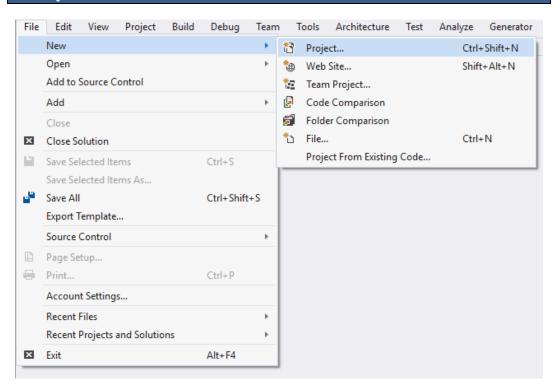
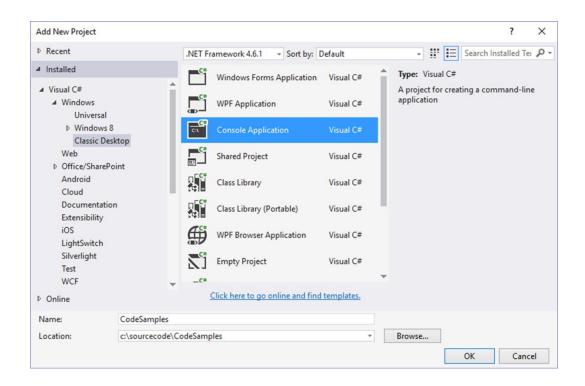
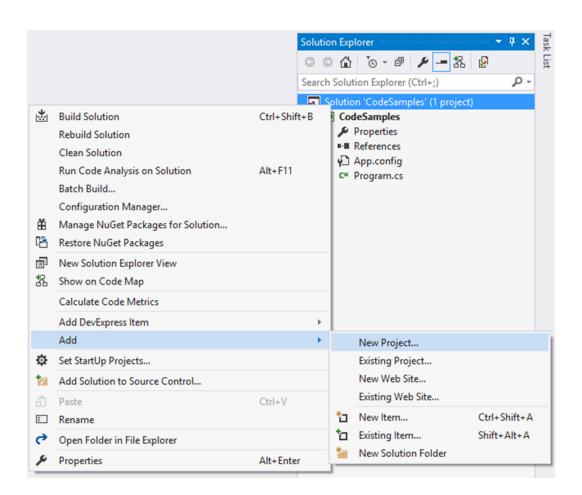
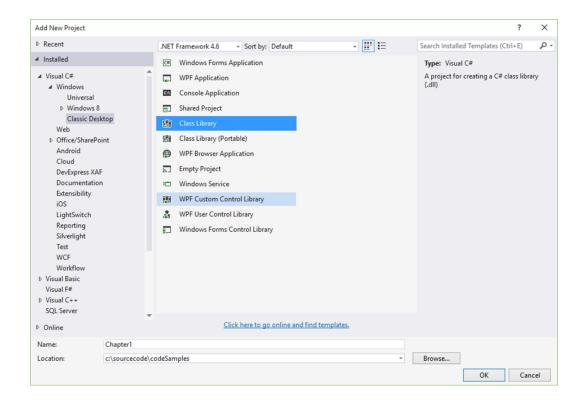
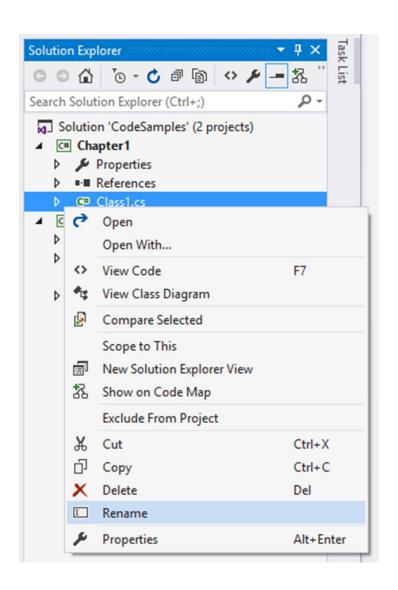
Chapter 1: New Features in C# 6.0

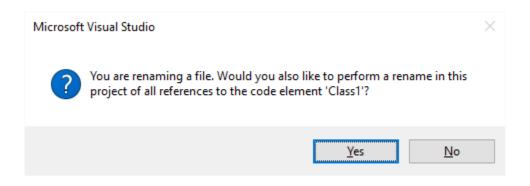


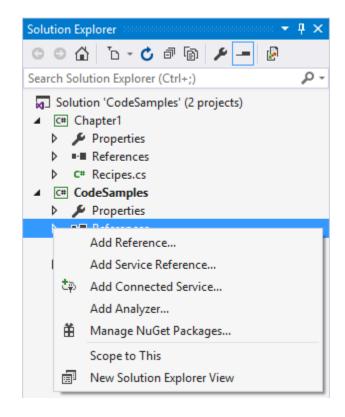


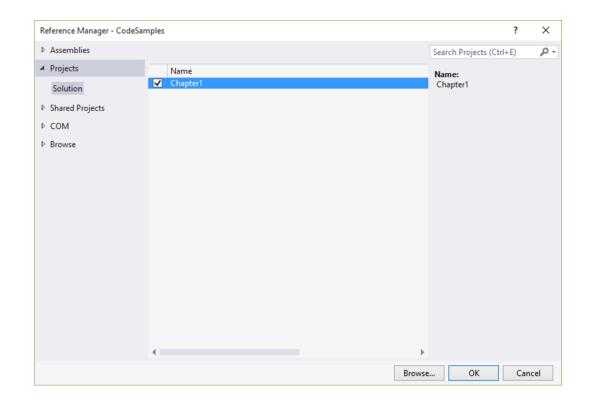


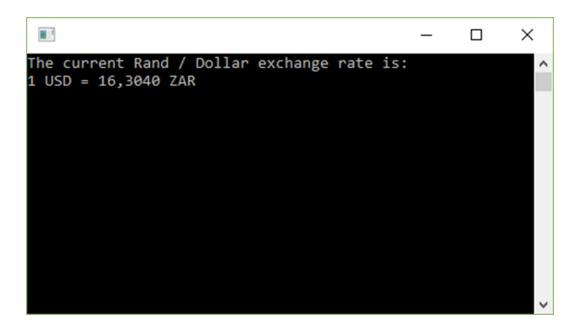


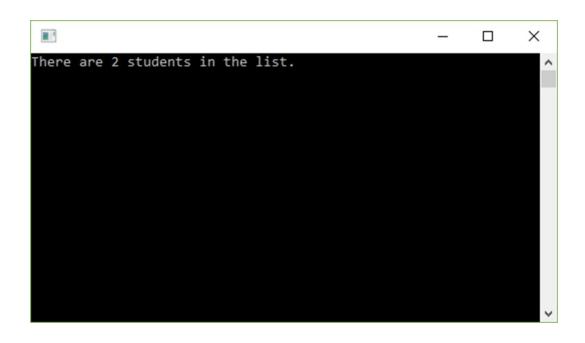


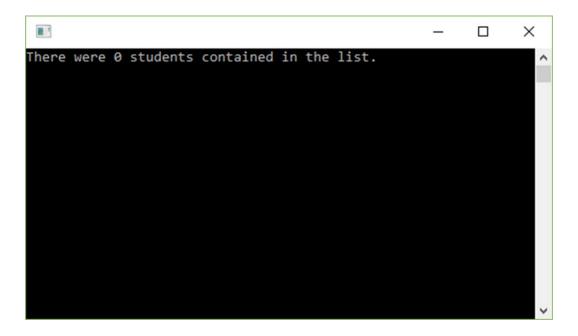














```
public static void CalculateSalePrice(string barCode, DiscountType discount)

{
    decimal shelfPrice = GetPriceFromBarcode(barCode);

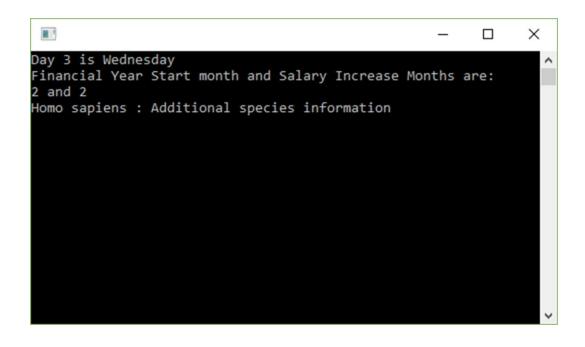
    if (discount == DiscountType.Sale)
        SalePrice = (shelfPrice == 0 ? ShelfPrice.CalculateSalePrice(SaleDiscountPercent) : shelfPrice.CalculateSalePrice(SaleDiscountPercent));

if (discount == DiscountType.Clearout)
        SalePrice = (shelfPrice == 0 ? ShelfPrice.CalculateSalePrice(ClearoutDiscountPercent) : shelfPrice.CalculateSalePrice(ClearoutDiscountPercent));

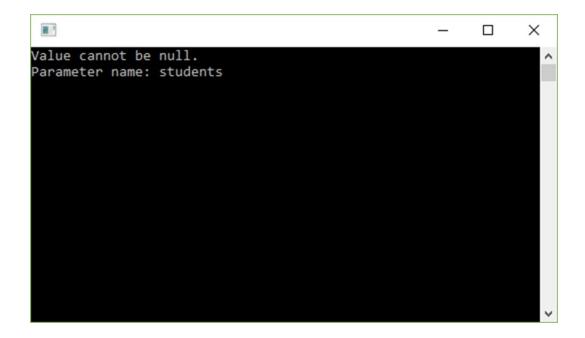
if (discount == DiscountType.None)
        SalePrice = (shelfPrice == 0 ? ShelfPrice : shelfPrice);

SalePrice = 200;
    ShelfPrice == 200;
    ShelfPrice == 200;
    ShelfPrice == 75;
    ClearoutDiscountPercent = 75;
    ClearoutDiscountPercent = 95;

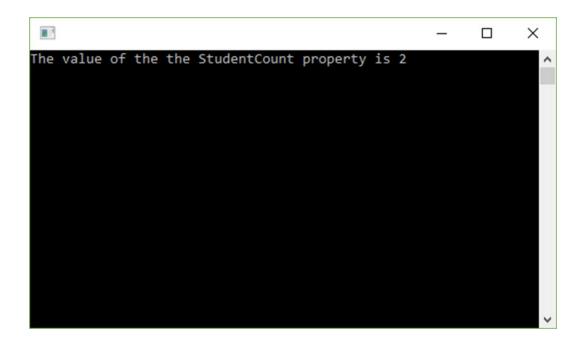
P    int Recipe3AutoImplementedProperties.ClearoutDiscountPercent(cannot be assigned to -- it is read only
```

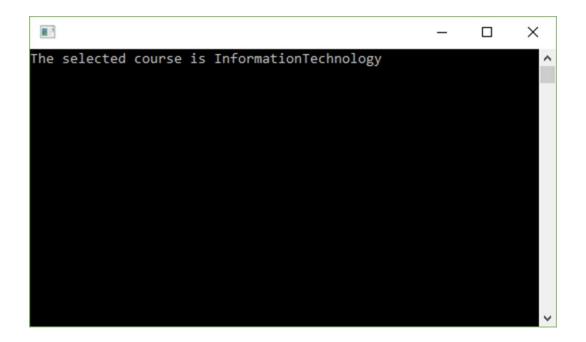


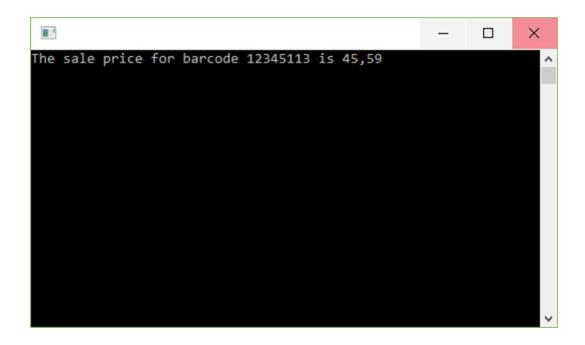


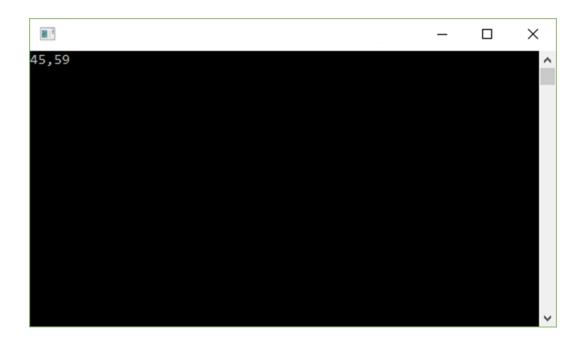


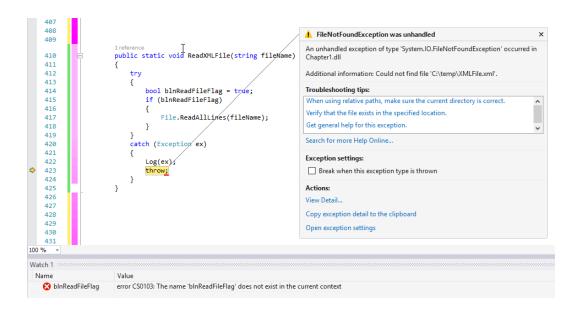
```
Rename: students
2 references
                                                           Modify any highlighted location to begin renaming.
public static class Recipe5NameofExpression
                                                           ☐ Include comments☐ Include strings
    public static int StudentCount { get; set; } = 0;
    1 reference
                                                            Preview changes
    public static List<Student> GetStudents()
                                                           Rename will update 7 references in 1 file.
        List<Student> students = new List<Student>();
                                                                                               Apply
        try
        {
             Student st = new Student();
             st.FirstName = "Dirk";
             st.LastName = "Strauss";
             st.JobTitle = "";
            st.Age = 19;
             st.StudentNumber = "20323742";
             students.Add(st);
            st.FirstName = "Bob";
             st.LastName = "Healey";
             st.JobTitle = "Lab Assistant";
             st.Age = 21;
             st.StudentNumber = "21457896";
             students.Add(st);
             students = null;
             StudentCount = students.Count();
             return students;
        }
        catch (Exception ex)
        {
             throw new ArgumentNullException(nameof(students));
        }
    }
```

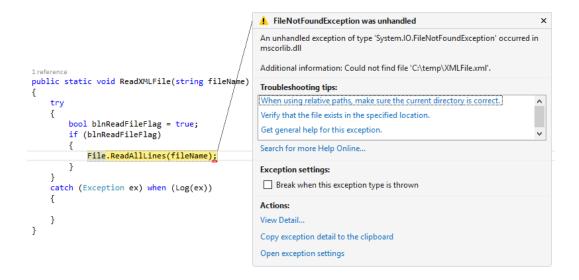


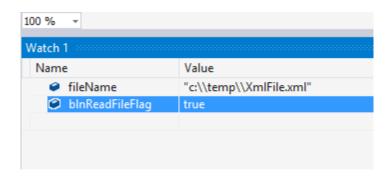


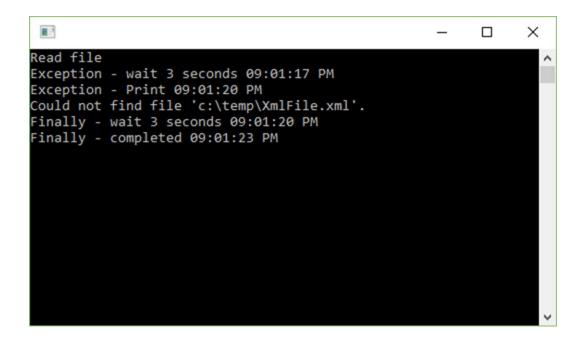




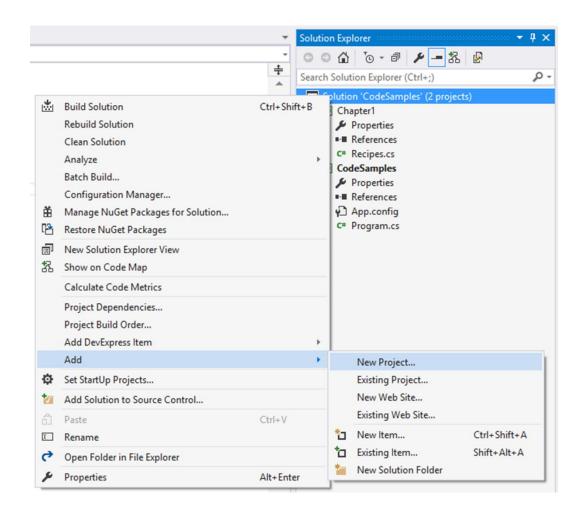


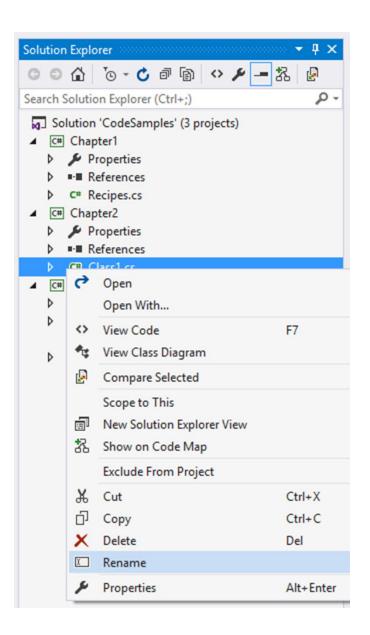


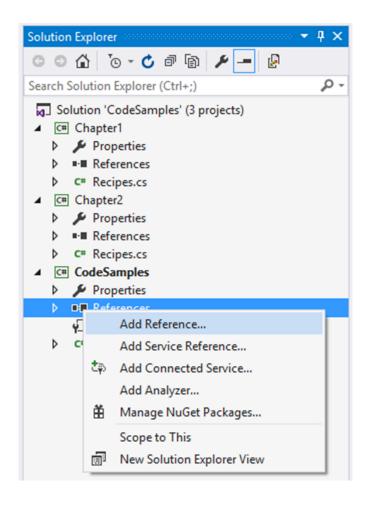


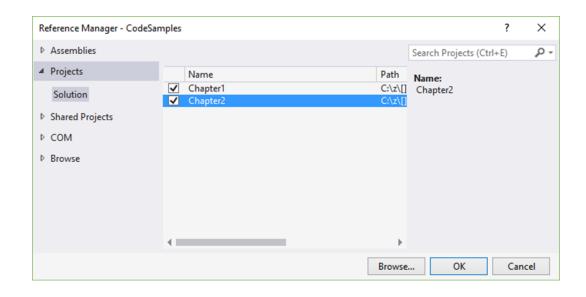


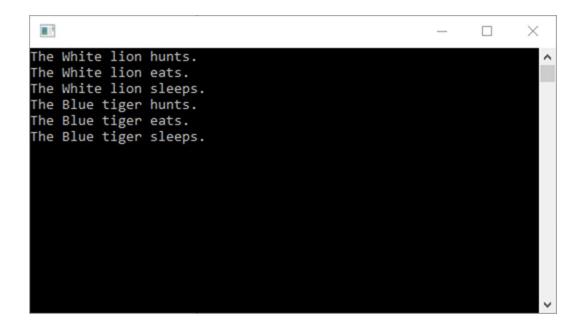
Chapter 2: Classes and Generics











```
Oreferences
public class Cheetah: Cat
{

| Implement Abstract Class | Cost | Cost | Cat. | Ca
```

```
public class Cheetah : Cat, IPurrable
                  · ·
    public override voi Implement interface
                                                         ്⊗ CS0535 'Cheetah' does not implement interface member
        WriteLine($"The Implement interface explicitly
                                                         'IPurrable.SoftPurr(int)'
                                                             public void SoftPurr(int decibel)
{
    public override void Hunt()
                                                                throw new NotImplementedException();
         WriteLine($"The cheetah hunts.");
    }
                                                          Preview changes
                                                          Fix all occurrences in: Document | Project | Solution
    public override void Sleep()
         WriteLine($"The cheetah sleeps.");
}
```

```
Oreferences
public class Cheetah : Cat, IPurrable

{
    Oreferences
    public int SoftPurr { get; set; }
    1reference
    public void SoftPurr(int decibel)
    {
        throw new
    }

        The type 'Cheetah' already contains a definition for 'SoftPurr'
    3references
    public override void Eat()
    {
        WriteLine($"The cheetah eats.");
    }
```

```
public class Cheetah : Cat, IPurrable
{

3 references
public override void
{

WriteLine($"The
}

3 references
public override void Hunt()
{

WriteLine($"The cheetah hunts.");
}

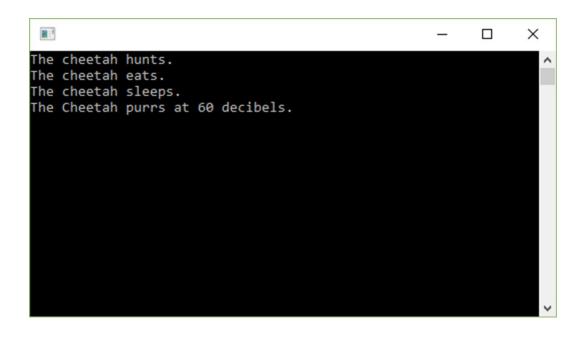
3 references
public override void Sleep()
{

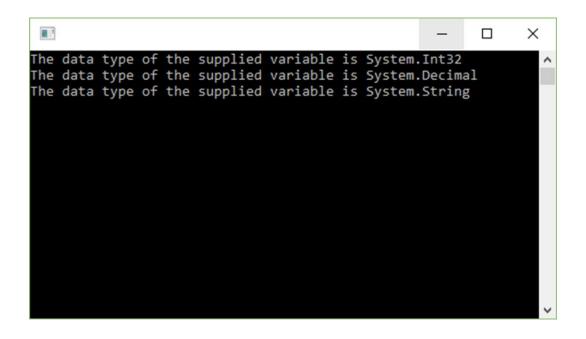
WriteLine($"The cheetah sleeps.");
}

4 WriteLine($"The cheetah sleeps.");
}

3 references
public override void Sleep()

WriteLine($"The cheetah sleeps.");
}
```

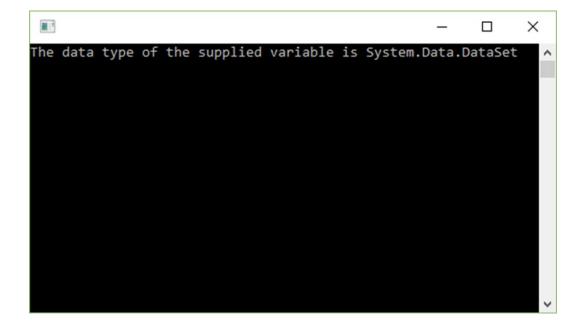




```
PerformAction<int> iAction = new PerformAction<int>(21);
iAction.IdentifyDataType();

PerformAction<decimal> dAction = new PerformAction<decimal>(21.55m);
dAction.IdentifyDataType();

PerformAction<string> sAction = new PerformAction<string>("Hello Generics");
sAction.IdentifyDataType();
```



```
The data type of the supplied parameter is System.Int32

An example of this type is 25

The data type of the supplied parameter is System.Decimal

An example of this type is 11,78

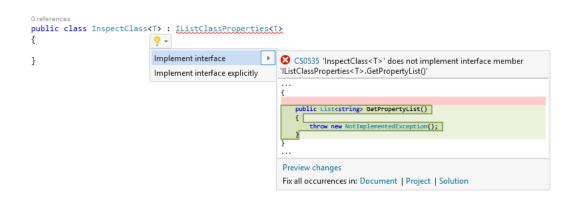
The data type of the supplied parameter is System.String

An example of this type is Hello Generics

The data type of the supplied parameter is CodeSamples.Program+

MyEnum

An example of this type is Value2
```



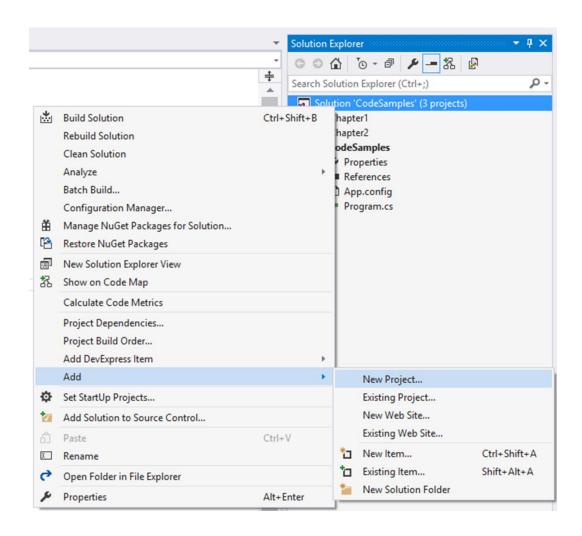
```
ID
TotalValue
LineNumber
StockItem
ItemPrice
Qty
```

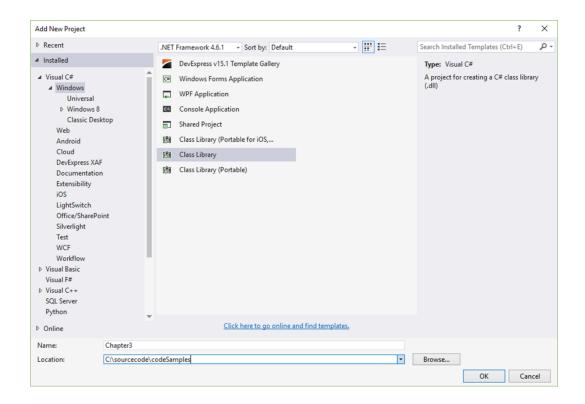
```
InspectClass<int> oClassInspector = new InspectClass<int>(10);
List<string> lstProps = oClassInspector.GetPropertyList();
foreach (string property in lstProps)
{
        Console.WriteLine(property);
}
Console.ReadLine();

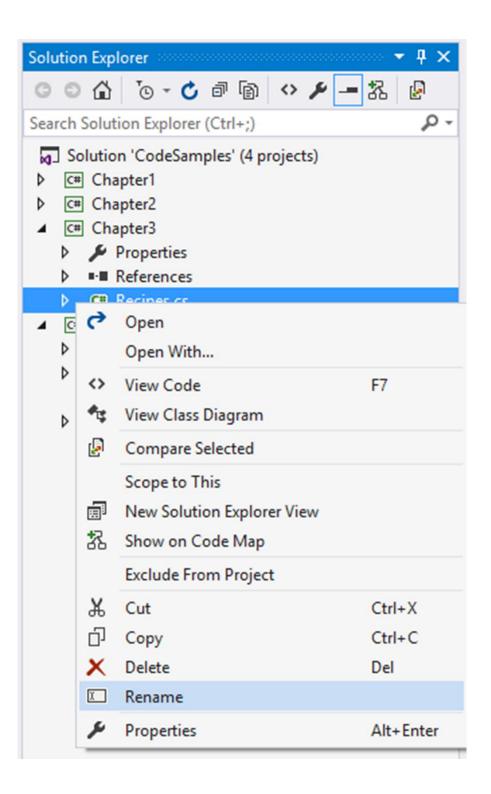
CreditNote oCreditNote = new CreditNote();
InspectClass<CreditNote> oCredClassInspector = new InspectClass<CreditNote>(oCreditNote);
List<string> credProps = oCredClassInspector.GetPropertyList();

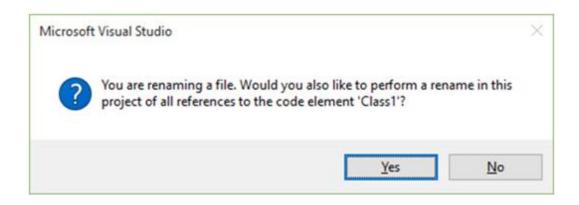
foreach (string property in credProps)
{
        Console.WriteLine(property);
}
Console.ReadLine();
```

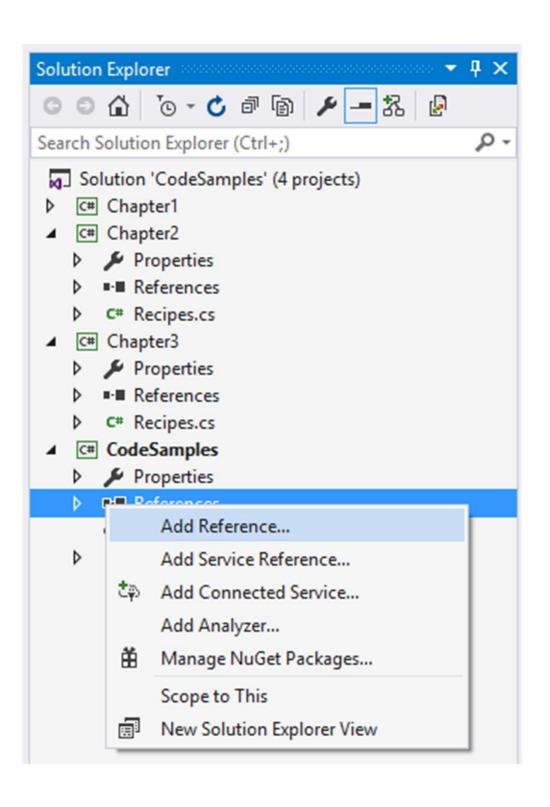
Chapter 3: Object-Oriented Programming in C#

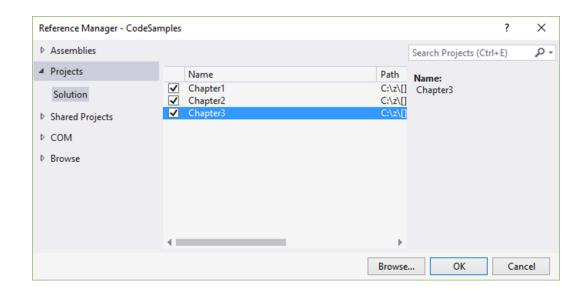


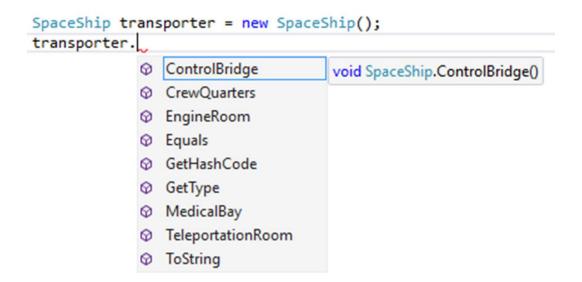


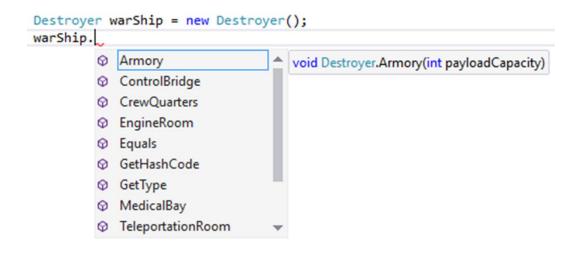


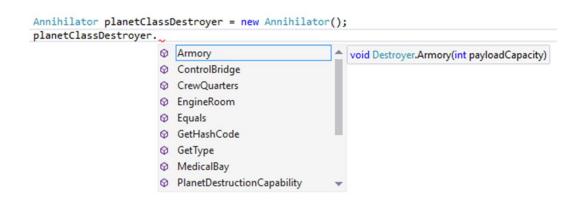


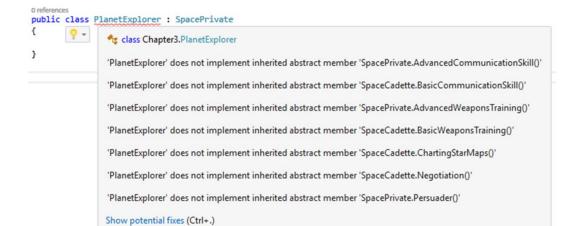












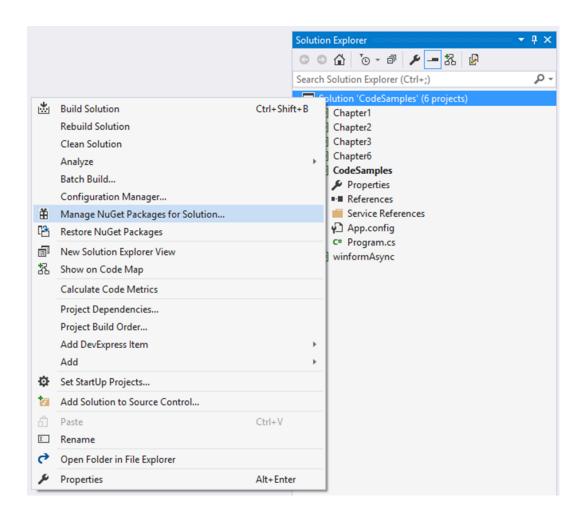
LaunchShuttle NasaShuttle1 = new LaunchShuttle(thrust, shuttleMass, graviatatonalAccelerationEarth);
thrustToWeightRatio = NasaShuttle1.

