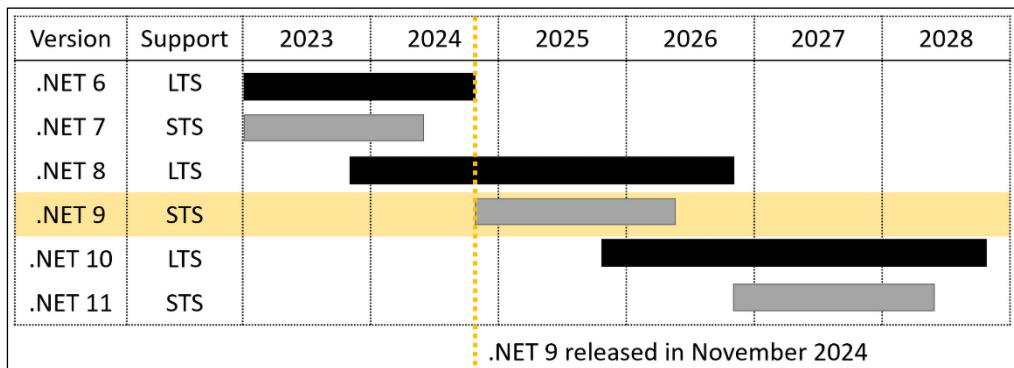
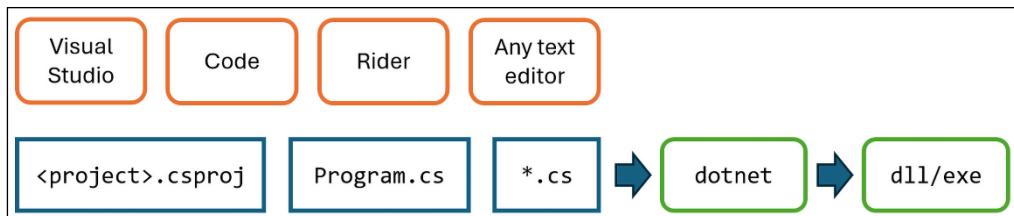
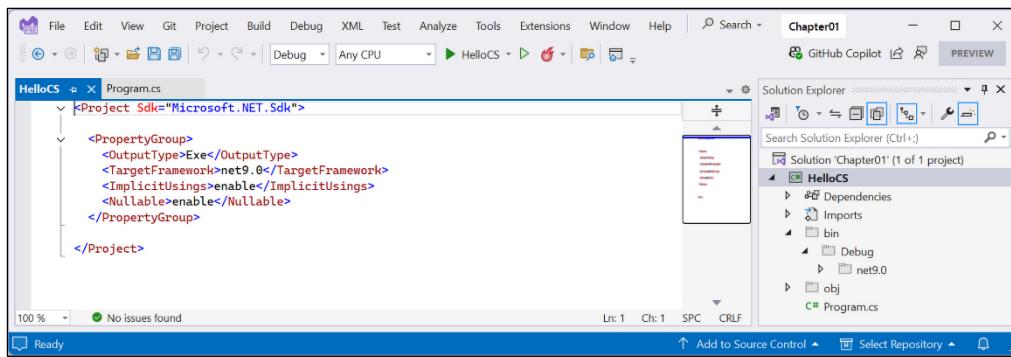
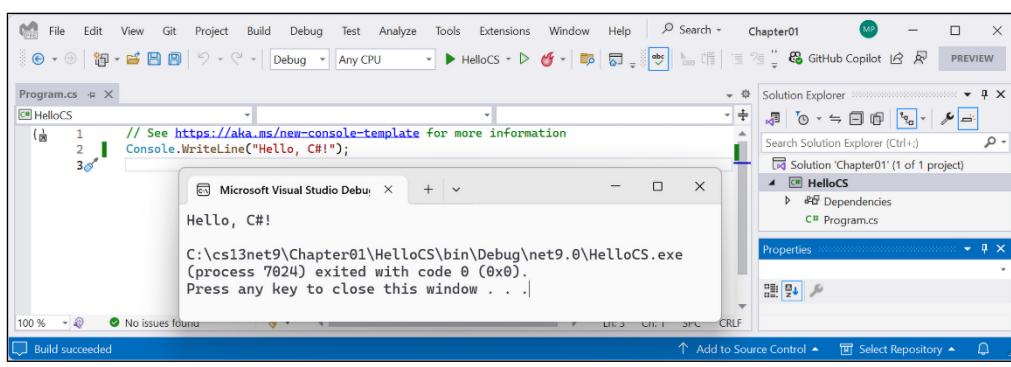
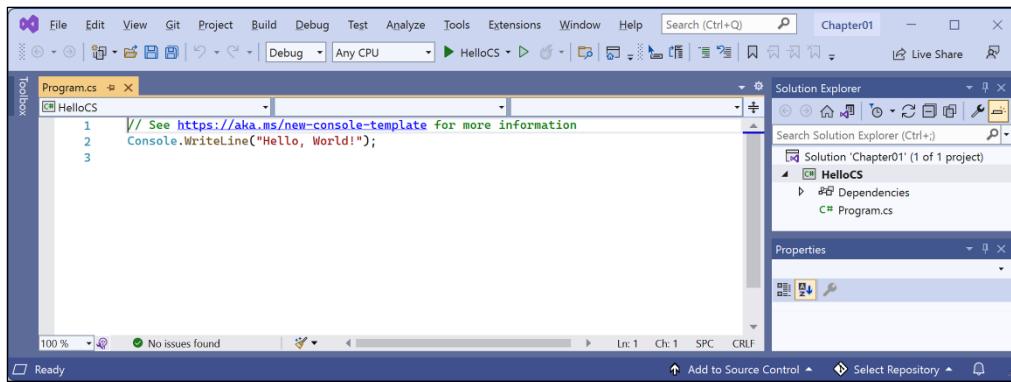
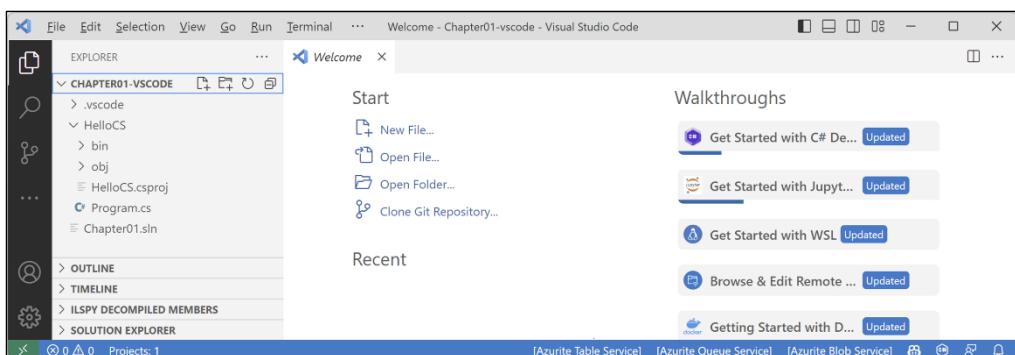
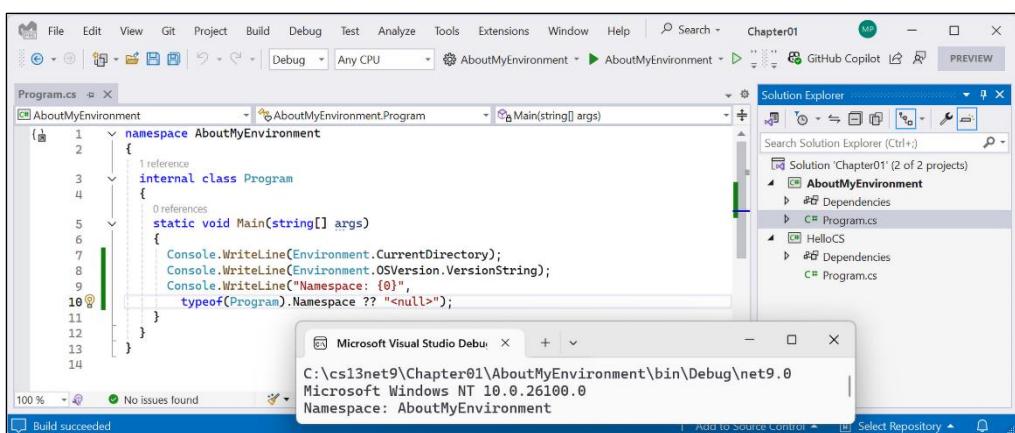
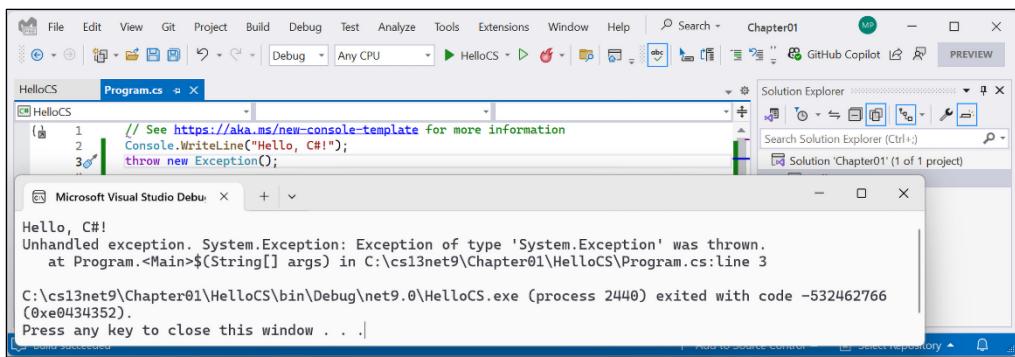
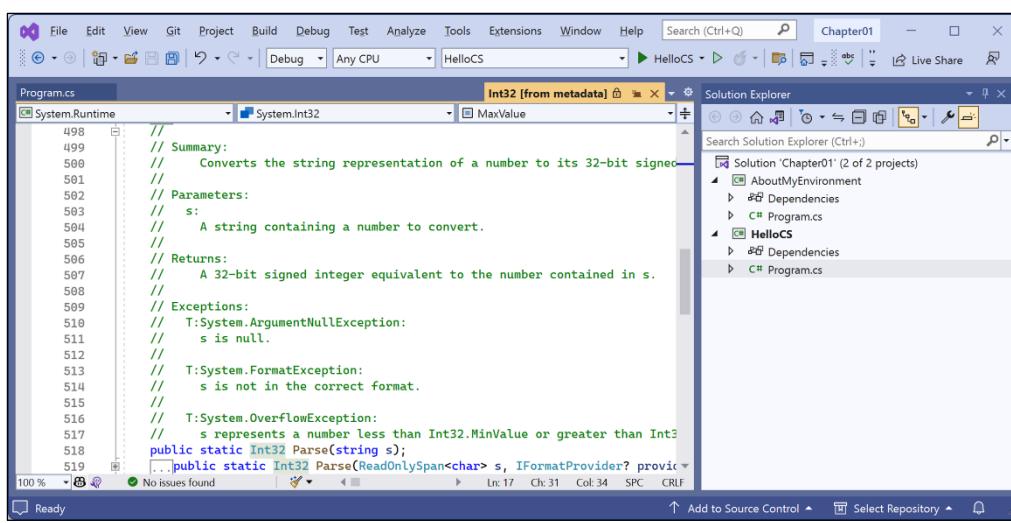
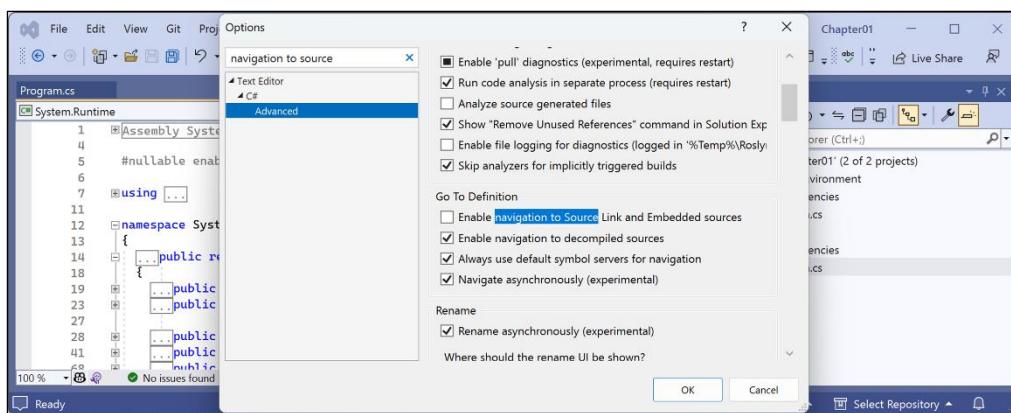
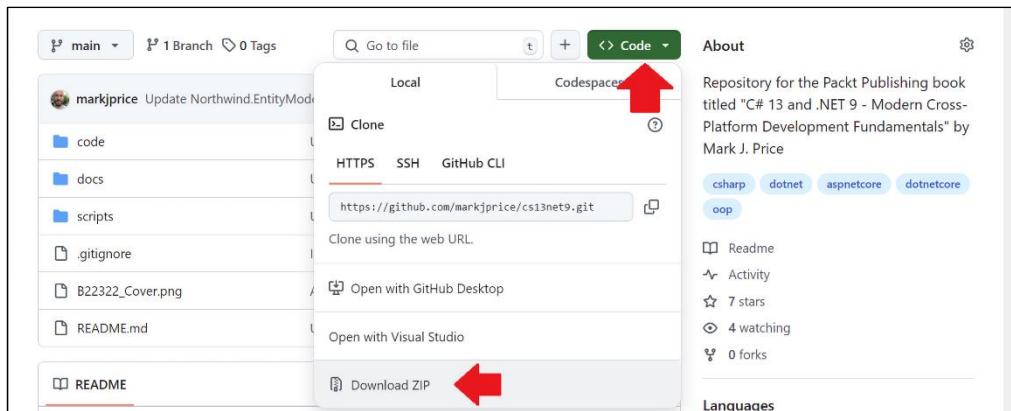


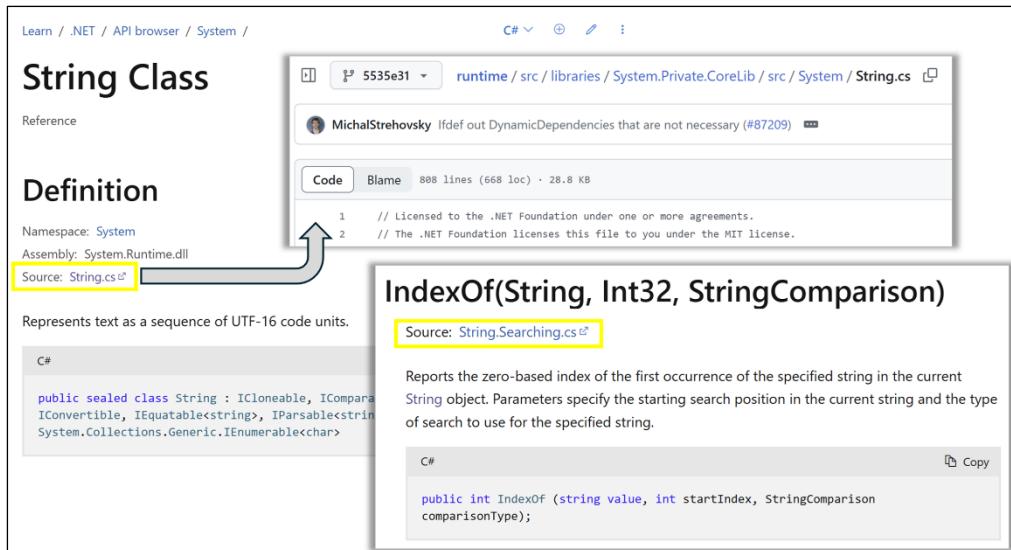
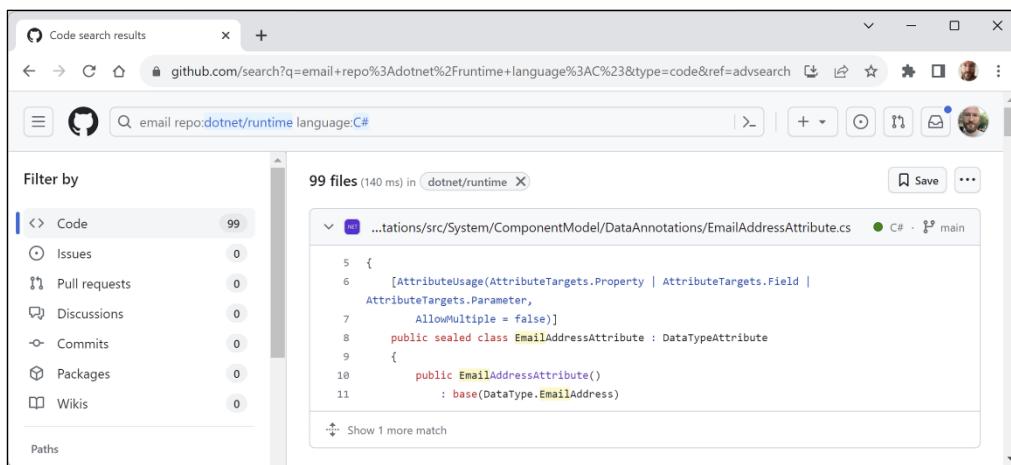
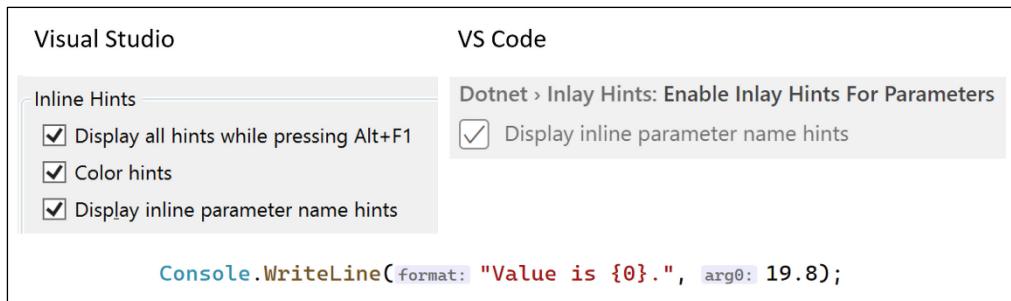
Chapter 1: Hello, C#! Welcome, .NET!

