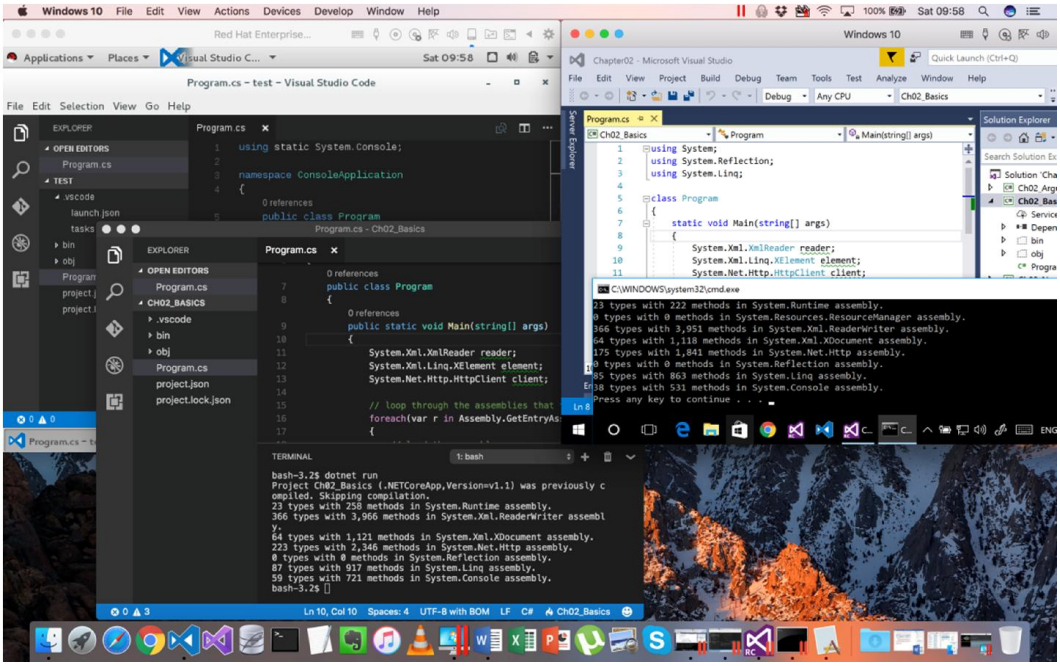
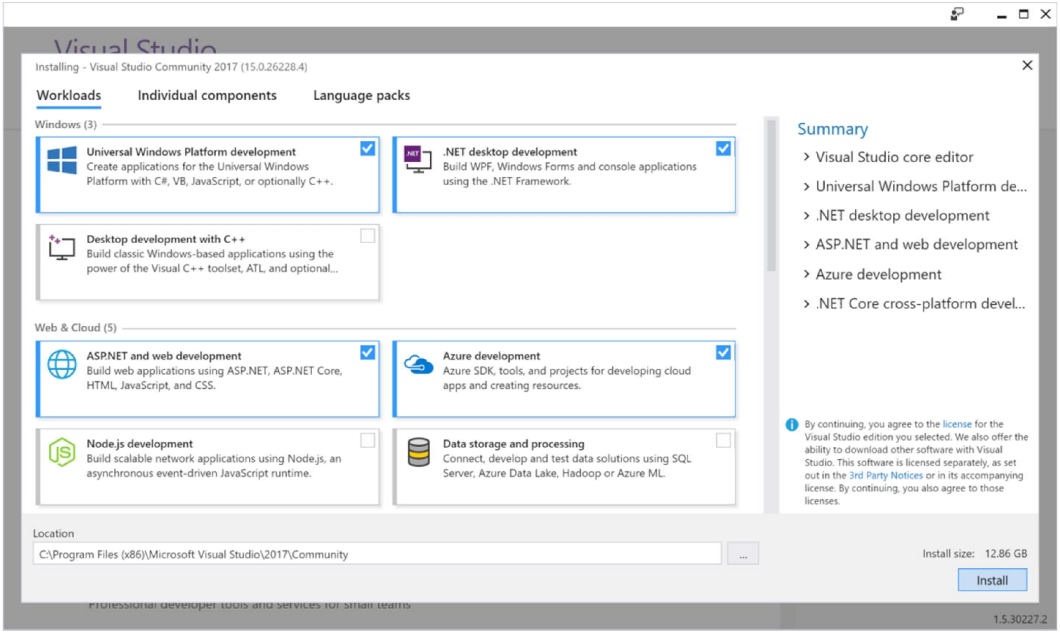
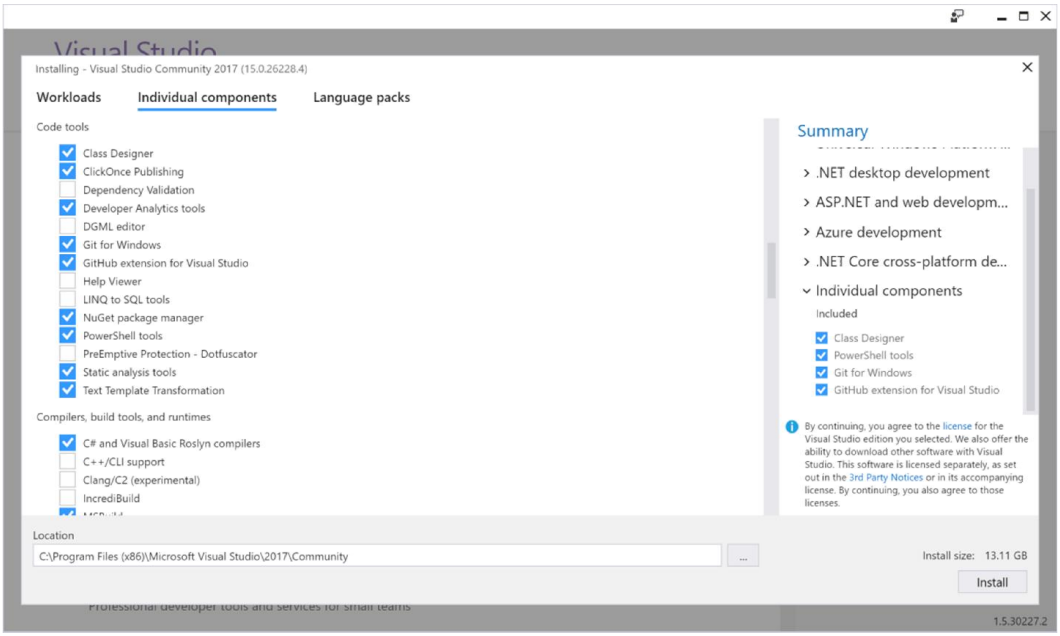
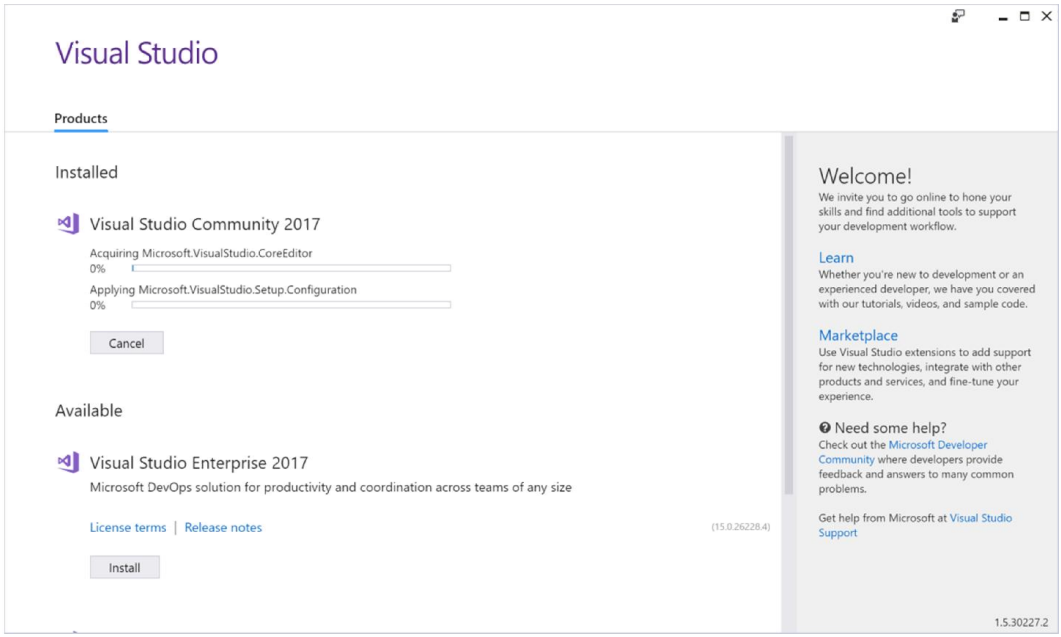
Chapter 1: Hello, C#! Welcome, .NET Core!

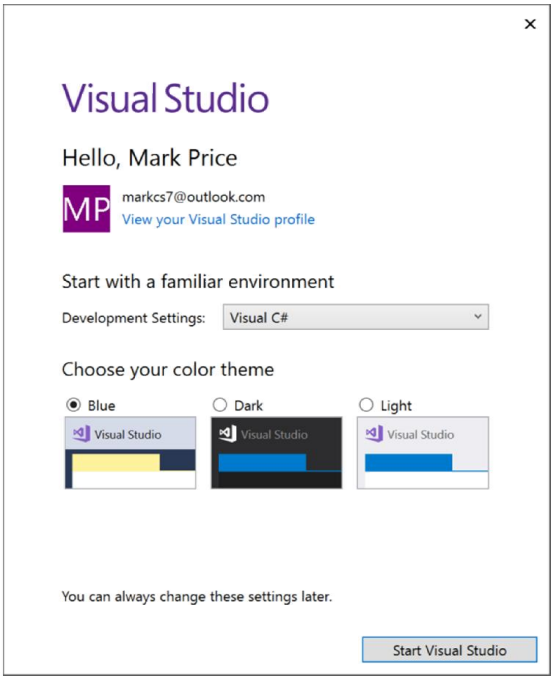
Chapters	IDE	Operating systems
1 to 12, 14, 16	Visual Studio 2017	Windows 7 SP1 or later
	Visual Studio Code	Windows, macOS, or Linux
13	Visual Studio 2017	Windows 10
15	Visual Studio for Mac	macOS

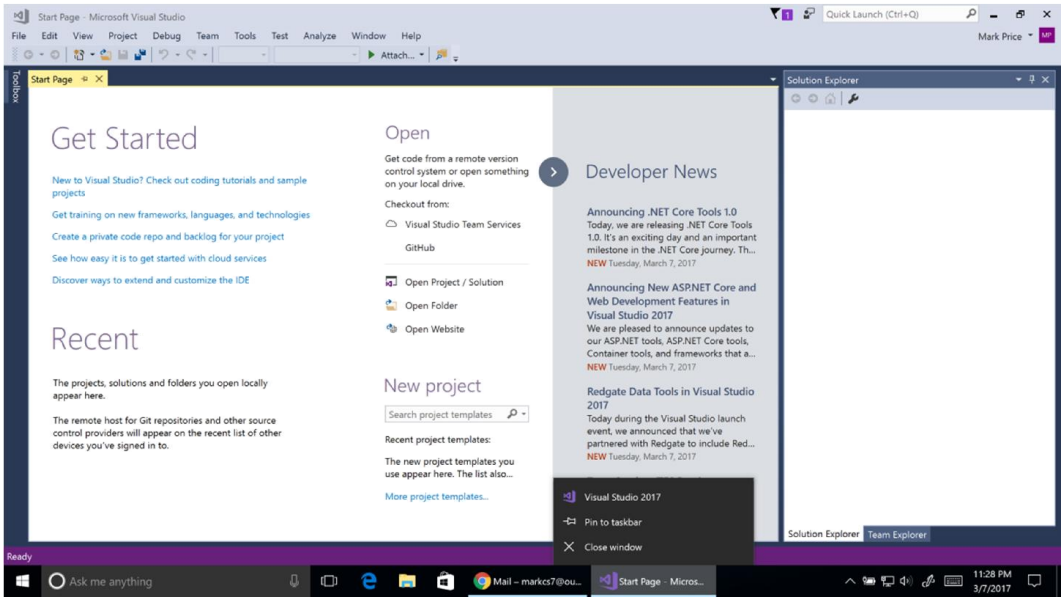


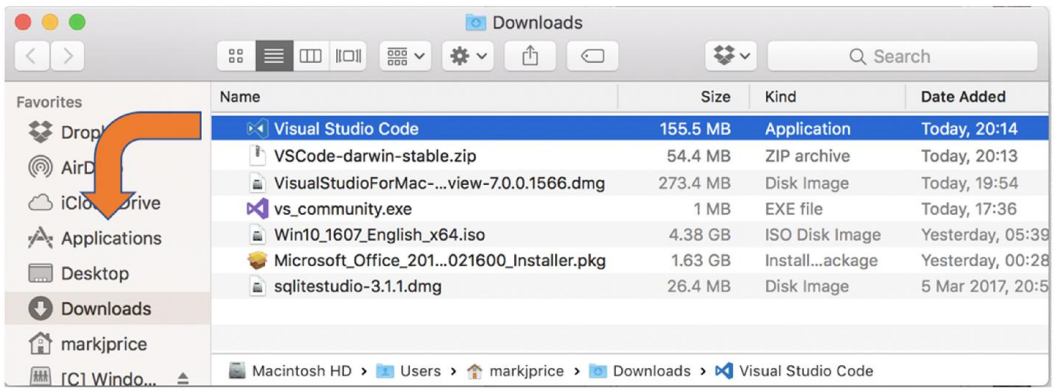

Visual Studio
Installing - Visual Studio Community 2017 (15.0.26228.4)
Workloads
Individual components
Language packs
Windows (3)
Universal Windows Platform development
Create applications for the Universal Windows Platform with C#, VB, JavaScript, or optionally C++.
.NET desktop development
Build WPF, Windows Forms and console applications using the .NET Framework.
Desktop development with C++
Build classic Windows-based applications using the power of the Visual C++ toolset, ATL, and optional...
Web & Cloud (5)
ASP.NET and web development
Build web applications using ASP.NET, ASP.NET Core, HTML, JavaScript, and CSS.
Azure development
Azure SDK, tools, and projects for developing cloud apps and creating resources.
Node.js development
Build scalable network applications using Node.js, an asynchronous event-driven JavaScript runtime.
Data storage and processing
Connect, develop and test data solutions using SQL Server, Azure Data Lake, Hadoop or Azure ML.
Summary
Visual Studio core editor
Universal Windows Platform de...
.NET desktop development
ASP.NET and web development
Azure development
.NET Core cross-platform devel...
By continuing, you agree to the license for the Visual Studio edition you selected. We also offer the ability to download other software with Visual Studio. This software is licensed separately, as set out in the 3rd Party Notices or in its accompanying license. By continuing, you also agree to those licenses.
Location
C:\Program Files (x86)\Microsoft Visual Studio\2017\Community
Install size: 12.86 GB
Install
1.5.30227.2

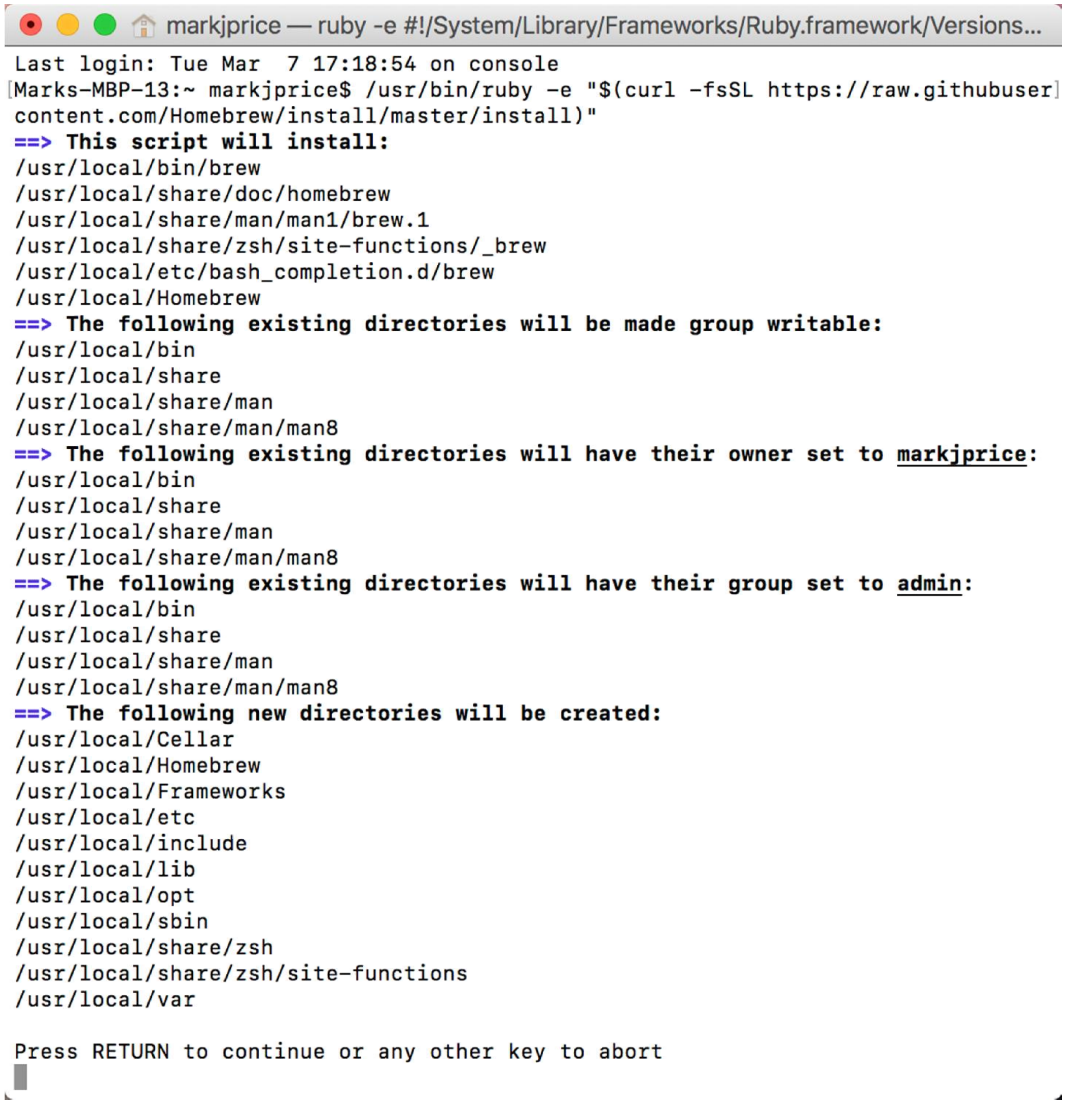

Visual Studio
Installing - Visual Studio Community 2017 (15.0.26228.4)
Workloads
Individual components
Language packs
Code tools
Class Designer
ClickOnce Publishing
Dependency Validation
Developer Analytics tools
DGML editor
Git for Windows
GitHub extension for Visual Studio
Help Viewer
LINQ to SQL tools
NuGet package manager
PowerShell tools
PreEmptive Protection - Dotfuscator
Static analysis tools
Text Template Transformation
Compilers, build tools, and runtimes
C# and Visual Basic Roslyn compilers
C++/CLI support
Clang/C2 (experimental)
IncrediBuild
Summary
.NET desktop development
ASP.NET and web developm...
Azure development
.NET Core cross-platform de...
Individual components
Included
Class Designer
PowerShell tools
Git for Windows
GitHub extension for Visual Studio
By continuing, you agree to the license for the Visual Studio edition you selected. We also offer the ability to download other software with Visual Studio. This software is licensed separately, as set out in the 3rd Party Notices or in its accompanying license. By continuing, you also agree to those licenses.
Location
C:\Program Files (x86)\Microsoft Visual Studio\2017\Community
Install size: 13.11 GB
Install
1.5.30227.2

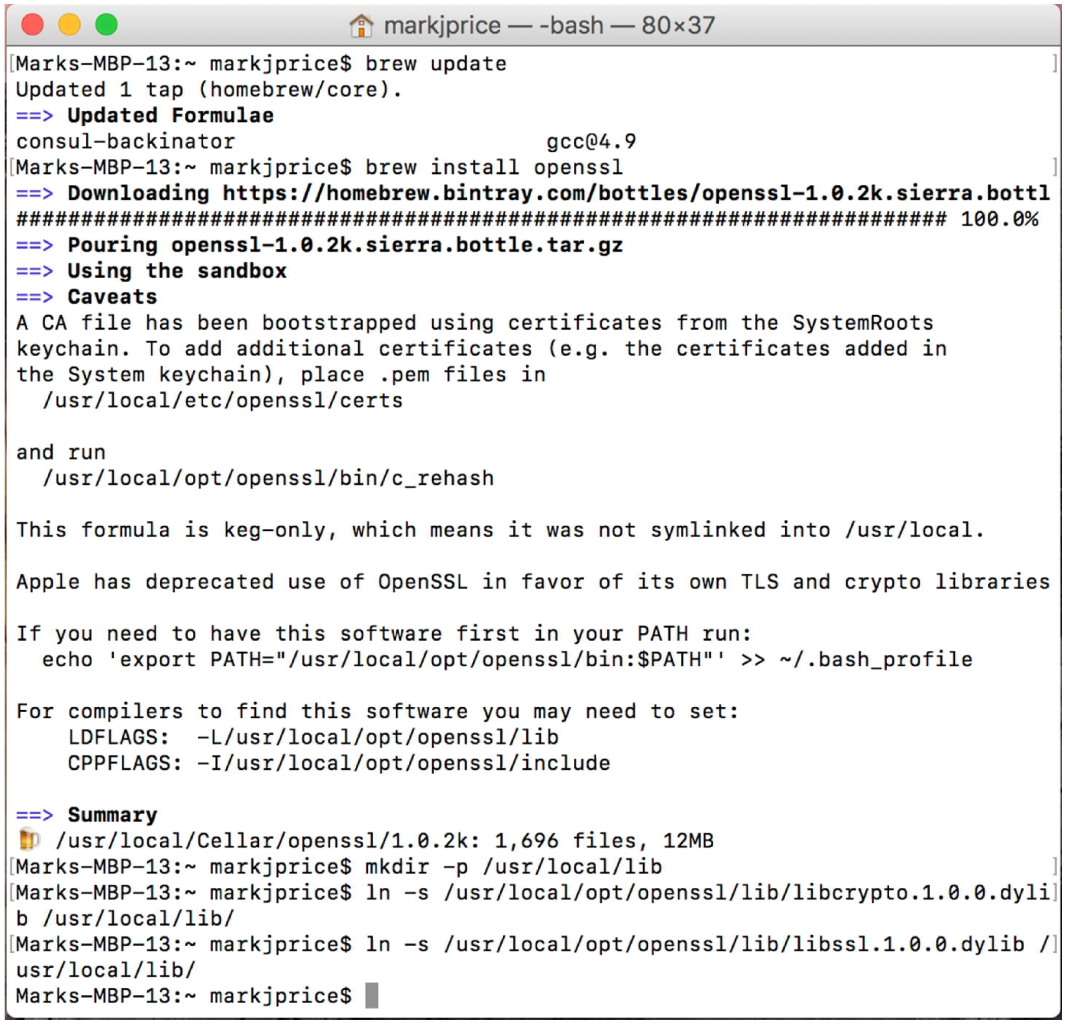

Visual Studio
Products
Installed
Visual Studio Community 2017
Acquiring Microsoft.VisualStudio.CoreEditor
0%
Applying Microsoft.VisualStudio.Setup.Configuration
0%
Cancel
Available
Visual Studio Enterprise 2017
Microsoft DevOps solution for productivity and coordination across teams of any size
License terms | Release notes
(15.0.26228.4)
Install
Welcome!
We invite you to go online to hone your skills and find additional tools to support your development workflow.
Learn
Whether you're new to development or an experienced developer, we have you covered with our tutorials, videos, and sample code.
Marketplace
Use Visual Studio extensions to add support for new technologies, integrate with other products and services, and fine-tune your experience.
Need some help?
Check out the Microsoft Developer Community where developers provide feedback and answers to many common problems.
Get help from Microsoft at Visual Studio Support
1.5.30227.2

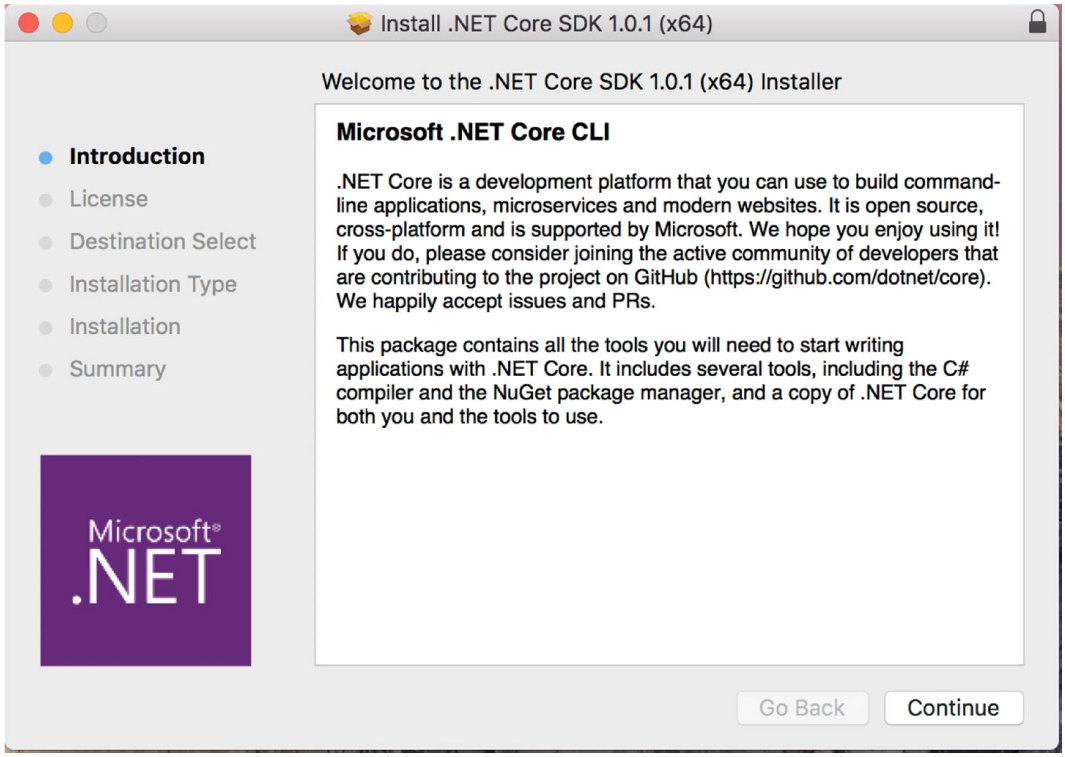

Visual Studio
Hello, Mark Price
MP
markcs7@outlook.com
View your Visual Studio profile
Start with a familiar environment
Development Settings:
Visual C#
Choose your color theme
Blue
Dark
Light
Visual Studio
Visual Studio
Visual Studio
You can always change these settings later.
Start Visual Studio

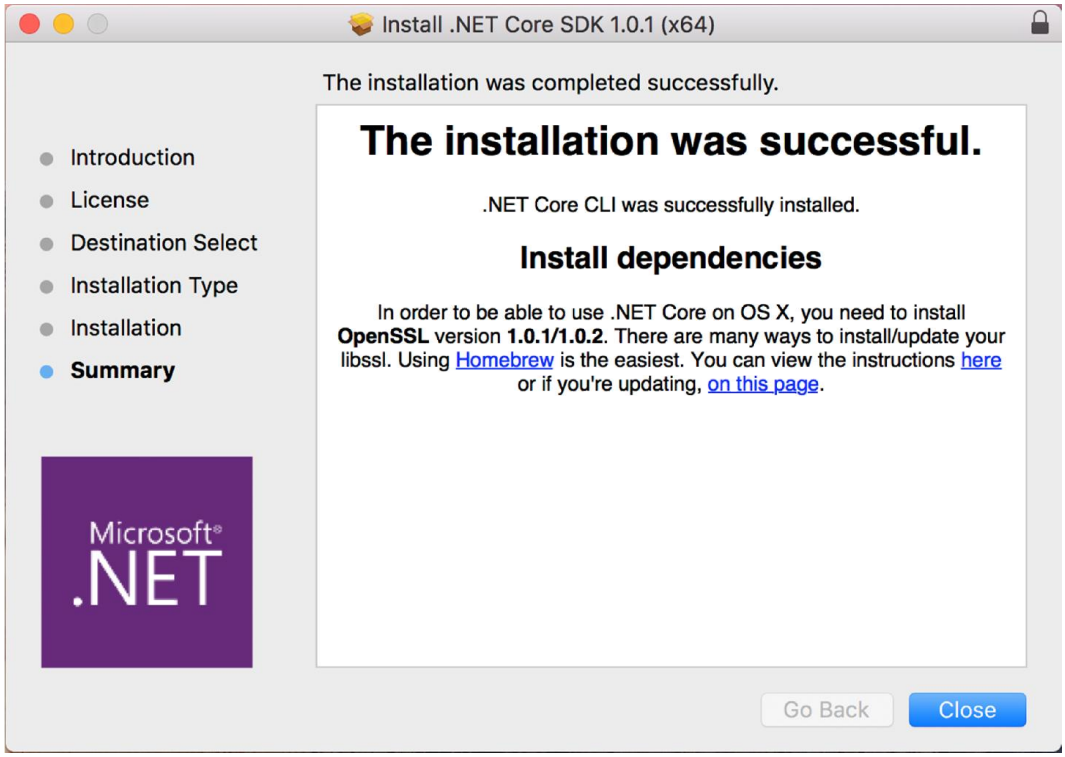

Start Page - Microsoft Visual Studio
File Edit View Project Debug Team Tools Test Analyze Window Help
Quick Launch (Ctrl+Q)
Mark Price
Start Page
Get Started
New to Visual Studio? Check out coding tutorials and sample projects
Get training on new frameworks, languages, and technologies
Create a private code repo and backlog for your project
See how easy it is to get started with cloud services
Discover ways to extend and customize the IDE
Recent
The projects, solutions and folders you open locally appear here.
The remote host for Git repositories and other source control providers will appear on the recent list of other devices you've signed in to.
Open
Get code from a remote version control system or open something on your local drive.
Checkout from:
Visual Studio Team Services
GitHub
Open Project / Solution
Open Folder
Open Website
New project
Search project templates
Recent project templates:
The new project templates you use appear here. The list also...
More project templates...
Developer News
Announcing .NET Core Tools 1.0
Today, we are releasing .NET Core Tools 1.0. It's an exciting day and an important milestone in the .NET Core journey. Th...
NEW Tuesday, March 7, 2017
Announcing New ASP.NET Core and Web Development Features in Visual Studio 2017
We are pleased to announce updates to our ASP.NET tools, ASP.NET Core tools, Container tools, and frameworks that a...
NEW Tuesday, March 7, 2017
Redgate Data Tools in Visual Studio 2017
Today during the Visual Studio launch event, we announced that we've partnered with Redgate to include Red...
NEW Tuesday, March 7, 2017
Visual Studio 2017
Pin to taskbar
Close window
Solution Explorer
Solution Explorer Team Explorer
Ready
Ask me anything
Mail – markcs7@ou...
Start Page - Micros...
11:28 PM
3/7/2017

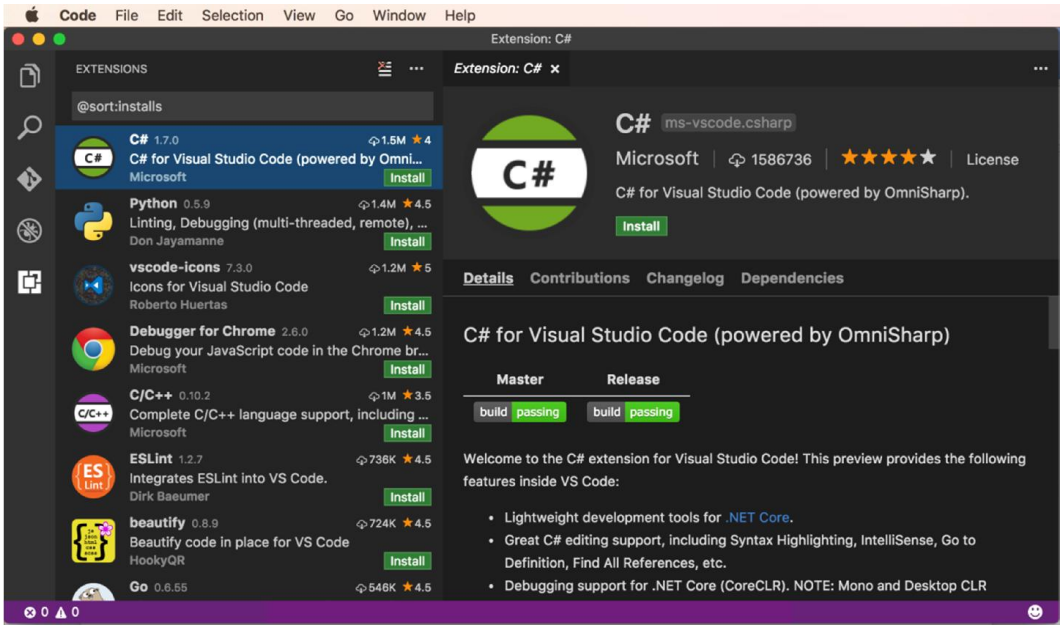

Downloads
Search
Favorites
Applications
Desktop
Downloads
markjprice
Name
Size
Kind
Date Added
Visual Studio Code 155.5 MB Application Today, 20:14
VSCode-darwin-stable.zip 54.4 MB ZIP archive Today, 20:13
VisualStudioForMac-...view-7.0.0.1566.dmg 273.4 MB Disk Image Today, 19:54
vs_community.exe 1 MB EXE file Today, 17:36
Win10_1607_English_x64.iso 4.38 GB ISO Disk Image Yesterday, 05:39
Microsoft_Office_201...021600_Installer.pkg 1.63 GB Install...ackage Yesterday, 00:28
sqlitestudio-3.1.1.dmg 26.4 MB Disk Image 5 Mar 2017, 20:5
Macintosh HD › Users › markjprice › Downloads › Visual Studio Code

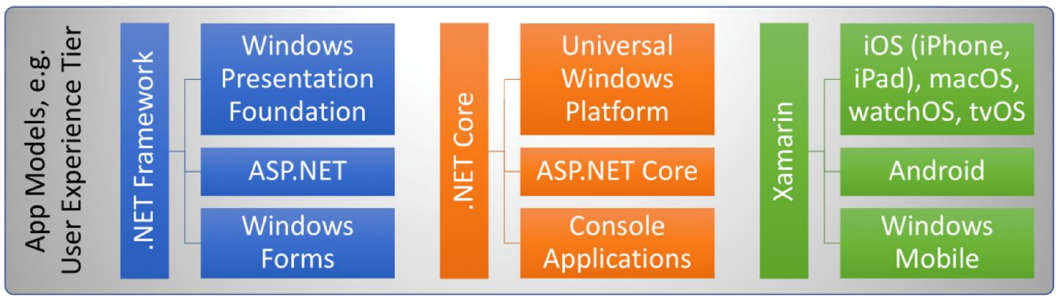

markjprice — ruby -e #!/System/Library/Frameworks/Ruby.framework/Versions...
Last login: Tue Mar 7 17:18:54 on console
Marks-MBP-13:~ markjprice$ /usr/bin/ruby -e "$(curl -fsSL https://raw.githubuser
content.com/Homebrew/install/master/install)"
==> This script will install:
/usr/local/bin/brew
/usr/local/share/doc/homebrew
/usr/local/share/man/man1/brew.1
/usr/local/share/zsh/site-functions/_brew
/usr/local/etc/bash_completion.d/brew
/usr/local/Homebrew
==> The following existing directories will be made group writable:
/usr/local/bin
/usr/local/share
/usr/local/share/man
/usr/local/share/man/man8
==> The following existing directories will have their owner set to markjprice:
/usr/local/bin
/usr/local/share
/usr/local/share/man
/usr/local/share/man/man8
==> The following existing directories will have their group set to admin:
/usr/local/bin
/usr/local/share
/usr/local/share/man
/usr/local/share/man/man8
==> The following new directories will be created:
/usr/local/Cellar
/usr/local/Homebrew
/usr/local/Frameworks
/usr/local/etc
/usr/local/include
/usr/local/lib
/usr/local/opt
/usr/local/sbin
/usr/local/share/zsh
/usr/local/share/zsh/site-functions
/usr/local/var
Press RETURN to continue or any other key to abort

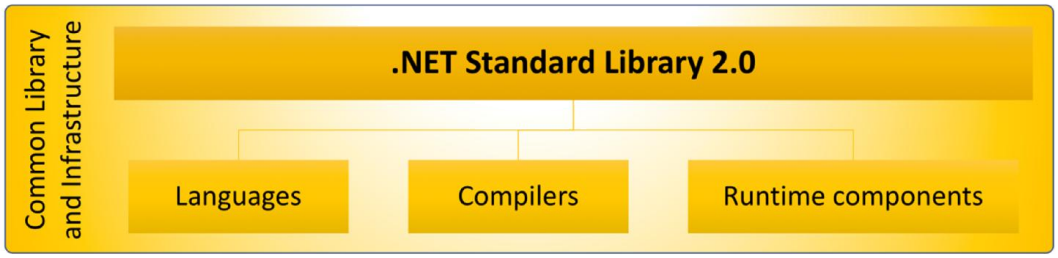

markjprice — -bash — 80×37
Marks-MBP-13:~ markjprice$ brew update
Updated 1 tap (homebrew/core).
==> Updated Formulae
consul-backinator gcc@4.9
Marks-MBP-13:~ markjprice$ brew install openssl
==> Downloading https://homebrew.bintray.com/bottles/openssl-1.0.2k.sierra.bottl
100.0%
==> Pouring openssl-1.0.2k.sierra.bottle.tar.gz
==> Using the sandbox
==> Caveats
A CA file has been bootstrapped using certificates from the SystemRoots
keychain. To add additional certificates (e.g. the certificates added in
the System keychain), place .pem files in
/usr/local/etc/openssl/certs
and run
/usr/local/opt/openssl/bin/c_rehash
This formula is keg-only, which means it was not symlinked into /usr/local.
Apple has deprecated use of OpenSSL in favor of its own TLS and crypto libraries
If you need to have this software first in your PATH run:
echo 'export PATH="/usr/local/opt/openssl/bin:$PATH"' >> ~/.bash_profile
For compilers to find this software you may need to set:
LDFLAGS: -L/usr/local/opt/openssl/lib
CPPFLAGS: -I/usr/local/opt/openssl/include
==> Summary
/usr/local/Cellar/openssl/1.0.2k: 1,696 files, 12MB
Marks-MBP-13:~ markjprice$ mkdir -p /usr/local/lib
Marks-MBP-13:~ markjprice$ ln -s /usr/local/opt/openssl/lib/libcrypto.1.0.0.dyli
b /usr/local/lib/
Marks-MBP-13:~ markjprice$ ln -s /usr/local/opt/openssl/lib/libssl.1.0.0.dylib /
usr/local/lib/
Marks-MBP-13:~ markjprice$


Install .NET Core SDK 1.0.1 (x64)
Welcome to the .NET Core SDK 1.0.1 (x64) Installer
Introduction
License
Destination Select
Installation Type
Installation
Summary
Microsoft .NET Core CLI
.NET Core is a development platform that you can use to build command-line applications, microservices and modern websites. It is open source, cross-platform and is supported by Microsoft. We hope you enjoy using it! If you do, please consider joining the active community of developers that are contributing to the project on GitHub (https://github.com/dotnet/core). We happily accept issues and PRs.
This package contains all the tools you will need to start writing applications with .NET Core. It includes several tools, including the C# compiler and the NuGet package manager, and a copy of .NET Core for both you and the tools to use.
Microsoft®
.NET
Go Back
Continue

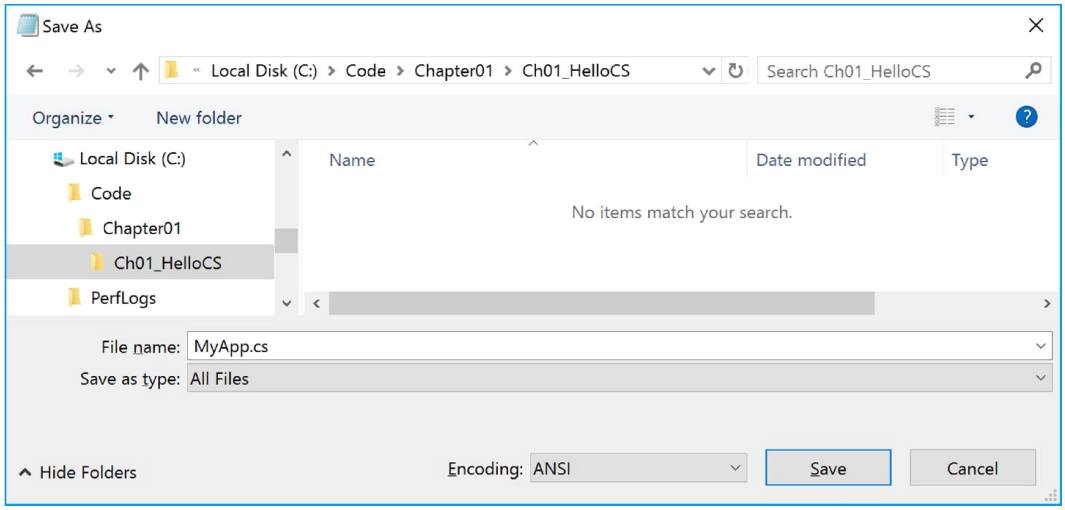

Install .NET Core SDK 1.0.1 (x64)
The installation was completed successfully.
Introduction
License
Destination Select
Installation Type
Installation
Summary
Microsoft®
.NET
The installation was successful.
.NET Core CLI was successfully installed.
Install dependencies
In order to be able to use .NET Core on OS X, you need to install OpenSSL version 1.0.1/1.0.2. There are many ways to install/update your libssl. Using Homebrew is the easiest. You can view the instructions here or if you're updating, on this page.
Go Back
Close

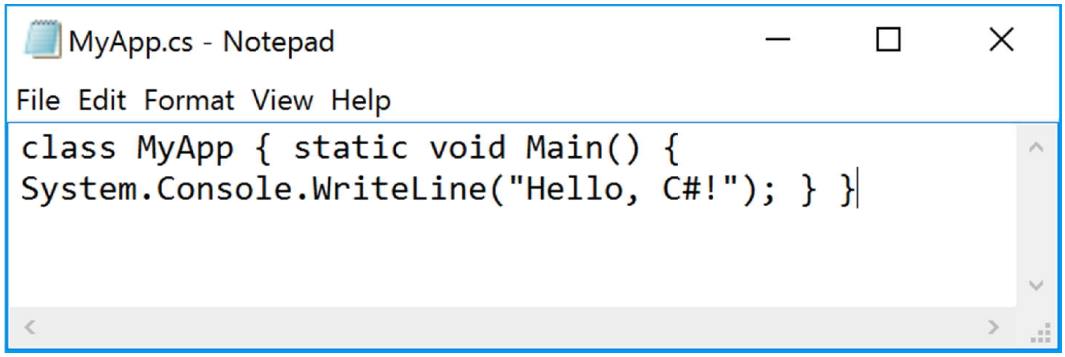

Code File Edit Selection View Go Window Help
Extension: C#
EXTENSIONS
@sort:installs
C# 1.7.0 1.5M ★4
C# for Visual Studio Code (powered by Omni...
Microsoft
Install
Python 0.5.9 1.4M ★4.5
Linting, Debugging (multi-threaded, remote), ...
Don Jayamanne
Install
vscode-icons 7.3.0 1.2M ★5
Icons for Visual Studio Code
Roberto Huertas
Install
Debugger for Chrome 2.6.0 1.2M ★4.5
Debug your JavaScript code in the Chrome br...
Microsoft
Install
C/C++ 0.10.2 1M ★3.5
Complete C/C++ language support, including ...
Microsoft
Install
ESLint 1.2.7 736K ★4.5
Integrates ESLint into VS Code.
Dirk Baeumer
Install
beautify 0.8.9 724K ★4.5
Beautify code in place for VS Code
HookyQR
Install
Go 0.6.55 546K ★4.5
Extension: C#
C#
ms-vscode.csharp
Microsoft 1586736 License
C# for Visual Studio Code (powered by OmniSharp).
Install
Details Contributions Changelog Dependencies
C# for Visual Studio Code (powered by OmniSharp)
Master Release
build passing build passing
Welcome to the C# extension for Visual Studio Code! This preview provides the following features inside VS Code:
Lightweight development tools for .NET Core.
Great C# editing support, including Syntax Highlighting, IntelliSense, Go to Definition, Find All References, etc.
Debugging support for .NET Core (CoreCLR). NOTE: Mono and Desktop CLR
0 0

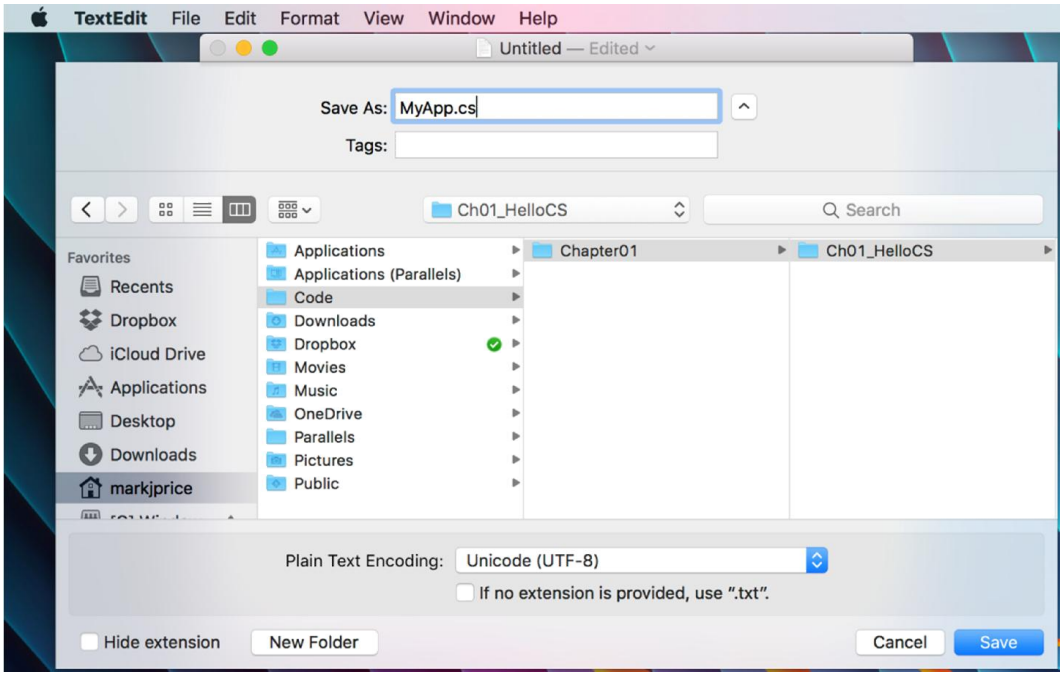

App Models, e.g. User Experience Tier
.NET Framework
Windows Presentation Foundation
ASP.NET
Windows Forms
.NET Core
Universal Windows Platform
ASP.NET Core
Console Applications
Xamarin
iOS (iPhone, iPad), macOS, watchOS, tvOS
Android
Windows Mobile

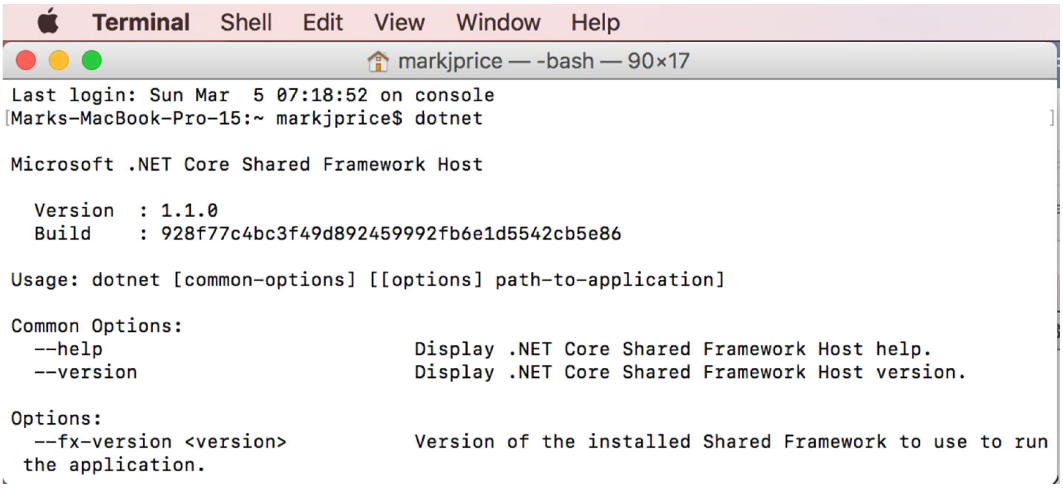

Common Library and Infrastructure
.NET Standard Library 2.0
Languages
Compilers
Runtime components

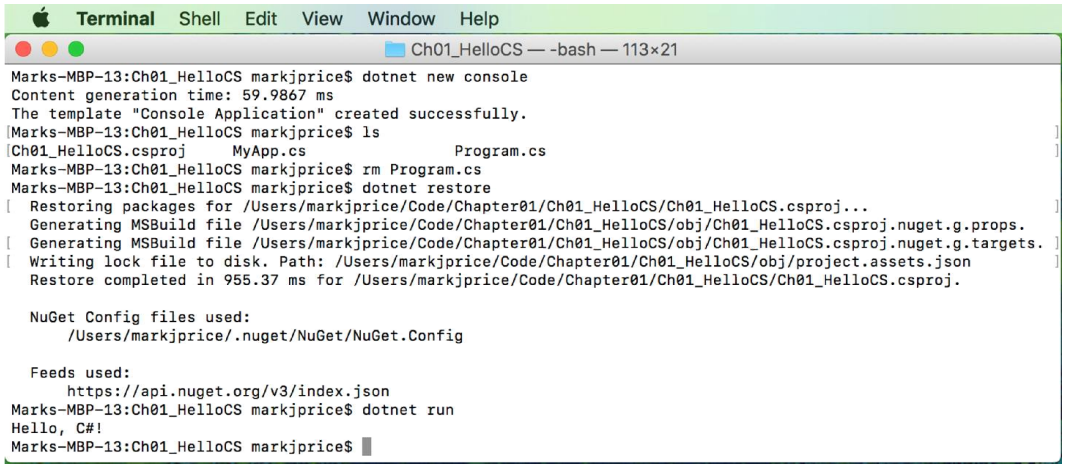
Technology	Feature set	Compiles to	Host OSes
.NET Framework	Mature and extensive	IL executed by a runtime	Windows only
Xamarin	Mature and limited to mobile features		iOS, Android, Windows Mobile
.NET Core	New and somewhat limited (until .NET Core 2.0)		Windows, Linux, macOS, Docker
.NET Native	New and somewhat limited	Native code	

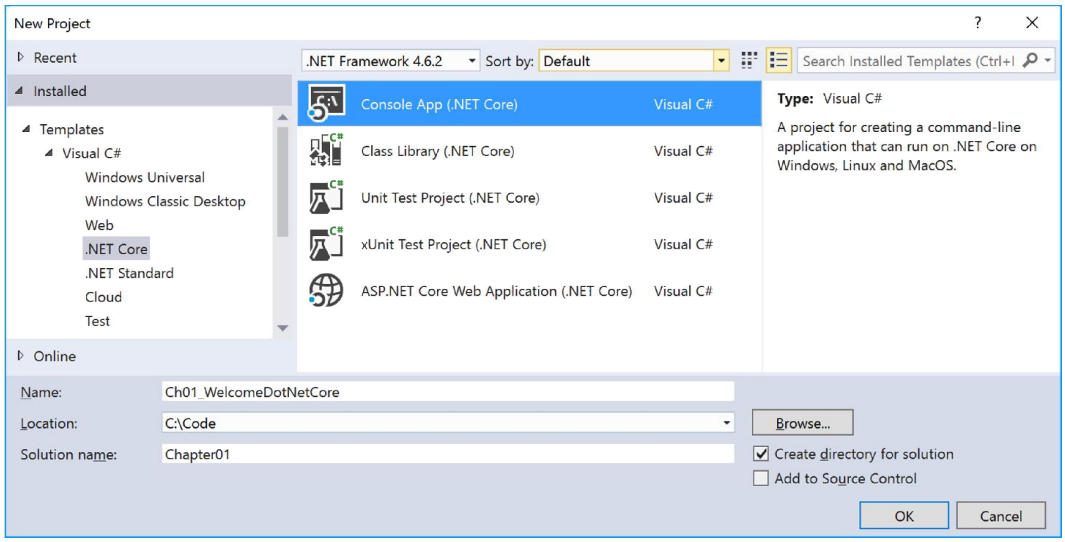


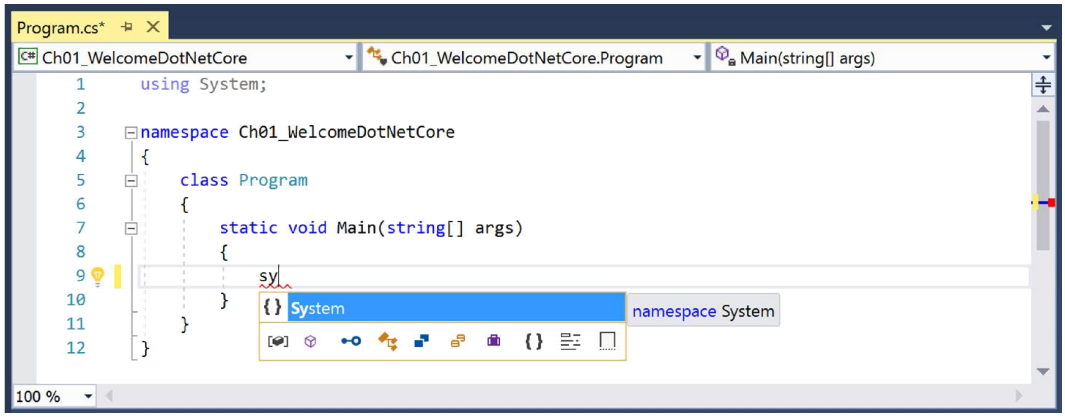


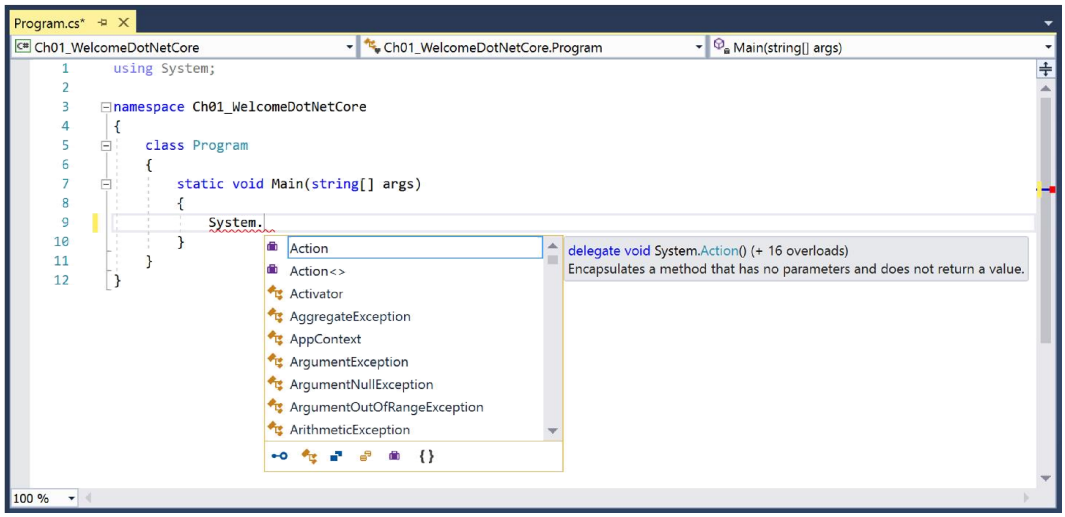

TextEdit File Edit Format View Window Help
Untitled — Edited
Save As: MyApp.cs
Tags:
Ch01_HelloCS
Search
Favorites
Recents
Dropbox
iCloud Drive
Applications
Desktop
Downloads
markjprice
Applications
Applications (Parallels)
Code
Downloads
Dropbox
Movies
Music
OneDrive
Parallels
Pictures
Public
Chapter01
Ch01_HelloCS
Plain Text Encoding: Unicode (UTF-8)
If no extension is provided, use ".txt".
Hide extension
New Folder
Cancel
Save

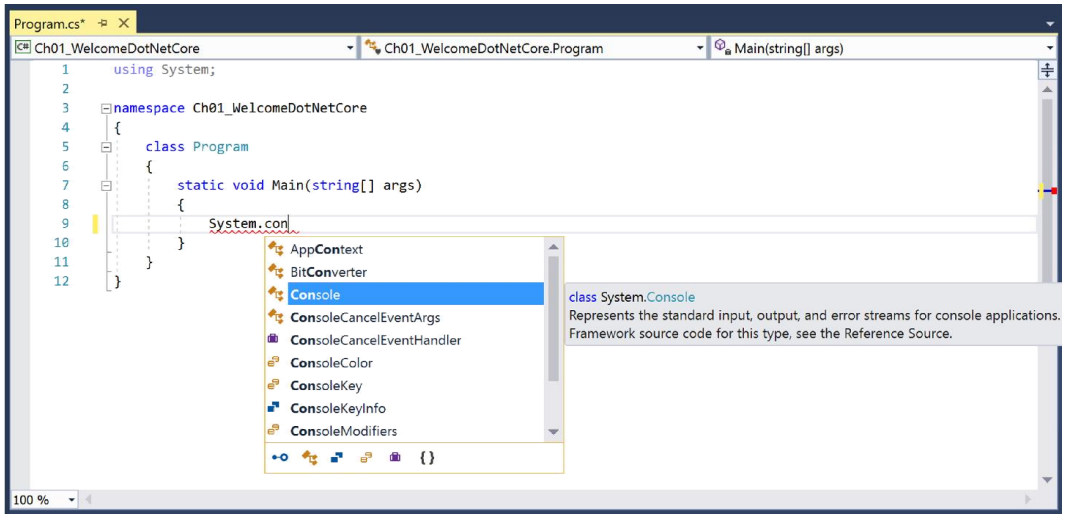

Terminal Shell Edit View Window Help
markjprice — -bash — 90×17
Last login: Sun Mar 5 07:18:52 on console
Marks-MacBook-Pro-15:~ markjprice$ dotnet
Microsoft .NET Core Shared Framework Host
Version : 1.1.0
Build : 928f77c4bc3f49d892459992fb6e1d5542cb5e86
Usage: dotnet [common-options] [[options] path-to-application]
Common Options:
--help Display .NET Core Shared Framework Host help.
--version Display .NET Core Shared Framework Host version.
Options:
--fx-version <version> Version of the installed Shared Framework to use to run
the application.