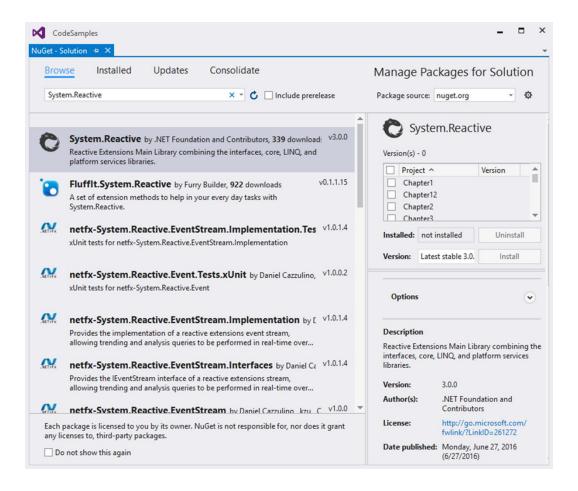
♥ Equals
 ♥ GetHashCode
 ♥ GetType
 ♥ ToString
 ♥ TWR
 double LaunchShuttle.TWR()

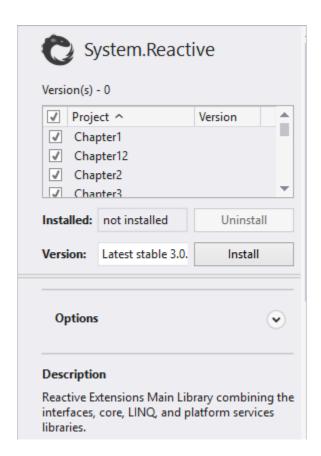
Fix all occurrences in: Document | Project | Solution

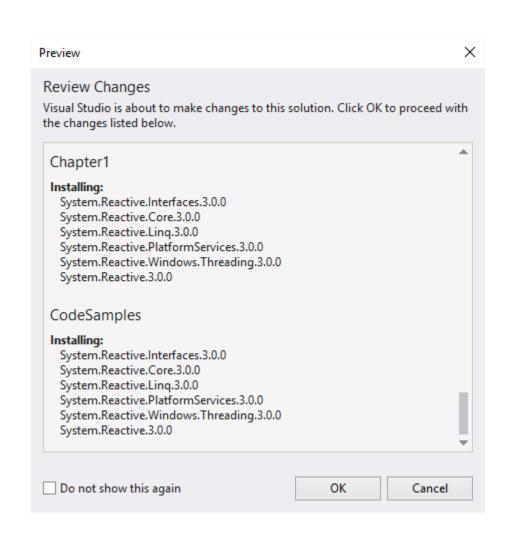


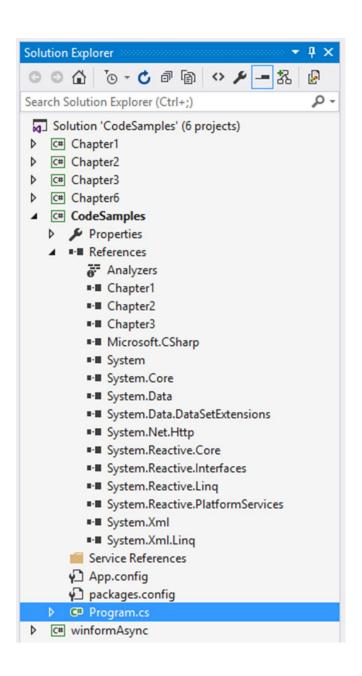
Chapter 4: Composing Event-Based Programs Using Reactive Extensions

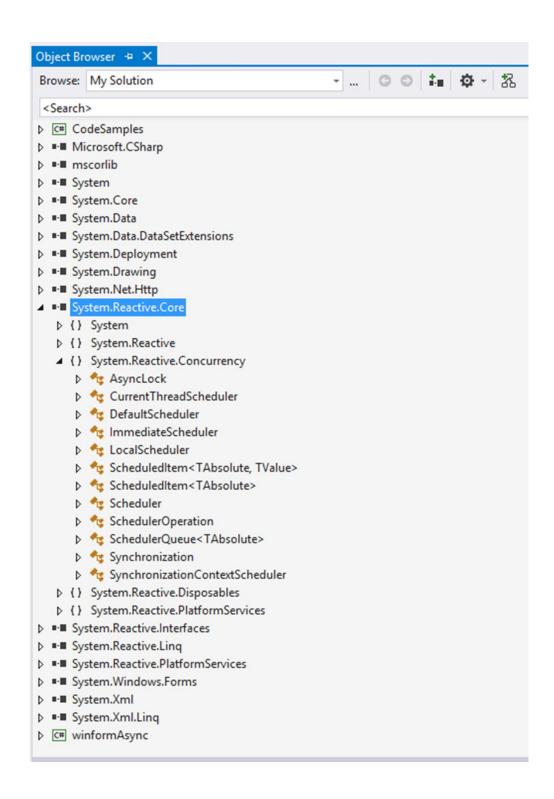




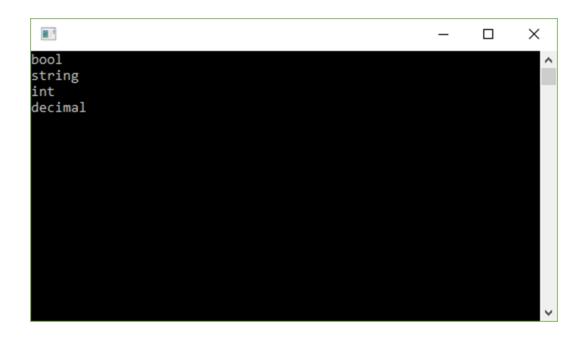


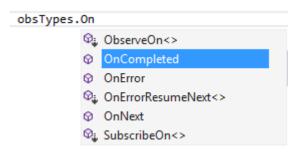


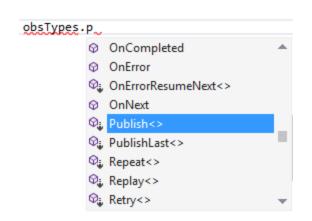


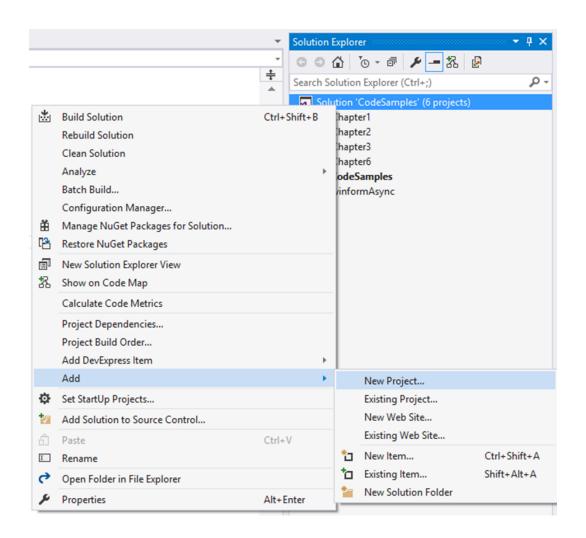


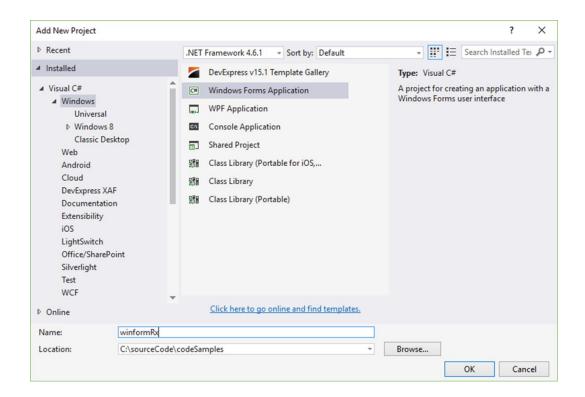


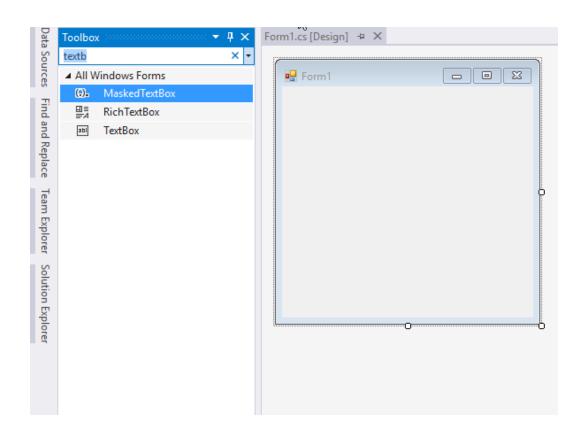


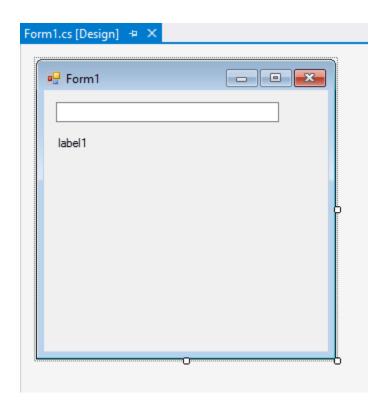


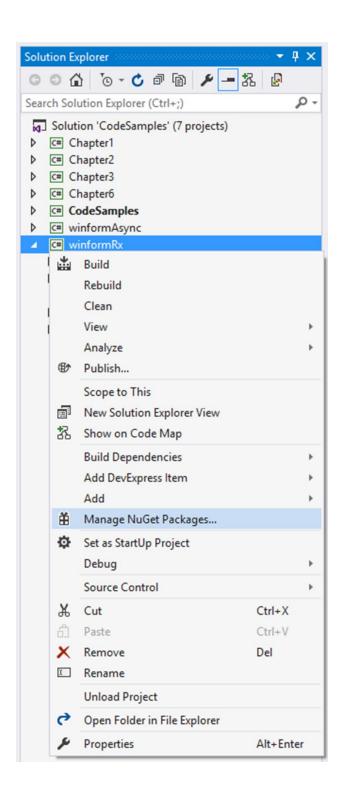


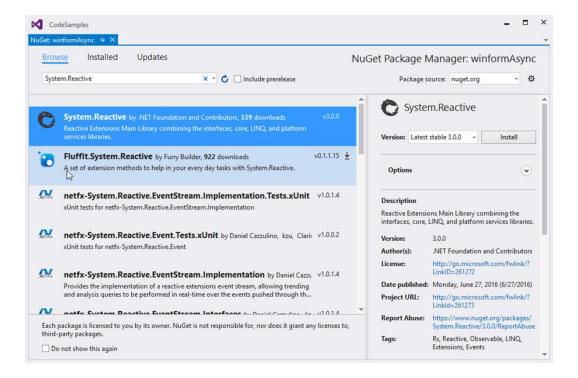




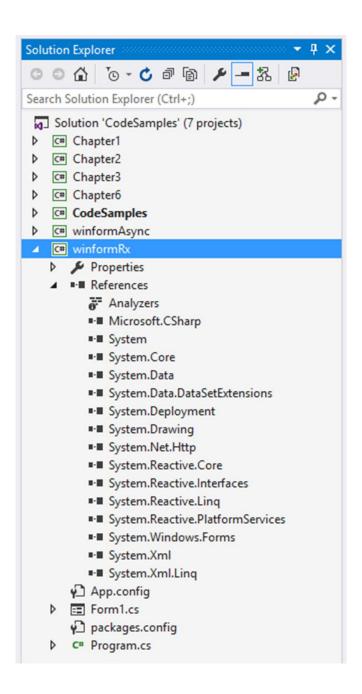


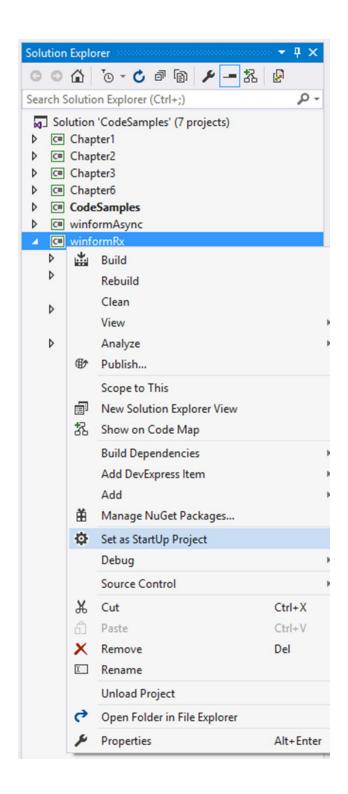






sual Studio is about to make changes to t nanges listed below.		Tocced William
vinformRx		
nstalling: System.Reactive.Interfaces.3.0.0 System.Reactive.Core.3.0.0 System.Reactive.Linq.3.0.0 System.Reactive.PlatformServices.3.0.0 System.Reactive.Windows.Threading.3.0 System.Reactive.3.0.0	0.0	
] Do not show this again	ОК	Cancel



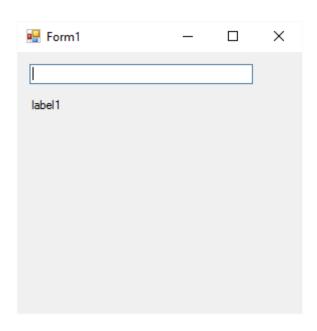


```
| Treference | private void Form1_Load(object sender, EventArgs e) | {
| Observable | Observable | does not exist in the current context |
| Show potential fixes (Ctrl+.) | }
| Ireference | private void Form1_Load(object sender, EventArgs e) | {
| Observable | Obse
```

Generate property 'Form1.Observable'

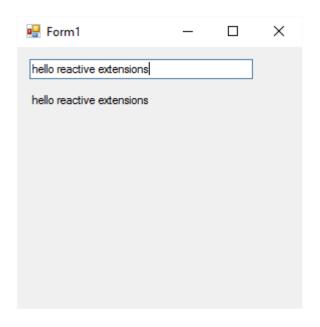
Generate field 'Observable' in 'Form1' Generate read-only field 'Form1.Observable'

Generate local 'Observable'

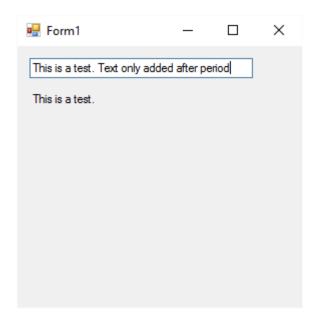


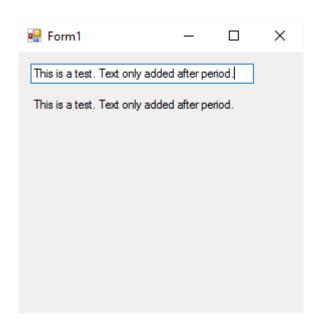
using System.Reactive.Linq; //using System.Reactive.Linq;

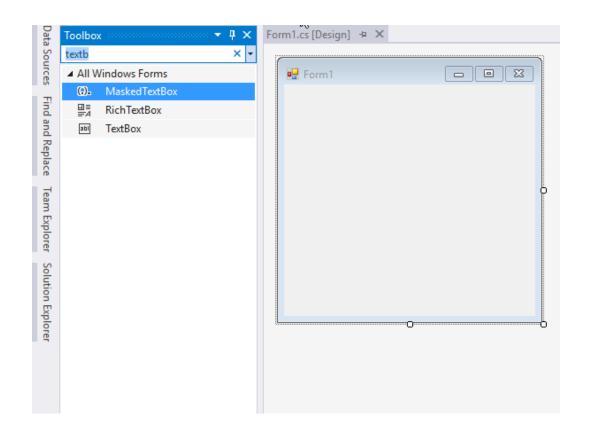
Preview changes

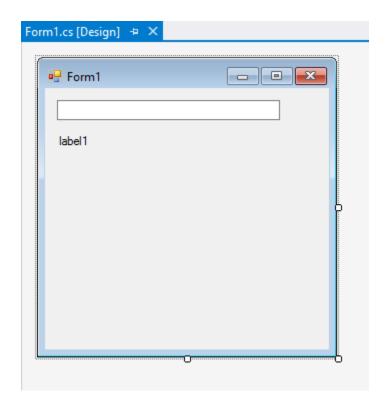


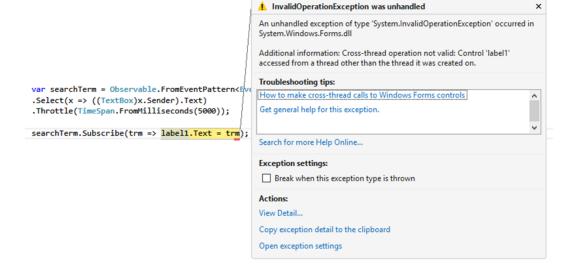


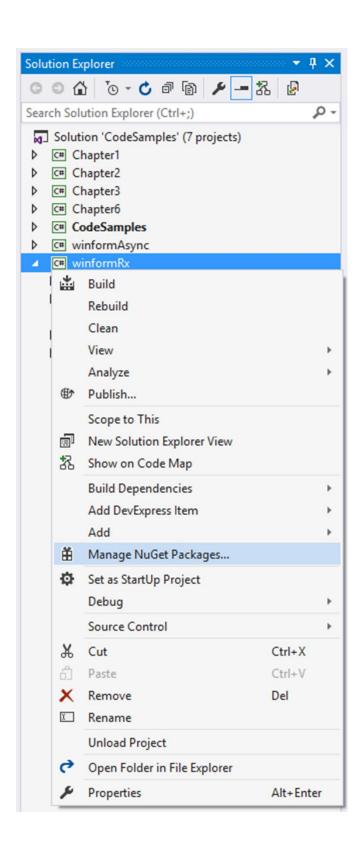


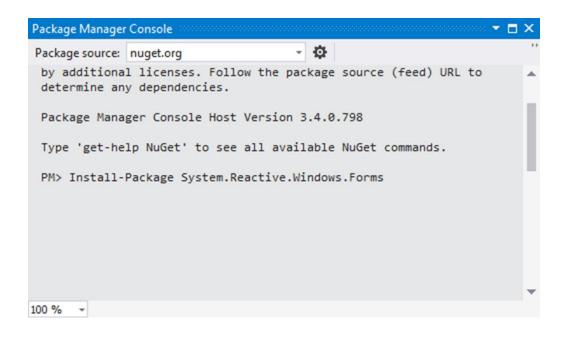


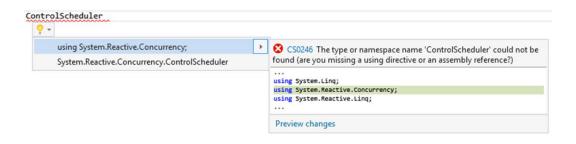


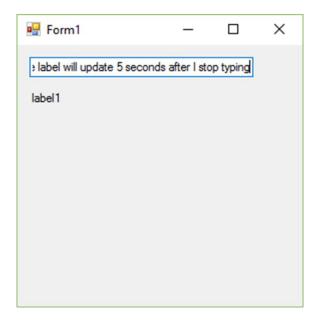


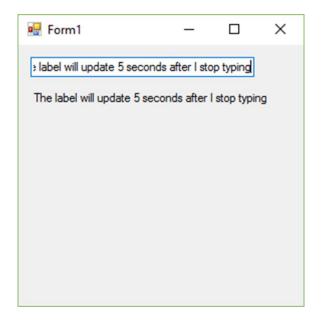




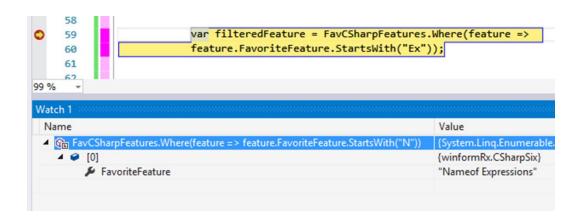




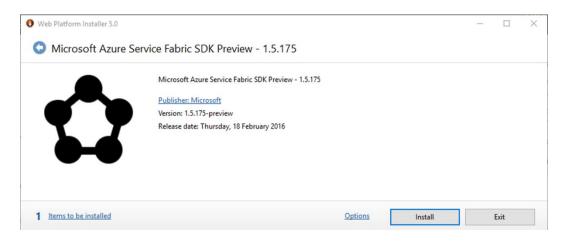


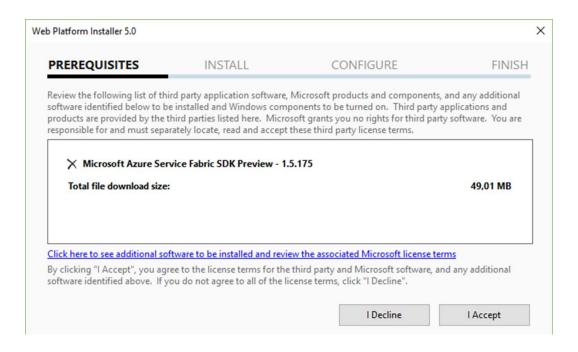


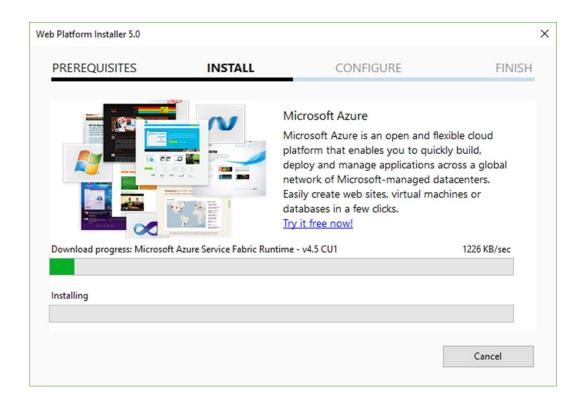
```
45
46
                     List<CSharpSix> FavCSharpFeatures = new List<CSharpSix>();
47
                     CSharpSix feature1 = new CSharpSix();
                     feature1.FavoriteFeature = "String Interpolation";
48
                     FavCSharpFeatures.Add(feature1);
49
50
                     CSharpSix feature2 = new CSharpSix();
51
                     feature2.FavoriteFeature = "Exception Filters";
52
                     FavCSharpFeatures.Add(feature2);
53
54
                     CSharpSix feature3 = new CSharpSix();
55
                     feature3.FavoriteFeature = "Nameof Expressions";
56
57
                     FavCSharpFeatures.Add(feature3);
58
                     var filteredFeature = FavCSharpFeatures.Where(feature => \le 1ms elapsed
59
                     feature.FavoriteFeature.StartsWith("Ex"));
60
61
```

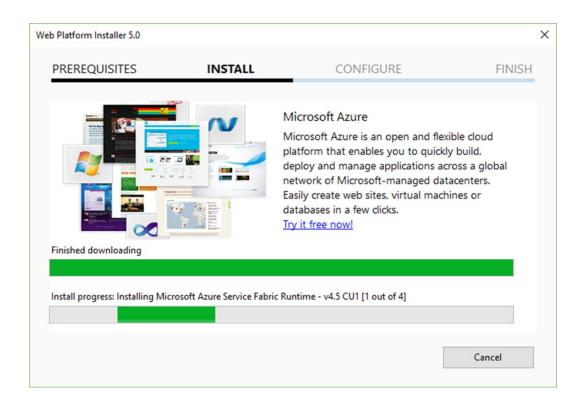


Chapter 5: Create Microservices on Azure Service Fabric





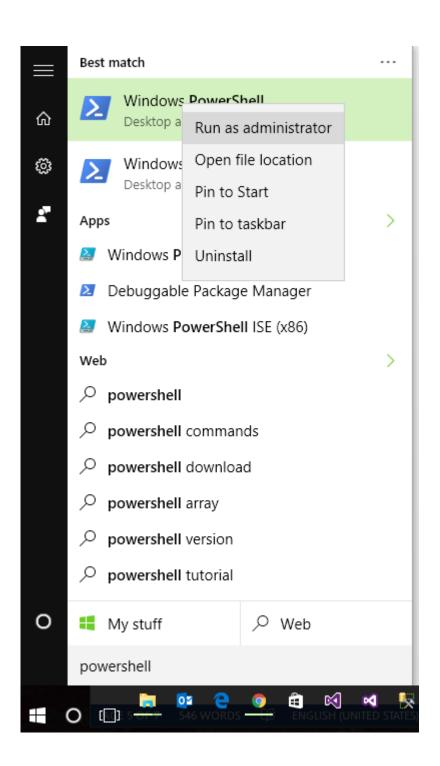




Web Platform Installer 5.0 **PREREQUISITES** INSTALL CONFIGURE **FINISH** ✓ The following products were successfully installed.

