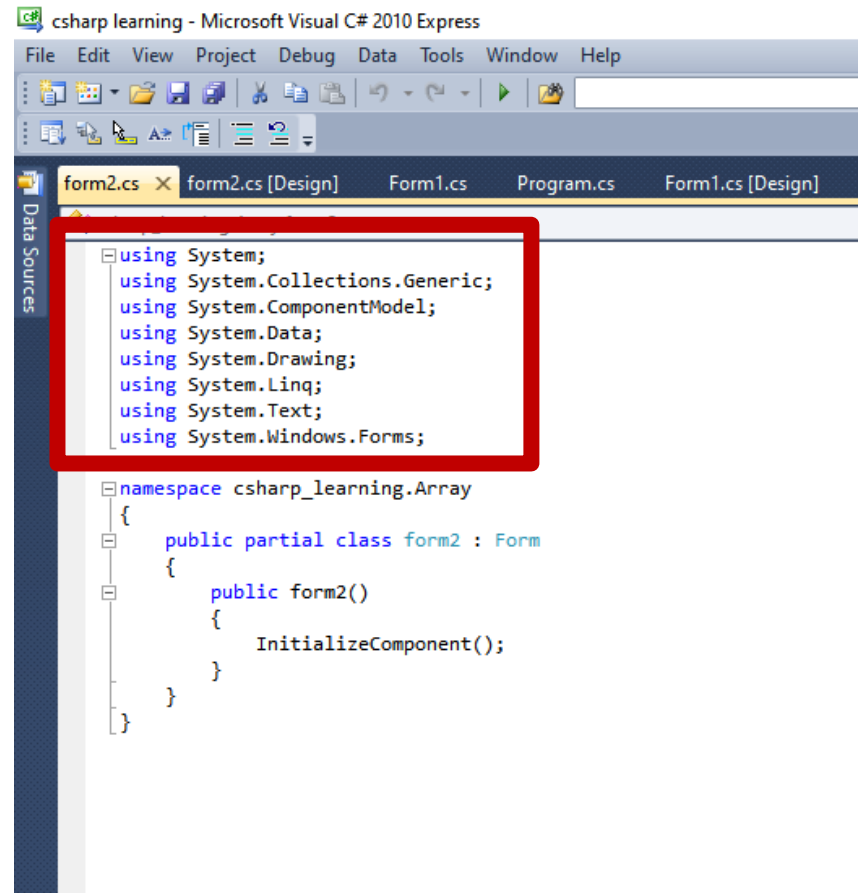


The screenshot shows the Microsoft Visual C# 2010 Express IDE. The title bar reads "csharp learning - Microsoft Visual C# 2010 Express". The menu bar includes File, Edit, View, Project, Debug, Data, Tools, Window, and Help. The toolbar contains various icons for file operations and development. The Solution Explorer on the left shows a project named "csharp_learning" with a file "Program.cs" selected. The Code Editor displays the following C# code:

```
csharp_learning.Program
using System;
using System.Collections.Generic;
using System.Linq;
using System.Windows.Forms;

namespace csharp_learning
{
    static class Program
    {
        /// <summary>
        /// The main entry point for the application.
        /// </summary>
        [STAThread]
        static void Main()
        {
            Application.EnableVisualStyles();
            Application.SetCompatibleTextRenderingDefault(false);
            Application.Run(new Form1());
        }
    }
}
```

C# .net namespace



The screenshot shows the Visual Studio IDE with the following code in the editor:

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;

namespace csharp_learning.Array
{
    public partial class form2 : Form
    {
        public form2()
        {
            InitializeComponent();
        }
    }
}
```

The 'using' statements are highlighted with a red box. The IDE title bar shows 'csharp learning - Microsoft Visual C# 2010 Express' and the menu bar includes File, Edit, View, Project, Debug, Data, Tools, Window, and Help. The tab bar shows 'form2.cs', 'form2.cs [Design]', 'Form1.cs', 'Program.cs', and 'Form1.cs [Design]'.

C# .net namespace

```
using System;  
using System.Linq;
```


Class

```
namespace windowsapp1
{
    public class MyClass
    {
        public string myField = string.Empty;
        public MyClass()
        {
        }
        public void MyMethod(int parameter1, string parameter2)
        {
            Console.WriteLine("First Parameter {0}, second parameter {1}", parameter1, parameter2);
        }
        public int MyAutoImplementedProperty { get; set; }
        private int myPropertyVar;
        public int MyProperty
        {
            get { return myPropertyVar; }
            set { myPropertyVar = value; }
        }
    }
}
```

Annotations in the code:

- Access Modifier* points to `public`.
- Class name* points to `MyClass`.
- field* points to `myField`.
- Constructor* points to `MyClass()`.
- Method\Function\Events* points to `MyMethod`.
- Auto-implemented property* points to `MyAutoImplementedProperty`.
- Property* points to the `MyProperty` property block.

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Class

یک کلاس مانند نقشه ای کامل از یک شی مشخص است. در جهان واقعی هر شی ایی دارای یک سری خصوصیات مانند رنگ ، شکل و نوع عملکرد است. برای مثال شما یک اتومبیل فراری را در نظر بگیرید. فراری یک شی از نوع اتومبیل است و اتومبیل در اینجا نقش کلاس را برای ما بازی میکند. یک کلاس اتومبیل میتواند دارای خصوصیات معینی مانند سرعت ، رنگ و شکل باشد.

Class