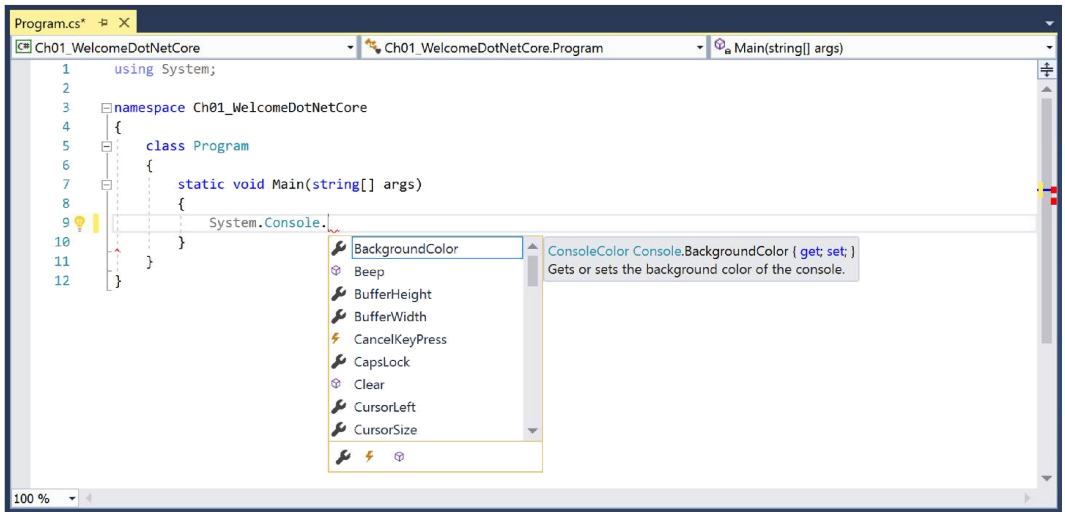

Terminal Shell Edit View Window Help
Ch01_HelloCS — -bash — 113×21
Marks-MBP-13:Ch01_HelloCS markjprice$ dotnet new console
Content generation time: 59.9867 ms
The template "Console Application" created successfully.
Marks-MBP-13:Ch01_HelloCS markjprice$ ls
Ch01_HelloCS.csproj MyApp.cs Program.cs
Marks-MBP-13:Ch01_HelloCS markjprice$ rm Program.cs
Marks-MBP-13:Ch01_HelloCS markjprice$ dotnet restore
Restoring packages for /Users/markjprice/Code/Chapter01/Ch01_HelloCS/Ch01_HelloCS.csproj...
Generating MSBuild file /Users/markjprice/Code/Chapter01/Ch01_HelloCS/obj/Ch01_HelloCS.csproj.nuget.g.props.
Generating MSBuild file /Users/markjprice/Code/Chapter01/Ch01_HelloCS/obj/Ch01_HelloCS.csproj.nuget.g.targets.
Writing lock file to disk. Path: /Users/markjprice/Code/Chapter01/Ch01_HelloCS/obj/project.assets.json
Restore completed in 955.37 ms for /Users/markjprice/Code/Chapter01/Ch01_HelloCS/Ch01_HelloCS.csproj.
NuGet Config files used:
/Users/markjprice/.nuget/NuGet/NuGet.Config
Feeds used:
https://api.nuget.org/v3/index.json
Marks-MBP-13:Ch01_HelloCS markjprice$ dotnet run
Hello, C#!
Marks-MBP-13:Ch01_HelloCS markjprice$

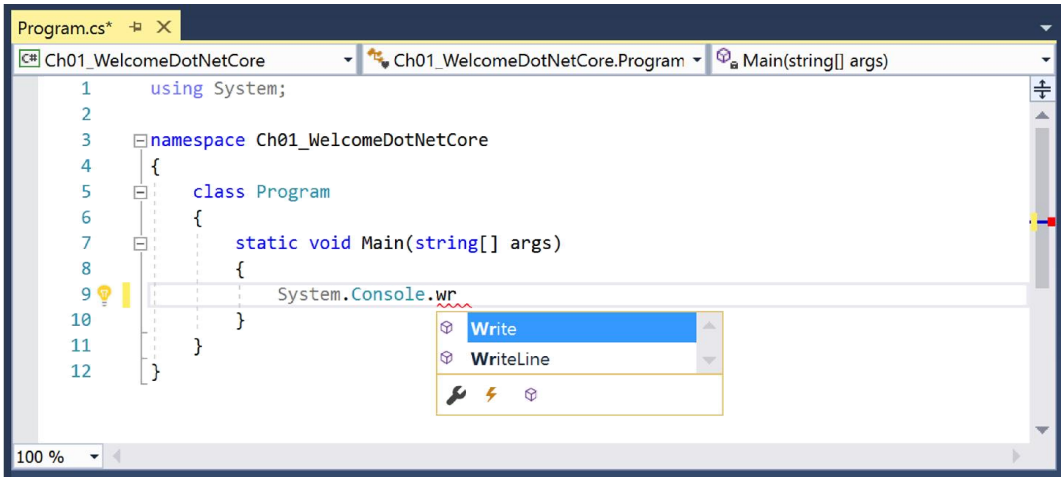

New Project
Recent
Installed
Templates
Visual C#
Windows Universal
Windows Classic Desktop
Web
.NET Core
.NET Standard
Cloud
Test
Online
.NET Framework 4.6.2
Sort by: Default
Search Installed Templates (Ctrl+I
Console App (.NET Core) Visual C#
Class Library (.NET Core) Visual C#
Unit Test Project (.NET Core) Visual C#
xUnit Test Project (.NET Core) Visual C#
ASP.NET Core Web Application (.NET Core) Visual C#
Type: Visual C#
A project for creating a command-line application that can run on .NET Core on Windows, Linux and MacOS.
Name: Ch01_WelcomeDotNetCore
Location: C:\Code
Solution name: Chapter01
Browse...
Create directory for solution
Add to Source Control
OK
Cancel

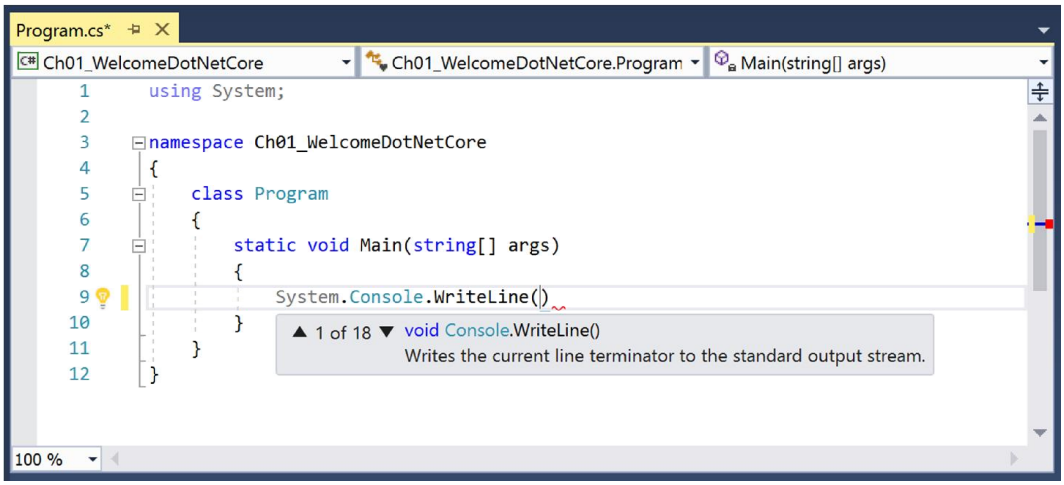

Program.cs*
Ch01_WelcomeDotNetCore
Ch01_WelcomeDotNetCore.Program
Main(string[] args)
using System;
namespace Ch01_WelcomeDotNetCore
{
class Program
{
static void Main(string[] args)
{
sy
}
}
}
System
namespace System
100 %

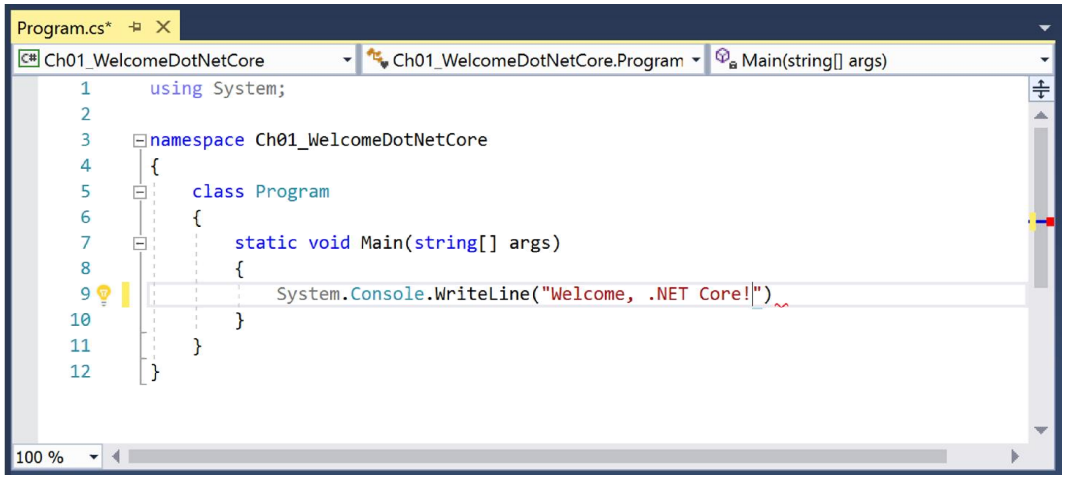

Program.cs*
Ch01_WelcomeDotNetCore
Ch01_WelcomeDotNetCore.Program
Main(string[] args)
using System;
namespace Ch01_WelcomeDotNetCore
{
class Program
{
static void Main(string[] args)
{
System.
}
}
}
Action
Action<>
Activator
AggregateException
AppContext
ArgumentException
ArgumentNullException
ArgumentOutOfRangeException
ArithmeticException
delegate void System.Action() (+ 16 overloads)
Encapsulates a method that has no parameters and does not return a value.
100 %


Program.cs*
Ch01_WelcomeDotNetCore
Ch01_WelcomeDotNetCore.Program
Main(string[] args)
using System;
namespace Ch01_WelcomeDotNetCore
{
class Program
{
static void Main(string[] args)
{
System.con
}
}
}
AppContext
BitConverter
Console
ConsoleCancelEventArgs
ConsoleCancelEventHandler
ConsoleColor
ConsoleKey
ConsoleKeyInfo
ConsoleModifiers
class System.Console
Represents the standard input, output, and error streams for console applications.
Framework source code for this type, see the Reference Source.
100 %

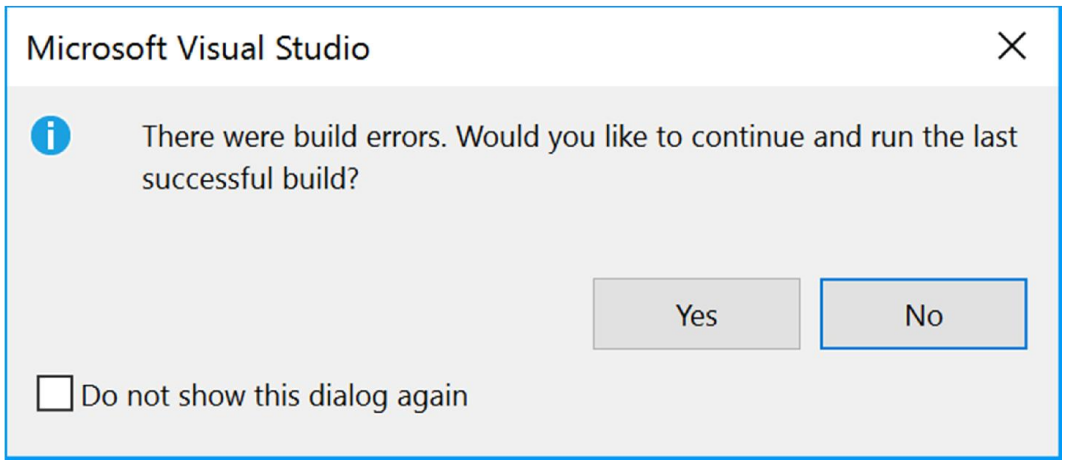

Program.cs*
Ch01_WelcomeDotNetCore
Ch01_WelcomeDotNetCore.Program
Main(string[] args)
using System;
namespace Ch01_WelcomeDotNetCore
{
class Program
{
static void Main(string[] args)
{
System.Console.
}
}
}
BackgroundColor
Beep
BufferHeight
BufferWidth
CancelKeyPress
CapsLock
Clear
CursorLeft
CursorSize
ConsoleColor Console.BackgroundColor { get; set; }
Gets or sets the background color of the console.
100 %

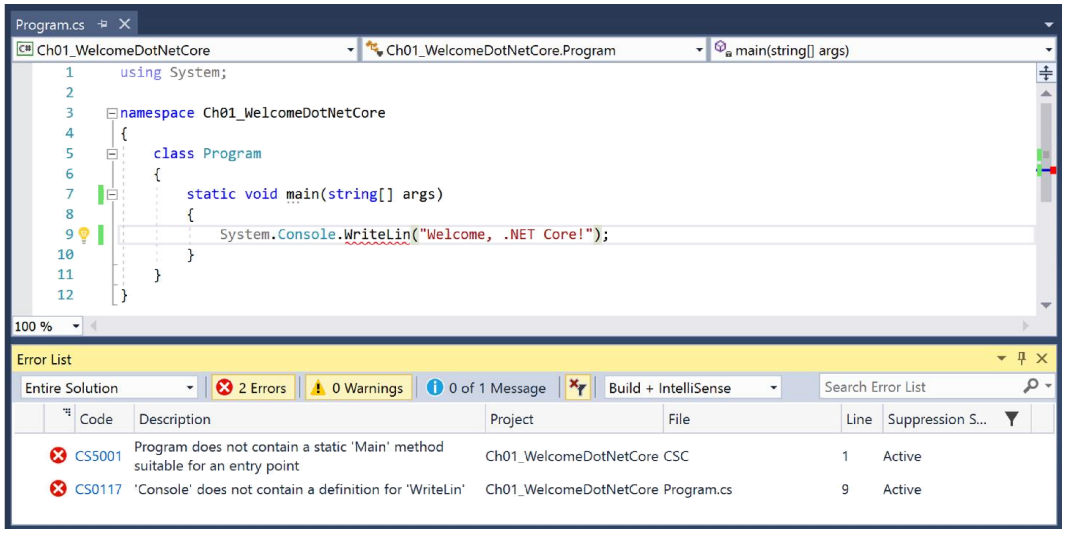

Program.cs*
Ch01_WelcomeDotNetCore
Ch01_WelcomeDotNetCore.Program
Main(string[] args)
using System;
namespace Ch01_WelcomeDotNetCore
{
class Program
{
static void Main(string[] args)
{
System.Console.wr
}
}
}
Write
WriteLine
100 %

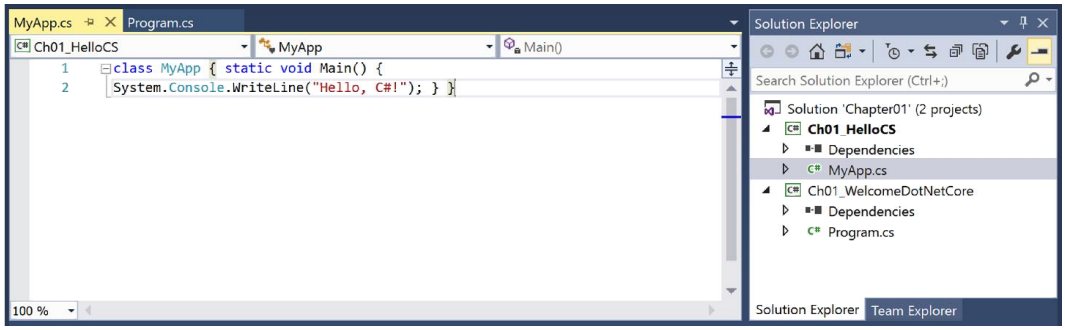

Program.cs*
Ch01_WelcomeDotNetCore
Ch01_WelcomeDotNetCore.Program
Main(string[] args)
using System;
namespace Ch01_WelcomeDotNetCore
{
class Program
{
static void Main(string[] args)
{
System.Console.WriteLine()
}
}
}
▲ 1 of 18 ▼ void Console.WriteLine()
Writes the current line terminator to the standard output stream.
100 %

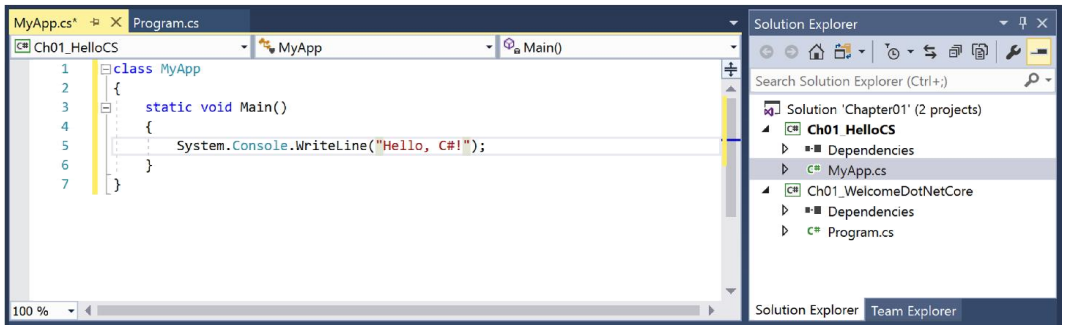

Program.cs*
Ch01_WelcomeDotNetCore
Ch01_WelcomeDotNetCore.Program
Main(string[] args)
using System;
namespace Ch01_WelcomeDotNetCore
{
class Program
{
static void Main(string[] args)
{
System.Console.WriteLine("Welcome, .NET Core!")
}
}
}
100 %

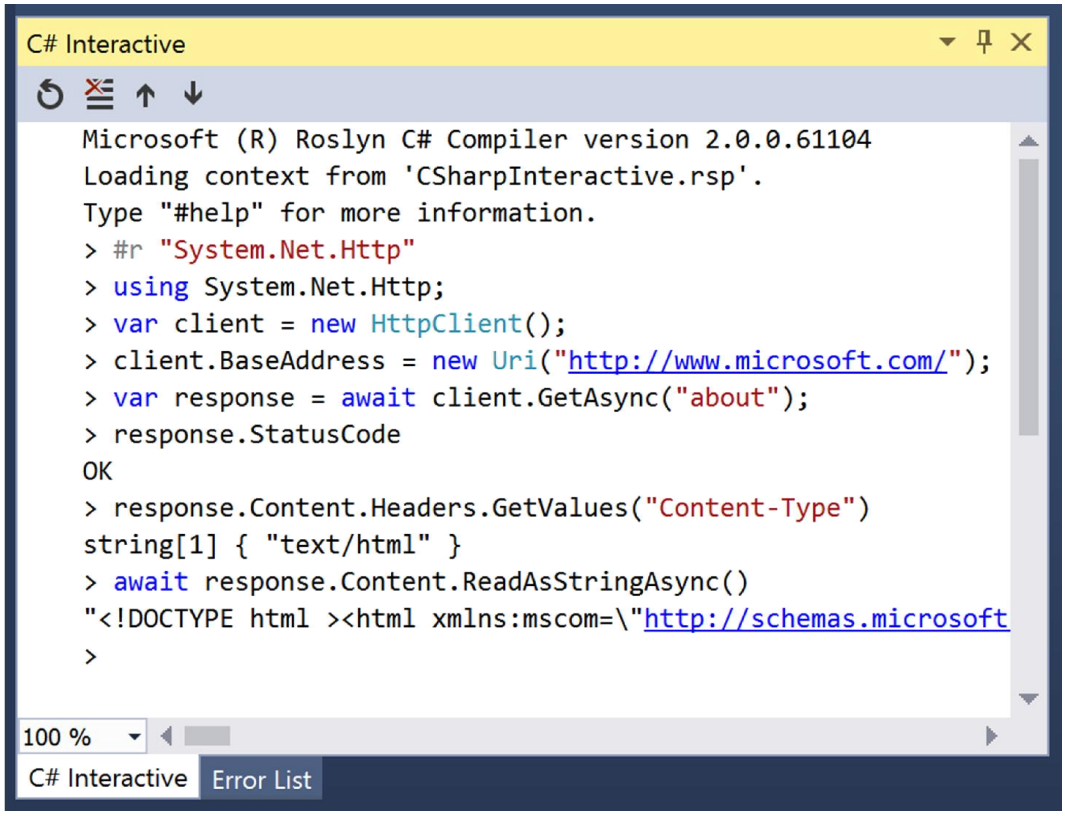
C:\Windows\system32\cmd.exe
Welcome, .NET Core!
Press any key to continue . . .

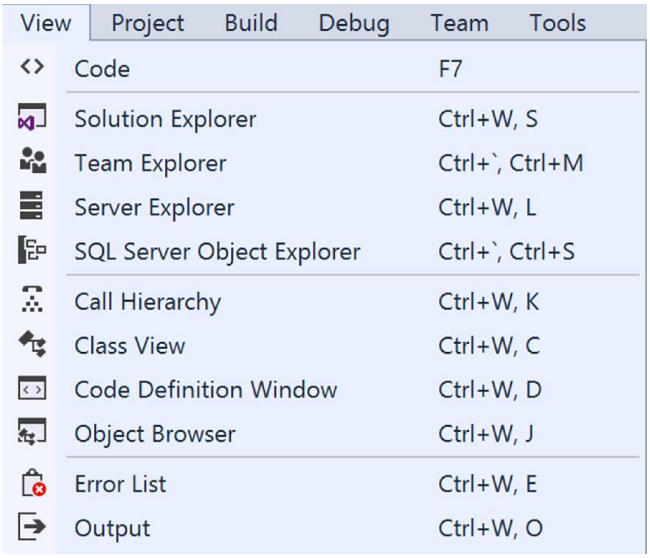

Microsoft Visual Studio
There were build errors. Would you like to continue and run the last successful build?
Yes
No
Do not show this dialog again

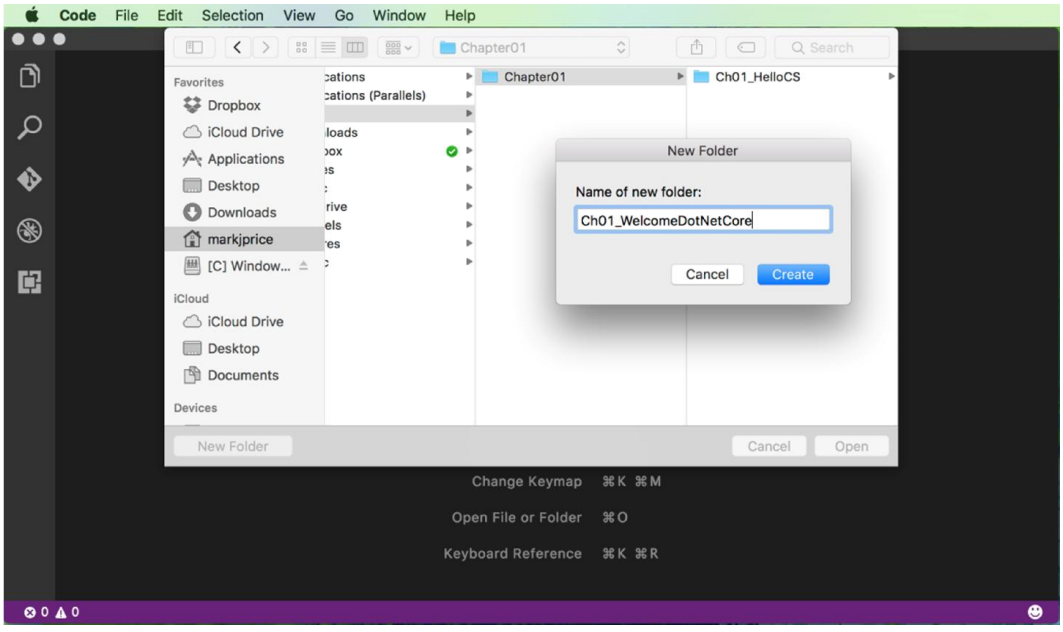

Program.cs
Ch01_WelcomeDotNetCore
Ch01_WelcomeDotNetCore.Program
main(string[] args)
using System;
namespace Ch01_WelcomeDotNetCore
{
class Program
{
static void main(string[] args)
{
System.Console.WriteLin("Welcome, .NET Core!");
}
}
}
100 %
Error List
Entire Solution
2 Errors
0 Warnings
0 of 1 Message
Build + IntelliSense
Search Error List
Code
Description
Project
File
Line
Suppression S...
CS5001
Program does not contain a static 'Main' method suitable for an entry point
Ch01_WelcomeDotNetCore
CSC
1
Active
CS0117
'Console' does not contain a definition for 'WriteLin'
Ch01_WelcomeDotNetCore
Program.cs
9
Active

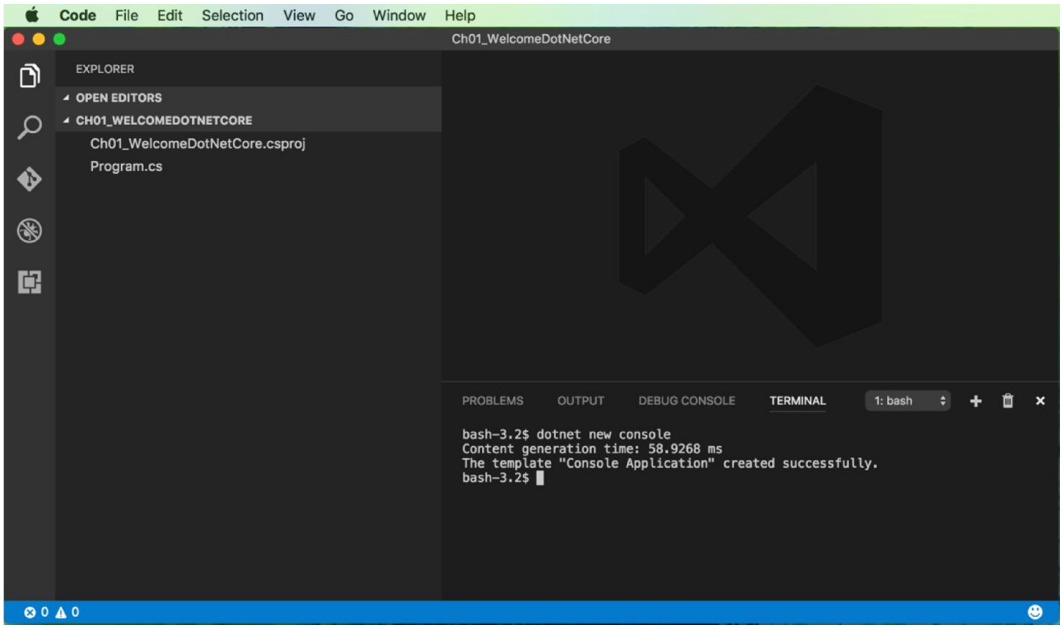

MyApp.cs
Program.cs
Ch01_HelloCS
MyApp
Main()
class MyApp { static void Main() {
System.Console.WriteLine("Hello, C#!"); } }
100 %
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Chapter01' (2 projects)
Ch01_HelloCS
Dependencies
MyApp.cs
Ch01_WelcomeDotNetCore
Dependencies
Program.cs
Solution Explorer
Team Explorer

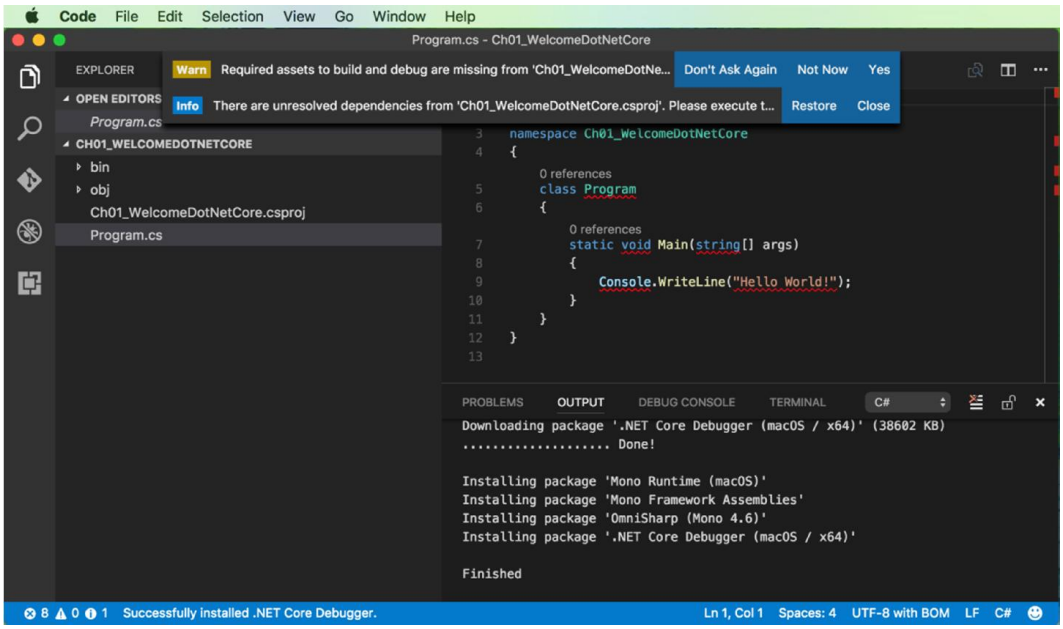

MyApp.cs*
Program.cs
Ch01_HelloCS
MyApp
Main()
class MyApp
{
static void Main()
{
System.Console.WriteLine("Hello, C#!");
}
}
100 %
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Chapter01' (2 projects)
Ch01_HelloCS
Dependencies
MyApp.cs
Ch01_WelcomeDotNetCore
Dependencies
Program.cs
Solution Explorer
Team Explorer

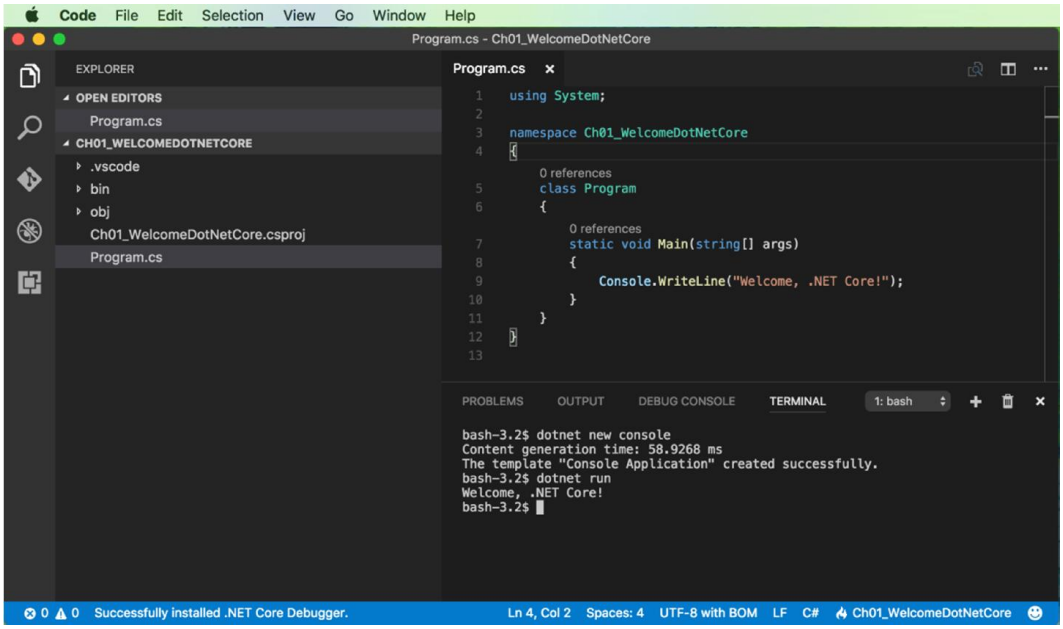

C# Interactive
Microsoft (R) Roslyn C# Compiler version 2.0.0.61104
Loading context from 'CSharpInteractive.rsp'.
Type "#help" for more information.
> #r "System.Net.Http"
> using System.Net.Http;
> var client = new HttpClient();
> client.BaseAddress = new Uri("http://www.microsoft.com/");
> var response = await client.GetAsync("about");
> response.StatusCode
OK
> response.Content.Headers.GetValues("Content-Type")
string[1] { "text/html" }
> await response.Content.ReadAsStringAsync()
"<!DOCTYPE html ><html xmlns:mscom=\"http://schemas.microsoft
>
100 %
C# Interactive
Error List

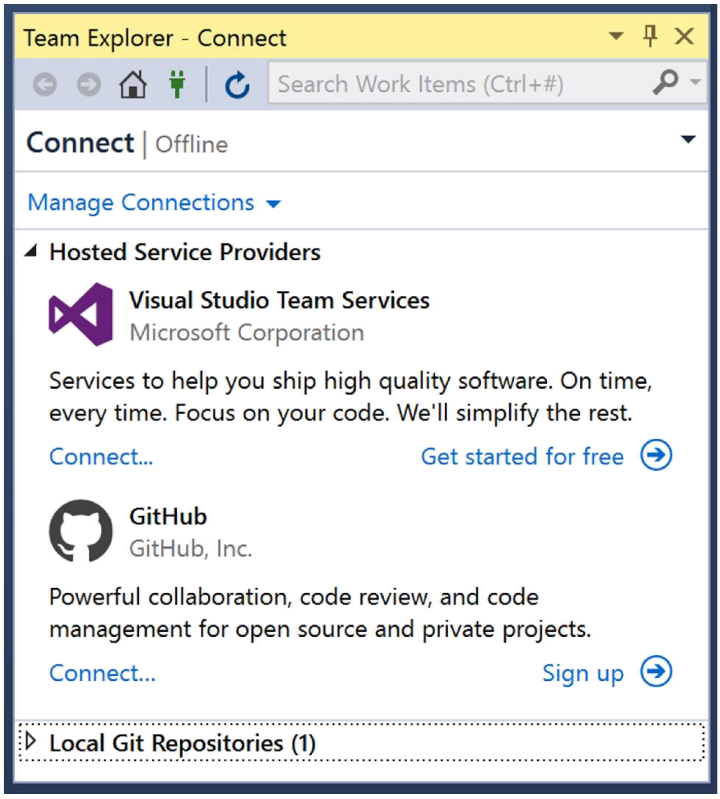

View
Project
Build
Debug
Team
Tools
Code F7
Solution Explorer Ctrl+W, S
Team Explorer Ctrl+`, Ctrl+M
Server Explorer Ctrl+W, L
SQL Server Object Explorer Ctrl+`, Ctrl+S
Call Hierarchy Ctrl+W, K
Class View Ctrl+W, C
Code Definition Window Ctrl+W, D
Object Browser Ctrl+W, J
Error List Ctrl+W, E
Output Ctrl+W, O

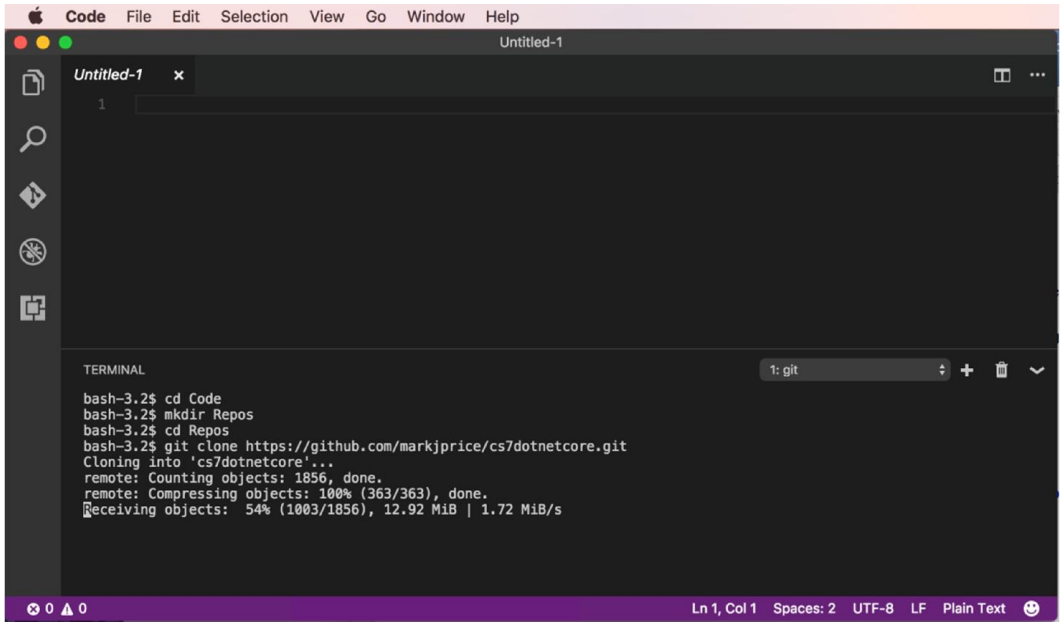

Code File Edit Selection View Go Window Help
Chapter01
Search
Favorites
Dropbox
iCloud Drive
Applications
Desktop
Downloads
markjprice
iCloud
Devices
Ch01_HelloCS
New Folder
Name of new folder:
Ch01_WelcomeDotNetCore
Cancel
Create
New Folder
Cancel
Open
Change Keymap ⌘K ⌘M
Open File or Folder ⌘O
Keyboard Reference ⌘K ⌘R


Code File Edit Selection View Go Window Help
Ch01_WelcomeDotNetCore
EXPLORER
OPEN EDITORS
CH01_WELCOMEDOTNETCORE
Ch01_WelcomeDotNetCore.csproj
Program.cs
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL 1: bash
bash-3.2$ dotnet new console
Content generation time: 58.9268 ms
The template "Console Application" created successfully.
bash-3.2$
0 0

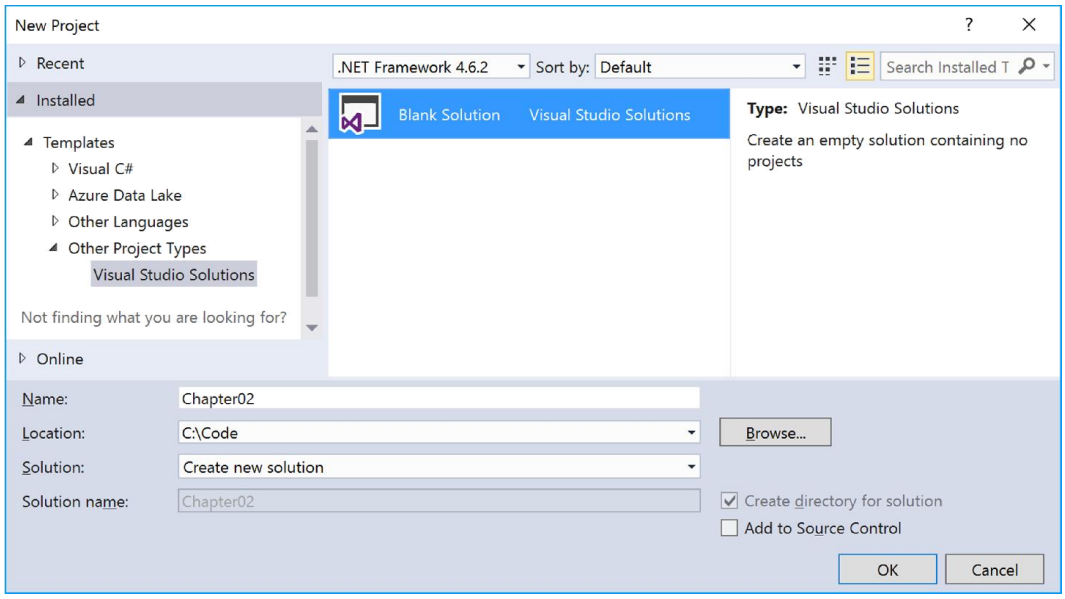

Code File Edit Selection View Go Window Help
Program.cs - Ch01_WelcomeDotNetCore
EXPLORER
Warn Required assets to build and debug are missing from 'Ch01_WelcomeDotNe... Don't Ask Again Not Now Yes
Info There are unresolved dependencies from 'Ch01_WelcomeDotNetCore.csproj'. Please execute t... Restore Close
OPEN EDITORS
Program.cs
CH01_WELCOMEDOTNETCORE
bin
obj
Ch01_WelcomeDotNetCore.csproj
Program.cs
namespace Ch01_WelcomeDotNetCore
{
0 references
class Program
{
0 references
static void Main(string[] args)
{
Console.WriteLine("Hello World!");
}
}
}
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL C#
Downloading package '.NET Core Debugger (macOS / x64)' (38602 KB)
..... Done!
Installing package 'Mono Runtime (macOS)'
Installing package 'Mono Framework Assemblies'
Installing package 'OmniSharp (Mono 4.6)'
Installing package '.NET Core Debugger (macOS / x64)'
Finished
8 0 1 Successfully installed .NET Core Debugger.
Ln 1, Col 1 Spaces: 4 UTF-8 with BOM LF C#

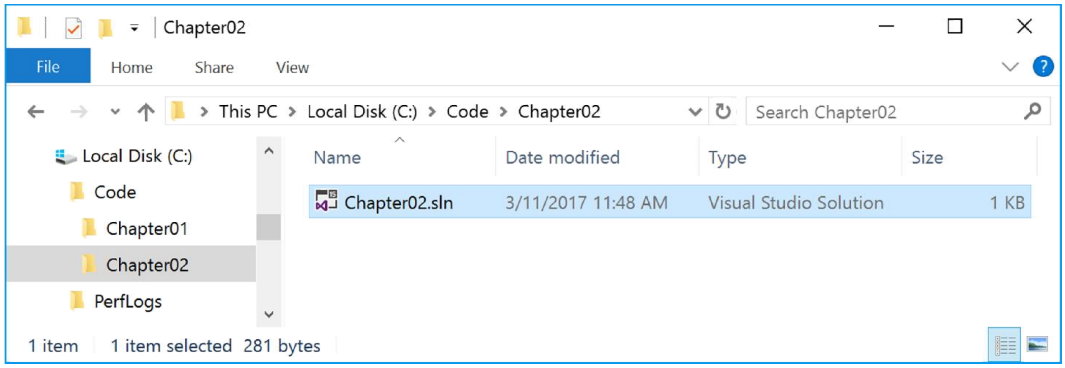

Code File Edit Selection View Go Window Help
Program.cs - Ch01_WelcomeDotNetCore
EXPLORER
OPEN EDITORS
Program.cs
CH01_WELCOMEDOTNETCORE
.vscode
bin
obj
Ch01_WelcomeDotNetCore.csproj
Program.cs
Program.cs
using System;
namespace Ch01_WelcomeDotNetCore
{
0 references
class Program
{
0 references
static void Main(string[] args)
{
Console.WriteLine("Welcome, .NET Core!");
}
}
}
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL 1: bash
bash-3.2$ dotnet new console
Content generation time: 58.9268 ms
The template "Console Application" created successfully.
bash-3.2$ dotnet run
Welcome, .NET Core!
bash-3.2$
0 0 Successfully installed .NET Core Debugger.
Ln 4, Col 2 Spaces: 4 UTF-8 with BOM LF C# Ch01_WelcomeDotNetCore

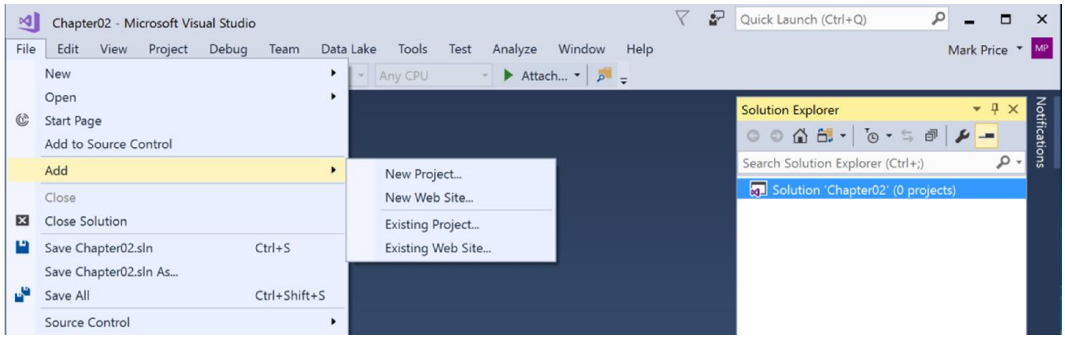

Team Explorer - Connect
Search Work Items (Ctrl+#)
Connect | Offline
Manage Connections
Hosted Service Providers
Visual Studio Team Services
Microsoft Corporation
Services to help you ship high quality software. On time, every time. Focus on your code. We'll simplify the rest.
Connect...
Get started for free
GitHub
GitHub, Inc.
Powerful collaboration, code review, and code management for open source and private projects.
Connect...
Sign up
Local Git Repositories (1)

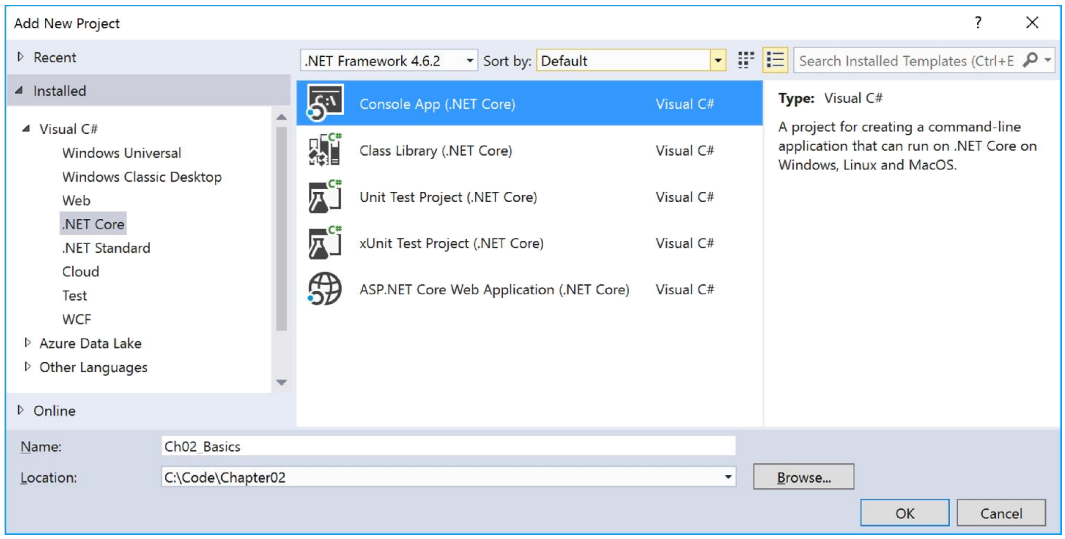

Code File Edit Selection View Go Window Help
Untitled-1
Untitled-1
1
TERMINAL
1: git
bash-3.2$ cd Code
bash-3.2$ mkdir Repos
bash-3.2$ cd Repos
bash-3.2$ git clone https://github.com/markjprice/cs7dotnetcore.git
Cloning into 'cs7dotnetcore'...
remote: Counting objects: 1856, done.
remote: Compressing objects: 100% (363/363), done.
Receiving objects: 54% (1003/1856), 12.92 MiB | 1.72 MiB/s
0 0
Ln 1, Col 1 Spaces: 2 UTF-8 LF Plain Text