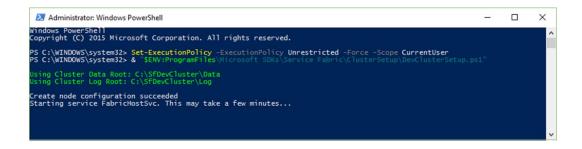
Microsoft Azure Service Fabric Runtime - v4.5 CU1 Microsoft Azure Service Fabric Core SDK Preview - 1.5.175 Microsoft Azure Service Fabric Visual Studio 2015 Tools Preview - 0.12 Microsoft Azure Service Fabric SDK Preview - 1.5.175

Finish









```
Administrator Windows PowerShell

Windows PowerShell
Copyright (C) 2015 Microsoft Corporation. All rights reserved.

PS C:\WINDOWS\system32> Set-ExecutionPolicy -ExecutionPolicy Unrestricted -Force -Scope CurrentUser
PS C:\WINDOWS\system32> & SEWY:ProgramFiles\Microsoft SDKs\Service Fabric\ClusterSetup\DevClusterSetup.ps1"

Using Cluster Data Root: C:\SfDevCluster\Data
Using Cluster Log Root: C:\SfDevCluster\Log
Create node configuration succeeded
Starting service FabrickOstSvc. This may take a few minutes...

Waiting for Service Fabric Cluster to be ready. This may take a few minutes...
Local Cluster ready status: 4% completed.
Local Cluster ready status: 2% completed.
Local Cluster ready status: 17% completed.
Local Cluster ready status: 21% completed.
Local Cluster ready status: 21% completed.
Local Cluster ready status: 21% completed.
Local Cluster ready status: 100% completed.
Local Cluster ready status: 100% completed.
Waiting for Naming Service to be ready. This may take a few minutes...
```

```
Administrator: Windows PowerShell

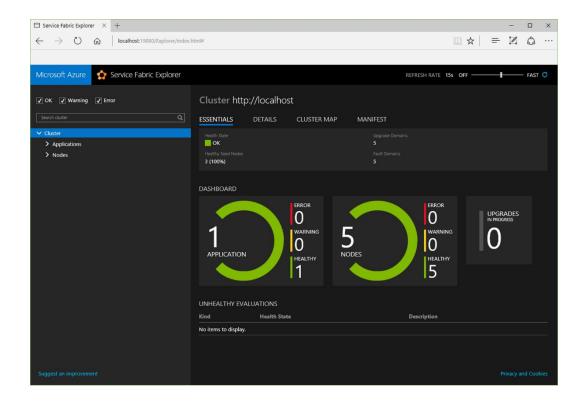
Naming Service ready status: 8% completed.
Naming Service ready status: 17% completed.
Naming Service ready status: 25% completed.
Naming Service ready status: 25% completed.
Naming Service ready status: 33% completed.
Naming Service ready status: 50% completed.
Naming Service ready status: 50% completed.
Naming Service ready status: 50% completed.
Naming Service ready status: 57% completed.
Naming Service ready status: 83% completed.
Naming Service ready status: 83% completed.
Naming Service ready status: 92% completed.
Naming Service ready status: 92% completed.
Naming Service ready status: 100% completed.
Naming Service ready status: 100% completed.
NARNING: Naming Service is taking longer than expected to be ready...

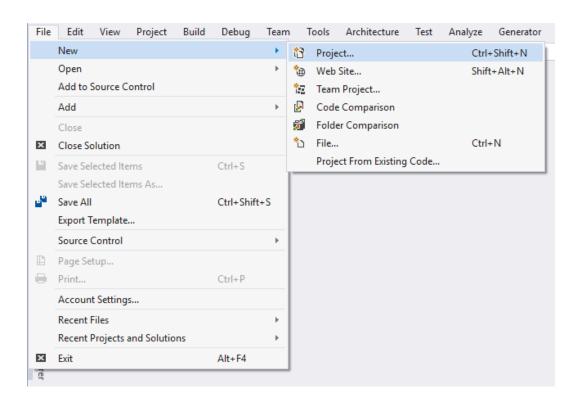
Local Service Fabric Cluster created successfully.

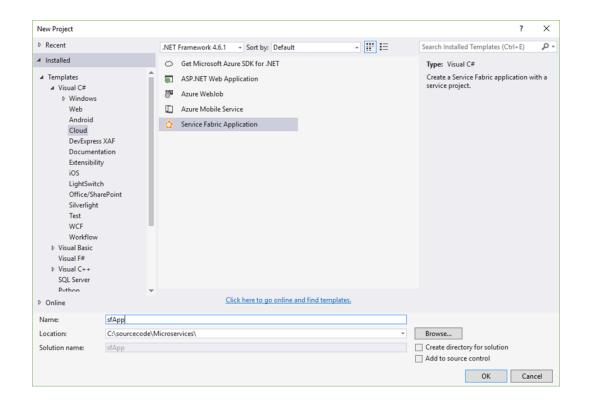
## To connect using Powershell, open an a new powershell window and connect using 'Connect-ServiceFabricCluster' command (without any arguments)."

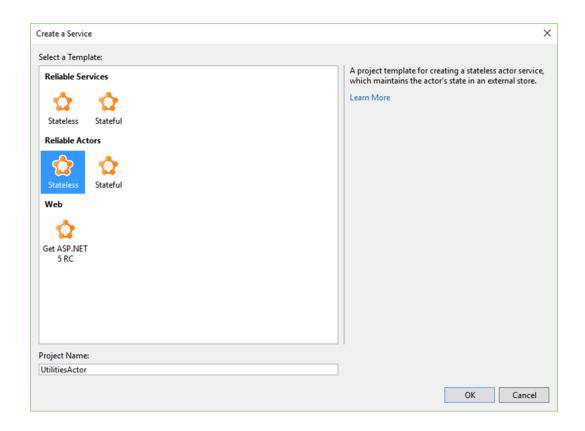
## To connect using Service Fabric Explorer, run ServiceFabricExplorer and connect using 'Local/OneBox Cluster'."

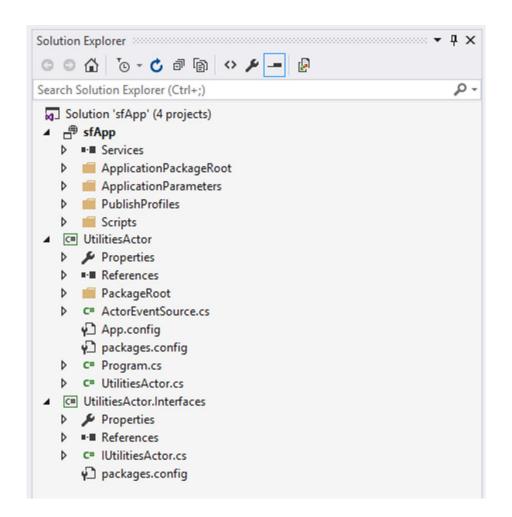
## To manage using Service Fabric Local Cluster Manager (system tray app), run ServiceFabricLocalClusterManager.exe"
```











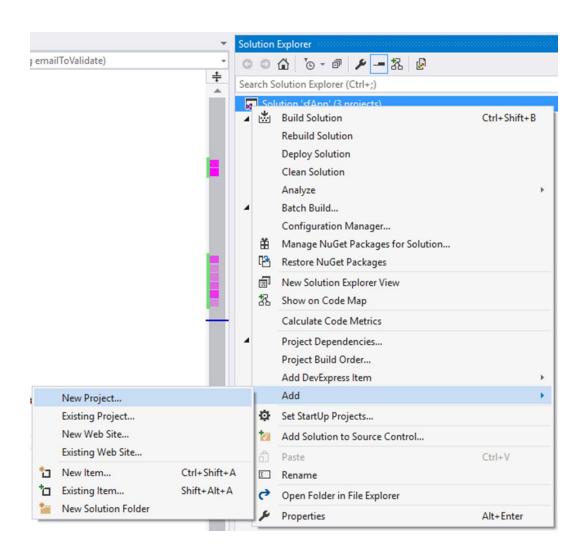
internal class UtilitiesActor : StatelessActor, IUtilitiesActor

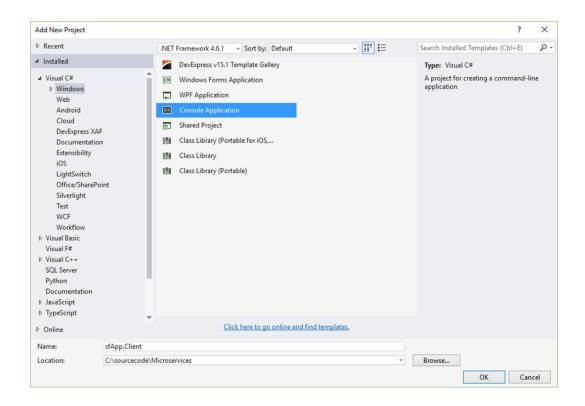
•• interface UtilitiesActor.Interfaces.IUtilitiesActor

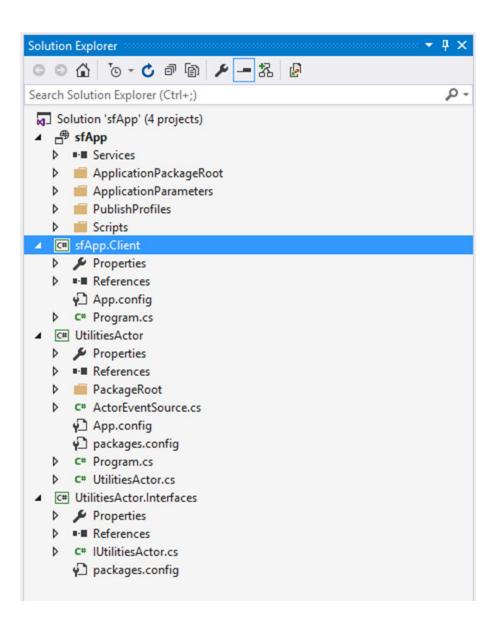
'UtilitiesActor' does not implement interface member 'IUtilitiesActor.ValidateEmailAsync(string)'

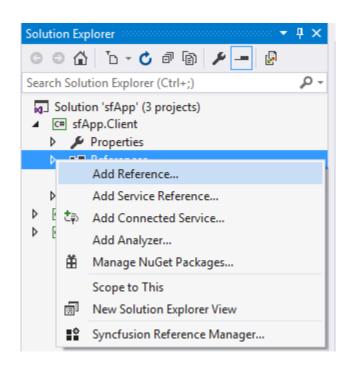
Show potential fixes (Ctrl+.)

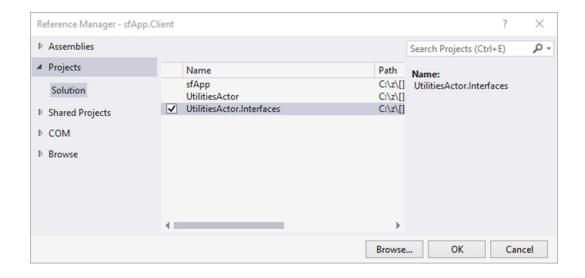
```
return await Task.FromResult(Regex.IsMatch(emailToValidate, @"\A(?:[a-z0-9!#$%&'*+/=?^_`{|}~-]+(?:\.[a-z0-9!#$%&'*+/=?^_`{|}~-]+(?:\.[a-z0-9!#$%&'*+/=?^_`{|}~-]+(?:\.[a-z0-9!#$%&'*+/=?^_`{|}~-]+(?:\.[a-z0-9!#$%&'*+/=?^_`{|}~-]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(?:\.[a-z0-9]!#$%&'*+/=?^_`]+(
```

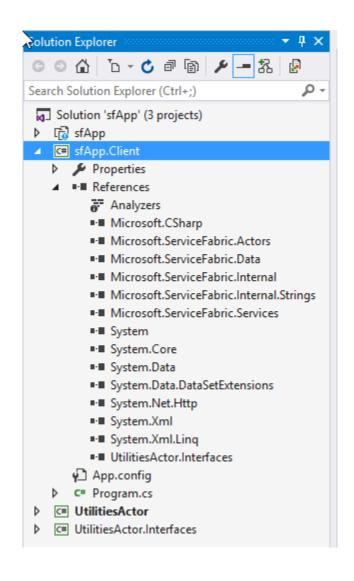


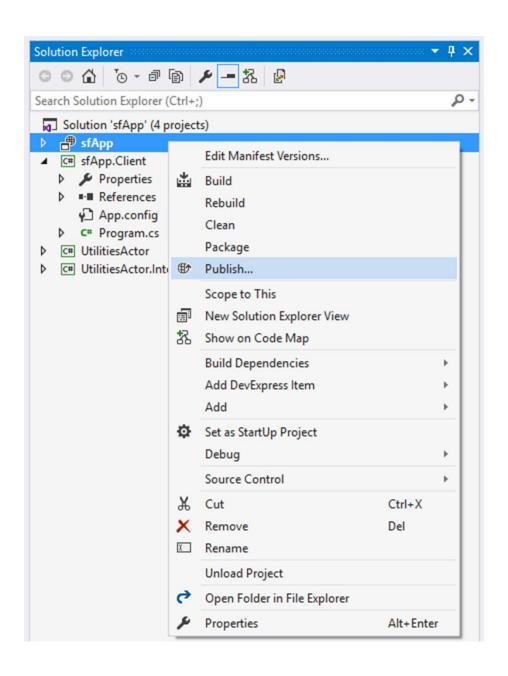


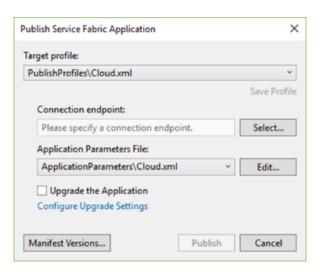


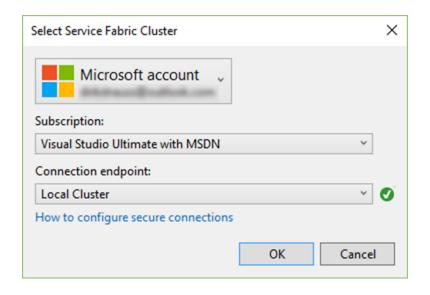


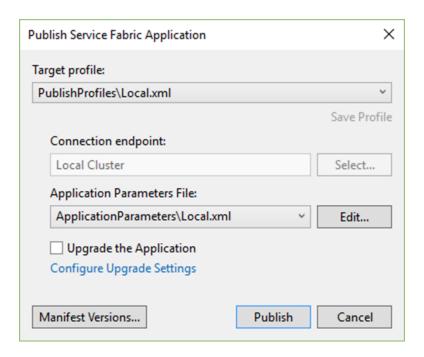


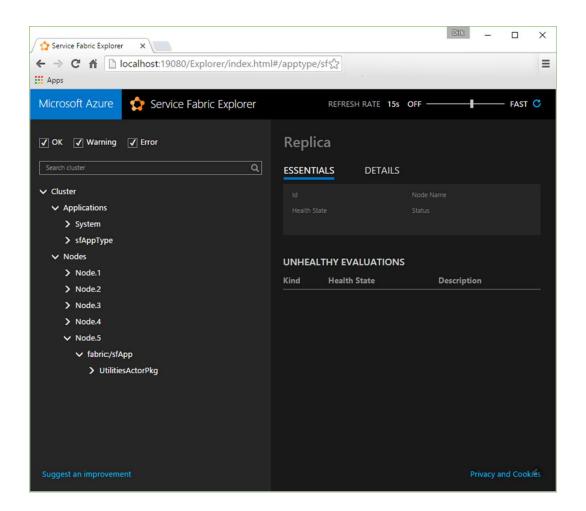


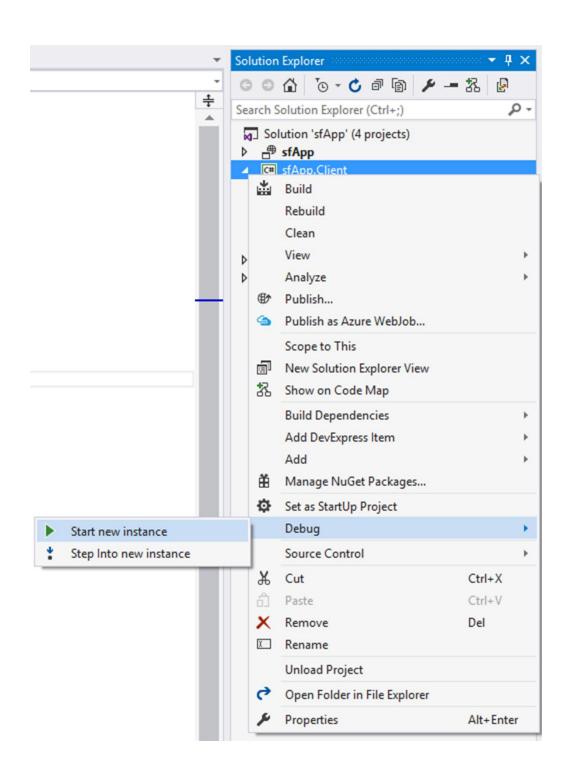


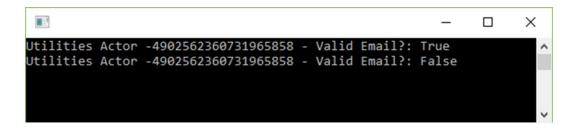


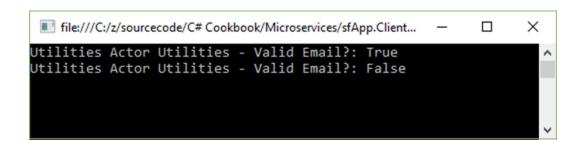


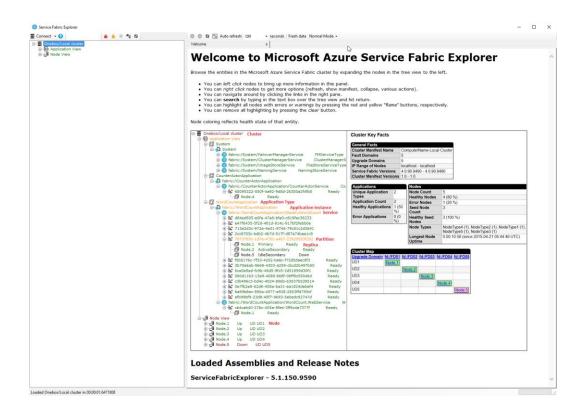


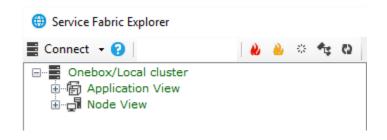














General Facts	
Cluster Manifest Name	ComputerName-Local-Cluster
Fault Domains	5
Upgrade Domains	5
IP Range of Nodes	localhost - localhost
Service Fabric Versions	5.1.150.9590 - 5.1.150.9590
Cluster Manifest Versions	1.0 - 1.0

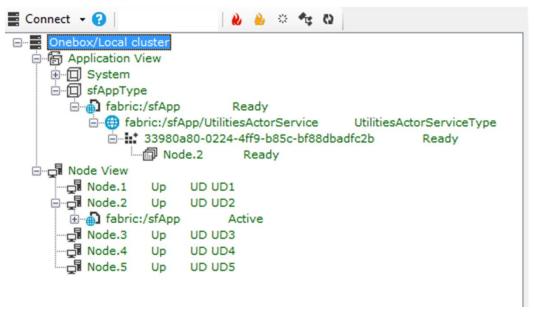
Applications		Nodes	
Unique Application Types	0	Node Count	5
Application Count	0	Healthy Nodes	5 (100 %)
Healthy Applications	0 (NaN %)	Error Nodes	0 (0 %)
Error Applications	0 (NaN %)	Seed Node Count	3
		Healthy Seed Nodes	3 (100 %)
		Node Types	NodeType2 (1), NodeType0 (1), NodeType1 (1), NodeType3 (1), NodeType4 (1)
		Longest Node Uptime	0.00:27.31 (since 2016-06-21 22:21:48 UTC)

Cluster Map					
Upgrade Domain	fd:/0	fd:/1	fd:/2	fd:/3	fd:/4
0	Node 0				
1		Node 1			
2			Node 2		
3				Node 3	
4					Node 4

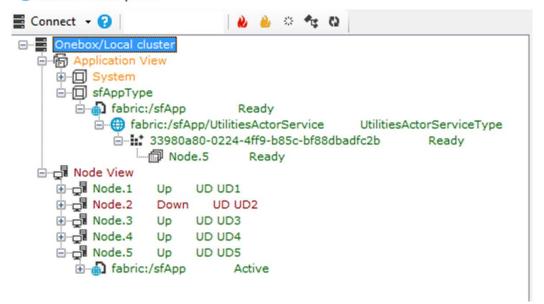
Load metrics	Name	Balancing threshold	Action	Balanced before	Deviation before	Balanced after	Deviation after
	ClusterManagerServicePrimaryCount	1	NoActionNeeded	True	2	True	2
	ClusterManagerServiceReplicaCount	1	NoActionNeeded	True	0	True	0
	FaultAnalysisServicePrimaryCount	1	NoActionNeeded	True	2	True	2
	FaultAnalysisServiceReplicaCount	1	NoActionNeeded	True	0	True	0
	NamingServicePrimaryCount	1	NoActionNeeded	True	0,816496580927726	True	0,816496580927
	NamingServiceReplicaCount	1	NoActionNeeded	True	0	True	0

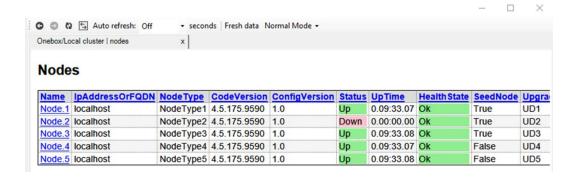
Unhealthy Health Evaluations
No evaluations.

Service Fabric Explorer

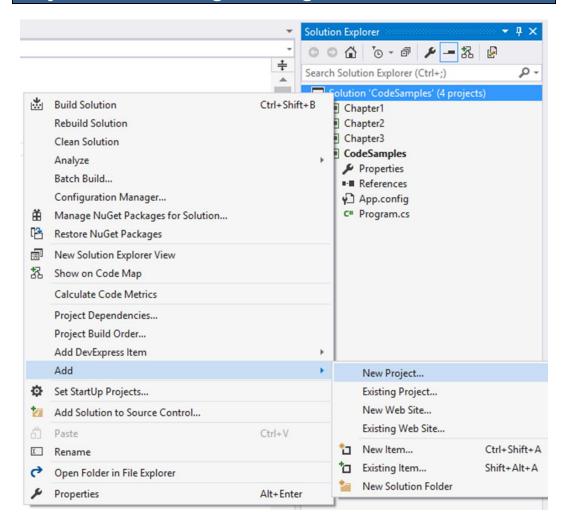


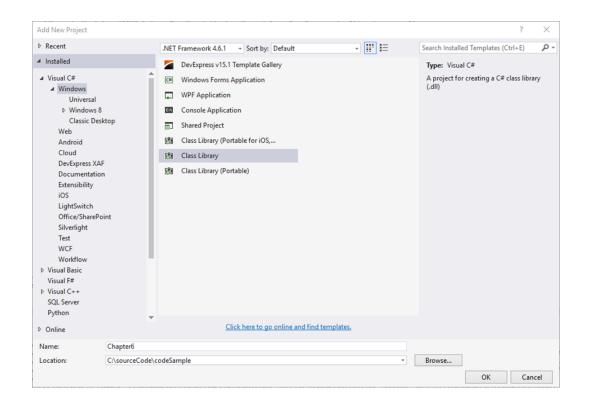
Service Fabric Explorer

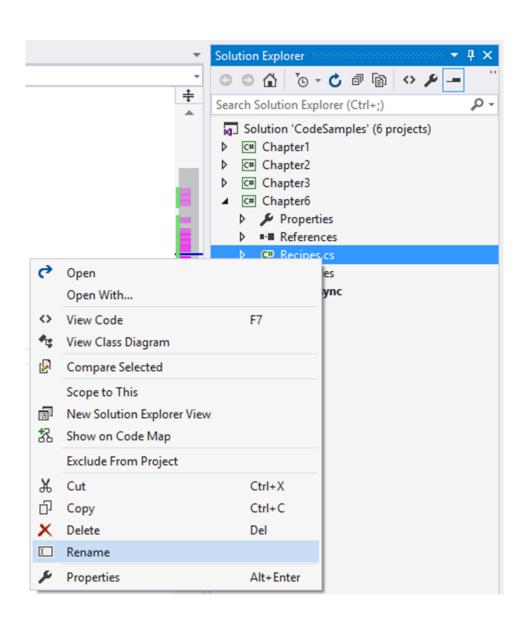


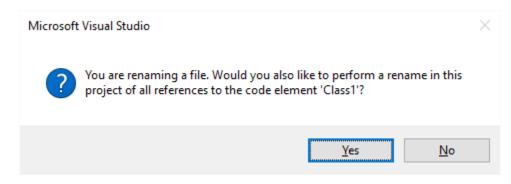


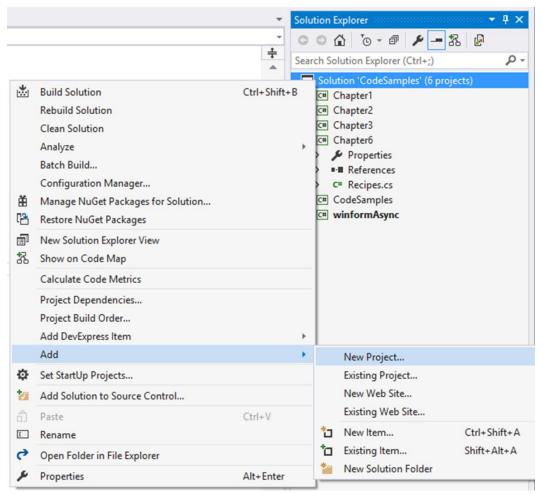
Chapter 6: Making Apps Responsive with Asynchronous Programming