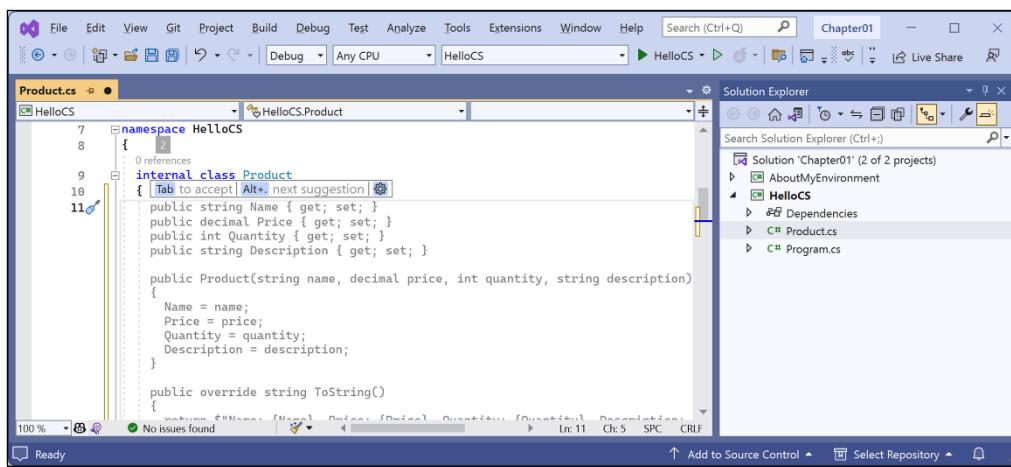
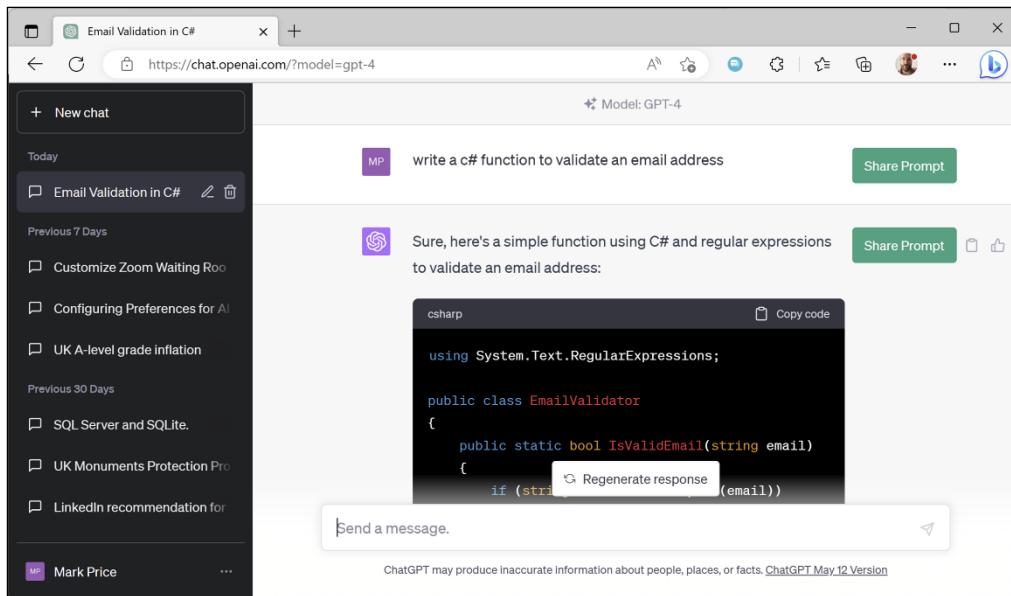




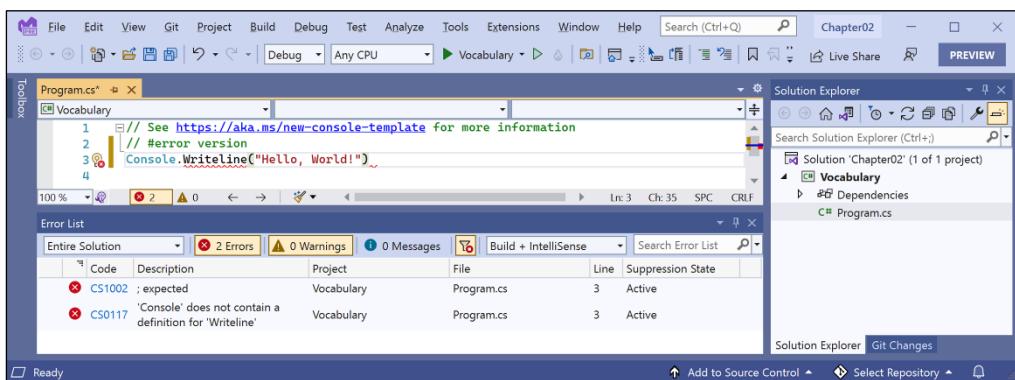
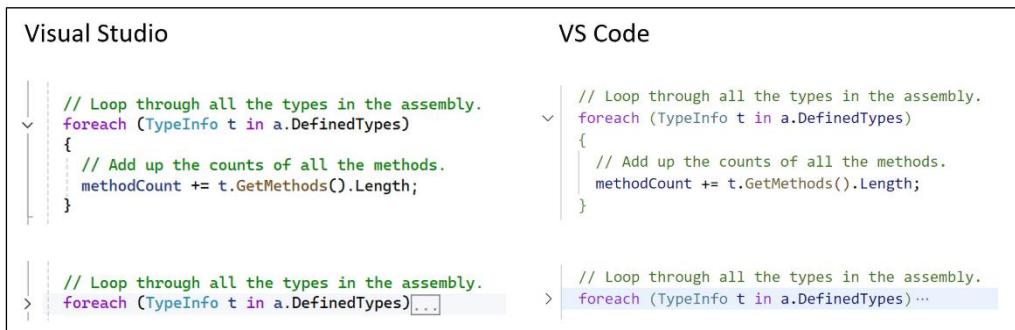
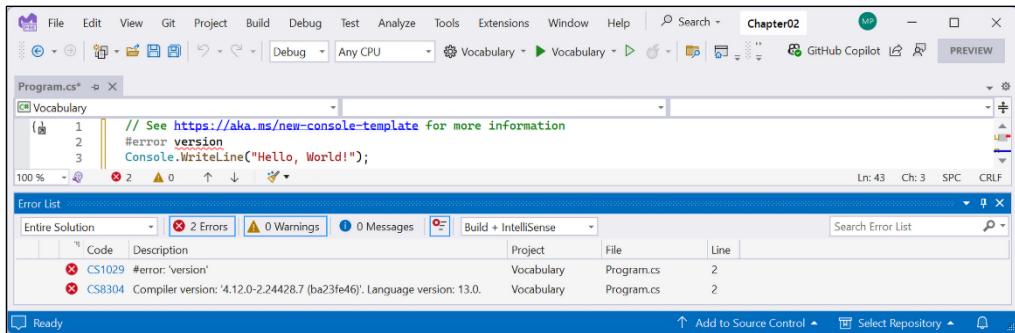








Chapter 2: Speaking C#,



128	64	32	16	8	4	2	1
0	0	0	0	1	0	1	0

128	64	32	16	8	4	2	1	.	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{16}$
0	0	0	0	1	1	0	0		1	1	0	0

```

Program.cs  DEBUG Any CPU Numbers
25 Console.WriteLine($"int uses {sizeof(int)} bytes and can store numbers in the range {int.MinValue:N0} to {int.MaxValue:N0}")
26 Console.WriteLine($"double uses {sizeof(double)} bytes and can store numbers in the range {double.MinValue:N0} to {double.MaxValue:N0}")
27 Console.WriteLine($"decimal uses {sizeof(decimal)} bytes and can store numbers in the range {decimal.MinValue:N0} to {decimal.MaxValue:N0}")

Select Microsoft Visual Studio Debug Console
int uses 4 bytes and can store numbers in the range -2,147,483,648 to 2,147,483,647.
double uses 8 bytes and can store numbers in the range -179,769,313,486,231,570,814,527,423,731,704,356,798,070,567,525,
844,996,598,917,476,883,157,260,780,028,538,760,589,558,632,766,878,171,540,458,953,514,382,464,234,321,326,889,464,182,
768,467,546,783,537,516,986,049,910,576,551,282,076,245,490,090,389,328,944,075,868,508,455,133,942,304,583,236,983,222,
948,165,805,599,332,123,348,274,797,826,204,144,723,168,738,177,180,919,299,881,250,404,026,184,124,858,368 to 179,769,3
13,486,231,570,814,527,423,731,704,356,798,070,567,525,844,996,598,917,476,803,157,260,780,028,538,760,589,558,632,766,8
78,171,540,458,953,514,382,464,234,321,326,889,464,182,768,467,546,703,537,516,986,049,910,576,551,282,076,245,490,090,3
89,328,944,075,868,508,455,133,942,304,583,236,903,222,948,165,808,559,332,123,348,274,797,826,204,144,723,168,738,177,1
80,919,299,881,250,404,026,184,124,858,368.

decimal uses 16 bytes and can store numbers in the range -79,228,162,514,264,337,593,543,950,335 to 79,228,162,514,264,3
37,593,543,950,335.

Ready

```

4	2	1	.	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{16}$	$\frac{1}{32}$	$\frac{1}{64}$	$\frac{1}{128}$	$\frac{1}{256}$	$\frac{1}{512}$	$\frac{1}{1024}$	$\frac{1}{2048}$
0	0	0		0	0	0	1	1	0	0	1	1	0	0

```

Program.cs  DEBUG Any CPU Variables
Person BirthDate
2
3 object height = 1.88; // storing a double in an object
4 object name = "Amir"; // storing a string in an object
5 Console.WriteLine($"{name} is {height} metres tall.");
6
7 int length1 = name.Length; // gives compile error!
8 int length2 = (string)name.Length;
9 Console.WriteLine($" CS1061: 'object' does not contain a definition for 'Length' and no accessible extension method 'Length' accepting a first argument of type 'object'
10 could be found (are you missing a using directive or an assembly reference?)"

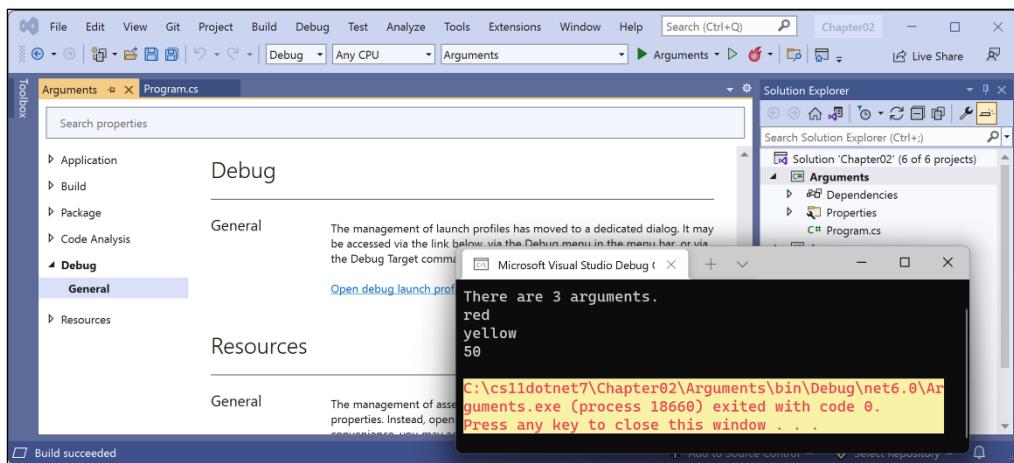
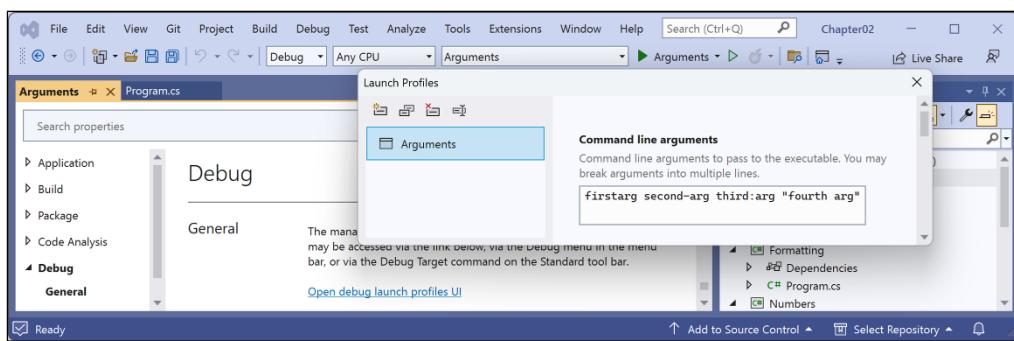
Item(s) Saved

```

A screenshot of Visual Studio showing the 'Formatting' tool window. The code editor displays the following C# code:

```
1 using static System.Console;
2
3 int numberOfApples = 12;
4 decimal pricePerApple = 0.35M;
5
6 Console.WriteLine(
7     format: "{0} apples costs {1:C}",
8     arg0: numberOfApples,
9     arg1: pricePerApple * numberOfApples);
10
```

The 'Formatting' tool window shows the current document selected. The Solution Explorer on the right shows a project named 'Chapter02' with files like 'Program.cs', 'Numbers', 'Variables', and their dependencies.



Program.cs — Chapter02 (Workspace)

```

    29     BackgroundColor = (ConsoleColor)Enum.Parse(
    30         ConsoleColor,
    31         enumType: typeof(ConsoleColor),
    32         value: args[1],
    33         ignoreCase: true);
    34     CursorSize = int.Parse(args[2]);

```

TERMINAL PROBLEMS 6 OUTPUT DEBUG CONSOLE 3: bash

```

Marks-MacBook-Pro-13:Arguments markjprices$ dotnet run red yellow 50
there are 3 arguments.
red
yellow
50
Unhandled exception. System.PlatformNotSupportedException: Operation is not supported on this platform.
   at System.ConsolePal.set_CursorSize(Int32 value)
   at System.Console.set_CursorSize(Int32 value)
   at Arguments.Program.Main(String[] args) in /Users/markjprice/Code/Chapter02/Arguments/Program.cs:line 36
Marks-MacBook-Pro-13:Arguments markjprices$ 

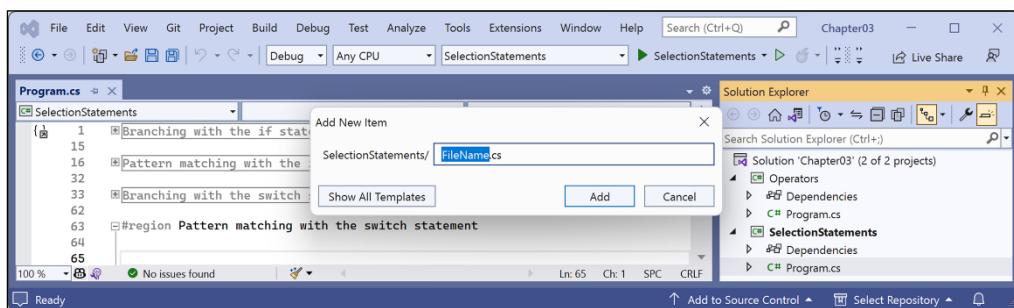
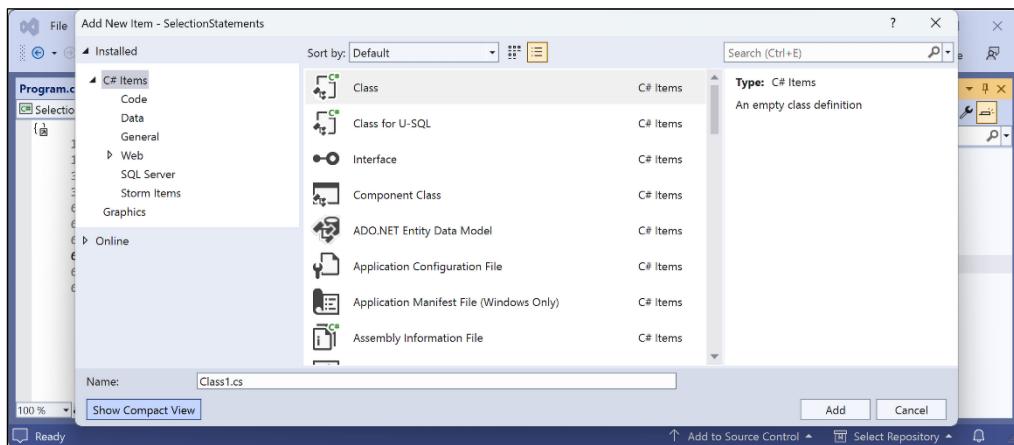
```