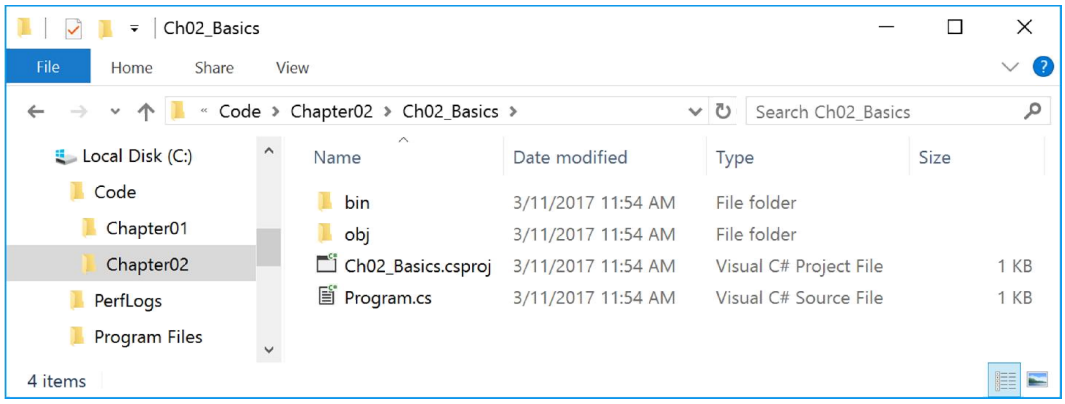
Chapter 2: Speaking C#

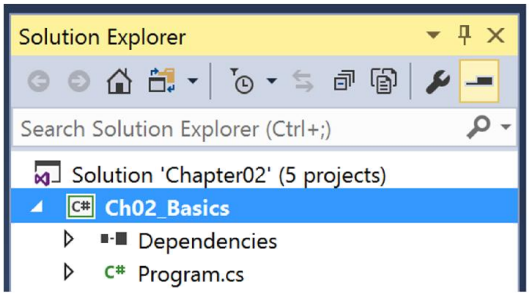


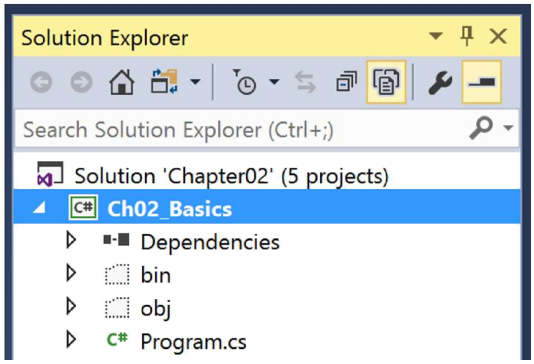


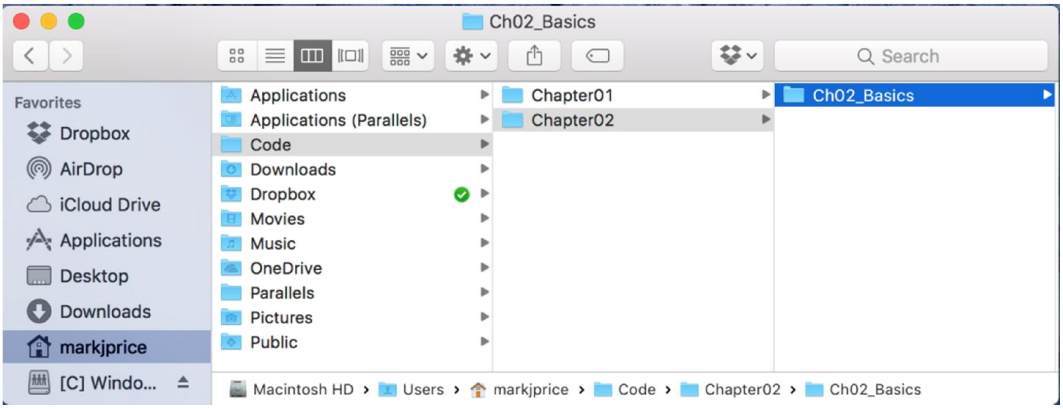

Chapter02 - Microsoft Visual Studio
Quick Launch (Ctrl+Q)
File Edit View Project Debug Team Data Lake Tools Test Analyze Window Help
Mark Price
New
Open
Start Page
Add to Source Control
Add
Close
Close Solution
Save Chapter02.sln Ctrl+S
Save Chapter02.sln As...
Save All Ctrl+Shift+S
Source Control
New Project...
New Web Site...
Existing Project...
Existing Web Site...
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Chapter02' (0 projects)
Notifications

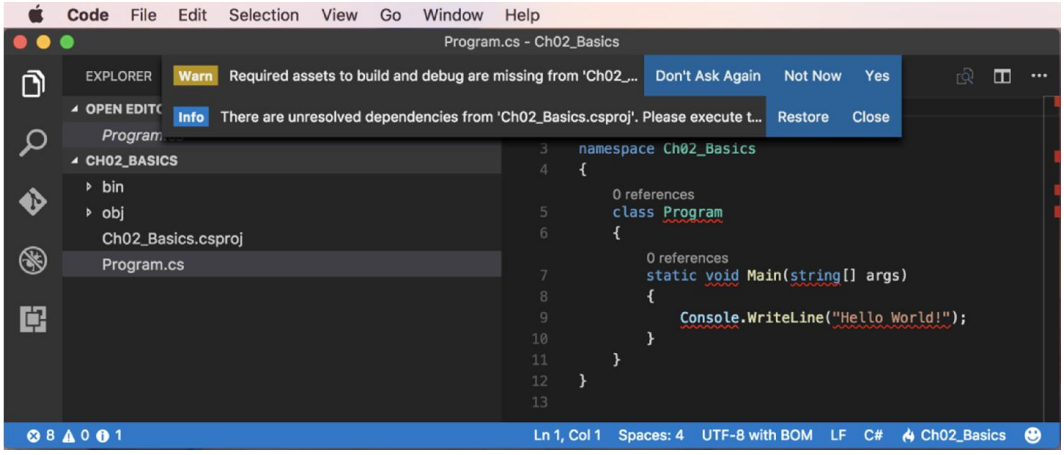

Add New Project
Recent
Installed
Visual C#
Windows Universal
Windows Classic Desktop
Web
.NET Core
.NET Standard
Cloud
Test
WCF
Azure Data Lake
Other Languages
Online
.NET Framework 4.6.2
Sort by: Default
Search Installed Templates (Ctrl+E
Console App (.NET Core) Visual C#
Class Library (.NET Core) Visual C#
Unit Test Project (.NET Core) Visual C#
xUnit Test Project (.NET Core) Visual C#
ASP.NET Core Web Application (.NET Core) Visual C#
Type: Visual C#
A project for creating a command-line application that can run on .NET Core on Windows, Linux and MacOS.
Name: Ch02_Basics
Location: C:\Code\Chapter02
Browse...
OK
Cancel

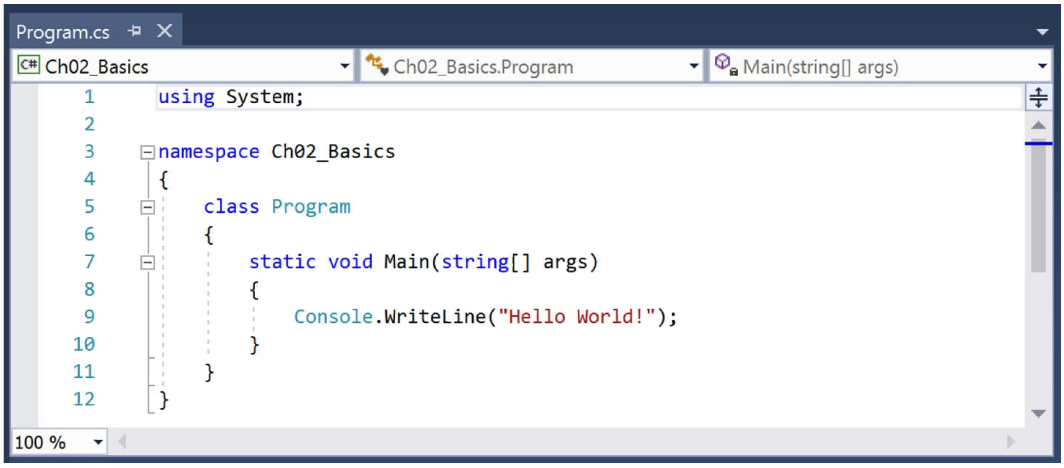

Ch02_Basics
File Home Share View
Code › Chapter02 › Ch02_Basics ›
Search Ch02_Basics
Local Disk (C:)
Code
Chapter01
Chapter02
PerfLogs
Program Files
Name Date modified Type Size
bin 3/11/2017 11:54 AM File folder
obj 3/11/2017 11:54 AM File folder
Ch02_Basics.csproj 3/11/2017 11:54 AM Visual C# Project File 1 KB
Program.cs 3/11/2017 11:54 AM Visual C# Source File 1 KB
4 items

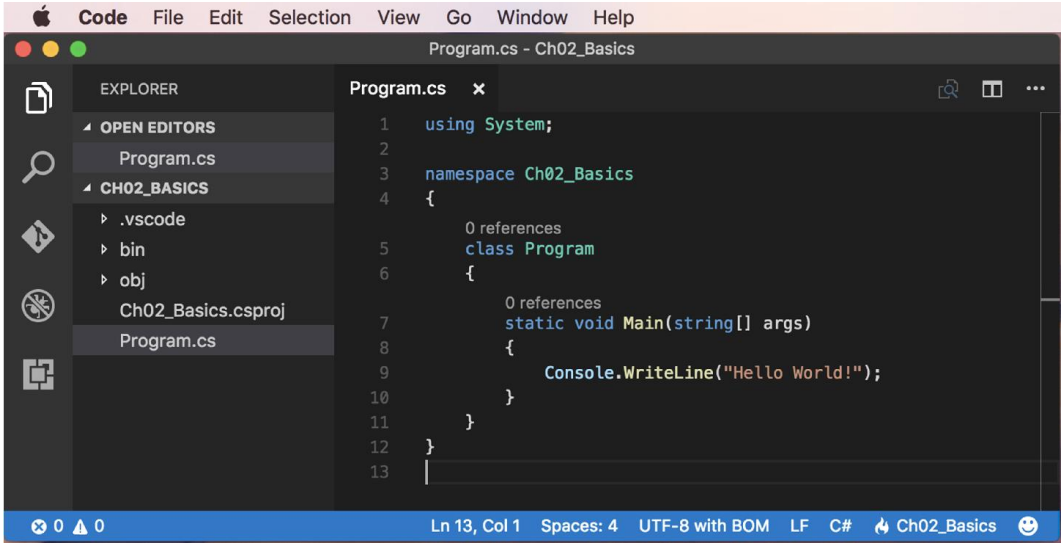

Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Chapter02' (5 projects)
Ch02_Basics
Dependencies
Program.cs

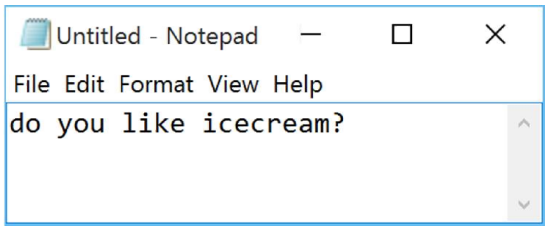

Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Chapter02' (5 projects)
Ch02_Basics
Dependencies
bin
obj
Program.cs

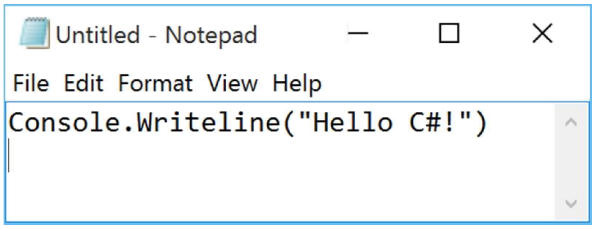

Ch02_Basics
Search
Favorites
Dropbox
AirDrop
iCloud Drive
Applications
Desktop
Downloads
markjprice
[C] Windo...
Applications
Applications (Parallels)
Code
Downloads
Dropbox
Movies
Music
OneDrive
Parallels
Pictures
Public
Chapter01
Chapter02
Ch02_Basics
Macintosh HD
Users
markjprice
Code
Chapter02
Ch02_Basics

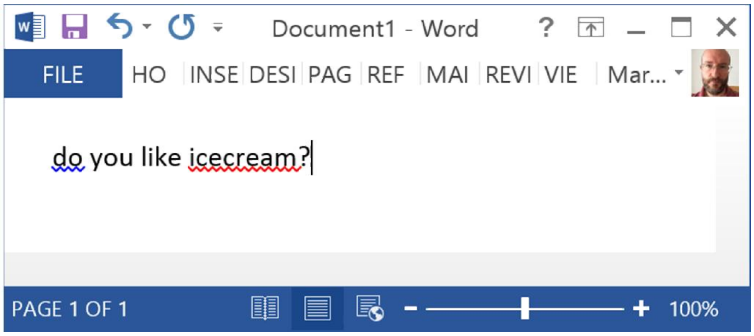

Code File Edit Selection View Go Window Help
Program.cs - Ch02_Basics
EXPLORER
Warn Required assets to build and debug are missing from 'Ch02_...
Don't Ask Again
Not Now
Yes
Info There are unresolved dependencies from 'Ch02_Basics.csproj'. Please execute t...
Restore
Close
OPEN EDITORS
CH02_BASICS
bin
obj
Ch02_Basics.csproj
Program.cs
namespace Ch02_Basics
{
0 references
class Program
{
0 references
static void Main(string[] args)
{
Console.WriteLine("Hello World!");
}
}
}
Ln 1, Col 1 Spaces: 4 UTF-8 with BOM LF C# Ch02_Basics

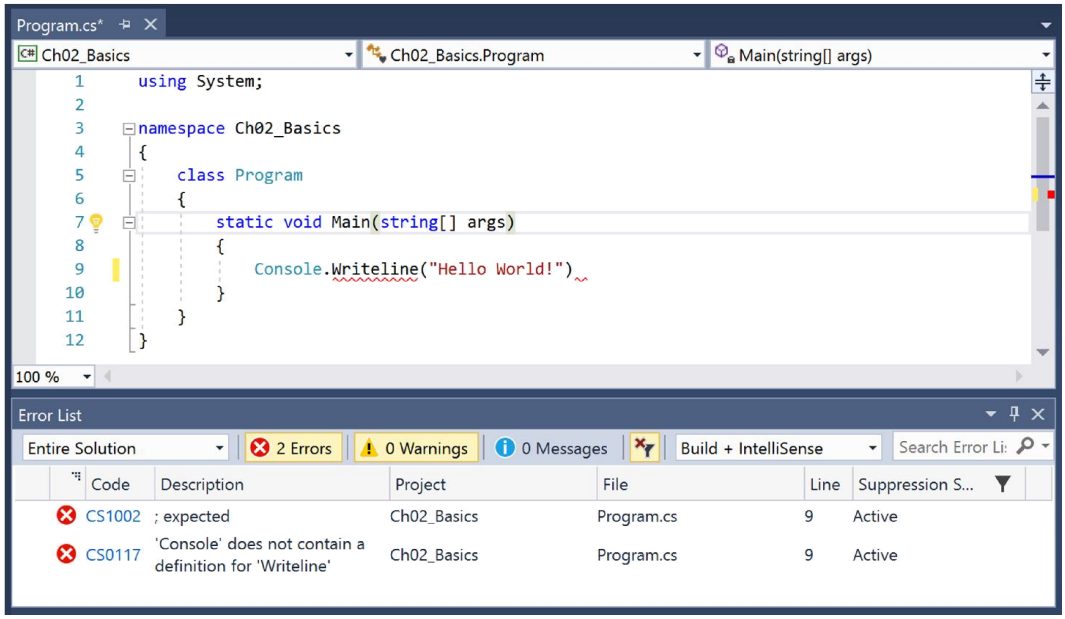

Program.cs
Ch02_Basics
Ch02_Basics.Program
Main(string[] args)
using System;
namespace Ch02_Basics
{
class Program
{
static void Main(string[] args)
{
Console.WriteLine("Hello World!");
}
}
}
100 %

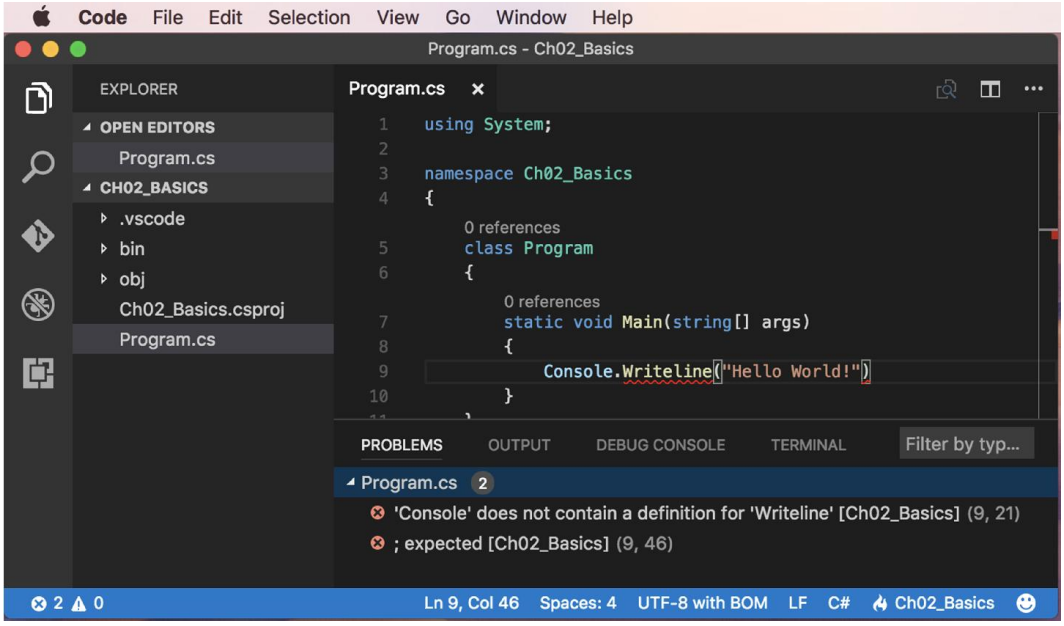

Code File Edit Selection View Go Window Help
Program.cs - Ch02_Basics
EXPLORER
OPEN EDITORS
Program.cs
CH02_BASICS
.vscode
bin
obj
Ch02_Basics.csproj
Program.cs
Program.cs
using System;
namespace Ch02_Basics
{
0 references
class Program
{
0 references
static void Main(string[] args)
{
Console.WriteLine("Hello World!");
}
}
}
Ln 13, Col 1 Spaces: 4 UTF-8 with BOM LF C# Ch02_Basics

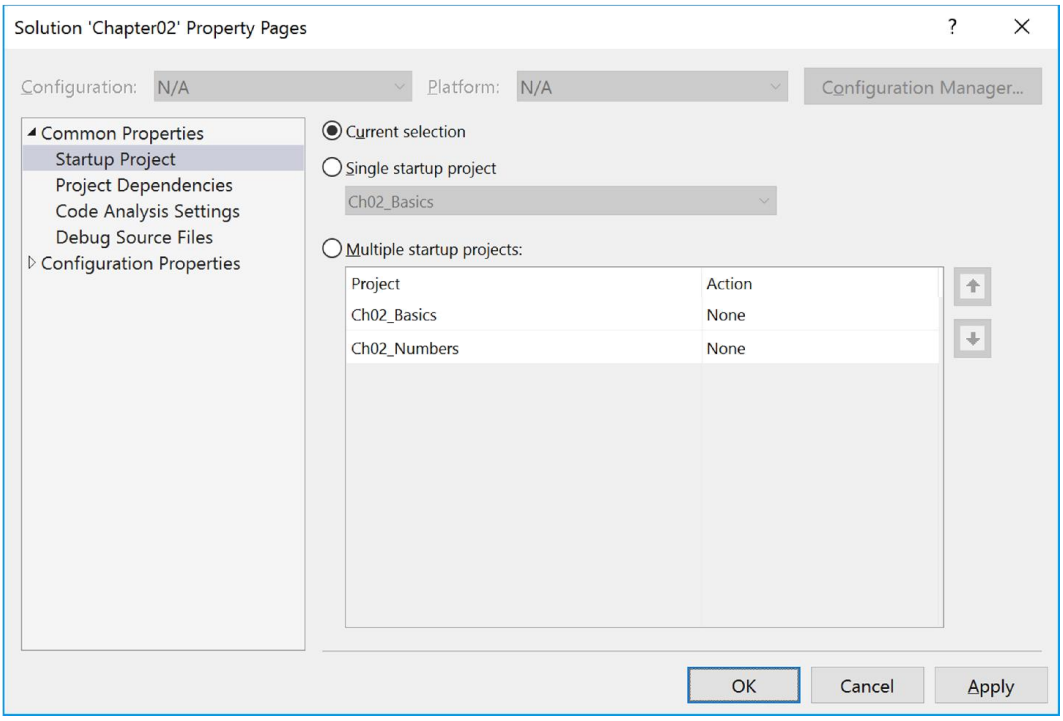

Untitled - Notepad
File Edit Format View Help
do you like icecream?

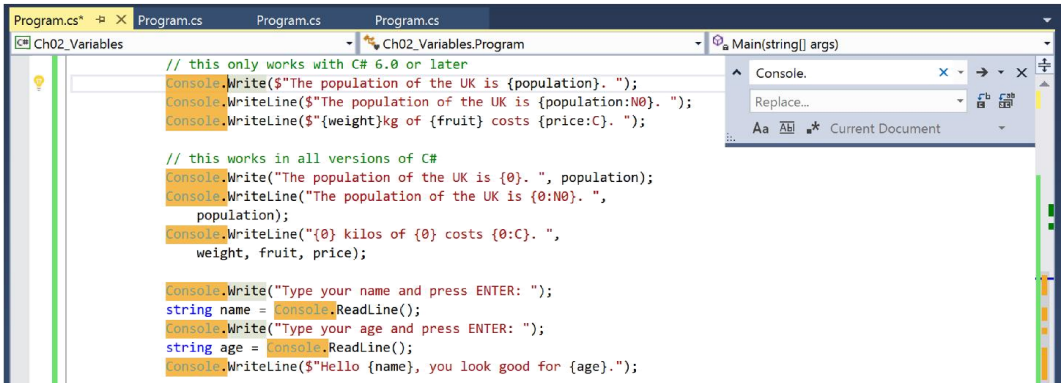

Untitled - Notepad
File Edit Format View Help
Console.Writeline("Hello C#!")

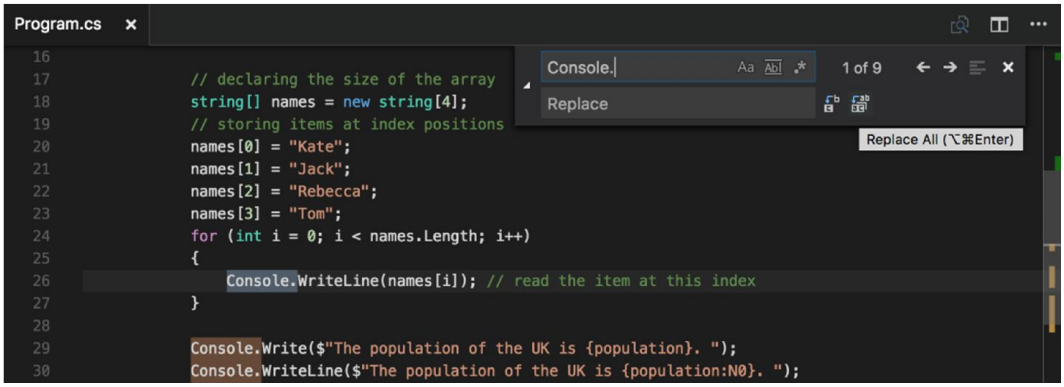

Document1 - Word
FILE
HO
INSE
DESI
PAG
REF
MAI
REVI
VIE
Mar...
do you like icecream?
PAGE 1 OF 1
100%

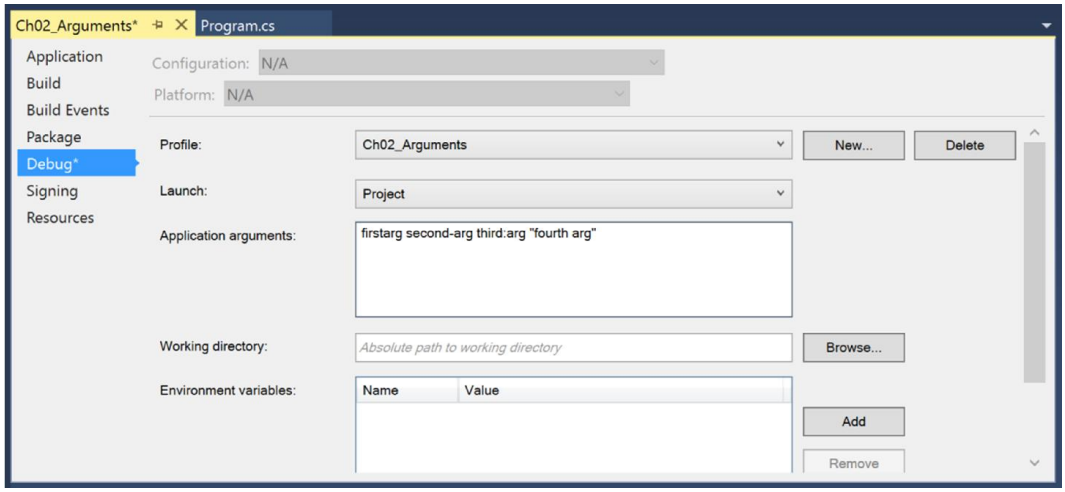

Program.cs*
Ch02_Basics
Ch02_Basics.Program
Main(string[] args)
1 using System;
2
3 namespace Ch02_Basics
4 {
5 class Program
6 {
7 static void Main(string[] args)
8 {
9 Console.Writeline("Hello World!")
10 }
11 }
12 }
100 %
Error List
Entire Solution
2 Errors
0 Warnings
0 Messages
Build + IntelliSense
Search Error Li:
Code
Description
Project
File
Line
Suppression S...
CS1002
; expected
Ch02_Basics
Program.cs
9
Active
CS0117
'Console' does not contain a definition for 'Writeline'
Ch02_Basics
Program.cs
9
Active

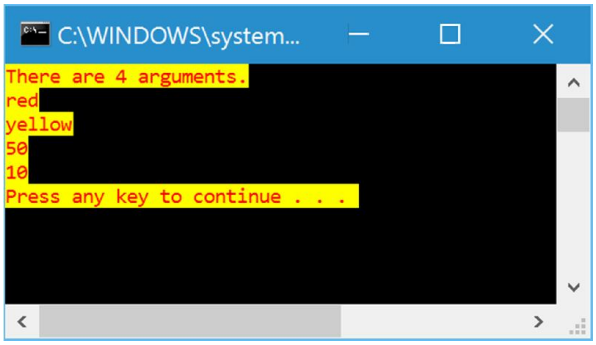

Code File Edit Selection View Go Window Help
Program.cs - Ch02_Basics
EXPLORER
OPEN EDITORS
Program.cs
CH02_BASICS
.vscode
bin
obj
Ch02_Basics.csproj
Program.cs
Program.cs
1 using System;
2
3 namespace Ch02_Basics
4 {
0 references
5 class Program
6 {
0 references
7 static void Main(string[] args)
8 {
9 Console.Writeline("Hello World!")
10 }
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
Filter by typ...
Program.cs 2
'Console' does not contain a definition for 'Writeline' [Ch02_Basics] (9, 21)
; expected [Ch02_Basics] (9, 46)
2 0
Ln 9, Col 46
Spaces: 4
UTF-8 with BOM
LF
C#
Ch02_Basics

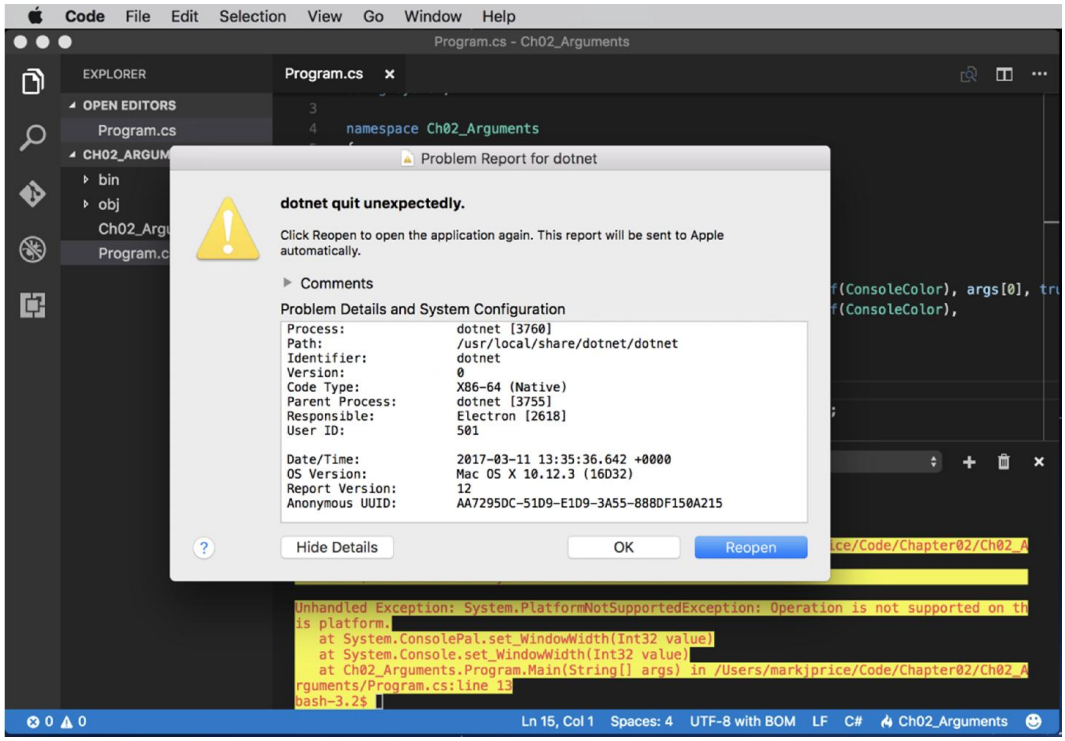

Solution 'Chapter02' Property Pages
Configuration: N/A
Platform: N/A
Configuration Manager...
Common Properties
Startup Project
Project Dependencies
Code Analysis Settings
Debug Source Files
Configuration Properties
Current selection
Single startup project
Ch02_Basics
Multiple startup projects:
Project
Action
Ch02_Basics
None
Ch02_Numbers
None
OK
Cancel
Apply


Program.cs*
Program.cs
Program.cs
Program.cs
Ch02_Variables
Ch02_Variables.Program
Main(string[] args)
Console.
Replace...
Current Document
// this only works with C# 6.0 or later
Console.Write($"The population of the UK is {population}. ");
Console.WriteLine($"The population of the UK is {population:N0}. ");
Console.WriteLine($"{weight}kg of {fruit} costs {price:C}. ");
// this works in all versions of C#
Console.Write("The population of the UK is {0}. ", population);
Console.WriteLine("The population of the UK is {0:N0}. ",
population);
Console.WriteLine("{0} kilos of {0} costs {0:C}. ",
weight, fruit, price);
Console.Write("Type your name and press ENTER: ");
string name = Console.ReadLine();
Console.Write("Type your age and press ENTER: ");
string age = Console.ReadLine();
Console.WriteLine($"Hello {name}, you look good for {age}.");

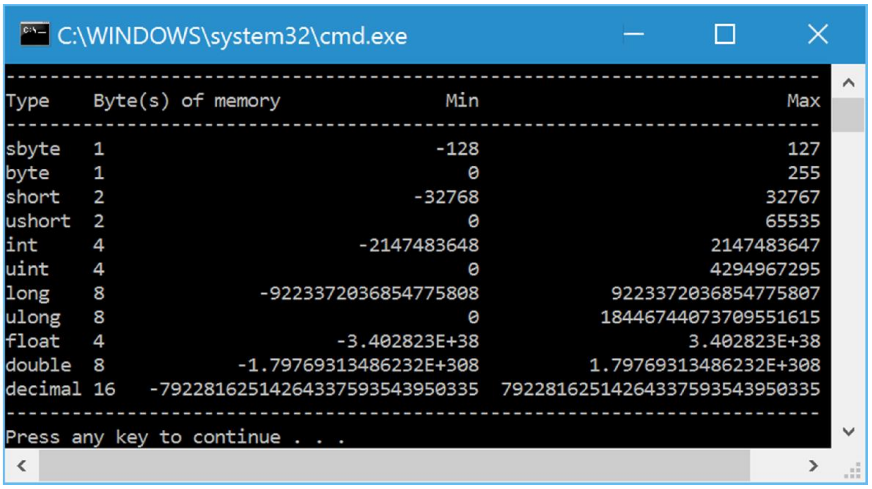

Program.cs
Console.
1 of 9
Replace
Replace All (⌥⌘Enter)
// declaring the size of the array
string[] names = new string[4];
// storing items at index positions
names[0] = "Kate";
names[1] = "Jack";
names[2] = "Rebecca";
names[3] = "Tom";
for (int i = 0; i < names.Length; i++)
{
Console.WriteLine(names[i]); // read the item at this index
}
Console.Write($"The population of the UK is {population}. ");
Console.WriteLine($"The population of the UK is {population:N0}. ");


Ch02_Arguments*
Program.cs
Application
Build
Build Events
Package
Debug*
Signing
Resources
Configuration: N/A
Platform: N/A
Profile:
Ch02_Arguments
New...
Delete
Launch:
Project
Application arguments:
firstarg second-arg third:arg "fourth arg"
Working directory:
Absolute path to working directory
Browse...
Environment variables:
Name
Value
Add
Remove


C:\WINDOWS\system...
There are 4 arguments.
red
yellow
50
10
Press any key to continue . . .



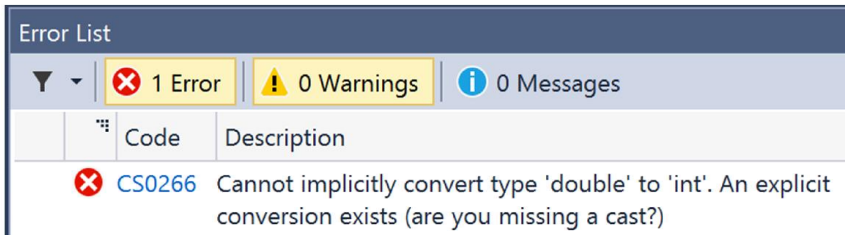

```
Unhandled Exception: System.PlatformNotSupportedException: Operation is not supported on this platform.
   at System.ConsolePal.set_WindowWidth(Int32 value)
   at System.Console.set_WindowWidth(Int32 value)
   at ConsoleApplication.Program.Main(String[] args) in /Users/markjprice/Code/Chapter02/Ch02_Arguments/
Program.cs:line 12
```

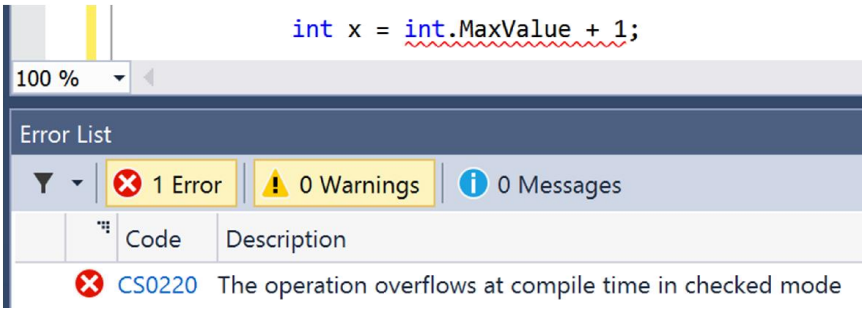

C:\WINDOWS\system32\cmd.exe
Type Byte(s) of memory Min Max
sbyte 1 -128 127
byte 1 0 255
short 2 -32768 32767
ushort 2 0 65535
int 4 -2147483648 2147483647
uint 4 0 4294967295
long 8 -9223372036854775808 9223372036854775807
ulong 8 0 18446744073709551615
float 4 -3.402823E+38 3.402823E+38
double 8 -1.79769313486232E+308 1.79769313486232E+308
decimal 16 -79228162514264337593543950335 79228162514264337593543950335
Press any key to continue . . .

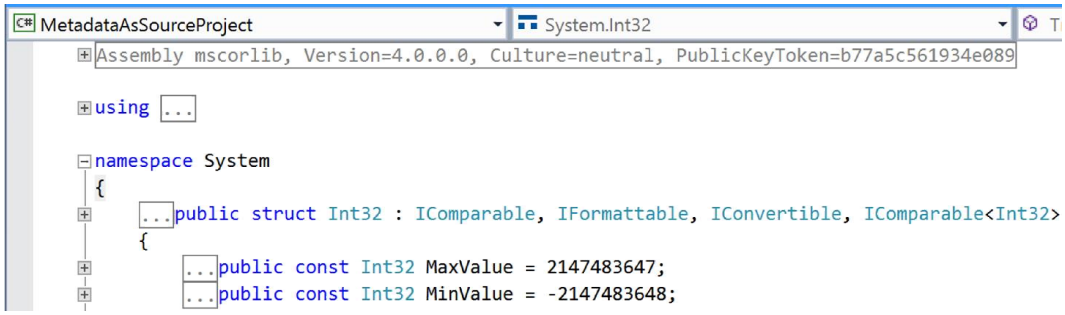
Chapter 3: Controlling the Flow, Converting Types, and Handling Exceptions

Chris Adamson @invalidname · May 26
Had a colleague remove my {} surrounding a 1-line if clause today. No, not angry. It's on his conscience now. **#gotofail**

10 15








```
//
// Summary:
//     Converts the string representation of a number to its 32-bit signed integer equivalent.
//
// Parameters:
//   s:
//     A string containing a number to convert.
//
// Returns:
//     A 32-bit signed integer equivalent to the number contained in s.
//
// Exceptions:
//   T:System.ArgumentNullException:
//     s is null.
//
//   T:System.FormatException:
//     s is not in the correct format.
//
//   T:System.OverflowException:
//     s represents a number less than System.Int32.MinValue or greater than System.Int32.MaxValue.
public static Int32 Parse(string s);
```

20
votes

7
answers

Q: Using SecureString

Can this be simplified to a one liner? Feel free to completely rewrite it as long as **secureString** gets initialized properly. **SecureString secureString** = new **SecureString** (); foreach (char c in "fizzbuzz".ToCharArray()) { secureString.AppendChar (c); } …

c# security securestring

asked Mar 10 '10 by Todd Smith

16
votes

7
answers

Q: Convert String to SecureString

How to convert String to **SecureString**? …

c# securestring

asked Oct 15 '09 by Nila

145
votes

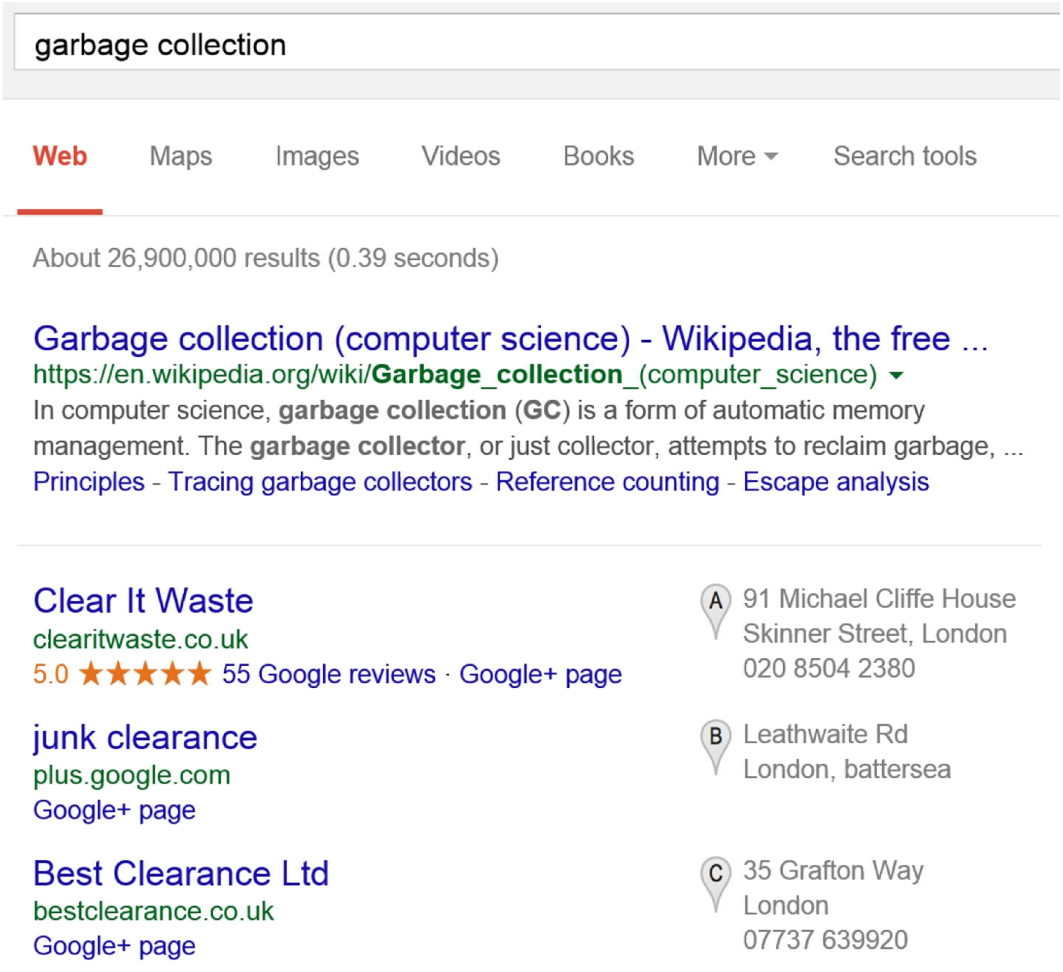
8
answers

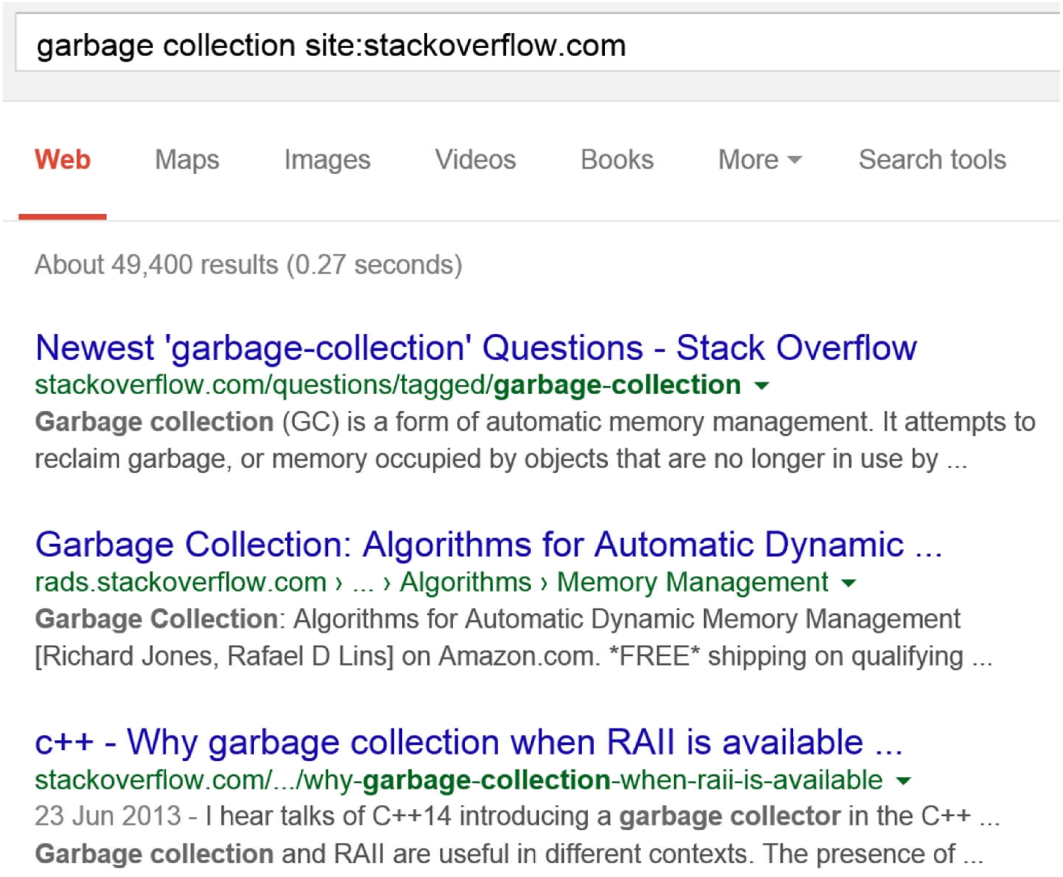
Q: When would I need a SecureString in .NET?

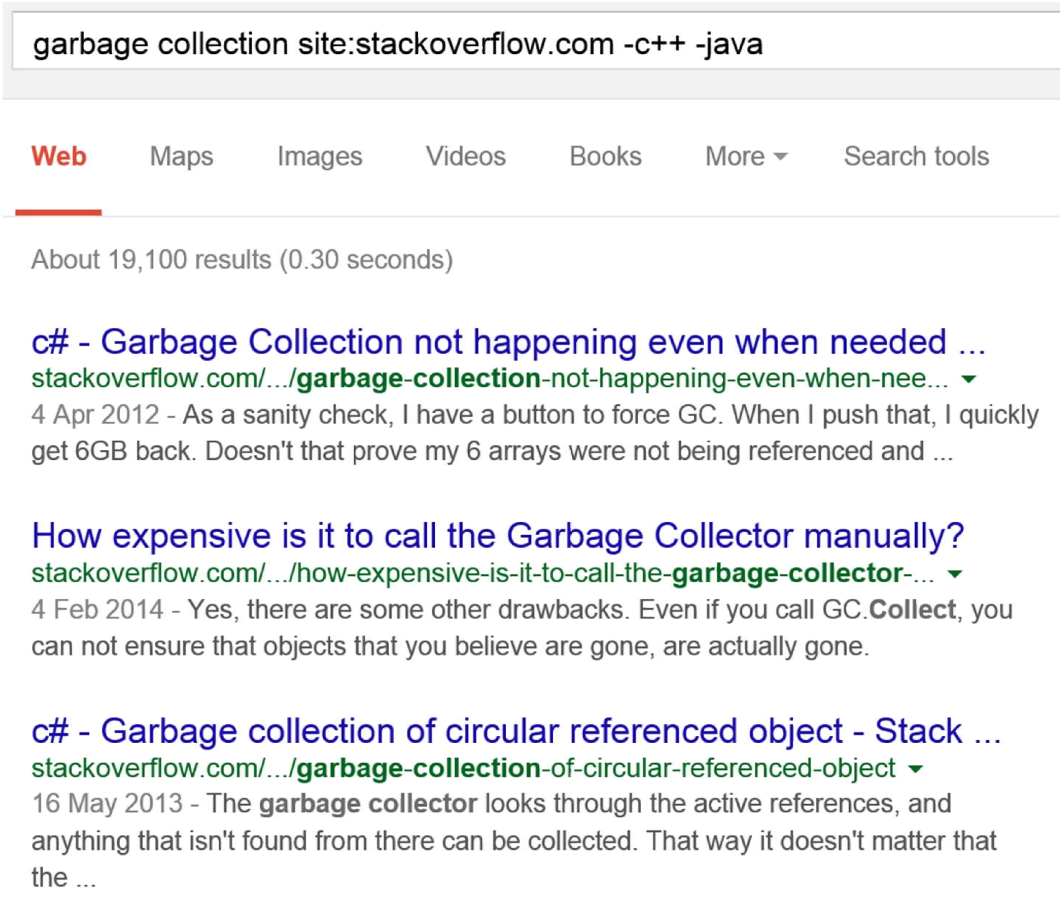
I'm trying to grok the purpose of .NET's **SecureString**. From MSDN: An instance of the System.String class is both immutable and, when no longer needed, cannot be programmatically scheduled … from computer memory. A **SecureString** object is similar to a String object in that it has a text value. However, the value of a **SecureString** object is automatically encrypted, can be modified …

.net security encryption

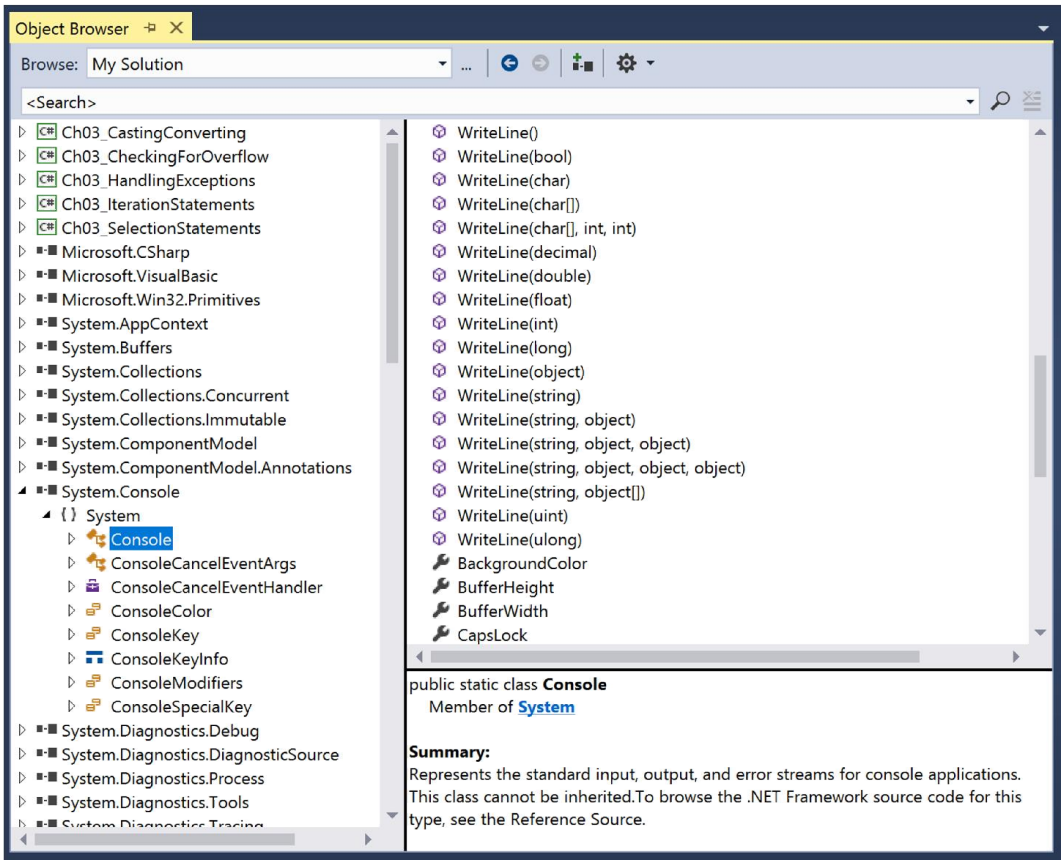
asked Sep 26 '08 by Richard Morgan

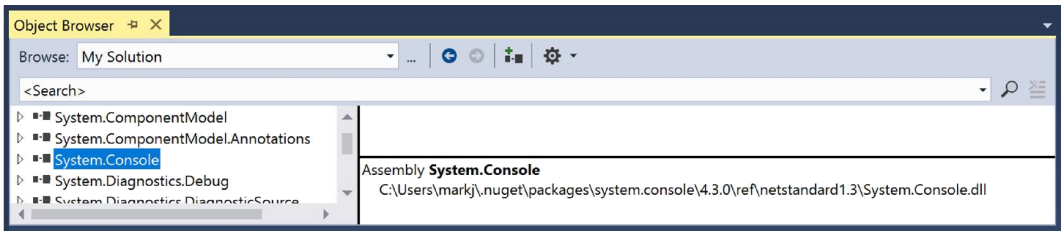

garbage collection
Web
Maps
Images
Videos
Books
More
Search tools
About 26,900,000 results (0.39 seconds)
Garbage collection (computer science) - Wikipedia, the free ...
https://en.wikipedia.org/wiki/Garbage_collection_(computer_science)
In computer science, garbage collection (GC) is a form of automatic memory management. The garbage collector, or just collector, attempts to reclaim garbage, ...
Principles - Tracing garbage collectors - Reference counting - Escape analysis
Clear It Waste
clearitwaste.co.uk
5.0 ★★★★★ 55 Google reviews · Google+ page
A
91 Michael Cliffe House
Skinner Street, London
020 8504 2380
junk clearance
plus.google.com
Google+ page
B
Leathwaite Rd
London, battersea
Best Clearance Ltd
bestclearance.co.uk
Google+ page
C
35 Grafton Way
London
07737 639920

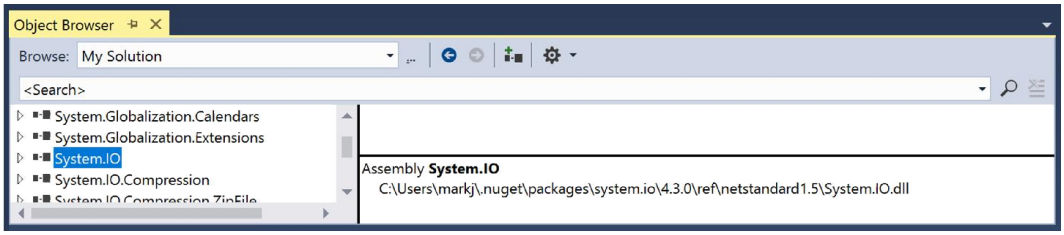

garbage collection site:stackoverflow.com
Web
Maps
Images
Videos
Books
More
Search tools
About 49,400 results (0.27 seconds)
Newest 'garbage-collection' Questions - Stack Overflow
stackoverflow.com/questions/tagged/garbage-collection
Garbage collection (GC) is a form of automatic memory management. It attempts to reclaim garbage, or memory occupied by objects that are no longer in use by ...
Garbage Collection: Algorithms for Automatic Dynamic ...
rads.stackoverflow.com › ... › Algorithms › Memory Management
Garbage Collection: Algorithms for Automatic Dynamic Memory Management [Richard Jones, Rafael D Lins] on Amazon.com. *FREE* shipping on qualifying ...
c++ - Why garbage collection when RAII is available ...
stackoverflow.com/.../why-garbage-collection-when-raii-is-available
23 Jun 2013 - I hear talks of C++14 introducing a garbage collector in the C++ ...
Garbage collection and RAII are useful in different contexts. The presence of ...