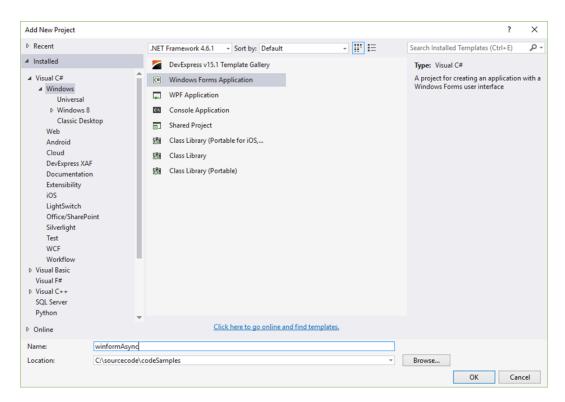


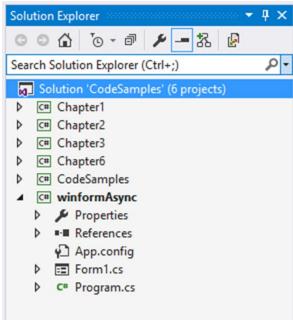


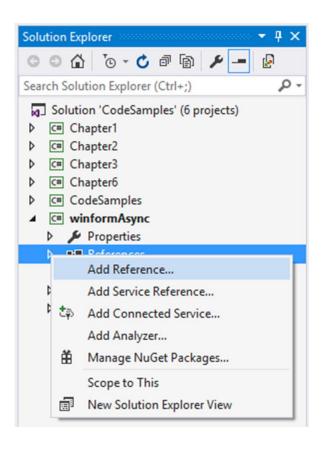


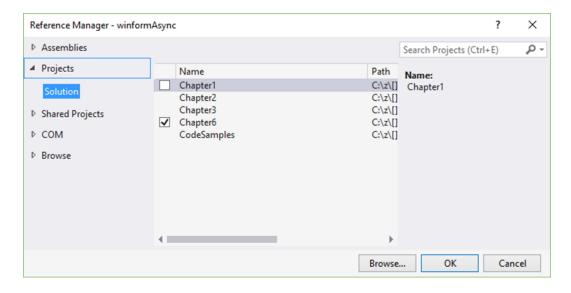


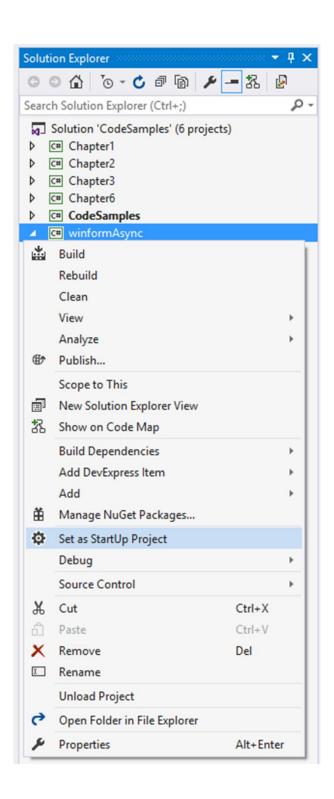


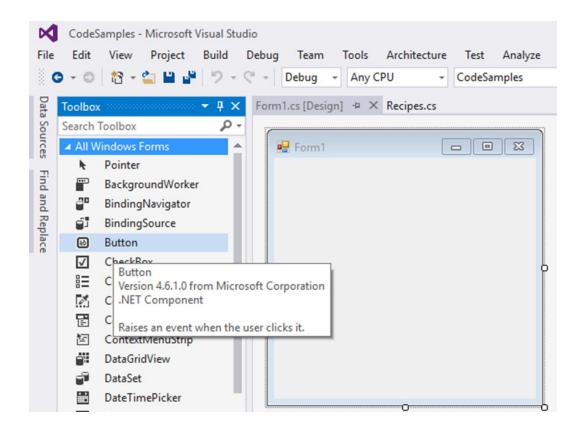


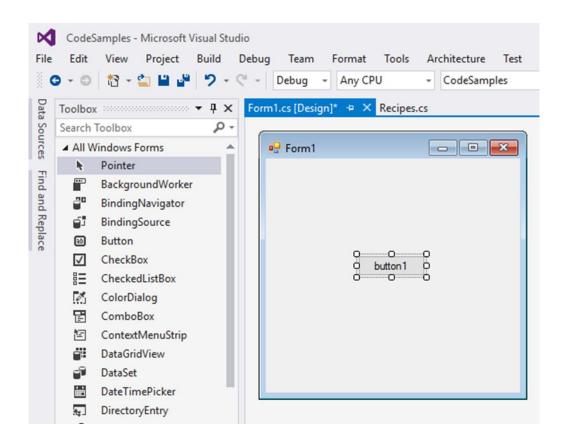


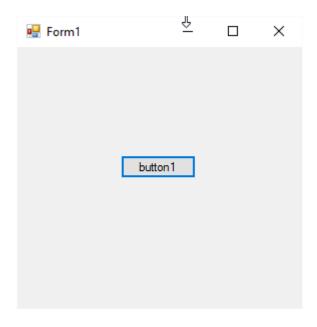


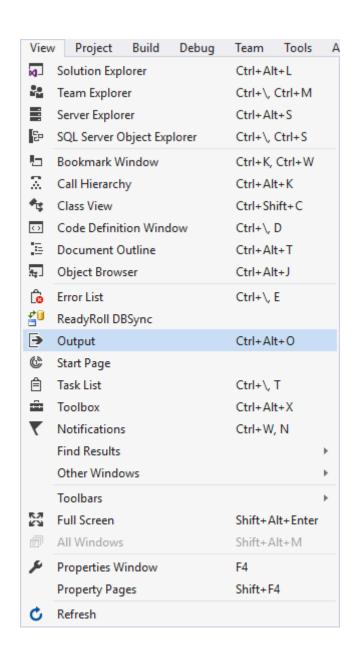


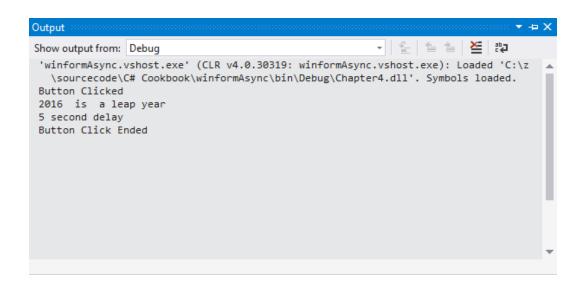


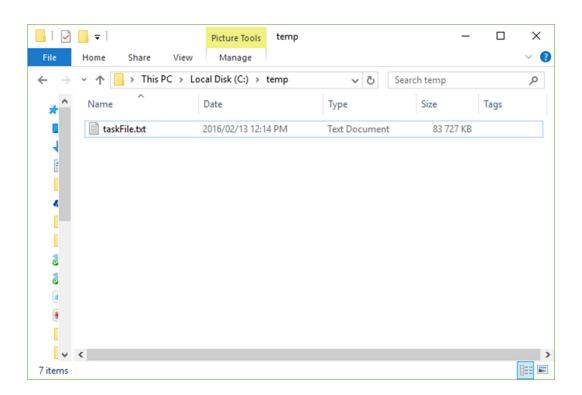


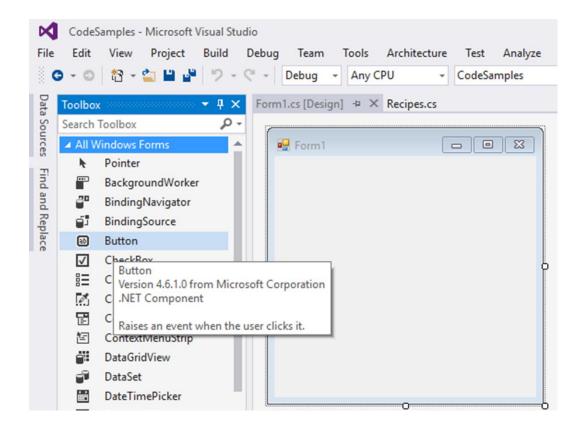


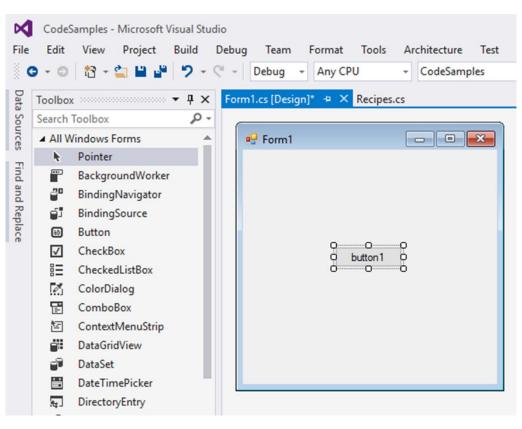


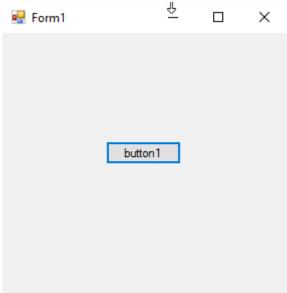


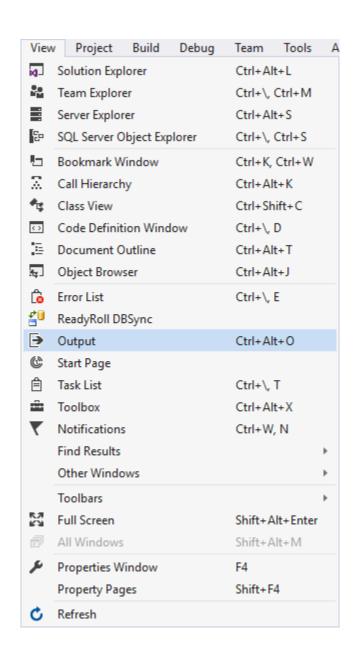




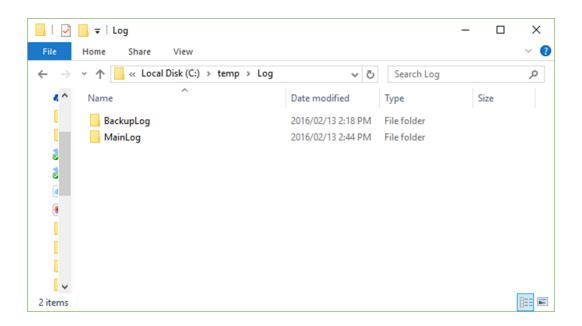


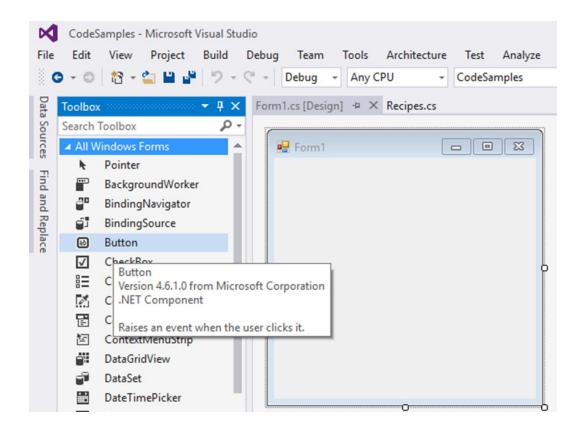


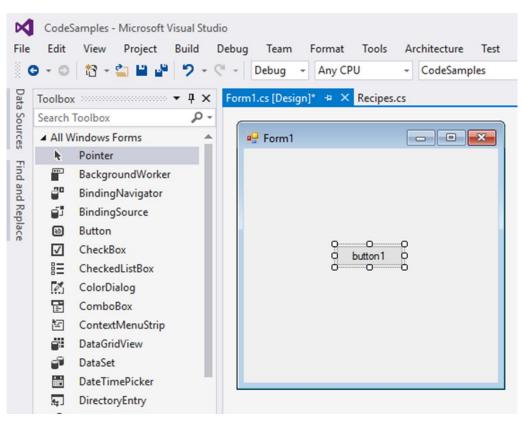


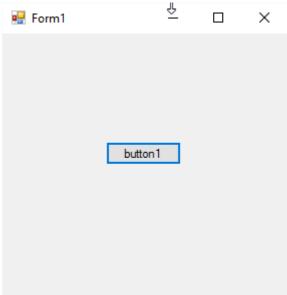


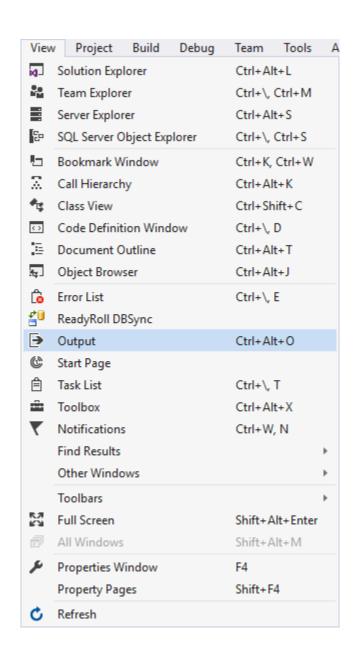


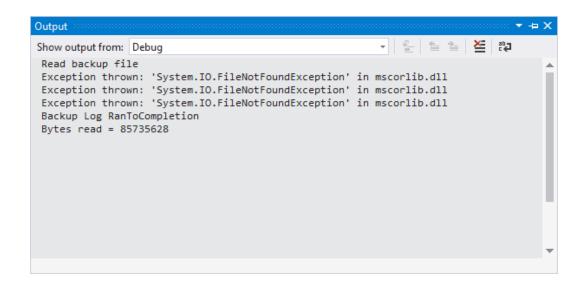




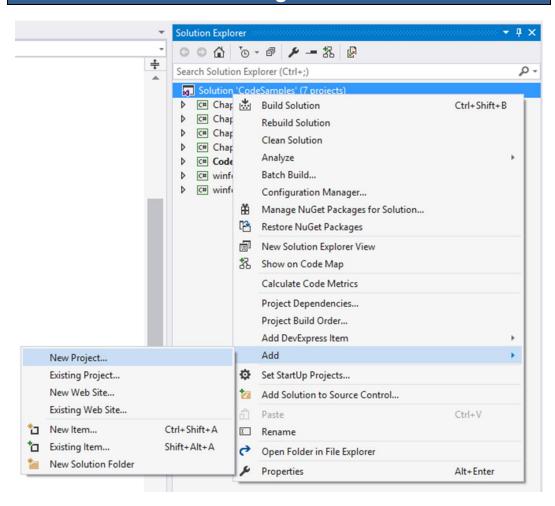


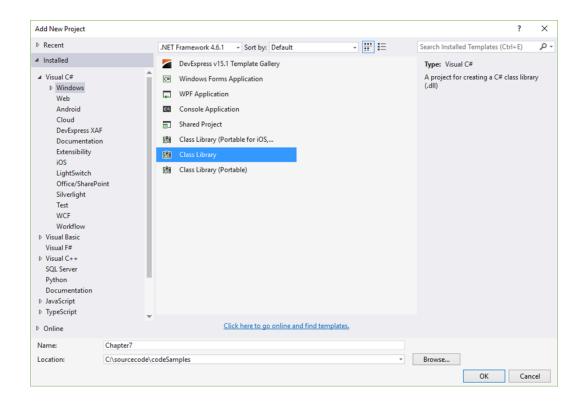


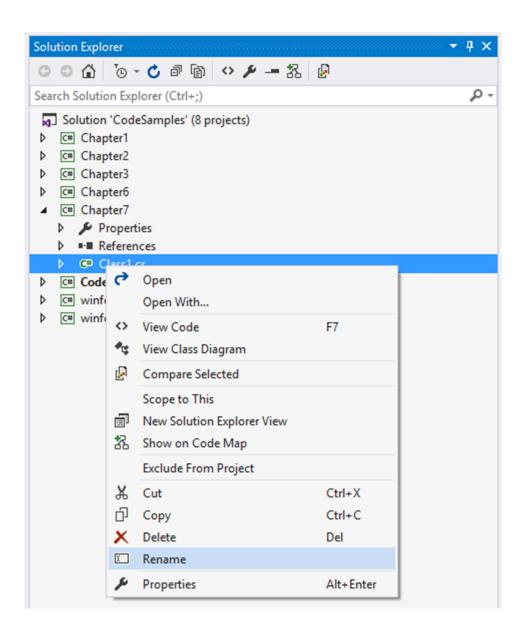


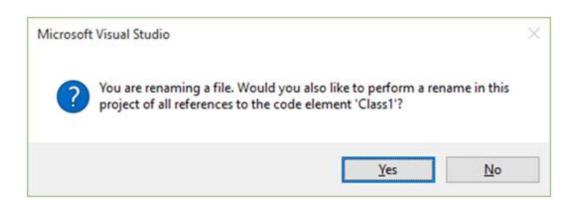


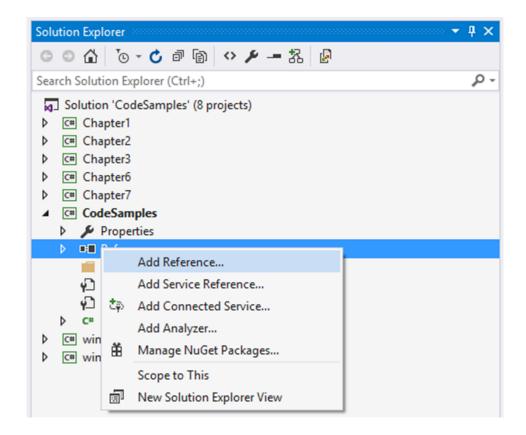
Chapter 7: High Performance Programming Using Parallel and Multithreading in C#

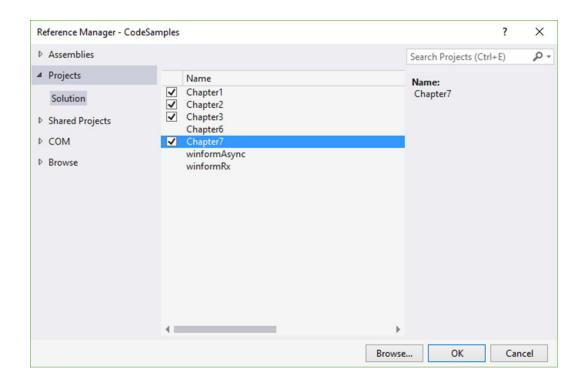


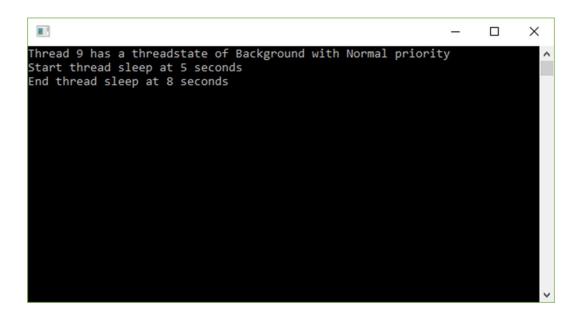


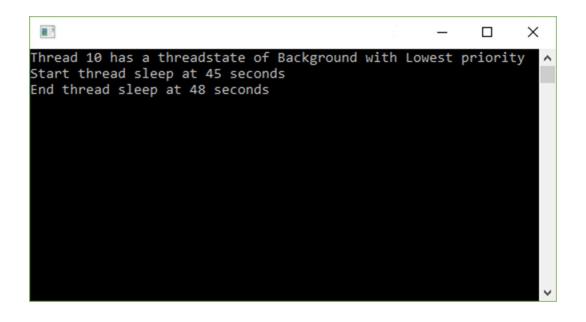


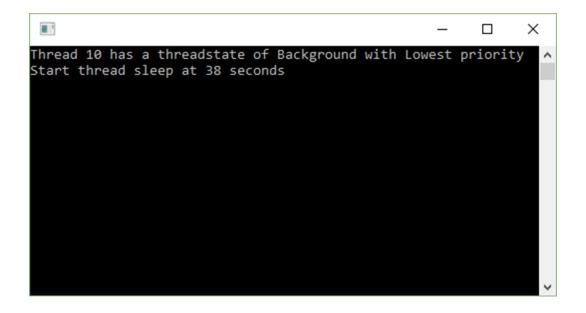




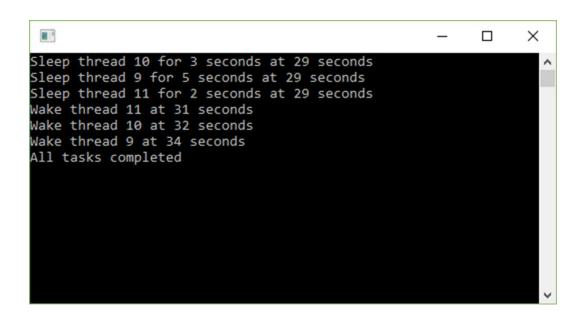


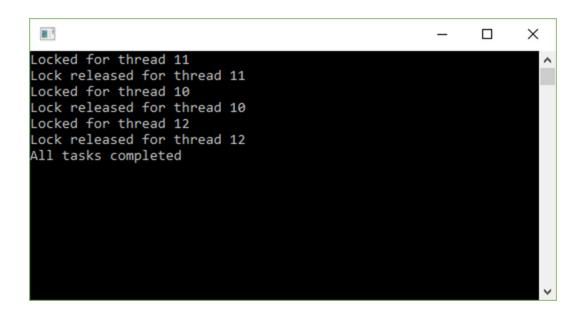


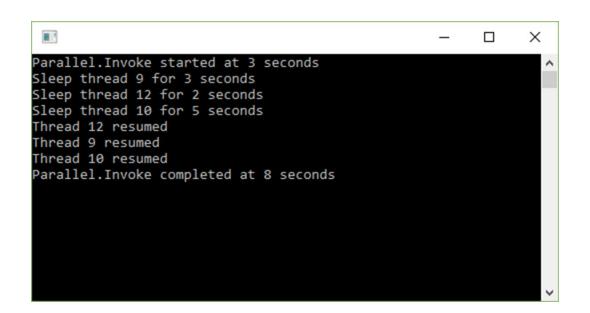


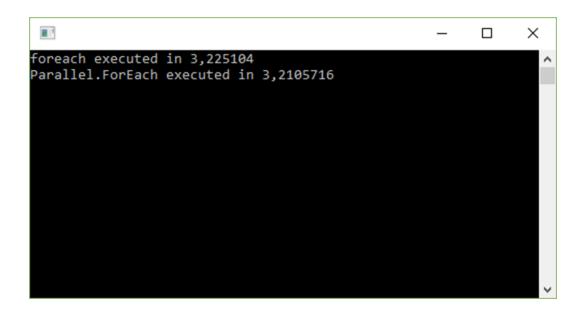


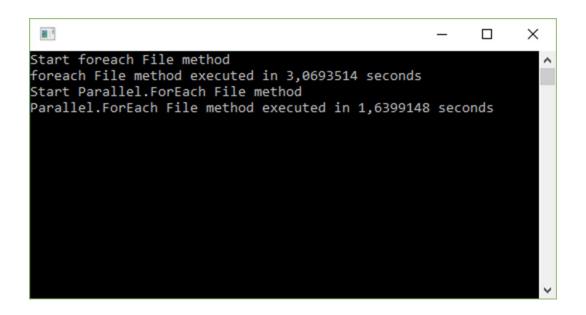
```
Processor Count = 8
ThreadPool minimum Worker = 8 and minimum Requests = 8
ThreadPool maximum Worker = 1023 and maximum Requests = 1000
New Max Worker Thread generated = 205
New Max Active Requests generated = 200
SetMaxThreads completed
ThreadPool Max Worker = 205 and Max Requests = 200
```



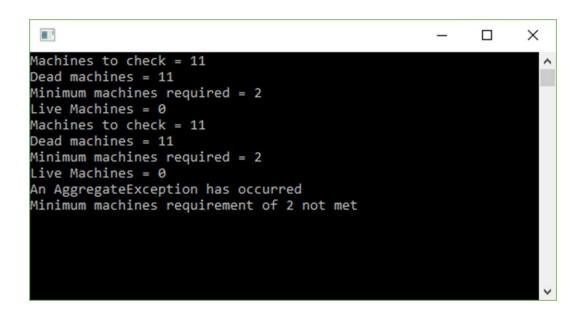


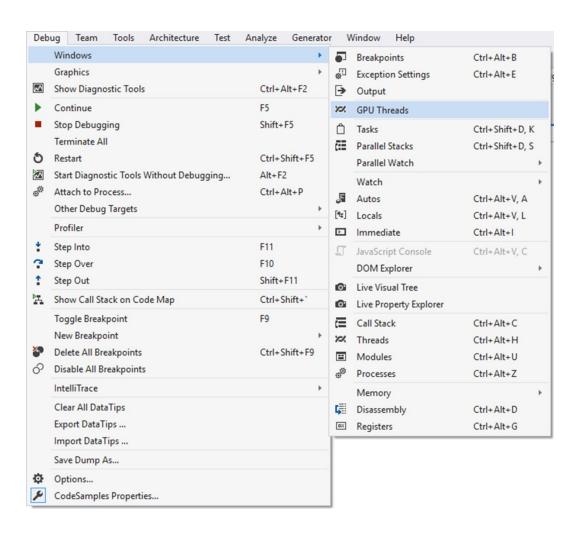


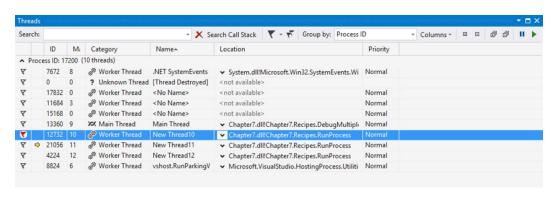


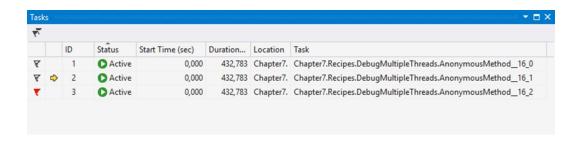


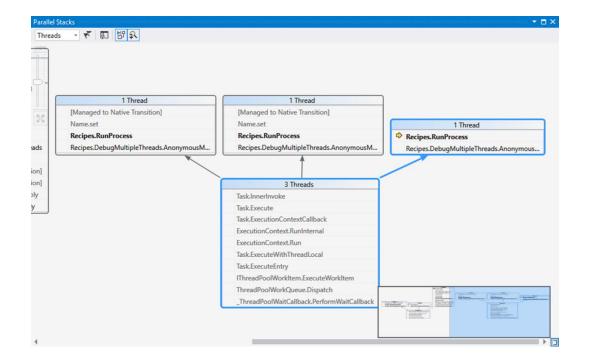
TI. X Processing item 9 on thread 8 Processing item 16 on thread 17 Processing item 379 on thread 13 Processing item 754 on thread 11 Processing item 629 on thread 16 Processing item 255 on thread 10 Processing item 132 on thread 9 Processing item 13 on thread 15 Processing item 879 on thread 14 Processing item 504 on thread 12 Terminate thread 21. Elapsed time 6 seconds Processing item 507 on thread 21 Terminate thread 19. Elapsed time 6 seconds Processing item 259 on thread 19 Terminate thread 18. Elapsed time 6 seconds Processing item 135 on thread 18 Terminate thread 8. Elapsed time 6 seconds Processing item 10 on thread 8 Terminate thread 17. Elapsed time 6 seconds Processing item 17 on thread 17 Terminate thread 16. Elapsed time 6 seconds Terminate thread 20. Elapsed time 6 seconds Processing item 383 on thread 20 Terminate thread 11. Elapsed time 6 seconds Processing item 755 on thread 11 Terminate thread 9. Elapsed time 6 seconds Processing item 133 on thread 9 Terminate thread 10. Elapsed time 6 seconds Processing item 256 on thread 10 Terminate thread 14. Elapsed time 6 seconds Processing item 880 on thread 14 Processing item 630 on thread 16 Terminate thread 13. Elapsed time 6 seconds Processing item 380 on thread 13 Terminate thread 15. Elapsed time 6 seconds Terminate thread 12. Elapsed time 6 seconds Processing item 505 on thread 12 Processing item 14 on thread 15 Terminate thread 22. Elapsed time 7 seconds Processing item 632 on thread 22 Parallel.ForEach loop terminated

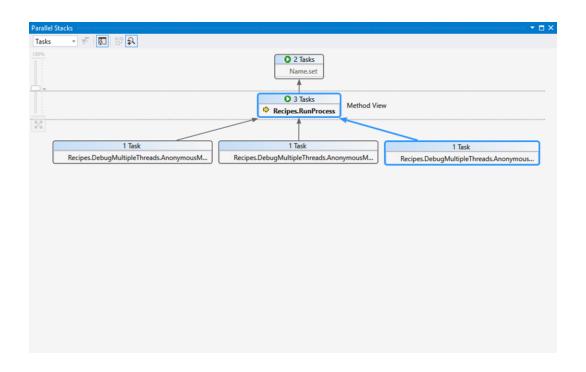


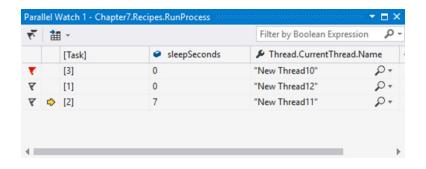




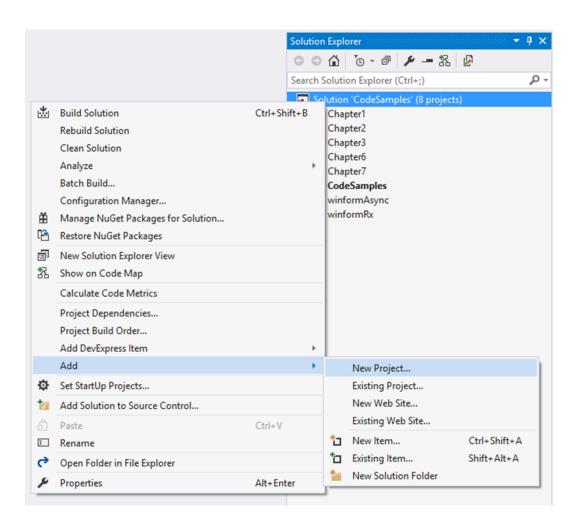


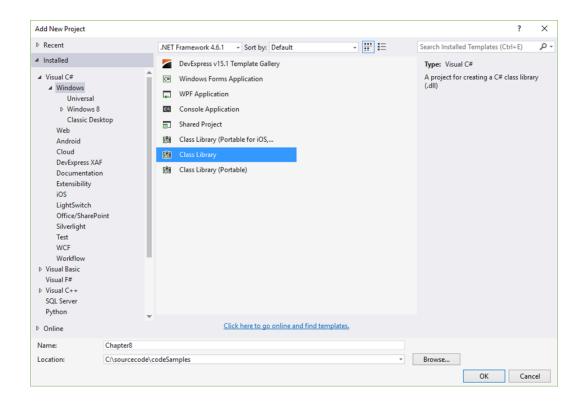


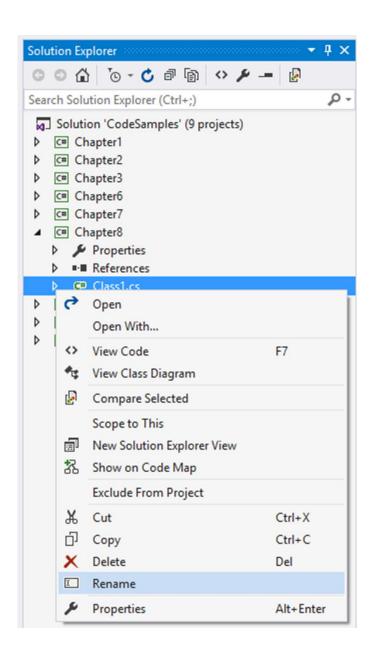


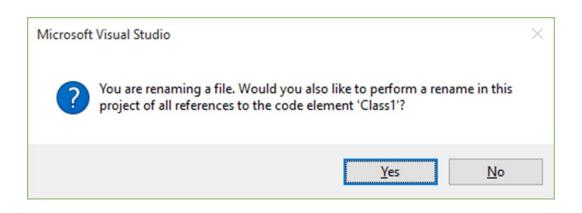


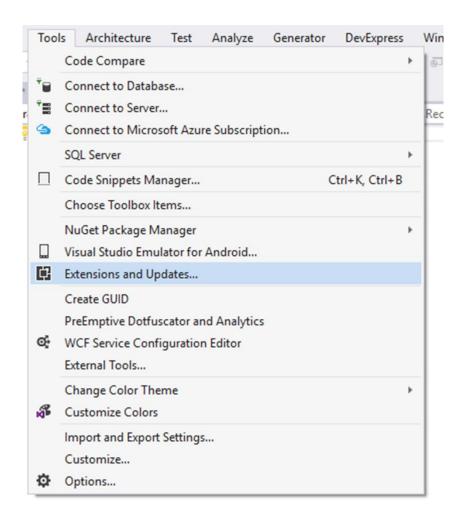
Chapter 8: Code Contracts

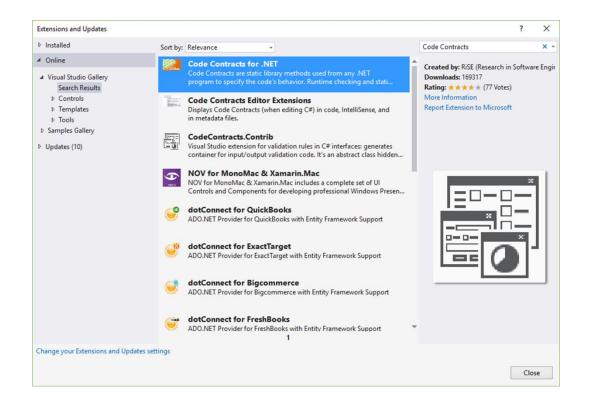


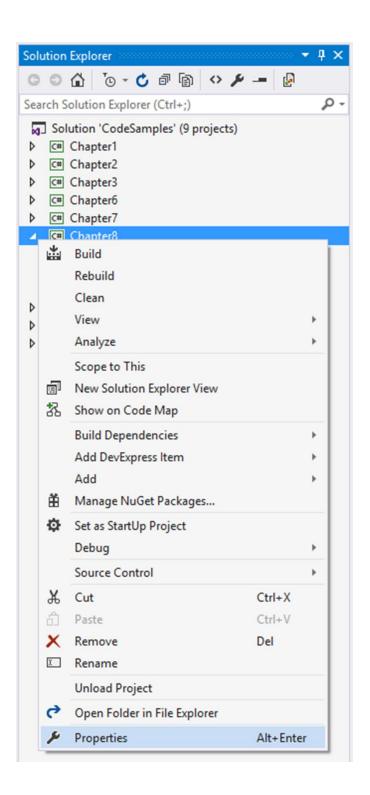


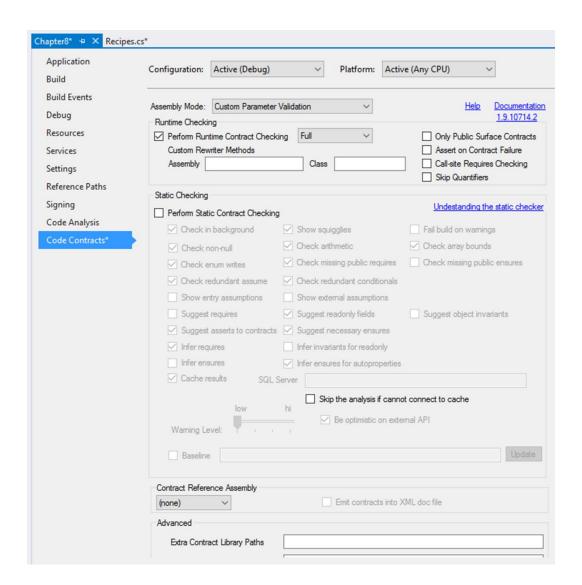


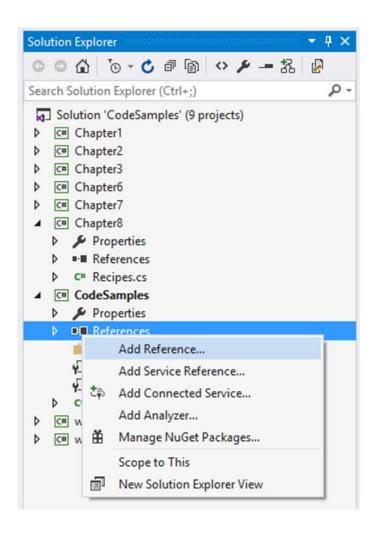


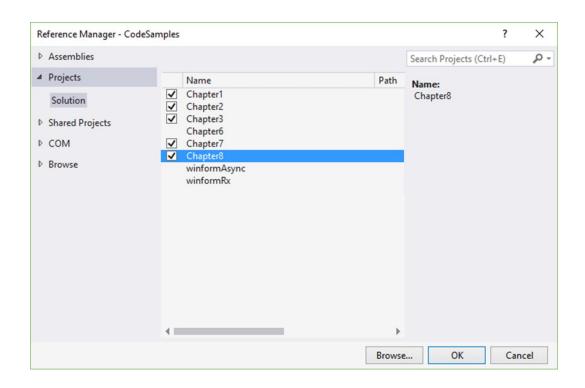








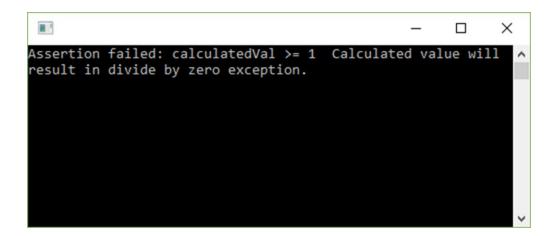


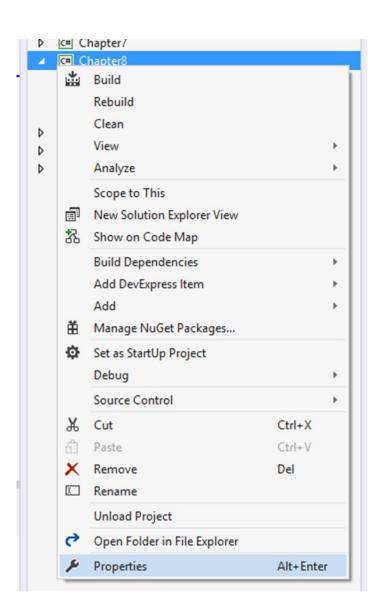


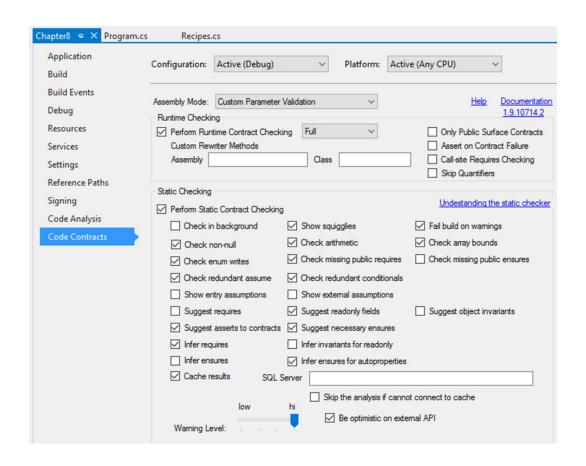


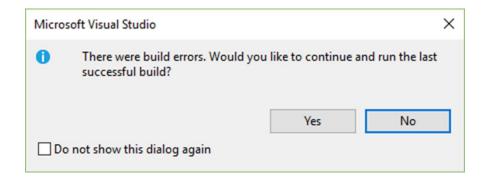




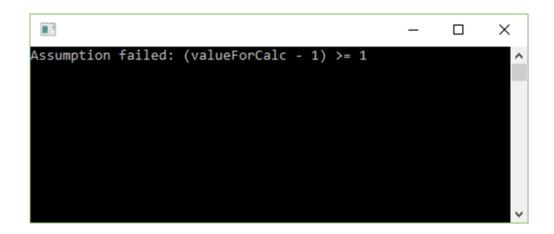






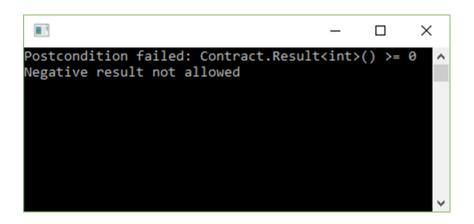


```
1 reference
public static int ValueIsValid(int valueForCalc, int valueToDivide)
{
    int calculatedVal = valueForCalc - 1;
    CodeContracts: Missing precondition in an externally visible method. Consider adding Contract.Requires((valueForCalc - 1) >= 1); for parameter validation
}
```



```
Assertion failed: Contract.ForAll(lstValues, n => n != 0) Zero values ^ are not allowed
```

```
Postcondition failed: Contract.ValueAtReturn<int>(out secureValue) >= 1 ^ The secure value is less or equal to zero
```





```
Implement Abstract Class

CS0534 'Rectangle' does not implement inherited abstract member 'Shape.Width(int)'

"" {

public override void Length(int value) {

throw new NotImplementedException();
}

public override void width(int value) {

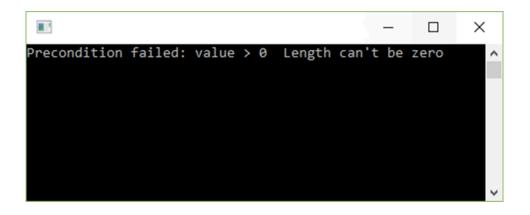
throw new NotImplementedException();
}

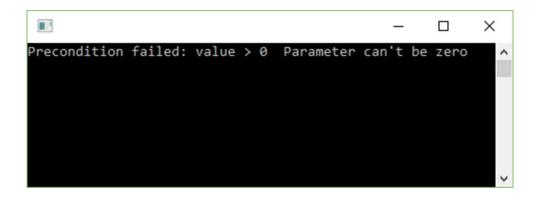
Preview changes

Fix all occurrences in: Document | Project | Solution
```