Ln 36, Col 1 Spaces: 2 UTF-8 with BOM CRLF C# ⚙️

Microsoft Visual Studio Debug Console

Type	Byte(s) of memory	Min	Max
sbyte	1	-128	127
byte	1	0	255
short	2	-32768	32767
ushort	2	0	65535
int	4	-2147483648	2147483647
uint	4	0	4294967295
long	8	-9223372036854775808	9223372036854775807
ulong	8	0	18446744073709551615
Int128	16	-170141183460469231731687303715884105728	170141183460469231731687303715884105727
UInt128	16	0	340282366920938463463374607431768211455
Half	2	-65500	65500
float	4	-3.4028235E+38	3.4028235E+38
double	8	-1.7976931348623157E+308	1.7976931348623157E+308
decimal	16	-79228162514264337593543950335	79228162514264337593543950335

Chapter 3: Controlling Flow, Converting Types, and Handling Exceptions



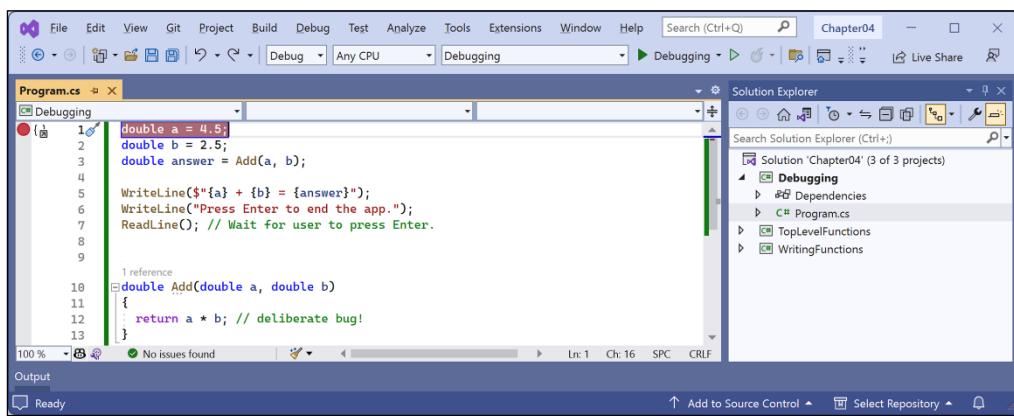
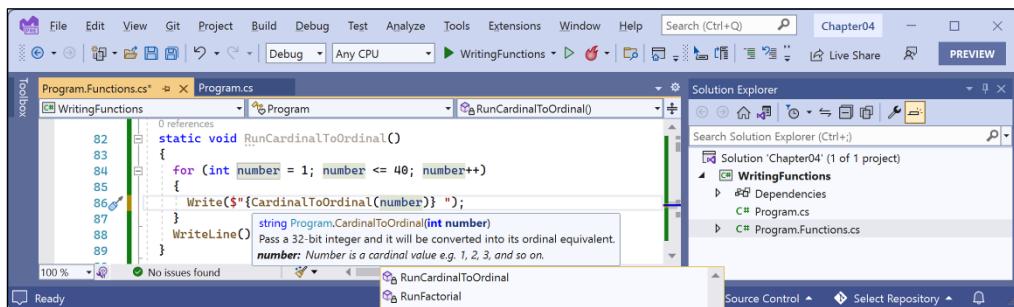
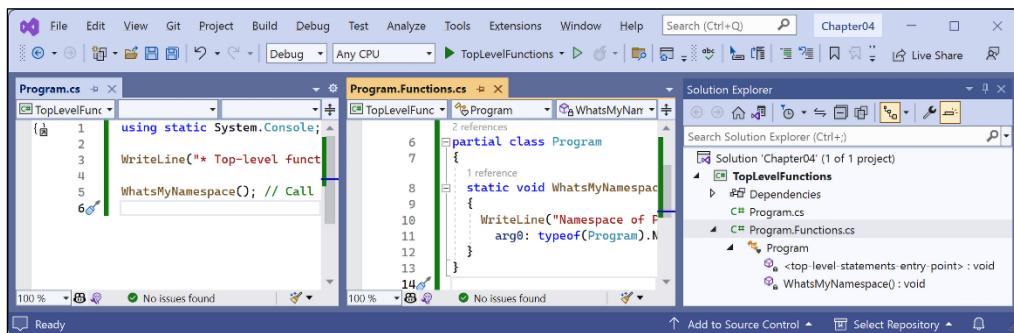
0	<table border="1"><tr><td>0</td><td>1</td><td>2</td></tr><tr><td>Alpha</td><td>Beta</td><td>Gamma</td></tr></table>	0	1	2	Alpha	Beta	Gamma		
0	1	2							
Alpha	Beta	Gamma							
1	<table border="1"><tr><td>0</td><td>1</td><td>2</td><td>3</td></tr><tr><td>Anne</td><td>Ben</td><td>Charlie</td><td>Doug</td></tr></table>	0	1	2	3	Anne	Ben	Charlie	Doug
0	1	2	3						
Anne	Ben	Charlie	Doug						
2	<table border="1"><tr><td>0</td><td>1</td></tr><tr><td>Aardvark</td><td>Bear</td></tr></table>	0	1	Aardvark	Bear				
0	1								
Aardvark	Bear								

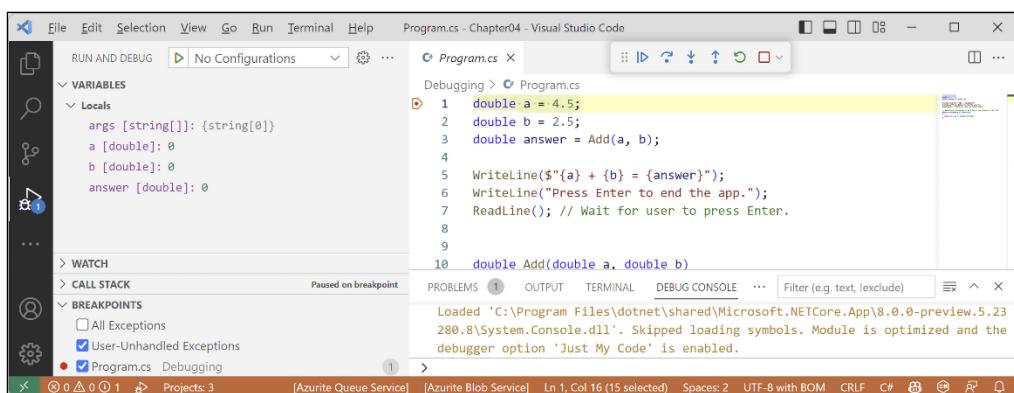
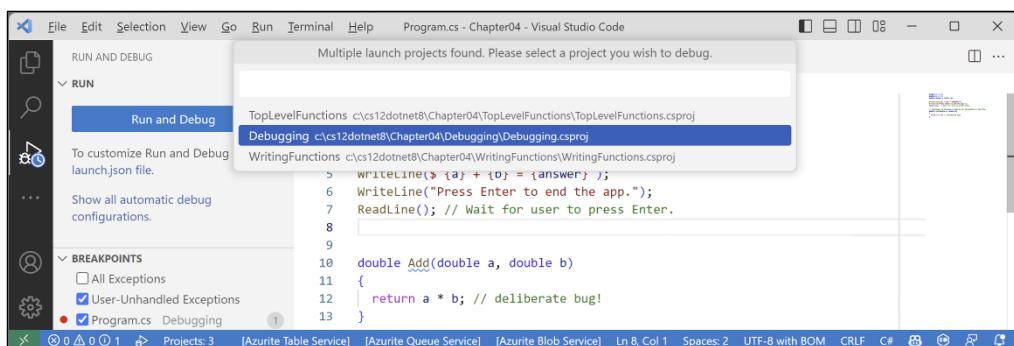
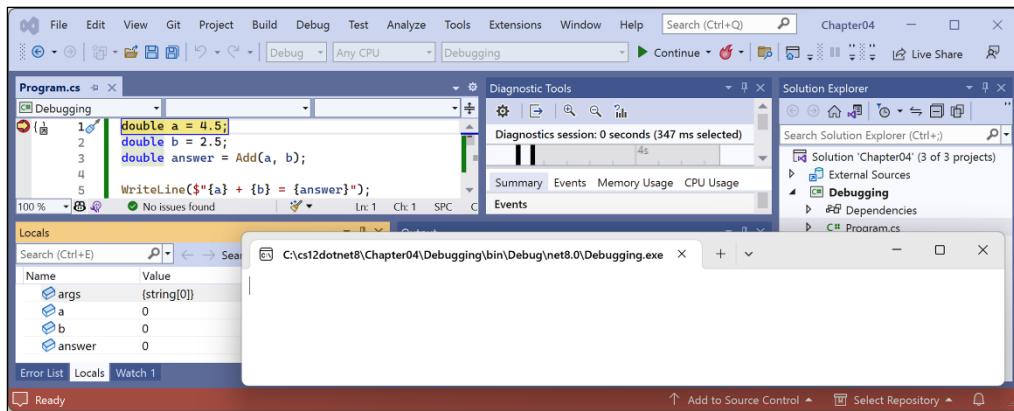


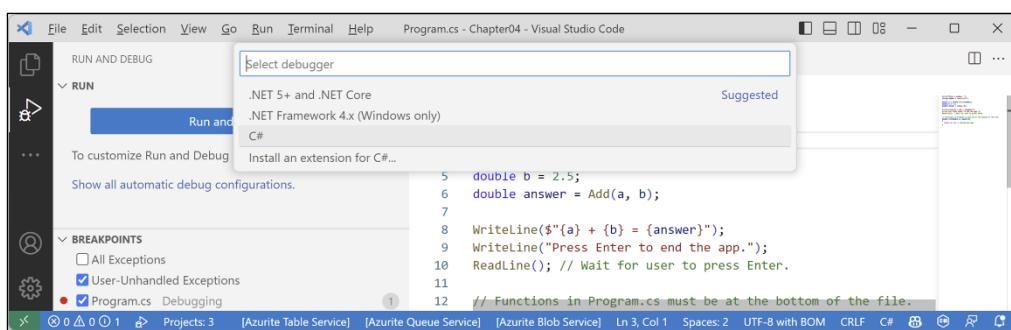
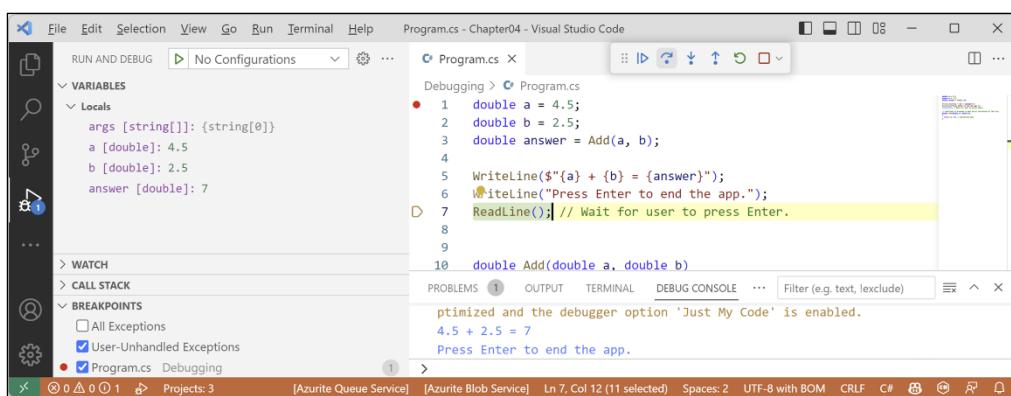
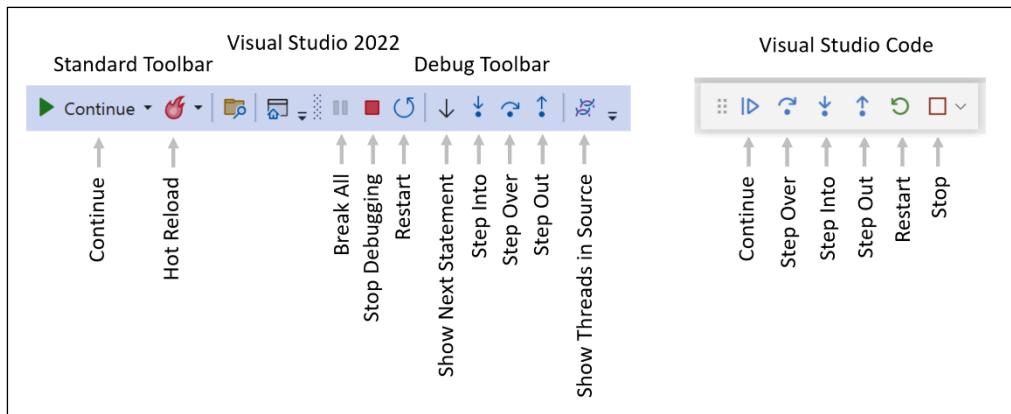
```
Microsoft Visual Studio Debug Console
```

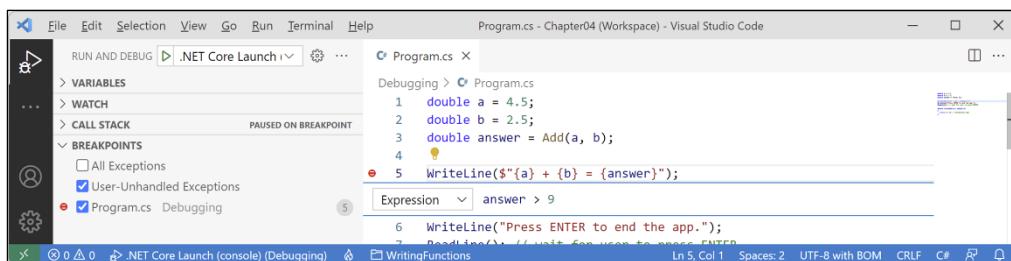
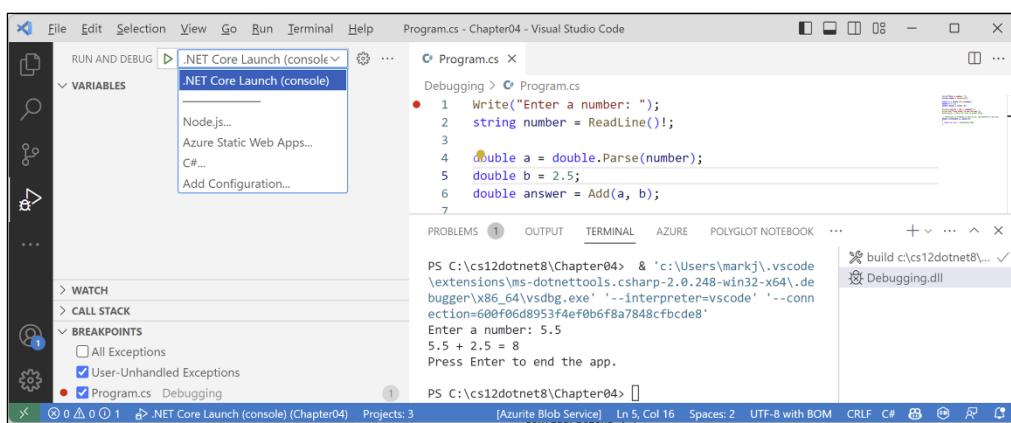
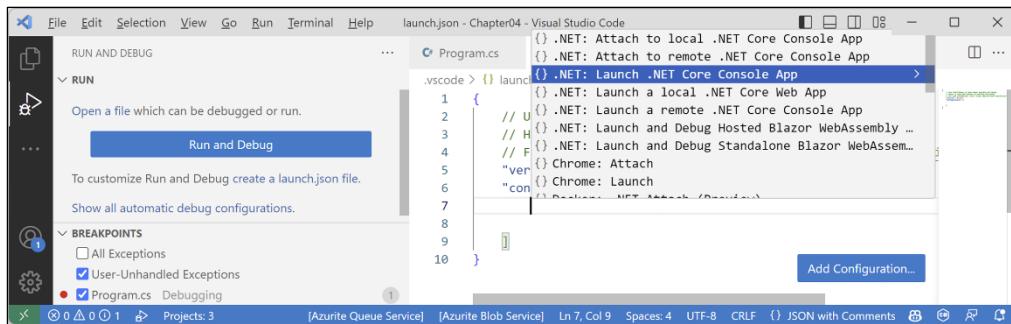
```
1, 2, Fizz, 4, Buzz, Fizz, 7, 8, Fizz, Buzz,  
11, Fizz, 13, 14, FizzBuzz, 16, 17, Fizz, 19, Buzz,  
Fizz, 22, 23, Fizz, Buzz, 26, Fizz, 28, 29, FizzBuzz,  
31, 32, Fizz, 34, Buzz, Fizz, 37, 38, Fizz, Buzz,  
41, Fizz, 43, 44, FizzBuzz, 46, 47, Fizz, 49, Buzz,  
Fizz, 52, 53, Fizz, Buzz, 56, Fizz, 58, 59, FizzBuzz,  
61, 62, Fizz, 64, Buzz, Fizz, 67, 68, Fizz, Buzz,  
71, Fizz, 73, 74, FizzBuzz, 76, 77, Fizz, 79, Buzz,  
Fizz, 82, 83, Fizz, Buzz, 86, Fizz, 88, 89, FizzBuzz,  
91, 92, Fizz, 94, Buzz, Fizz, 97, 98, Fizz, Buzz
```