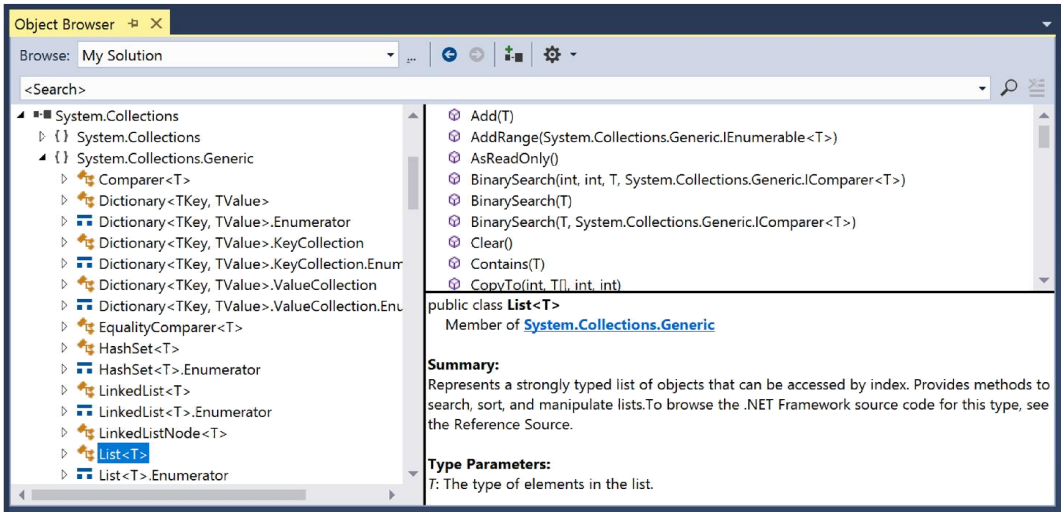

garbage collection site:stackoverflow.com -c++ -java
Web
Maps
Images
Videos
Books
More
Search tools
About 19,100 results (0.30 seconds)
c# - Garbage Collection not happening even when needed ...
stackoverflow.com/.../garbage-collection-not-happening-even-when-nee...
4 Apr 2012 - As a sanity check, I have a button to force GC. When I push that, I quickly get 6GB back. Doesn't that prove my 6 arrays were not being referenced and ...
How expensive is it to call the Garbage Collector manually?
stackoverflow.com/.../how-expensive-is-it-to-call-the-garbage-collector-...
4 Feb 2014 - Yes, there are some other drawbacks. Even if you call GC.Collect, you can not ensure that objects that you believe are gone, are actually gone.
c# - Garbage collection of circular referenced object - Stack ...
stackoverflow.com/.../garbage-collection-of-circular-referenced-object
16 May 2013 - The garbage collector looks through the active references, and anything that isn't found from there can be collected. That way it doesn't matter that the ...

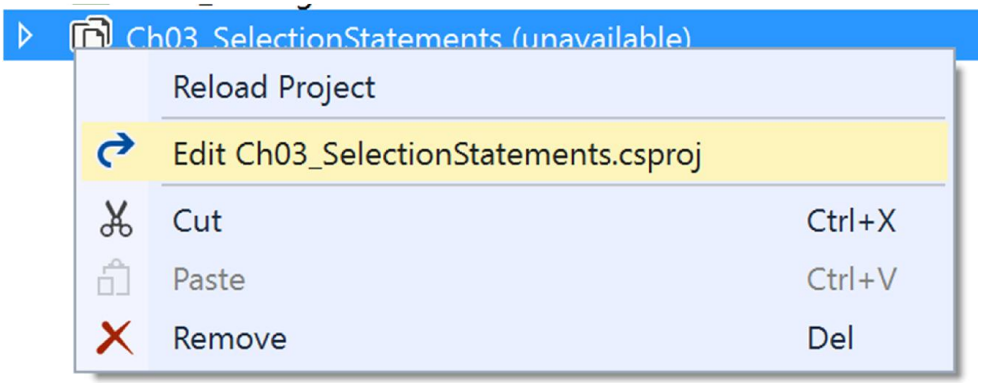
Chapter 4: Using .NET Standard Types

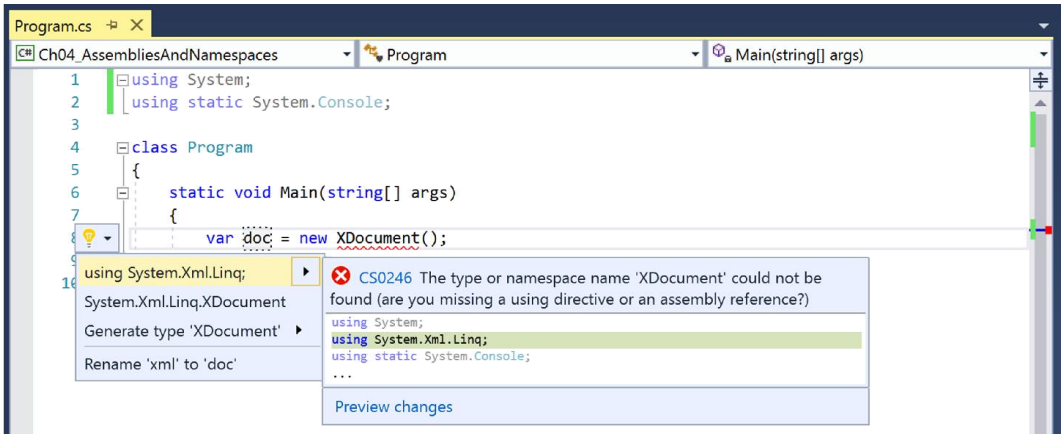




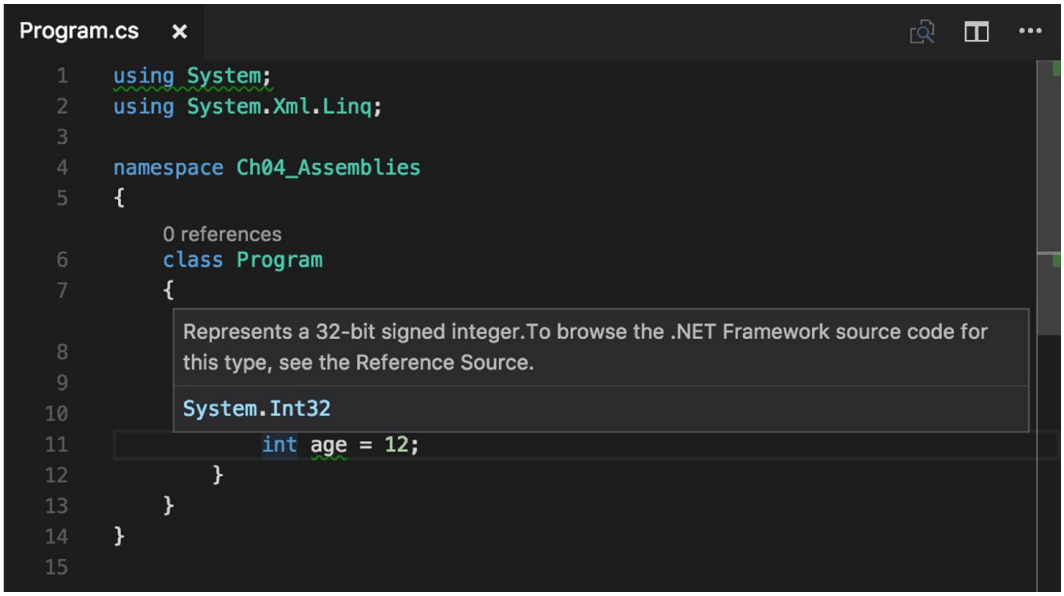

Object Browser
Browse: My Solution
<Search>
System.Globalization.Calendars
System.Globalization.Extensions
System.IO
System.IO.Compression
Assembly System.IO
C:\Users\markj\.nuget\packages\system.io\4.3.0\ref\netstandard1.5\System.IO.dll


Object Browser
Browse: My Solution
<Search>
System.Collections
System.Collections
System.Collections.Generic
Comparer<T>
Dictionary<TKey, TValue>
Dictionary<TKey, TValue>.Enumerator
Dictionary<TKey, TValue>.KeyCollection
Dictionary<TKey, TValue>.KeyCollection.Enum
Dictionary<TKey, TValue>.ValueCollection
Dictionary<TKey, TValue>.ValueCollection.Enu
EqualityComparer<T>
HashSet<T>
HashSet<T>.Enumerator
LinkedList<T>
LinkedList<T>.Enumerator
LinkedListNode<T>
List<T>
List<T>.Enumerator
Add(T)
AddRange(System.Collections.Generic.IEnumerable<T>)
AsReadOnly()
BinarySearch(int, int, T, System.Collections.Generic.IComparer<T>)
BinarySearch(T)
BinarySearch(T, System.Collections.Generic.IComparer<T>)
Clear()
Contains(T)
CopyTo(int, T[], int, int)
public class List<T>
Member of System.Collections.Generic
Summary:
Represents a strongly typed list of objects that can be accessed by index. Provides methods to search, sort, and manipulate lists.To browse the .NET Framework source code for this type, see the Reference Source.
Type Parameters:
T: The type of elements in the list.

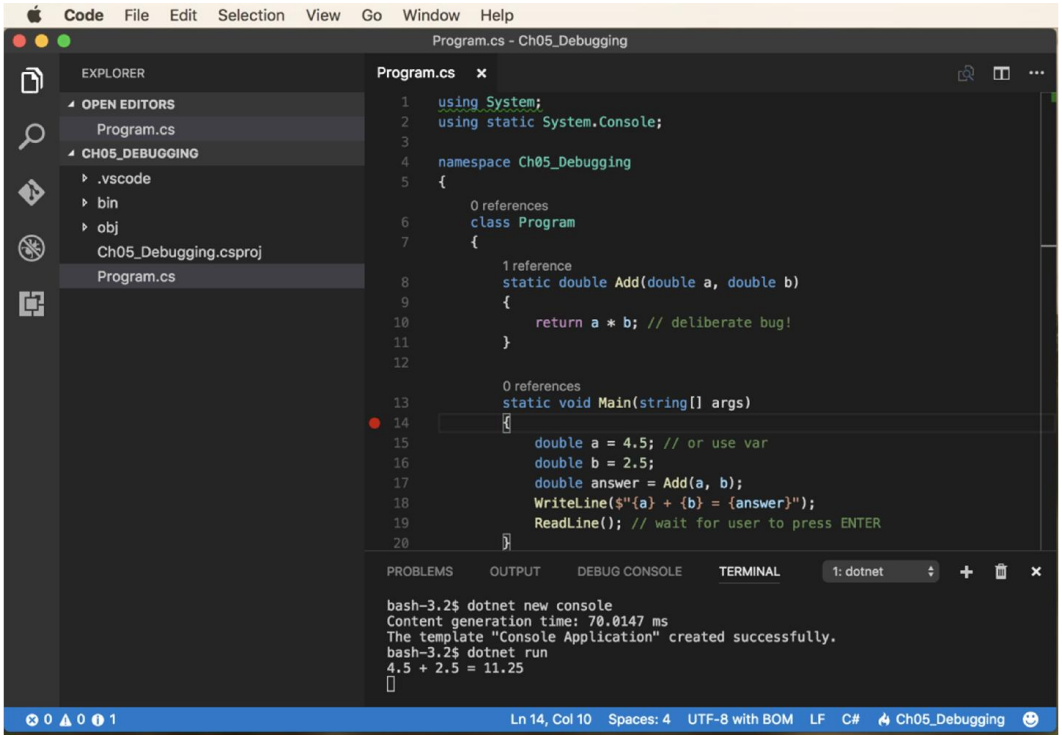

Ch03_SelectionStatements (unavailable)
Reload Project
Edit Ch03_SelectionStatements.csproj
Cut Ctrl+X
Paste Ctrl+V
Remove Del

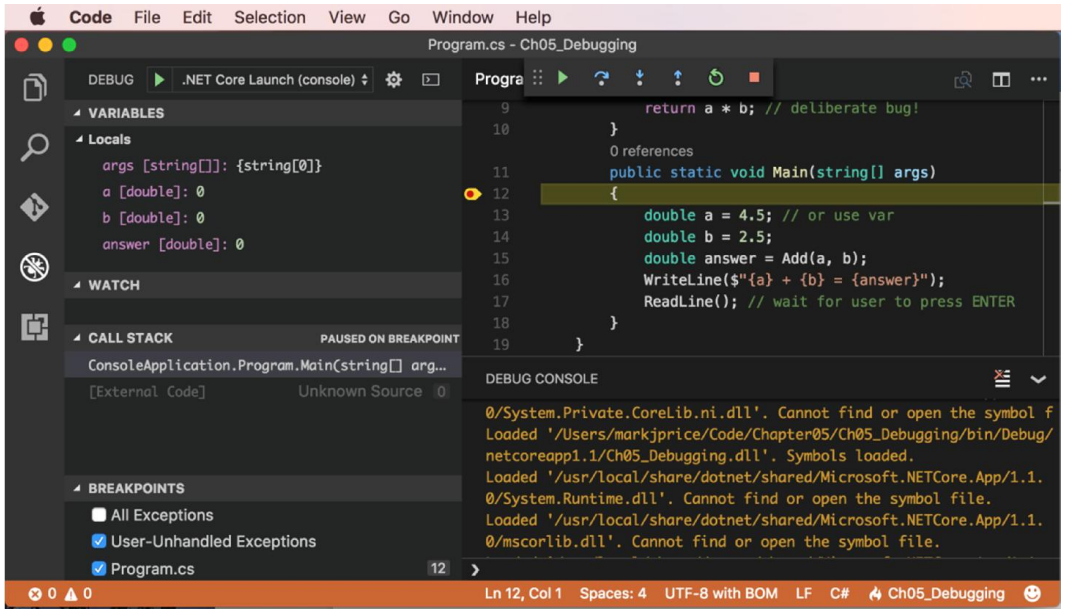

Program.cs
Ch04_AssembliesAndNamespaces
Program
Main(string[] args)
using System;
using static System.Console;
class Program
{
static void Main(string[] args)
{
var doc = new XDocument();
using System.Xml.Linq;
System.Xml.Linq.XDocument
Generate type 'XDocument'
Rename 'xml' to 'doc'
CS0246 The type or namespace name 'XDocument' could not be found (are you missing a using directive or an assembly reference?)
using System;
using System.Xml.Linq;
using static System.Console;
...
Preview changes

Program.cs
using System;
using static System.Console;
namespace ConsoleApplication
{
0 references
public class Program
{
0 references
public static void Main(string[] args)
{
var doc = new XDocument();
using System.Xml.Linq;
System.Xml.Linq.XDocument
Generate type
Remove Unnecessary Usings

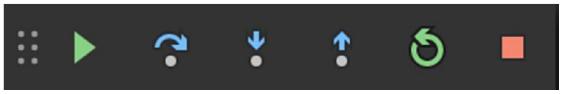

Program.cs
using System;
using System.Xml.Linq;
namespace Ch04_Assemblies
{
0 references
class Program
{
Represents a 32-bit signed integer.To browse the .NET Framework source code for this type, see the Reference Source.
System.Int32
int age = 12;
}
}
}

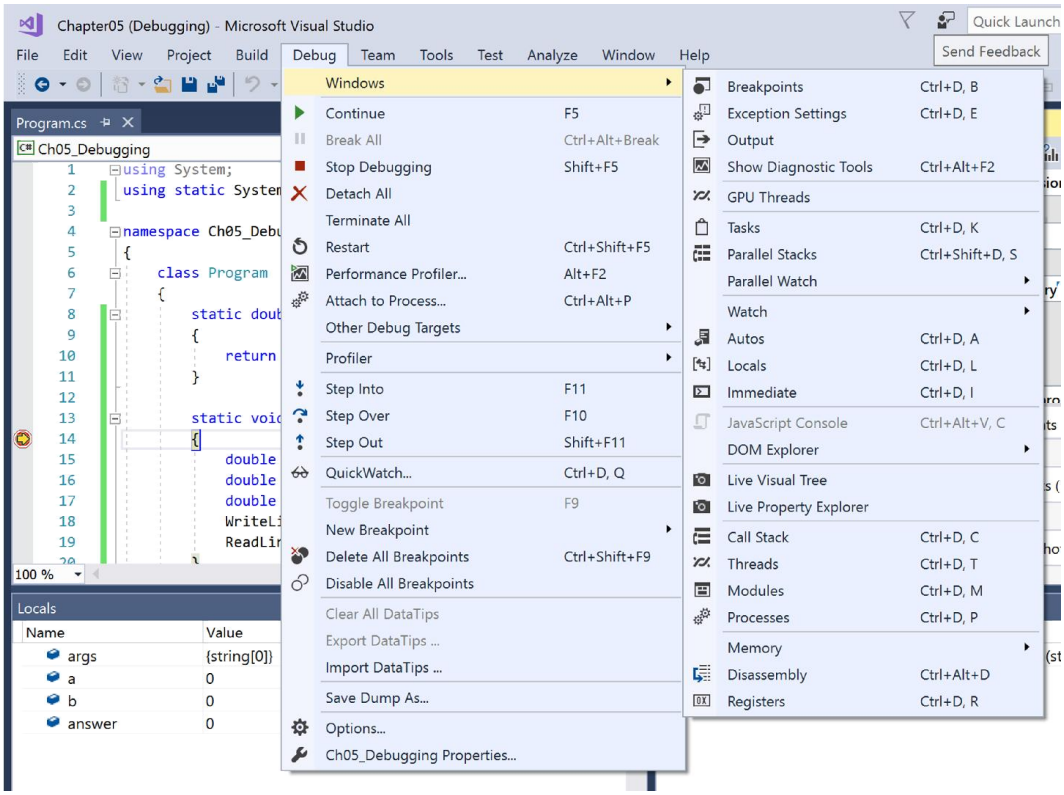
Chapter 5: Debugging, Monitoring, and Testing

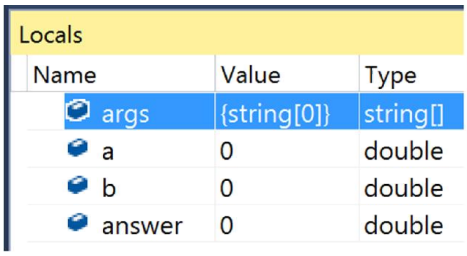


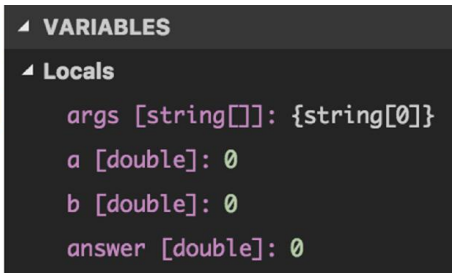

Code File Edit Selection View Go Window Help
Program.cs - Ch05_Debugging
DEBUG .NET Core Launch (console)
VARIABLES
Locals
args [string[]]: {string[0]}
a [double]: 0
b [double]: 0
answer [double]: 0
WATCH
CALL STACK PAUSED ON BREAKPOINT
ConsoleApplication.Program.Main(string[] arg...
[External Code] Unknown Source 0
BREAKPOINTS
All Exceptions
User-Unhandled Exceptions
Program.cs 12
return a * b; // deliberate bug!
}
0 references
public static void Main(string[] args)
{
double a = 4.5; // or use var
double b = 2.5;
double answer = Add(a, b);
WriteLine($"{a} + {b} = {answer}");
ReadLine(); // wait for user to press ENTER
}
}
DEBUG CONSOLE
0/System.Private.CoreLib.ni.dll'. Cannot find or open the symbol f
Loaded '/Users/markjprice/Code/Chapter05/Ch05_Debugging/bin/Debug/
netcoreapp1.1/Ch05_Debugging.dll'. Symbols loaded.
Loaded '/usr/local/share/dotnet/shared/Microsoft.NETCore.App/1.1.
0/System.Runtime.dll'. Cannot find or open the symbol file.
Loaded '/usr/local/share/dotnet/shared/Microsoft.NETCore.App/1.1.
0/mscorlib.dll'. Cannot find or open the symbol file.
0 0
Ln 12, Col 1 Spaces: 4 UTF-8 with BOM LF C# Ch05_Debugging

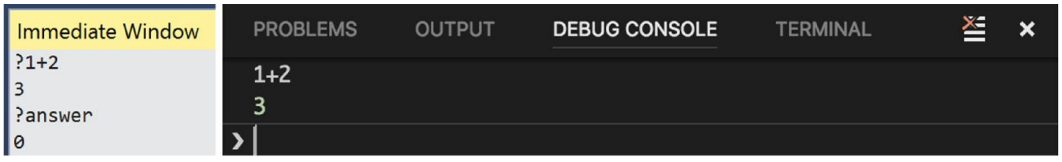
Continue

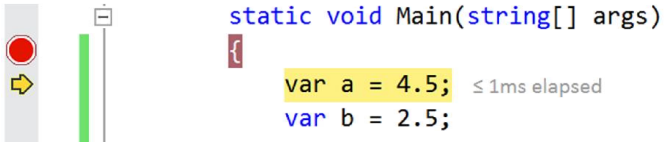


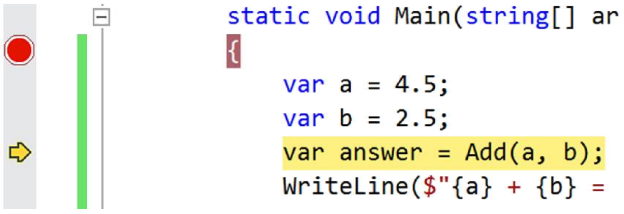

Chapter05 (Debugging) - Microsoft Visual Studio
Quick Launch
Send Feedback
File Edit View Project Build Debug Team Tools Test Analyze Window Help
Program.cs
Ch05_Debugging
Windows
Continue F5
Break All Ctrl+Alt+Break
Stop Debugging Shift+F5
Detach All
Terminate All
Restart Ctrl+Shift+F5
Performance Profiler... Alt+F2
Attach to Process... Ctrl+Alt+P
Other Debug Targets
Profiler
Step Into F11
Step Over F10
Step Out Shift+F11
QuickWatch... Ctrl+D, Q
Toggle Breakpoint F9
New Breakpoint
Delete All Breakpoints Ctrl+Shift+F9
Disable All Breakpoints
Clear All DataTips
Export DataTips ...
Import DataTips ...
Save Dump As...
Options...
Ch05_Debugging Properties...
Breakpoints Ctrl+D, B
Exception Settings Ctrl+D, E
Output
Show Diagnostic Tools Ctrl+Alt+F2
GPU Threads
Tasks Ctrl+D, K
Parallel Stacks Ctrl+Shift+D, S
Parallel Watch
Watch
Autos Ctrl+D, A
Locals Ctrl+D, L
Immediate Ctrl+D, I
JavaScript Console Ctrl+Alt+V, C
DOM Explorer
Live Visual Tree
Live Property Explorer
Call Stack Ctrl+D, C
Threads Ctrl+D, T
Modules Ctrl+D, M
Processes Ctrl+D, P
Memory
Disassembly Ctrl+Alt+D
Registers Ctrl+D, R
Locals
Name Value
args {string[0]}
a 0
b 0
answer 0

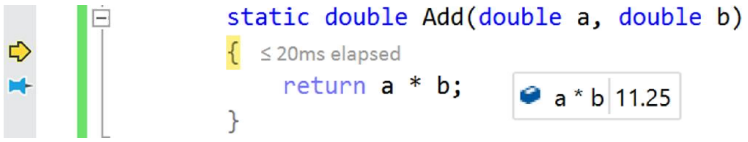

Locals
Name
Value
Type
args
{string[0]}
string[]
a
0
double
b
0
double
answer
0
double

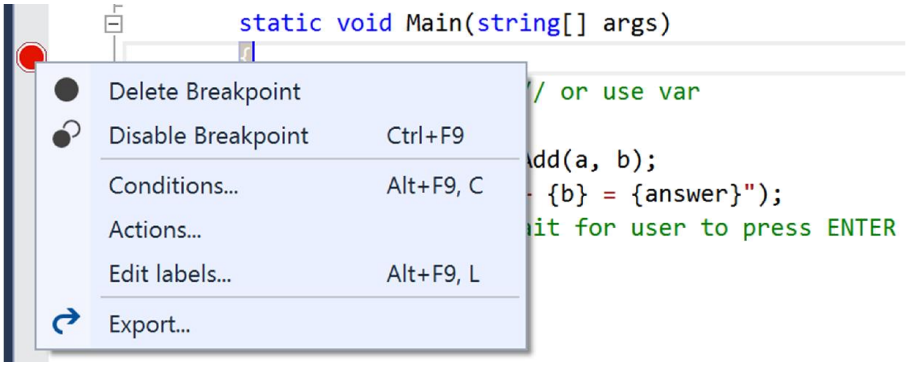

VARIABLES
Locals
args [string[]]: {string[0]}
a [double]: 0
b [double]: 0
answer [double]: 0

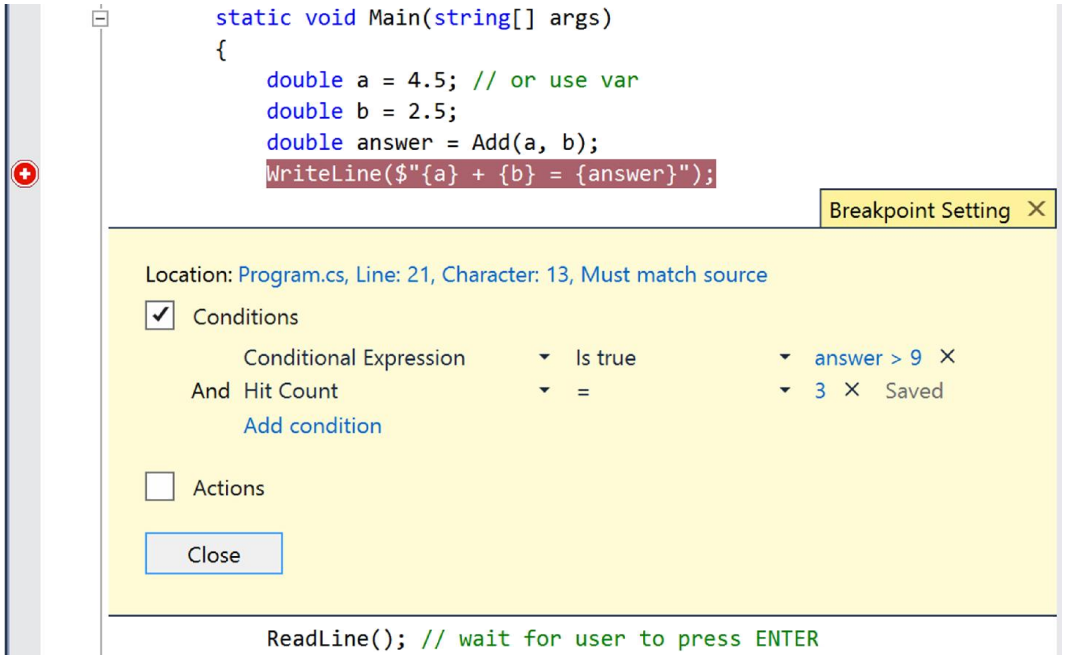

Immediate Window
?1+2
3
?answer
0
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
1+2
3

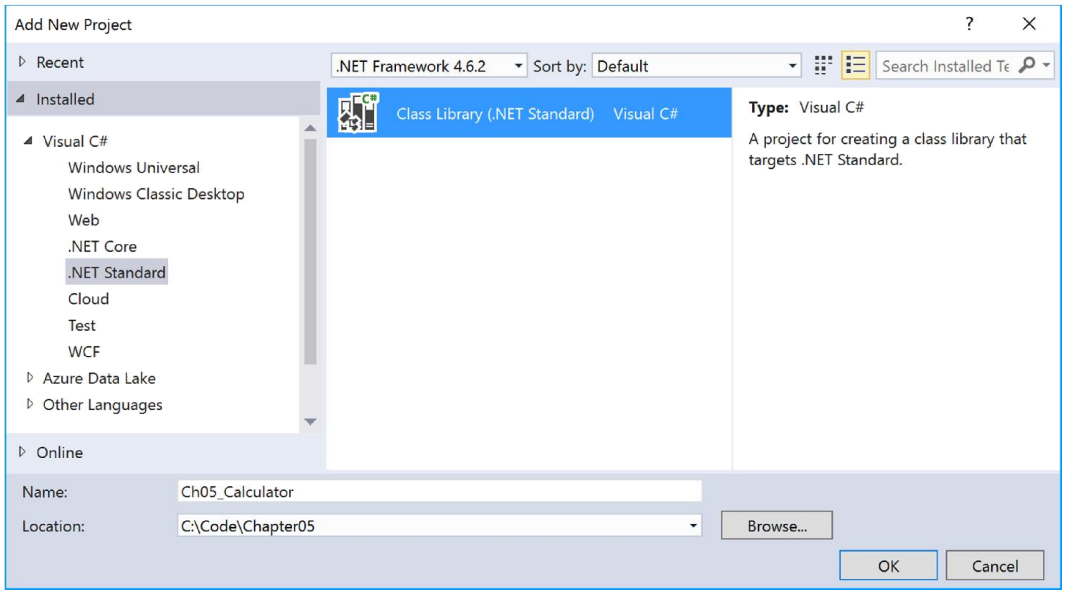

static void Main(string[] args)
{
var a = 4.5;
≤ 1ms elapsed
var b = 2.5;

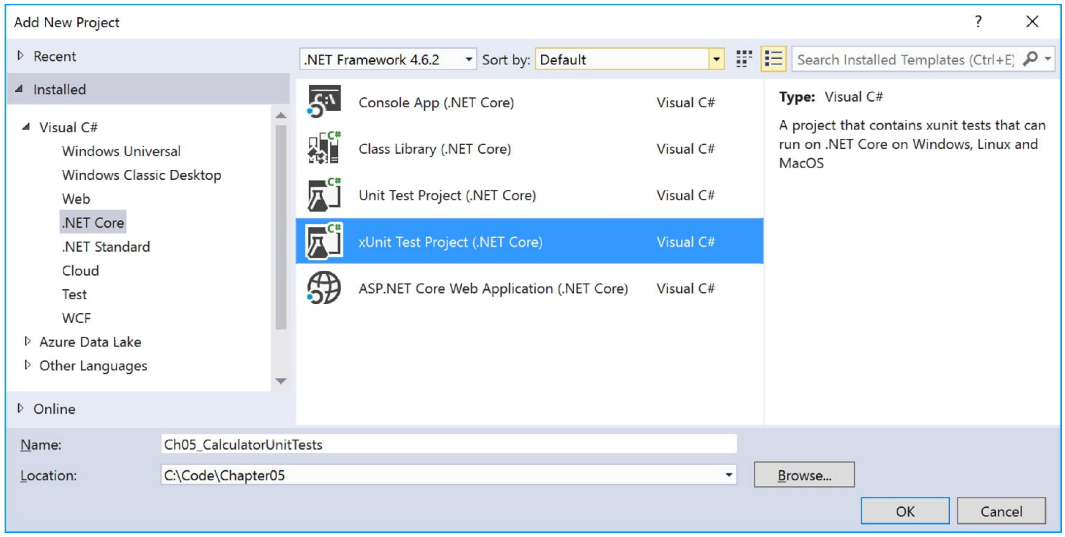

static void Main(string[] ar
{
var a = 4.5;
var b = 2.5;
var answer = Add(a, b);
WriteLine($"{a} + {b} =

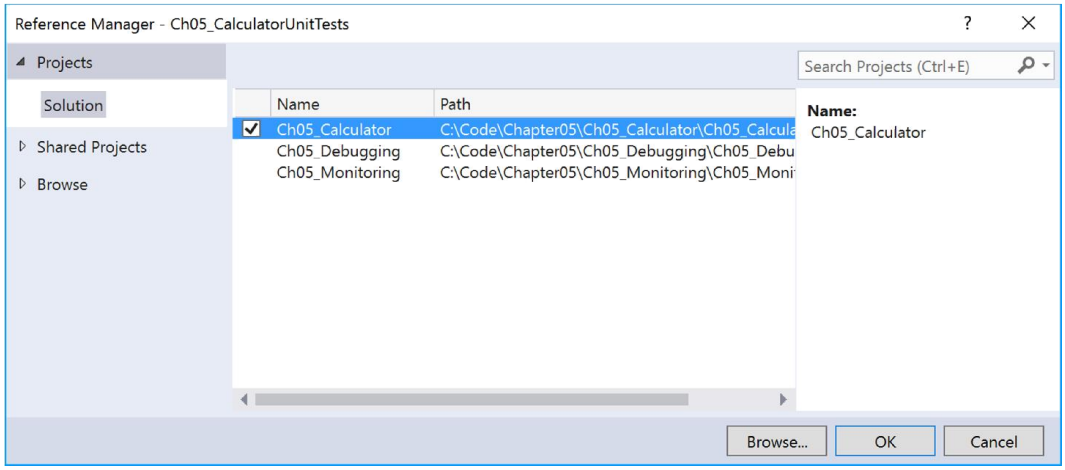

static double Add(double a, double b)
{
≤ 20ms elapsed
return a * b;
a * b 11.25
}

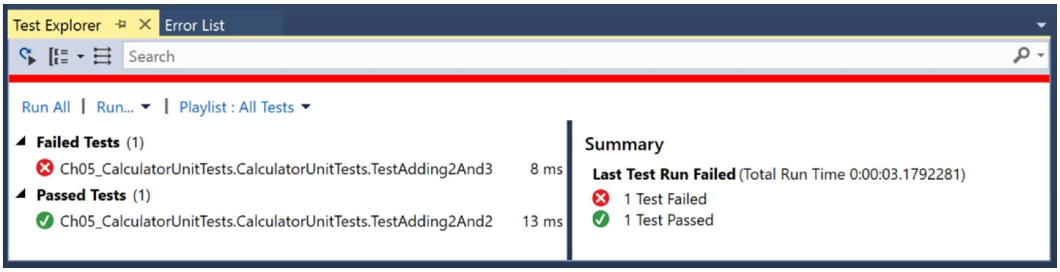

static void Main(string[] args)
Delete Breakpoint
Disable Breakpoint Ctrl+F9
Conditions... Alt+F9, C
Actions...
Edit labels... Alt+F9, L
Export...
or use var
{b} = {answer}");
for user to press ENTER

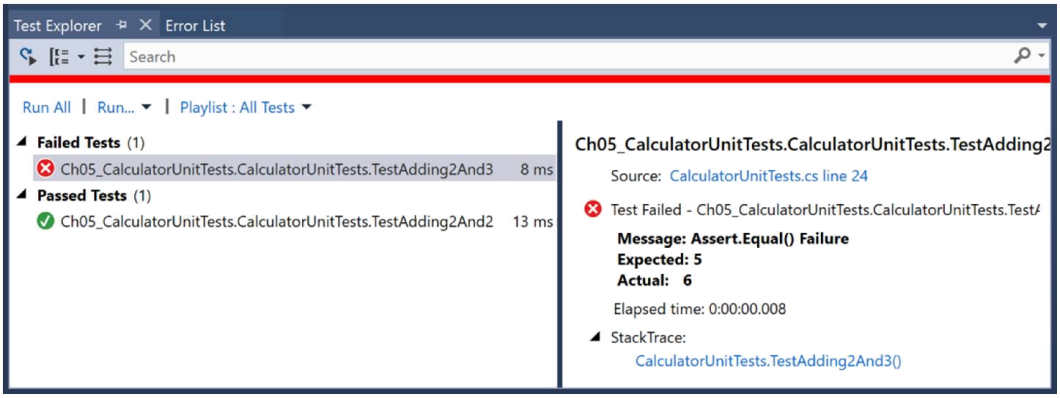

static void Main(string[] args)
{
double a = 4.5; // or use var
double b = 2.5;
double answer = Add(a, b);
WriteLine($"{a} + {b} = {answer}");
Breakpoint Setting
Location: Program.cs, Line: 21, Character: 13, Must match source
Conditions
Conditional Expression
Is true
answer > 9
And Hit Count
=
3
Saved
Add condition
Actions
Close
ReadLine(); // wait for user to press ENTER

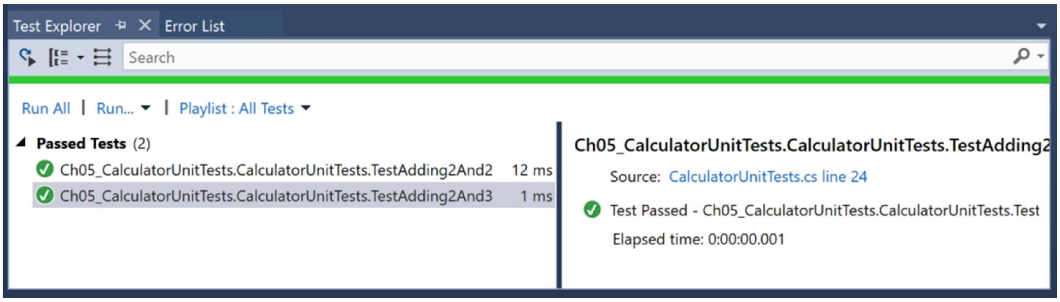

Add New Project
Recent
Installed
Visual C#
Windows Universal
Windows Classic Desktop
Web
.NET Core
.NET Standard
Cloud
Test
WCF
Azure Data Lake
Other Languages
Online
.NET Framework 4.6.2
Sort by:
Default
Search Installed Te
Class Library (.NET Standard) Visual C#
Type: Visual C#
A project for creating a class library that targets .NET Standard.
Name:
Ch05_Calculator
Location:
C:\Code\Chapter05
Browse...
OK
Cancel

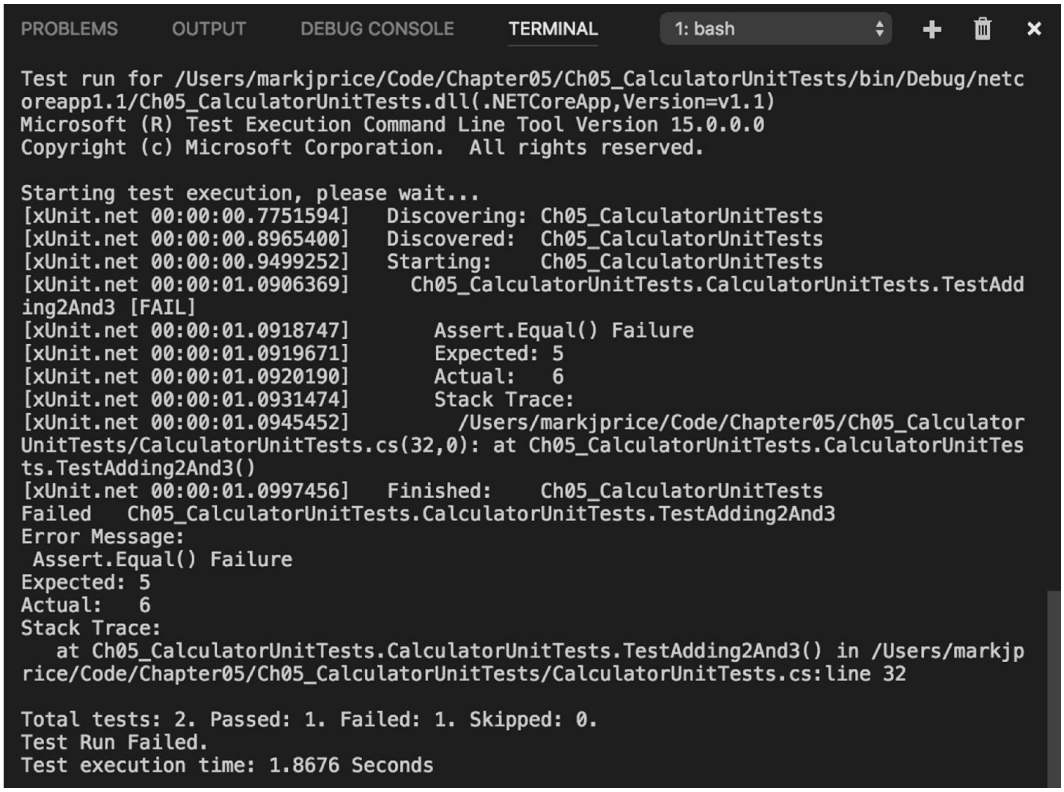

Add New Project
Recent
Installed
Visual C#
Windows Universal
Windows Classic Desktop
Web
.NET Core
.NET Standard
Cloud
Test
WCF
Azure Data Lake
Other Languages
Online
.NET Framework 4.6.2
Sort by: Default
Search Installed Templates (Ctrl+E)
Console App (.NET Core) Visual C#
Class Library (.NET Core) Visual C#
Unit Test Project (.NET Core) Visual C#
xUnit Test Project (.NET Core) Visual C#
ASP.NET Core Web Application (.NET Core) Visual C#
Type: Visual C#
A project that contains xunit tests that can run on .NET Core on Windows, Linux and MacOS
Name: Ch05_CalculatorUnitTests
Location: C:\Code\Chapter05
Browse...
OK
Cancel


Reference Manager - Ch05_CalculatorUnitTests
Projects
Solution
Shared Projects
Browse
Search Projects (Ctrl+E)
Name
Path
Ch05_Calculator C:\Code\Chapter05\Ch05_Calculator\Ch05_Calcula
Ch05_Debugging C:\Code\Chapter05\Ch05_Debugging\Ch05_Debu
Ch05_Monitoring C:\Code\Chapter05\Ch05_Monitoring\Ch05_Moni
Name:
Ch05_Calculator
Browse...
OK
Cancel

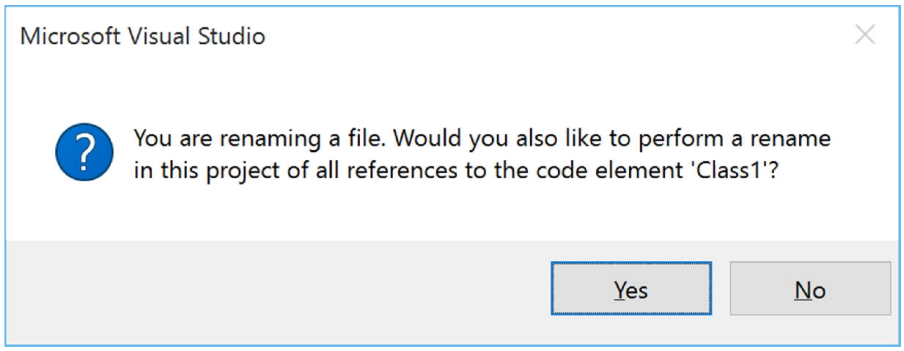

Test Explorer
Error List
Search
Run All | Run... | Playlist : All Tests
Failed Tests (1)
Ch05_CalculatorUnitTests.CalculatorUnitTests.TestAdding2And3 8 ms
Passed Tests (1)
Ch05_CalculatorUnitTests.CalculatorUnitTests.TestAdding2And2 13 ms
Summary
Last Test Run Failed (Total Run Time 0:00:03.1792281)
1 Test Failed
1 Test Passed

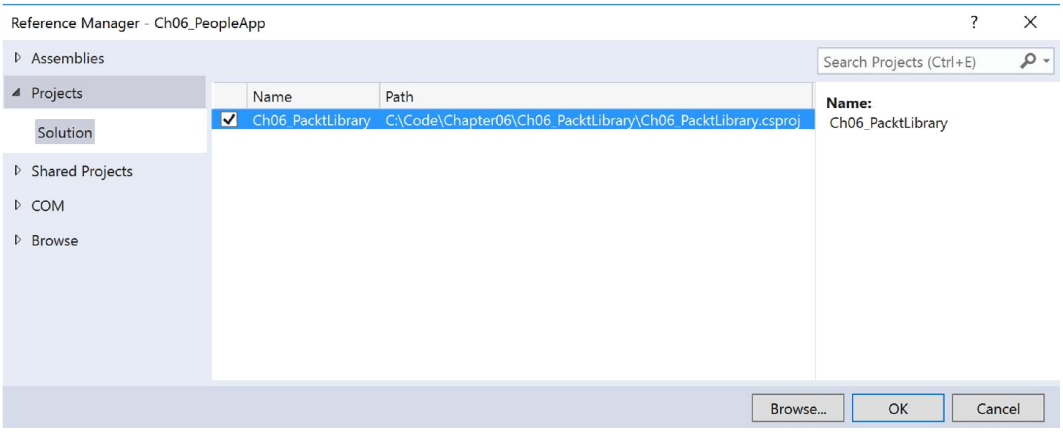

Test Explorer
Error List
Search
Run All | Run... | Playlist : All Tests
Failed Tests (1)
Ch05_CalculatorUnitTests.CalculatorUnitTests.TestAdding2And3 8 ms
Passed Tests (1)
Ch05_CalculatorUnitTests.CalculatorUnitTests.TestAdding2And2 13 ms
Ch05_CalculatorUnitTests.CalculatorUnitTests.TestAdding2
Source: CalculatorUnitTests.cs line 24
Test Failed - Ch05_CalculatorUnitTests.CalculatorUnitTests.Test
Message: Assert.Equal() Failure
Expected: 5
Actual: 6
Elapsed time: 0:00:00.008
StackTrace:
CalculatorUnitTests.TestAdding2And3()

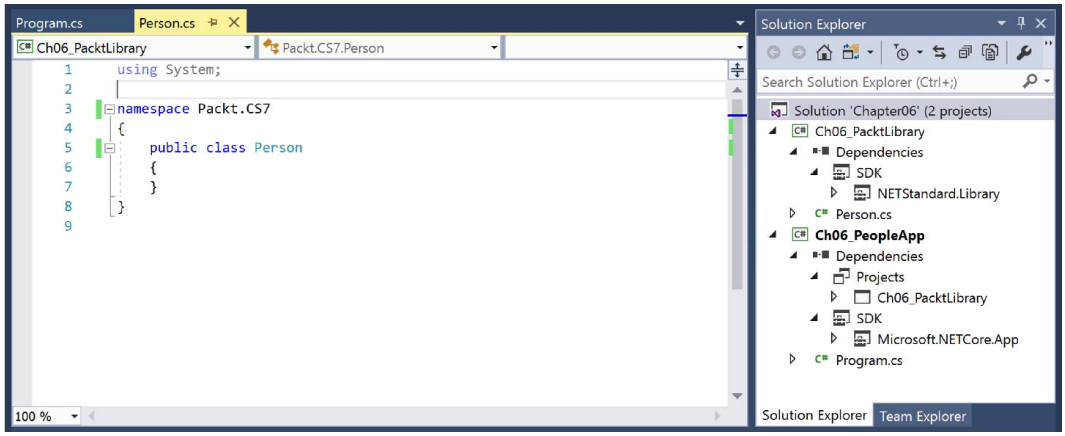

Test Explorer
Error List
Search
Run All | Run... | Playlist : All Tests
Passed Tests (2)
Ch05_CalculatorUnitTests.CalculatorUnitTests.TestAdding2And2 12 ms
Ch05_CalculatorUnitTests.CalculatorUnitTests.TestAdding2And3 1 ms
Ch05_CalculatorUnitTests.CalculatorUnitTests.TestAdding2
Source: CalculatorUnitTests.cs line 24
Test Passed - Ch05_CalculatorUnitTests.CalculatorUnitTests.Test
Elapsed time: 0:00:00.001

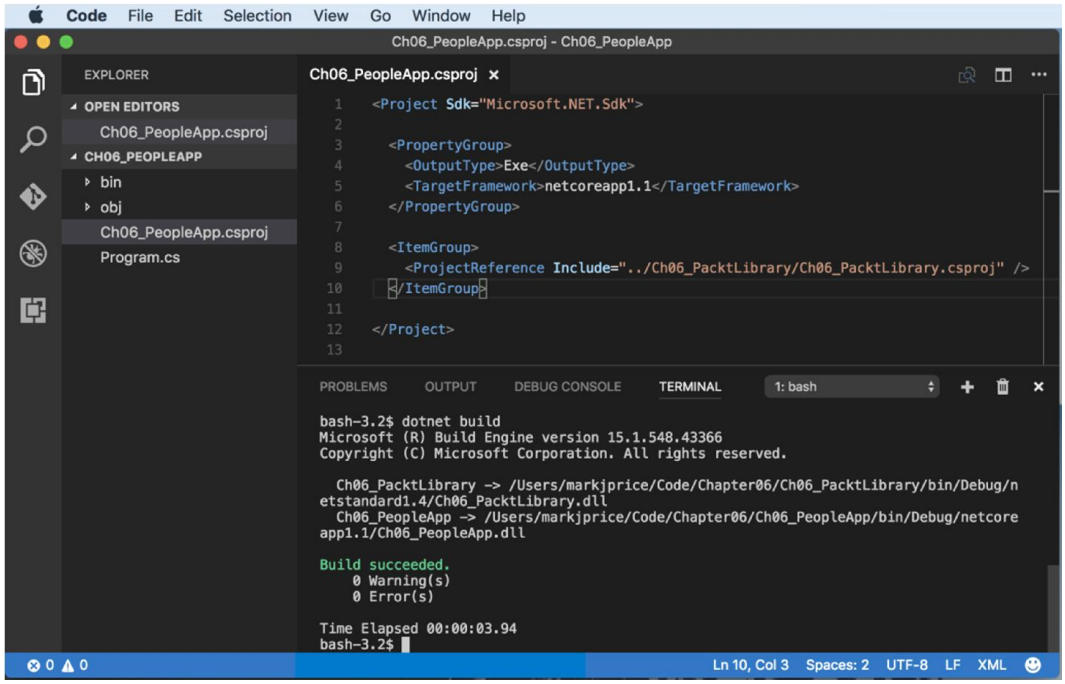

PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
1: bash
Test run for /Users/markjprice/Code/Chapter05/Ch05_CalculatorUnitTests/bin/Debug/netcoreapp1.1/Ch05_CalculatorUnitTests.dll(.NETCoreApp,Version=v1.1)
Microsoft (R) Test Execution Command Line Tool Version 15.0.0.0
Copyright (c) Microsoft Corporation. All rights reserved.
Starting test execution, please wait...
[xUnit.net 00:00:00.7751594] Discovering: Ch05_CalculatorUnitTests
[xUnit.net 00:00:00.8965400] Discovered: Ch05_CalculatorUnitTests
[xUnit.net 00:00:00.9499252] Starting: Ch05_CalculatorUnitTests
[xUnit.net 00:00:01.0906369] Ch05_CalculatorUnitTests.CalculatorUnitTests.TestAdding2And3 [FAIL]
[xUnit.net 00:00:01.0918747] Assert.Equal() Failure
[xUnit.net 00:00:01.0919671] Expected: 5
[xUnit.net 00:00:01.0920190] Actual: 6
[xUnit.net 00:00:01.0931474] Stack Trace:
[xUnit.net 00:00:01.0945452] /Users/markjprice/Code/Chapter05/Ch05_CalculatorUnitTests/CalculatorUnitTests.cs(32,0): at Ch05_CalculatorUnitTests.CalculatorUnitTests.TestAdding2And3()
[xUnit.net 00:00:01.0997456] Finished: Ch05_CalculatorUnitTests
Failed Ch05_CalculatorUnitTests.CalculatorUnitTests.TestAdding2And3
Error Message:
Assert.Equal() Failure
Expected: 5
Actual: 6
Stack Trace:
at Ch05_CalculatorUnitTests.CalculatorUnitTests.TestAdding2And3() in /Users/markjprice/Code/Chapter05/Ch05_CalculatorUnitTests/CalculatorUnitTests.cs:line 32
Total tests: 2. Passed: 1. Failed: 1. Skipped: 0.
Test Run Failed.
Test execution time: 1.8676 Seconds