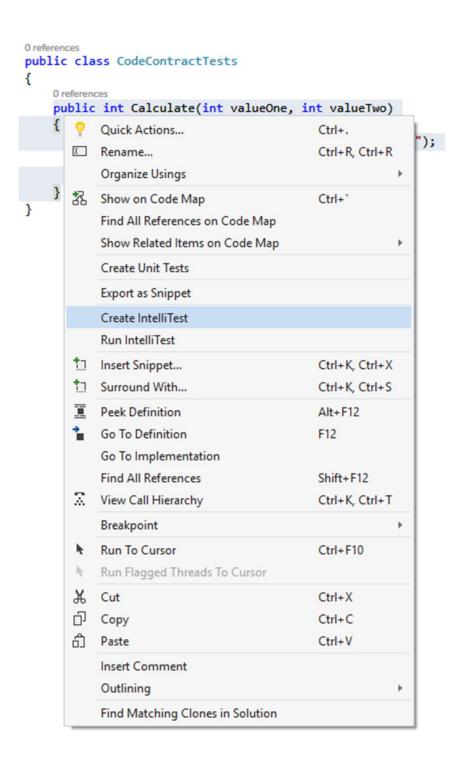
```
public class Rectangle : Shape
{
    3 references
    public override void Length(int value)
    {
        throw new NotImplementedException();
    }

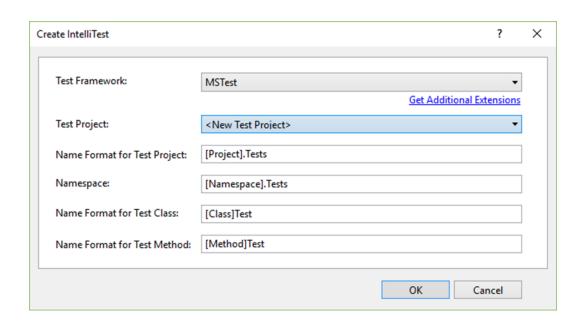
    3 references
    public override void Width(int value)
    {
        throw new NotImplementedException();
    }
}
```

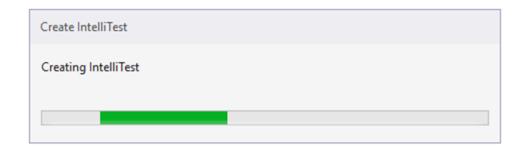


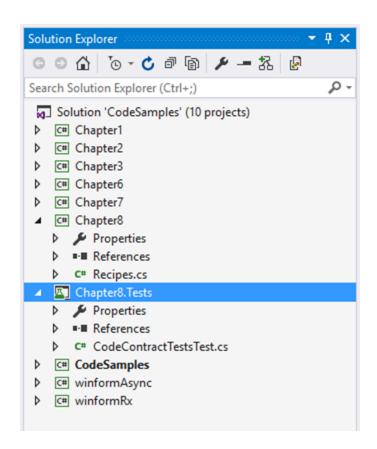




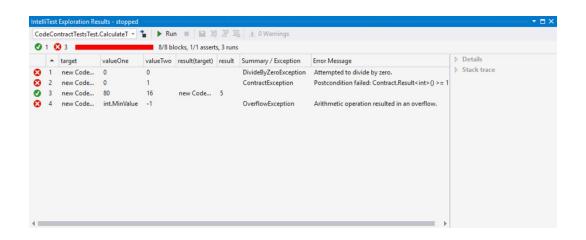


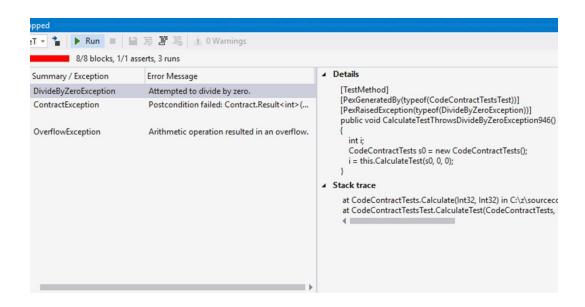




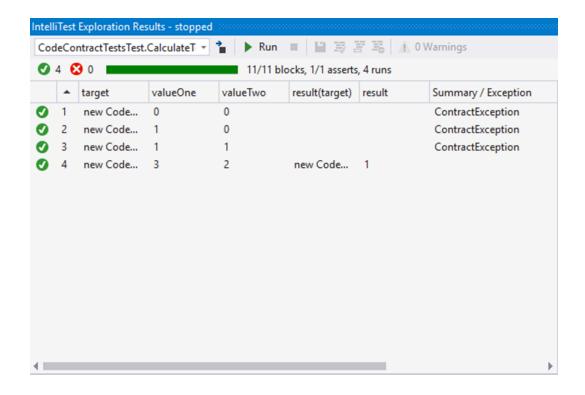


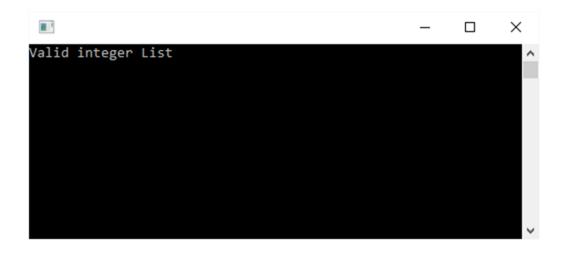
```
public class CodeContractTests
    public int Calculate(int valueOne. int valueTwo)
                            Quick Actions...
                                                               Ctrl+.
         Contract.Ensi
                       Rename...
                                                               Ctrl+R, Ctrl+R
                            Organize Usings
        return value
    }
                        Show on Code Map
                                                               Ctrl+`
}
                            Find All References on Code Map
                            Show Related Items on Code Map
                            Create Unit Tests
                            Export as Snippet
                            Create IntelliTest
                            Run IntelliTest
                        Run Tests
                                                               Ctrl+R, T
                            Debug Tests
                                                               Ctrl+R, Ctrl+T
                        insert Snippet...
                                                               Ctrl+K, Ctrl+X
                        Surround With...
                                                               Ctrl+K, Ctrl+S
                        Peek Definition
                                                               Alt+F12
                        Go To Definition
                                                               F12
                            Go To Implementation
                            Find All References
                                                               Shift+F12
                        Ctrl+K, Ctrl+T
                            Breakpoint
                        Run To Cursor
                                                               Ctrl+F10
                            Run Flagged Threads To Cursor
                        X Cut
                                                               Ctrl+X
                        [] Сору
                                                               Ctrl+C
                        f Paste
                                                               Ctrl+V
                            Insert Comment
                            Outlining
                            Find Matching Clones in Solution
```





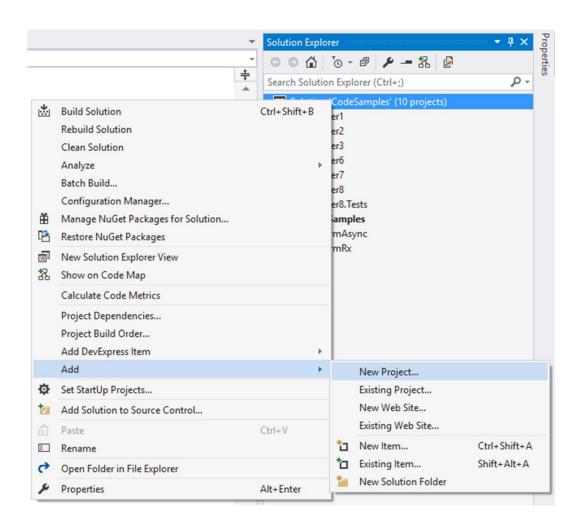
result	Summary / Exception	Error Message
	DivideByZeroException	Attempted to divide by zero.
	ContractException	Postcondition failed: Contract.Result <int>() >= 1</int>
5		
	OverflowException	Arithmetic operation resulted in an overflow.

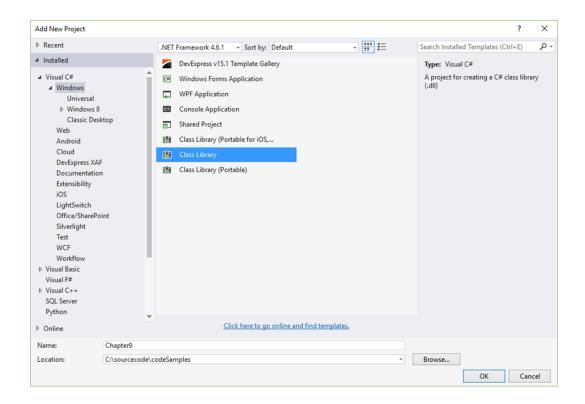


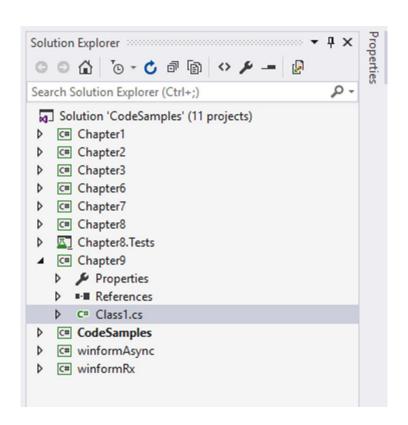


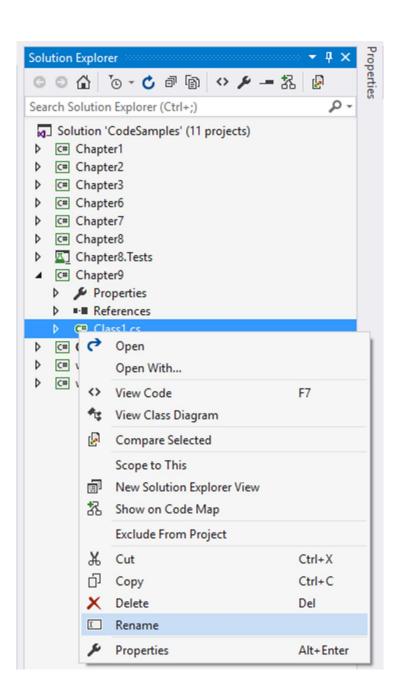


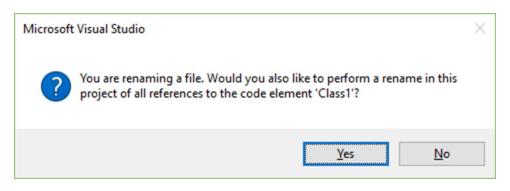
Chapter 9: Regular Expressions

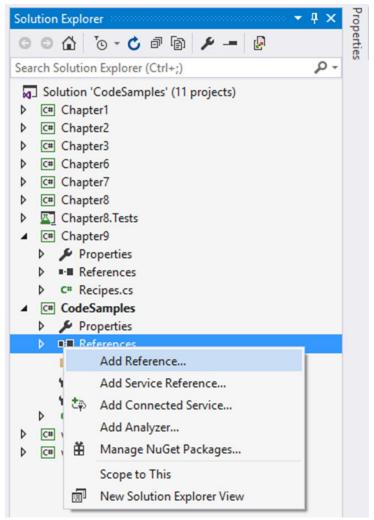


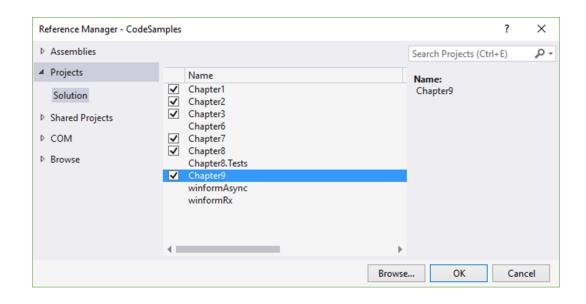


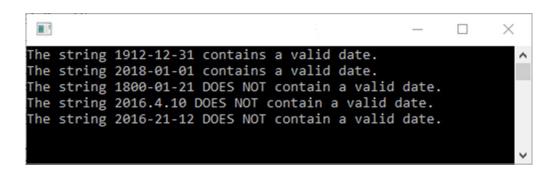










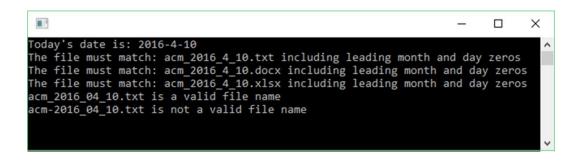


```
The string 1912-12-31 contains a valid date.
The string 2018-01-01 contains a valid date.
The string 1800-01-21 DOES NOT contain a valid date.
The string 2016.4.10 contains a valid date.
The string 2016-21-12 DOES NOT contain a valid date.
```

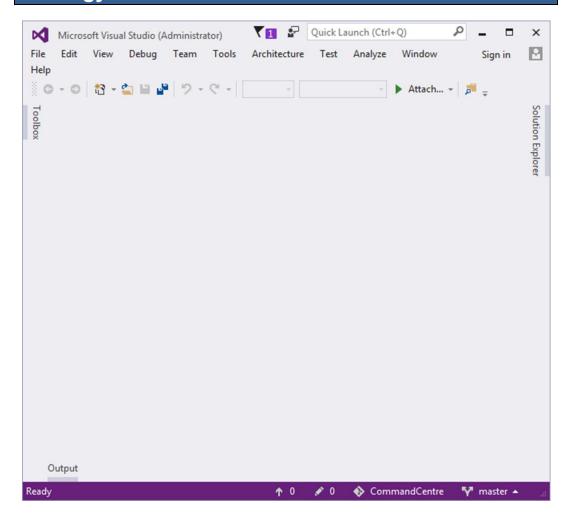
```
This is a string that contains a *****, another **** and a third *****
```

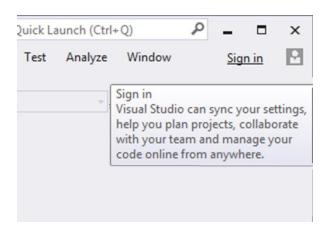






Chapter 10: Choosing and Using a Source Control Strategy







Type the email address or phone number of the account you want to sign in with.

Email or phone

Continue

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Terms of use Privacy & Cookies



Redirecting

We're taking you to the Microsoft account sign-in page.

© 2016 Microsoft



Terms of use Privacy & Cookies

Microsoft account

Sign in

Microsoft account

dotnetcsharpdev@outlook.com

Password

•••••

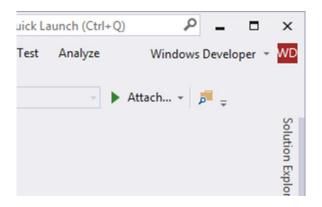
Sign in

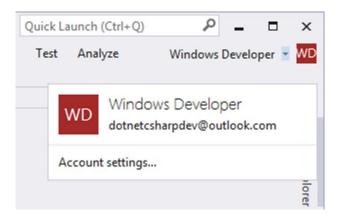
Don't have a Microsoft account? Sign up now



Full name * 😯	
Windows Developer	
Contact e-mail *	
dotnetcsharpdev@outlook.com	
Country/Region *	
South Africa	~
Create a Visual Studio Team Service	es site (optional)
https://	.visualstudio.com
Your account will be hosted in the Change options	West Europe region.
Microsoft may use my email and opportunities for developed	
By clicking Continue , you agree to Statement.	the Terms of Service and Privacy

Continue







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Your personalization account is used to roam settings across devices, and to provide other personalized services.

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Enterprise 2015

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Your evaluation period will end on Thursday, May 12, 2016.

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Get started for free

Pricing for the rest of your team*

Number of users:	5	10	20	50	100	200	1000	Calculate pricing	
Total monthly cost:	FREE	\$30	\$110	\$350	\$750	\$1,150	\$4,350	***	

The quantities shown above are examples. You can choose any number of users and you'll pay only for that number. Here's how we calculate pricing:

First 5 users: FREE Users 6 through 10: \$6 each Users 11 through 100: \$8 each Users 101 through 1000: \$4 each Users 1001 and above: \$2 each

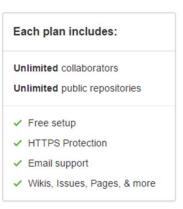
Welcome to GitHub

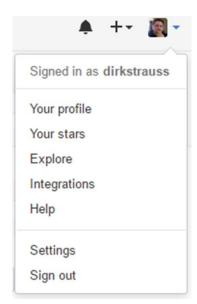
You've taken your first step into a larger world,



Choose your personal plan

Plan	Cost (view in ZAR)	Private repositories	
Large	\$50/month	50	Choose
Medium	\$22/month	20	Choose
Small	\$12/month	10	Choose
Micro	\$7/month	5	Choose
Free	\$0/month	0	Chosen





Personal settings
Profile
Account
Emails
Notifications
Billing
SSH and GPG keys
Security
OAuth applications
Personal access tokens
Repositories
Organizations
Saved replies

Two-factor authentication

Status: Off X

Set up two-factor authentication

Two-factor authentication provides another layer of security to your account.

Two-factor authentication adds an extra layer of security to your account. In addition to your username and password, you'll need to enter a code that GitHub sends to you via text or an app on your phone.



When you sign into GitHub you'll enter your username and password, like always.



When logging in from a new browser, you'll need to enter an additional code from your phone or tablet.



Once you enter the code on the website, you'll be logged into GitHub.

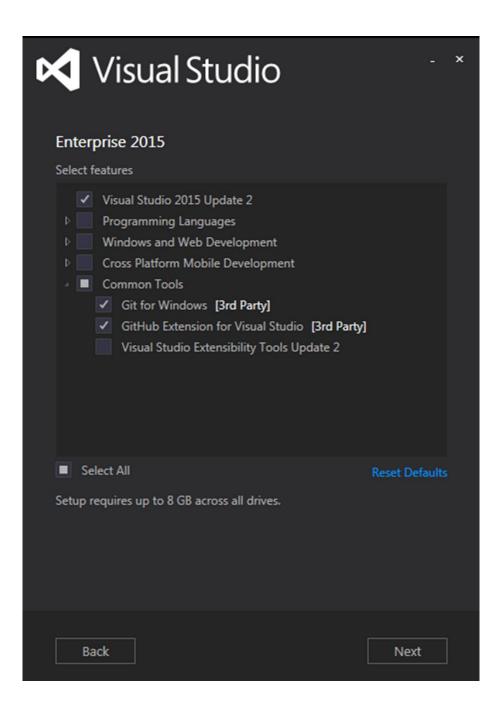
Use an application on your phone to get two-factor authentication codes when prompted.

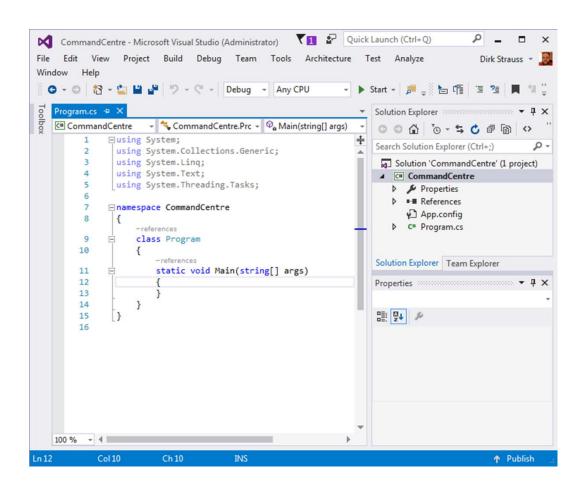
Set up using an app

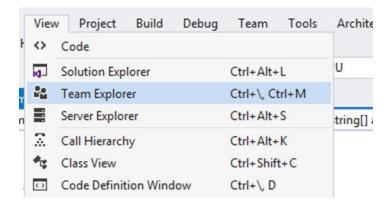
GitHub will send you an SMS with a two-factor authentication code when prompted.

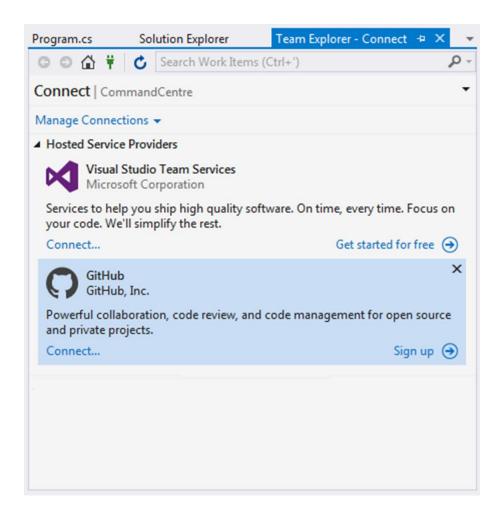
Set up using SMS

SMS deliverability is only available in certain countries.