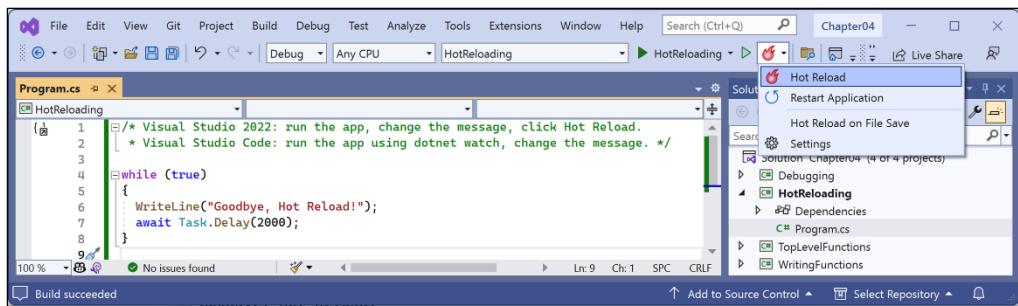
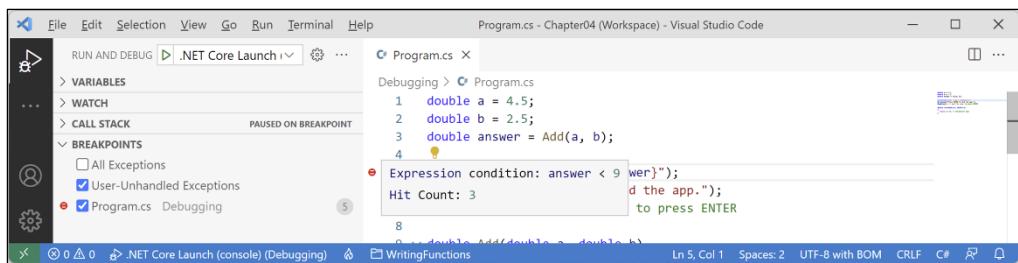
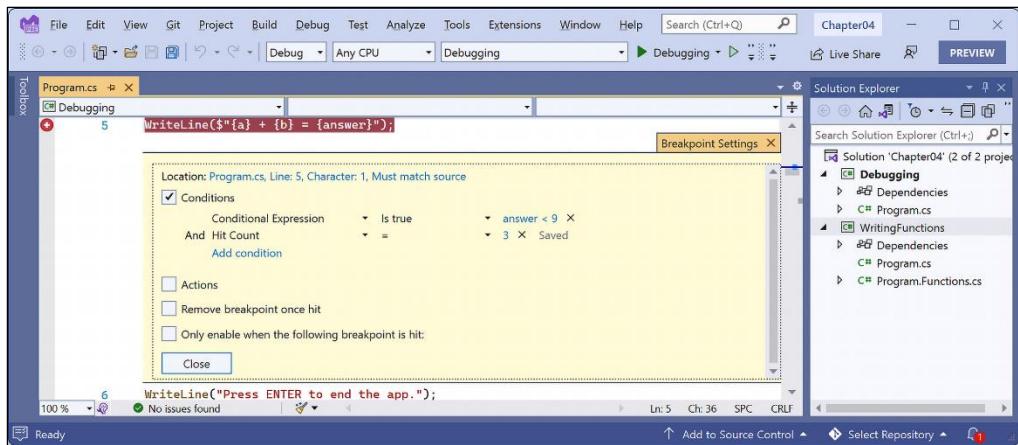
Chapter 4: Writing, Debugging, and Testing Functions

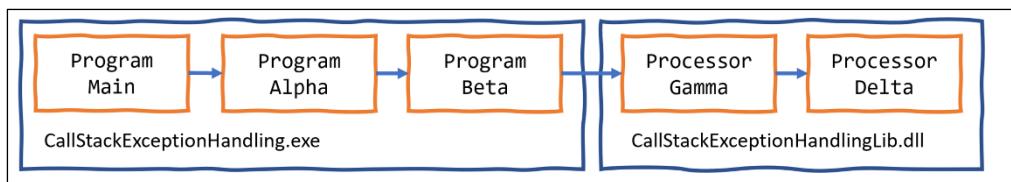
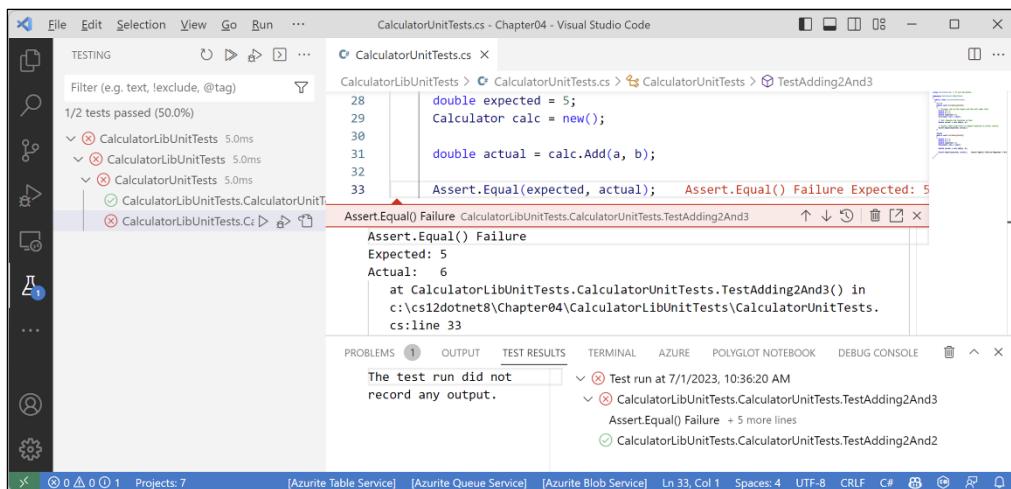
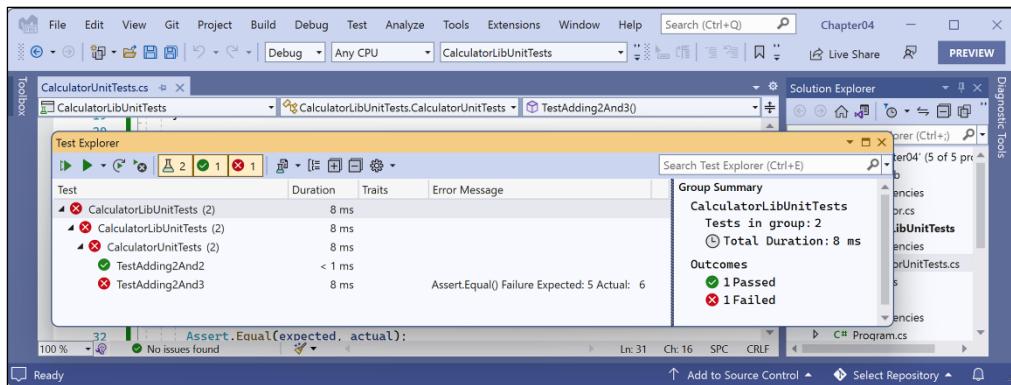




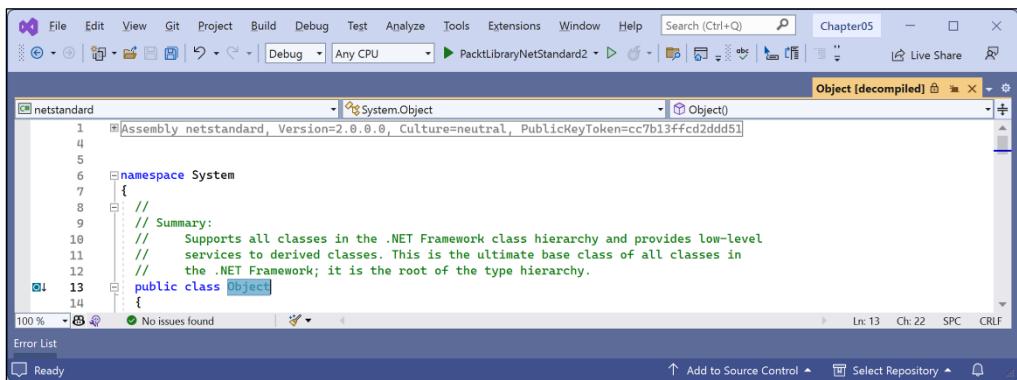






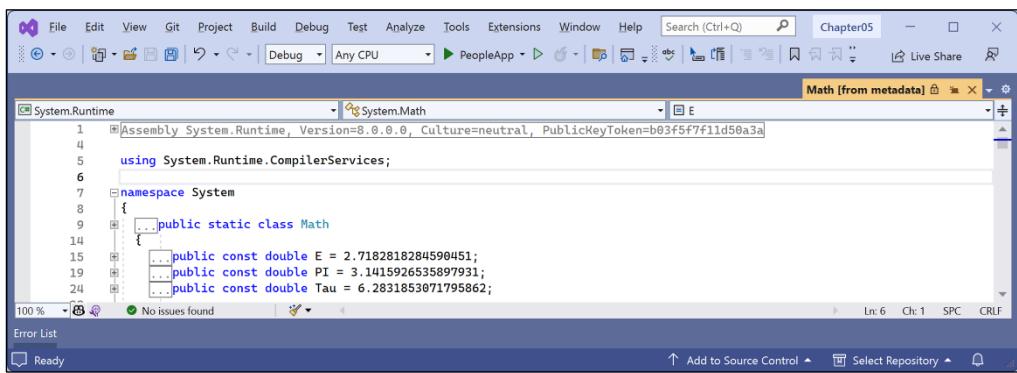


Chapter 5: Building Your Own Types with Object-Oriented Programming



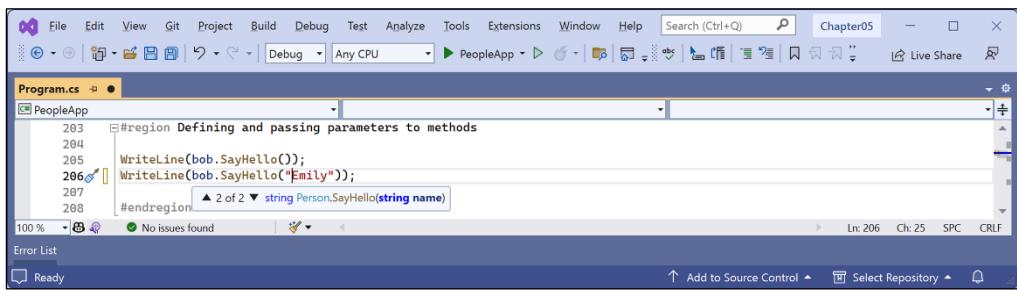
This screenshot shows the decompiled code for the `Object` class from the `System` namespace. The code is part of the `netstandard` assembly. The `Object` class is described as the ultimate base class of all classes in the .NET Framework, serving as the root of the type hierarchy. It contains a single method, `Finalize`, which is marked as protected.

```
1 // Assembly netstandard, Version=2.0.0.0, Culture=neutral, PublicKeyToken=c7b13ffcd2dd51
4
5
6 namespace System
7 {
8     // Summary:
9     //     Supports all classes in the .NET Framework class hierarchy and provides low-level
10    //     services to derived classes. This is the ultimate base class of all classes in
11    //     the .NET Framework; it is the root of the type hierarchy.
12
13     public class Object
14     {
15         // ...
16
17         [ReliabilityContract(Consistency.WillNotCorruptState, Cer.Critical)]
18         protected void Finalize()
19         {
20             // ...
21         }
22     }
23 }
```



This screenshot shows the decompiled code for the `Math` class from the `System` namespace. The code is part of the `System.Runtime` assembly. The `Math` class contains three public static constants: `E`, `PI`, and `Tau`.

```
1 // Assembly System.Runtime, Version=8.0.0.0, Culture=neutral, PublicKeyToken=b03f5f7f11d50a3a
4
5 using System.Runtime.CompilerServices;
6
7 namespace System
8 {
9     public static class Math
10 {
11     public const double E = 2.7182818284590451;
12     public const double PI = 3.1415926535897931;
13     public const double Tau = 6.2831853071795862;
14 }
15 }
```



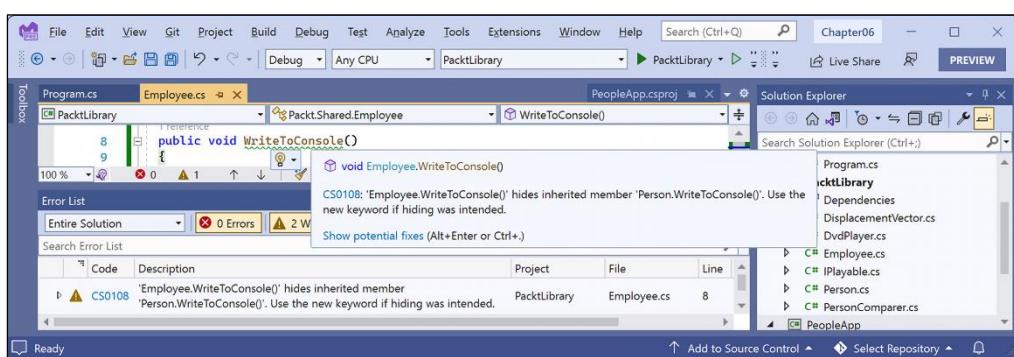
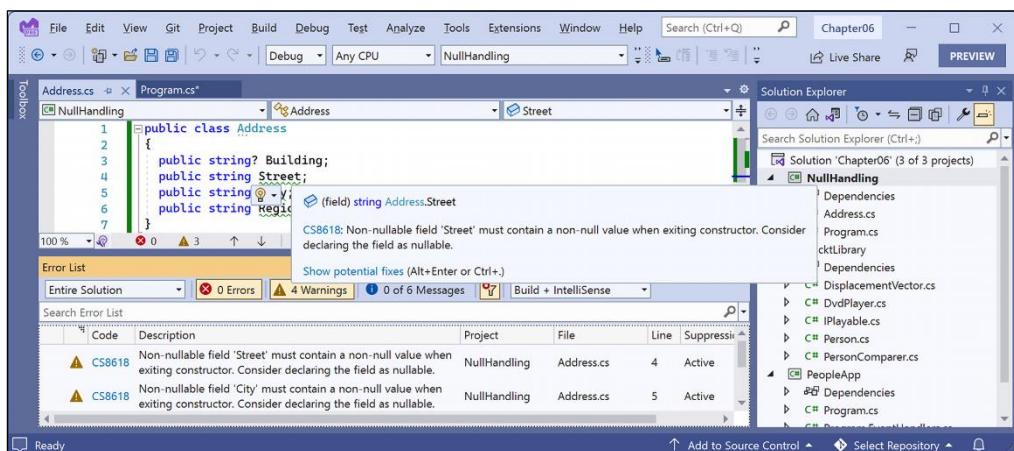
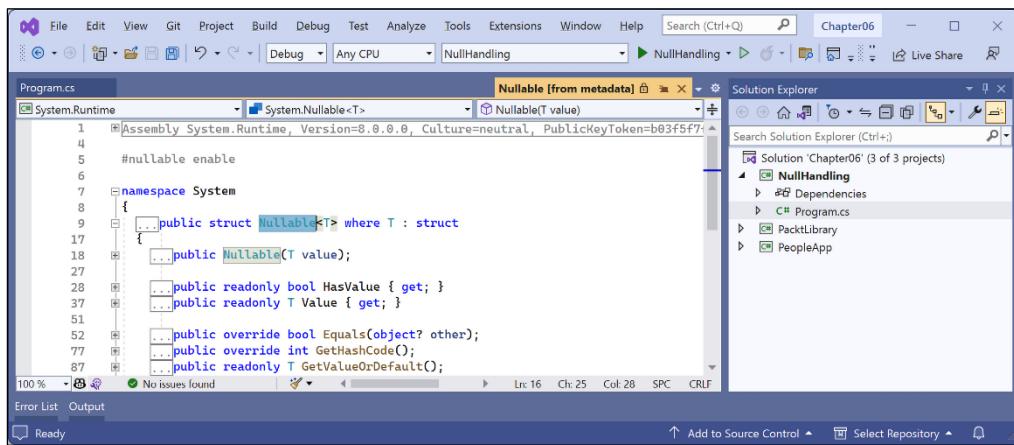
This screenshot shows the code for `Program.cs` in a `PeopleApp` project. The code defines a region named `Defining and passing parameters to methods`. Inside this region, there is a `#endregion` directive followed by a call to the `SayHello` method of the `Person` class, passing the string `"Emily"` as a parameter.