```
access modifier class className  
{  
  //Fields, properties, constructor, methods and events go here...  
}
```

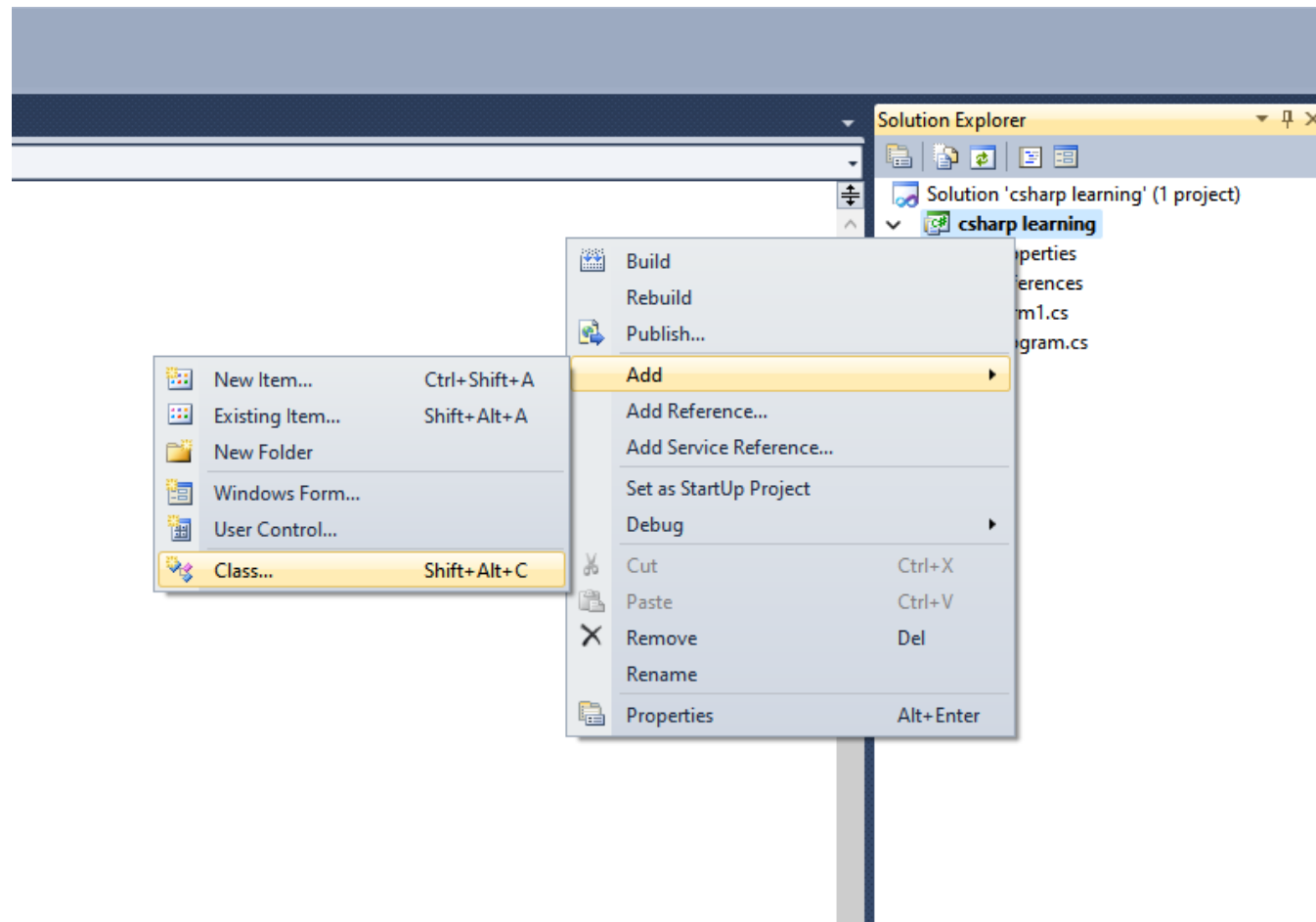
Class Access Modifier

Visibility keyword	Containing Classes	Derived Classes	Containing Program <small>(Within same application or program or Assembly)</small>	Any where Outside the Containing program <small>(outside the application)</small>
Private	Yes	No	No	No
Protected	Yes	Yes	No	No
Internal	Yes	Yes	Yes	No
Protected Internal	Yes	Yes	Yes	No
Public	Yes	Yes	Yes	Yes

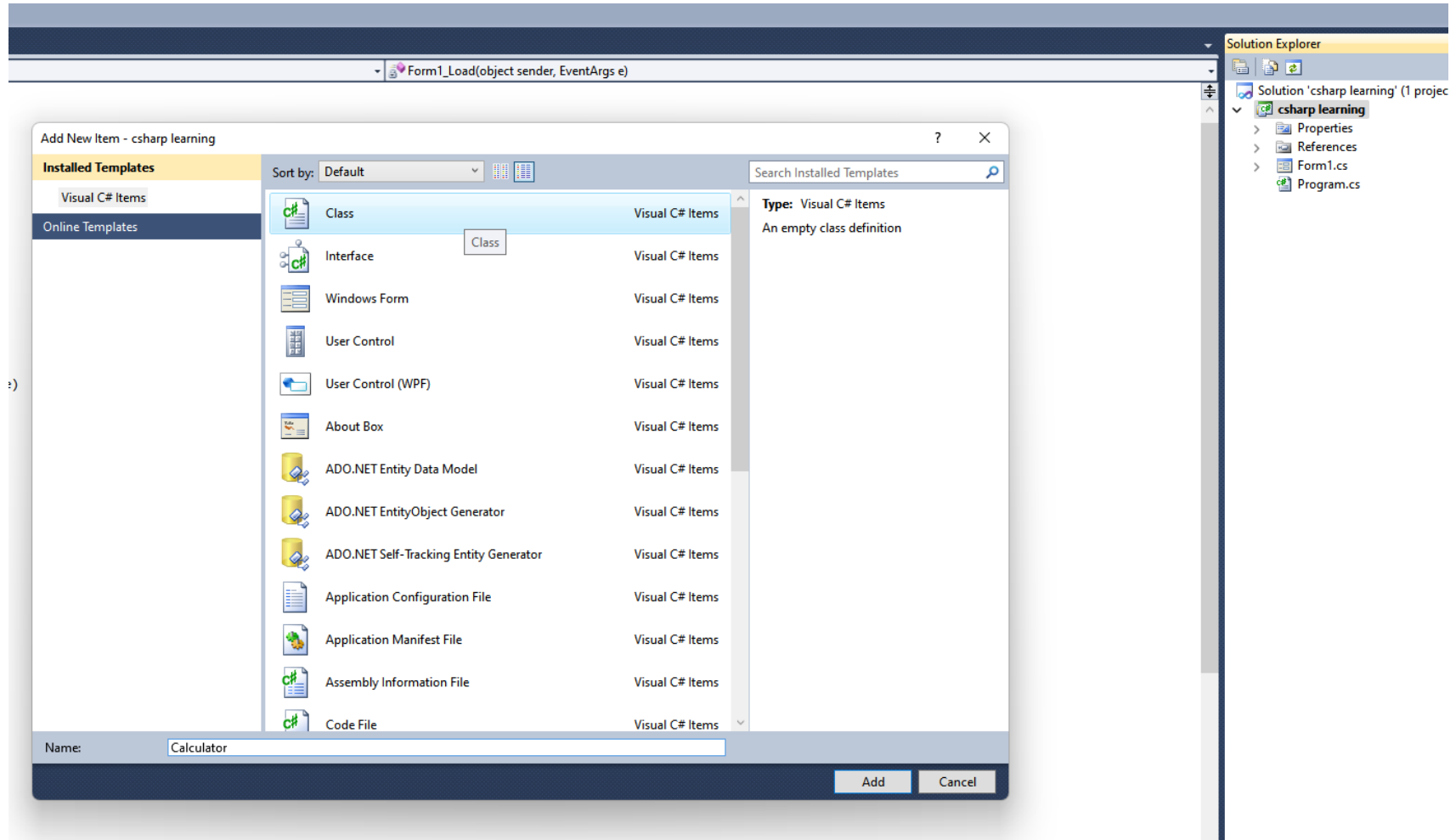
Class

```
public class Customer  
{  
  //Fields, properties, methods and events go here...  
}
```

Create Class in C#

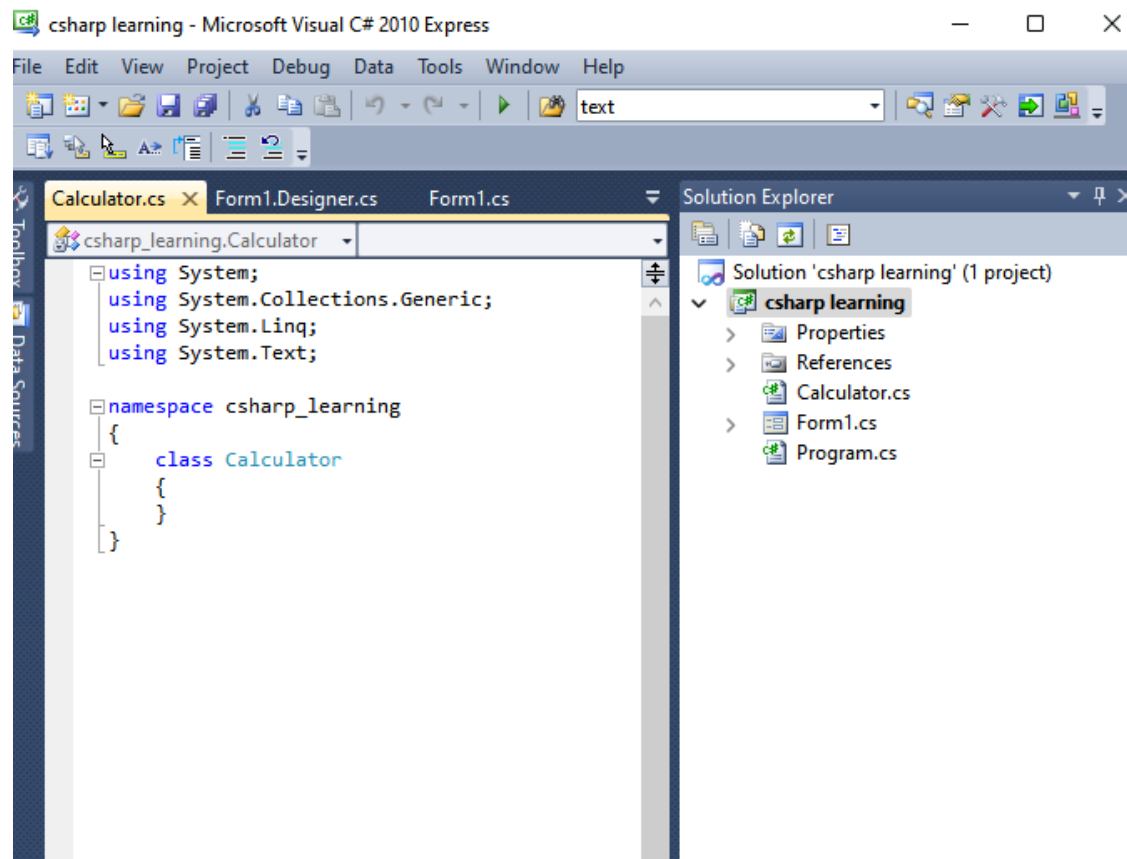


Create Class in C#



کاوه حقیقی - ویژوال استودیو

Create Class in C#



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

namespace csharp_learning
{
    class Calculator
    {
    }
}
```

یک کلاس بدون سطح دسترسی، بصورت private شناخته می شود.