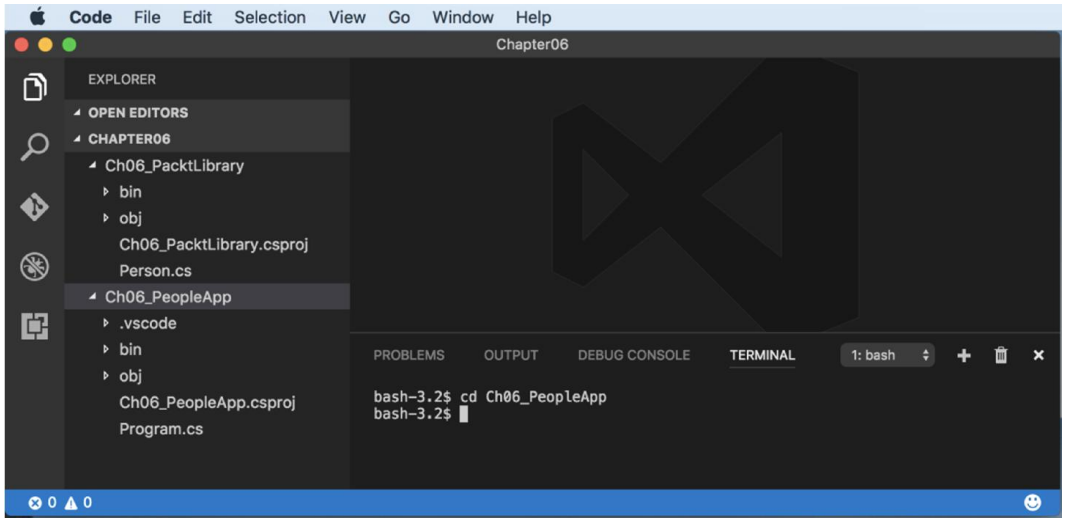
Chapter 6: Building Your Own Types with Object-Oriented Programming






Program.cs
Person.cs
Ch06_PacktLibrary
Packt.CS7.Person
using System;
namespace Packt.CS7
{
public class Person
{
}
}
100 %
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Chapter06' (2 projects)
Ch06_PacktLibrary
Dependencies
SDK
NETStandard.Library
Person.cs
Ch06_PeopleApp
Dependencies
Projects
Ch06_PacktLibrary
SDK
Microsoft.NETCore.App
Program.cs
Solution Explorer
Team Explorer

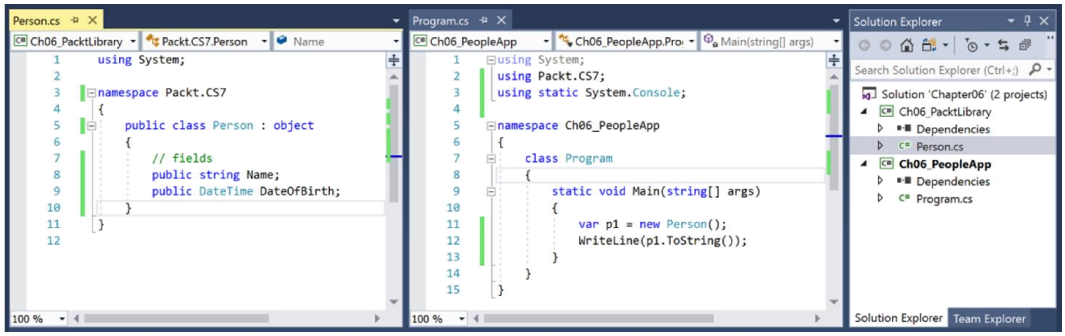

Code File Edit Selection View Go Window Help
Ch06_PeopleApp.csproj - Ch06_PeopleApp
EXPLORER
OPEN EDITORS
Ch06_PeopleApp.csproj
CH06_PEOPLEAPP
bin
obj
Ch06_PeopleApp.csproj
Program.cs
Ch06_PeopleApp.csproj
<Project Sdk="Microsoft.NET.Sdk">
<PropertyGroup>
<OutputType>Exe</OutputType>
<TargetFramework>netcoreapp1.1</TargetFramework>
</PropertyGroup>
<ItemGroup>
<ProjectReference Include="../Ch06_PacktLibrary/Ch06_PacktLibrary.csproj" />
</ItemGroup>
</Project>
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
1: bash
bash-3.2$ dotnet build
Microsoft (R) Build Engine version 15.1.548.43366
Copyright (C) Microsoft Corporation. All rights reserved.
Ch06_PacktLibrary -> /Users/markjprice/Code/Chapter06/Ch06_PacktLibrary/bin/Debug/netstandard1.4/Ch06_PacktLibrary.dll
Ch06_PeopleApp -> /Users/markjprice/Code/Chapter06/Ch06_PeopleApp/bin/Debug/netcoreapp1.1/Ch06_PeopleApp.dll
Build succeeded.
0 Warning(s)
0 Error(s)
Time Elapsed 00:00:03.94
bash-3.2$
0 0
Ln 10, Col 3
Spaces: 2
UTF-8
LF
XML

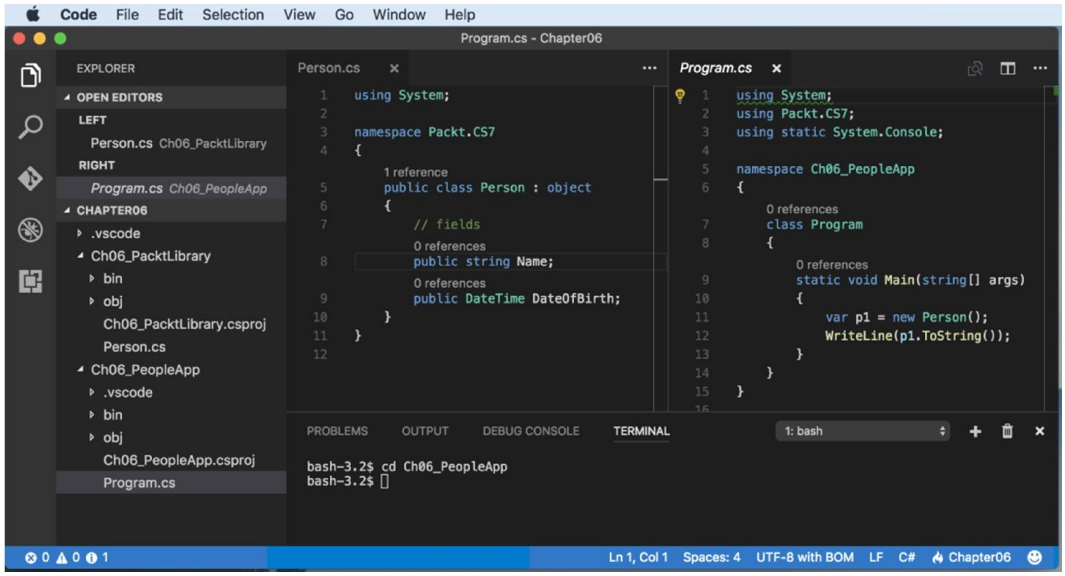


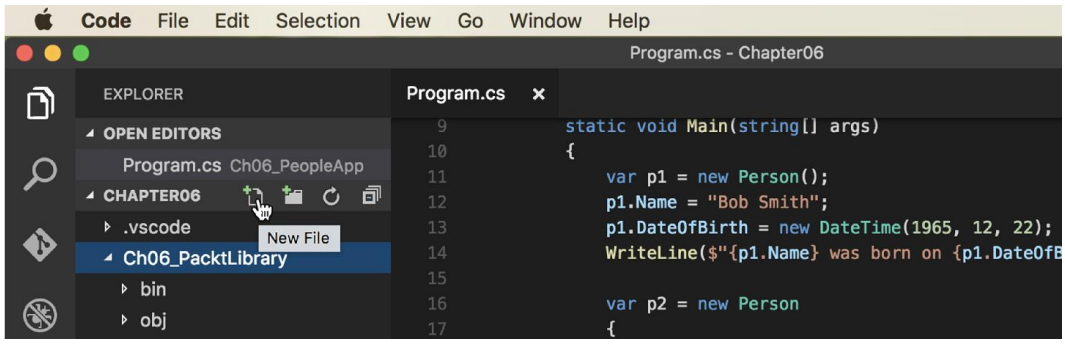

```
namespace System
{
    public class Object
    {
        public Object();

        ~Object();

        public static bool Equals(Object objA, Object objB);
        public static bool ReferenceEquals(Object objA, Object objB);
        public virtual bool Equals(Object obj);
        public virtual int GetHashCode();
        public Type GetType();
        public virtual string ToString();
        protected Object MemberwiseClone();
    }
}
```

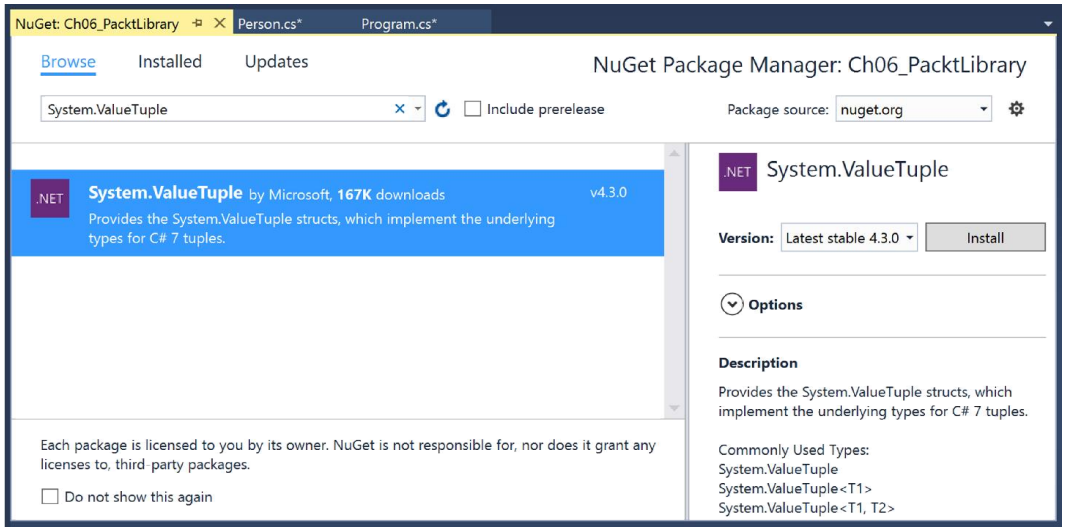

Person.cs
Ch06_PacktLibrary
Packt.CS7.Person
Name
using System;
namespace Packt.CS7
{
public class Person : object
{
// fields
public string Name;
public DateTime DateOfBirth;
}
}
Program.cs
Ch06_PeopleApp
Ch06_PeopleApp.Pro
Main(string[] args)
using System;
using Packt.CS7;
using static System.Console;
namespace Ch06_PeopleApp
{
class Program
{
static void Main(string[] args)
{
var p1 = new Person();
WriteLine(p1.ToString());
}
}
}
100 %
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Chapter06' (2 projects)
Ch06_PacktLibrary
Dependencies
Person.cs
Ch06_PeopleApp
Dependencies
Program.cs
Solution Explorer
Team Explorer


Code File Edit Selection View Go Window Help
Program.cs - Chapter06
EXPLORER
OPEN EDITORS
LEFT
Person.cs Ch06_PacktLibrary
RIGHT
Program.cs Ch06_PeopleApp
CHAPTER06
.vscode
Ch06_PacktLibrary
bin
obj
Ch06_PacktLibrary.csproj
Person.cs
Ch06_PeopleApp
.vscode
bin
obj
Ch06_PeopleApp.csproj
Program.cs
Person.cs
using System;
namespace Packt.CS7
{
1 reference
public class Person : object
{
// fields
0 references
public string Name;
0 references
public DateTime DateOfBirth;
}
}
Program.cs
using System;
using Packt.CS7;
using static System.Console;
namespace Ch06_PeopleApp
{
0 references
class Program
{
0 references
static void Main(string[] args)
{
var p1 = new Person();
WriteLine(p1.ToString());
}
}
}
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
1: bash
bash-3.2$ cd Ch06_PeopleApp
bash-3.2$
Ln 1, Col 1
Spaces: 4
UTF-8 with BOM
LF
C#
Chapter06


Code File Edit Selection View Go Window Help
Program.cs - Chapter06
EXPLORER
OPEN EDITORS
Program.cs Ch06_PeopleApp
CHAPTER06
.vscode
Ch06_PacktLibrary
bin
obj
New File
Program.cs
static void Main(string[] args)
{
var p1 = new Person();
p1.Name = "Bob Smith";
p1.DateOfBirth = new DateTime(1965, 12, 22);
WriteLine($"{p1.Name} was born on {p1.DateOfB
var p2 = new Person
{

```
(constant) int int.MaxValue = 2147483647
Represents the largest possible value of an int. This field is constant.
```

```
(constant) double Math.PI = 3.1415926535897931
Represents the ratio of the circumference of a circle to its diameter, specified by the constant, π.
```




```
SayHello());
```

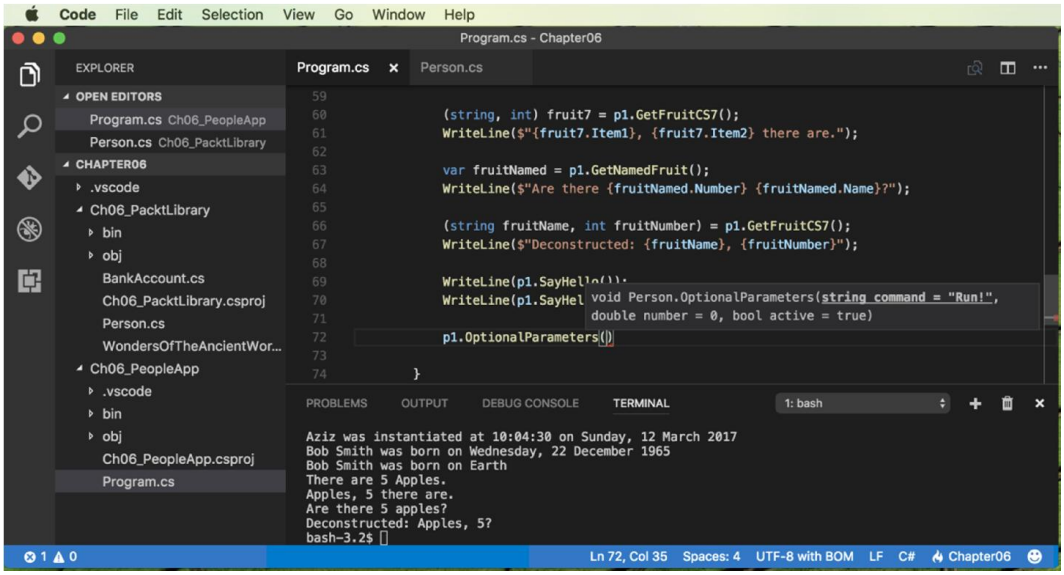
```
string Person.SayHello()
```

```
SayHelloTo("Emily"));
```

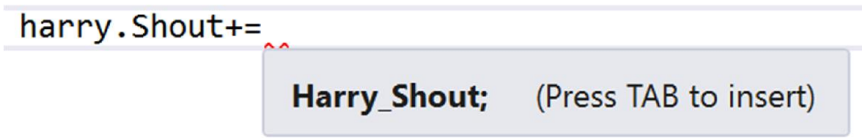
```
string Person.SayHelloTo(string name)
```

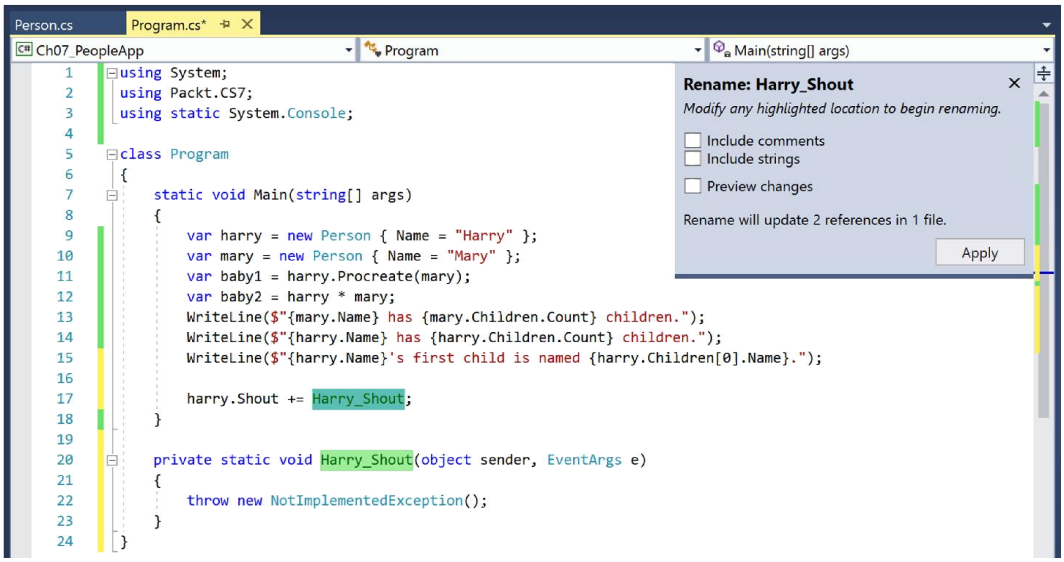
```
SayHello("Emily"));
```

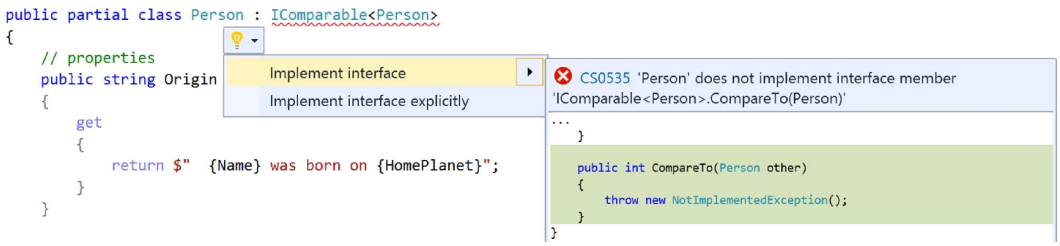
```
string Person.SayHello(string name) (+ 1 overload)
```

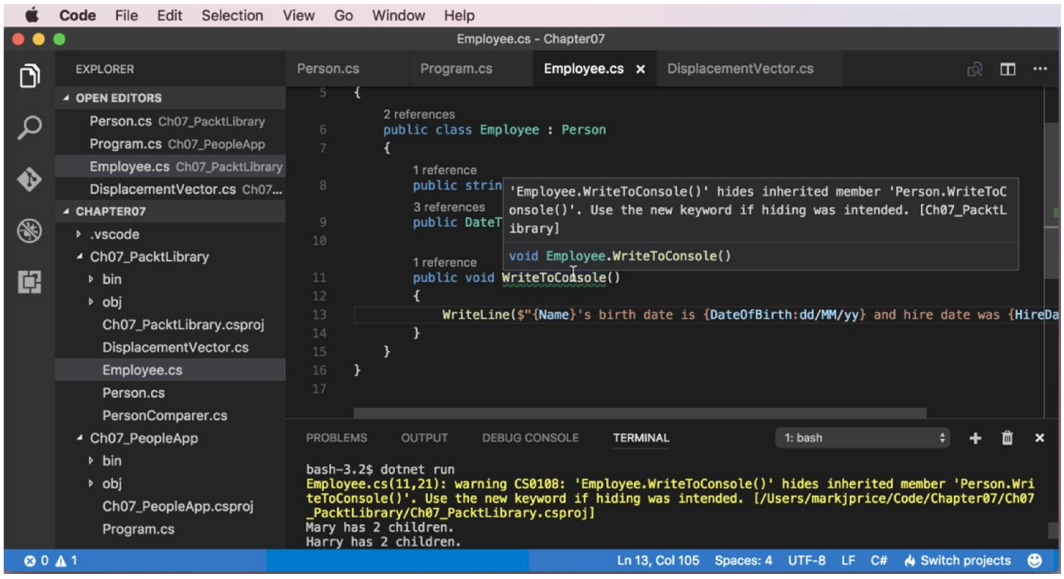

Code File Edit Selection View Go Window Help
Program.cs - Chapter06
EXPLORER
OPEN EDITORS
Program.cs Ch06_PeopleApp
Person.cs Ch06_PacktLibrary
CHAPTER06
.vscode
Ch06_PacktLibrary
bin
obj
BankAccount.cs
Ch06_PacktLibrary.csproj
Person.cs
WondersOfTheAncientWor...
Ch06_PeopleApp
.vscode
bin
obj
Ch06_PeopleApp.csproj
Program.cs
Program.cs
Person.cs
(string, int) fruit7 = p1.GetFruitCS7();
WriteLine($"{fruit7.Item1}, {fruit7.Item2} there are.");
var fruitNamed = p1.GetNamedFruit();
WriteLine($"Are there {fruitNamed.Number} {fruitNamed.Name}?");
(string fruitName, int fruitNumber) = p1.GetFruitCS7();
WriteLine($"Deconstructed: {fruitName}, {fruitNumber}");
WriteLine(p1.SayHello());
WriteLine(p1.SayHel
void Person.OptionalParameters(string command = "Run!",
double number = 0, bool active = true)
p1.OptionalParameters()
}
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
1: bash
Aziz was instantiated at 10:04:30 on Sunday, 12 March 2017
Bob Smith was born on Wednesday, 22 December 1965
Bob Smith was born on Earth
There are 5 Apples.
Apples, 5 there are.
Are there 5 apples?
Deconstructed: Apples, 5?
bash-3.2$
1 0
Ln 72, Col 35 Spaces: 4 UTF-8 with BOM LF C# Chapter06

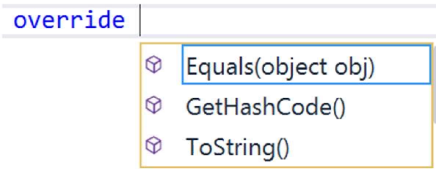
Chapter 7: Implementing Interfaces and Inheriting Classes

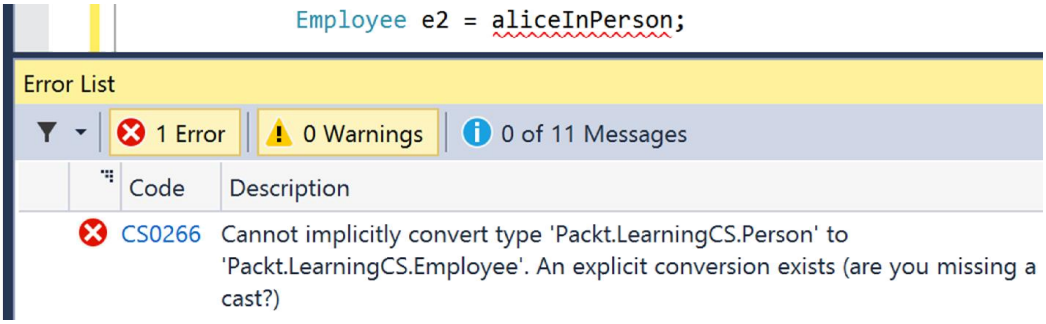


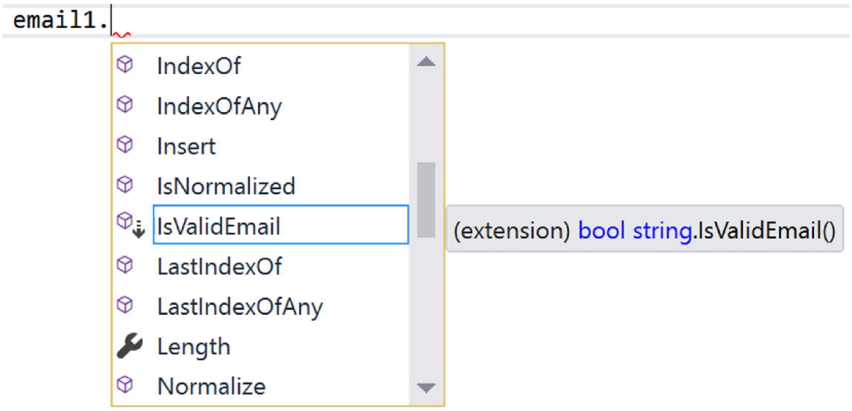




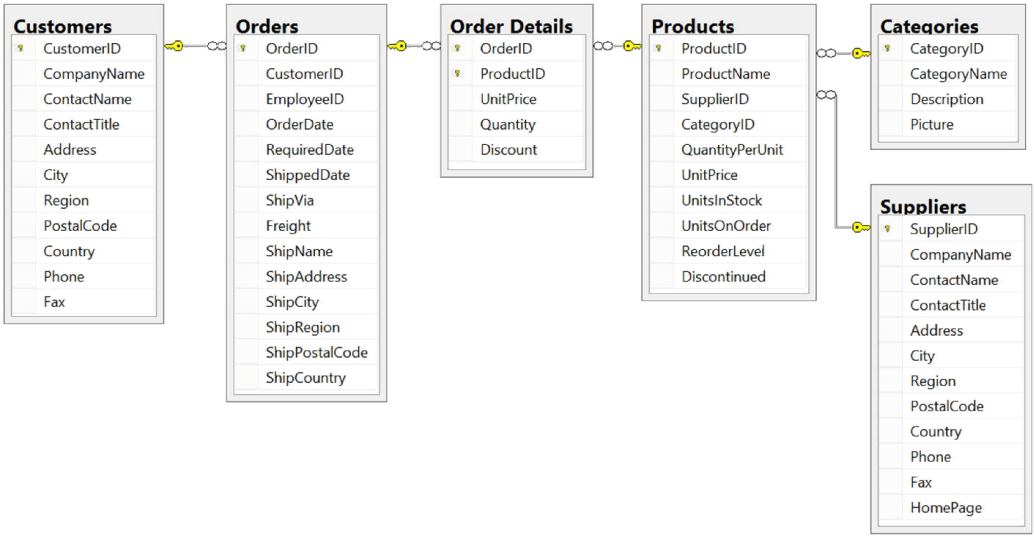

Code File Edit Selection View Go Window Help
Employee.cs - Chapter07
EXPLORER
OPEN EDITORS
Person.cs Ch07_PacktLibrary
Program.cs Ch07_PeopleApp
Employee.cs Ch07_PacktLibrary
DisplacementVector.cs Ch07...
CHAPTER07
.vscode
Ch07_PacktLibrary
bin
obj
Ch07_PacktLibrary.csproj
DisplacementVector.cs
Employee.cs
Person.cs
PersonComparer.cs
Ch07_PeopleApp
bin
obj
Ch07_PeopleApp.csproj
Program.cs
Person.cs
Program.cs
Employee.cs
DisplacementVector.cs
2 references
public class Employee : Person
1 reference
3 references
'Employee.WriteToConsole()' hides inherited member 'Person.WriteToConsole()'. Use the new keyword if hiding was intended. [Ch07_PacktLibrary]
void Employee.WriteToConsole()
1 reference
public void WriteToConsole()
WriteLine($"{Name}'s birth date is {DateOfBirth:dd/MM/yy} and hire date was {HireDa
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
1: bash
bash-3.2$ dotnet run
Employee.cs(11,21): warning CS0108: 'Employee.WriteToConsole()' hides inherited member 'Person.WriteToConsole()'. Use the new keyword if hiding was intended. [/Users/markjprice/Code/Chapter07/Ch07_PacktLibrary/Ch07_PacktLibrary.csproj]
Mary has 2 children.
Harry has 2 children.
Ln 13, Col 105
Spaces: 4
UTF-8
LF
C#
Switch projects

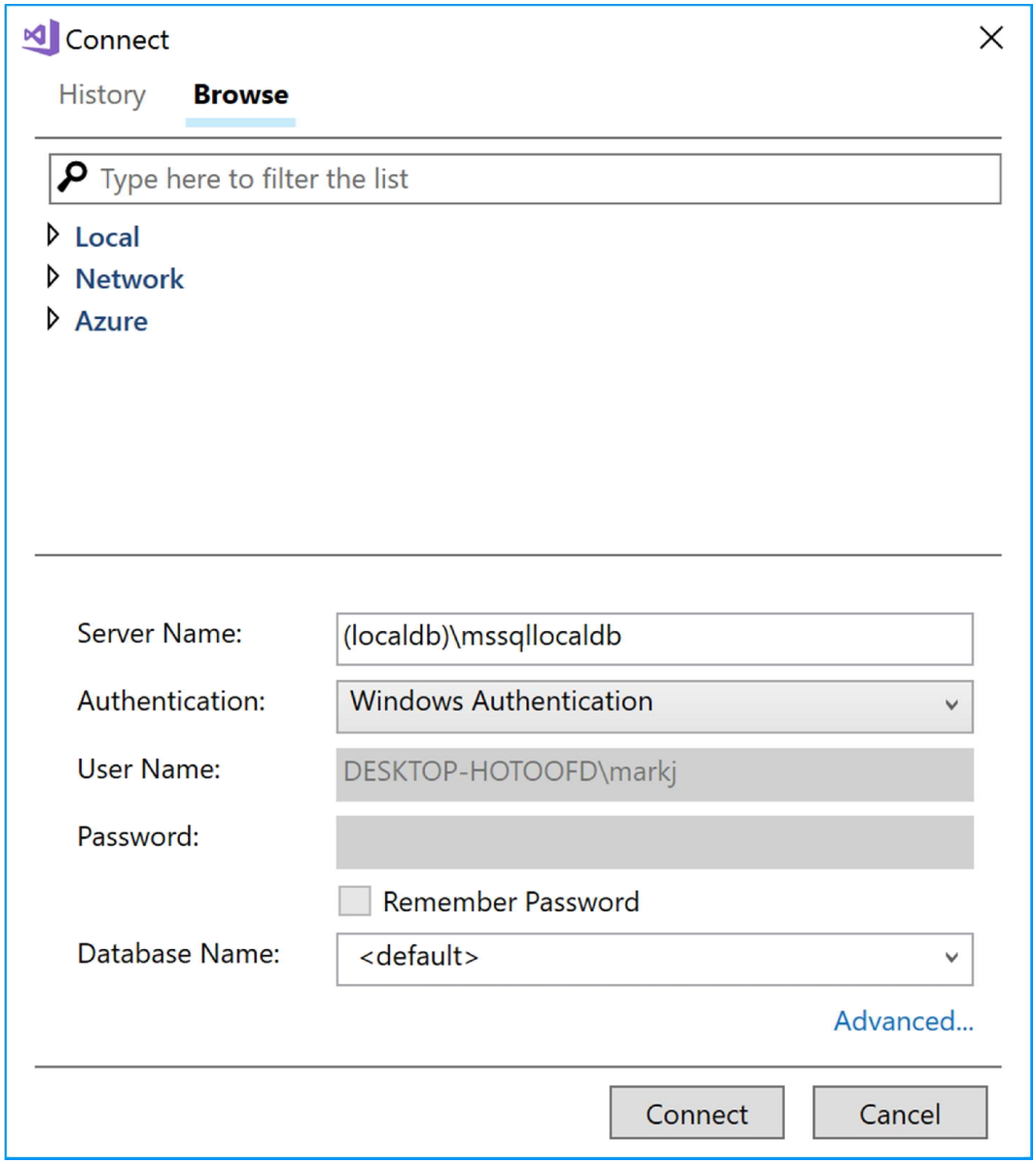

override
Equals(object obj)
GetHashCode()
ToString()

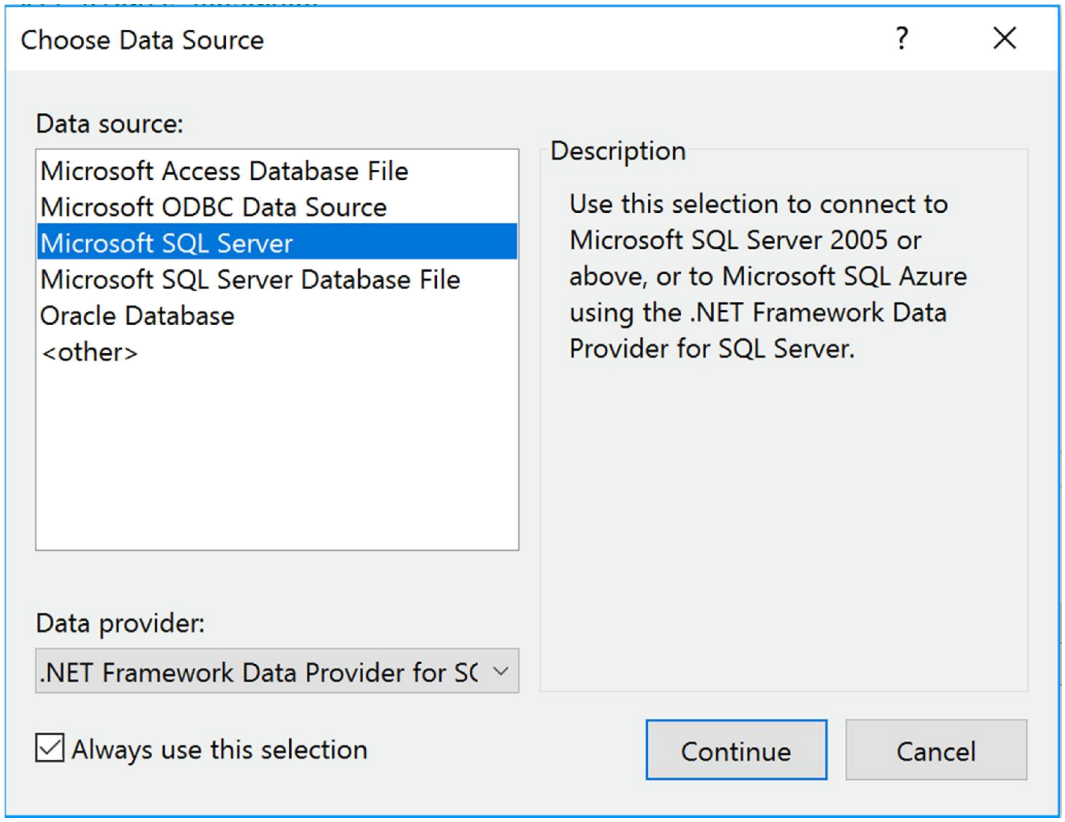

Employee e2 = aliceInPerson;
Error List
1 Error
0 Warnings
0 of 11 Messages
Code
Description
CS0266
Cannot implicitly convert type 'Packt.LearningCS.Person' to 'Packt.LearningCS.Employee'. An explicit conversion exists (are you missing a cast?)

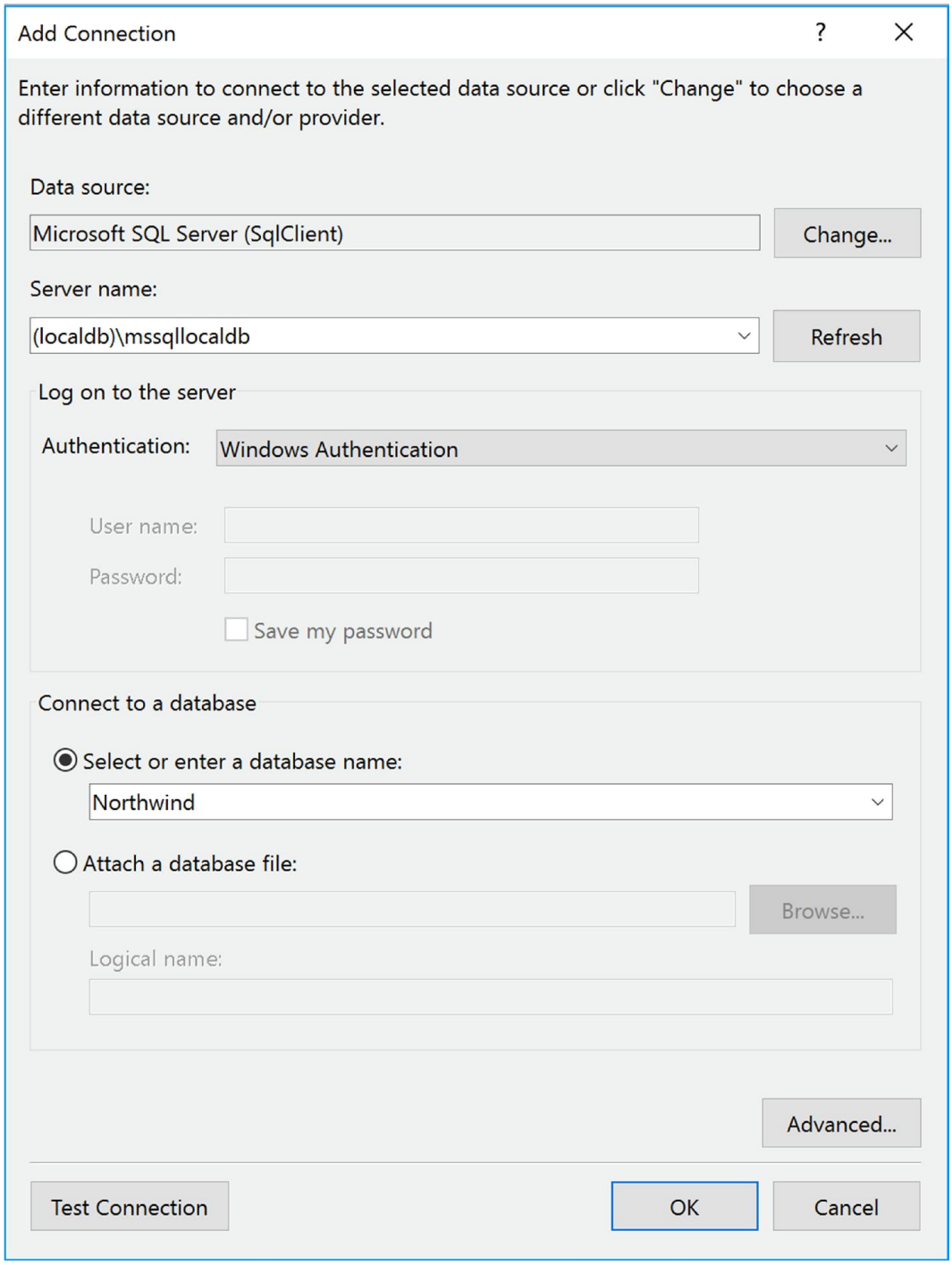

email1.
IndexOf
IndexOfAny
Insert
IsNormalized
IsValidEmail
LastIndexOf
LastIndexOfAny
Length
Normalize
(extension) bool string.IsValidEmail()

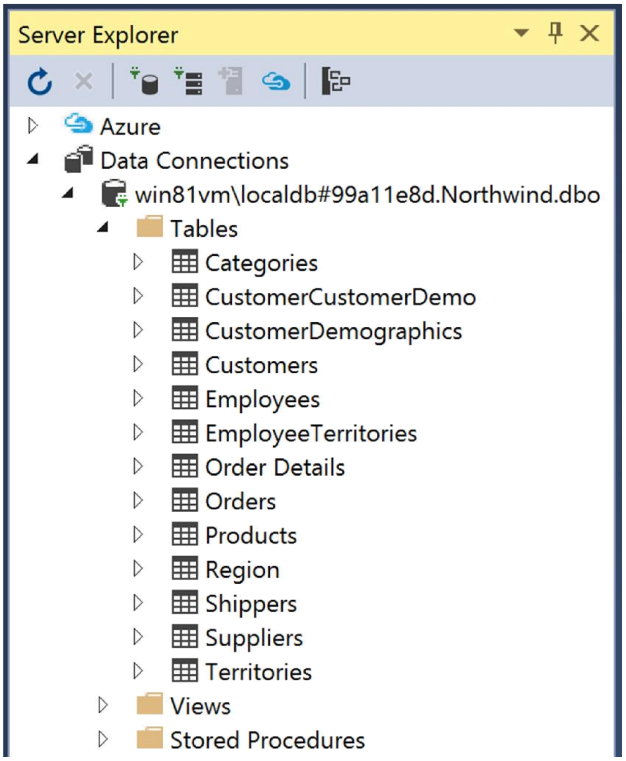
Chapter 8: Working with Databases Using the Entity Framework Core




Connect
History
Browse
Type here to filter the list
Local
Network
Azure
Server Name:
(localdb)\mssqllocaldb
Authentication:
Windows Authentication
User Name:
DESKTOP-HOTOOFD\markj
Password:
Remember Password
Database Name:
<default>
Advanced...
Connect
Cancel


Choose Data Source
Data source:
Microsoft Access Database File
Microsoft ODBC Data Source
Microsoft SQL Server
Microsoft SQL Server Database File
Oracle Database
<other>
Description
Use this selection to connect to Microsoft SQL Server 2005 or above, or to Microsoft SQL Azure using the .NET Framework Data Provider for SQL Server.
Data provider:
.NET Framework Data Provider for SC
Always use this selection
Continue
Cancel

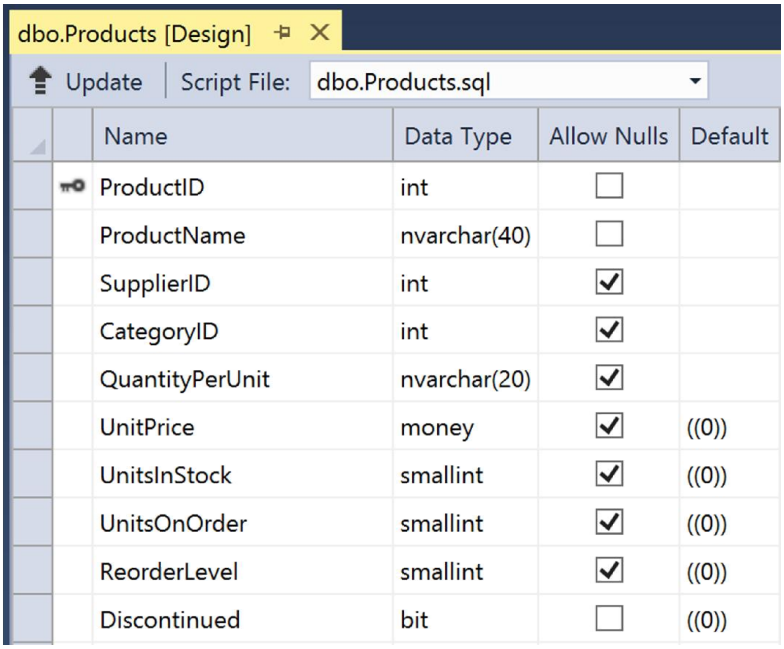

Add Connection
Enter information to connect to the selected data source or click "Change" to choose a different data source and/or provider.
Data source:
Microsoft SQL Server (SqlClient)
Change...
Server name:
(localdb)\mssqllocaldb
Refresh
Log on to the server
Authentication:
Windows Authentication
User name:
Password:
Save my password
Connect to a database
Select or enter a database name:
Northwind
Attach a database file:
Browse...
Logical name:
Advanced...
Test Connection
OK
Cancel



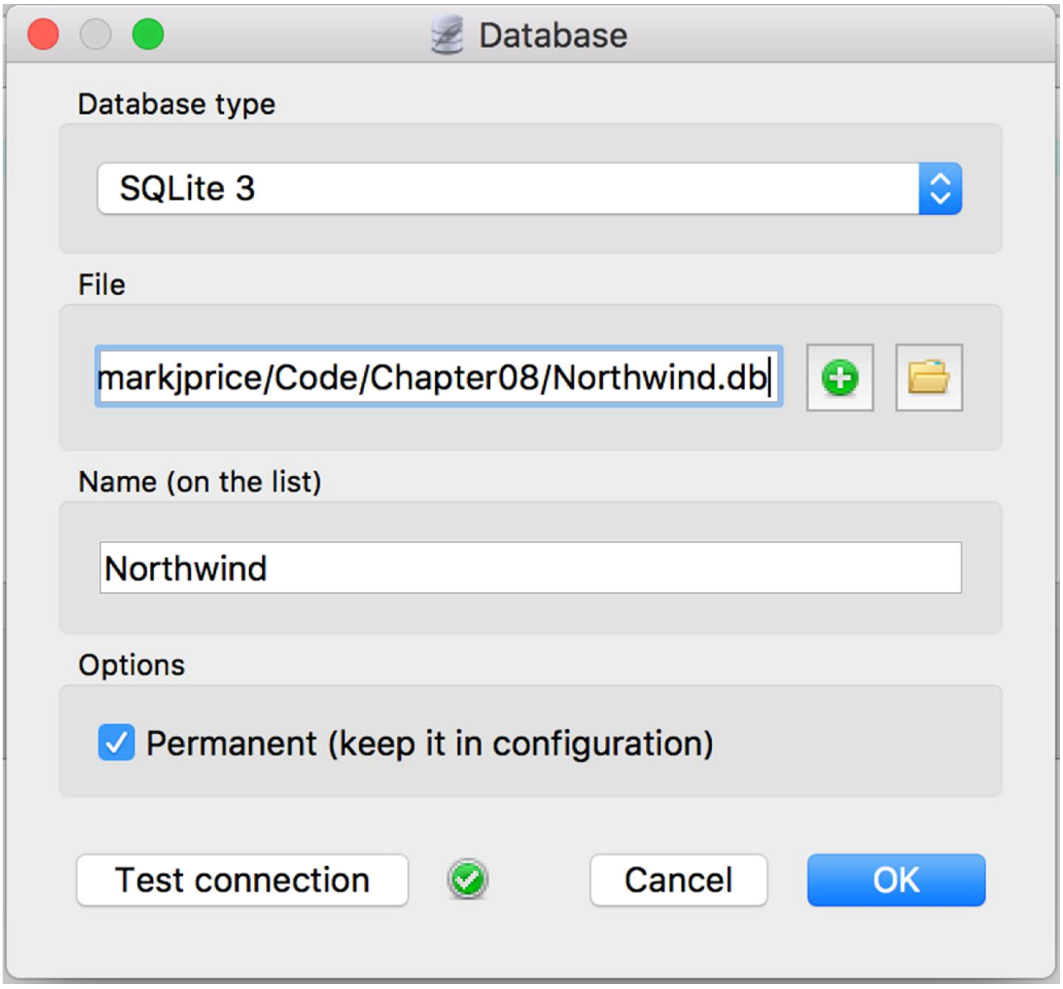
dbo.Products [Data]

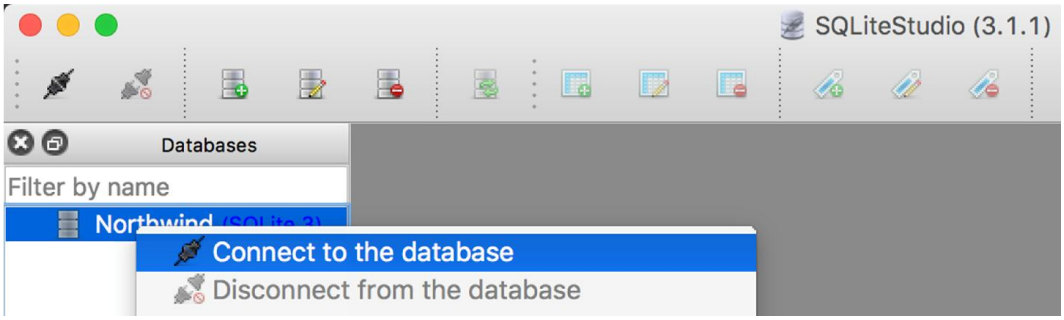
Max Rows: 1000

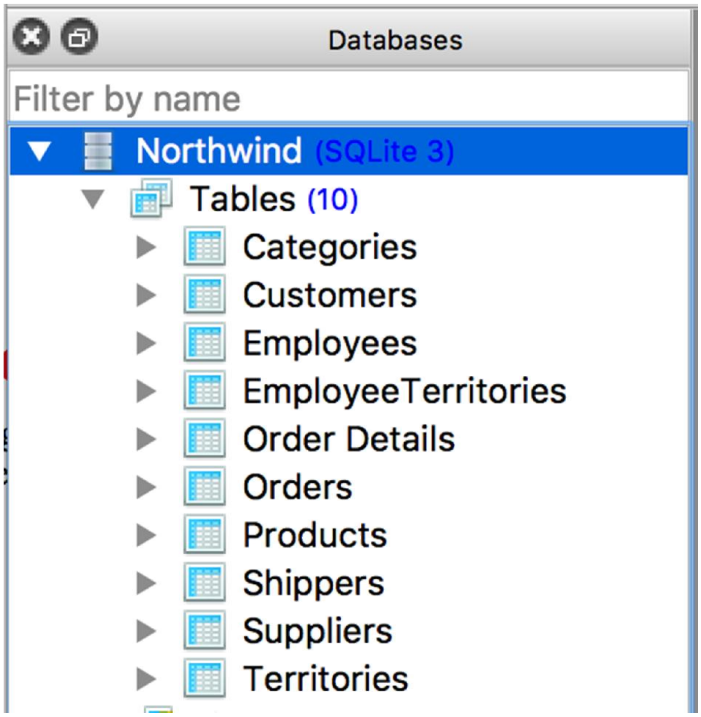
ProductID	ProductName	SupplierID	CategoryID	QuantityPerUnit
1	Chai	1	1	10 boxes x 20 bags
2	Chang	1	1	24 - 12 oz bottles
3	Aniseed Syrup	1	2	12 - 550 ml bottles
4	Chef Anton's Cajun Seasoning	2	2	48 - 6 oz jars
5	Chef Anton's Gumbo Mix	2	2	36 boxes

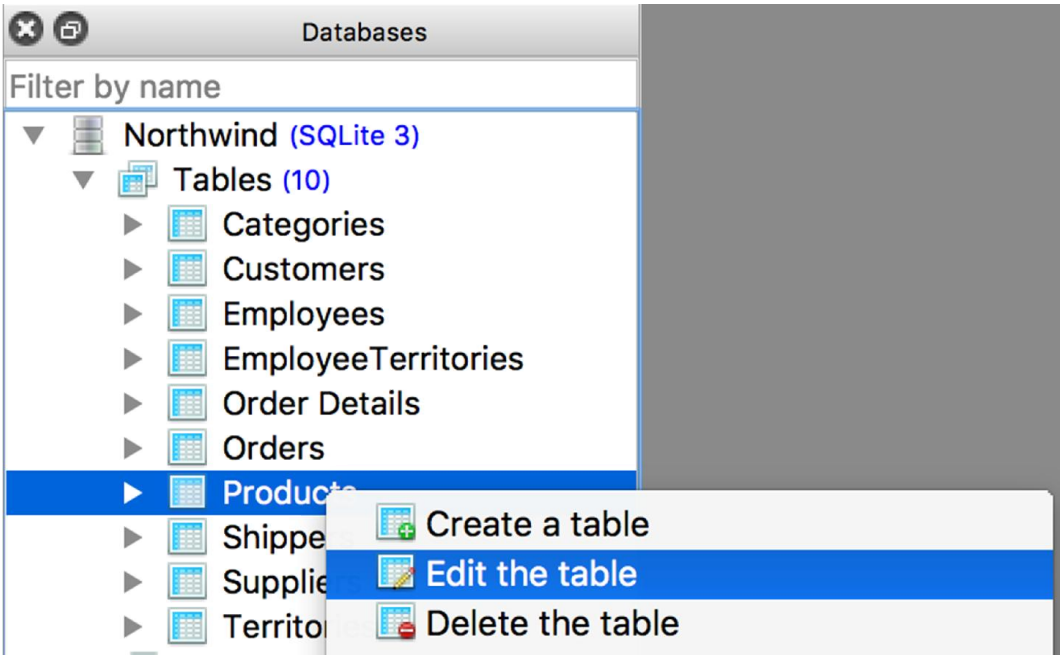


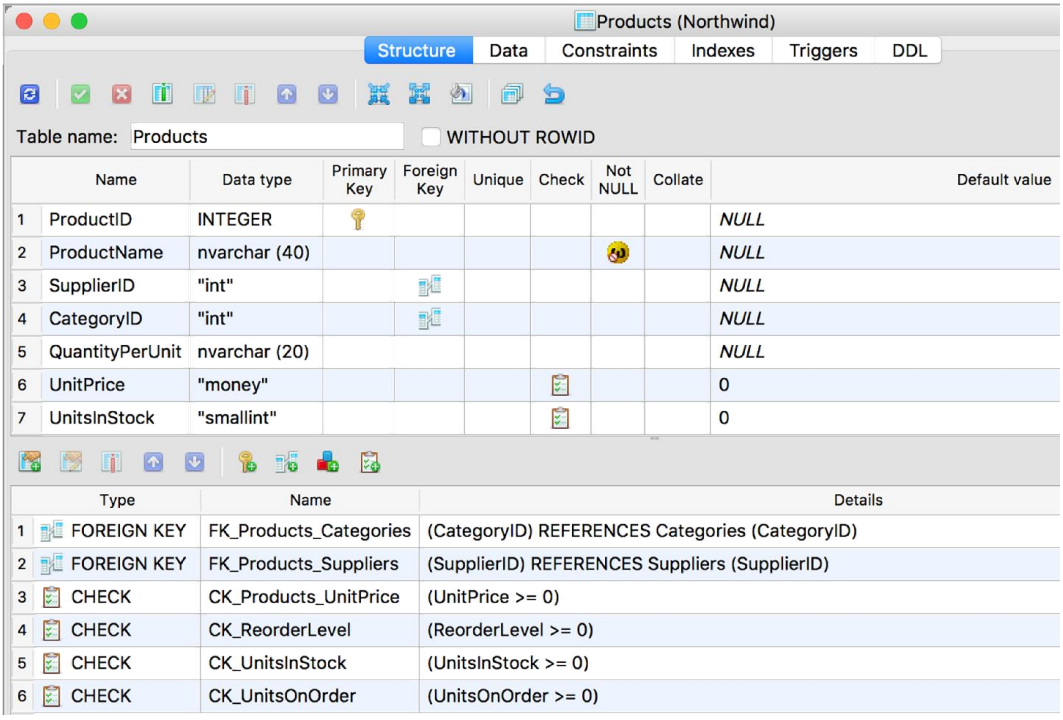
	Name	Data Type	Allow Nulls	Default
🔑	ProductID	int	☐	
	ProductName	nvarchar(40)	☐	
	SupplierID	int	☑	
	CategoryID	int	☑	
	QuantityPerUnit	nvarchar(20)	☑	
	UnitPrice	money	☑	((0))
	UnitsInStock	smallint	☑	((0))
	UnitsOnOrder	smallint	☑	((0))
	ReorderLevel	smallint	☑	((0))
	Discontinued	bit	☐	((0))