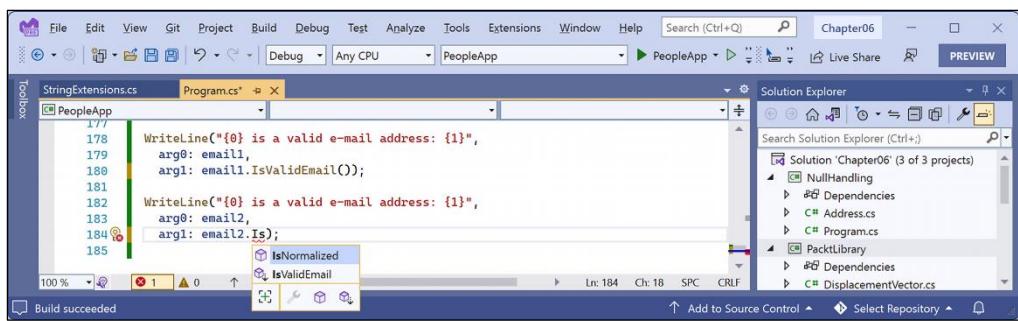
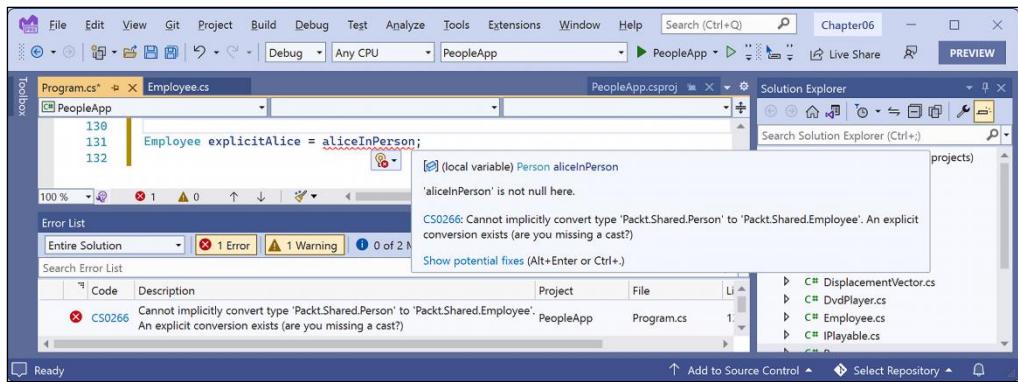
```
203 #region Defining and passing parameters to methods
204
205     WriteLine(bob.SayHello());
206     WriteLine(bob.SayHello("Emily"));
207
208 #endregion
```

```
Program.cs
209
210     #region Passing optional parameters
211
212     WriteLine(bob.OptionalParameters());
213
214     WriteLine("www.optionalparameters.cs");
215 }
```

The screenshot shows the Microsoft Visual Studio IDE interface. The title bar says "Chapter05". The menu bar includes File, Edit, View, Git, Project, Build, Debug, Test, Analyze, Tools, Extensions, Window, Help. The toolbar has various icons for file operations like Open, Save, and Build. The status bar at the bottom shows "Ln: 212 Ch: 34 SPC CRLF".

Chapter 6: Implementing Interfaces and Inheriting Classes



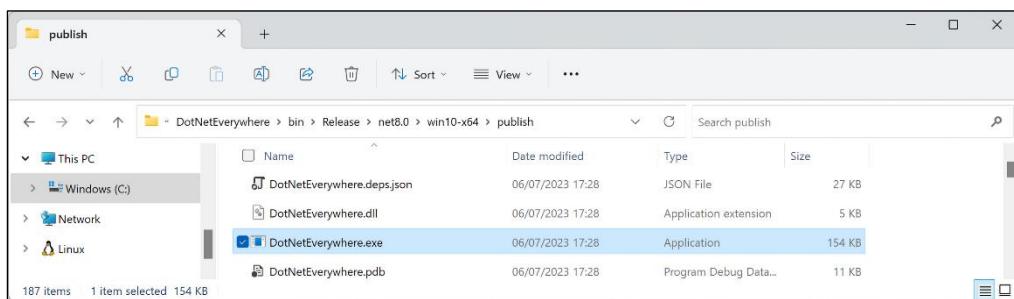
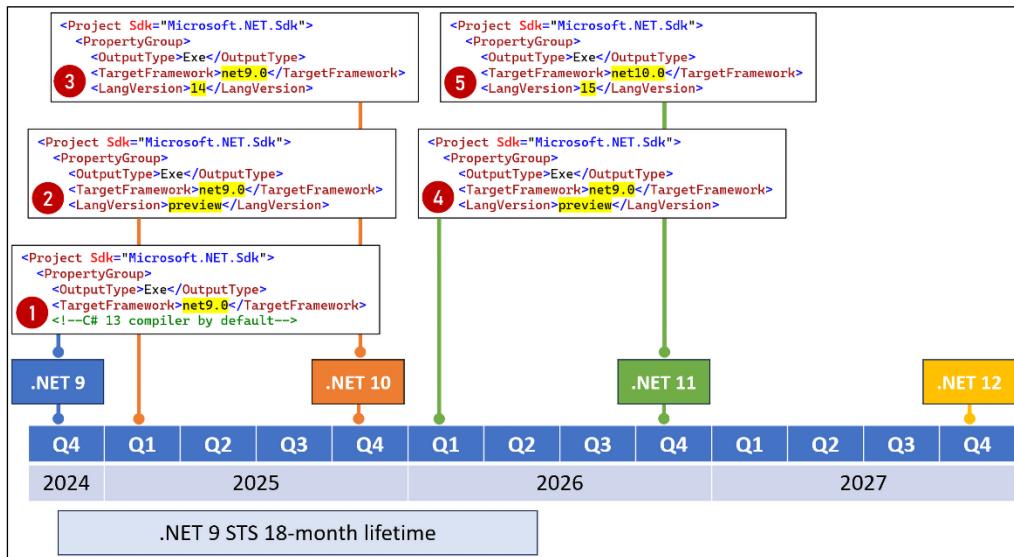


Chapter 7: Implementing Interfaces and Inheriting Classes

A screenshot of the Visual Studio IDE. The title bar says "Chapter07". The main window shows a C# file named "Program.cs" with the following code:

```
System.Xml.Linq.XDocument
    #region Assembly System.Xml.Linq, Version=9.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089
    // C:\Program Files\dotnet\packs\Microsoft.NETCore.App.Ref\9.0.0
    #endregion
    #nullable enable
    using ...
    namespace System.Xml.Linq
    {
        public class XDocument : XContainer
        {
            public XDocument();
        }
    }
```

The Solution Explorer shows a single project named "AssembliesAndNamespaces" containing a file "Program.cs".

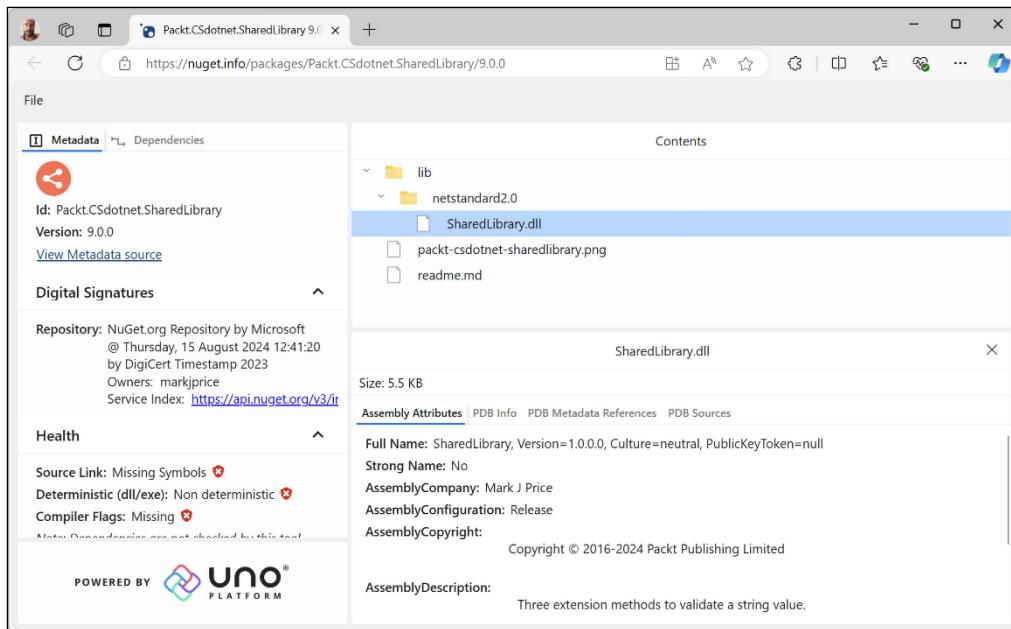


The screenshot shows the NuGet Gallery interface for the package `Packt.CSdotnet.SharedLibrary`. The URL in the address bar is <https://www.nuget.org/packages/Packt.CSdotnet.SharedLibrary/9.0.0>. The page displays the following information:

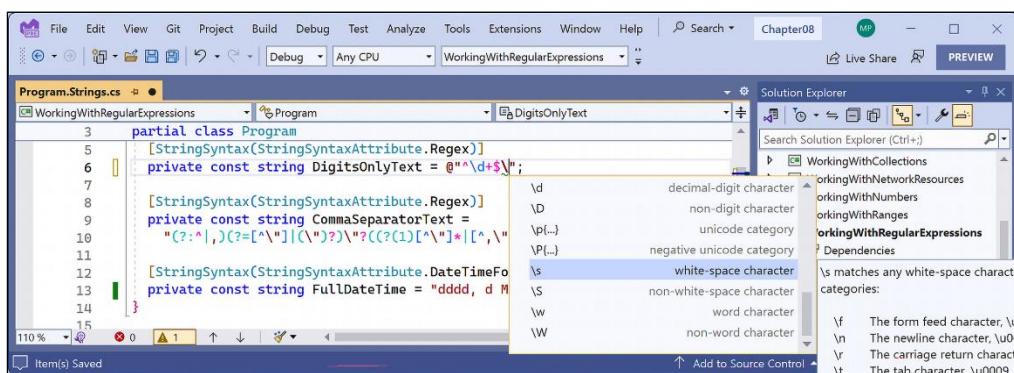
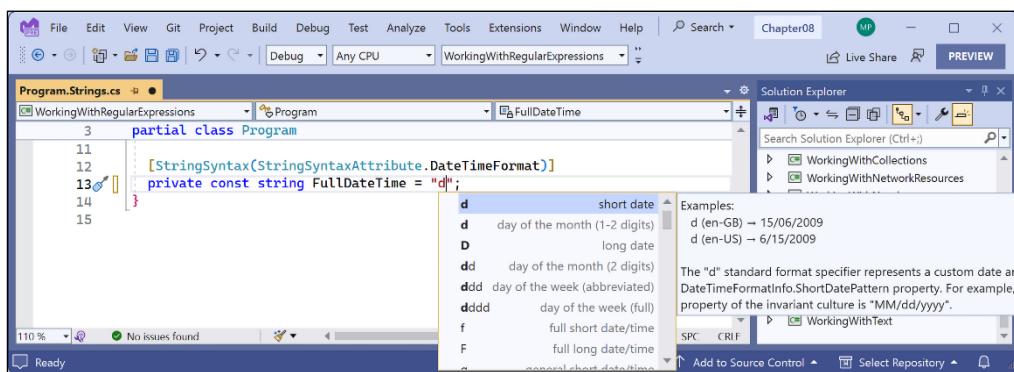
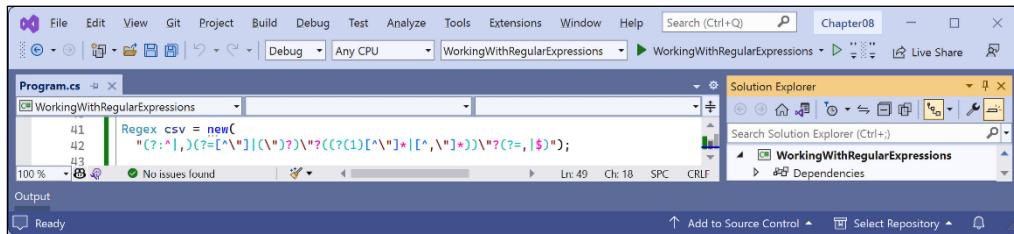
- Packages** tab selected.
- Search for packages...** input field.
- Message:** You successfully uploaded Packt.CSdotnet.SharedLibrary 9.0.0.
- Package Details:** `Packt.CSdotnet.SharedLibrary`, version 9.0.0, .NET Standard 2.0.
- Downloads:** Total 4.5K, Current version 0, Per day average 3.
- About:** Last updated a few seconds ago, Project website, MS-PL license.
- Manage:** Manage package, Contact support.
- Table:** Shows the package's status and validation progress.

The screenshot shows the NuGet Gallery interface for the package `Packt.CSdotnet.SharedLibrary`, specifically the `supportedframeworks` page. The URL in the address bar is <https://www.nuget.org/packages/Packt.CSdotnet.SharedLibrary/9.0.0#supportedframeworks-b...>. The page displays the following information:

- Frameworks:** Selected tab.
- Product:** Versions table.
- .NET:** Versions: net5.0, net5.0-windows, net6.0, net6.0-android, net6.0-ios, net6.0-maccatalyst, net6.0-macos, net6.0-tvos, net6.0-windows, net7.0, net7.0-android, net7.0-ios, net7.0-maccatalyst, net7.0-macos, net7.0-tvos, net7.0-windows, net8.0, net8.0-android, net8.0-browser, net8.0-ios, net8.0-maccatalyst, net8.0-macos, net8.0-tvos, net8.0-windows.
- .NET Core:** Versions: netcoreapp2.0, netcoreapp2.1, netcoreapp2.2, netcoreapp3.0, netcoreapp3.1.
- .NET Standard:** Versions: netstandard2.0, netstandard2.1.
- .NET Framework:** Versions: net461, net462, net463, net47, net471, net472, net48, net481.
- Manage:** Manage package, Contact support.
- Owners:** markjprice.
- Tags:** string, extensions, packt, csharp, dotnet.
- Copyright:** Copyright © 2016-2024 Packt Publishing Limited.