Using Class

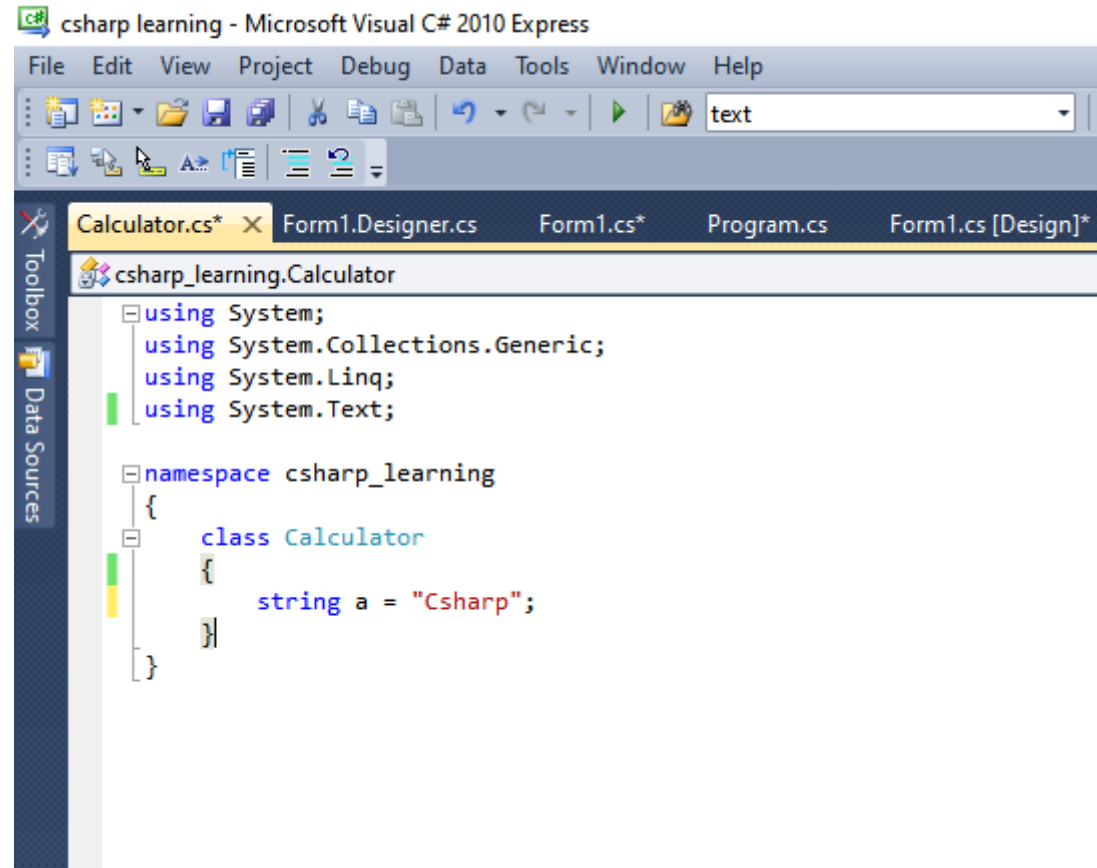
```
Calculator.cs  Form1.Designer.cs  Form1.cs* X  Program.cs  Form1.cs [Design]*
Toolbox
Data Sources
csharp_learning.Form1
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;

namespace csharp_learning
{
    partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void Form1_Load(object sender, EventArgs e)
        {
            Calculator calc = new Calculator();
        }
    }
}
```

ایجاد یک نمونه از یک کلاس

Class - Fields



The screenshot shows the Microsoft Visual C# 2010 Express IDE. The title bar reads "csharp learning - Microsoft Visual C# 2010 Express". The menu bar includes File, Edit, View, Project, Debug, Data, Tools, Window, and Help. The toolbar contains various icons for file operations and execution. The Solution Explorer on the left shows a project named "csharp_learning" with a file "Calculator.cs" selected. The Code window displays the following C# code:

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

namespace csharp_learning
{
    class Calculator
    {
        string a = "Csharp";
    }
}
```

Class - Fields

```
csharp learning - Microsoft Visual C# 2010 Express
File Edit View Project Debug Data Tools Window Help
Calculator.cs Form1.Designer.cs Form1.cs* Program.cs Form1.cs [Design]*
csharp_learning.Form1
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;

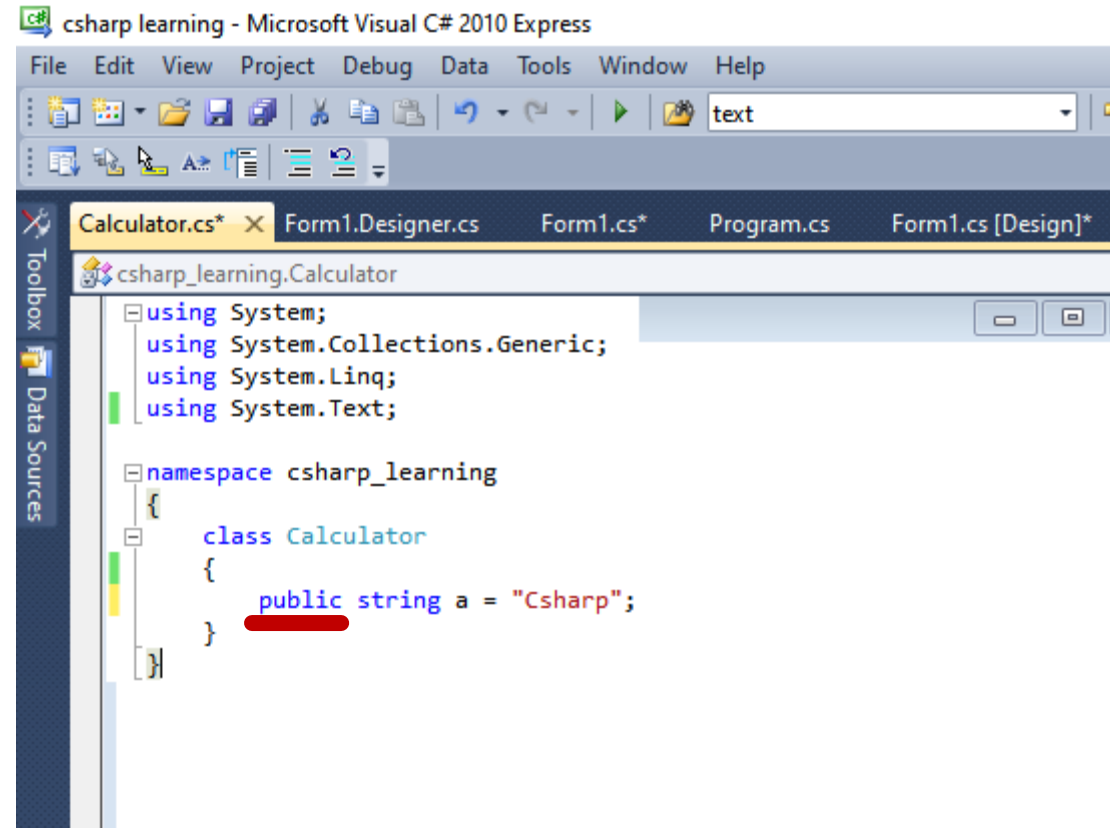
namespace csharp_learning
{
    partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void Form1_Load(object sender, EventArgs e)
        {
            Calculator calc = new Calculator();
            MessageBox.Show(calc.);
        }
    }
}

Equals bool object.Equals(object obj)
Determines whether the specified
????
```

کاوه حقیقی - ویژوال استودیو

Class - Fields



The screenshot shows the Microsoft Visual C# 2010 Express IDE. The title bar reads "csharp learning - Microsoft Visual C# 2010 Express". The menu bar includes File, Edit, View, Project, Debug, Data, Tools, Window, and Help. The toolbar contains various icons for file operations and execution. The Solution Explorer on the left shows a project named "csharp_learning" with a file "Calculator.cs" selected. The Code Editor displays the following C# code:

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

namespace csharp_learning
{
    class Calculator
    {
        public string a = "Csharp";
    }
}
```