Database
Database type
SQLite 3
File
markjprice/Code/Chapter08/Northwind.db
Name (on the list)
Northwind
Options
Permanent (keep it in configuration)
Test connection
Cancel
OK


SQLiteStudio (3.1.1)
Databases
Filter by name
Connect to the database
Disconnect from the database

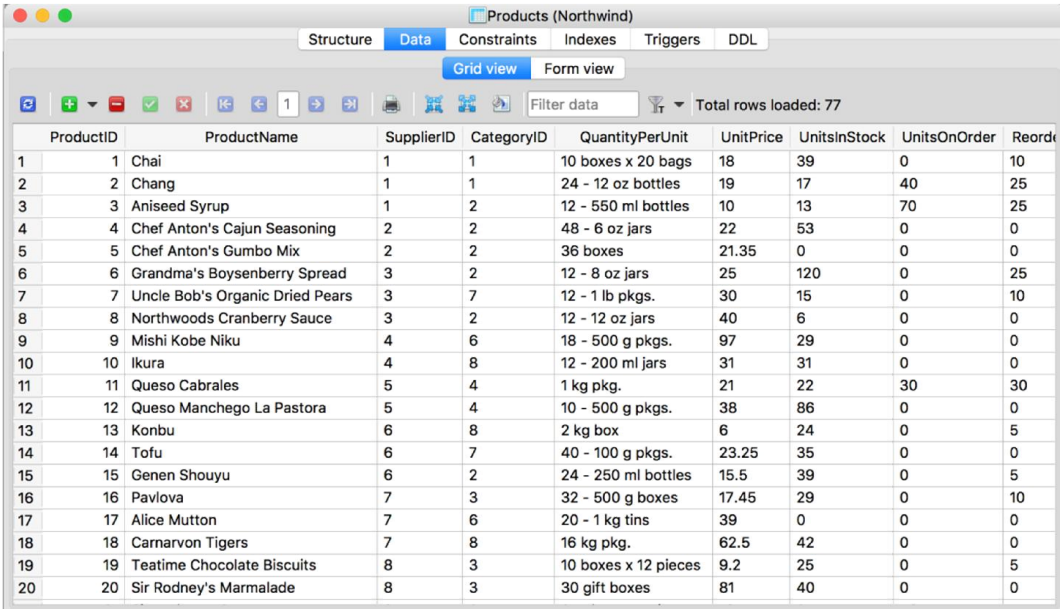

Databases
Filter by name
Northwind (SQLite 3)
Tables (10)
Categories
Customers
Employees
EmployeeTerritories
Order Details
Orders
Products
Shippers
Suppliers
Territories


Databases
Filter by name
Northwind (SQLite 3)
Tables (10)
Categories
Customers
Employees
EmployeeTerritories
Order Details
Orders
Create a table
Edit the table
Delete the table

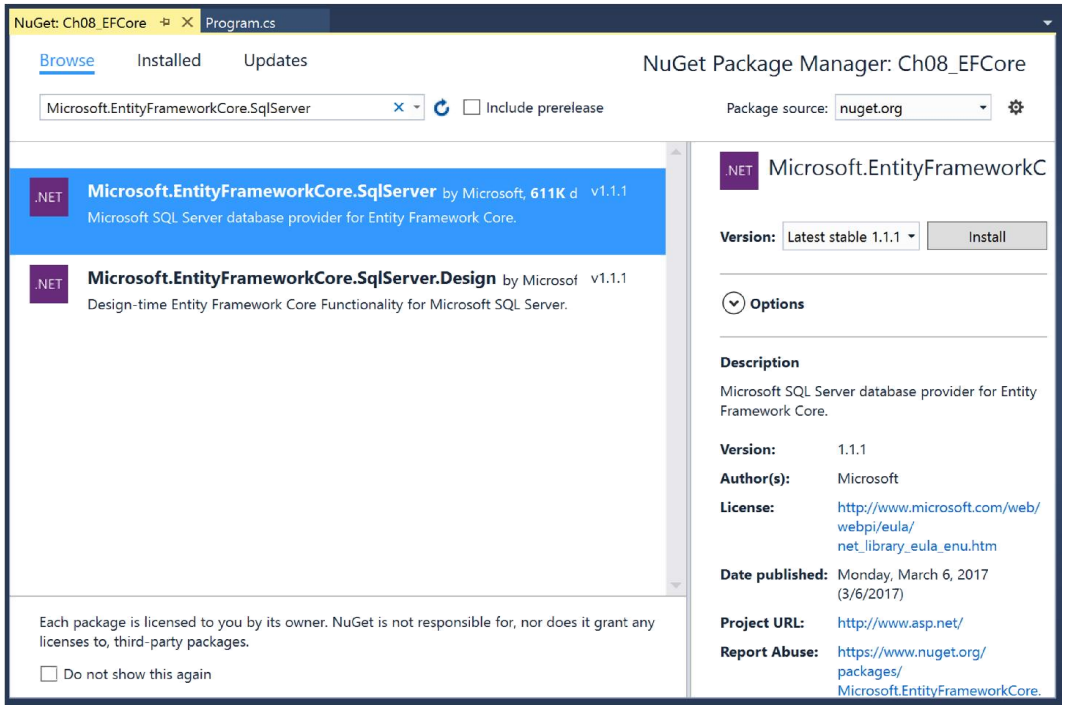


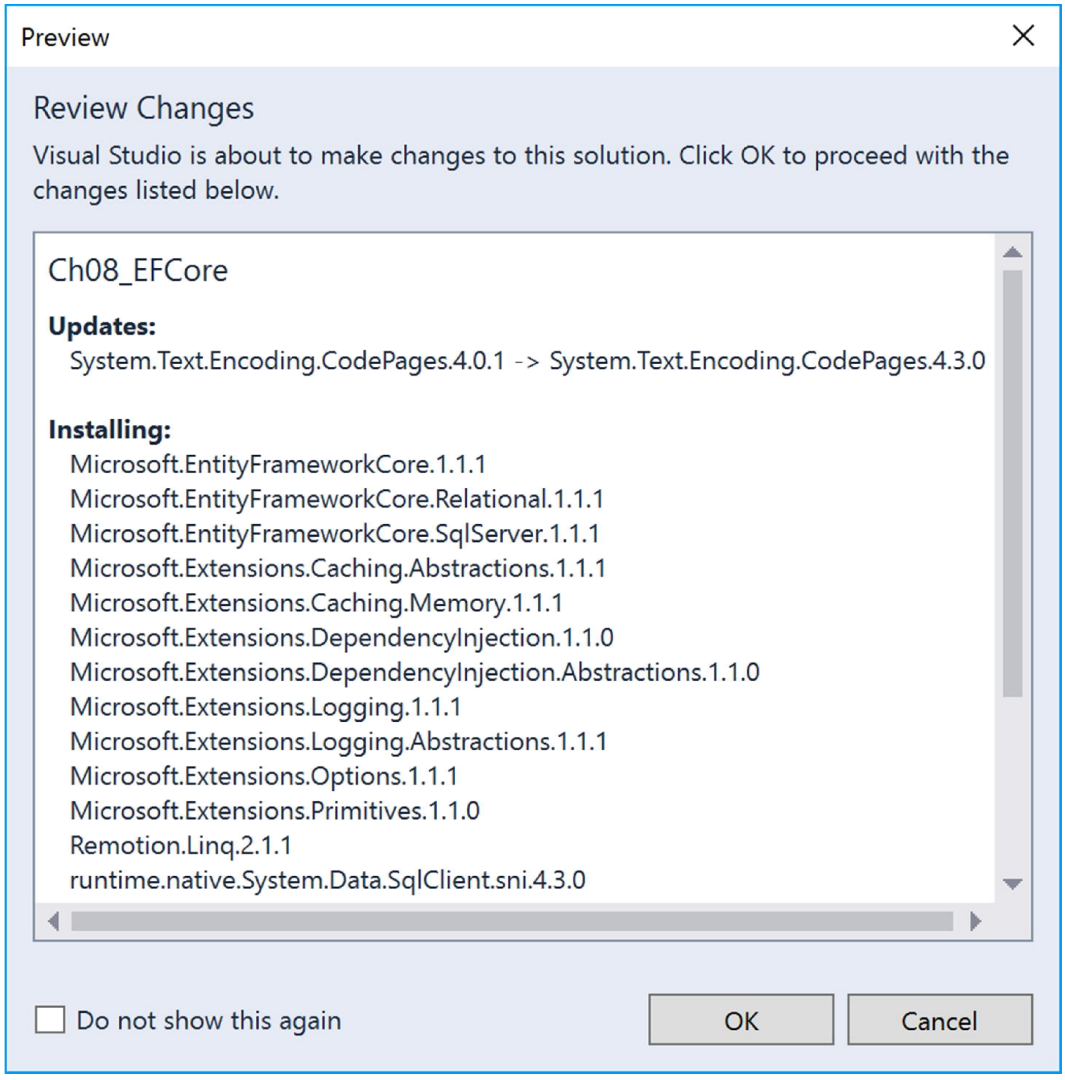
	Name	Data type	Primary Key	Foreign Key	Unique	Check	Not NULL	Collate	Default value
1	ProductID	INTEGER							*NULL*
2	ProductName	nvarchar (40)							*NULL*
3	SupplierID	"int"							*NULL*
4	CategoryID	"int"							*NULL*
5	QuantityPerUnit	nvarchar (20)							*NULL*
6	UnitPrice	"money"							0
7	UnitsInStock	"smallint"							0

	Type	Name	Details
1	FOREIGN KEY	FK_Products_Categories	(CategoryID) REFERENCES Categories (CategoryID)
2	FOREIGN KEY	FK_Products_Suppliers	(SupplierID) REFERENCES Suppliers (SupplierID)
3	CHECK	CK_Products_UnitPrice	(UnitPrice >= 0)
4	CHECK	CK_ReorderLevel	(ReorderLevel >= 0)
5	CHECK	CK_UnitsInStock	(UnitsInStock >= 0)
6	CHECK	CK_UnitsOnOrder	(UnitsOnOrder >= 0)

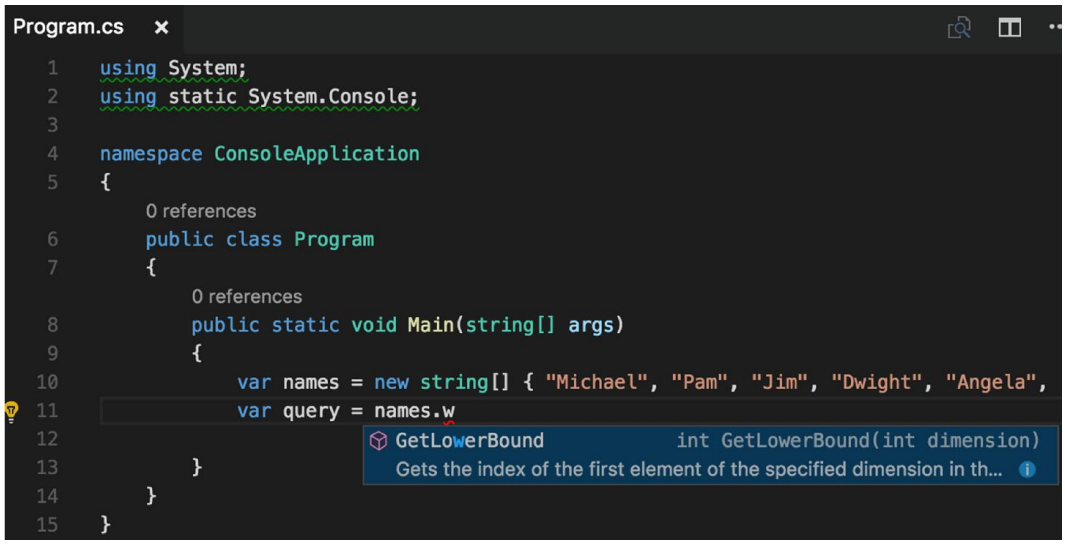


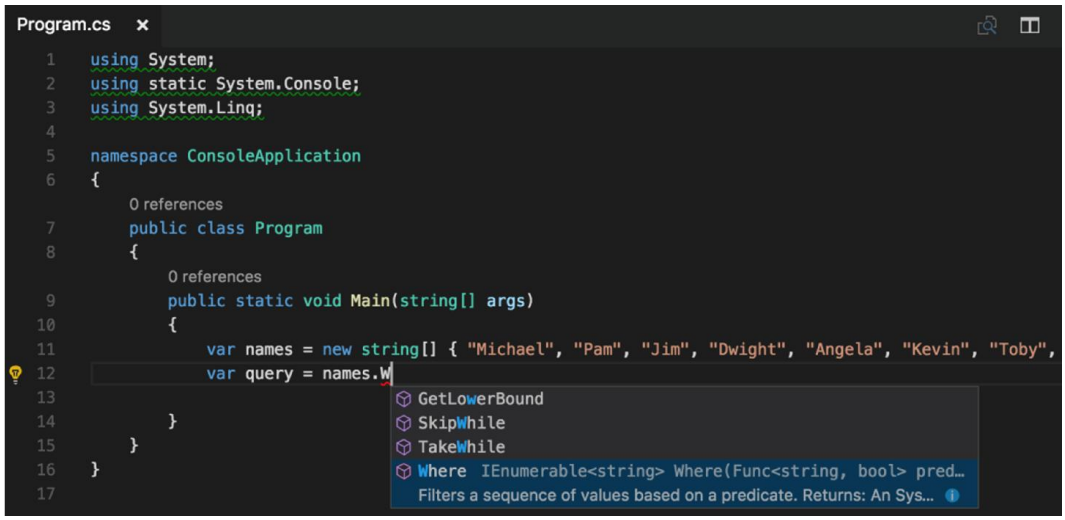
	ProductID	ProductName	SupplierID	CategoryID	QuantityPerUnit	UnitPrice	UnitsInStock	UnitsOnOrder	Reorde
1	1	Chai	1	1	10 boxes x 20 bags	18	39	0	10
2	2	Chang	1	1	24 - 12 oz bottles	19	17	40	25
3	3	Aniseed Syrup	1	2	12 - 550 ml bottles	10	13	70	25
4	4	Chef Anton's Cajun Seasoning	2	2	48 - 6 oz jars	22	53	0	0
5	5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35	0	0	0
6	6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25	120	0	25
7	7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30	15	0	10
8	8	Northwoods Cranberry Sauce	3	2	12 - 12 oz jars	40	6	0	0
9	9	Mishi Kobe Niku	4	6	18 - 500 g pkgs.	97	29	0	0
10	10	Ikura	4	8	12 - 200 ml jars	31	31	0	0
11	11	Queso Cabrales	5	4	1 kg pkg.	21	22	30	30
12	12	Queso Manchego La Pastora	5	4	10 - 500 g pkgs.	38	86	0	0
13	13	Konbu	6	8	2 kg box	6	24	0	5
14	14	Tofu	6	7	40 - 100 g pkgs.	23.25	35	0	0
15	15	Genen Shouyu	6	2	24 - 250 ml bottles	15.5	39	0	5
16	16	Pavlova	7	3	32 - 500 g boxes	17.45	29	0	10
17	17	Alice Mutton	7	6	20 - 1 kg tins	39	0	0	0
18	18	Carnarvon Tigers	7	8	16 kg pkg.	62.5	42	0	0
19	19	Teatime Chocolate Biscuits	8	3	10 boxes x 12 pieces	9.2	25	0	5
20	20	Sir Rodney's Marmalade	8	3	30 gift boxes	81	40	0	0

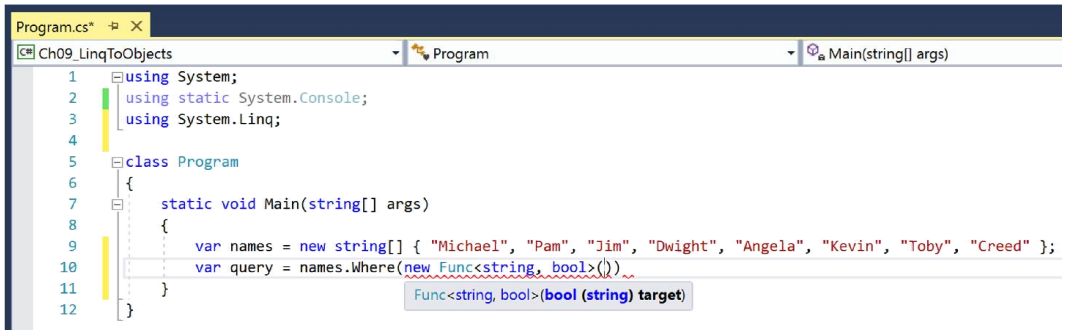

NuGet: Ch08_EFCore
Program.cs
Browse
Installed
Updates
NuGet Package Manager: Ch08_EFCore
Microsoft.EntityFrameworkCore.SqlServer
Include prerelease
Package source:
nuget.org
.NET
Microsoft.EntityFrameworkCore.SqlServer by Microsoft, 611K d
v1.1.1
Microsoft SQL Server database provider for Entity Framework Core.
.NET
Microsoft.EntityFrameworkCore.SqlServer.Design by Microsof
v1.1.1
Design-time Entity Framework Core Functionality for Microsoft SQL Server.
Each package is licensed to you by its owner. NuGet is not responsible for, nor does it grant any licenses to, third-party packages.
Do not show this again
.NET
Microsoft.EntityFrameworkC
Version:
Latest stable 1.1.1
Install
Options
Description
Microsoft SQL Server database provider for Entity Framework Core.
Version:
1.1.1
Author(s):
Microsoft
License:
http://www.microsoft.com/web/webpi/eula/net_library_eula_enu.htm
Date published:
Monday, March 6, 2017 (3/6/2017)
Project URL:
http://www.asp.net/
Report Abuse:
https://www.nuget.org/packages/Microsoft.EntityFrameworkCore.

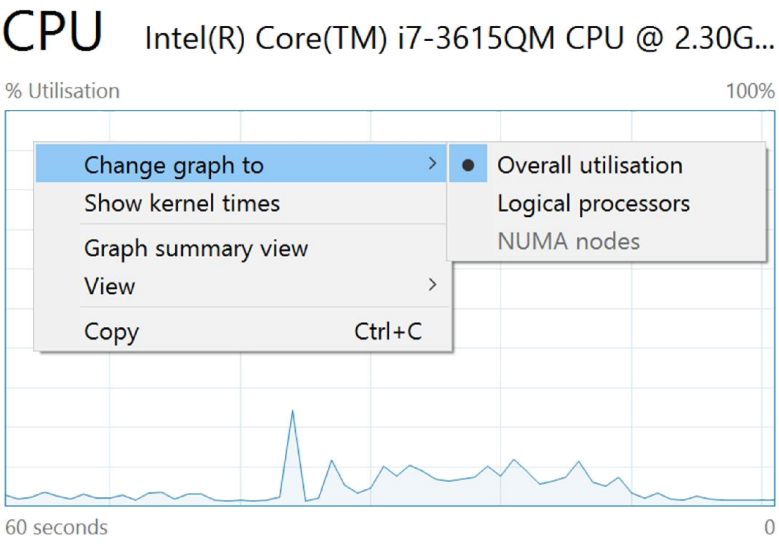

Preview
Review Changes
Visual Studio is about to make changes to this solution. Click OK to proceed with the changes listed below.
Ch08_EFCore
Updates:
System.Text.Encoding.CodePages.4.0.1 -> System.Text.Encoding.CodePages.4.3.0
Installing:
Microsoft.EntityFrameworkCore.1.1.1
Microsoft.EntityFrameworkCore.Relational.1.1.1
Microsoft.EntityFrameworkCore.SqlServer.1.1.1
Microsoft.Extensions.Caching.Abstractions.1.1.1
Microsoft.Extensions.Caching.Memory.1.1.1
Microsoft.Extensions.DependencyInjection.1.1.0
Microsoft.Extensions.DependencyInjection.Abstractions.1.1.0
Microsoft.Extensions.Logging.1.1.1
Microsoft.Extensions.Logging.Abstractions.1.1.1
Microsoft.Extensions.Options.1.1.1
Microsoft.Extensions.Primitives.1.1.0
Remotion.Linq.2.1.1
runtime.native.System.Data.SqlClient.sni.4.3.0
Do not show this again
OK
Cancel

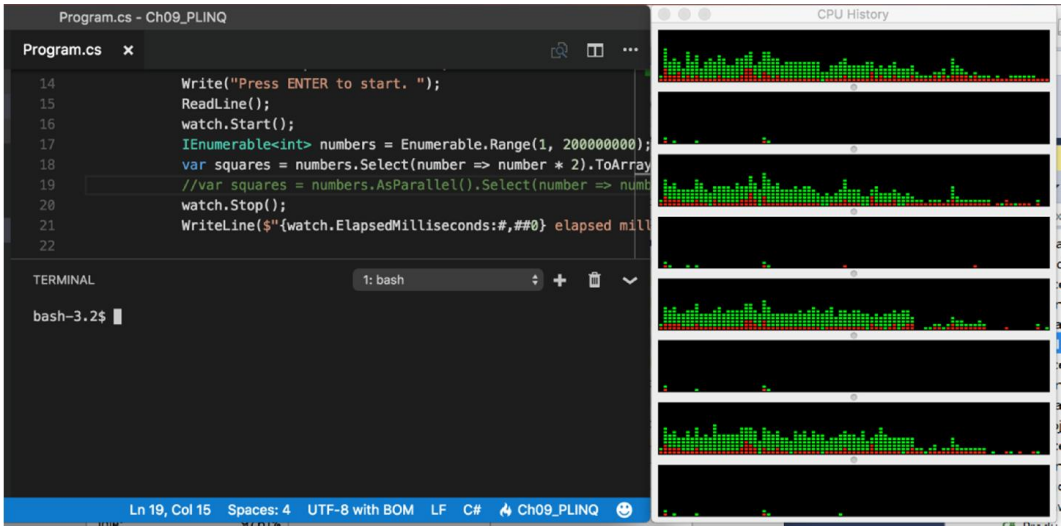
Chapter 9: Querying and Manipulating Data with LINQ

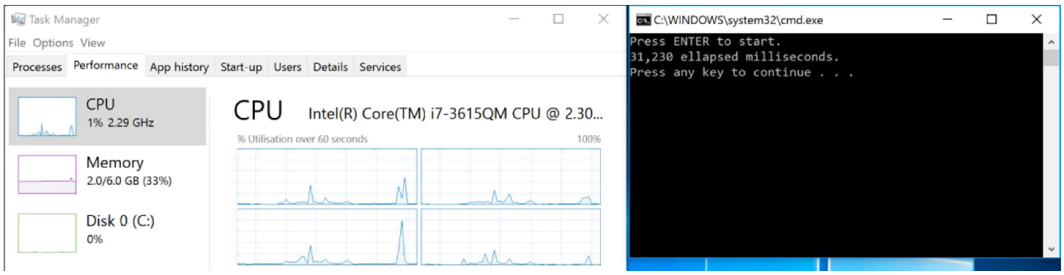


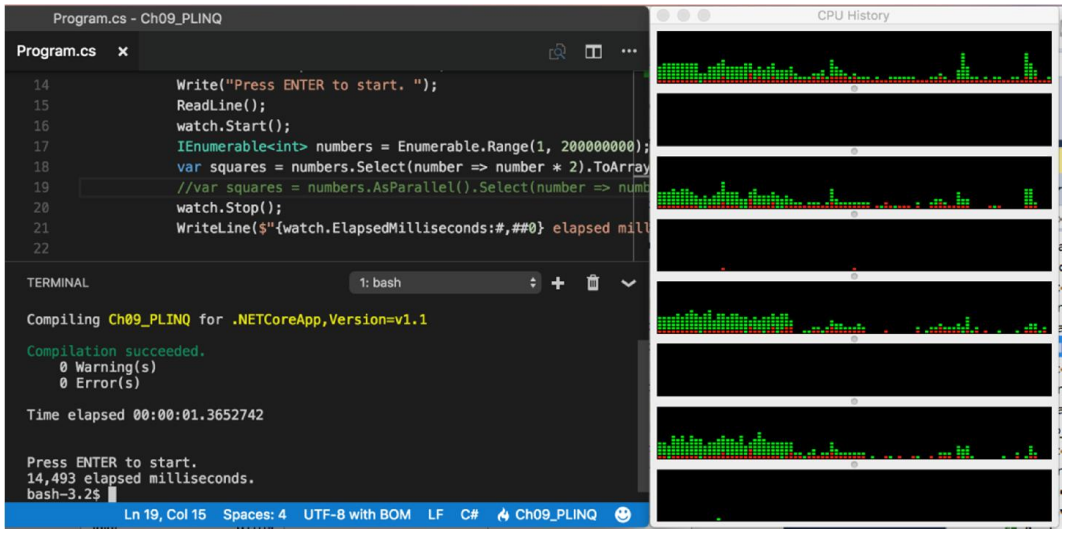


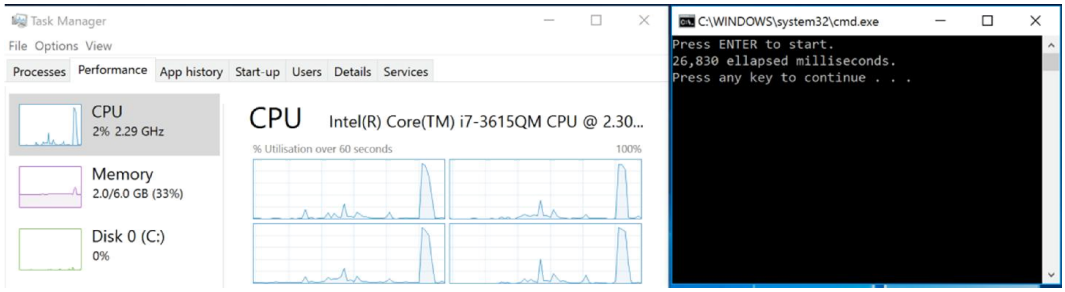

Program.cs*
Ch09_LinqToObjects
Program
Main(string[] args)
using System;
using static System.Console;
using System.Linq;
class Program
{
static void Main(string[] args)
{
var names = new string[] { "Michael", "Pam", "Jim", "Dwight", "Angela", "Kevin", "Toby", "Creed" };
var query = names.Where(new Func<string, bool>())
}
}
Func<string, bool>(bool (string) target)

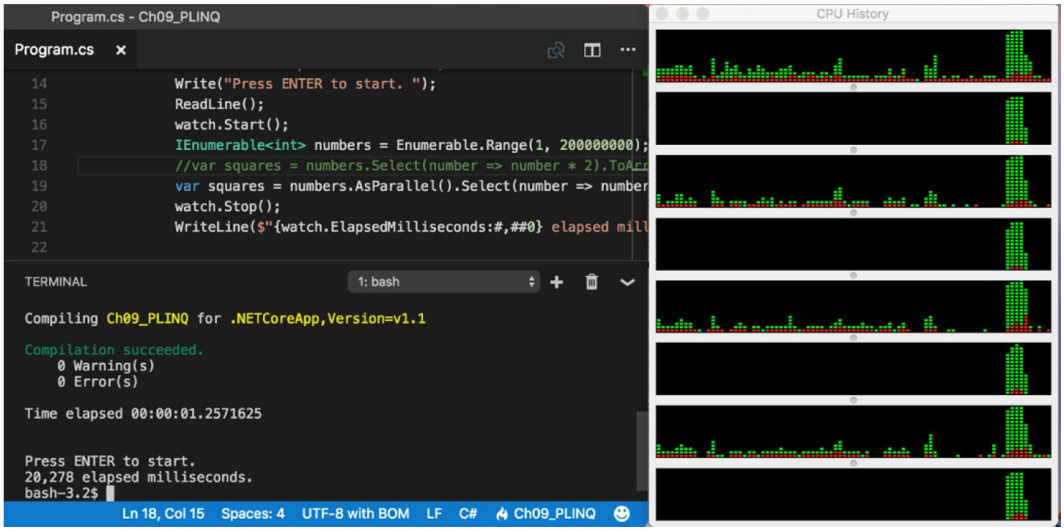

CPU
Intel(R) Core(TM) i7-3615QM CPU @ 2.30G...
% Utilisation
100%
Change graph to
Show kernel times
Graph summary view
View
Copy
Ctrl+C
Overall utilisation
Logical processors
NUMA nodes
60 seconds
0


Program.cs - Ch09_PLINQ
Program.cs
14 Write("Press ENTER to start. ");
15 ReadLine();
16 watch.Start();
17 IEnumerable<int> numbers = Enumerable.Range(1, 200000000);
18 var squares = numbers.Select(number => number * 2).ToArray
19 //var squares = numbers.AsParallel().Select(number => numb
20 watch.Stop();
21 WriteLine($"{watch.ElapsedMilliseconds:#,##0} elapsed mill
22
TERMINAL
1: bash
bash-3.2$
Ln 19, Col 15 Spaces: 4 UTF-8 with BOM LF C# Ch09_PLINQ
CPU History


Task Manager
File Options View
Processes Performance App history Start-up Users Details Services
CPU
1% 2.29 GHz
Memory
2.0/6.0 GB (33%)
Disk 0 (C:)
0%
CPU Intel(R) Core(TM) i7-3615QM CPU @ 2.30...
% Utilisation over 60 seconds
100%
C:\WINDOWS\system32\cmd.exe
Press ENTER to start.
31,230 ellapsed milliseconds.
Press any key to continue . . .


Program.cs - Ch09_PLINQ
Program.cs
14 Write("Press ENTER to start. ");
15 ReadLine();
16 watch.Start();
17 IEnumerable<int> numbers = Enumerable.Range(1, 200000000);
18 var squares = numbers.Select(number => number * 2).ToArray
19 //var squares = numbers.AsParallel().Select(number => numb
20 watch.Stop();
21 WriteLine($"{watch.ElapsedMilliseconds:#,##0} elapsed mill
22
TERMINAL
1: bash
Compiling Ch09_PLINQ for .NETCoreApp,Version=v1.1
Compilation succeeded.
0 Warning(s)
0 Error(s)
Time elapsed 00:00:01.3652742
Press ENTER to start.
14,493 elapsed milliseconds.
bash-3.2$
Ln 19, Col 15 Spaces: 4 UTF-8 with BOM LF C# Ch09_PLINQ
CPU History

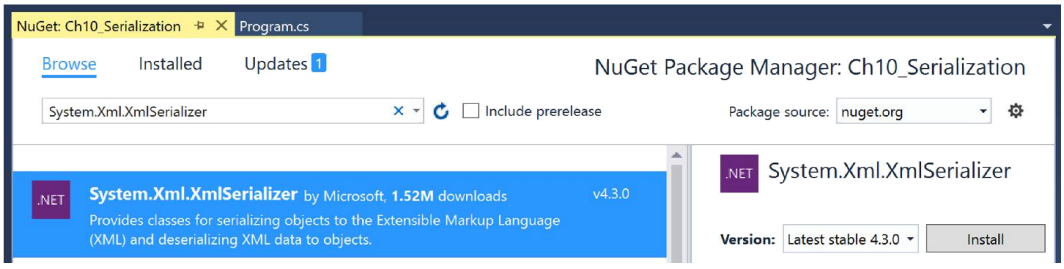

Task Manager
File Options View
Processes Performance App history Start-up Users Details Services
CPU
2% 2.29 GHz
Memory
2.0/6.0 GB (33%)
Disk 0 (C:)
0%
CPU Intel(R) Core(TM) i7-3615QM CPU @ 2.30...
% Utilisation over 60 seconds 100%
C:\WINDOWS\system32\cmd.exe
Press ENTER to start.
26,830 ellapsed milliseconds.
Press any key to continue . . .


Program.cs - Ch09_PLINQ
Program.cs
14 Write("Press ENTER to start. ");
15 ReadLine();
16 watch.Start();
17 IEnumerable<int> numbers = Enumerable.Range(1, 200000000);
18 //var squares = numbers.Select(number => number * 2).ToArr
19 var squares = numbers.AsParallel().Select(number => number
20 watch.Stop();
21 WriteLine($"{watch.ElapsedMilliseconds:#,##0} elapsed mill
22
TERMINAL
1: bash
Compiling Ch09_PLINQ for .NETCoreApp,Version=v1.1
Compilation succeeded.
0 Warning(s)
0 Error(s)
Time elapsed 00:00:01.2571625
Press ENTER to start.
20,278 elapsed milliseconds.
bash-3.2$
Ln 18, Col 15 Spaces: 4 UTF-8 with BOM LF C# Ch09_PLINQ
CPU History

Chapter 10: Working with Files, Streams, and Serialization

Namespace	Class	Description
`System.IO`	`FileStream`	This is stored in the filesystem
	`MemoryStream`	This is stored in memory in the current process
`System.Net.Sockets`	`NetworkStream`	This is stored at a network location

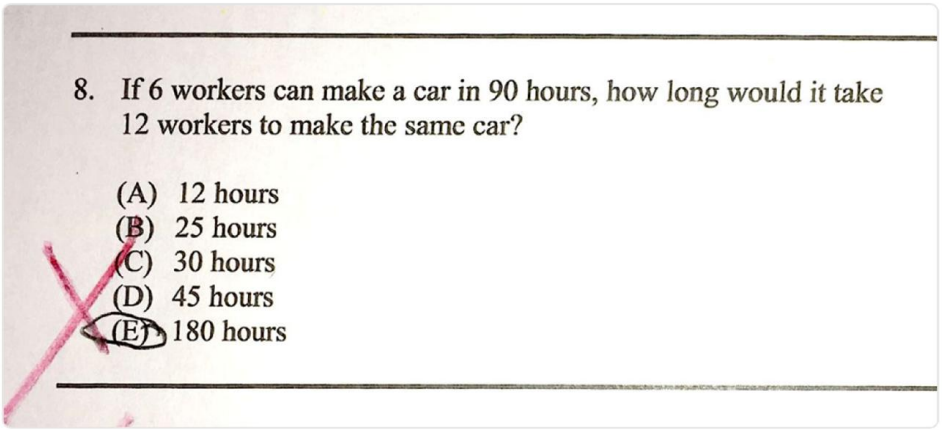
Namespace	Class	Description
`System.IO`	`StreamReader`	This reads from streams as text
	`StreamWriter`	This writes to streams as text
	`BinaryReader`	This reads from streams as .NET types
	`BinaryWriter`	This writes to streams as .NET types
`System.Xml`	`XmlReader`	This reads from streams as XML
	`XmlWriter`	This writes to streams as XML



Chapter 12: Improving Performance and Scalability with Multitasking

Carl T. Bergstrom @CT_Bergstrom · Dec 17

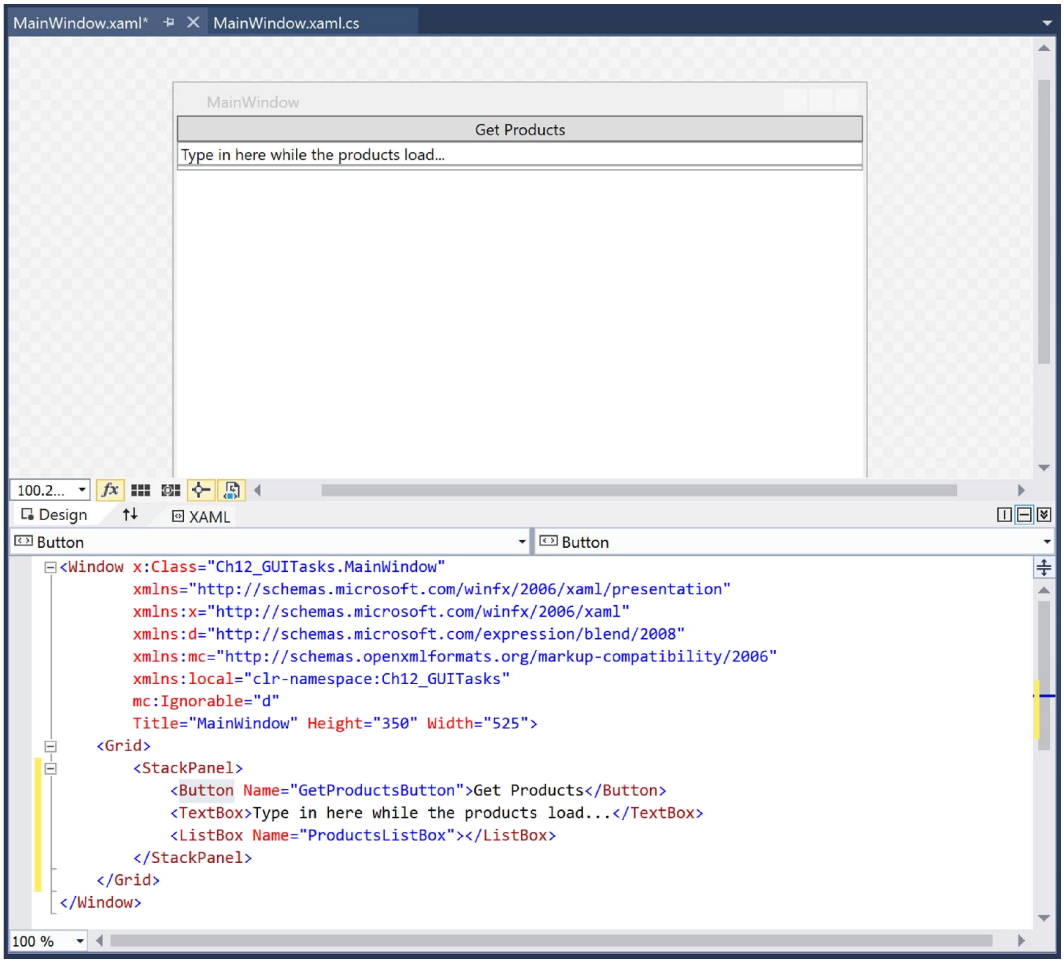
My son clearly has a better grasp on the real world than his teacher does.



8. If 6 workers can make a car in 90 hours, how long would it take 12 workers to make the same car?

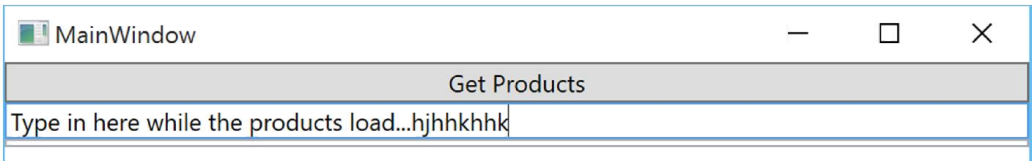
(A) 12 hours
(B) 25 hours
(C) 30 hours
(D) 45 hours
(E) 180 hours

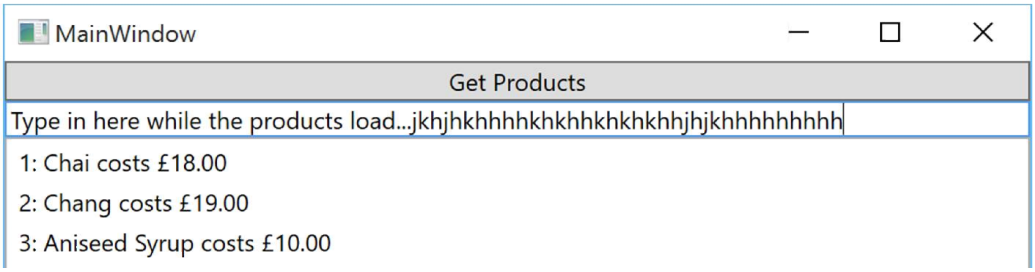
253 10K 16K •••



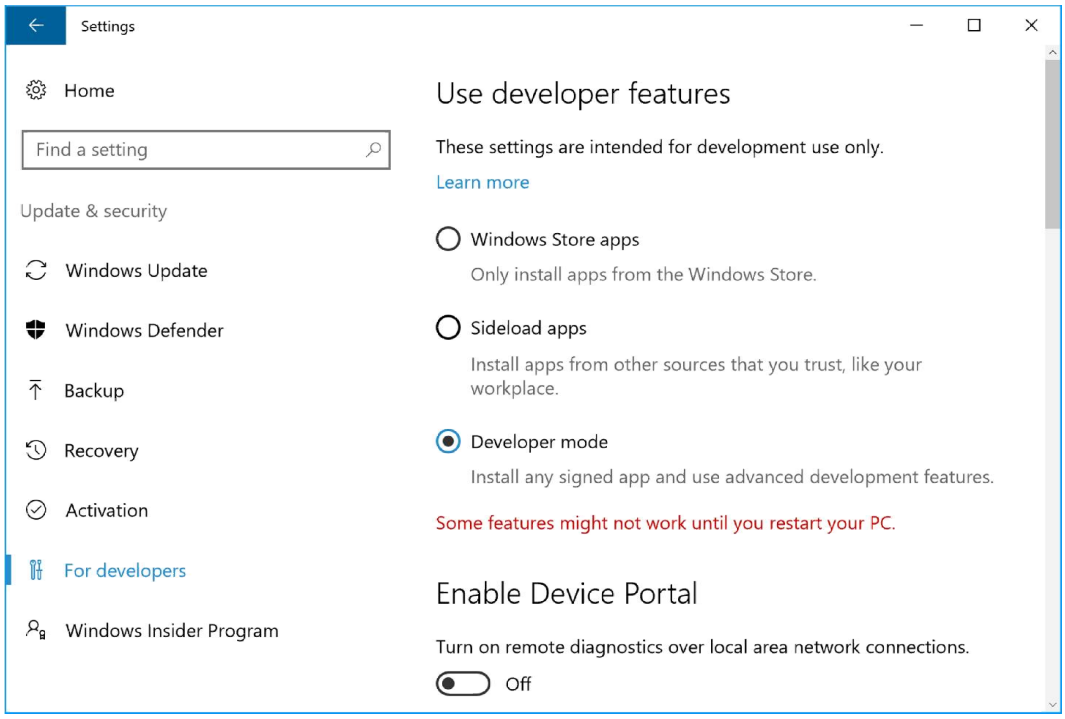

```
<Grid>
    <StackPanel>
        <Button Name="GetProductsButton" Click="">Get Products</Button>
        <TextBox>Type in here while the products load...</TextBox>
```

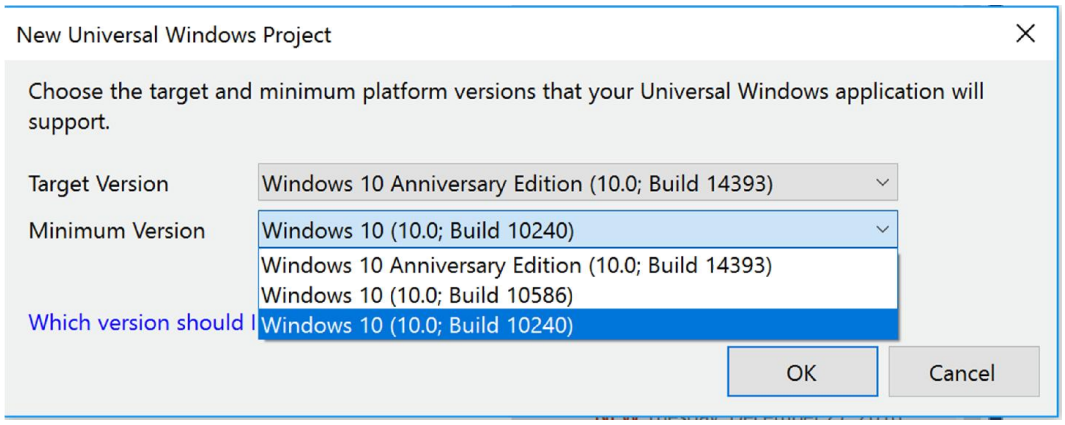
<New Event Handler>

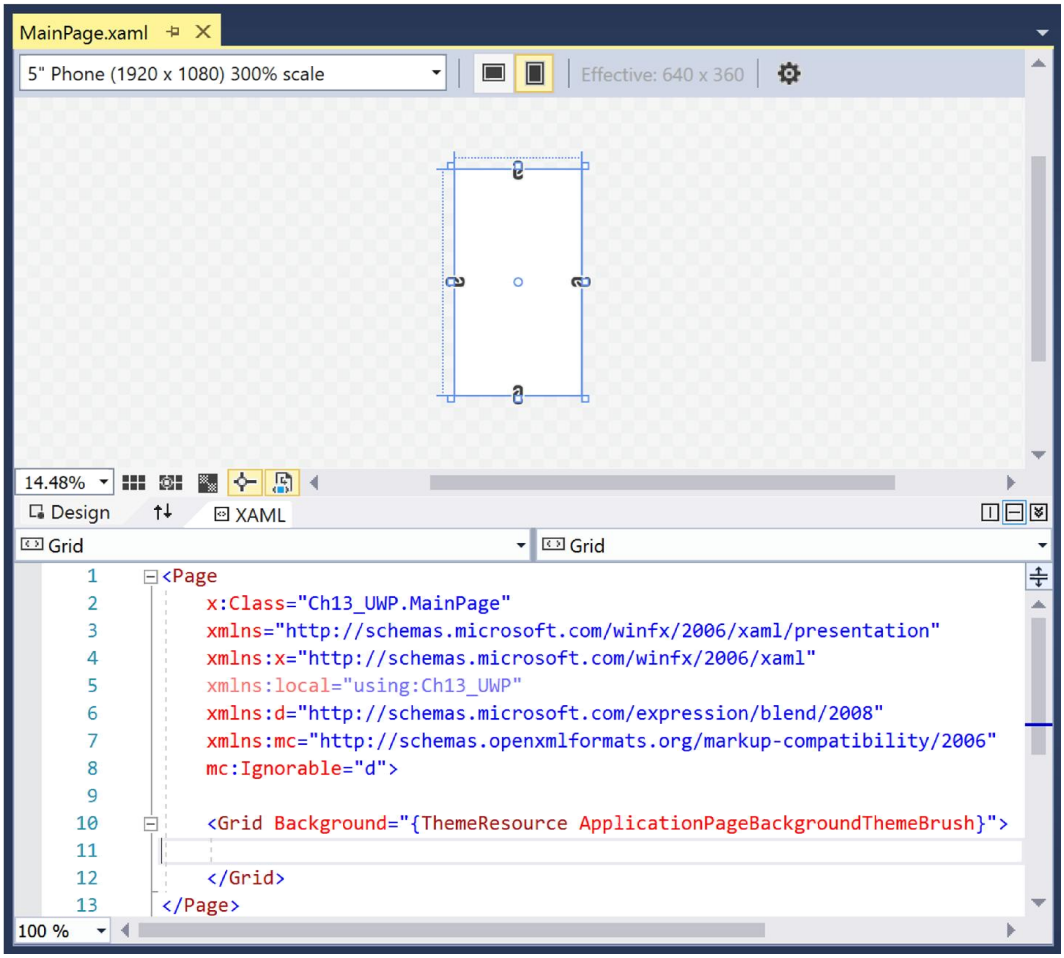


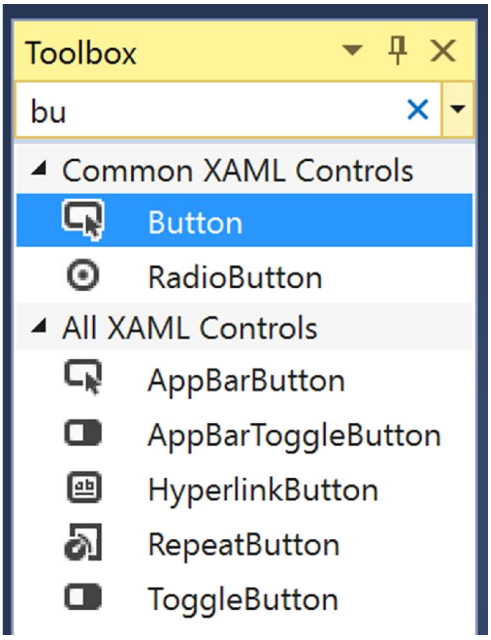

MainWindow
Get Products
Type in here while the products load...jkhjhkhhhhkhkhhkhkhkhhjhjkhhhhhhhhhh
1: Chai costs £18.00
2: Chang costs £19.00
3: Aniseed Syrup costs £10.00

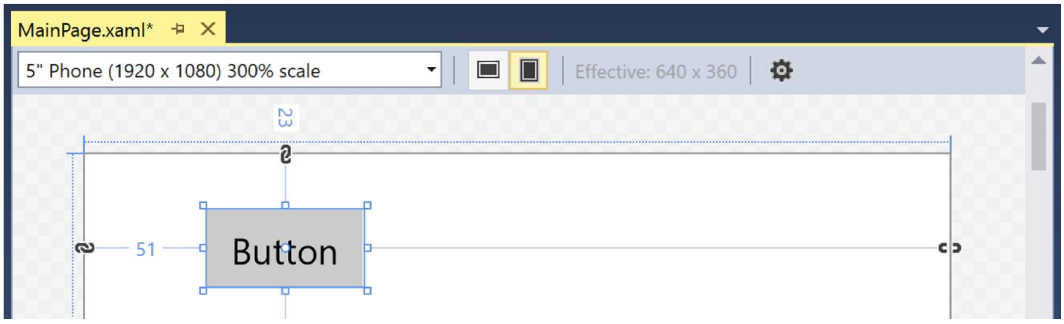
Chapter 13: Building Universal Windows Platform Apps Using XAML

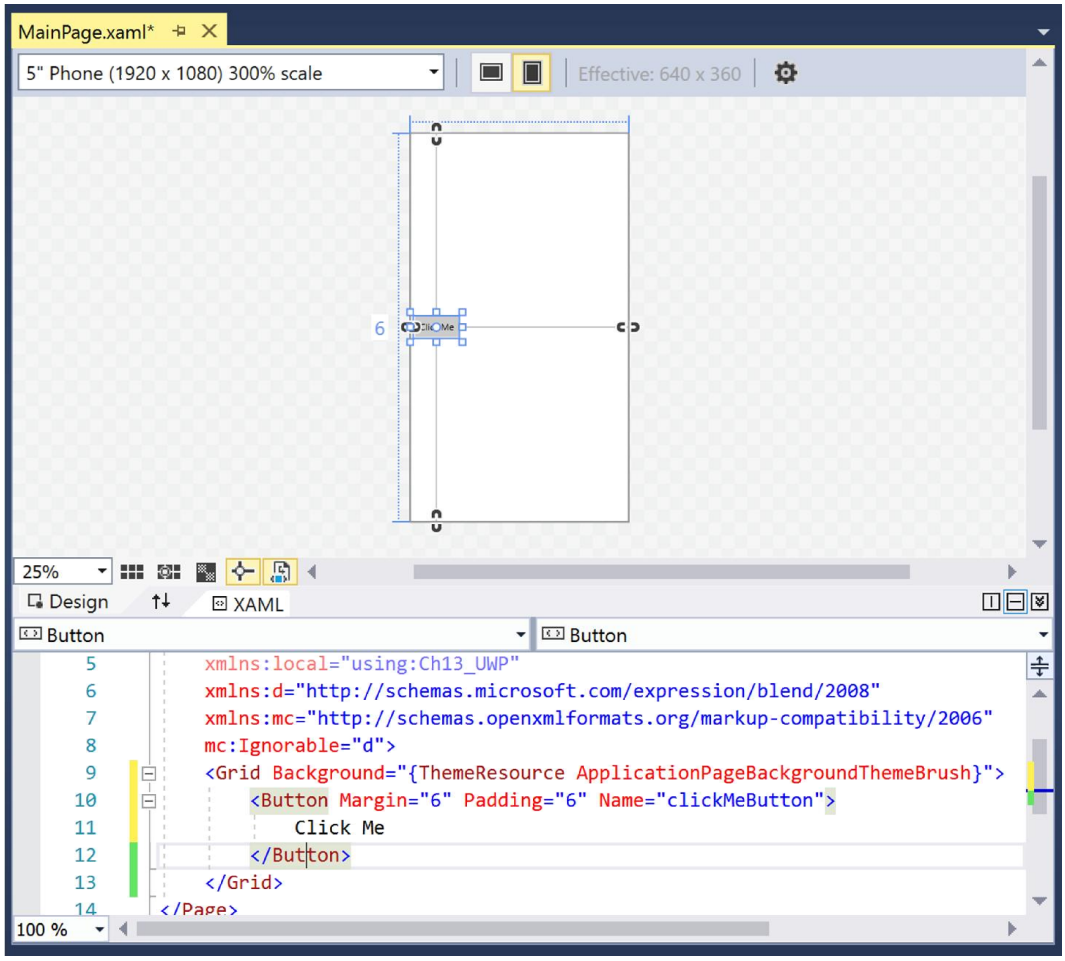


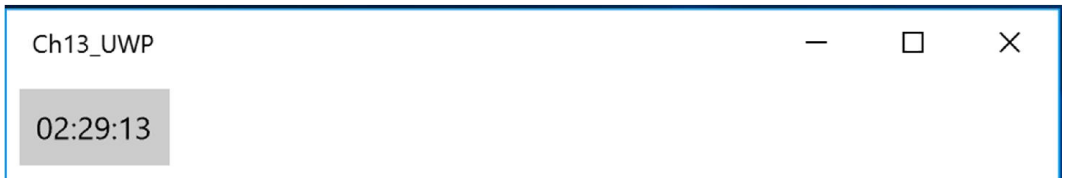



MainPage.xaml
5" Phone (1920 x 1080) 300% scale
Effective: 640 x 360
14.48%
Design
XAML
Grid
Grid
<Page
x:Class="Ch13_UWP.MainPage"
xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
xmlns:local="using:Ch13_UWP"
xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
mc:Ignorable="d">
<Grid Background="{ThemeResource ApplicationPageBackgroundThemeBrush}">
</Grid>
</Page>
100 %