Chapter 8: Working with Common .NET Types



```
using System.Text.RegularExpressions; // To use [GeneratedRegex].  
partial class Program  
{  
    [GeneratedRegex(DigitsOnlyText, RegexOptions.IgnoreCase)]  
    private static partial Regex DigitsOnly { get; }  
    [GeneratedRegex(CommaSeparatorText, RegexOptions.IgnoreCase)]  
    private static partial Regex CommaSepa
```

Pattern:
^\d+\$

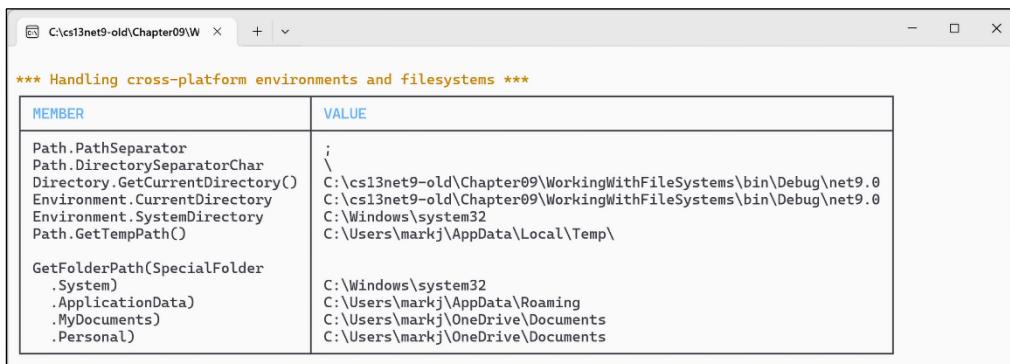
Options:
RegexOptions.IgnoreCase

Explanation:
Match if at the beginning of the string.
Match a Unicode digit atomically at least once.
Match if at the end of the string or if before an ending newline.

```
This file was generated by 'System.Text.RegularExpressions.Generator.RegexGenerator' at 16/09/2024 16:37:23 and cannot be edited. [Rerun generator]  
partial class Program  
{  
    /// o Match if at the beginning of the string.<br/>  
    /// o Match a Unicode digit atomically at least once.<br/>  
    /// o Match if at the end of the string or if before an ending newline.<br/>  
    /// </code>  
    /// </remarks>  
    [global::System.CodeDom.Compiler.GeneratedCodeAttribute("System.Text.RegularExpressions.Generator", "9.0.10.43107")]  
    private static partial global::System.Text.RegularExpressions.Regex DigitsOnly => global::System.Text.RegularExpressions
```

```
ReadOnlySpan<char> text = "12+23+456".AsSpan();  
int sum = 0;  
foreach (Range r in text.Split('+'))  
{  
    sum += int.Parse(text[r]);  
} ↓ 12ms elapsed ↵ r {0..2} ←  
WriteLine($"Sum using Split: {sum}");
```

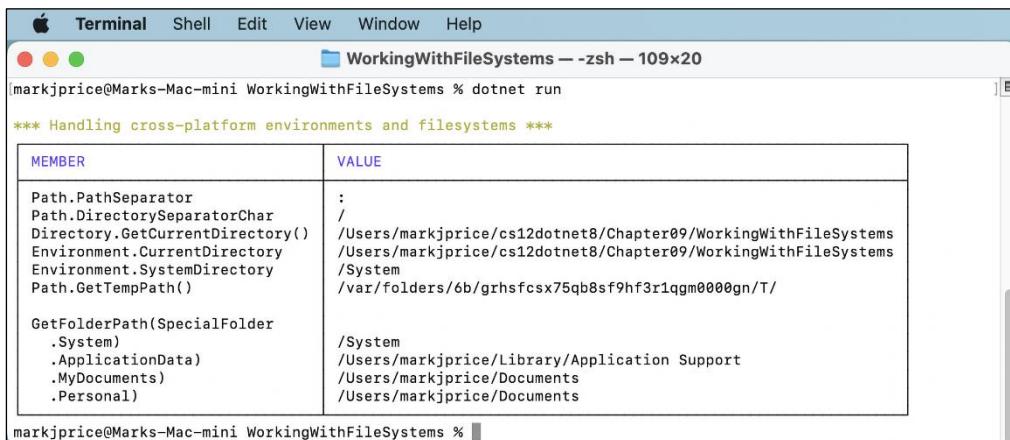
Chapter 9: Working with Files, Streams, and Serialization



```
C:\cs13net9-old\Chapter09\W + ~
```

*** Handling cross-platform environments and filesystems ***

MEMBER	VALUE
Path.PathSeparator Path.DirectorySeparatorChar Directory.GetCurrentDirectory() Environment.CurrentDirectory Environment.SystemDirectory Path.GetTempPath()	 ;\br/> C:\cs13net9-old\Chapter09\WorkingWithFileSystems\bin\Debug\net9.0 C:\cs13net9-old\Chapter09\WorkingWithFileSystems\bin\Debug\net9.0 C:\Windows\system32 C:\Users\markj\AppData\Local\Temp\
GetFolderPath(SpecialFolder .System) .ApplicationData .MyDocuments .Personal)	 C:\Windows\system32 C:\Users\markj\AppData\Roaming C:\Users\markj\OneDrive\Documents C:\Users\markj\OneDrive\Documents



```
Terminal Shell Edit View Window Help
```

WorkingWithFileSystems -- zsh -- 109x20

```
[markjprice@Marks-Mac-mini WorkingWithFileSystems % dotnet run
```

*** Handling cross-platform environments and filesystems ***

MEMBER	VALUE
Path.PathSeparator Path.DirectorySeparatorChar Directory.GetCurrentDirectory() Environment.CurrentDirectory Environment.SystemDirectory Path.GetTempPath()	 : / /Users/markjprice/cs12dotnet8/Chapter09/WorkingWithFileSystems /Users/markjprice/cs12dotnet8/Chapter09/WorkingWithFileSystems /System /var/folders/6b/grhsfcsx75qb8sf9hf3r1qgm000gn/T/
GetFolderPath(SpecialFolder .System) .ApplicationData .MyDocuments .Personal)	 /System /Users/markjprice/Library/Application Support /Users/markjprice/Documents /Users/markjprice/Documents

Microsoft Visual Studio Debug Console

```
*** Managing drives ***
NAME      TYPE   FORMAT     SIZE (BYTES)    FREE SPACE
C:\       Fixed  NTFS       510,759,268,352 148,998,021,120
```

WorkingWithFileSystems — zsh — 101x16

```
*** Managing drives ***
NAME          TYPE   FORMAT     SIZE (BYTES)    FREE SPACE
/             Fixed  apfs       494,384,795,648 226,914,848,768
/dev          Ram    devfs      206,848           0
/System/Volumes/VM Fixed  apfs       494,384,795,648 226,914,848,768
/System/Volumes/Preboot Fixed  apfs       494,384,795,648 226,914,848,768
/System/Volumes/Update Fixed  apfs       494,384,795,648 226,914,848,768
/System/Volumes/xarts Fixed  apfs       524,288,000      506,101,760
/System/Volumes/iSCSPreboot Fixed  apfs       524,288,000      506,101,760
/System/Volumes/Hardware Fixed  apfs       524,288,000      506,101,760
/System/Volumes/Data  Fixed  apfs       494,384,795,648 226,914,848,768
/System/Volumes/Data/home Network autoofs   0           0
/Volumes/LaCie   Fixed  hfs        4,000,443,056,128 875,921,227,776
```

WriteLine("hello");

```
StreamWriter → GZipStream → CryptoStream → FileStream → "G7x"
```

Thread

James Newton-King @JamesNK

Negative 2 billion downloads in NuGet Package Explorer 😊

cc @NuGetPE

Select Package

Newtonsoft.Json by James Newton-King - 2.1G downloads

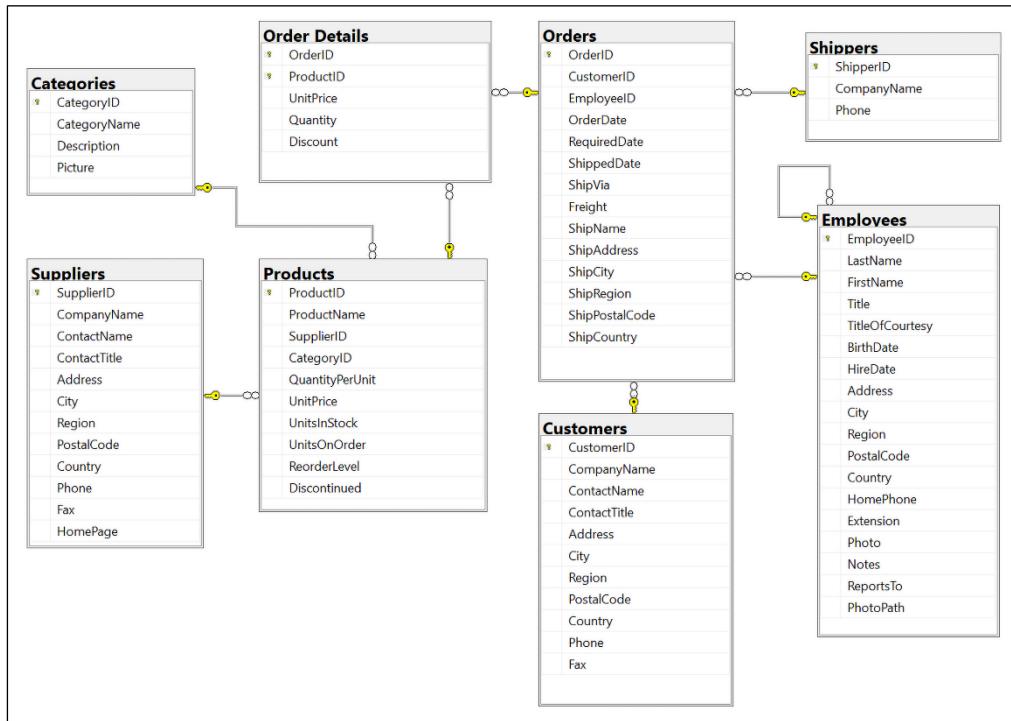
Newtonsoft.Json by James Newton-King - 2.1G downloads

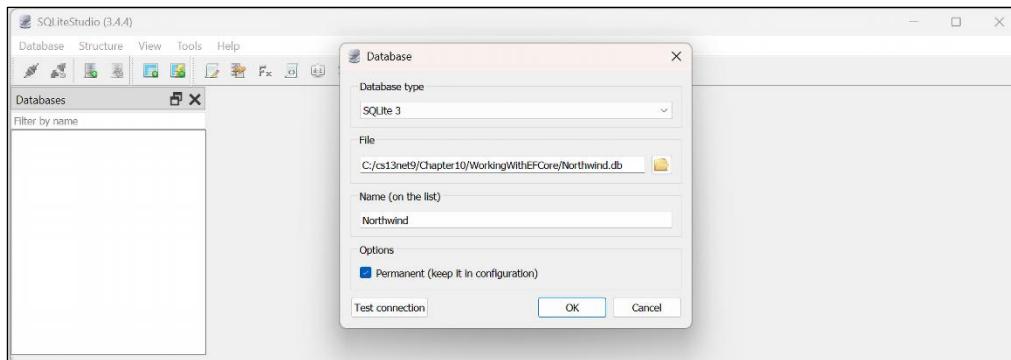
JamesNK commented on 29 Oct 2018

@Thorium Json.NET isn't going away. You aren't losing anything. This is another option for simple and high performance scenarios.

19

Chapter 10: Working with Data Using Entity Framework Core





SQLiteStudio (3.4.4) - [Products (Northwind)]

Database Structure View Tools Help

Databases

Tables (10)

Northwind

Table name: Products

Structure Data Constraints Indexes Triggers DDL

	Name	Data type	Primary Key	Foreign Key	Unique	Check	Not NULL	Collate	Generated	Default value
1	ProductId	INTEGER								NULL
2	ProductName	nvarchar(40)								NULL
3	SupplierId	"int"								NULL
4	CategoryId	"int"								NULL

Type Name Details

1 FOREIGN KEY FK_Products_Categories (CategoryId) REFERENCES Categories (CategoryId)

2 FOREIGN KEY FK_Products_Suppliers (SupplierId) REFERENCES Suppliers (SupplierId)

Products (Northwind)

SQLiteStudio (3.4.4) - [Products (Northwind)]

Database Structure View Tools Help

Databases

Tables (10)

Northwind

Product

Structure Data Constraints Indexes Triggers DDL

Grid view Form view

ProductId	ProductName	SupplierId	CategoryId	QuantityPerUnit	UnitPrice	UnitsInStock	UnitsOnOrder	ReorderLevel	Discontinued
1	Chai	1	1	10 boxes x 20 bags	18	39	0	10	
2	Chang	1	1	24 - 12 oz bottles	19	17	40	25	
3	Aniseed Syrup	1	2	12 - 550 ml bottles	10	13	70	25	
4	Chef Anton's Cajun Seasoning	2	2	48 - 6 oz jars	22	53	0	0	

Total rows loaded: 77

Products (Northwind)

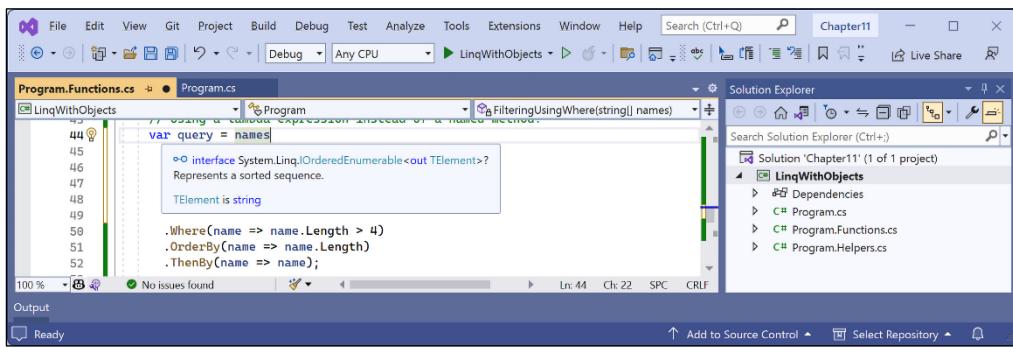
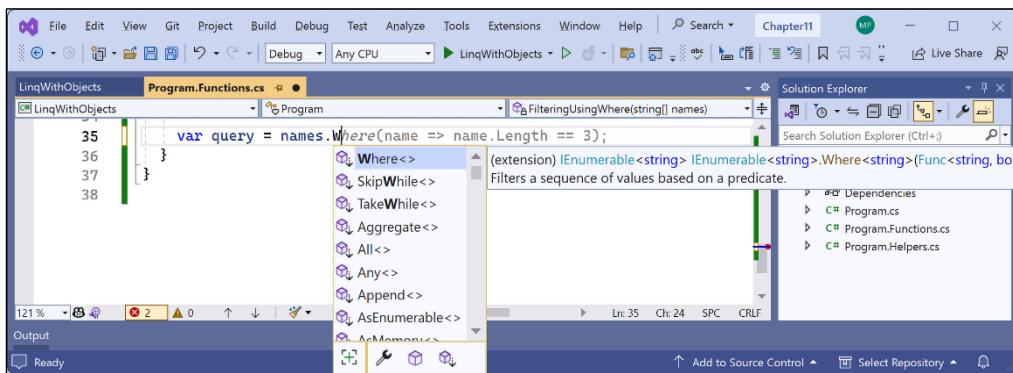
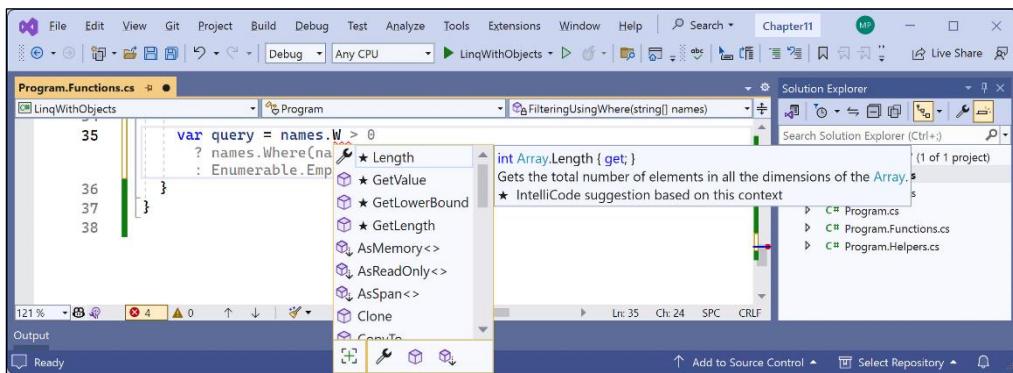
The screenshot shows the Microsoft Visual Studio IDE interface. The main window displays the code for `NorthwindDb.cs` under the project `WorkingWithEFCore`. The code is as follows:

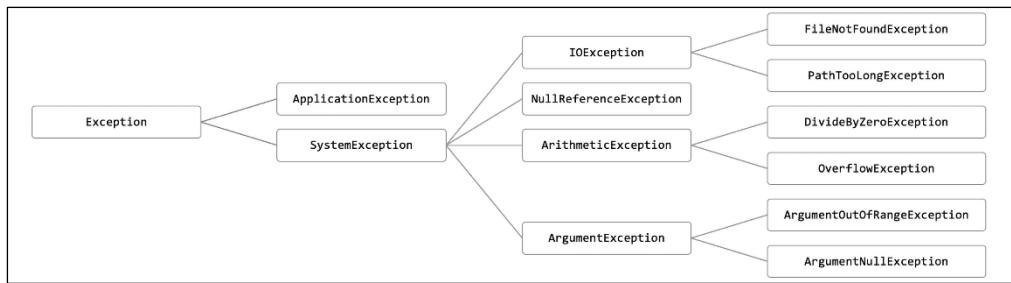
```
public class NorthwindDb : DbContext
{
    protected override void OnConfiguring(
        DbContextOptionsBuilder optionsBuilder)
    {
        optionsBuilder.UseSqlite("ConnectionString");
        optionsBuilder.LogTo(WriteLine) // This is the Console method.
        #if DEBUG
            .EnableSensitiveDataLogging() // Include SQL parameters.
            .EnableDetailedErrors()
        #endif
    }
}
```

The `Configuration Manager` dropdown at the top shows `Release` selected. The `Solution Explorer` pane on the right lists the project structure:

- `WorkingWithEFCore`
 - `Dependencies`
 - `AutoGenModels`
 - `Northwind.db`
 - `Northwind4SQLite.sql`
 - `NorthwindDb.cs`
 - `Program.cs`
 - `Program.Helpers.cs`
 - `Program.Modifications.cs`