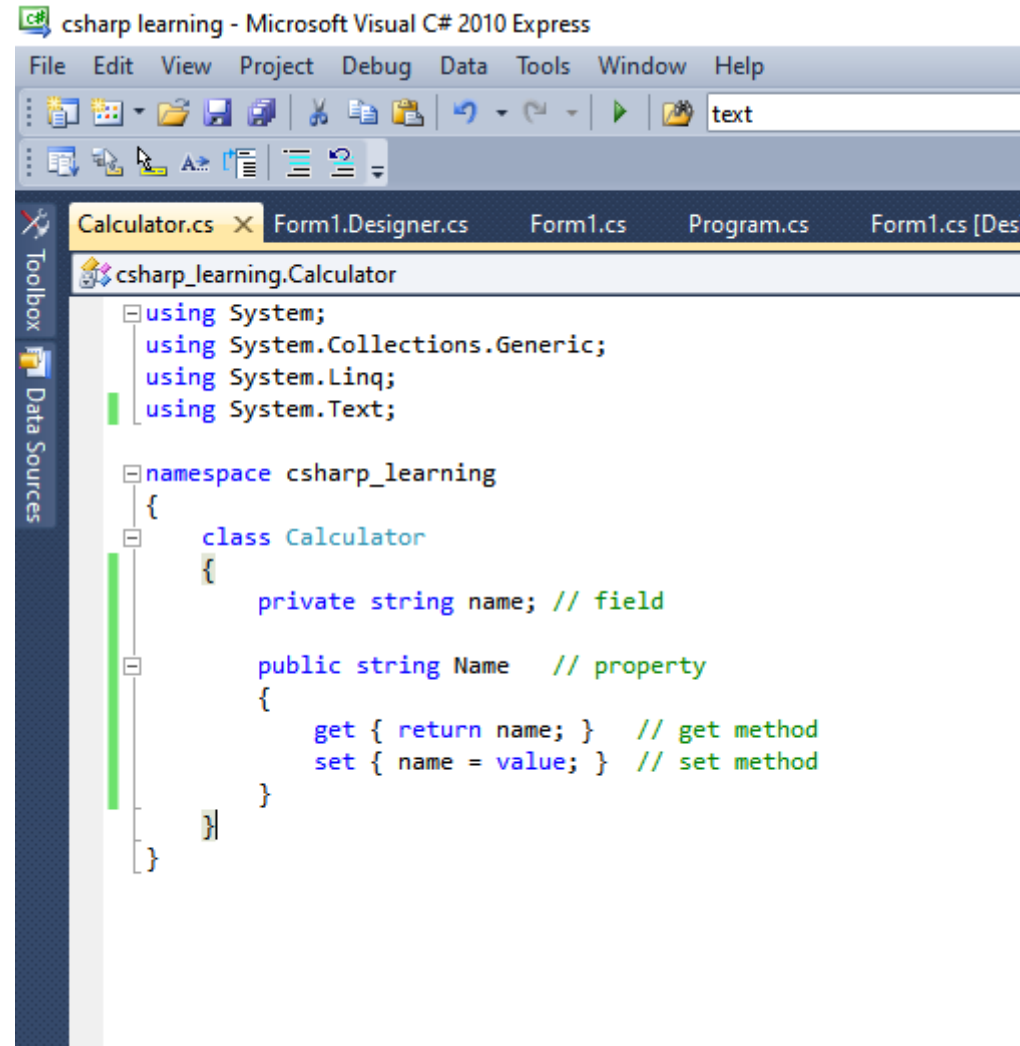
Class - Fields

```
csharp learning - Microsoft Visual C# 2010 Express
File Edit View Project Debug Data Tools Window Help
Calculator.cs* Form1.Designer.cs Form1.cs* Program.cs Form1.cs [Design]*
csharp_learning.Form1
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;

namespace csharp_learning
{
    partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void Form1_Load(object sender, EventArgs e)
        {
            Calculator calc = new Calculator();
            MessageBox.Show(calc.);
        }
    }
}
```

Class - Property



The screenshot shows the Microsoft Visual C# 2010 Express IDE. The title bar reads "csharp learning - Microsoft Visual C# 2010 Express". The menu bar includes File, Edit, View, Project, Debug, Data, Tools, Window, and Help. The toolbar contains various icons for file operations and execution. The Solution Explorer on the left shows a project named "csharp_learning" with a file "Calculator.cs" selected. The Code window displays the following C# code:

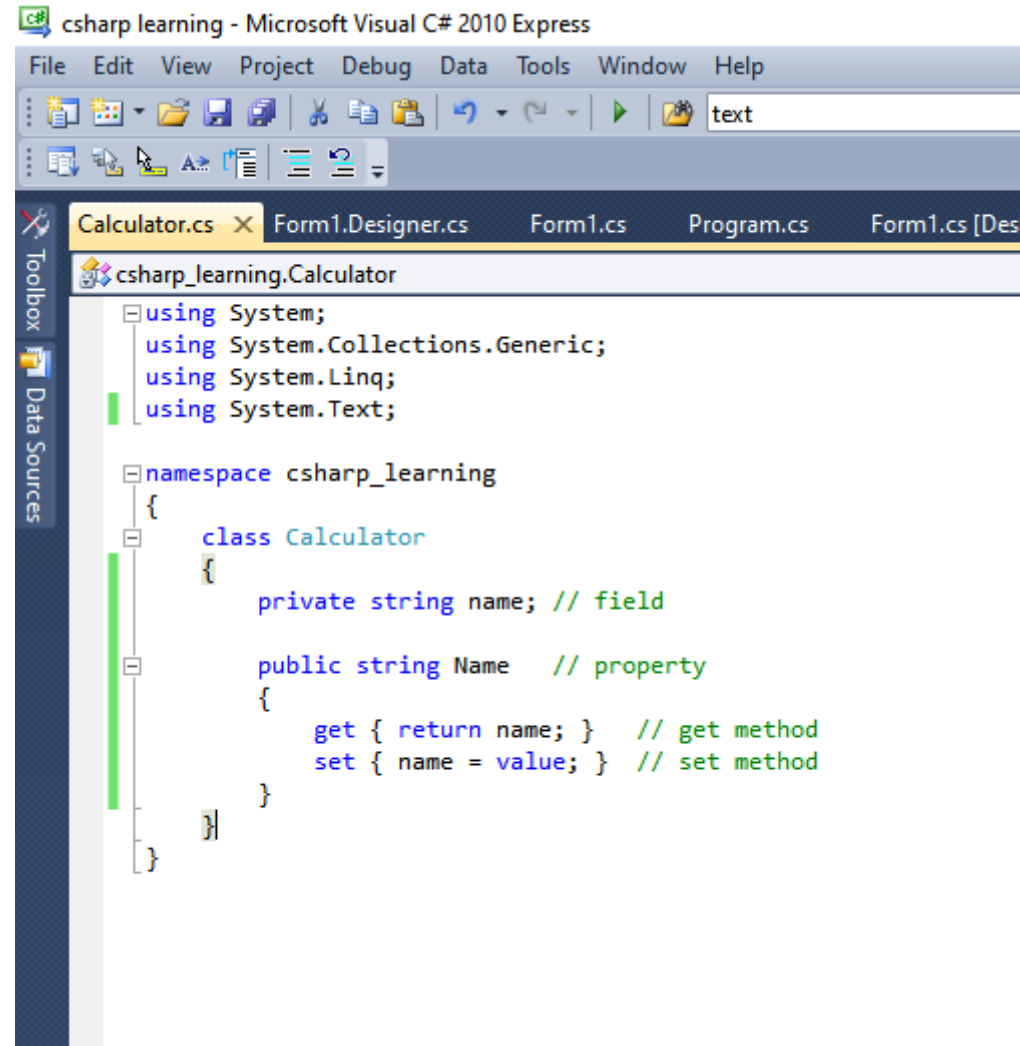
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace csharp_learning
{
    class Calculator
    {
        private string name; // field

        public string Name // property
        {
            get { return name; } // get method
            set { name = value; } // set method
        }
    }
}
```

کاوه حقیقی - ویژوال استودیو

Class - Property



The screenshot shows the Microsoft Visual C# 2010 Express IDE. The title bar reads "csharp learning - Microsoft Visual C# 2010 Express". The menu bar includes File, Edit, View, Project, Debug, Data, Tools, Window, and Help. The toolbar contains various icons for file operations and execution. The Solution Explorer on the left shows a project named "csharp_learning" with a file "Calculator.cs" selected. The Code window displays the following C# code:

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

namespace csharp_learning
{
    class Calculator
    {
        private string name; // field

        public string Name // property
        {
            get { return name; } // get method
            set { name = value; } // set method
        }
    }
}
```