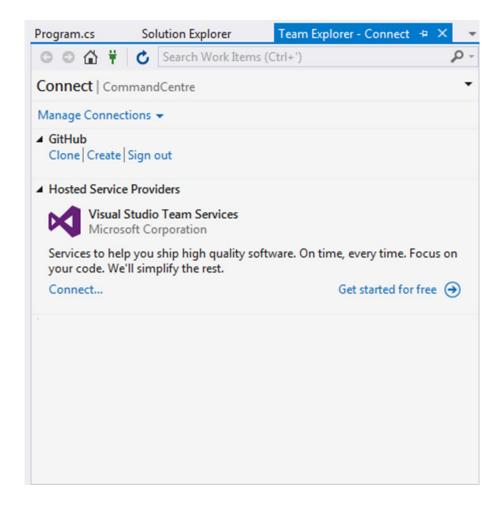


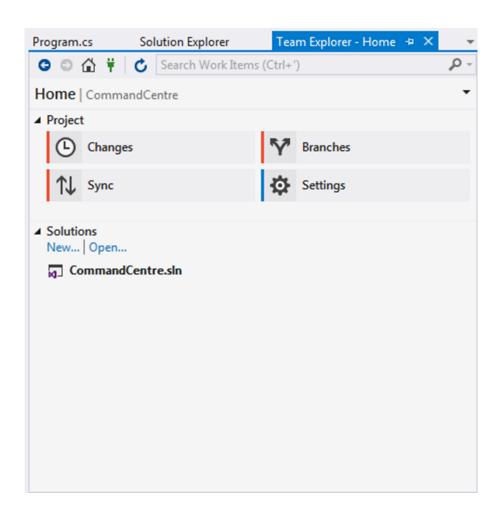


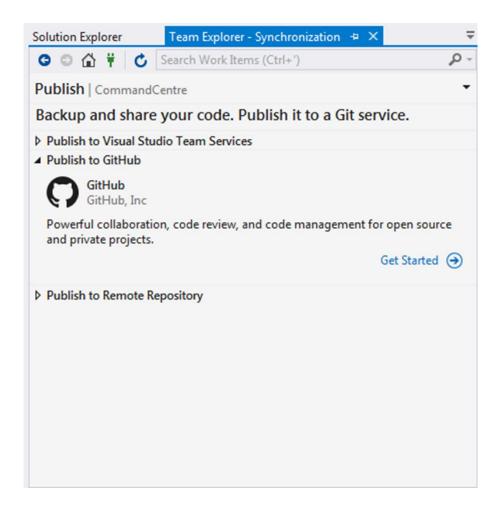


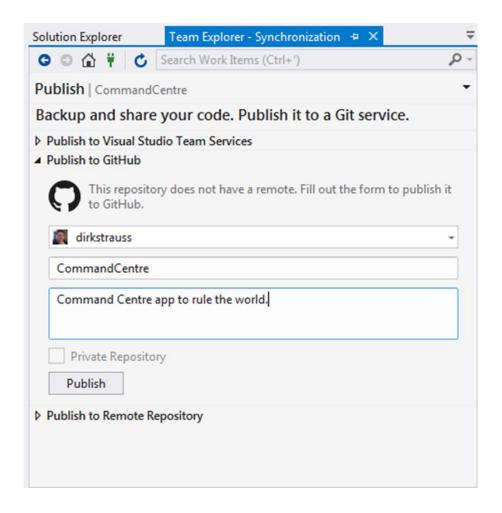


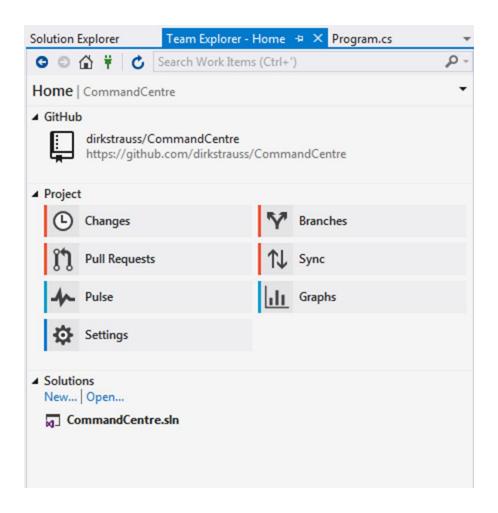


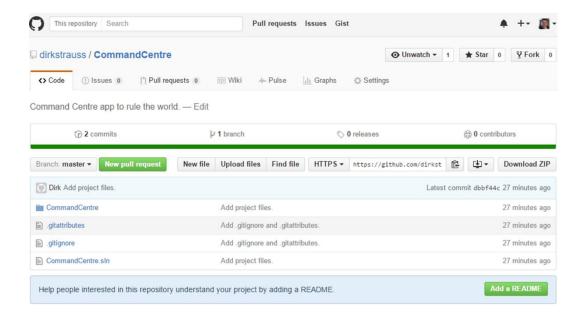


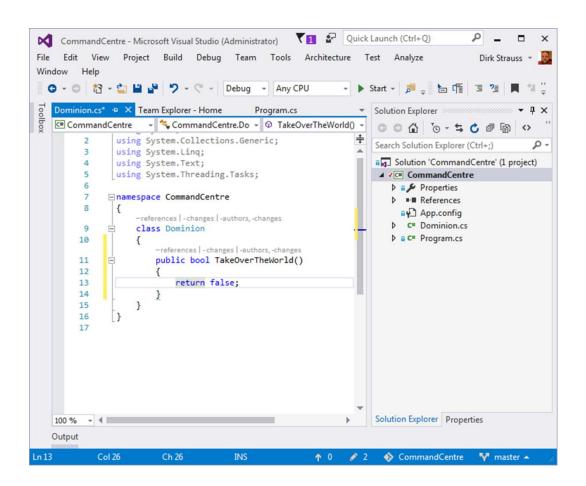


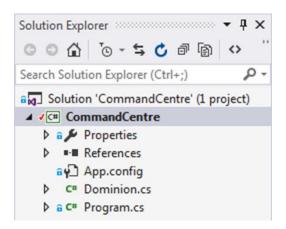


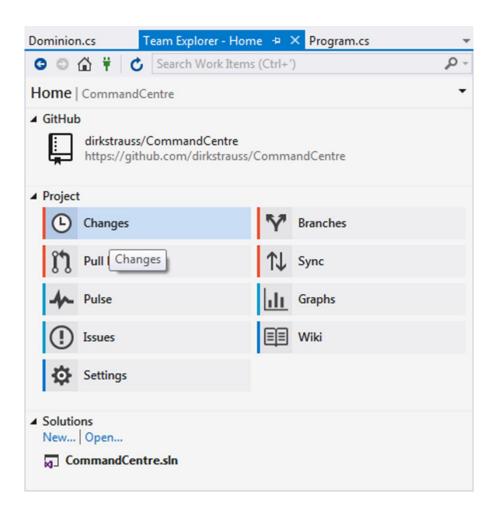


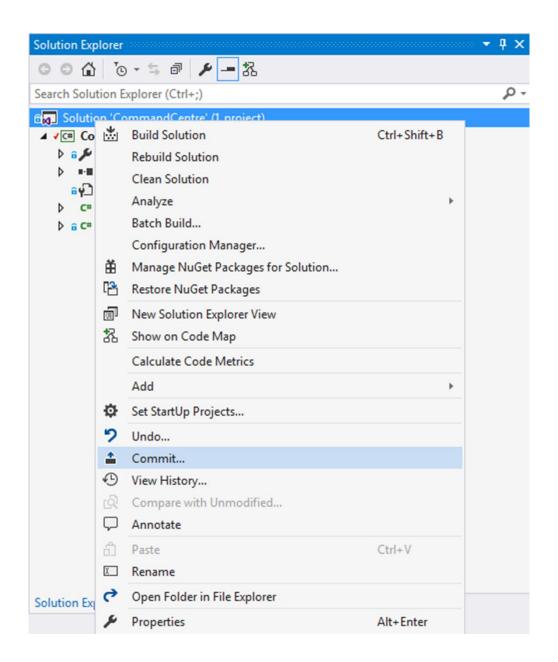


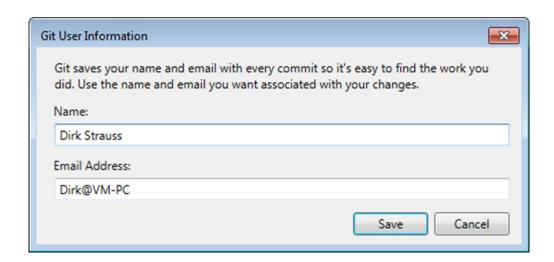


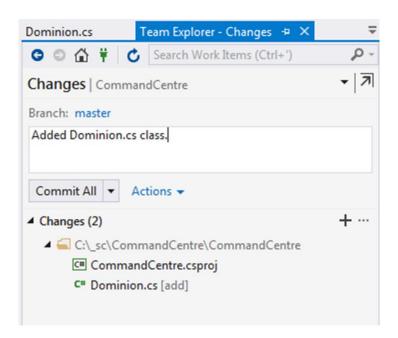


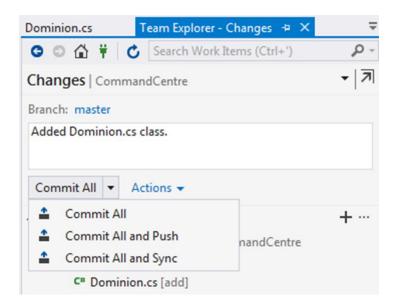


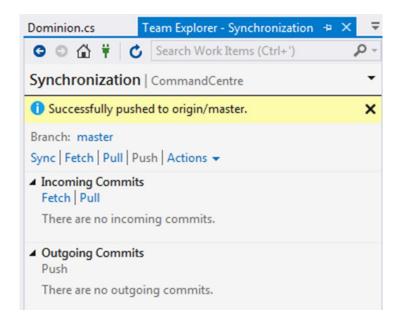


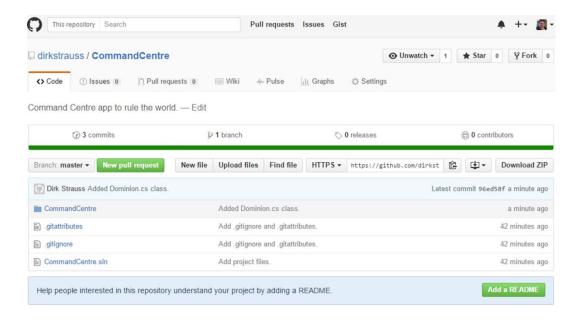


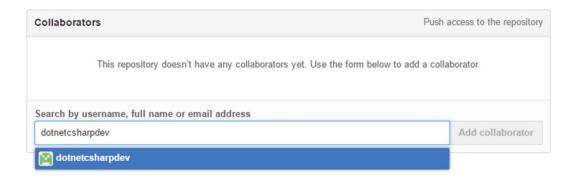


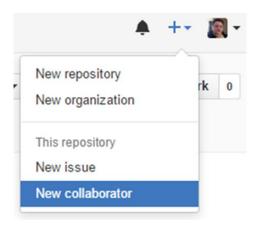


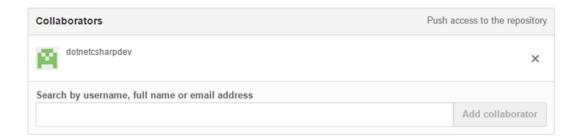


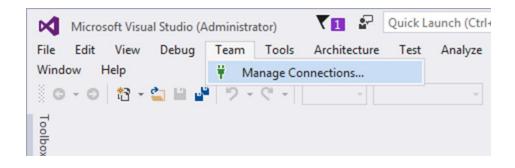


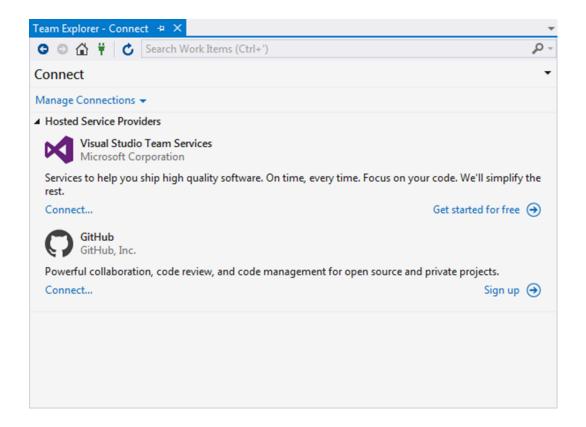




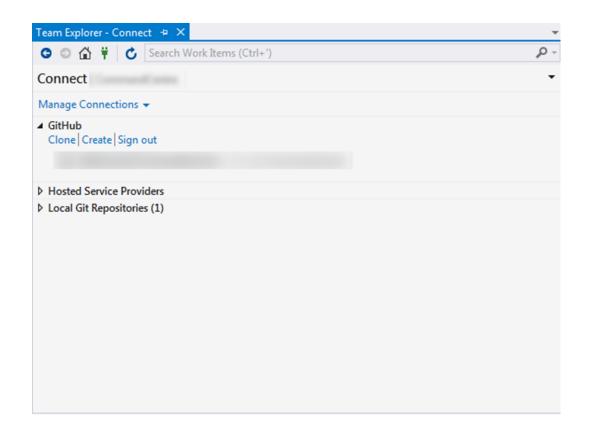


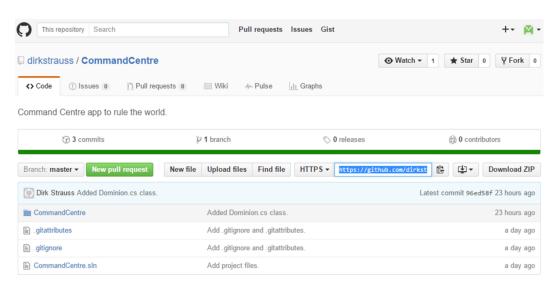


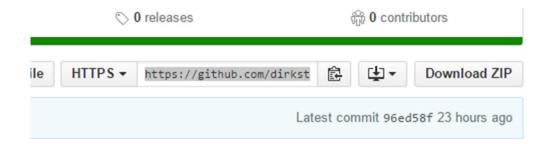


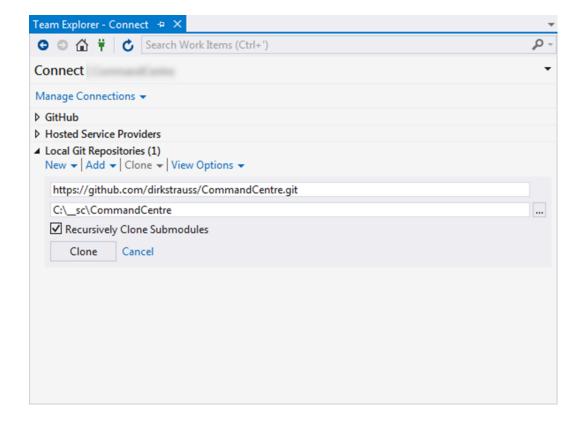


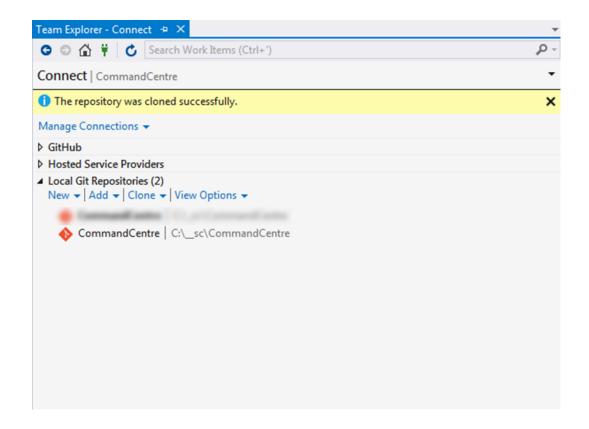


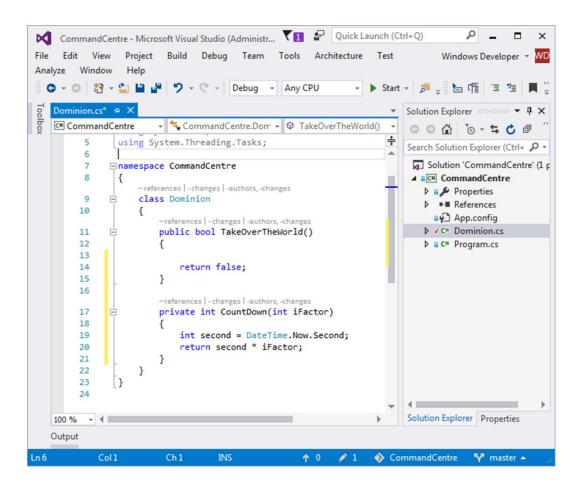


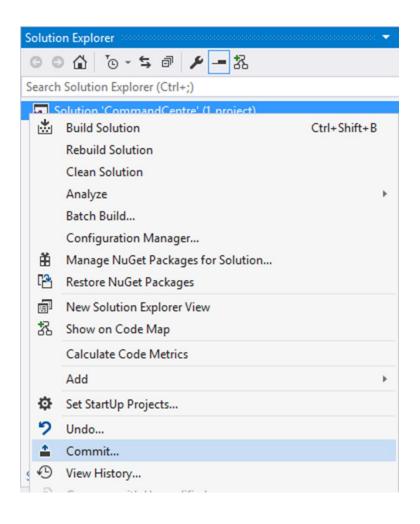


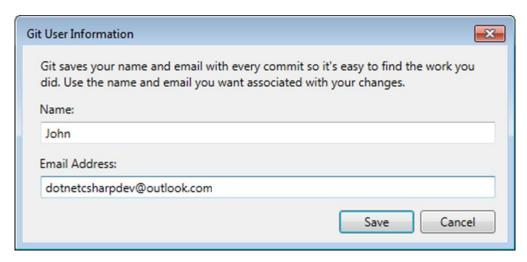


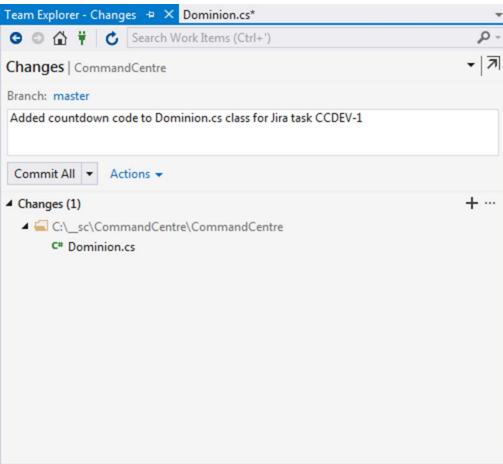


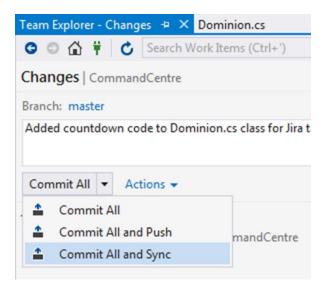


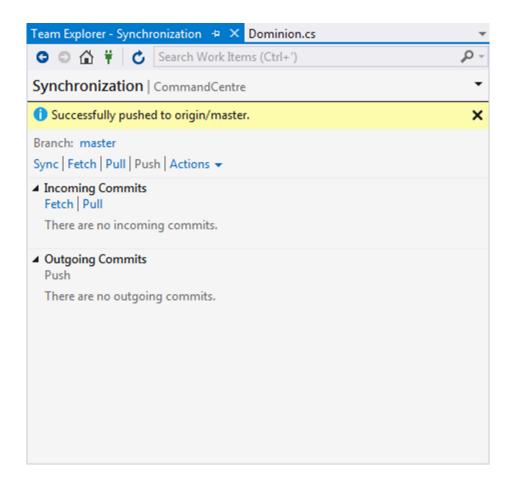


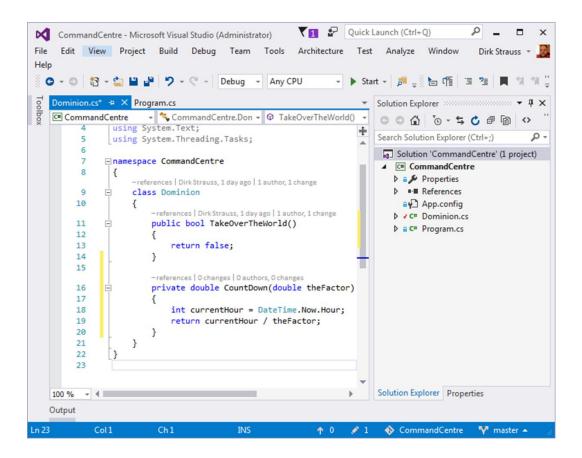


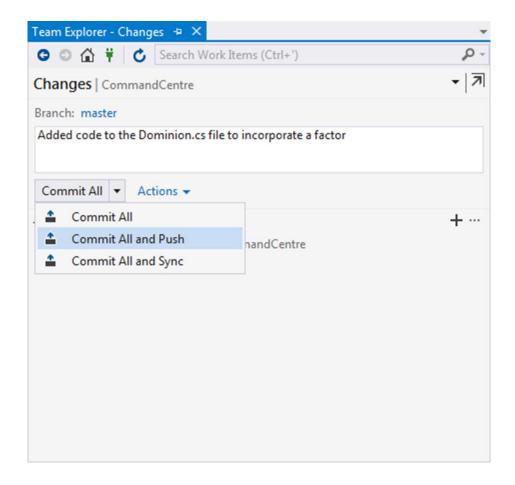


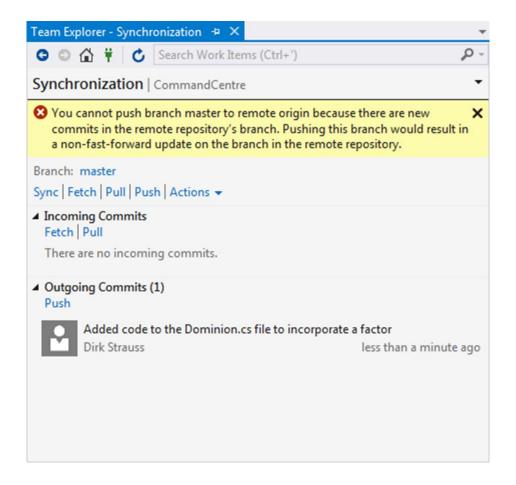


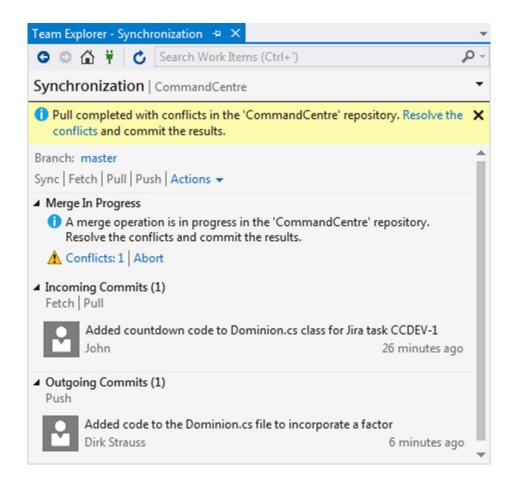


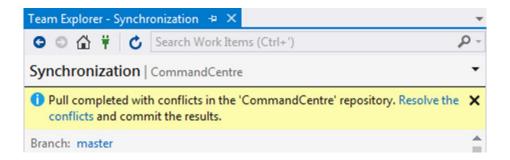


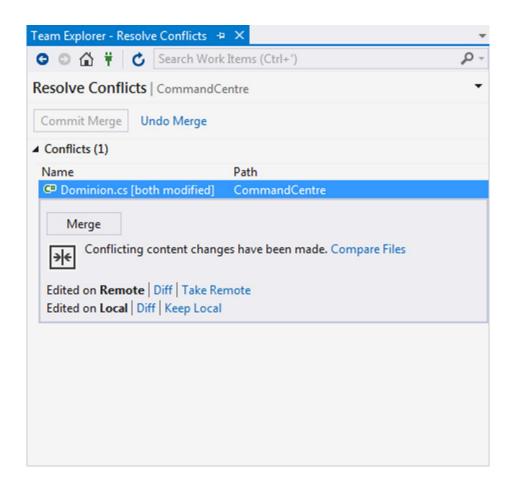


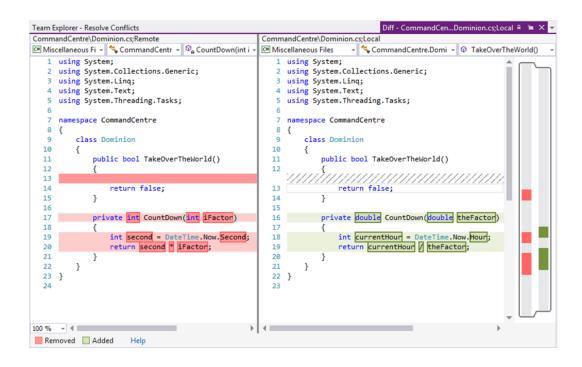


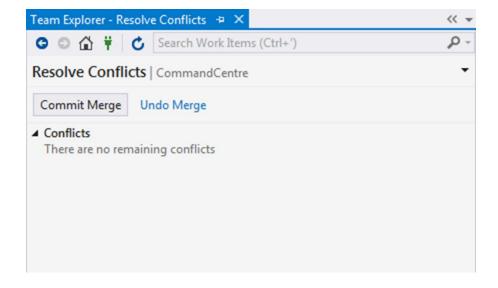


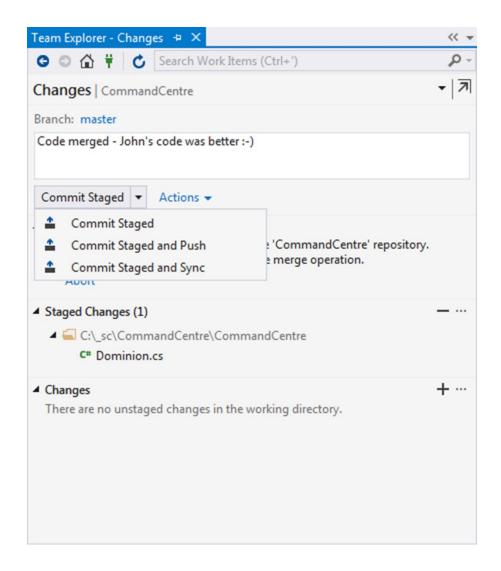


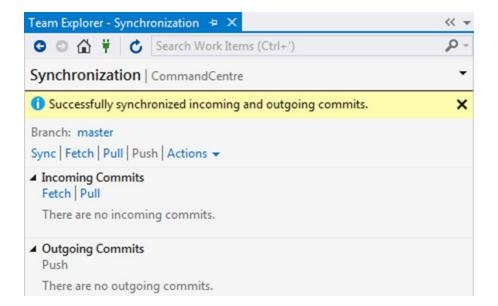








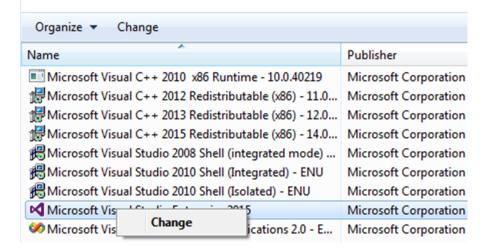




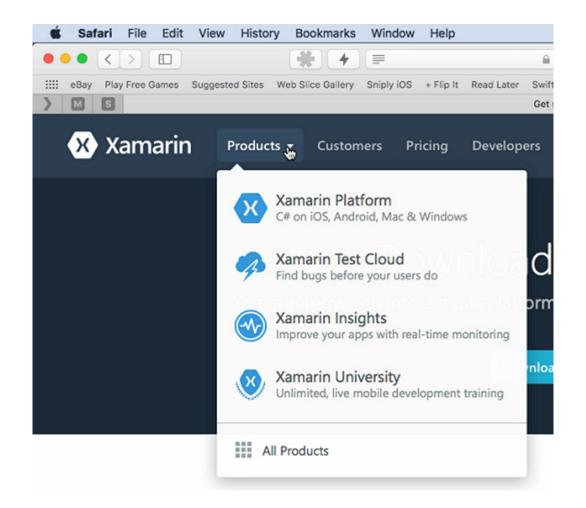
Chapter 11: Creating a Mobile Application in Visual Studio

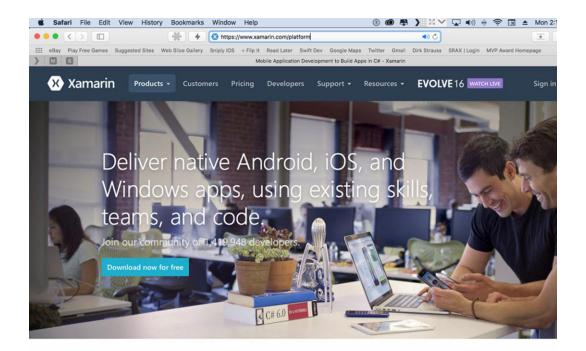
Uninstall or change a program

To uninstall a program, select it from the list and then click Uninstall, Change,









Xamarin apps look and feel native because they are.