Chapter 11: Querying and Manipulating Data Using LINQ





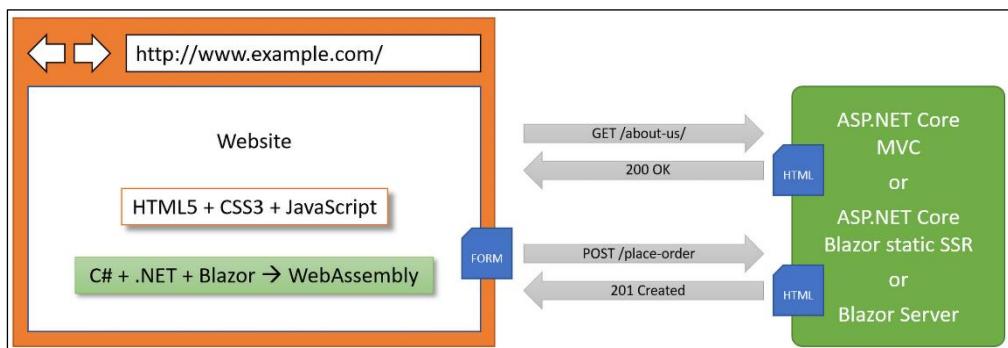
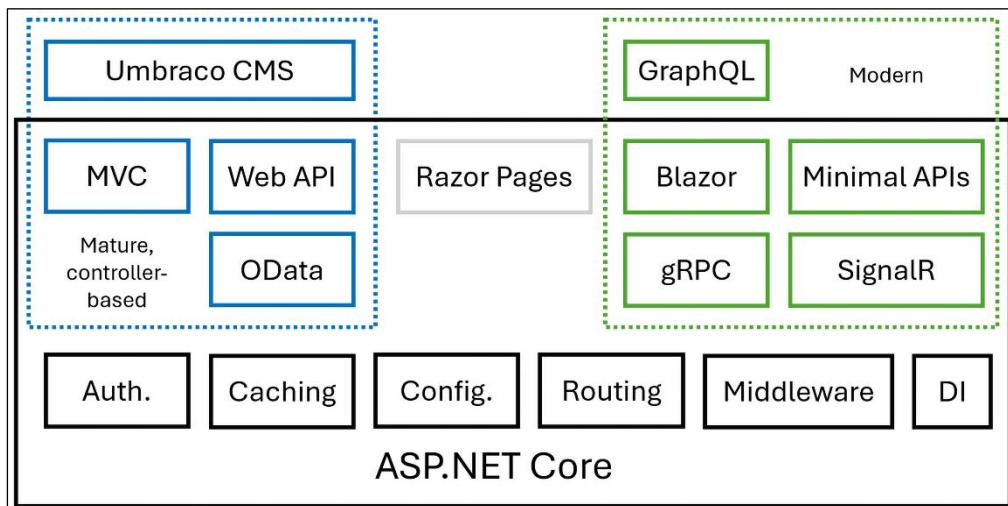
The screenshot shows the Visual Studio IDE interface. The top menu bar includes File, Edit, View, Git, Project, Build, Debug, Test, Analyze, Tools, Extensions, Window, Help, and a search bar. The toolbar below has icons for Undo, Redo, Cut, Copy, Paste, Find, Replace, and others. The main window contains the 'Program.cs' file with the following code:

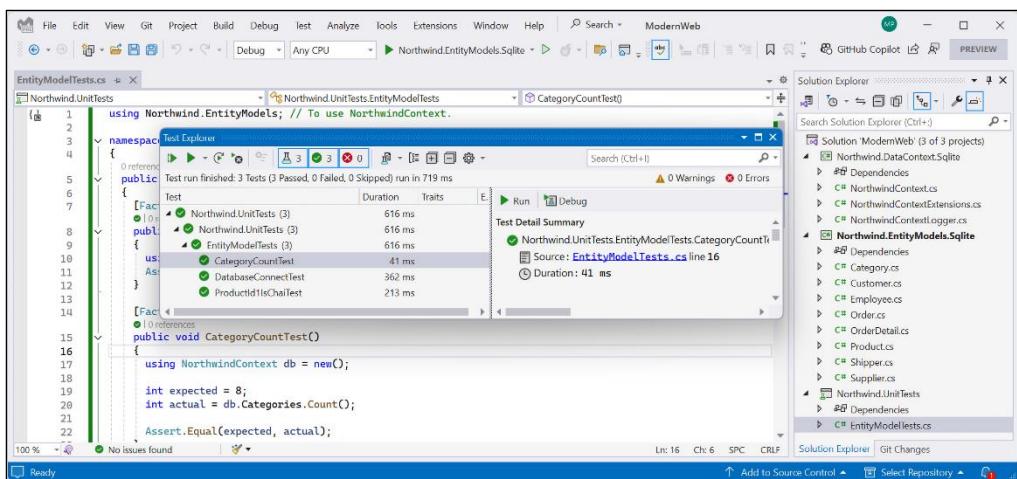
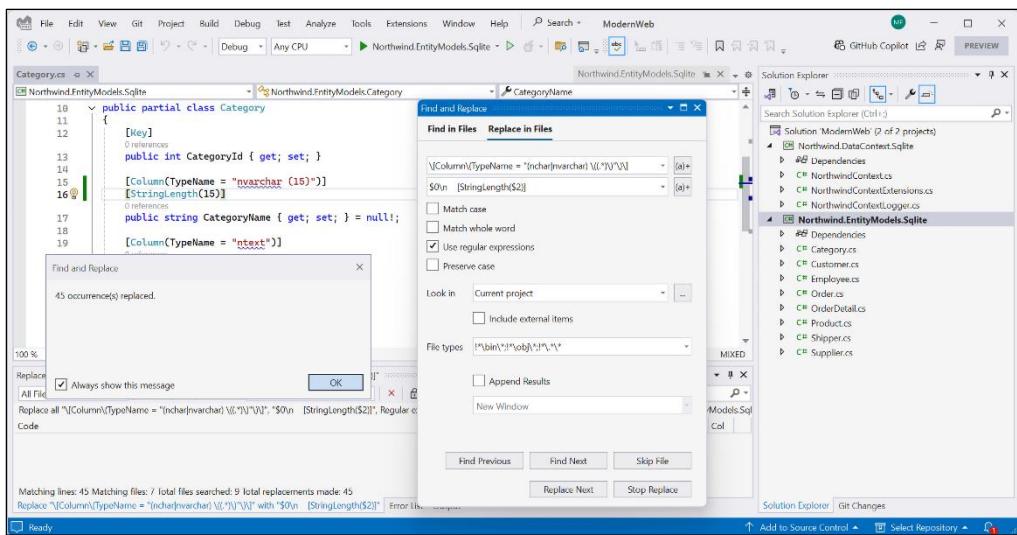
```

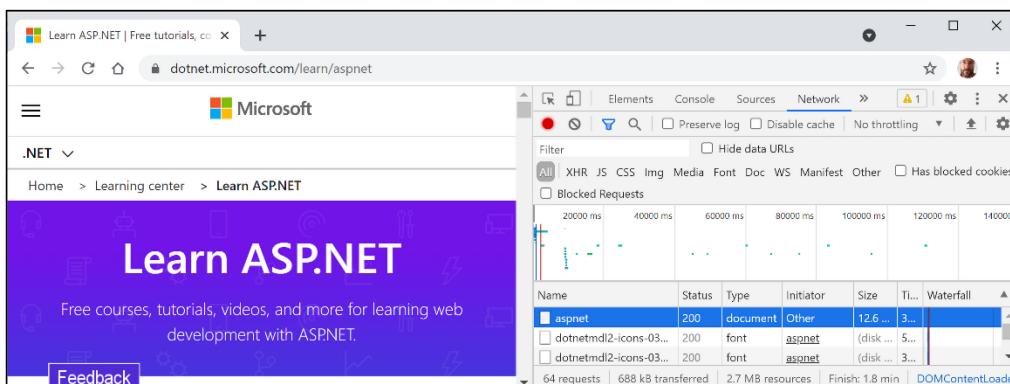
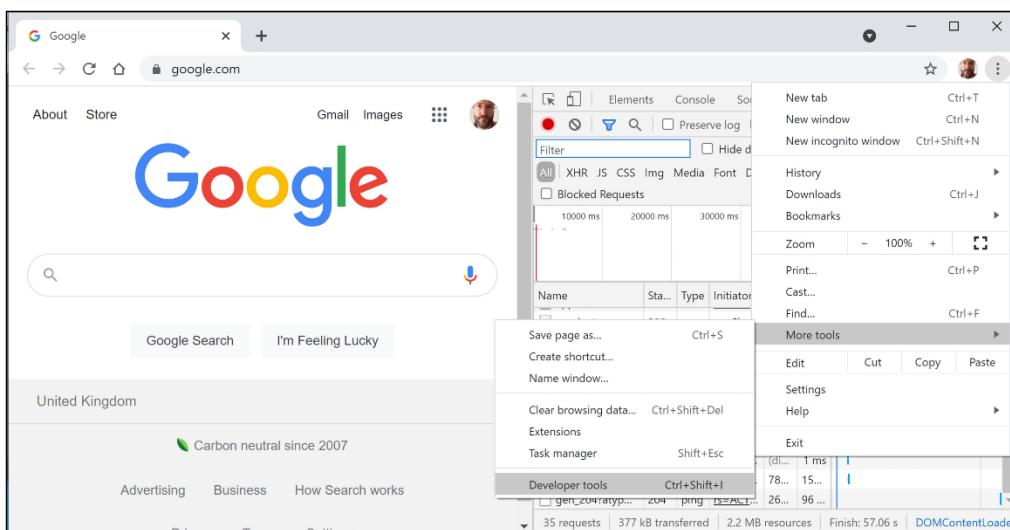
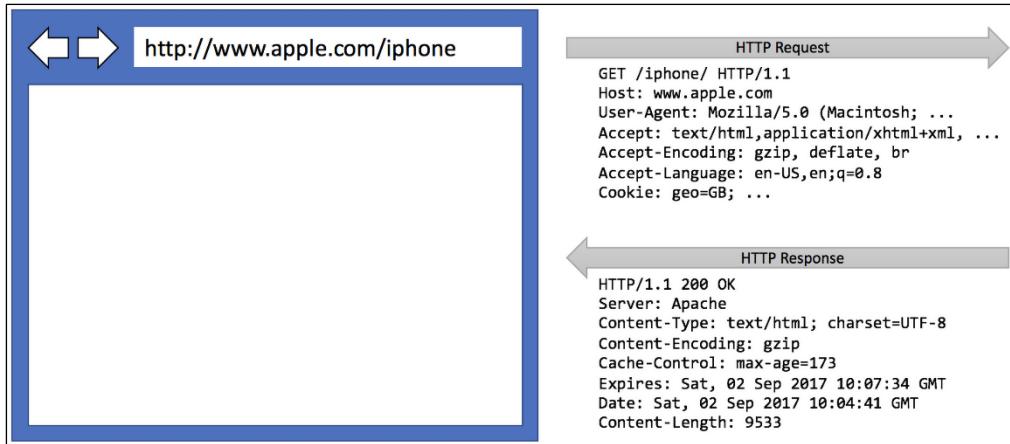
27     IOrderedQueryable<Product> sortedAndFilteredProducts =
28         filteredProducts.OrderByDescending(product => product.UnitPrice);
29
29
30     var projectedProducts = sortedAndFilteredProducts
31         .Select(product => new // anonymous type
32             {
33                 product.ProductId,
34                 product.ProductName,
35                 product.UnitPrice
36             });
37
  
```

A tooltip is displayed over the line containing the 'AnonymousType' keyword, with the text: "Anonymous Types: 'is new [int ProductId, string ProductName, decimal? UnitPrice]'". The Solution Explorer on the right shows the project structure for 'LinqWithEFCore'.

Chapter 12: Introducing Modern Web Development Using .NET



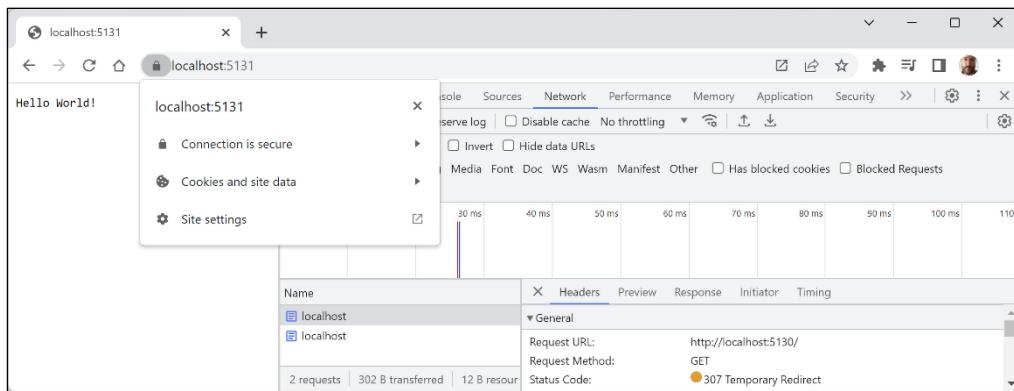
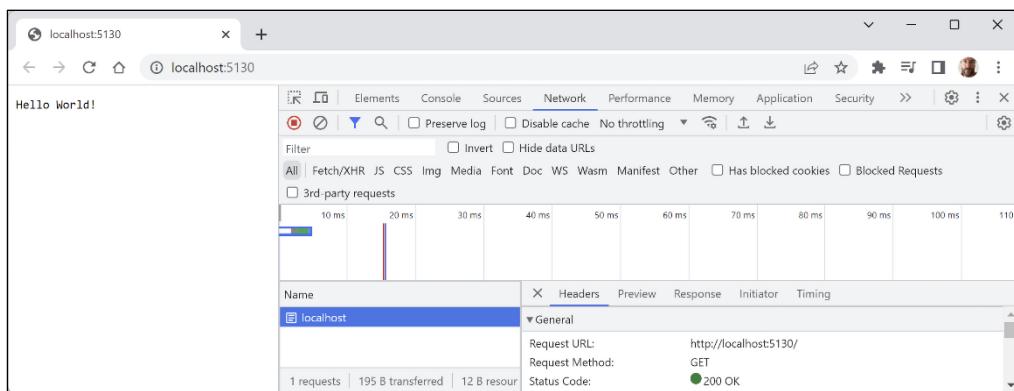
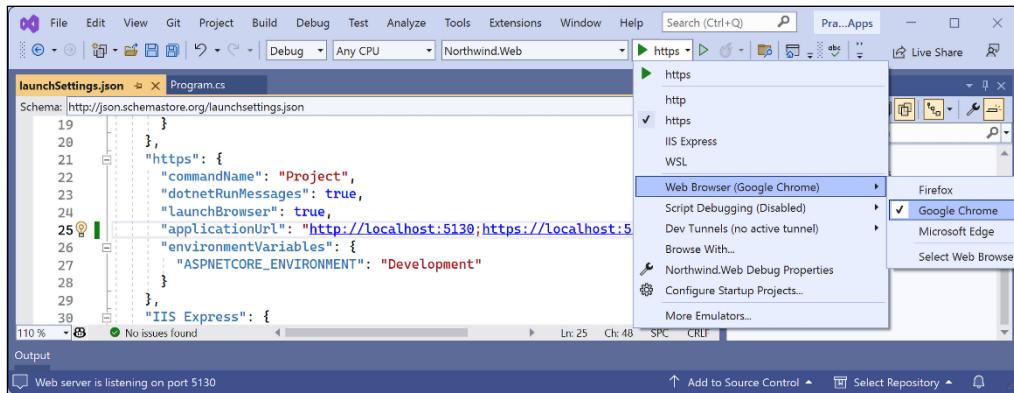


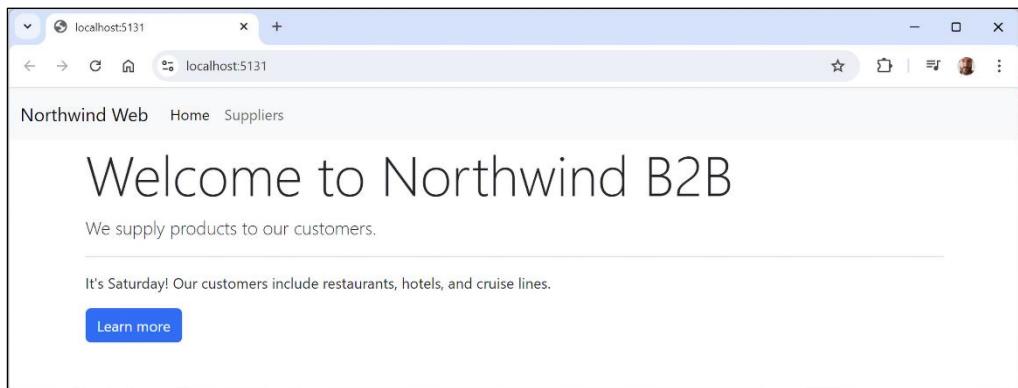
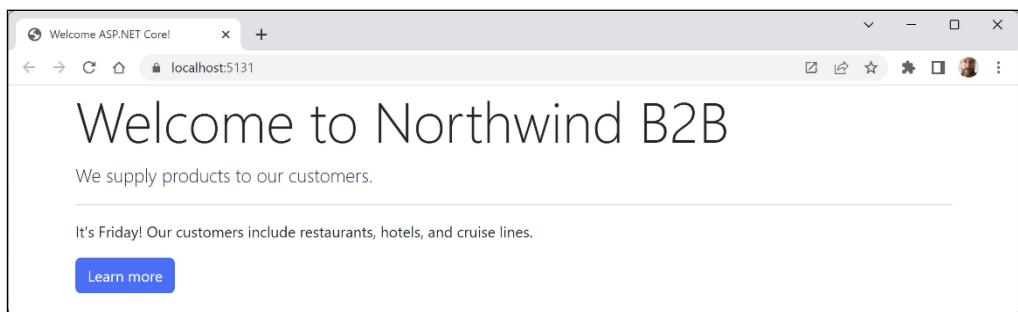
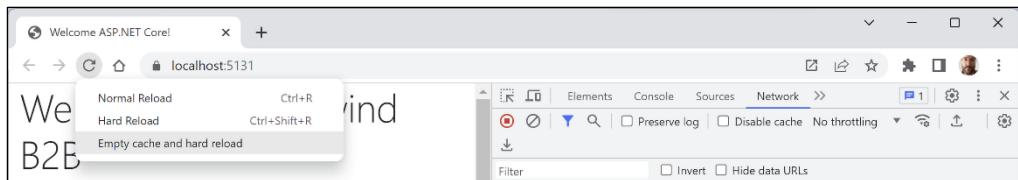


The screenshot shows a browser window with the Microsoft Learn ASP.NET website loaded at dotnet.microsoft.com/learn/aspnet. The page displays a purple header with the title "Learn ASP.NET" and a sub-section "Popular learning materials" featuring a video thumbnail titled "What is ASP.NET?". To the right of the page, the browser's developer tools are open, specifically the Network tab. This tab lists numerous requests made by the browser, such as "aspnet", "dotnetmdl2-icons-032021-2.v", and "override.css?c=7". The "General" section of the Network tab provides detailed information about the current request to the URL <https://dotnet.microsoft.com/learn/aspnet>, which is a GET method with a status code of 200. It also shows the remote address as [2620:1ec:bdf:64]:443 and a referer policy of strict-origin-when-cross-origin.