کاوه حقیقی - ویژوال استودیو

Class - Constructor

سازنده ها در هنگام تعریف یک نمونه از یک کلاس فراخوانی میشوند. سازنده ها به وسیله ی یک کلمه ی سطح دسترسی و کلمه ای که همنام با نام کلاس باشند تعریف میشوند :

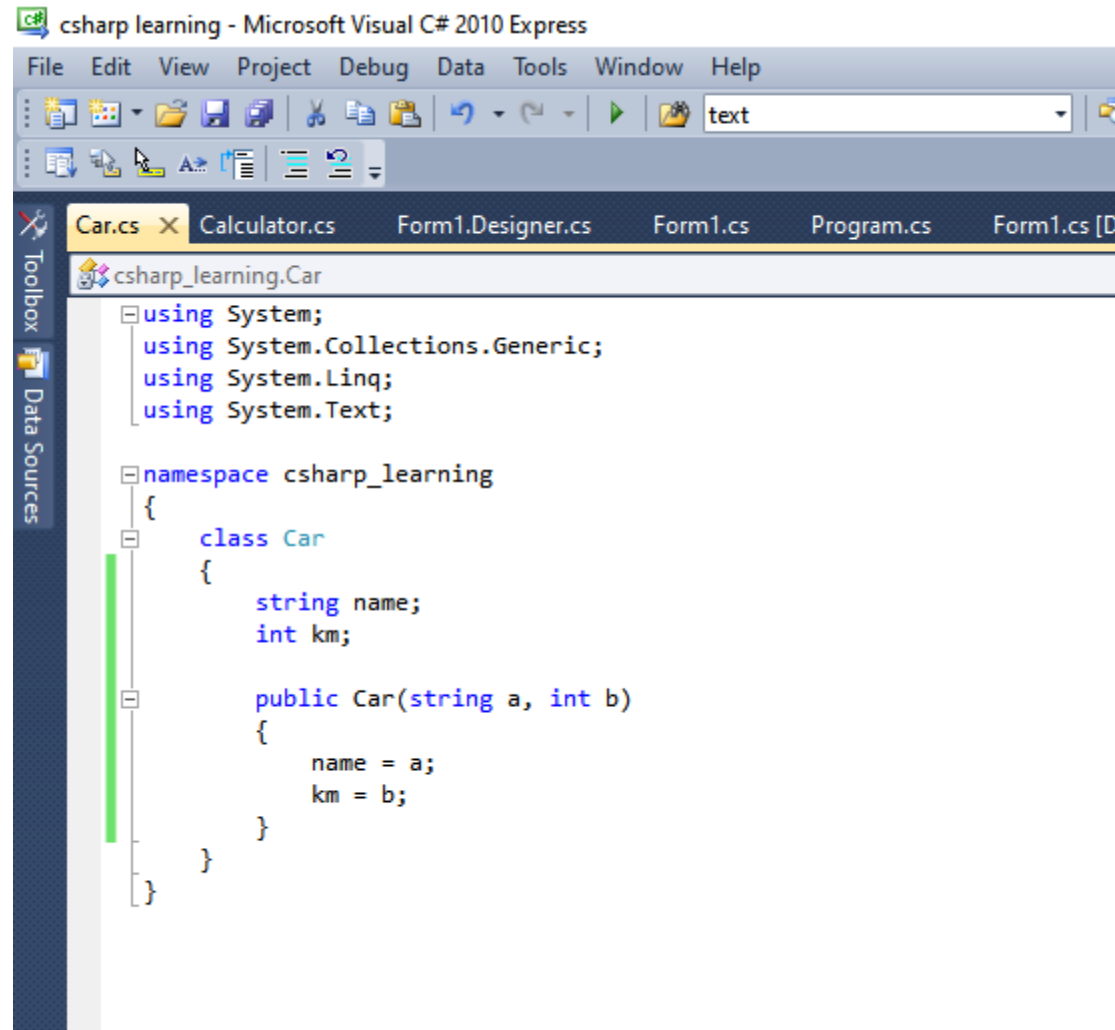
```
class Car
{
    public Car()
    {
    }
}
```


Class - Constructor

سازنده ها در هنگام تعریف یک نمونه از یک کلاس فراخوانی میشوند. سازنده ها به وسیله ی یک کلمه ی سطح دسترسی و کلمه ای که همنام با نام کلاس باشند تعریف میشوند :

```
class Car
{
    public Car()
    {
    }
}
```

Class - Constructor



The screenshot shows the Microsoft Visual C# 2010 Express IDE. The title bar reads "csharp learning - Microsoft Visual C# 2010 Express". The menu bar includes File, Edit, View, Project, Debug, Data, Tools, Window, and Help. The toolbar contains various icons for file operations and development. The Solution Explorer on the left shows a project named "csharp_learning" with a class named "Car". The Code window displays the following C# code:

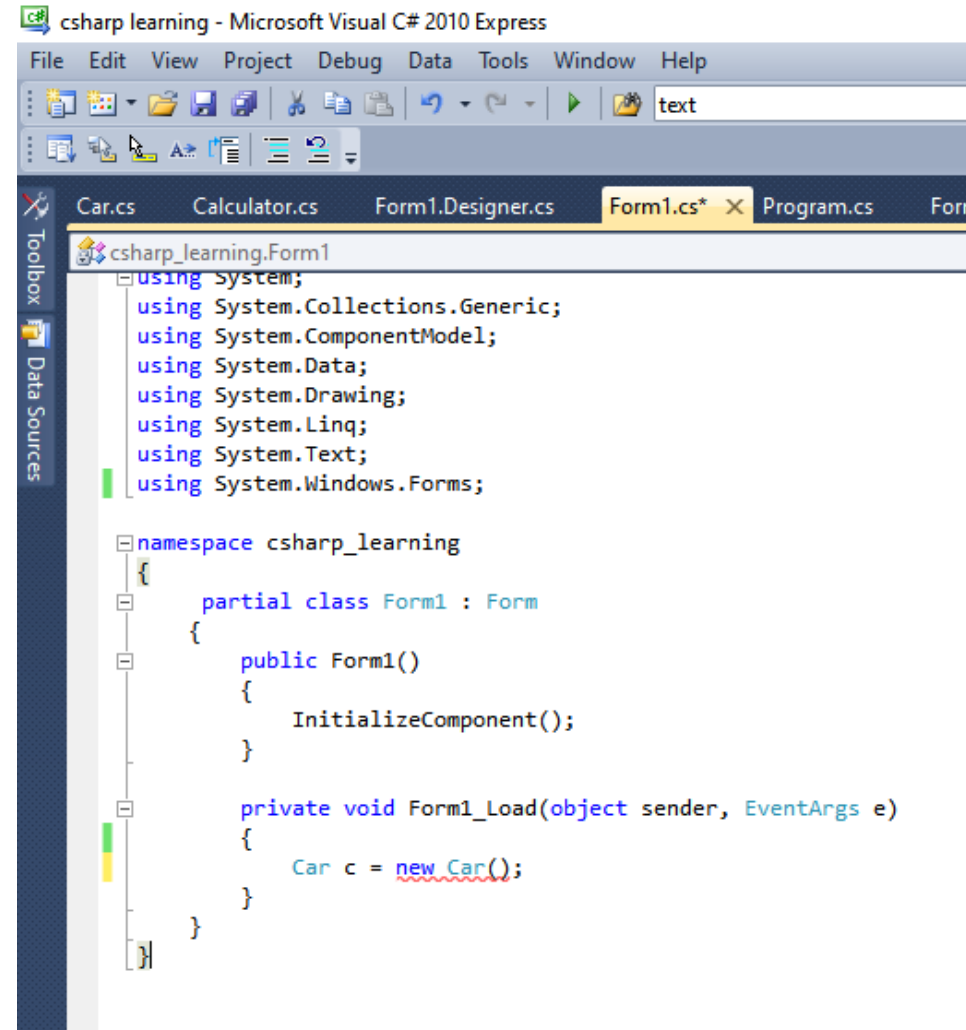
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;

namespace csharp_learning
{
    class Car
    {
        string name;
        int km;