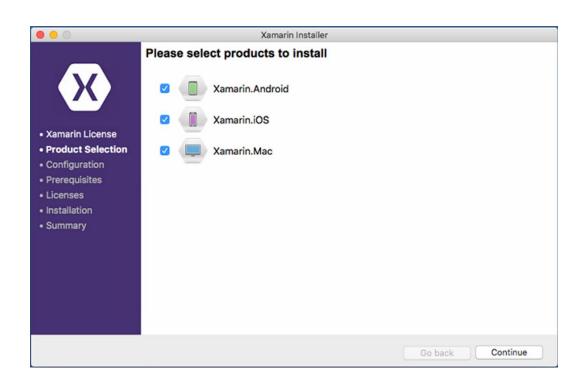
Xamarin apps are built with standard,

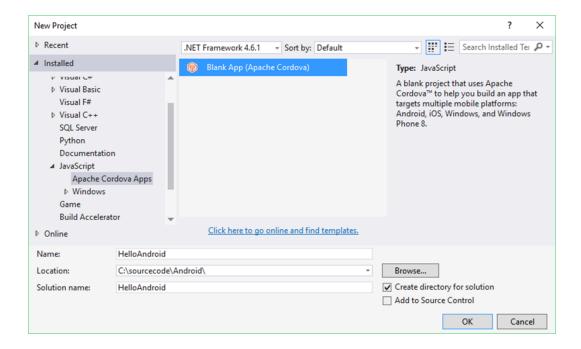


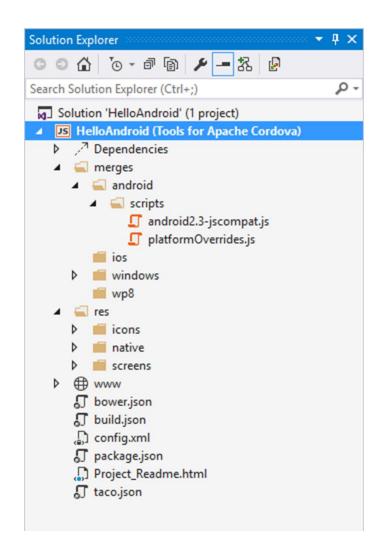
Xamarin apps have access to the full

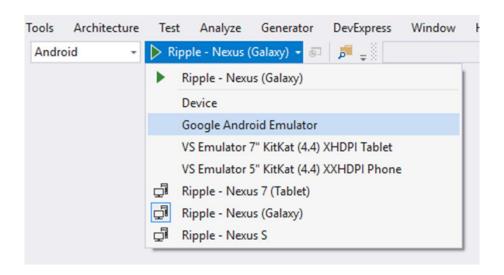


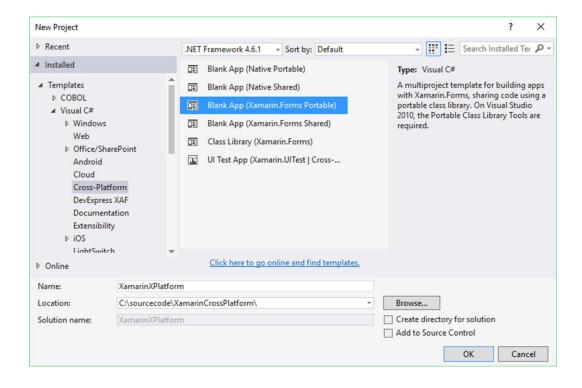
Xamarin apps leverage platform-

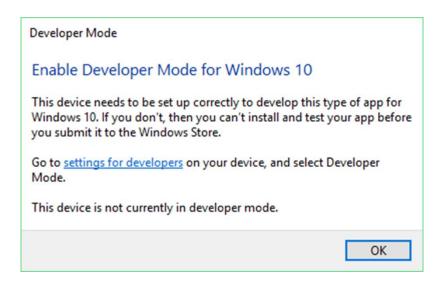


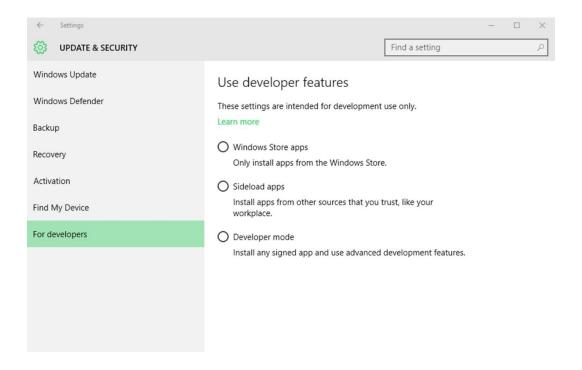


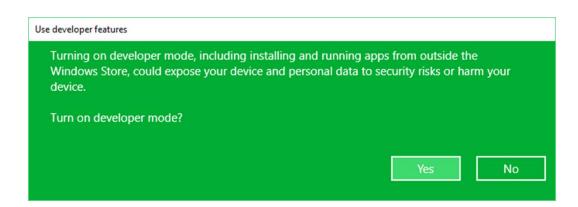


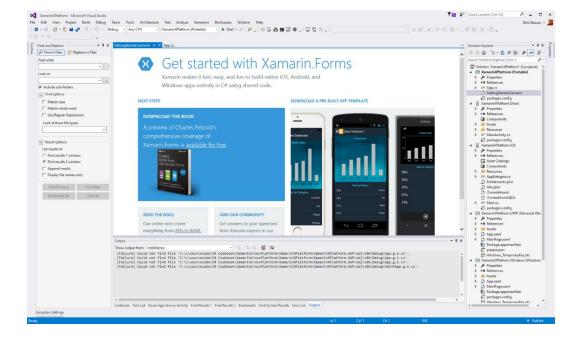


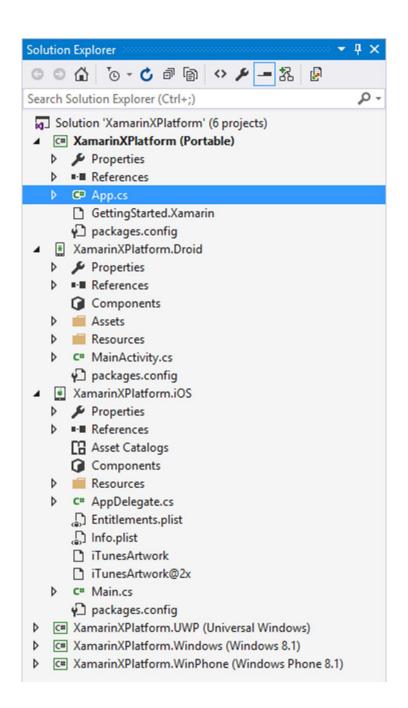


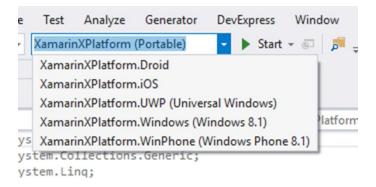




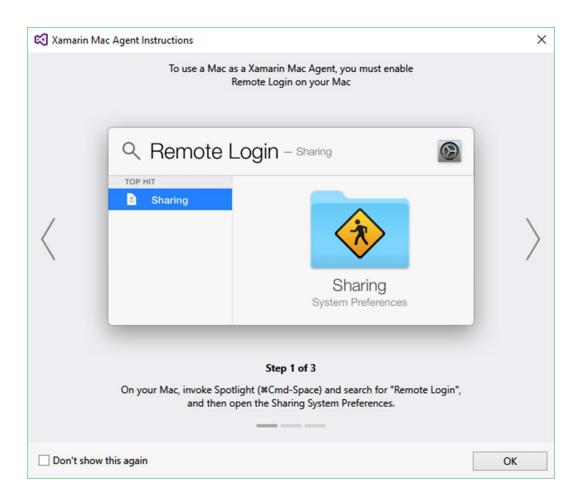




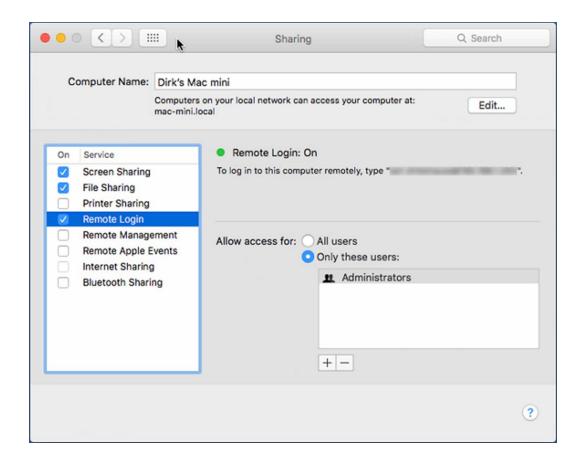




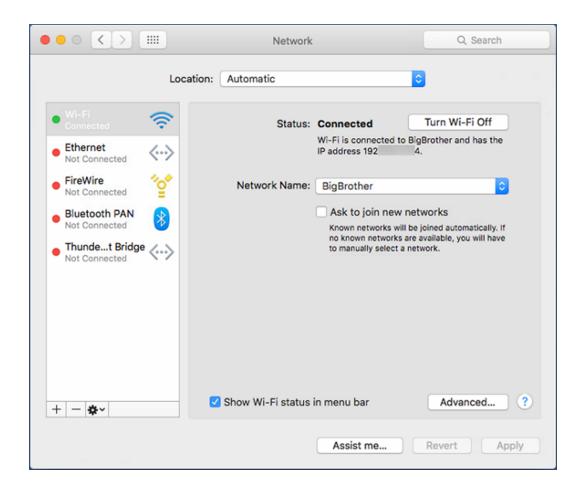


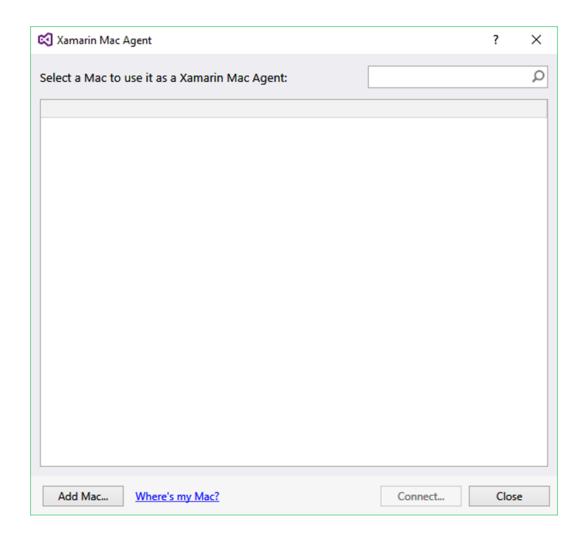


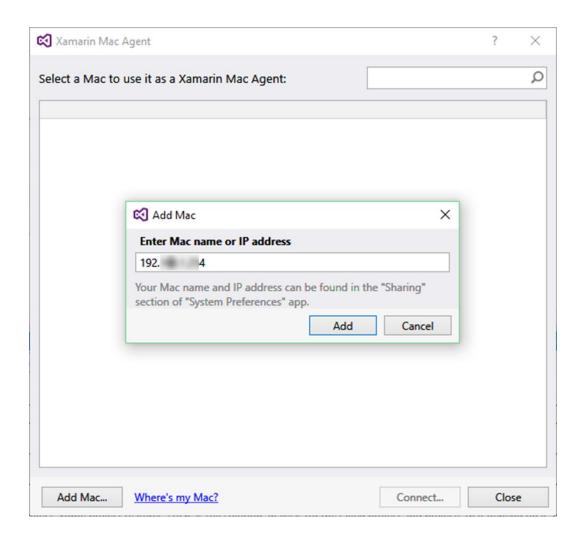


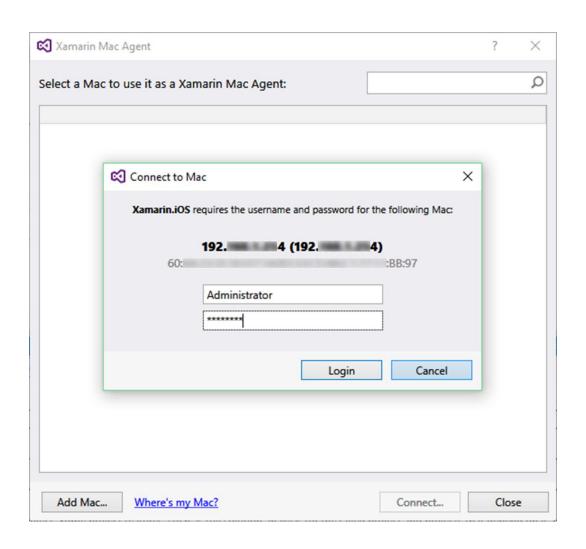


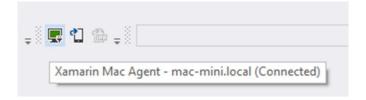


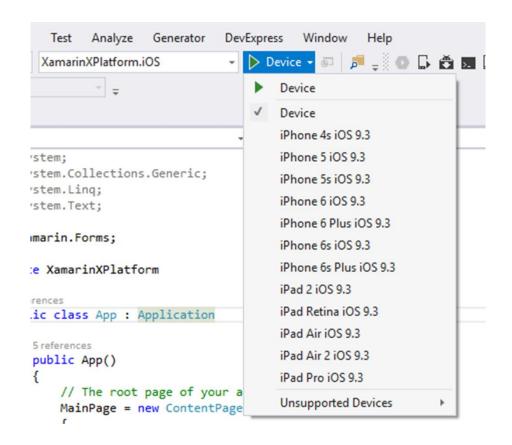


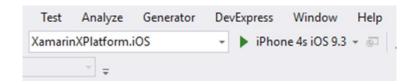


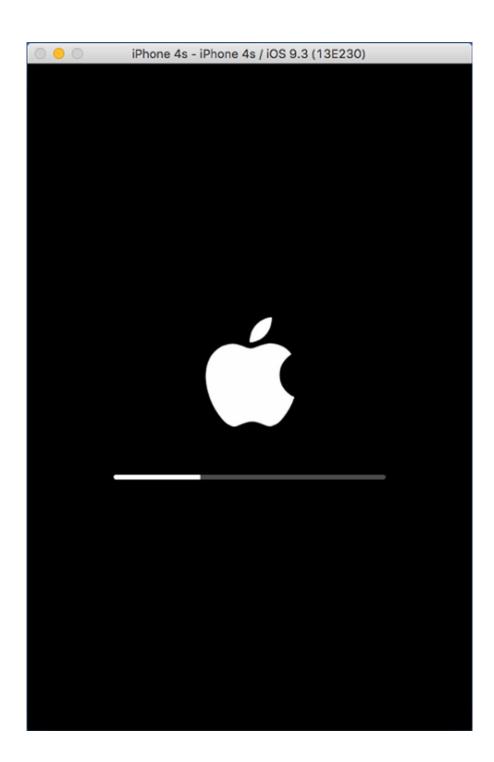


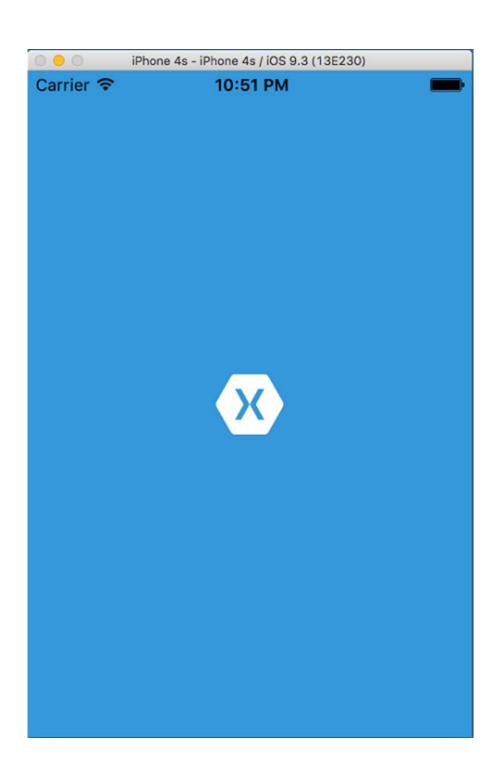




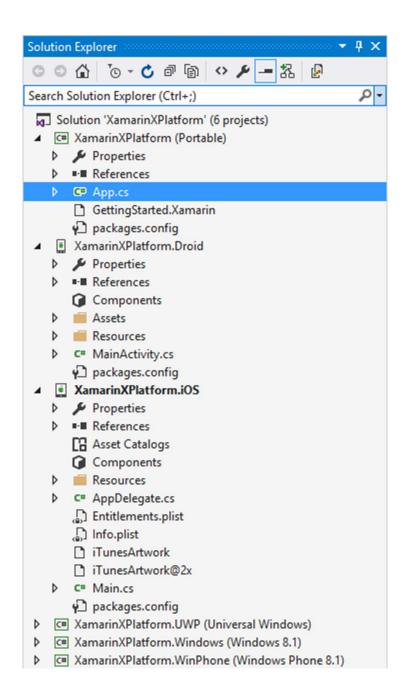




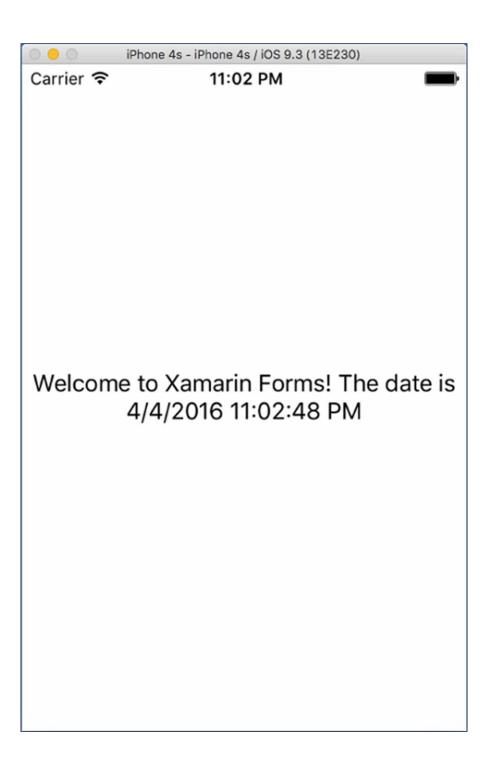




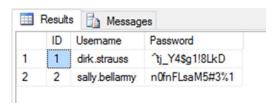


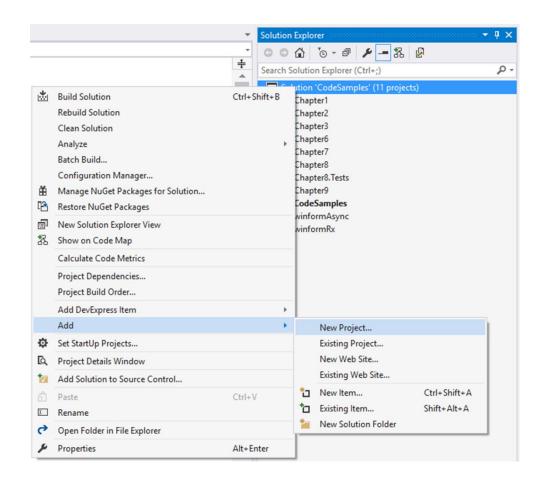


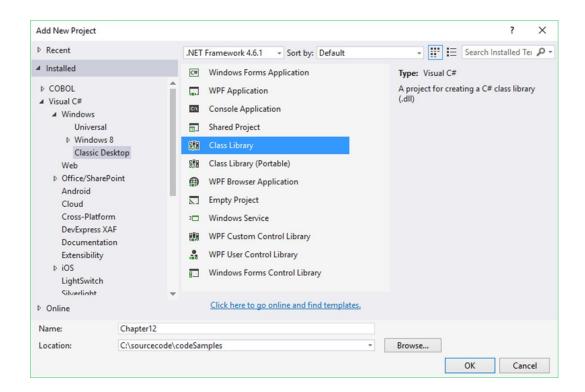
```
namespace XamarinXPlatform
{
   6 references
   public class App : Application
       5 references
        public App()
           // The root page of your application
           MainPage = new ContentPage
                Content = new StackLayout
                    VerticalOptions = LayoutOptions.Center,
                    Children = {
                        new Label { HorizontalTextAlignment = TextAlignment.Center,
                           Text = "Welcome to Xamarin Forms!"
                        }
          };
                   }
       }
```

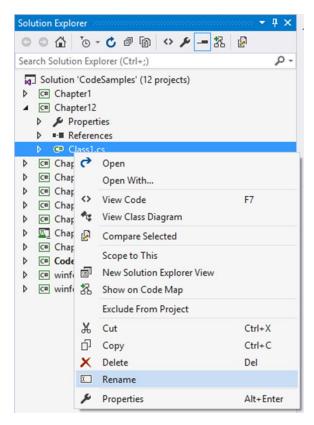


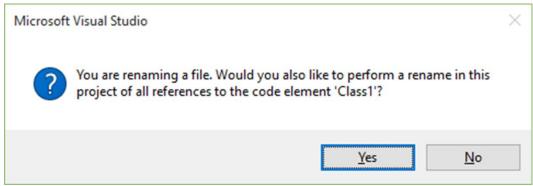
Chapter 12: Writing Secure Code and Debugging in Visual Studio

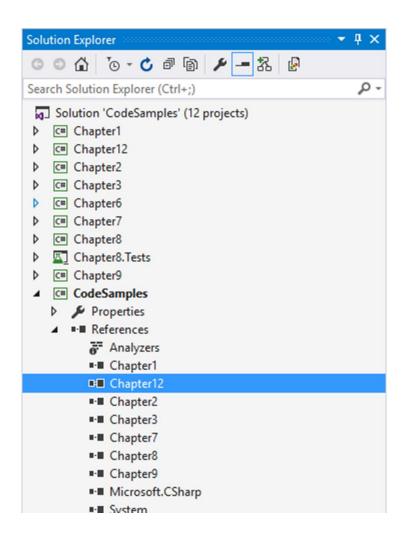


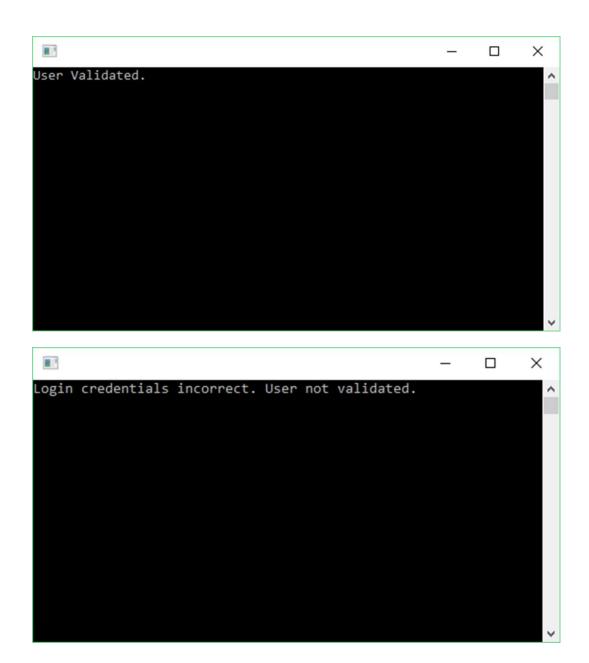








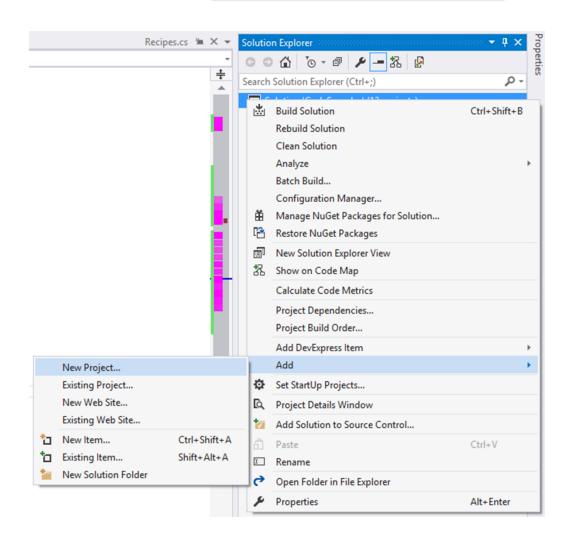


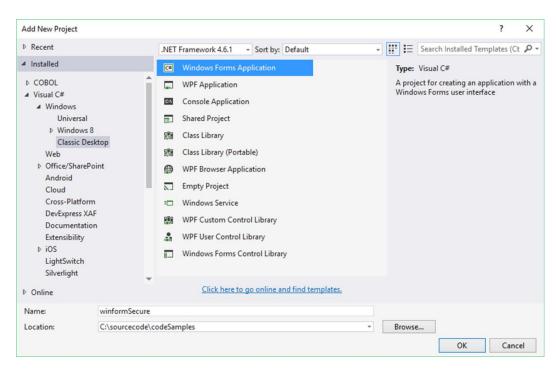


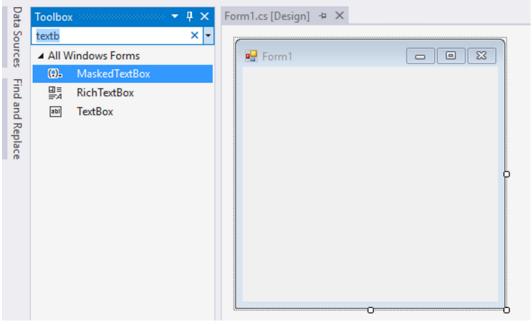


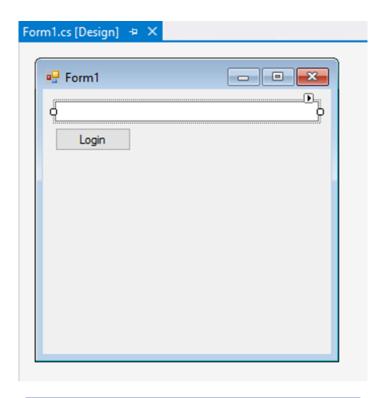
SqlCredential cred = new SqlCredential()

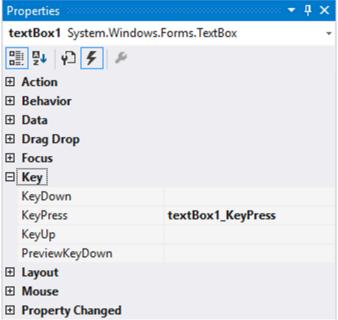
SqlCredential(string userId, SecureString password)
Creates an object of type SqlCredential.
userId: The user id.

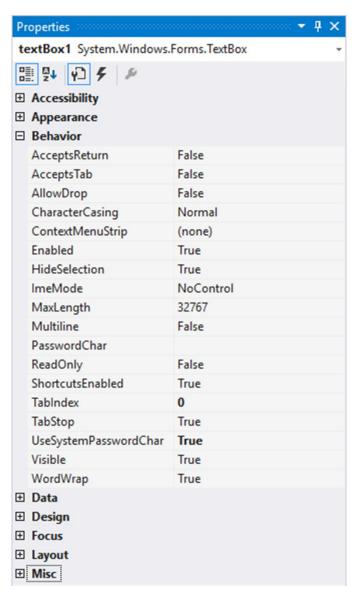


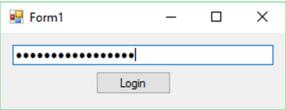


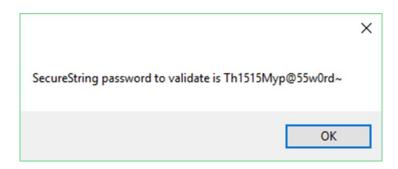


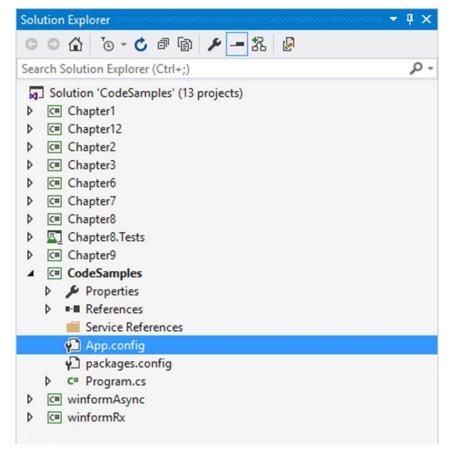




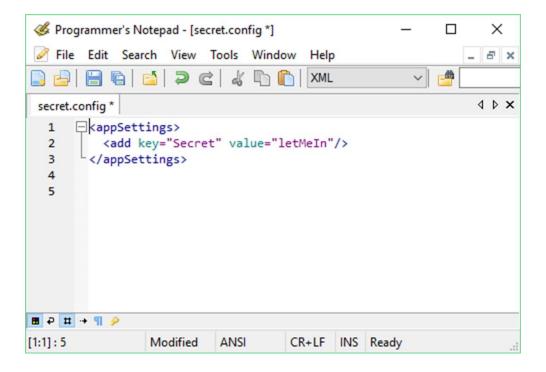


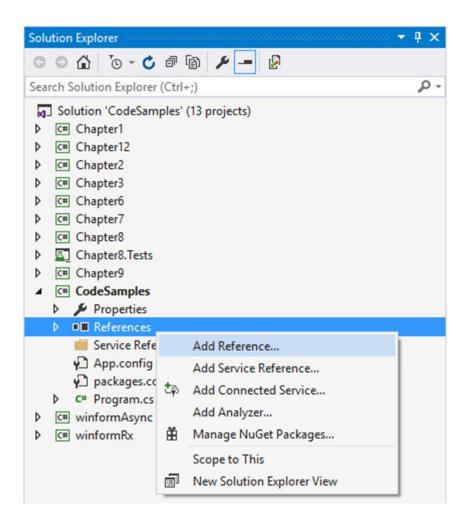


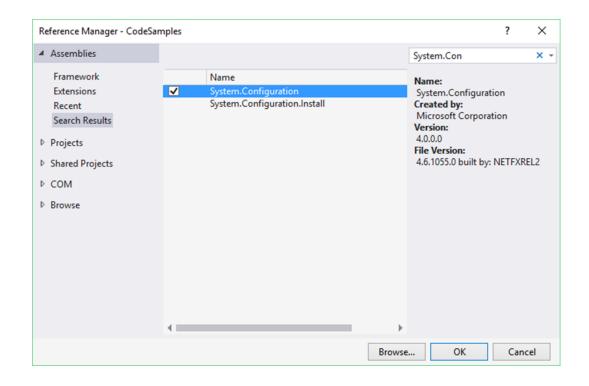


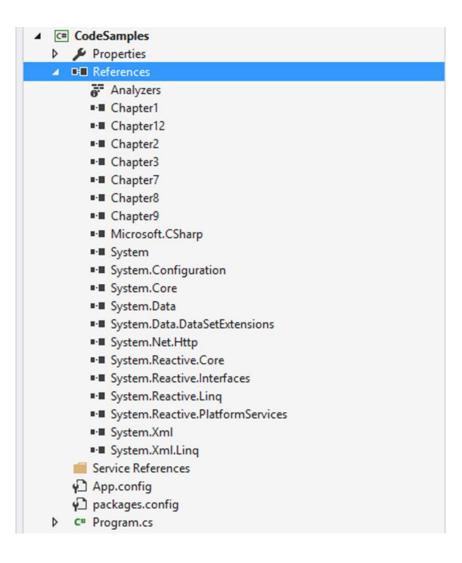


```
<?xml version="1.0" encoding="utf-8"?>
1
2
    3
   <startup>
4
            <supportedRuntime version="v4.0" sku=".NETFramework, Version=v4.6.1"/>
5
         </startup>
6
         <appSettings file="C:\temp\secret\secret.config">
7
          <add key="name" value="Dirk"/>
          <add key="lastname" value="Strauss"/>
8
9
         </appSettings>
10
     </configuration>
- | ✓ - secret
                                                                ×
                                                                     v 🔞
       Home
              Share
                     View
       ∨ ♂
                                                 Search secret
                                                                     Q
        secret.config
   ą,
                                                                    0 -- -
 1 item
```



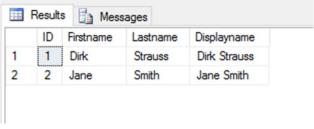










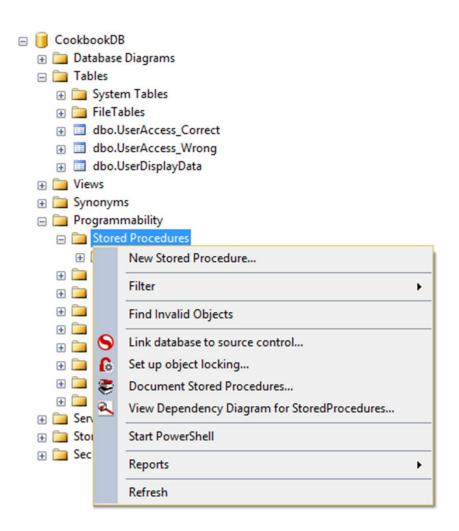


- ☐ CookbookDB
 - ⊕ Database Diagrams
 - ☐ Tables

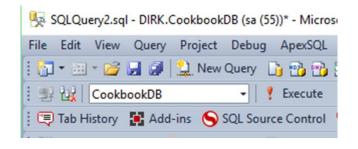
 - dbo.UserAccess_Correct

 - dbo.UserDisplayData
 - + 🛅 Views
 - Synonyms
 - Programmability
 - Stored Procedures
 - **⊕** Functions
 - Database Triggers
 - Assemblies
 - Types
 - Rules
 - Defaults

 - Sequences
 - Service Broker



```
SET ANSI_NULLS ON
 SET QUOTED_IDENTIFIER ON
 GO
E---
              <Dirk Strauss>
 -- Create date: <2 April 2016>
-- Description: <Read the user data for the specific user ID supplied as parameter>
□ CREATE PROCEDURE cb_ReadCurrentUserDisplayData
     @userID INT
 AS
BEGIN
     -- SET NOCOUNT ON added to prevent extra result sets from
      -- interfering with SELECT statements.
     SET NOCOUNT ON;
     SELECT
         Firstname, Lastname, Displayname
         dbo.UserDisplayData
      WHERE
        ID = @userID
 END
 GO
```



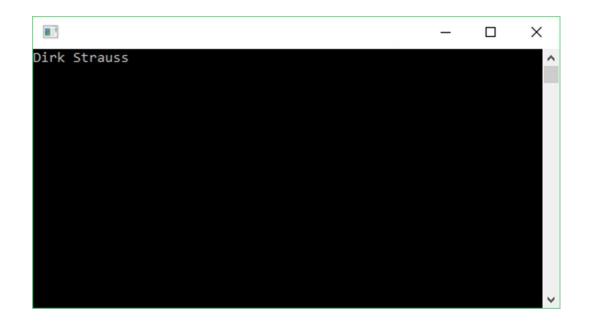
⊟ 间 CookbookDB
Database Diagrams
☐ Tables
⊕ ☐ System Tables
dbo.UserDisplayData
⊕
☐ Programmability
☐ Stored Procedures
⊕ System Stored Procedures
dbo.cb_ReadCurrentUserDisplayData
⊕ ☐ Functions
Database Triggers
 Assemblies
⊕ ☐ Rules
⊕ Defaults
Security

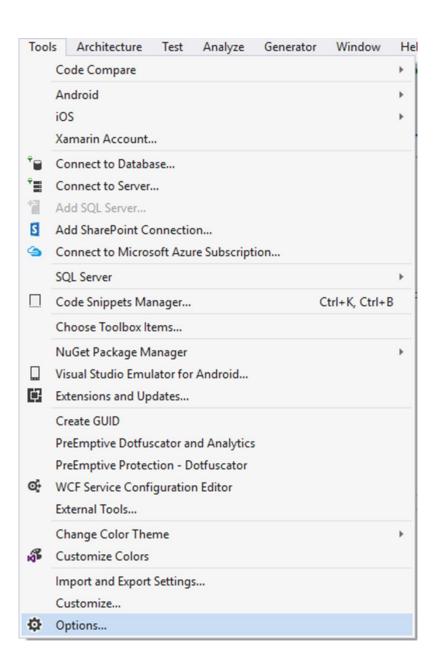
cmd.Parameters.Add("userID", SqlDbType.Int").Value = intUserID;

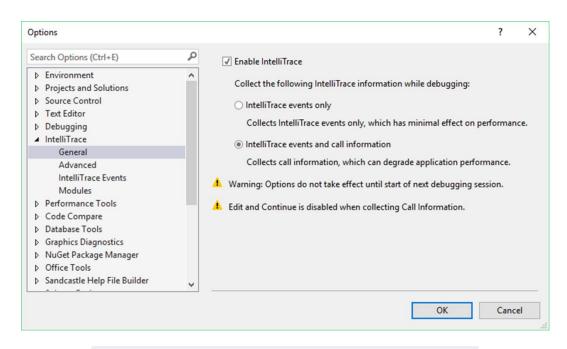
▲ 3 of 4 ▼ SqlParameter SqlParameterCollection.Add(string parameterName, SqlDbType sqlDbType, int size)

Adds a SqlParameter to the SqlParameterCollection, given the specified parameter name, SqlDbType and size.

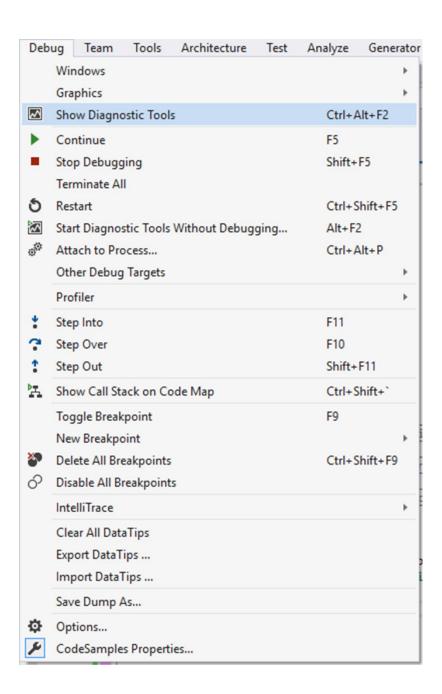
sqlDbType: The SqlDbType of the SqlParameter to add to the collection.