Toolbox
bu
Common XAML Controls
Button
RadioButton
All XAML Controls
AppBarButton
AppBarToggleButton
HyperlinkButton
RepeatButton
ToggleButton

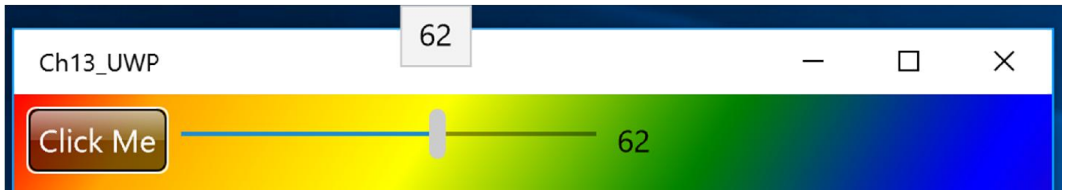

MainPage.xaml*
5" Phone (1920 x 1080) 300% scale
Effective: 640 x 360
23
51
Button

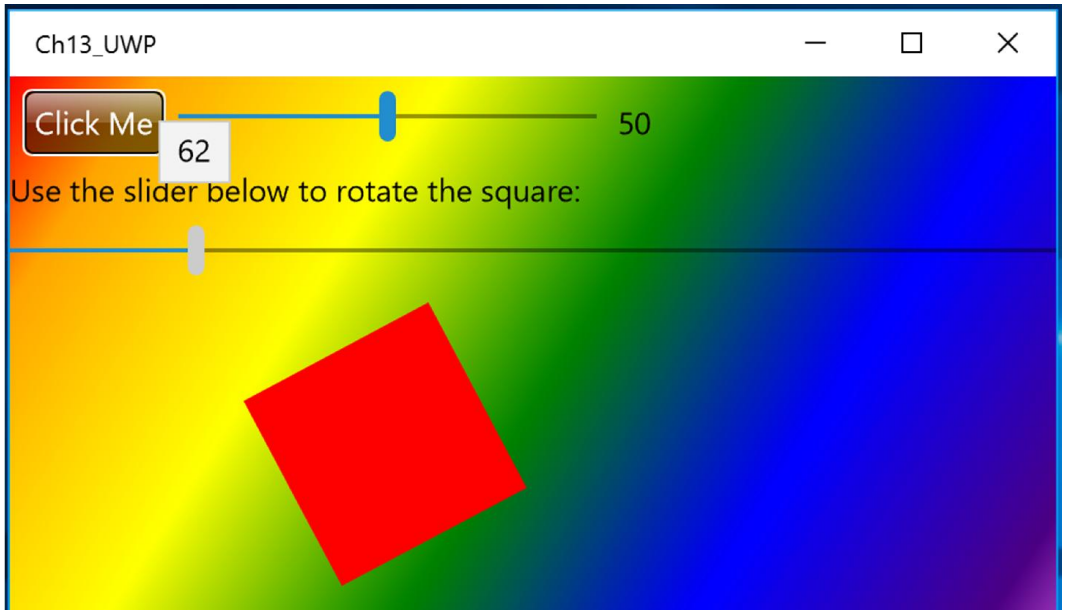

MainPage.xaml*
5" Phone (1920 x 1080) 300% scale
Effective: 640 x 360
Click Me
25%
Design
XAML
Button
Button
5 xmlns:local="using:Ch13_UWP"
6 xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
7 xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
8 mc:Ignorable="d">
9 <Grid Background="{ThemeResource ApplicationPageBackgroundThemeBrush}">
10 <Button Margin="6" Padding="6" Name="clickMeButton">
11 Click Me
12 </Button>
13 </Grid>
14 </Page>
100 %

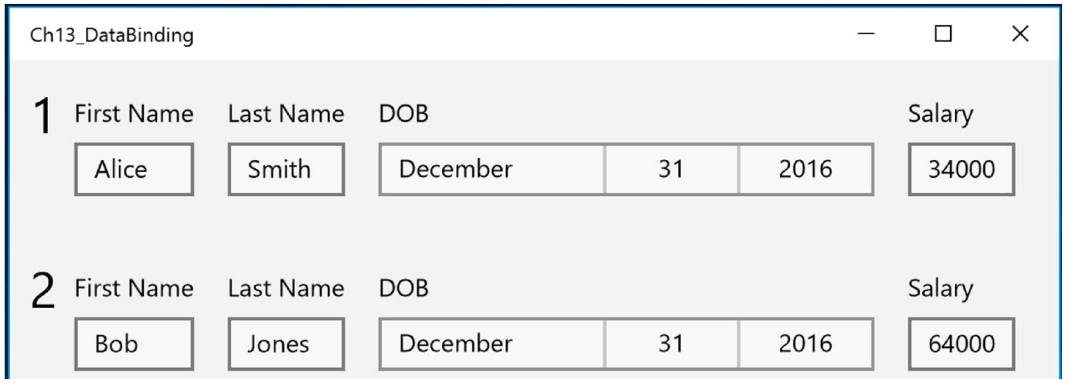

Ch13_UWP
02:29:13

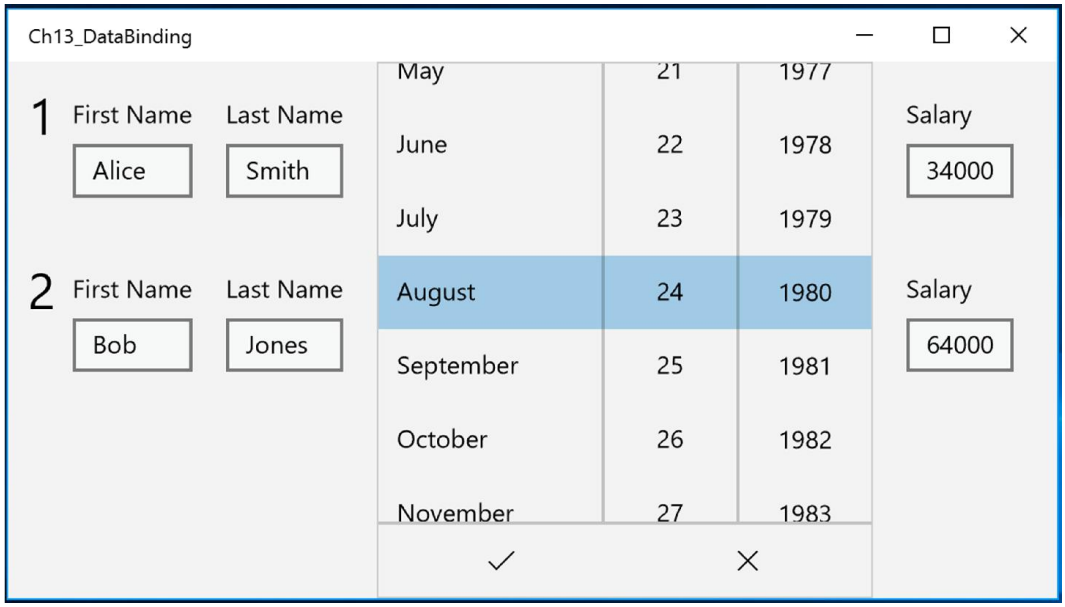
Ch13_UWP
Click Me

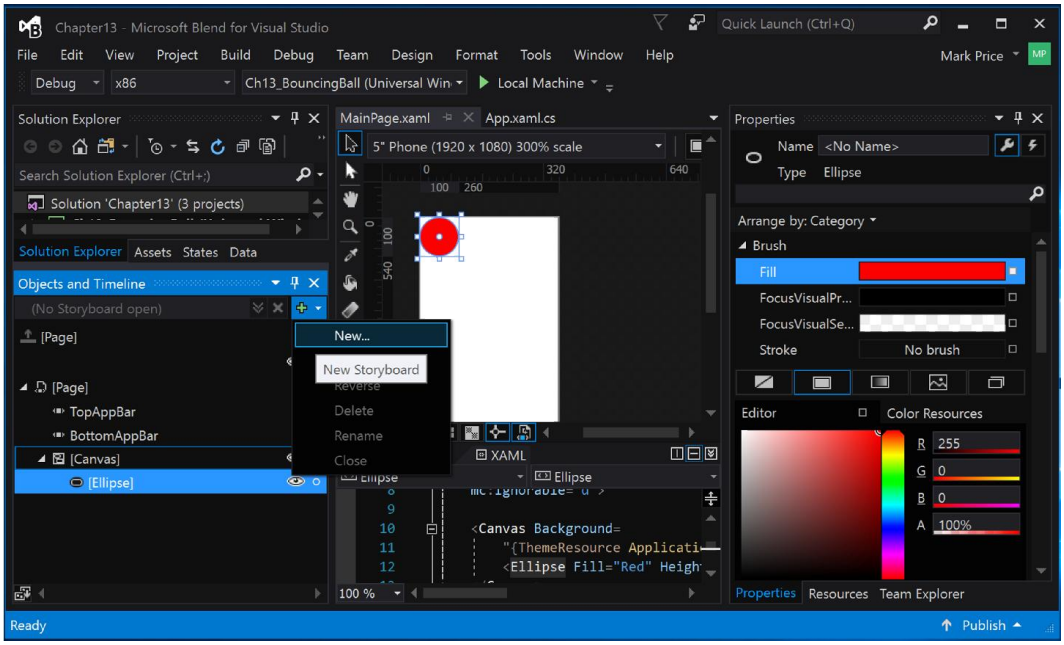
Ch13_UWP
02:45:40

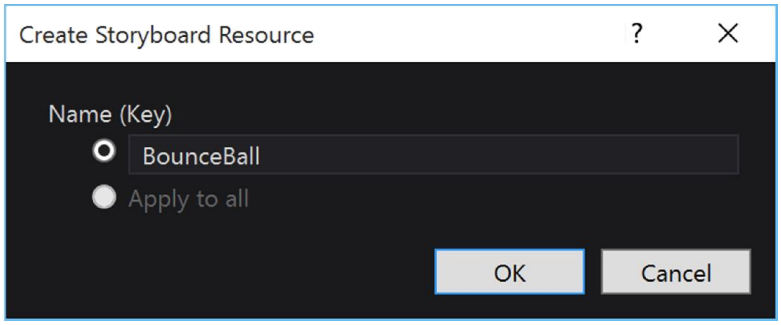

62
Ch13_UWP
Click Me
62


Ch13_UWP
Click Me
50
62
Use the slider below to rotate the square:

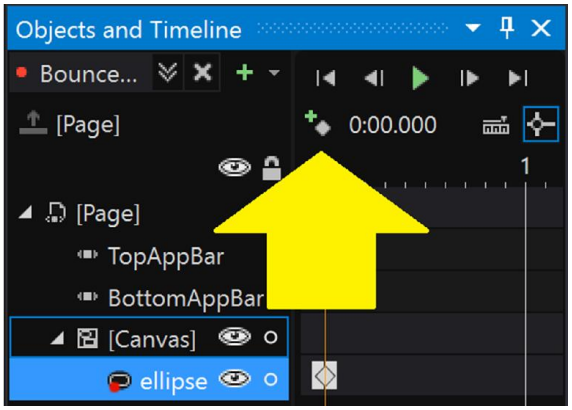

Ch13_DataBinding
1
First Name
Last Name
DOB
Salary
Alice
Smith
December
31
2016
34000
2
First Name
Last Name
DOB
Salary
Bob
Jones
December
31
2016
64000

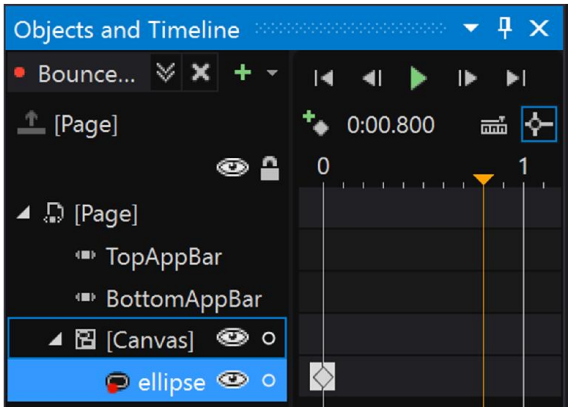

Ch13_DataBinding
1
First Name
Last Name
Alice
Smith
2
First Name
Last Name
Bob
Jones
May
21
1977
June
22
1978
July
23
1979
August
24
1980
September
25
1981
October
26
1982
November
27
1983
Salary
34000
Salary
64000

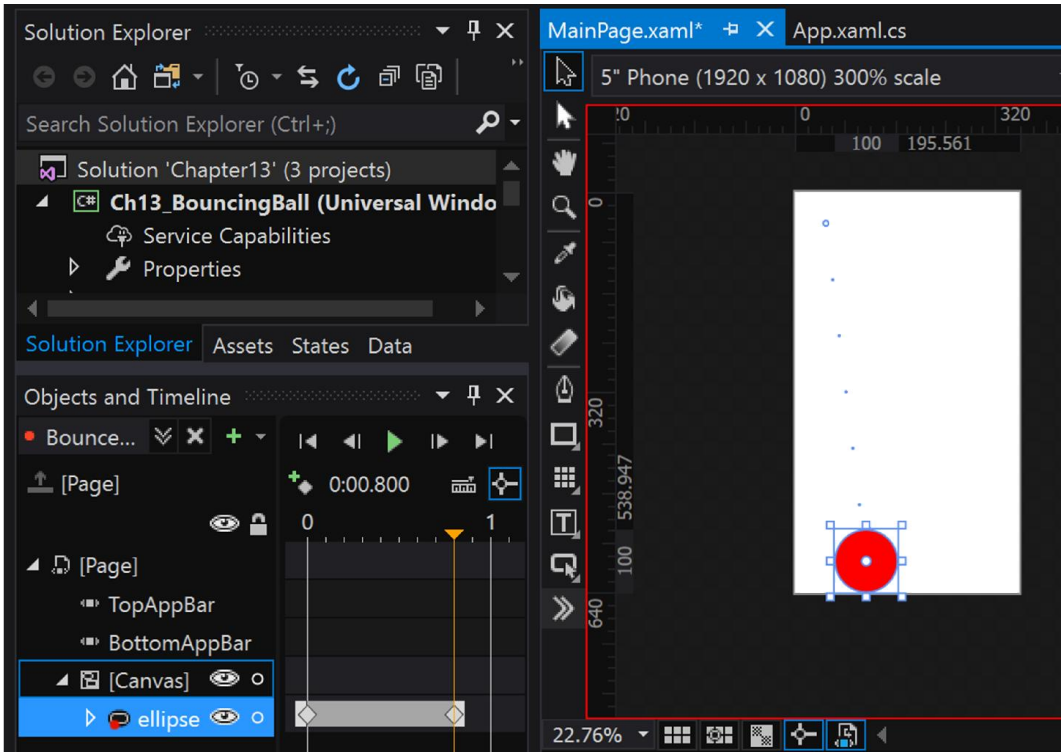

Chapter13 - Microsoft Blend for Visual Studio
Quick Launch (Ctrl+Q)
File Edit View Project Build Debug Team Design Format Tools Window Help
Mark Price
Debug x86 Ch13_BouncingBall (Universal Win Local Machine
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Chapter13' (3 projects)
Solution Explorer Assets States Data
Objects and Timeline
(No Storyboard open)
[Page]
[Page]
TopAppBar
BottomAppBar
[Canvas]
[Ellipse]
New...
New Storyboard
Reverse
Delete
Rename
Close
MainPage.xaml App.xaml.cs
5" Phone (1920 x 1080) 300% scale
XAML
Ellipse
<Canvas Background=
"{ThemeResource Applicati
<Ellipse Fill="Red" Heigh
100 %
Properties
Name <No Name>
Type Ellipse
Arrange by: Category
Brush
Fill
FocusVisualPr...
FocusVisualSe...
Stroke No brush
Editor
Color Resources
R 255
G 0
B 0
A 100%
Properties Resources Team Explorer
Ready
Publish

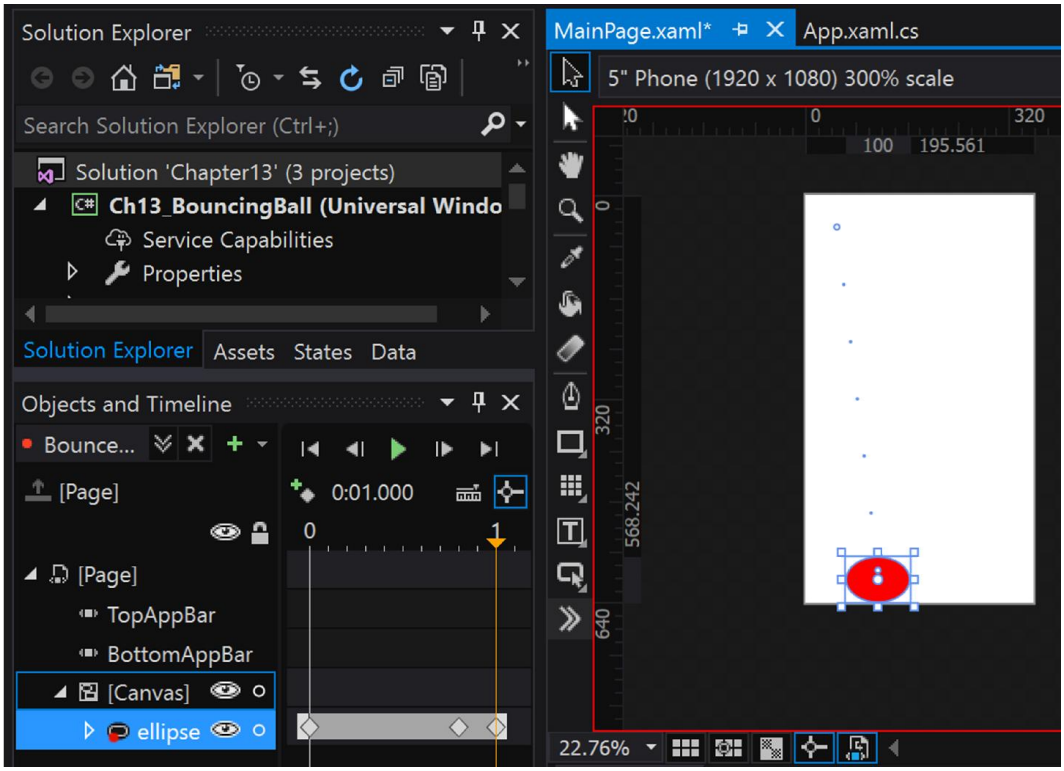

Create Storyboard Resource
Name (Key)
BounceBall
Apply to all
OK
Cancel

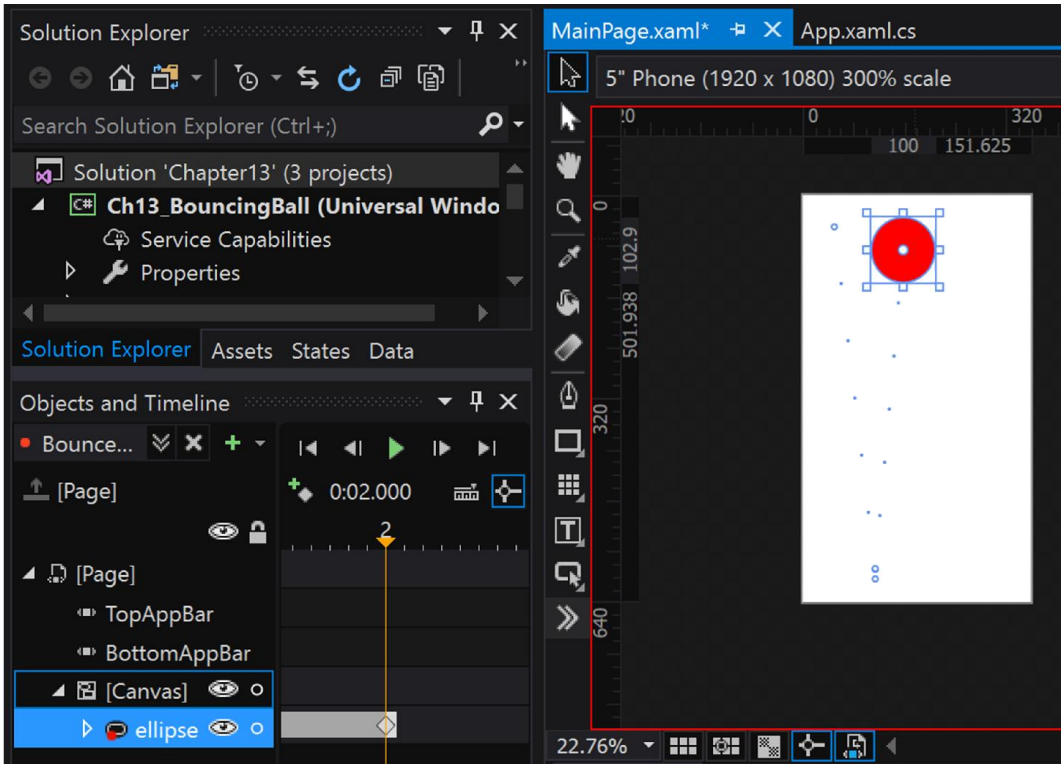
BounceBall timeline recording is on.


Objects and Timeline
Bounce...
[Page]
0:00.000
1
[Page]
TopAppBar
BottomAppBar
[Canvas]
ellipse

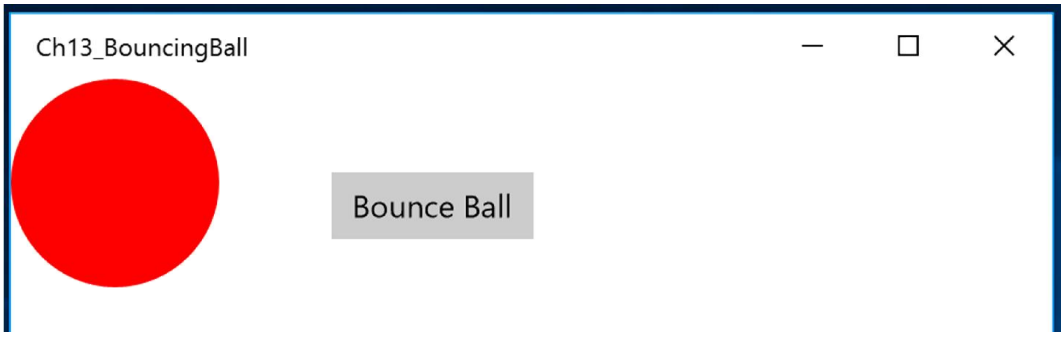

Objects and Timeline
Bounce...
[Page]
0:00.800
0
1
[Page]
TopAppBar
BottomAppBar
[Canvas]
ellipse

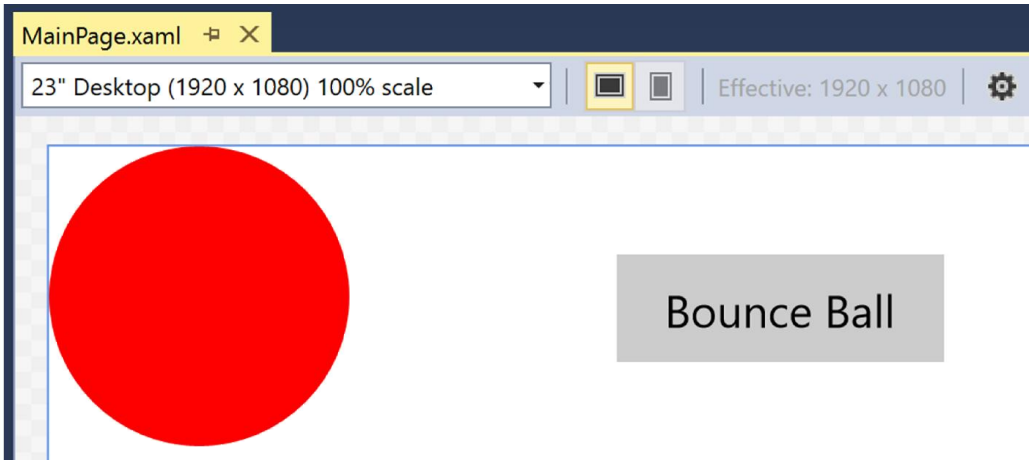

Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Chapter13' (3 projects)
Ch13_BouncingBall (Universal Windo
Service Capabilities
Properties
Solution Explorer
Assets
States
Data
Objects and Timeline
Bounce...
[Page]
0:00.800
0
1
[Page]
TopAppBar
BottomAppBar
[Canvas]
ellipse
MainPage.xaml*
App.xaml.cs
5" Phone (1920 x 1080) 300% scale
100
195.561
320
538.947
640
22.76%

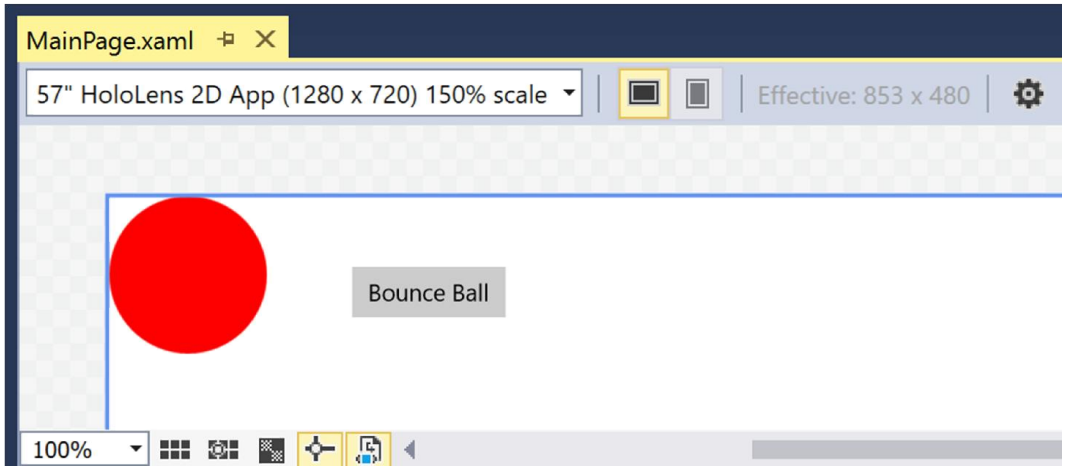

Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Chapter13' (3 projects)
Ch13_BouncingBall (Universal Windo
Service Capabilities
Properties
Solution Explorer
Assets
States
Data
Objects and Timeline
Bounce...
[Page]
0:01.000
0
1
[Page]
TopAppBar
BottomAppBar
[Canvas]
ellipse
MainPage.xaml*
App.xaml.cs
5" Phone (1920 x 1080) 300% scale
0
320
100
195.561
320
568.242
640
22.76%

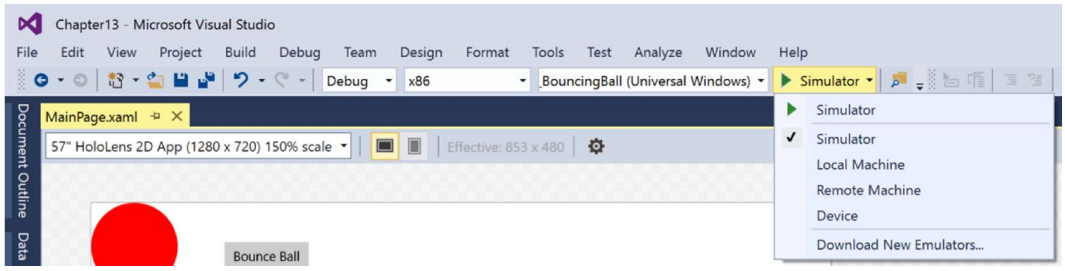


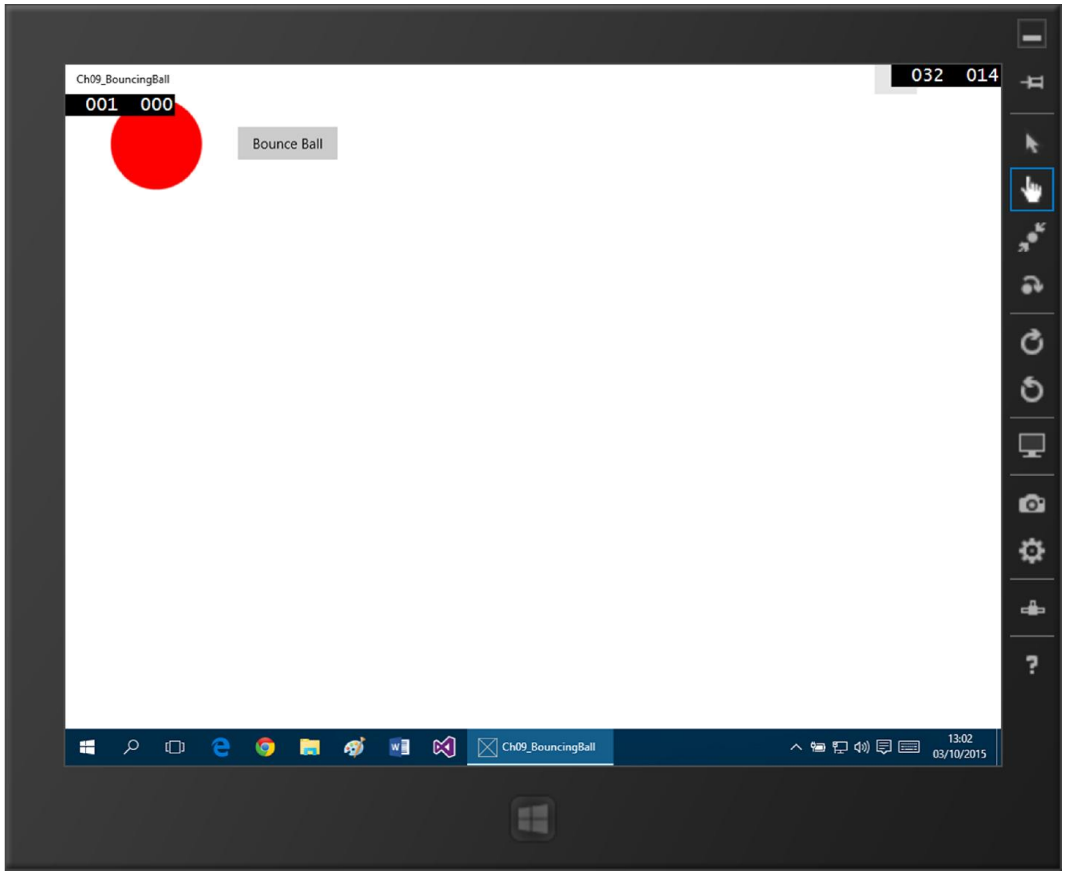
BounceBall timeline recording is off.



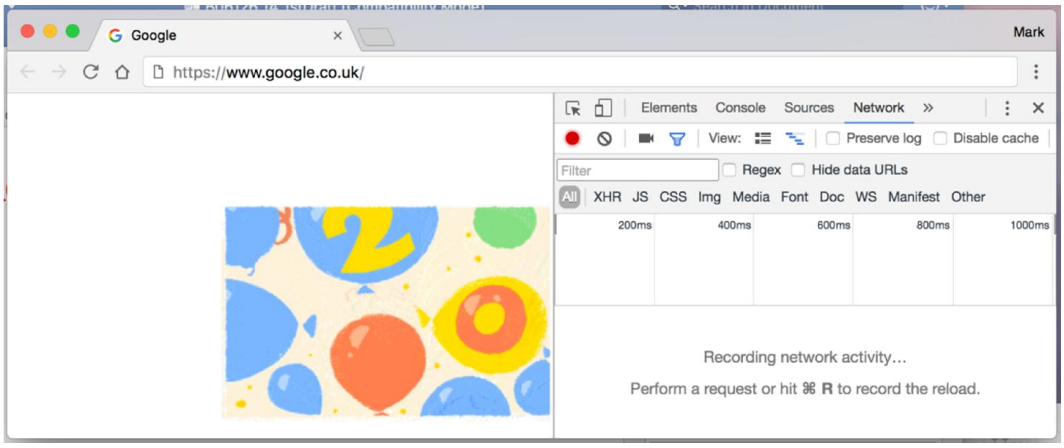

MainPage.xaml
23" Desktop (1920 x 1080) 100% scale
Effective: 1920 x 1080
Bounce Ball

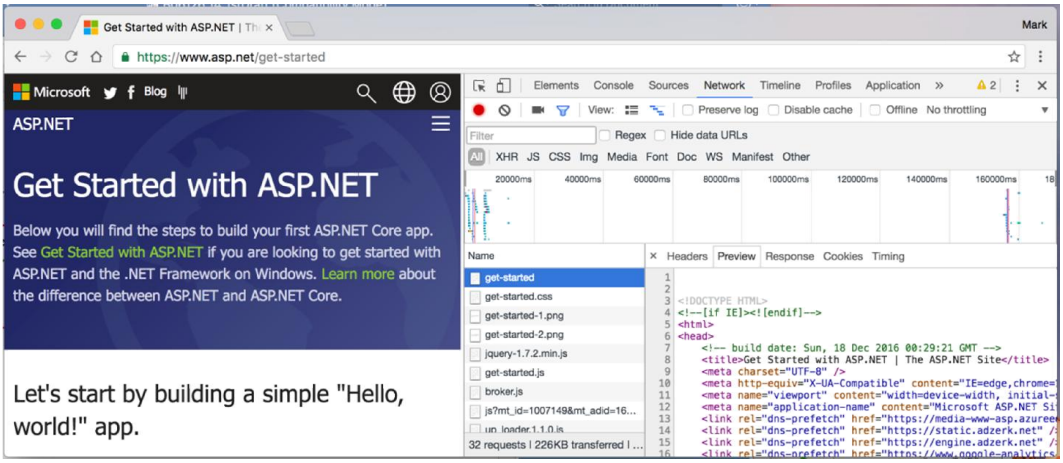

MainPage.xaml
57" HoloLens 2D App (1280 x 720) 150% scale
Effective: 853 x 480
Bounce Ball
100%

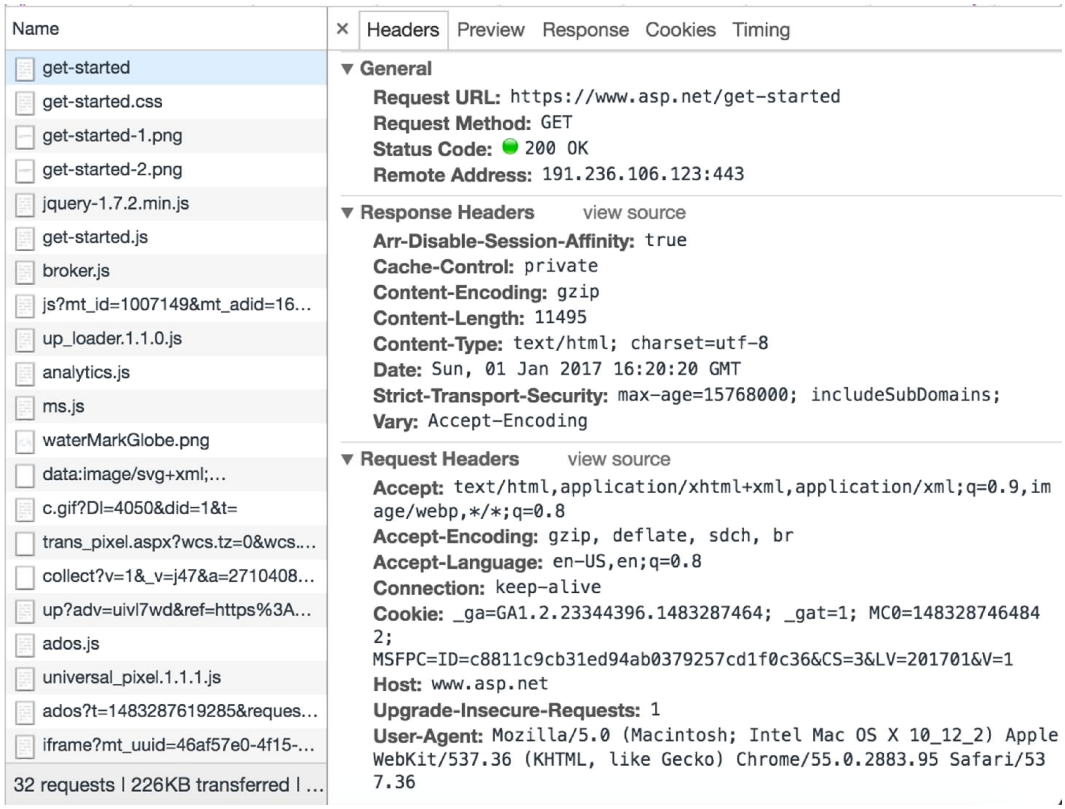

Chapter13 - Microsoft Visual Studio
File Edit View Project Build Debug Team Design Format Tools Test Analyze Window Help
Debug
x86
BouncingBall (Universal Windows)
Simulator
Simulator
Simulator
Local Machine
Remote Machine
Device
Download New Emulators...
MainPage.xaml
57" HoloLens 2D App (1280 x 720) 150% scale
Effective: 853 x 480
Bounce Ball
Document Outline
Data

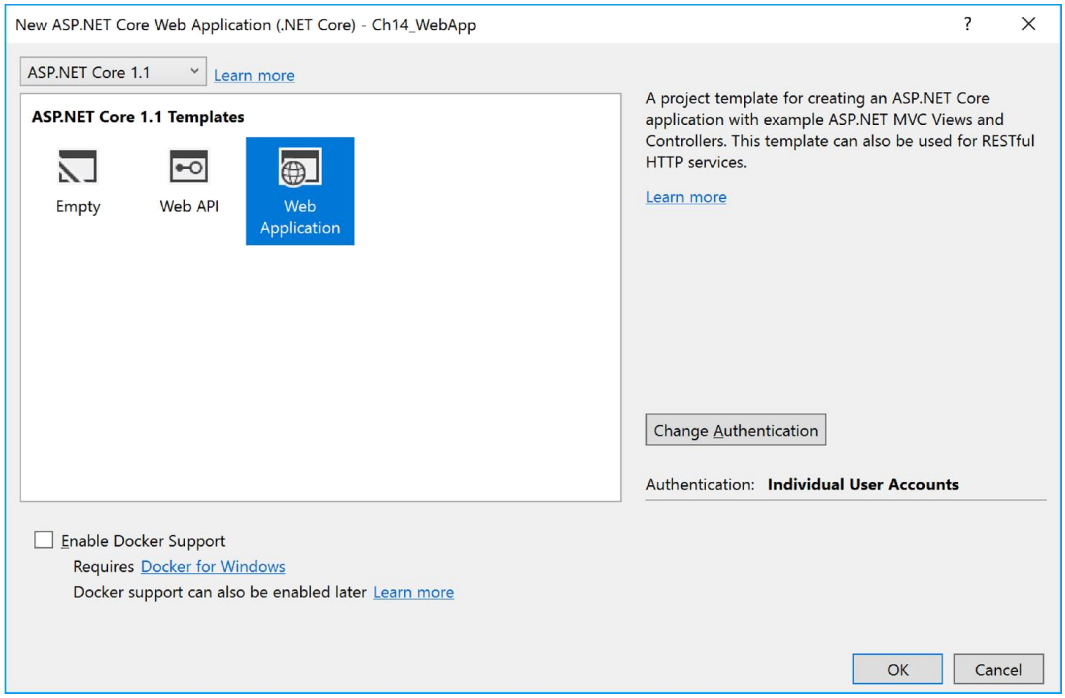

Ch09_BouncingBall
001 000
Bounce Ball
032 014
Ch09_BouncingBall
13:02
03/10/2015

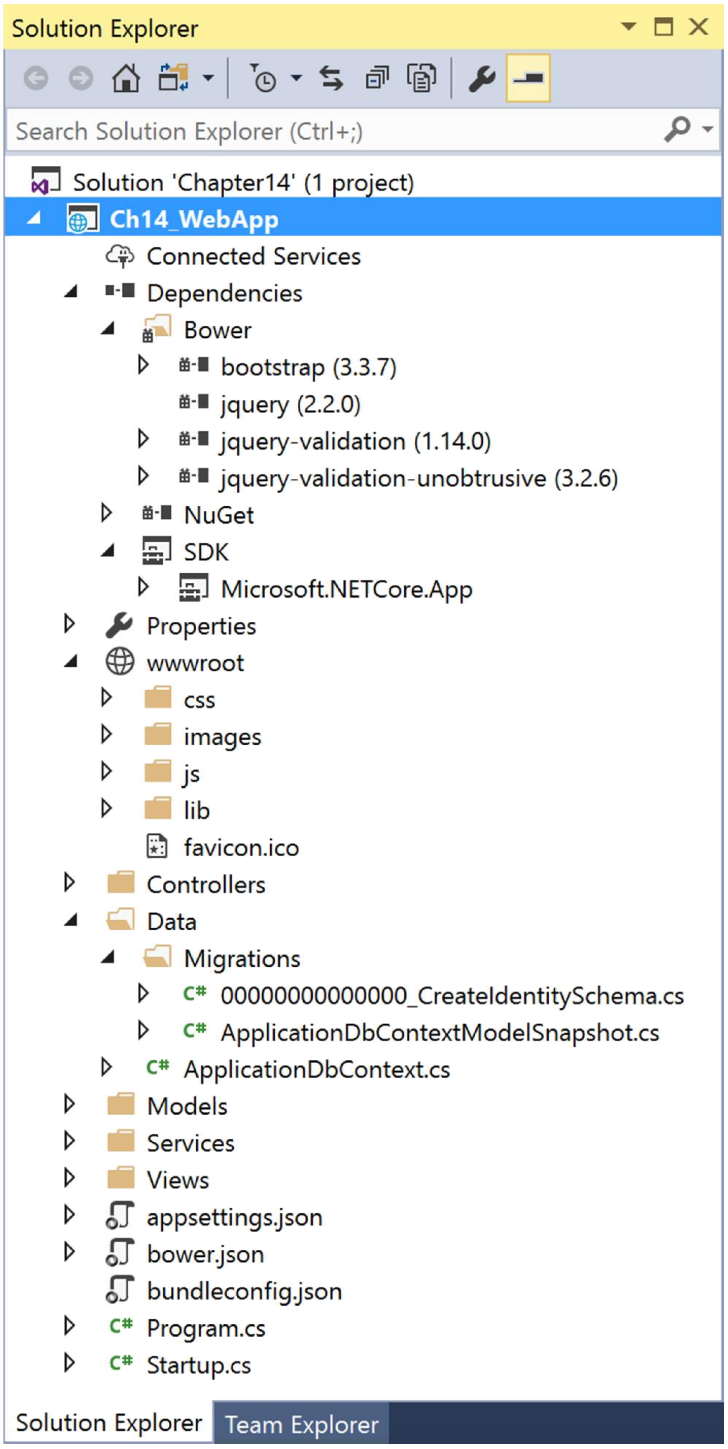
Chapter 14: Building Web Applications Using ASP.NET Core MVC

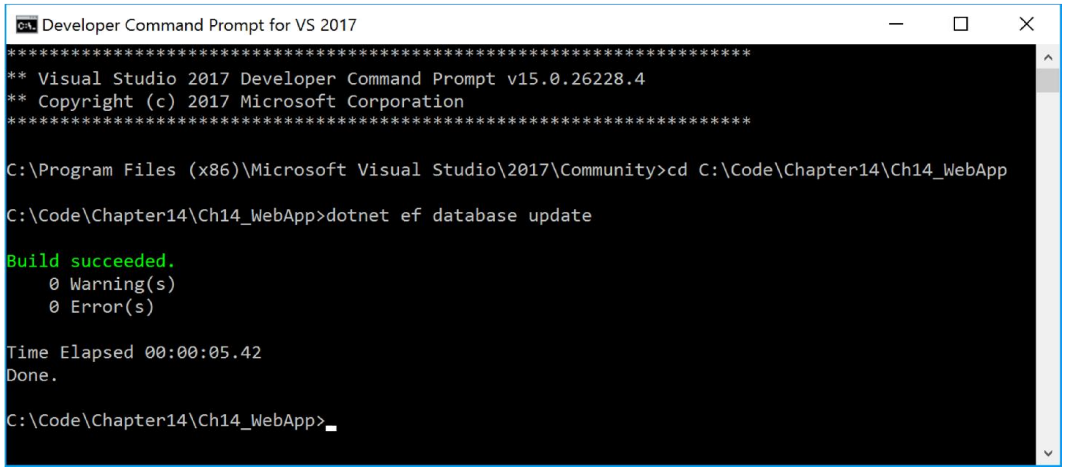


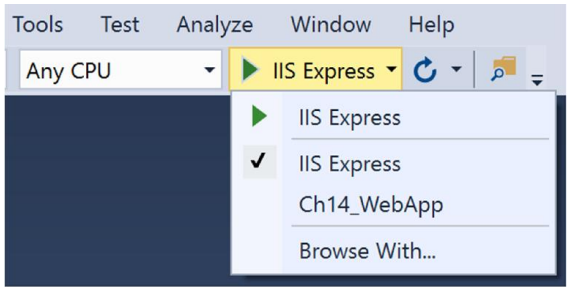


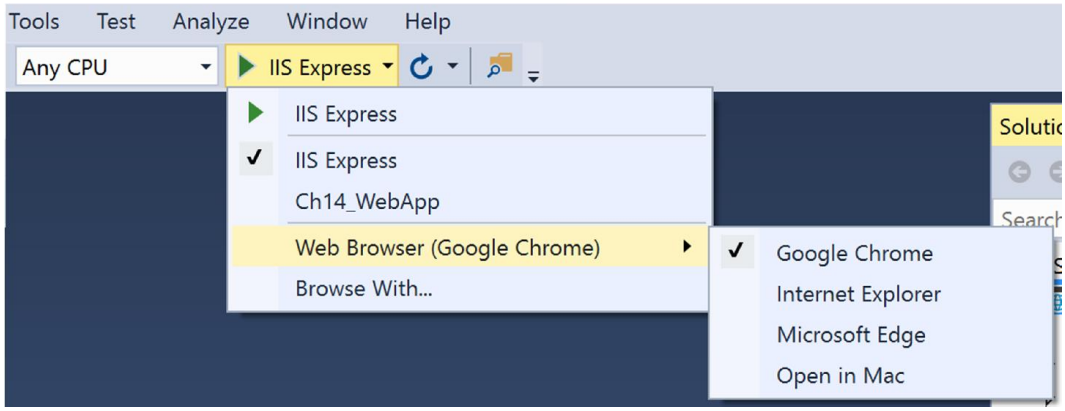

Name
get-started
get-started.css
get-started-1.png
get-started-2.png
jquery-1.7.2.min.js
get-started.js
broker.js
js?mt_id=1007149&mt_adid=16…
up_loader.1.1.0.js
analytics.js
ms.js
waterMarkGlobe.png
data:image/svg+xml;…
c.gif?DI=4050&did=1&t=
trans_pixel.aspx?wcs.tz=0&wcs.…
collect?v=1&_v=j47&a=2710408…
up?adv=uivl7wd&ref=https%3A…
ados.js
universal_pixel.1.1.1.js
ados?t=1483287619285&reques…
iframe?mt_uuid=46af57e0-4f15-…
32 requests | 226KB transferred | …
Headers
Preview
Response
Cookies
Timing
General
Request URL: https://www.asp.net/get-started
Request Method: GET
Status Code: 200 OK
Remote Address: 191.236.106.123:443
Response Headers
view source
Arr-Disable-Session-Affinity: true
Cache-Control: private
Content-Encoding: gzip
Content-Length: 11495
Content-Type: text/html; charset=utf-8
Date: Sun, 01 Jan 2017 16:20:20 GMT
Strict-Transport-Security: max-age=15768000; includeSubDomains;
Vary: Accept-Encoding
Request Headers
view source
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Encoding: gzip, deflate, sdch, br
Accept-Language: en-US,en;q=0.8
Connection: keep-alive
Cookie: _ga=GA1.2.23344396.1483287464; _gat=1; MC0=148328746484
2;
MSFPC=ID=c8811c9cb31ed94ab0379257cd1f0c36&CS=3&LV=201701&V=1
Host: www.asp.net
Upgrade-Insecure-Requests: 1
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10_12_2) Apple
WebKit/537.36 (KHTML, like Gecko) Chrome/55.0.2883.95 Safari/53
7.36

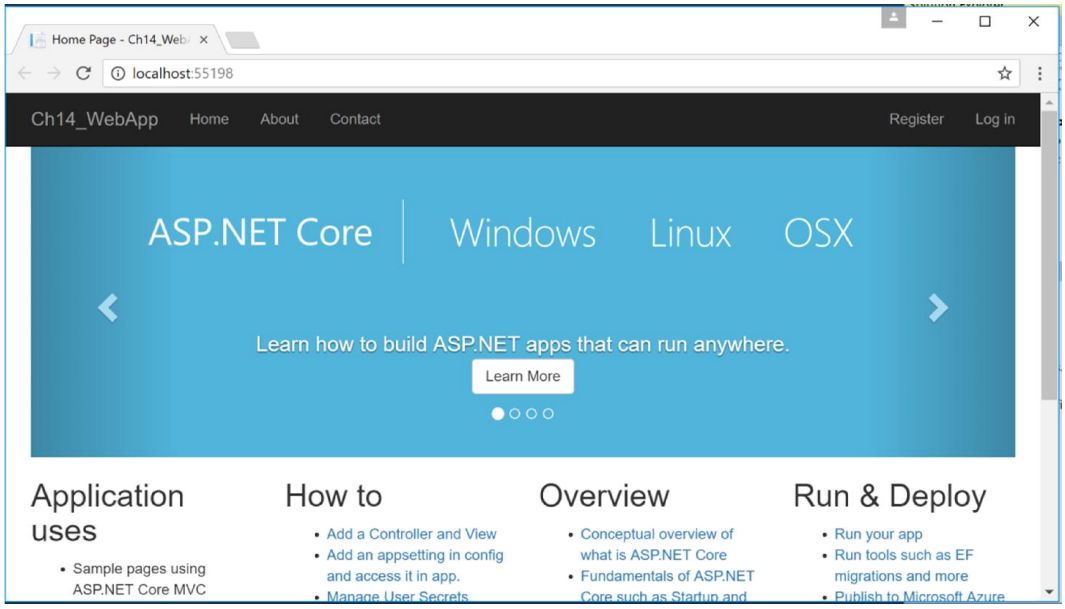

New ASP.NET Core Web Application (.NET Core) - Ch14_WebApp
ASP.NET Core 1.1
Learn more
ASP.NET Core 1.1 Templates
Empty
Web API
Web Application
A project template for creating an ASP.NET Core application with example ASP.NET MVC Views and Controllers. This template can also be used for RESTful HTTP services.
Learn more
Change Authentication
Authentication: Individual User Accounts
Enable Docker Support
Requires Docker for Windows
Docker support can also be enabled later Learn more
OK
Cancel

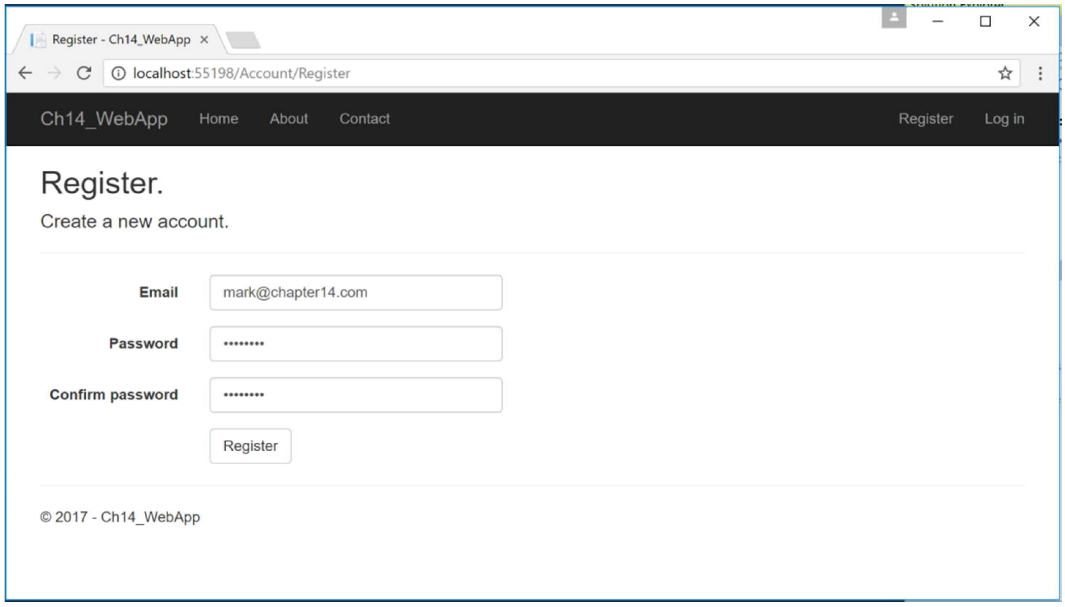

Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Chapter14' (1 project)
Ch14_WebApp
Connected Services
Dependencies
Bower
bootstrap (3.3.7)
jquery (2.2.0)
jquery-validation (1.14.0)
jquery-validation-unobtrusive (3.2.6)
NuGet
SDK
Microsoft.NETCore.App
Properties
wwwroot
css
images
js
lib
favicon.ico
Controllers
Data
Migrations
00000000000000_CreateIdentitySchema.cs
ApplicationDbContextModelSnapshot.cs
ApplicationDbContext.cs
Models
Services
Views
appsettings.json
bower.json
bundleconfig.json
Program.cs
Startup.cs
Solution Explorer
Team Explorer

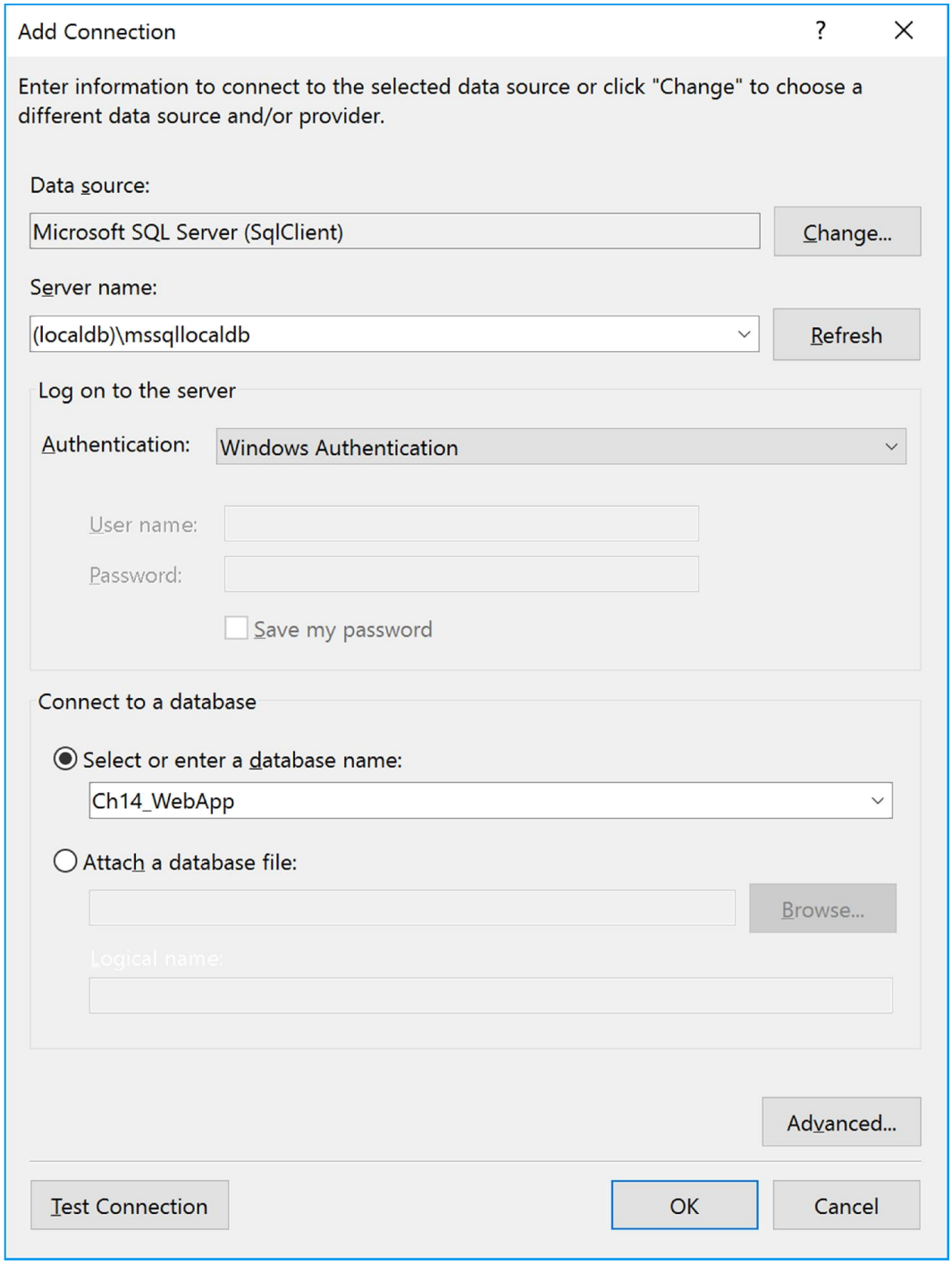

Developer Command Prompt for VS 2017
** Visual Studio 2017 Developer Command Prompt v15.0.26228.4
** Copyright (c) 2017 Microsoft Corporation
C:\Program Files (x86)\Microsoft Visual Studio\2017\Community>cd C:\Code\Chapter14\Ch14_WebApp
C:\Code\Chapter14\Ch14_WebApp>dotnet ef database update
Build succeeded.
0 Warning(s)
0 Error(s)
Time Elapsed 00:00:05.42
Done.
C:\Code\Chapter14\Ch14_WebApp>

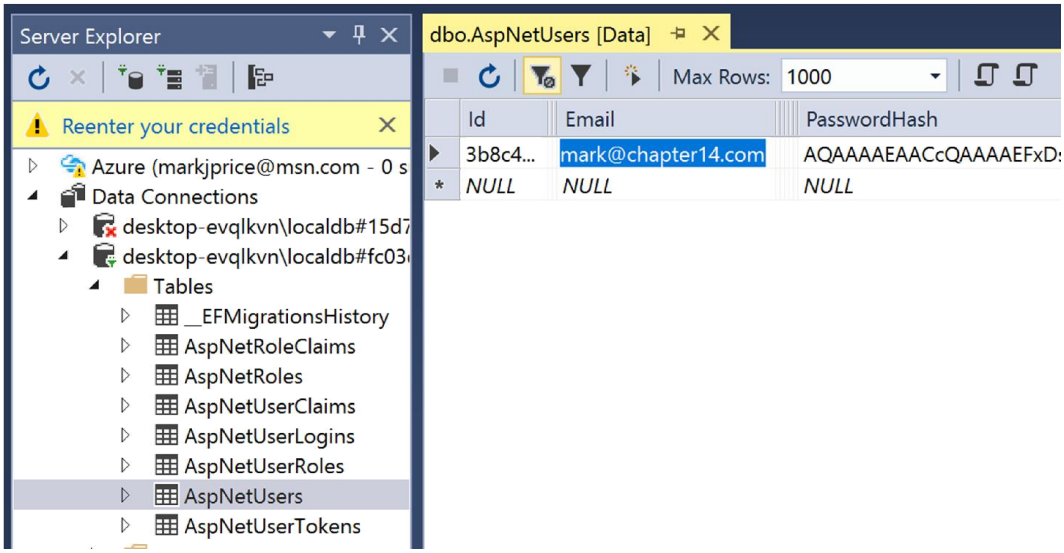

Tools
Test
Analyze
Window
Help
Any CPU
IIS Express
IIS Express
IIS Express
Ch14_WebApp
Browse With...