        public Car(string a, int b)
        {
            name = a;
            km = b;
        }
    }
}
```

کاوه حقیقی - ویژوال استودیو

Class - Constructor



The screenshot shows the Microsoft Visual C# 2010 Express IDE. The title bar reads "csharp learning - Microsoft Visual C# 2010 Express". The menu bar includes File, Edit, View, Project, Debug, Data, Tools, Window, and Help. The toolbar contains various icons for file operations and development. The Solution Explorer on the left shows a project named "csharp_learning" with a file "Form1" selected. The Code window displays the following C# code:

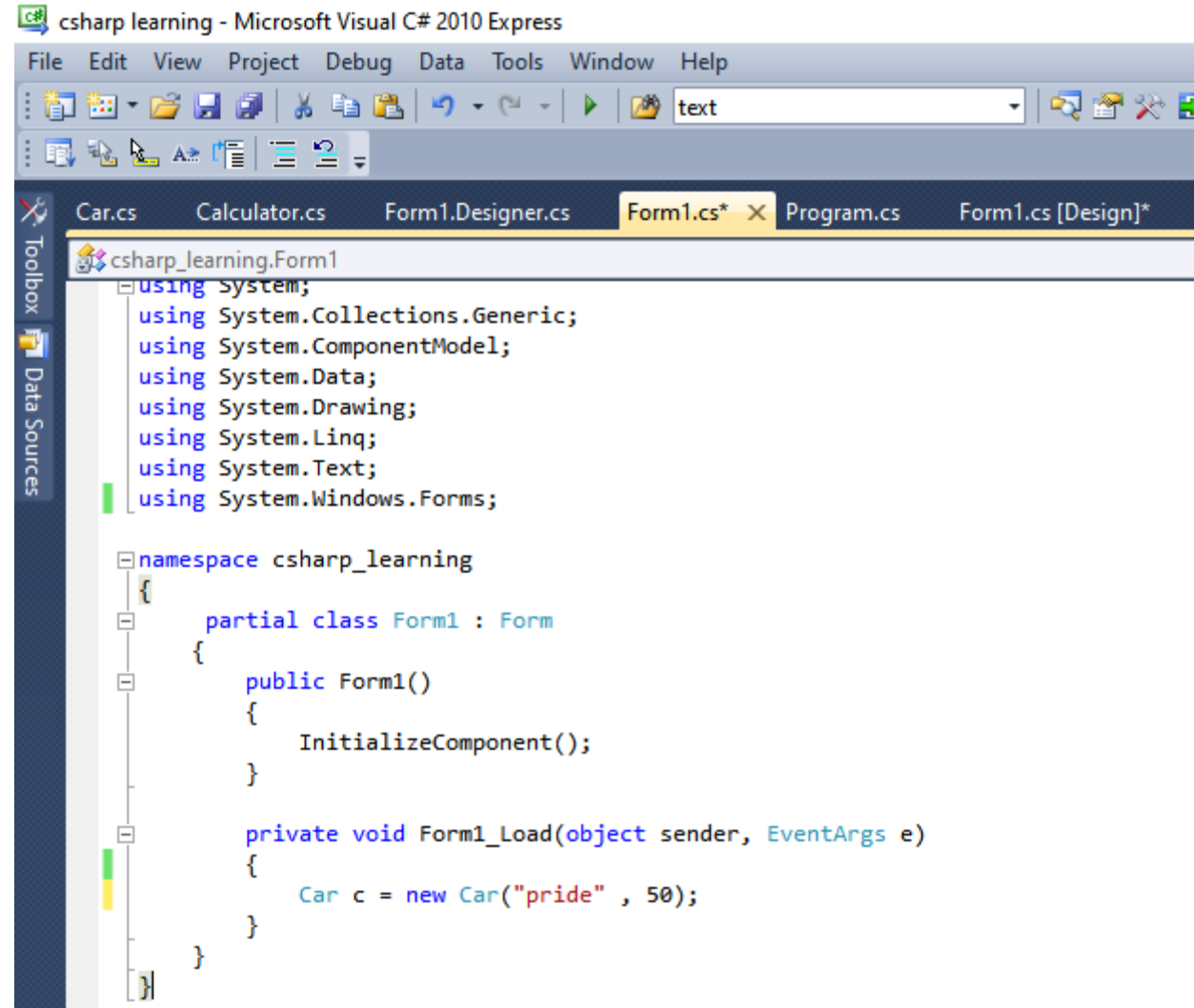
```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;

namespace csharp_learning
{
    partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void Form1_Load(object sender, EventArgs e)
        {
            Car c = new Car();
        }
    }
}
```

کاوه حقیقی - ویژوال استودیو

Class - Constructor



The screenshot shows the Microsoft Visual C# 2010 Express IDE. The title bar reads "csharp learning - Microsoft Visual C# 2010 Express". The menu bar includes File, Edit, View, Project, Debug, Data, Tools, Window, and Help. The toolbar contains various icons for file operations and development. The Solution Explorer on the left shows a project named "csharp_learning" with a file "Form1" selected. The Code window displays the following C# code:

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;

namespace csharp_learning
{
    partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

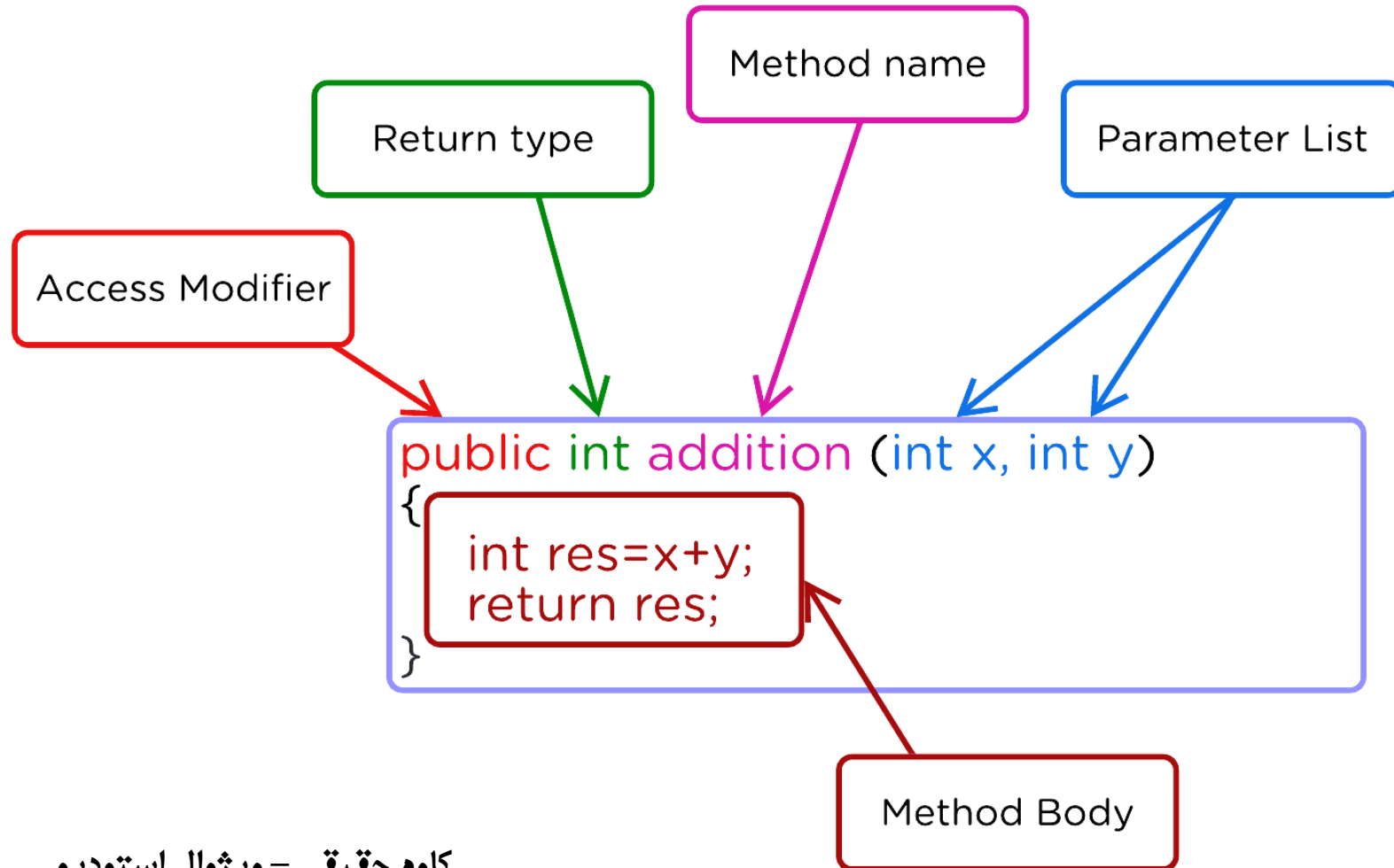
        private void Form1_Load(object sender, EventArgs e)
        {
            Car c = new Car("pride" , 50);
        }
    }
}
```