Name	Headers	Preview	Response	Initiator	Timing	Cookies
aspnet						
dotnetmdl2-icons-032021-2.v						
dotnetmdl2-icons-032021-2.t						
2c-511e5e?ver=2.0&_cf=2021						
override.css?c=7						
bootstrap-custom.min.css?v=						
cookie-consent.min.js?v=-lVl						
general.min.js?v=7G9KtIn8Ko						
google-analytics.min.js?v=lGIl						
wpc consent.js						
17-f90ef1?ver=2.0&_cf=2021f						
listen-post-message-iframe.m						
RElMu3b?ver=5c31						
main.min.js?v=OQcqOB0XUU						
aspnet?domain=https://dotne						
analytics.js						
home-hero-bg.svg						
mwfmdl2-v3.54.woff						
js?l=id=GTM-KPDDMV7&cid=2						
collect?v=1&v=j90&a=1122&						
85 requests 692 kB transferred						

Chapter 13: Building Websites Using ASP.NET Core





localhost:5131/suppliers

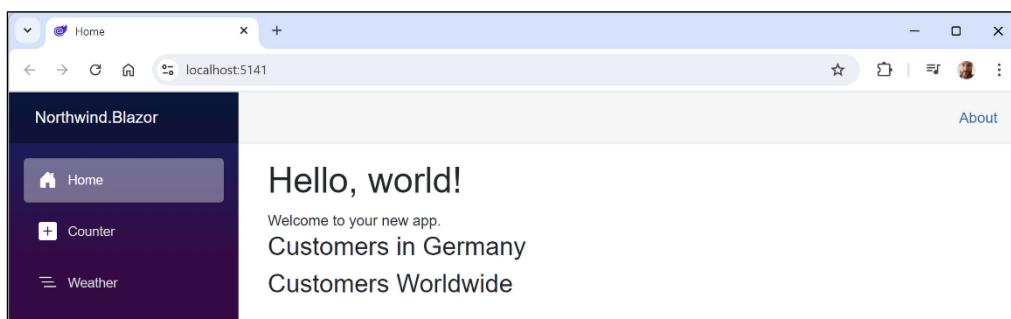
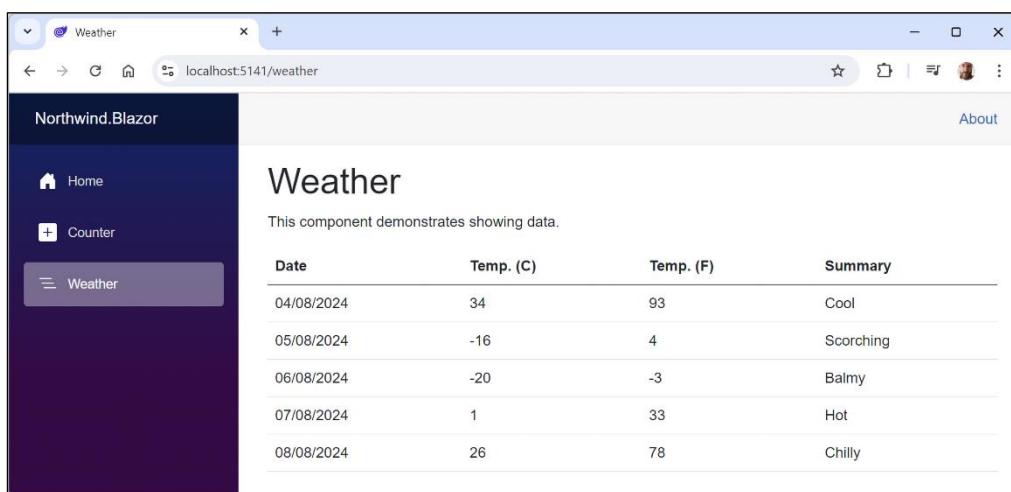
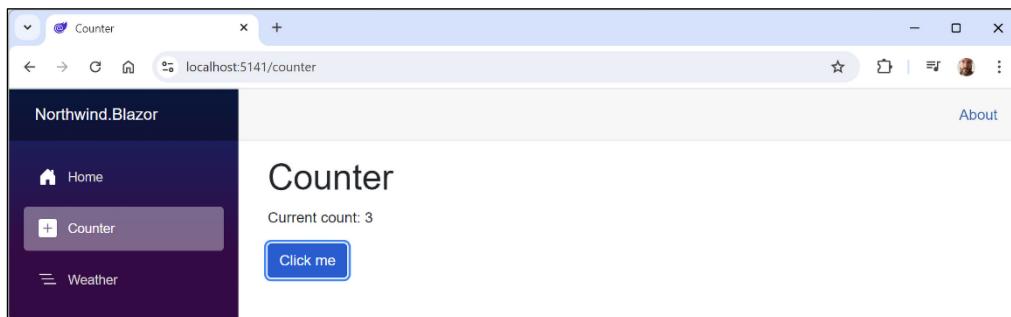
Northwind Web Home Suppliers

Suppliers

Company Name	Country	Phone
G'day, Mate	Australia	(02) 555-5914
Pavlova, Ltd.	Australia	(03) 444-2343
Refrescos Americanas LTDA	Brazil	(11) 555 4640



Chapter 14: Building Interactive Web Components Using Blazor

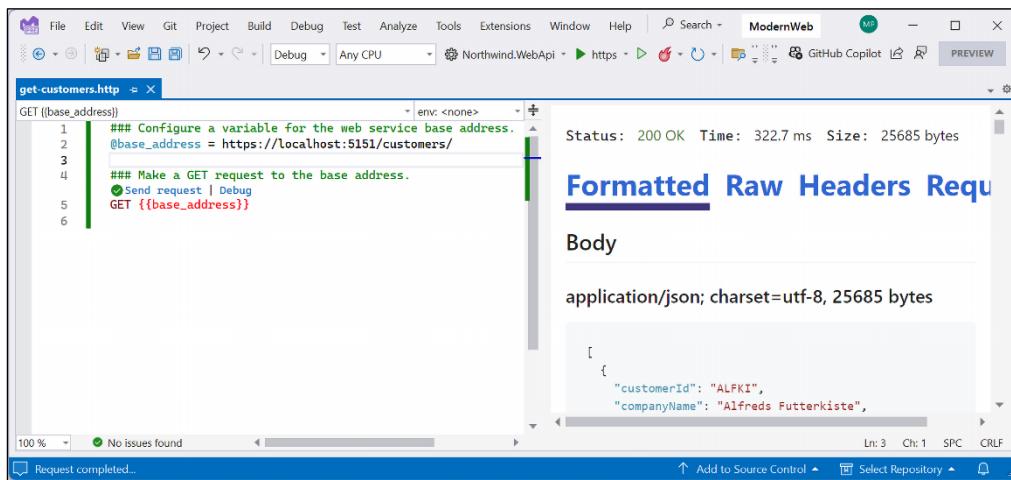
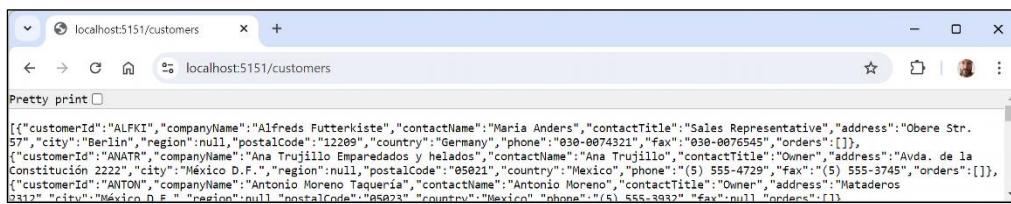
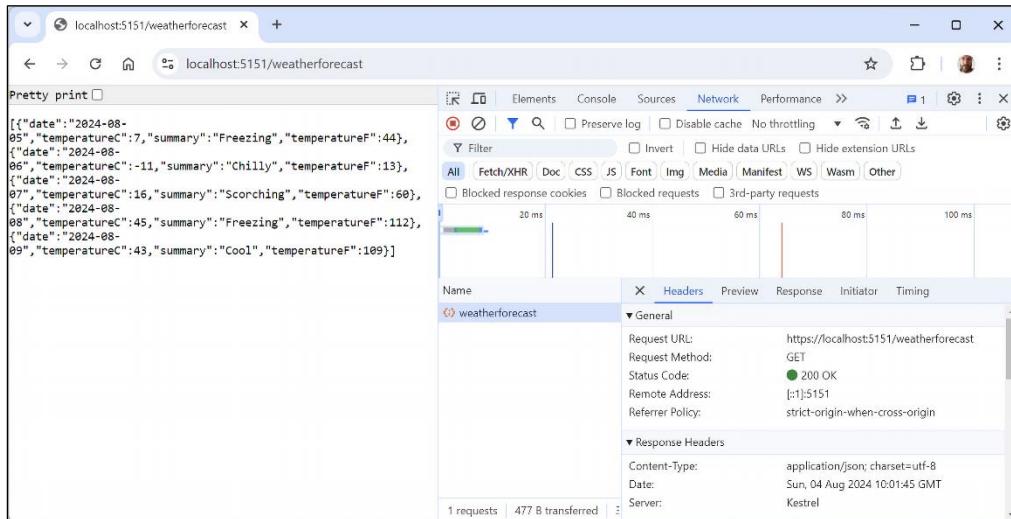




Customers in Germany				
Id	Company Name	Address	Phone	
ALFKI	Alfreds Futterkiste	Obere Str. 57 Berlin 12209 Germany	030-0074321	
BLAUS	Blauer See Delikatessen	Forsterstr. 57 Mannheim 68306 Germany	0621-08460	
DRACD	Drachenblut Delikatessen	Walserweg 21	0241-039123	

The screenshot shows a browser window with the URL `localhost:5141/createcustomer`. The page title is "Create Customer". On the left, there is a dark sidebar with the "Northwind.Blazor" logo and several menu items: "Home", "Counter", "Weather", "Customers Worldwide", and "Customers in Germany". The main content area displays a form for creating a new customer. It has fields for "Customer Id" (containing "ABCDEF", which is highlighted with a red border) and "Company Name" (an empty input field). Below the company name field is another empty input field for "Address". Error messages are displayed above the address field: "The field CustomerId must be a string with a maximum length of 5." and "The field CustomerId must match the regular expression '[A-Z]{5}'".

Chapter 15: Building Interactive Web Components Using Blazor



The screenshot shows the ModernWeb IDE interface. On the left, there is a code editor window titled "create-customer.http" containing C# code for creating a customer. The code includes a configuration section for the base address and a POST request body with customer details. On the right, a preview pane displays the response status as "201 Created", time as "73.81 ms", and size as "236 bytes". Below the status, the word "Response" is followed by "HTTP/1.1 201 Created (73.81 ms)". A "Headers" section shows three entries: Date (Mon, 05 Aug 2024 11:11), Server (Kestrel), and Location (/customers/ABCXY). At the bottom, there are buttons for "Add to Source Control" and "Select Repository".

```

POST {{base_address}}
1  ## Configure a variable for the web service base address.
2  @base_address = https://localhost:5151/customers/
3
4  ### Make a POST request to the base address.
5  POST {{base_address}}
6  Content-Type: application/json
7
8  {
9    "customerID": "ABCXY",
10   "companyName": "ABC Corp",
11   "contactName": "John Smith",
12   "contactTitle": "Sir",
13   "address": "Main Street",
14   "city": "New York",
15   "region": "NY",
16   "postalCode": "90210",
17   "country": "USA",
18   "phone": "(123) 555-1234"
19 }
20

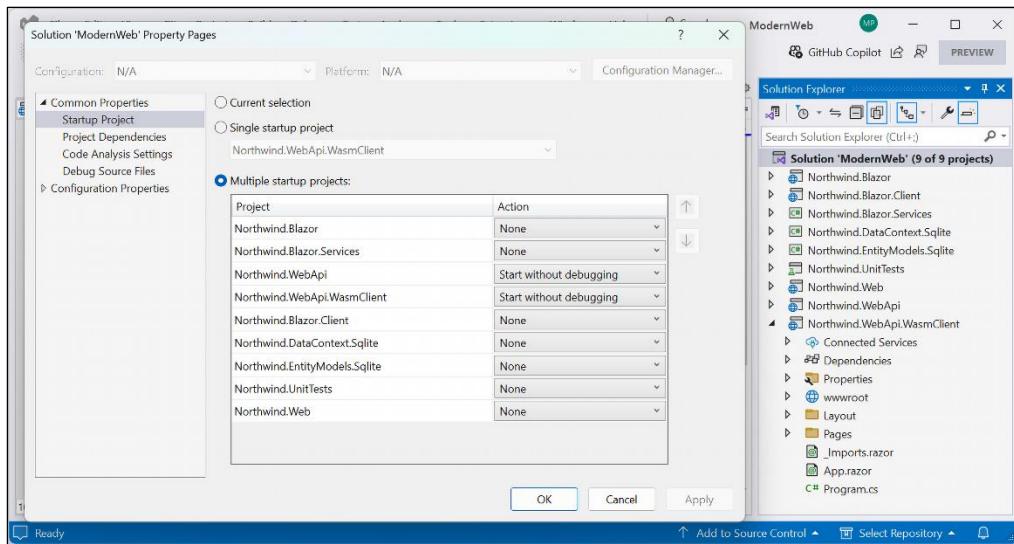
```

The screenshot shows a browser window displaying the OpenAPI v2 JSON schema for the "GetWeatherForecast" operation. The schema is highly nested and includes definitions for "weatherforecast/days" and "weatherforecast/hello" paths. It defines various parameters like "date", "temperatureC", "temperatureF", and "summary" with specific types and descriptions. The "responses" section includes detailed descriptions for both 200 and 200 responses.

```

{
  "openapi": "3.0.1",
  "info": {
    "title": "Northwind.WebApi | v2",
    "version": "1.0.0"
  },
  "paths": {
    "/weatherforecast/days/{date}": {
      "get": {
        "tags": [
          "weatherforecast"
        ],
        "parameters": [
          {
            "name": "date",
            "in": "path",
            "required": true,
            "schema": {
              "type": "integer",
              "format": "int32",
              "default": "5"
            }
          }
        ],
        "responses": {
          "200": {
            "description": "OK",
            "content": {
              "application/json": {
                "schema": {
                  "type": "array",
                  "items": [
                    {
                      "required": true,
                      "date": "2024-08-05T14:00:00Z",
                      "temperatureC": 25,
                      "temperatureF": 77,
                      "summary": "Partly Cloudy"
                    }
                  ]
                }
              }
            }
          }
        }
      }
    },
    "/weatherforecast/hello": {
      "get": {
        "tags": [
          "weatherforecast"
        ],
        "responses": {
          "200": {
            "description": "OK",
            "content": {
              "text/plain": {
                "schema": {
                  "$ref": "#/components/schemas/string"
                }
              }
            }
          }
        }
      }
    }
  },
  "components": {
    "schemas": {
      "string": {
        "type": "string",
        "format": "string"
      },
      "date": {
        "type": "string",
        "format": "date"
      },
      "int32": {
        "type": "integer",
        "format": "int32"
      },
      "array": {
        "type": "array",
        "items": [
          {
            "type": "object",
            "properties": {
              "date": {
                "type": "string",
                "format": "date"
              },
              "temperatureC": {
                "type": "integer",
                "format": "int32"
              },
              "temperatureF": {
                "type": "integer",
                "format": "int32"
              }
            }
          }
        ]
      }
    }
  }
}

```



The screenshot shows a web browser window with two tabs: 'localhost:5151/weatherforecast' and 'localhost:5152/customers'. The main content area displays a table titled 'Customers Worldwide' with the following data:

ID	Company Name	Address	Phone
ALFKI	Alfreds Futterkiste	Obere Str. 57 Berlin 12209 Germany	030-0074321
ANATR	Ana Trujillo Emparedados y helados	Avda. de la Constitución 2222 México D.F. 05021 Mexico	(5) 555-4729