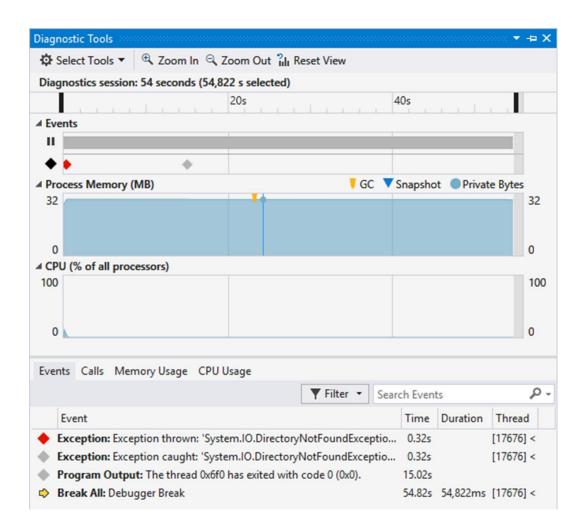


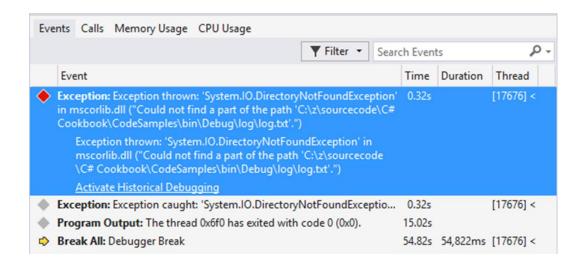










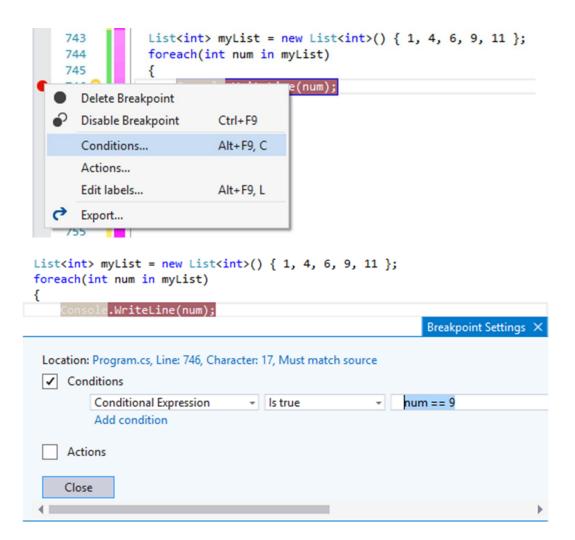


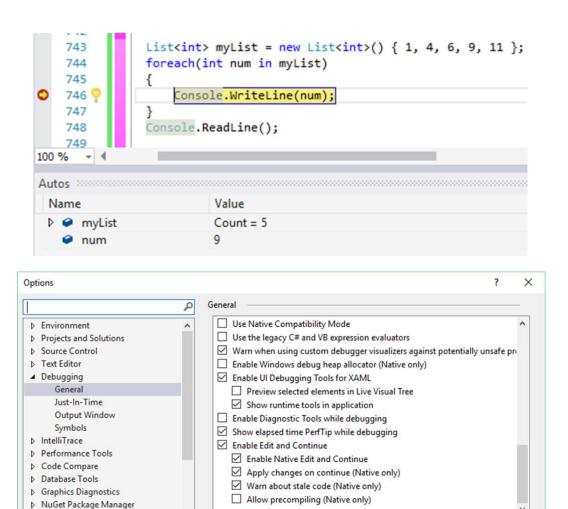
```
Diagnostic Tools
Program.cs @
                   Recipes.cs a → X
C# Chapter12
                                     Chapter12.Recipes
                                                                        → © ErrorInception()
                                string basepath = Path.GetDirectoryName(Assembly.GetEntryAssembly()
var full = Path.Combine(basepath, "log");
         74
         75
         76
                                                                                                                 Solution Explorer
         77
         78
                                     for (int i = 0; i <= 3; i++)
         79
         80
                                          // do work
         81
         82 3
⇔ =
                                          File.Open($"{full}\\log.txt", FileMode.Append);
         83
         84
                                }
                                catch (Exception ex)
         85
         86
         87
                                     StackTrace st = new StackTrace();
                                     StackFrame sf = st.GetFrame(0);
         88
                                     MethodBase currentMethodName = sf.GetMethod();
         89
                                     ex.Data.Add("Date", DateTime.Now);
         90
         91
                                     LogException(ex.Message);
100 %
 Locals (Historical Debugging)
  Name
                              Value
                                                                                                   Type
       Exception Message
                              "Could not find a part of the path 'C:\\z\\sourcecode\\C# Cookbook\\Code Q + string

    Exception WinRT Data null

                                                                                              Q - string
Autos (Historical Debu... Locals (Historical Deb... Watch 1 (Historical De... Find Results 1 Find Results 2 Find Symbol Results
Call Stack (Historical Debugging) Breakpoints Command Window Immediate Window Output Error List Bookmarks Ready
         742
                           List<int> myList = new List<int>() { 1, 4, 6, 9, 11 };
         743
                           foreach(int num in myList)
         744
         745
                                  Console.WriteLine(num);
         746
         747
         748
                           Console.ReadLine();
```

749





```
RunFastTask();
Thread.Sleep(1000);
```

}

OK

Cancel

Office Tools

▶ Sandcastle Help File Builder

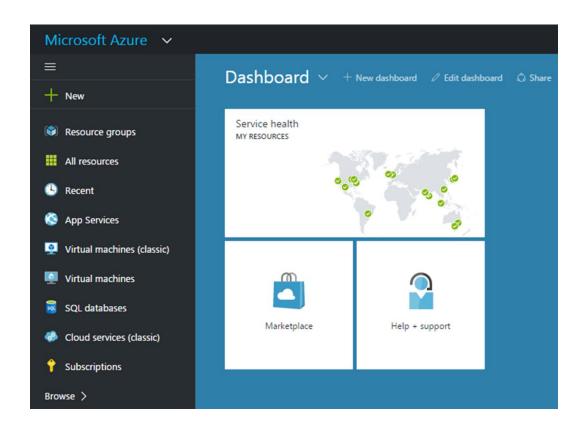
```
RunFastTask();
Thread.Sleep(1000); ≤11022ms elapsed
}

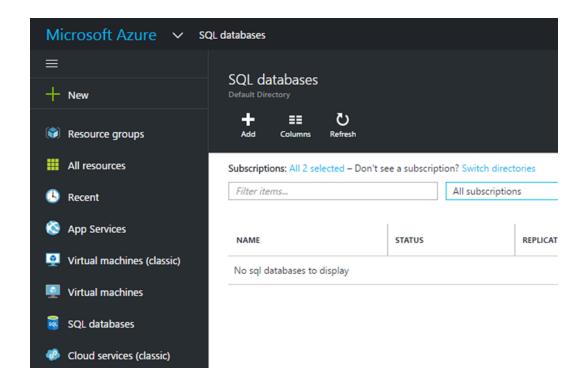
1reference
public static void RunFastTask()
{
    RunLongerTask();
}

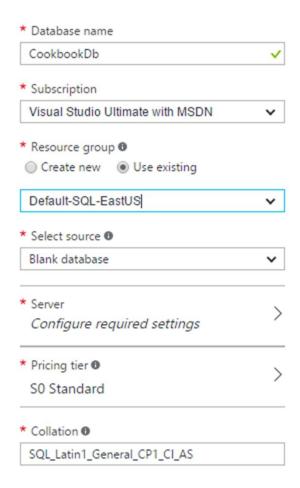
1reference
private static void RunLongerTask()
{
    Thread.Sleep(3000);
    BottleNeck();
}

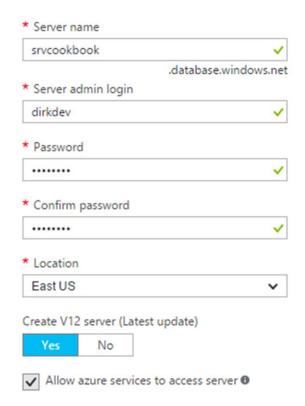
1reference
private static void BottleNeck()
{
    Thread.Sleep(8000);
}
```

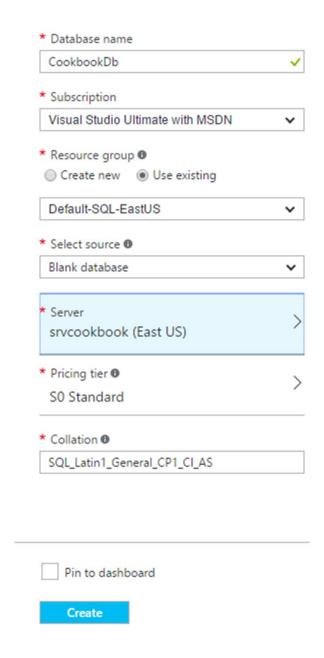
Chapter 13: Creating a Web Application in Azure

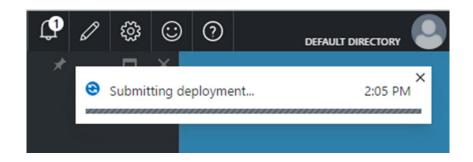




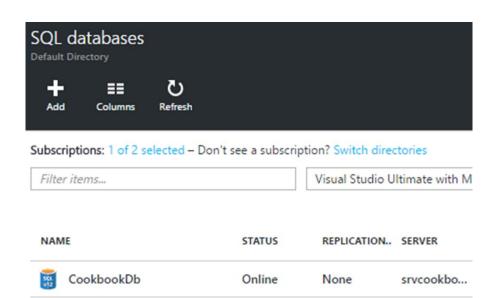


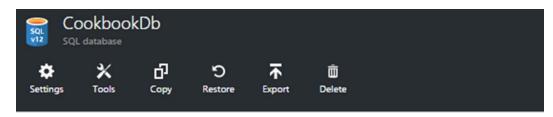












Essentials ^





Resource group

Default-SQL-EastUS

Status Online

Location

Location

East US

Subscription name

Visual Studio Ultimate with MSDN

Subscription ID

4f9a9899-298b-42a3-ab0b-2c2ff4fc44a3

Server name

srvcookbook.database.windows.net

Server version

V12

Connection strings

Show database connection strings

Pricing tier

S0 Standard (10 DTUs)

Geo-Replication role Not configured

All settings ->

ADO.NET(SQL authentication)

Server=tcp:srvcookbook.database.windows.net,1433;Data Source=srvcookbook.database.win



ODBC (Includes Node.js)

Driver={SQL Server Native Client 11.0};Server=tcp:srvcookbook.database.windows.net,1433;D



PHP

Server: srvcookbook.database.windows.net, 1433 \r\nSQL Database: CookbookDb\r\nUser Na



JDBC (SQL authentication)

jdbc;sqlserver;//srvcookbook.database.windows.net;1433;database=CookbookDb;user=dirkd





Essentials ^

Server version

Resource group
Default-SQL-EastUS

V12

Status

Auditing

Available

Not configured

Location East US Server admin

Subscription name

dirkdev

Visual Studio Ultimate with MSDN

Active Directory admin Not configured

Subscription ID

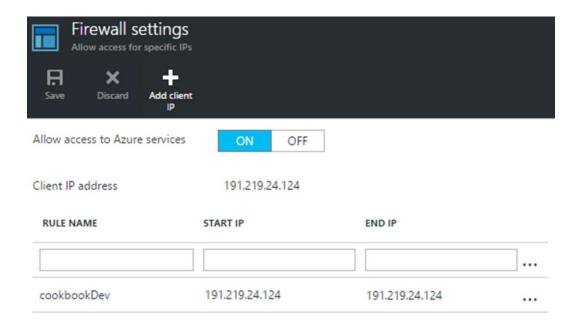
Firewall

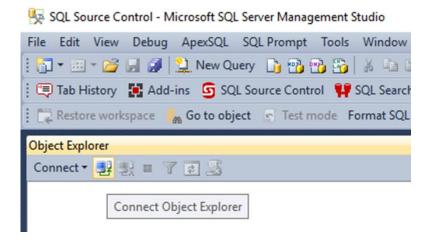
4f9a9899-298b-42a3-ab0b-2c2ff4fc44a3

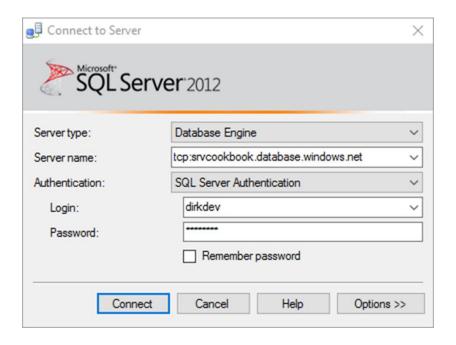
Show firewall settings



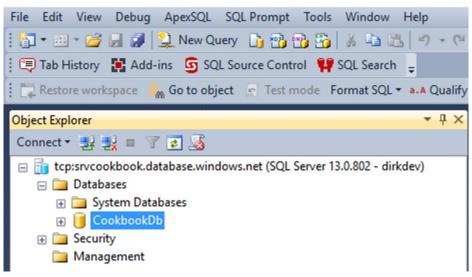
A 89 0

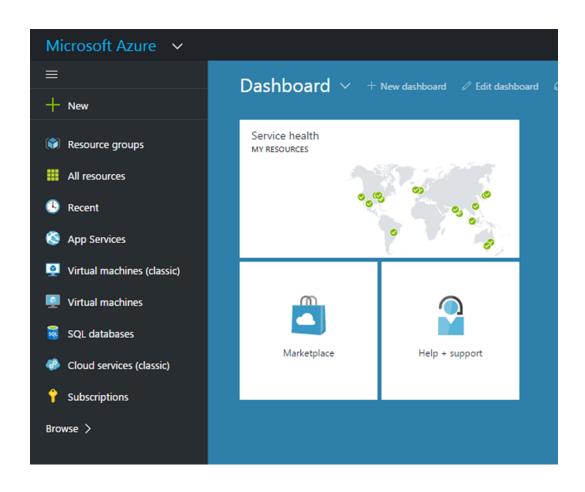


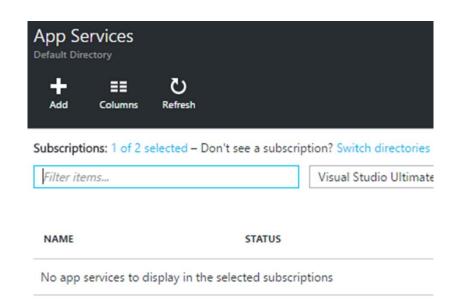


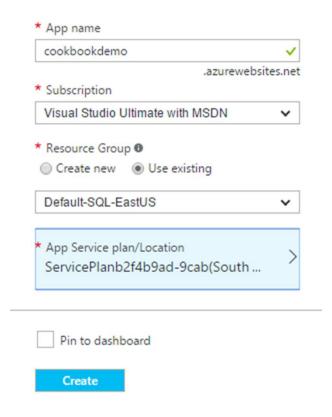


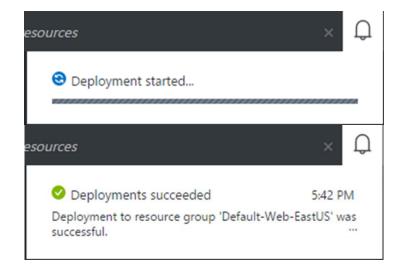
👺 SQL Source Control - Microsoft SQL Server Management Studio

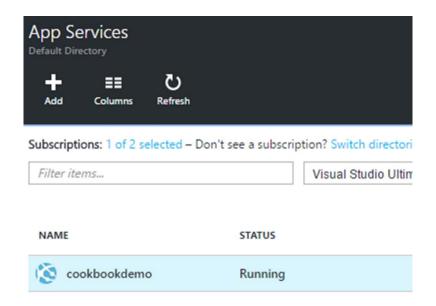


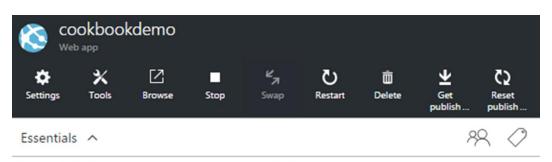












Resource group

Default-Web-EastUS

Status Running Location

South Central US

Subscription name

BizSpark Subscription ID

4f9a9899-298b-42a3-ab0b-2c2ff4fc44a3

URL

http://cookbookdemo.azurewebsites.net

App Service plan/pricing tier

ServicePlan26f0c29f-8e8f (Standard: 1 Sma...

FTP/Deployment username

No FTP/deployment user set

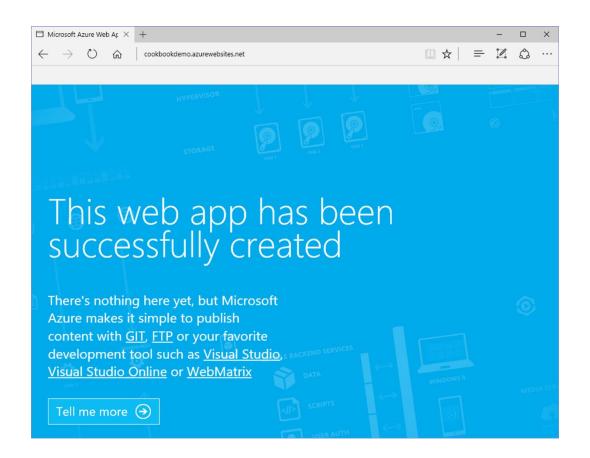
FTP hostname

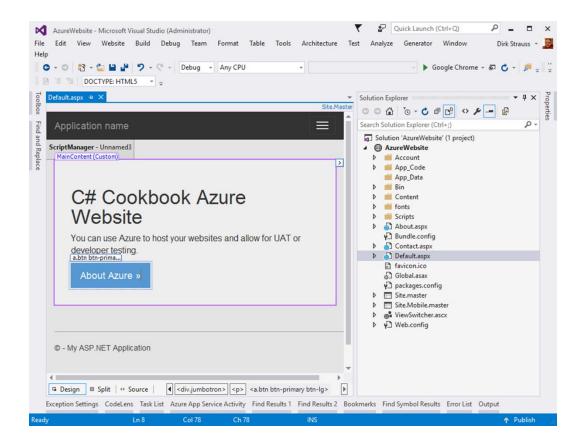
ftp://waws-prod-sn1-037.ftp.azurewebsites...

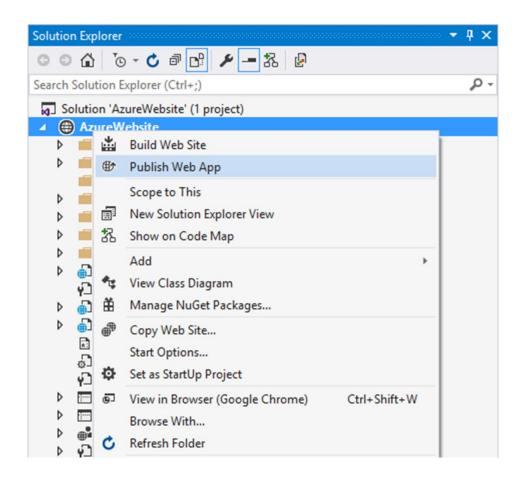
FTPS hostname

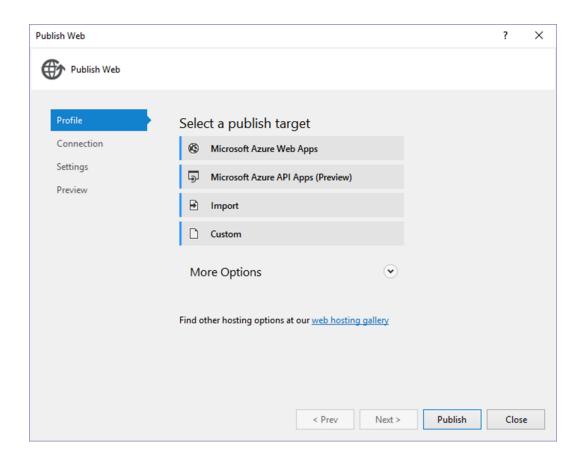
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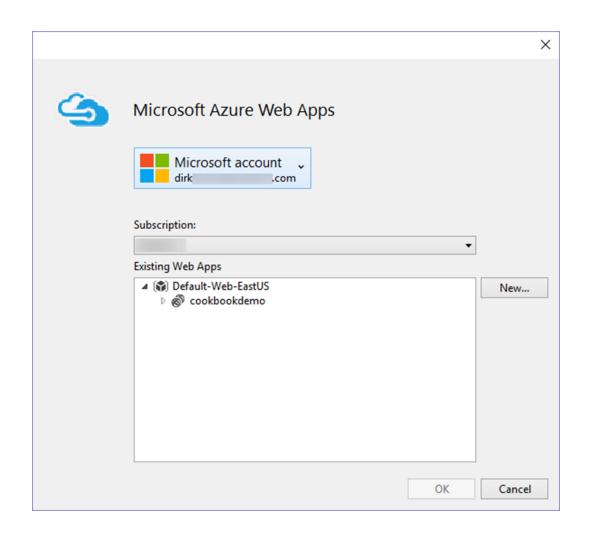
All settings →

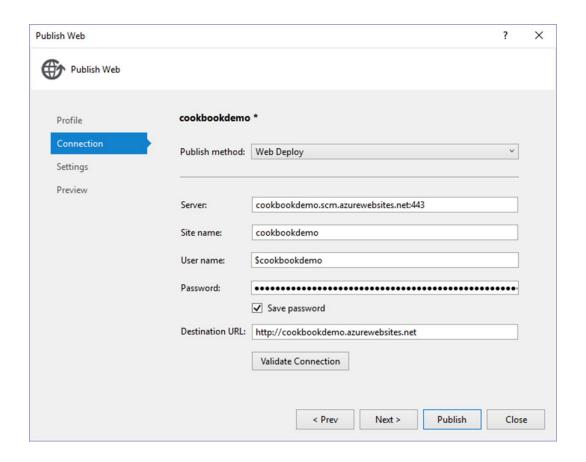




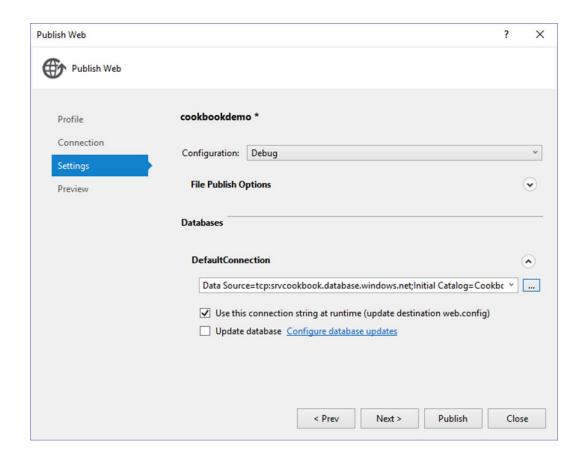


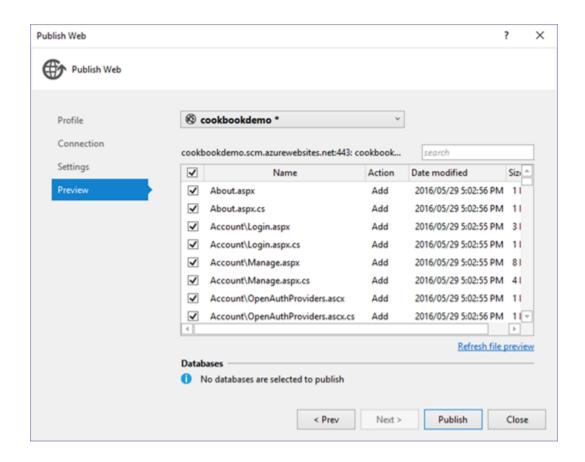


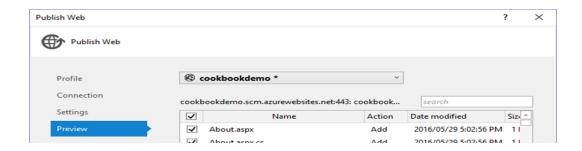


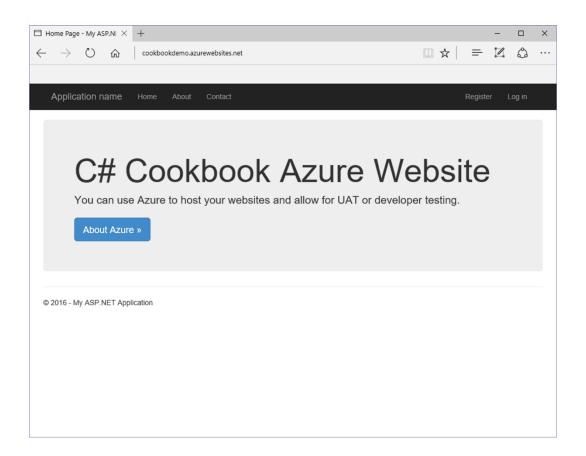


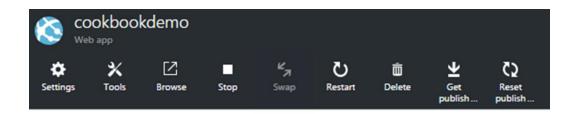












Essentials ^

Resource group Default-Web-EastUS http://cookbookdemo.azurewebsites.net

4f9a9899-298b-42a3-ab0b-2c2ff4fc44a3

Status App Service plan/pricing tier ServicePlan26f0c29f-8e8f (Standard: 1 Sma... Running

Location FTP/Deployment username South Central US No FTP/deployment user set

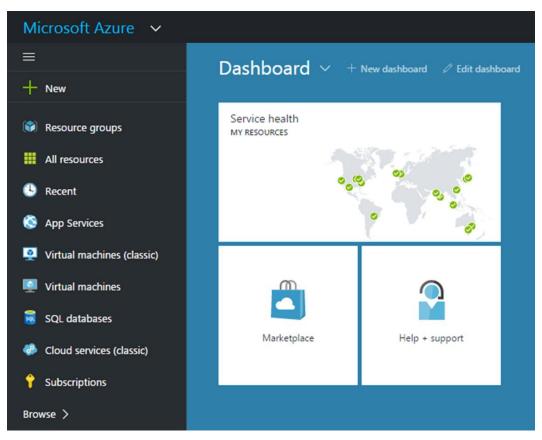
Subscription name FTP hostname

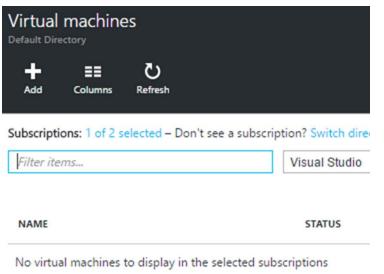
BizSpark ftp://waws-prod-sn1-037.ftp.azurewebsites... Subscription ID

FTPS hostname

ftps://waws-prod-sn1-037.ftp.azurewebsite...







Virtual Machines



Search Virtual Machines



Recommended



Service Fabric Cluster Microsoft



Windows Server Microsoft



Cloudera



Enterprise Data Cloudera



Virtual machine scale set Microsoft



Red Hat Enterprise Linux RedHat



Ubuntu Server Canonical

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More

More

Virtual Machines T Filter

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WITHUOWS DASEU





Aras Innovator PLM Suite 11 Aras

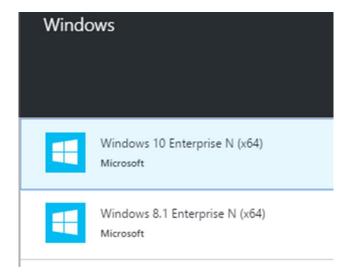


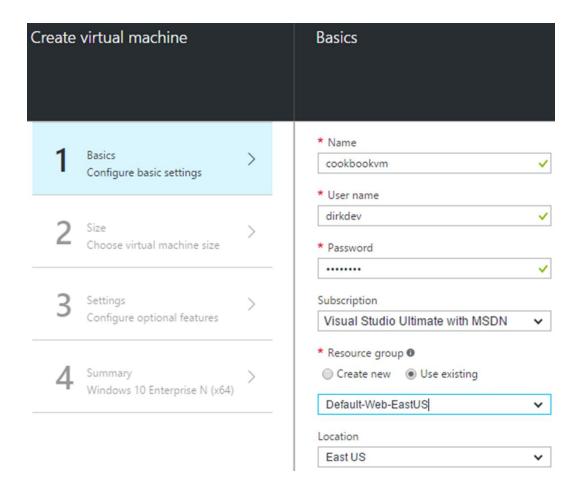
IBM® WebSphere® Microsoft

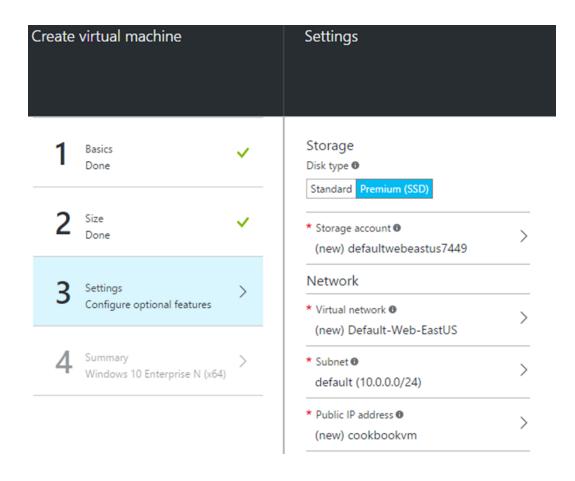


Visual Studio

Microsoft







Validation passed

Basics

Subscription Visual Studio Ultimate with MS

Resource group Default-Web-EastUS

Location East US

Settings

Computer name cookbookvm User name dirkdev

 Size
 Standard DS1 v2

 Disk type
 Premium (SSD)

Storage account (new) defaultwebeastus7449
Virtual network (new) Default-Web-EastUS
Subnet (new) default (10.0.0.0/24)
Public IP address (new) cookbookvm
Network security group (new) cookbookvm

Availability set None
Diagnostics Enabled

Diagnostics storage account (new) defaultwebeastus 1622