کاوه حقیقی - ویژوال استودیو

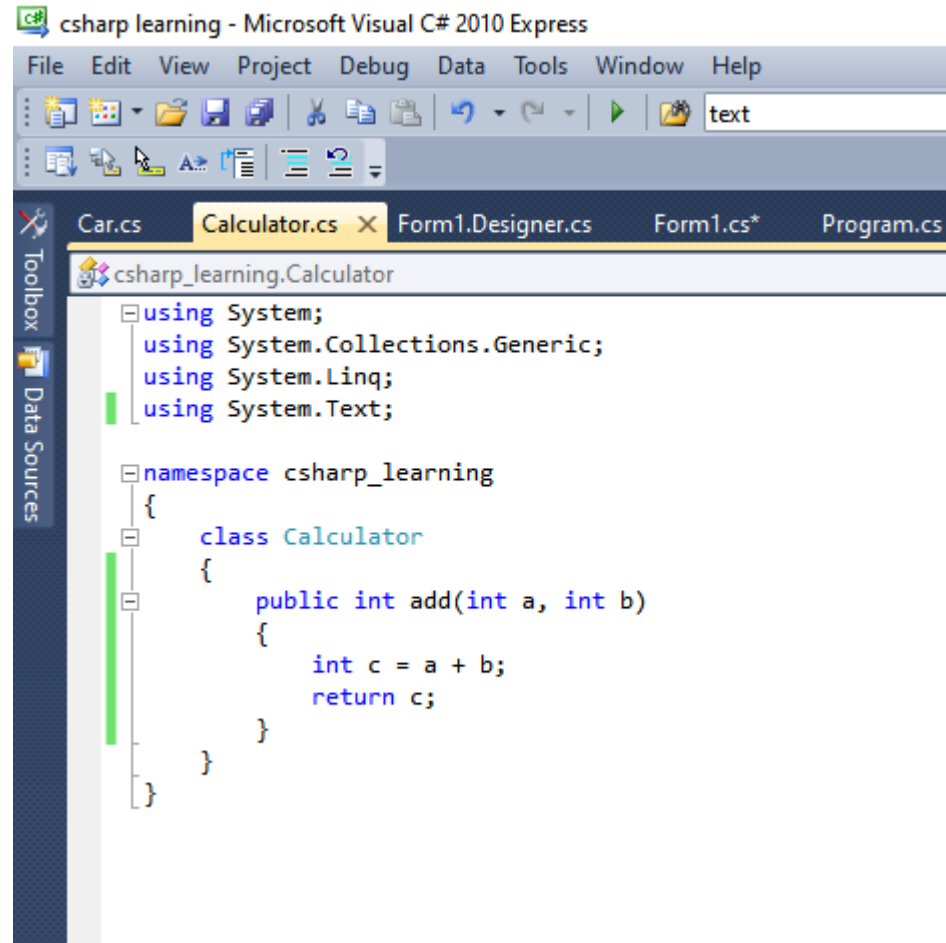
Class - Method

```
access modifier return type MethodName (parameters)  
{  
}
```

Class - Method



Class - Method

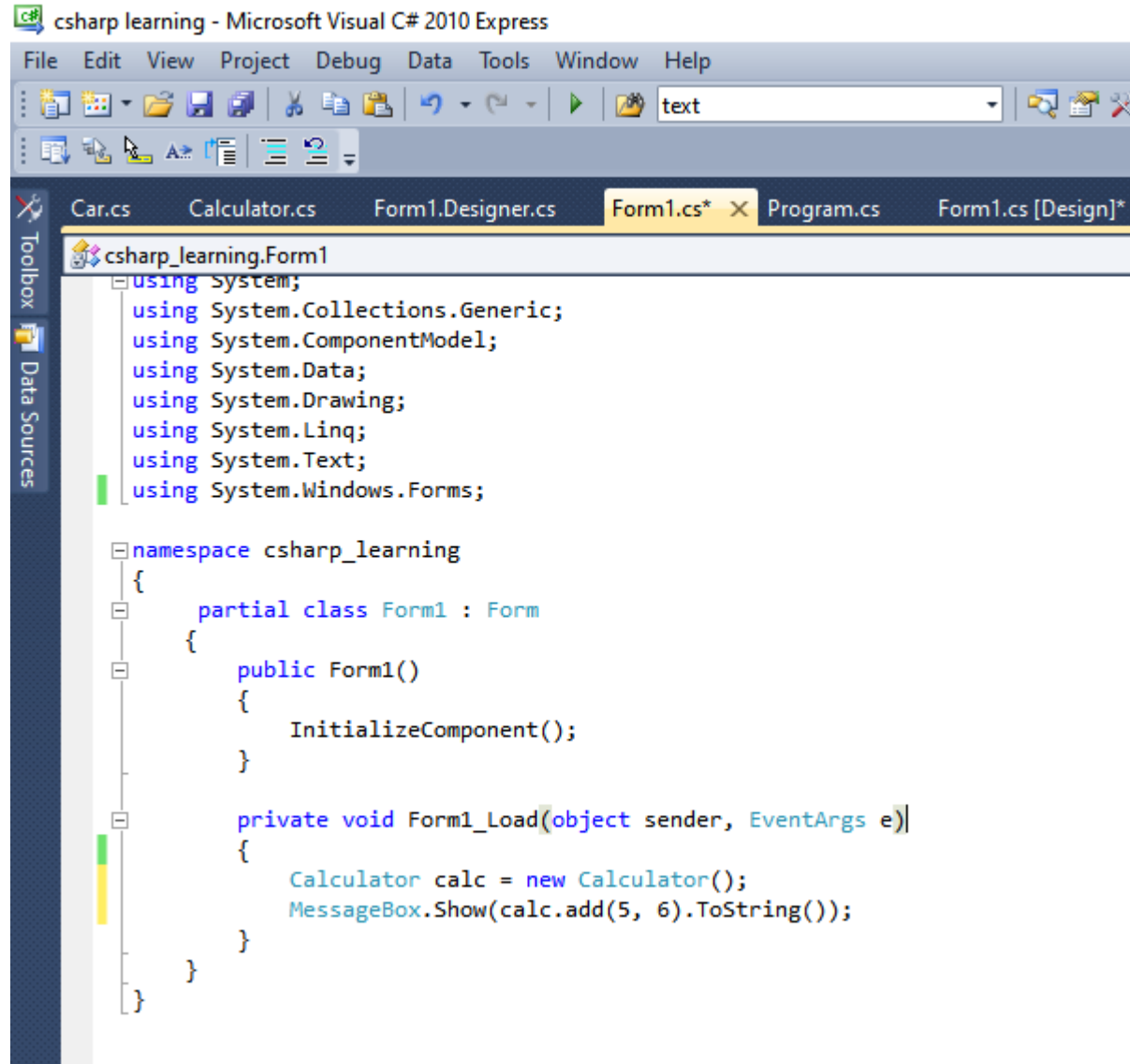


The screenshot displays the Microsoft Visual C# 2010 Express IDE. The title bar reads "csharp learning - Microsoft Visual C# 2010 Express". The menu bar includes File, Edit, View, Project, Debug, Data, Tools, Window, and Help. The toolbar contains various icons for file operations and execution. The Solution Explorer on the left shows a project named "csharp_learning" with a file named "Calculator.cs" selected. The Code window displays the following C# code:

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

namespace csharp_learning
{
    class Calculator
    {
        public int add(int a, int b)
        {
            int c = a + b;
            return c;
        }
    }
}
```

Class - Method



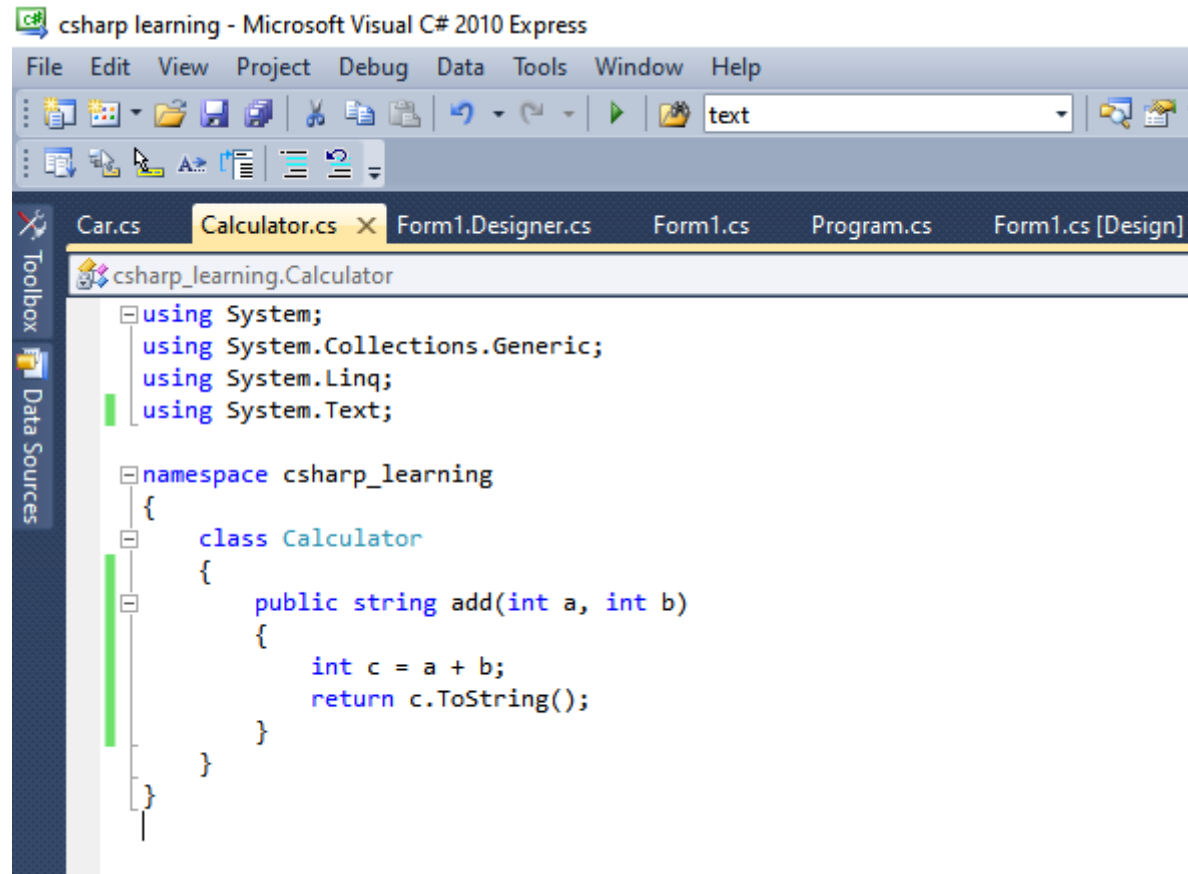
```
csharp learning - Microsoft Visual C# 2010 Express
File Edit View Project Debug Data Tools Window Help
Car.cs Calculator.cs Form1.Designer.cs Form1.cs* Program.cs Form1.cs [Design]*
csharp_learning.Form1
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;

namespace csharp_learning
{
    partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void Form1_Load(object sender, EventArgs e)
        {
            Calculator calc = new Calculator();
            MessageBox.Show(calc.add(5, 6).ToString());
        }
    }
}
```

کاوه حقیقی - ویژوال استودیو

Class - Method

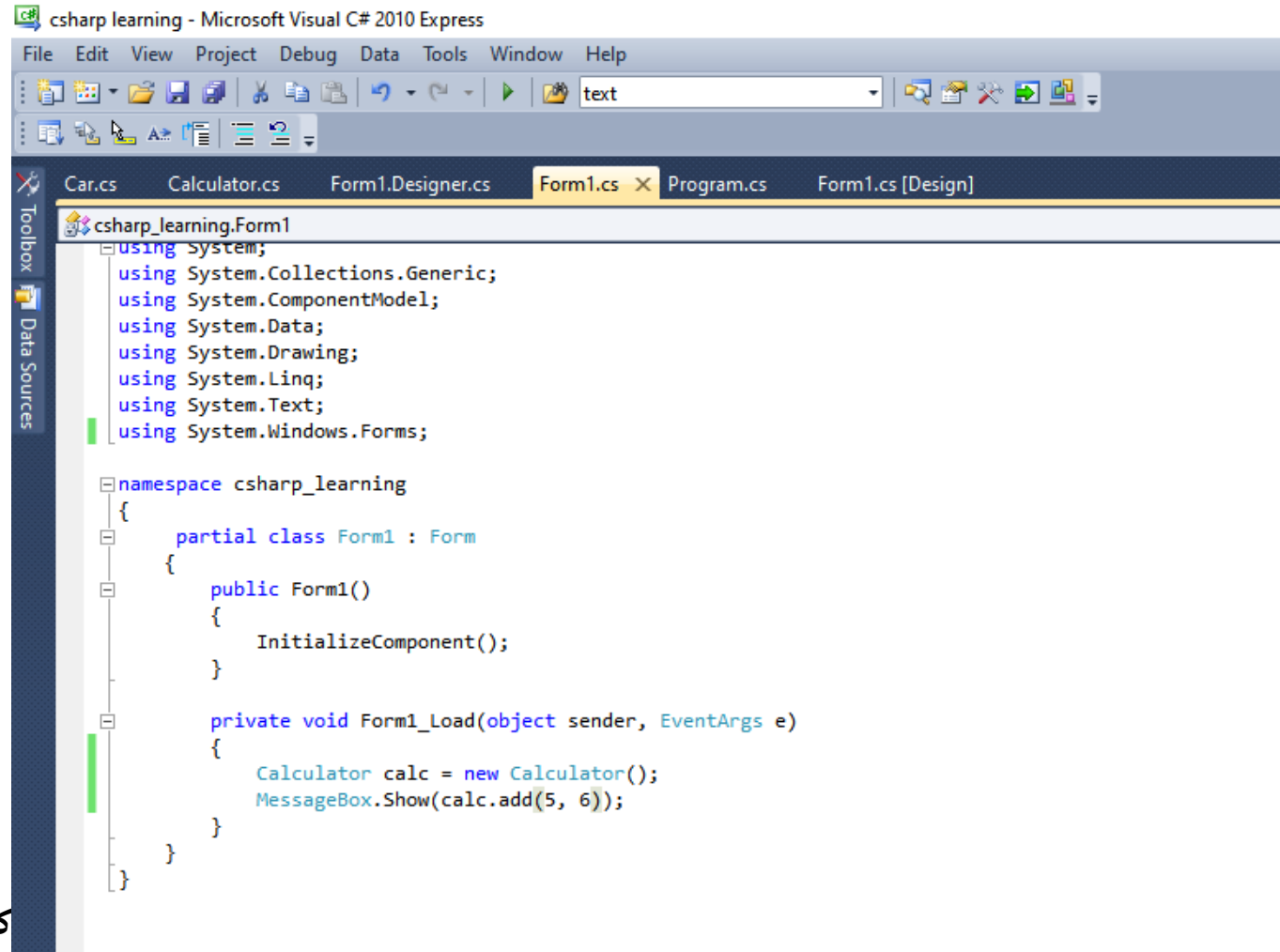


The screenshot shows the Microsoft Visual C# 2010 Express IDE. The title bar reads "csharp learning - Microsoft Visual C# 2010 Express". The menu bar includes File, Edit, View, Project, Debug, Data, Tools, Window, and Help. The toolbar contains various icons for file operations and execution. The Solution Explorer on the left shows a project named "csharp_learning" with a file "Calculator.cs" selected. The Code window displays the following C# code:

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

namespace csharp_learning
{
    class Calculator
    {
        public string add(int a, int b)
        {
            int c = a + b;
            return c.ToString();
        }
    }
}
```

Class - Method



```
csharp learning - Microsoft Visual C# 2010 Express
File Edit View Project Debug Data Tools Window Help
Car.cs Calculator.cs Form1.Designer.cs Form1.cs Program.cs Form1.cs [Design]
csharp_learning.Form1
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Windows.Forms;

namespace csharp_learning
{
    partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void Form1_Load(object sender, EventArgs e)
        {
            Calculator calc = new Calculator();
            MessageBox.Show(calc.add(5, 6));
        }
    }
}
```

Class - Method

```
Convert.ToString(5);
```

Class - Event

کاوه حقیقی - ویژوال استودیو