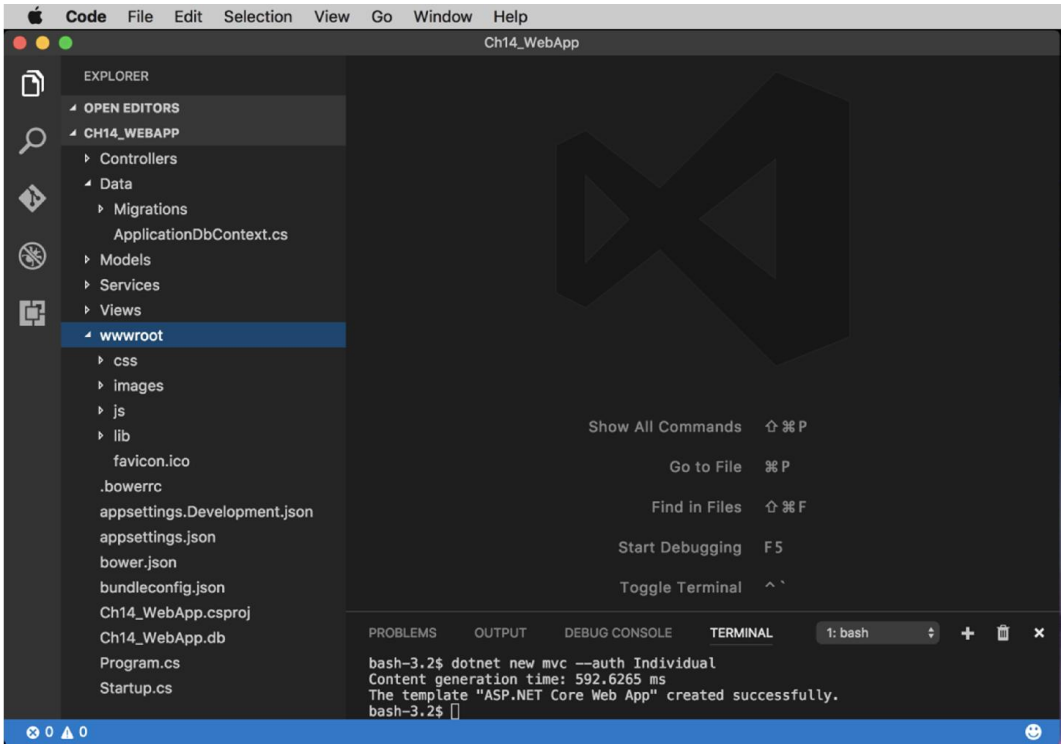

Tools
Test
Analyze
Window
Help
Any CPU
IIS Express
IIS Express
IIS Express
Ch14_WebApp
Web Browser (Google Chrome)
Browse With...
Google Chrome
Internet Explorer
Microsoft Edge
Open in Mac

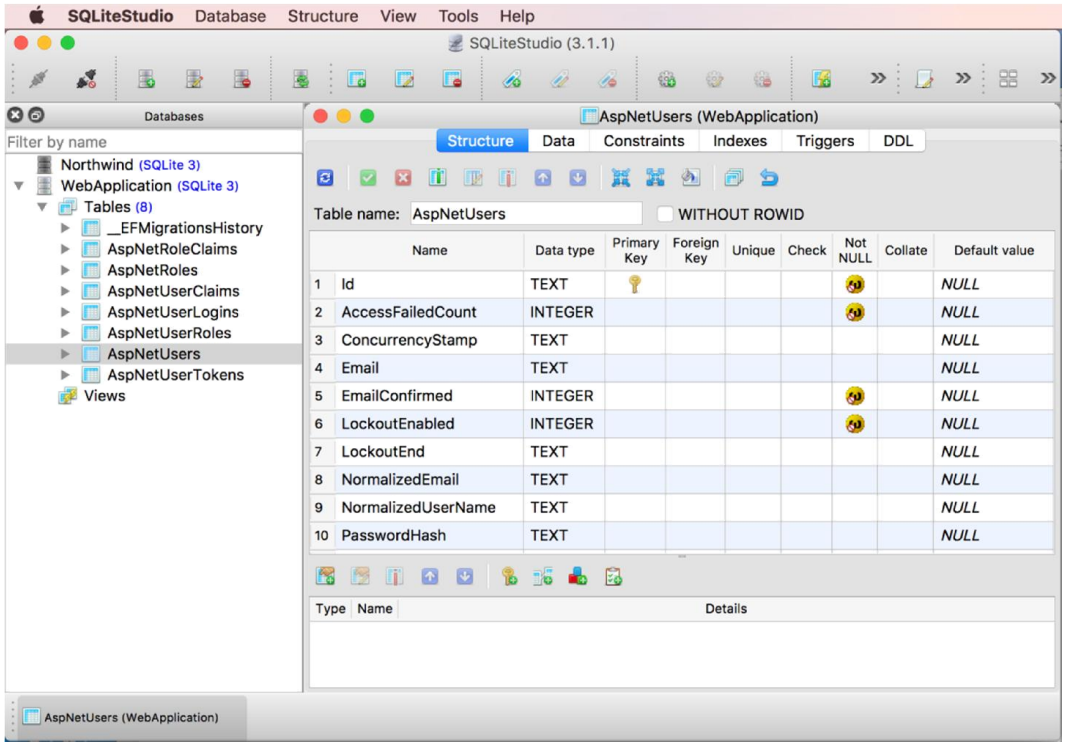

Home Page - Ch14_Web
localhost:55198
Ch14_WebApp
Home
About
Contact
Register
Log in
ASP.NET Core
Windows
Linux
OSX
Learn how to build ASP.NET apps that can run anywhere.
Learn More
Application uses
Sample pages using ASP.NET Core MVC
How to
Add a Controller and View
Add an appsetting in config and access it in app.
Overview
Conceptual overview of what is ASP.NET Core
Fundamentals of ASP.NET Core such as Startup and
Run & Deploy
Run your app
Run tools such as EF migrations and more
Publish to Microsoft Azure

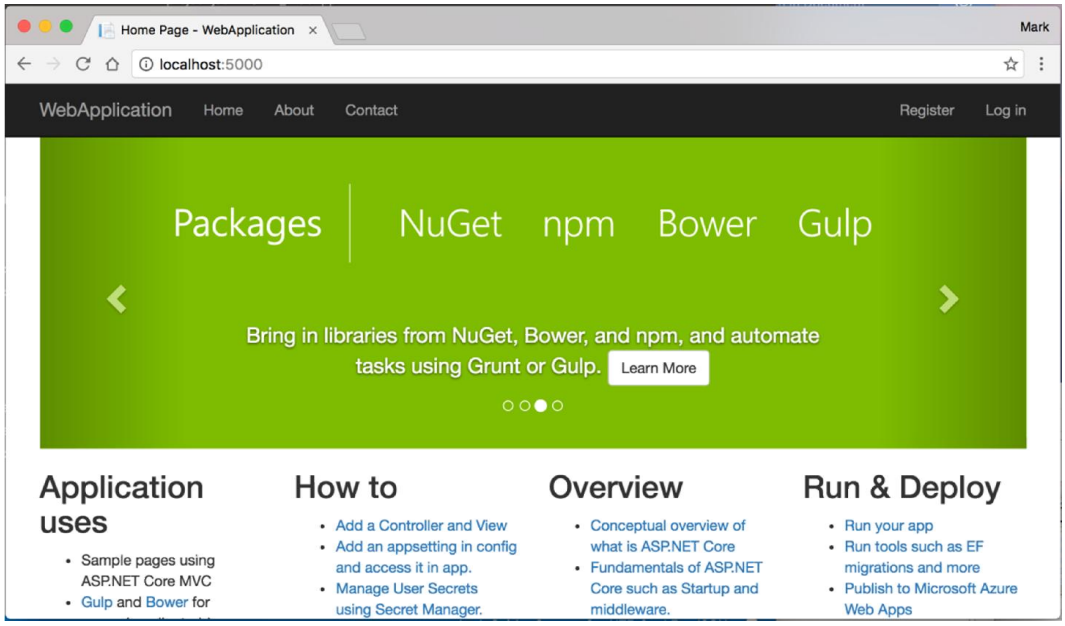

Register - Ch14_WebApp
localhost:55198/Account/Register
Ch14_WebApp
Home
About
Contact
Register
Log in
Register.
Create a new account.
Email
mark@chapter14.com
Password
Confirm password
Register
© 2017 - Ch14_WebApp

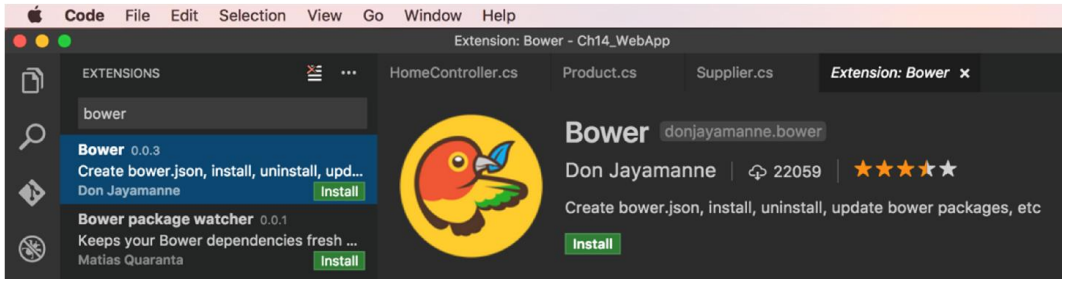

Add Connection
Enter information to connect to the selected data source or click "Change" to choose a different data source and/or provider.
Data source:
Microsoft SQL Server (SqlClient)
Change...
Server name:
(localdb)\mssqllocaldb
Refresh
Log on to the server
Authentication:
Windows Authentication
User name:
Password:
Save my password
Connect to a database
Select or enter a database name:
Ch14_WebApp
Attach a database file:
Browse...
Logical name:
Advanced...
Test Connection
OK
Cancel

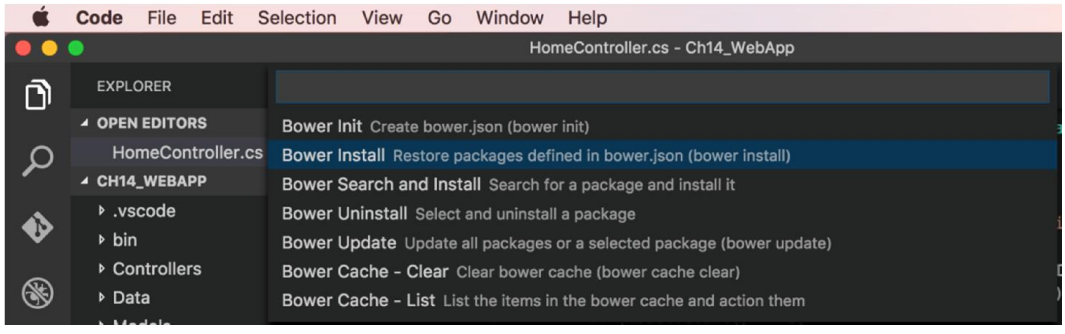

Server Explorer
Reenter your credentials
Azure (markjprice@msn.com - 0 s
Data Connections
desktop-evqlkvn\localdb#15d7
desktop-evqlkvn\localdb#fc03
Tables
__EFMigrationsHistory
AspNetRoleClaims
AspNetRoles
AspNetUserClaims
AspNetUserLogins
AspNetUserRoles
AspNetUsers
AspNetUserTokens
dbo.AspNetUsers [Data]
Max Rows: 1000
Id
Email
PasswordHash
3b8c4...
mark@chapter14.com
AQAAAAEAACcQAAAAEFxD
NULL
NULL
NULL

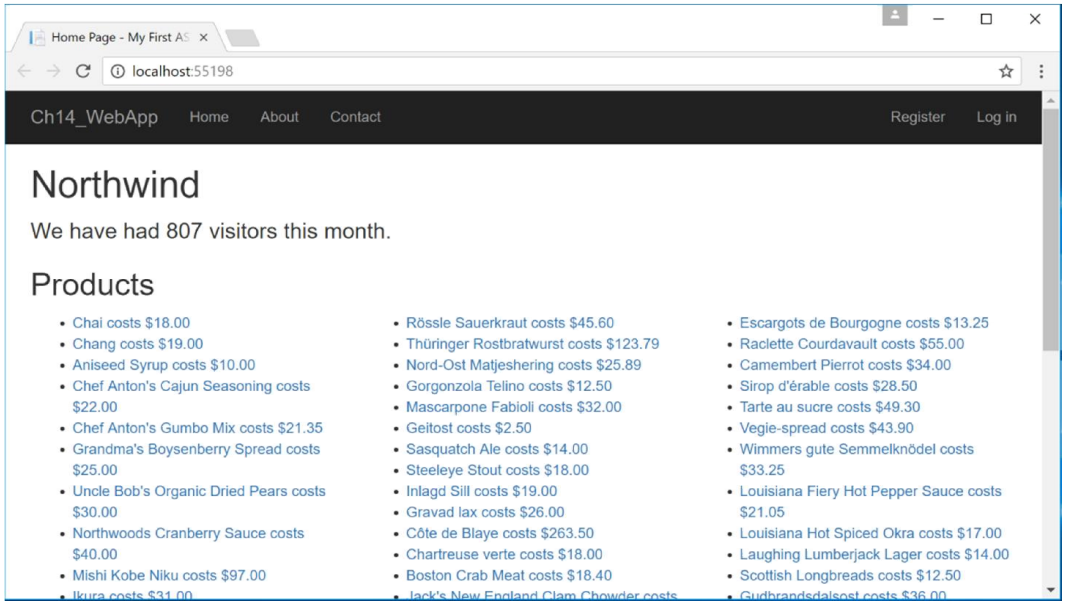

Code File Edit Selection View Go Window Help
Ch14_WebApp
EXPLORER
OPEN EDITORS
CH14_WEBAPP
Controllers
Data
Migrations
ApplicationDbContext.cs
Models
Services
Views
wwwroot
css
images
js
lib
favicon.ico
.bowerrc
appsettings.Development.json
appsettings.json
bower.json
bundleconfig.json
Ch14_WebApp.csproj
Ch14_WebApp.db
Program.cs
Startup.cs
Show All Commands ⇧⌘P
Go to File ⌘P
Find in Files ⇧⌘F
Start Debugging F5
Toggle Terminal ^`
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL 1: bash
bash-3.2$ dotnet new mvc --auth Individual
Content generation time: 592.6265 ms
The template "ASP.NET Core Web App" created successfully.
bash-3.2$
0 0

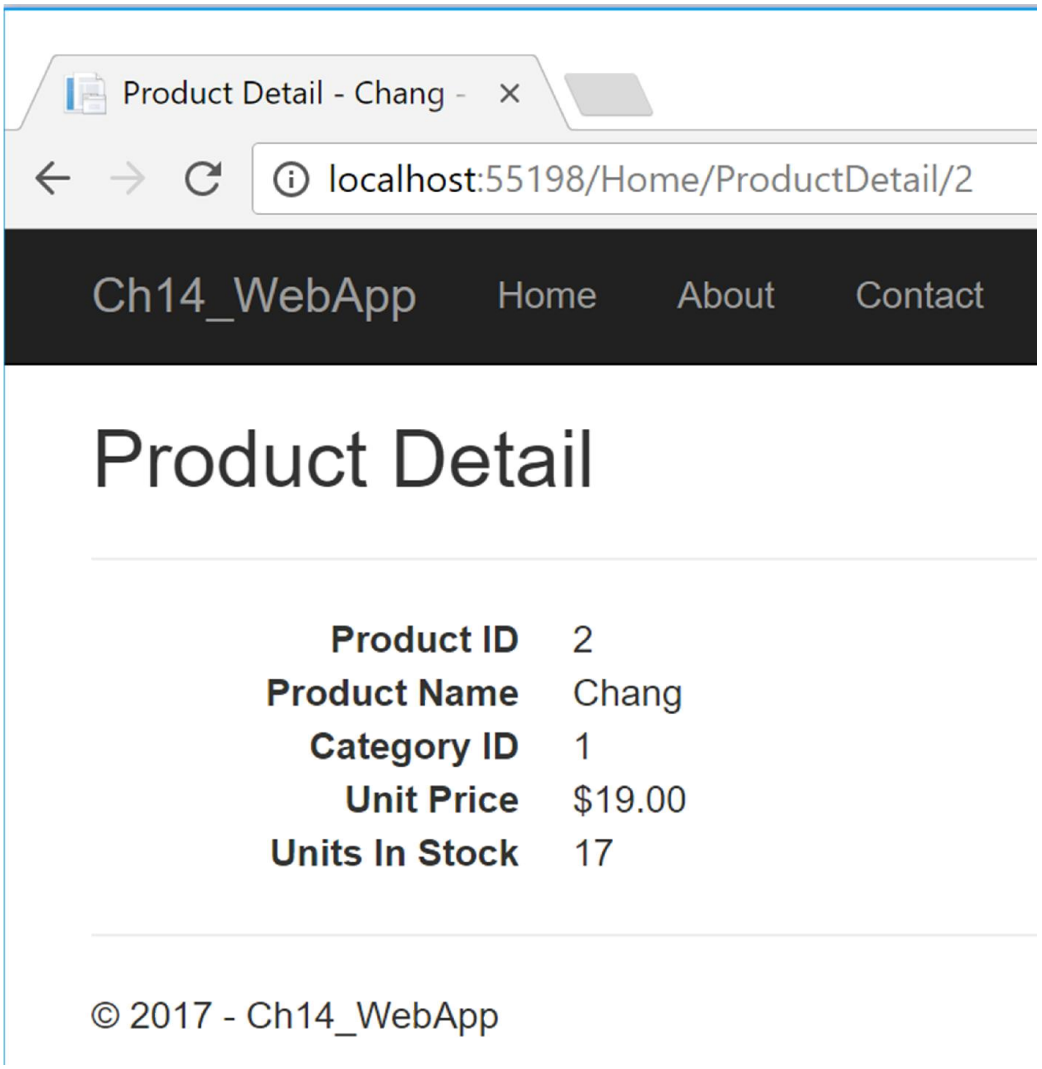

SQLiteStudio Database Structure View Tools Help
SQLiteStudio (3.1.1)
Databases
Filter by name
Northwind (SQLite 3)
WebApplication (SQLite 3)
Tables (8)
__EFMigrationsHistory
AspNetRoleClaims
AspNetRoles
AspNetUserClaims
AspNetUserLogins
AspNetUserRoles
AspNetUsers
AspNetUserTokens
Views
AspNetUsers (WebApplication)
Structure
Data
Constraints
Indexes
Triggers
DDL
Table name: AspNetUsers
WITHOUT ROWID
Name
Data type
Primary Key
Foreign Key
Unique
Check
Not NULL
Collate
Default value
1 Id TEXT NULL
2 AccessFailedCount INTEGER NULL
3 ConcurrencyStamp TEXT NULL
4 Email TEXT NULL
5 EmailConfirmed INTEGER NULL
6 LockoutEnabled INTEGER NULL
7 LockoutEnd TEXT NULL
8 NormalizedEmail TEXT NULL
9 NormalizedUserName TEXT NULL
10 PasswordHash TEXT NULL
Type
Name
Details
AspNetUsers (WebApplication)

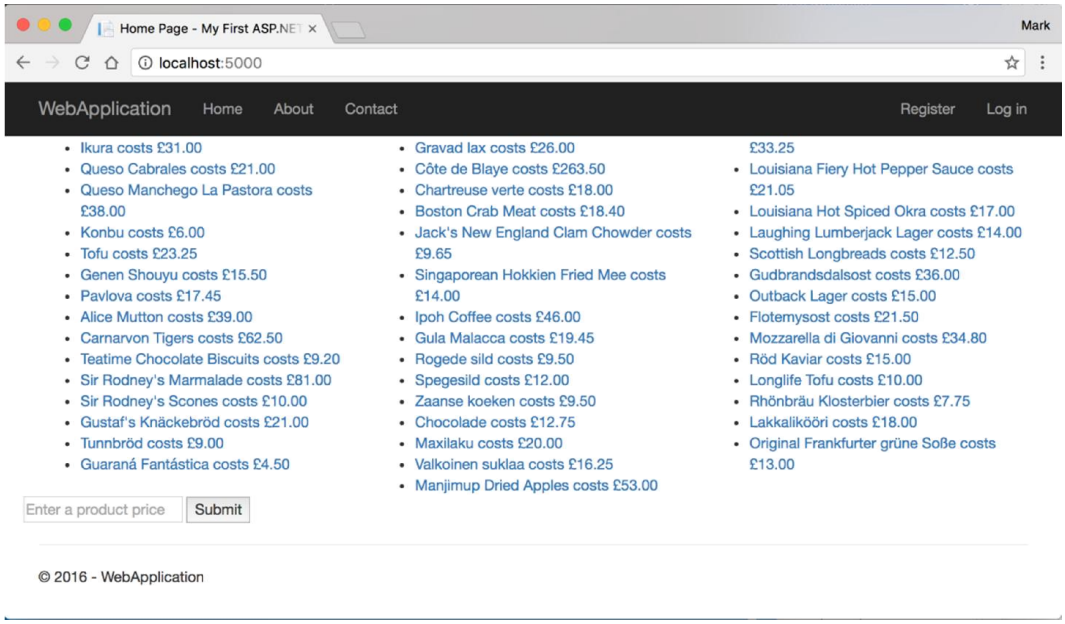

Home Page - WebApplication
Mark
localhost:5000
WebApplication
Home
About
Contact
Register
Log in
Packages
NuGet
npm
Bower
Gulp
Bring in libraries from NuGet, Bower, and npm, and automate tasks using Grunt or Gulp.
Learn More
Application uses
Sample pages using ASP.NET Core MVC
Gulp and Bower for
How to
Add a Controller and View
Add an appsetting in config and access it in app.
Manage User Secrets using Secret Manager.
Overview
Conceptual overview of what is ASP.NET Core
Fundamentals of ASP.NET Core such as Startup and middleware.
Run & Deploy
Run your app
Run tools such as EF migrations and more
Publish to Microsoft Azure Web Apps

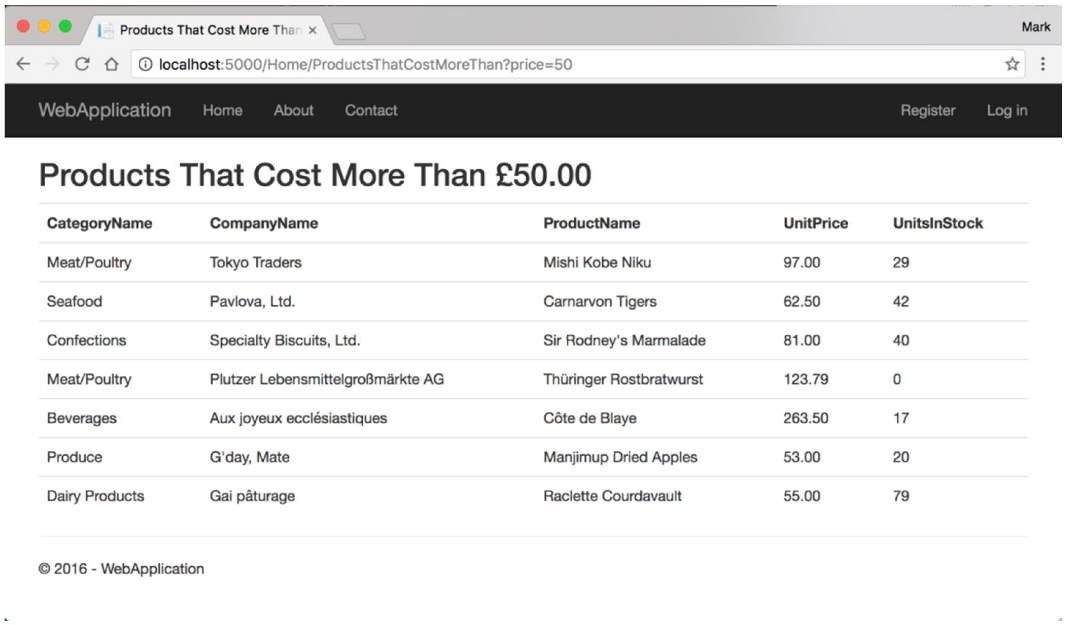

Code
File
Edit
Selection
View
Go
Window
Help
Extension: Bower - Ch14_WebApp
EXTENSIONS
bower
Bower 0.0.3
Create bower.json, install, uninstall, upd...
Don Jayamanne
Install
Bower package watcher 0.0.1
Keeps your Bower dependencies fresh ...
Matias Quaranta
Install
HomeController.cs
Product.cs
Supplier.cs
Extension: Bower
Bower
donjayamanne.bower
Don Jayamanne
22059
Create bower.json, install, uninstall, update bower packages, etc
Install

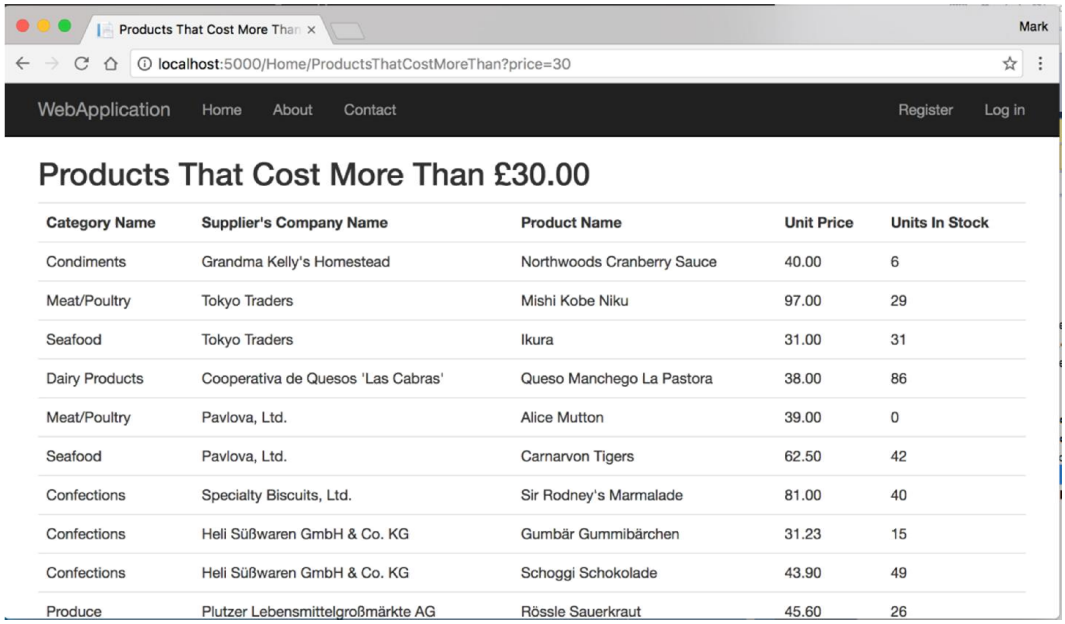

Code
File
Edit
Selection
View
Go
Window
Help
HomeController.cs - Ch14_WebApp
EXPLORER
OPEN EDITORS
HomeController.cs
CH14_WEBAPP
.vscode
bin
Controllers
Data
Bower Init Create bower.json (bower init)
Bower Install Restore packages defined in bower.json (bower install)
Bower Search and Install Search for a package and install it
Bower Uninstall Select and uninstall a package
Bower Update Update all packages or a selected package (bower update)
Bower Cache - Clear Clear bower cache (bower cache clear)
Bower Cache - List List the items in the bower cache and action them


Home Page - My First AS
localhost:55198
Ch14_WebApp
Home
About
Contact
Register
Log in
Northwind
We have had 807 visitors this month.
Products
Chai costs $18.00
Chang costs $19.00
Aniseed Syrup costs $10.00
Chef Anton's Cajun Seasoning costs $22.00
Chef Anton's Gumbo Mix costs $21.35
Grandma's Boysenberry Spread costs $25.00
Uncle Bob's Organic Dried Pears costs $30.00
Northwoods Cranberry Sauce costs $40.00
Mishi Kobe Niku costs $97.00
Ikura costs $31.00
Rössle Sauerkraut costs $45.60
Thüringer Rostbratwurst costs $123.79
Nord-Ost Matjeshering costs $25.89
Gorgonzola Telino costs $12.50
Mascarpone Fabioli costs $32.00
Geitost costs $2.50
Sasquatch Ale costs $14.00
Steeleye Stout costs $18.00
Inlagd Sill costs $19.00
Gravad lax costs $26.00
Côte de Blaye costs $263.50
Chartreuse verte costs $18.00
Boston Crab Meat costs $18.40
Jack's New England Clam Chowder costs
Escargots de Bourgogne costs $13.25
Raclette Courdavault costs $55.00
Camembert Pierrot costs $34.00
Sirop d'érable costs $28.50
Tarte au sucre costs $49.30
Vegie-spread costs $43.90
Wimmers gute Semmelknödel costs $33.25
Louisiana Fiery Hot Pepper Sauce costs $21.05
Louisiana Hot Spiced Okra costs $17.00
Laughing Lumberjack Lager costs $14.00
Scottish Longbreads costs $12.50
Gudbrandsdalsost costs $36.00


Product Detail - Chang -
localhost:55198/Home/ProductDetail/2
Ch14_WebApp
Home
About
Contact
Product Detail
Product ID 2
Product Name Chang
Category ID 1
Unit Price $19.00
Units In Stock 17
© 2017 - Ch14_WebApp

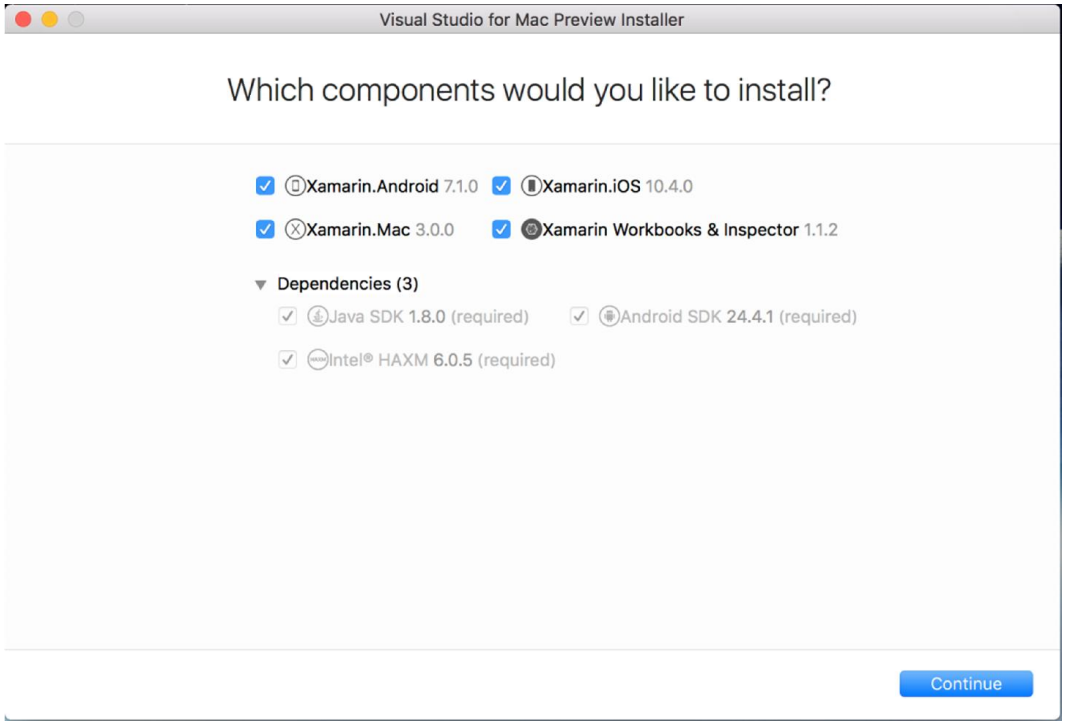

Home Page - My First ASP.NET
Mark
localhost:5000
WebApplication
Home
About
Contact
Register
Log in
Ikura costs £31.00
Queso Cabrales costs £21.00
Queso Manchego La Pastora costs £38.00
Konbu costs £6.00
Tofu costs £23.25
Genen Shouyu costs £15.50
Pavlova costs £17.45
Alice Mutton costs £39.00
Carnarvon Tigers costs £62.50
Teatime Chocolate Biscuits costs £9.20
Sir Rodney's Marmalade costs £81.00
Sir Rodney's Scones costs £10.00
Gustaf's Knäckebröd costs £21.00
Tunnbröd costs £9.00
Guaraná Fantástica costs £4.50
Gravad lax costs £26.00
Côte de Blaye costs £263.50
Chartreuse verte costs £18.00
Boston Crab Meat costs £18.40
Jack's New England Clam Chowder costs £9.65
Singaporean Hokkien Fried Mee costs £14.00
Ipoh Coffee costs £46.00
Gula Malacca costs £19.45
Rogede sild costs £9.50
Spegesild costs £12.00
Zaanse koeken costs £9.50
Chocolade costs £12.75
Maxilaku costs £20.00
Valkoinen suklaa costs £16.25
Manjimup Dried Apples costs £53.00
£33.25
Louisiana Fiery Hot Pepper Sauce costs £21.05
Louisiana Hot Spiced Okra costs £17.00
Laughing Lumberjack Lager costs £14.00
Scottish Longbreads costs £12.50
Gudbrandsdalsost costs £36.00
Outback Lager costs £15.00
Flotemysost costs £21.50
Mozzarella di Giovanni costs £34.80
Röd Kaviar costs £15.00
Longlife Tofu costs £10.00
Rhönbräu Klosterbier costs £7.75
Lakkalikööri costs £18.00
Original Frankfurter grüne Soße costs £13.00
Enter a product price
Submit
© 2016 - WebApplication

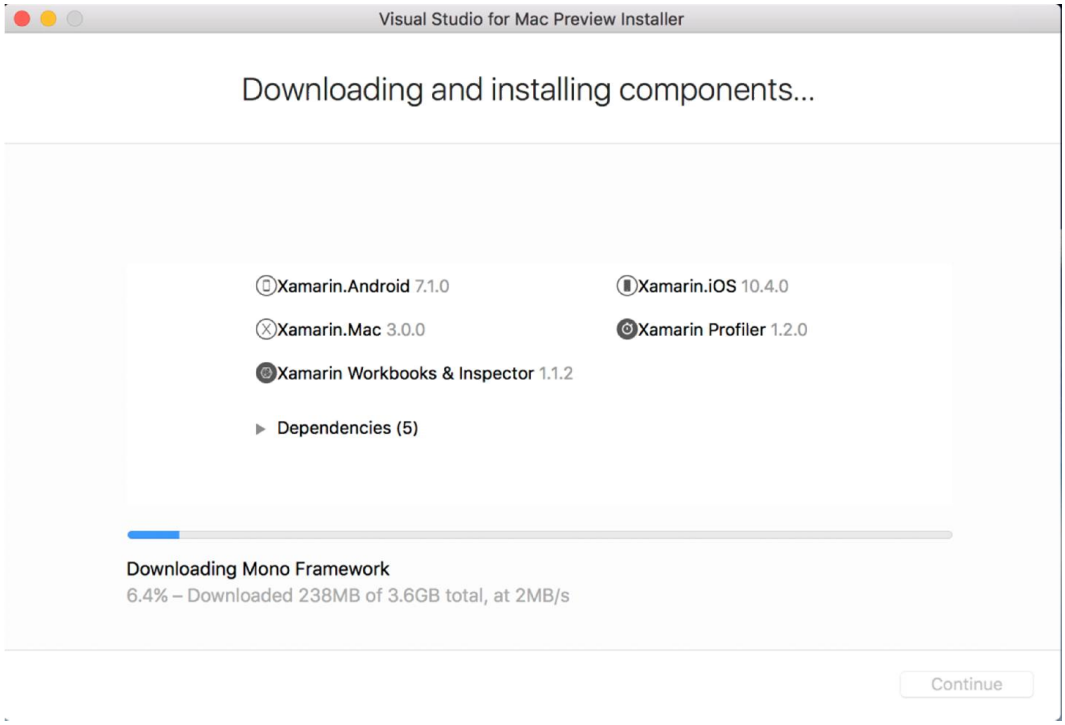

Products That Cost More Than
Mark
localhost:5000/Home/ProductsThatCostMoreThan?price=50
WebApplication
Home
About
Contact
Register
Log in
Products That Cost More Than £50.00
CategoryName
CompanyName
ProductName
UnitPrice
UnitsInStock
Meat/Poultry
Tokyo Traders
Mishi Kobe Niku
97.00
29
Seafood
Pavlova, Ltd.
Carnarvon Tigers
62.50
42
Confections
Specialty Biscuits, Ltd.
Sir Rodney's Marmalade
81.00
40
Meat/Poultry
Plutzer Lebensmittelgroßmärkte AG
Thüringer Rostbratwurst
123.79
0
Beverages
Aux joyeux ecclésiastiques
Côte de Blaye
263.50
17
Produce
G'day, Mate
Manjimup Dried Apples
53.00
20
Dairy Products
Gai pâturage
Raclette Courdavault
55.00
79
© 2016 - WebApplication

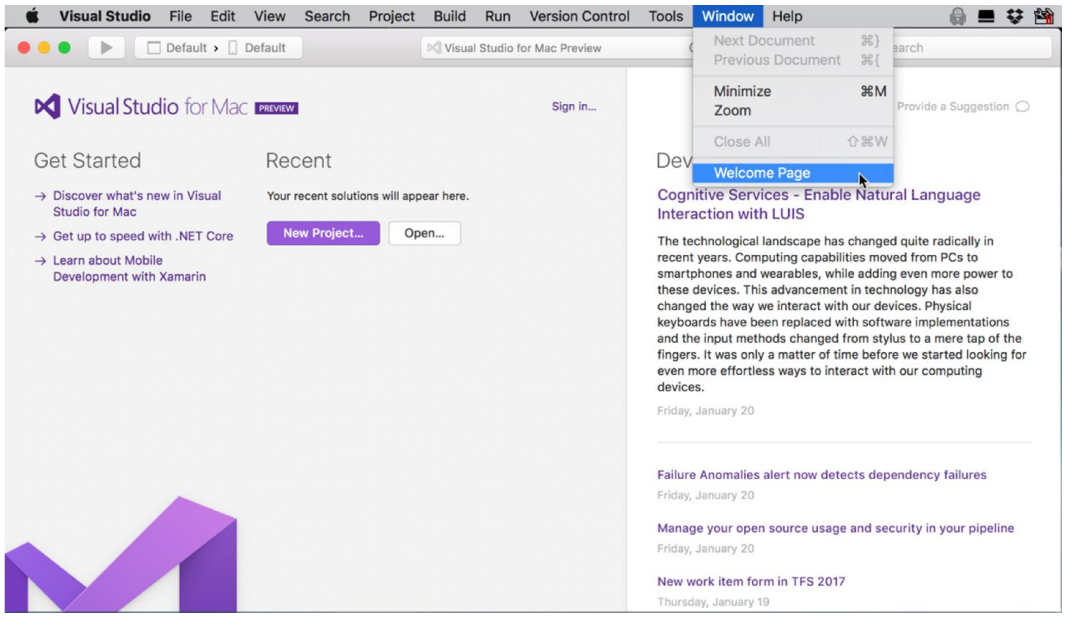

Products That Cost More Than
Mark
localhost:5000/Home/ProductsThatCostMoreThan?price=30
WebApplication
Home
About
Contact
Register
Log in
Products That Cost More Than £30.00
Category Name
Supplier's Company Name
Product Name
Unit Price
Units In Stock
Condiments
Grandma Kelly's Homestead
Northwoods Cranberry Sauce
40.00
6
Meat/Poultry
Tokyo Traders
Mishi Kobe Niku
97.00
29
Seafood
Tokyo Traders
Ikura
31.00
31
Dairy Products
Cooperativa de Quesos 'Las Cabras'
Queso Manchego La Pastora
38.00
86
Meat/Poultry
Pavlova, Ltd.
Alice Mutton
39.00
0
Seafood
Pavlova, Ltd.
Carnarvon Tigers
62.50
42
Confections
Specialty Biscuits, Ltd.
Sir Rodney's Marmalade
81.00
40
Confections
Heli Süßwaren GmbH & Co. KG
Gumbär Gummibärchen
31.23
15
Confections
Heli Süßwaren GmbH & Co. KG
Schoggi Schokolade
43.90
49
Produce
Plutzer Lebensmittelgroßmärkte AG
Rössle Sauerkraut
45.60
26

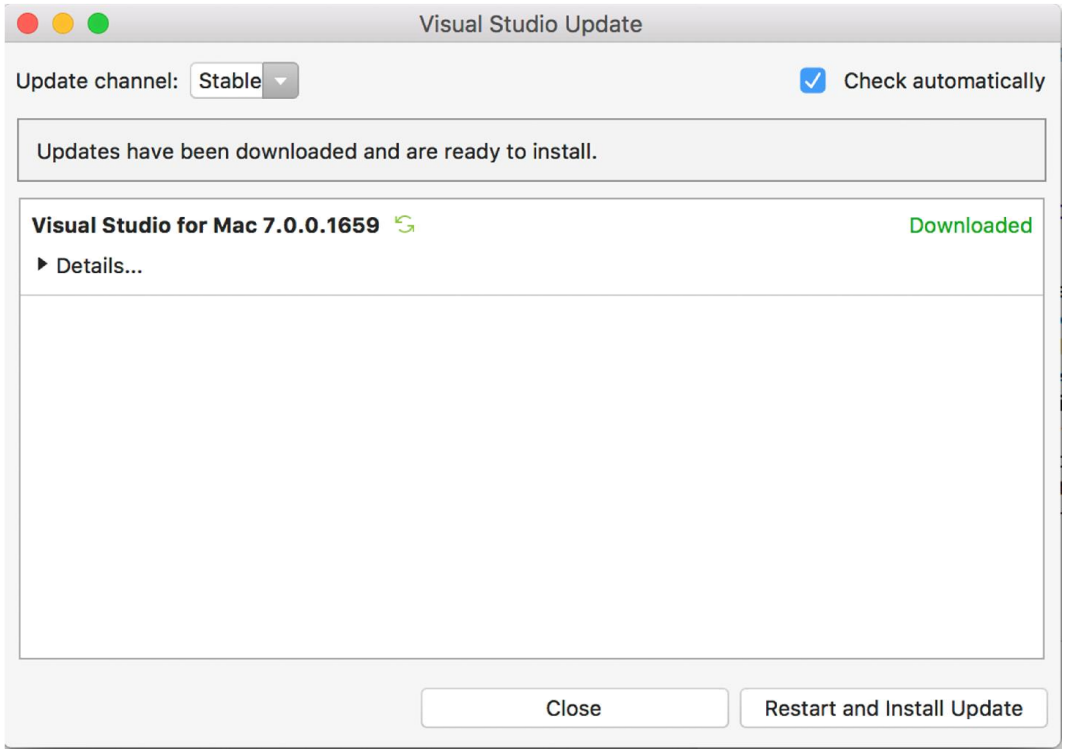
Chapter 15: Building Mobile Apps Using Xamarin.Forms and ASP.NET Core Web API

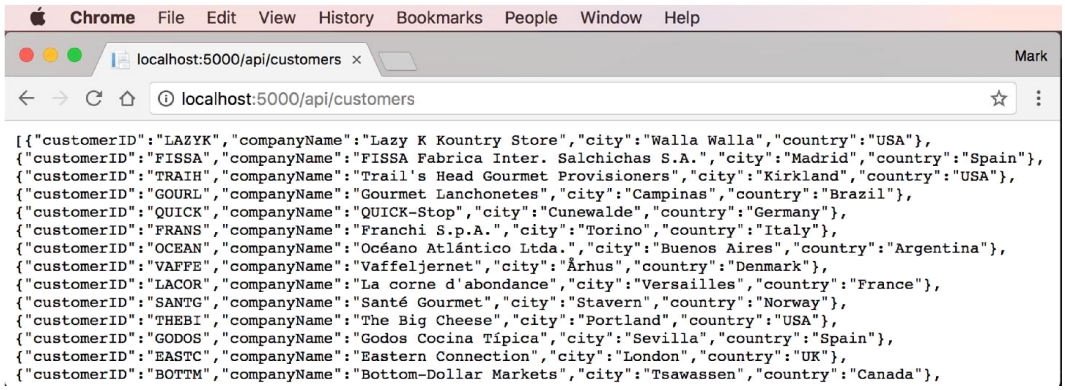
	iOS	Android	Windows Mobile	ASP.NET Core Web API
Visual Studio Code	×	×	×	✓
Visual Studio for Mac	✓	✓	×	✓
Visual Studio 2017	×	✓	✓	✓

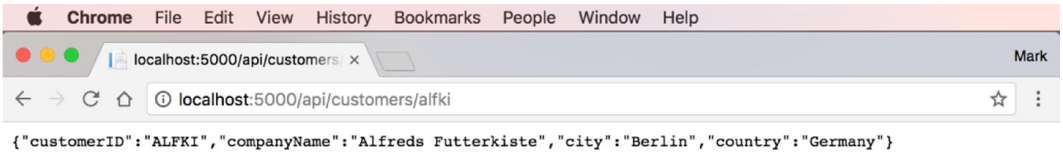

Visual Studio for Mac Preview Installer
Which components would you like to install?
Xamarin.Android 7.1.0
Xamarin.iOS 10.4.0
Xamarin.Mac 3.0.0
Xamarin Workbooks & Inspector 1.1.2
Dependencies (3)
Java SDK 1.8.0 (required)
Android SDK 24.4.1 (required)
Intel® HAXM 6.0.5 (required)
Continue


Visual Studio for Mac Preview Installer
Downloading and installing components...
Xamarin.Android 7.1.0
Xamarin.iOS 10.4.0
Xamarin.Mac 3.0.0
Xamarin Profiler 1.2.0
Xamarin Workbooks & Inspector 1.1.2
Dependencies (5)
Downloading Mono Framework
6.4% – Downloaded 238MB of 3.6GB total, at 2MB/s
Continue


Visual Studio File Edit View Search Project Build Run Version Control Tools Window Help
Next Document ⌘}
Previous Document ⌘{
Minimize ⌘M
Zoom
Close All ⇧⌘W
Welcome Page
Visual Studio for Mac PREVIEW
Sign in...
Provide a Suggestion
Get Started
Discover what's new in Visual Studio for Mac
Get up to speed with .NET Core
Learn about Mobile Development with Xamarin
Recent
Your recent solutions will appear here.
New Project...
Open...
Cognitive Services - Enable Natural Language Interaction with LUIS
The technological landscape has changed quite radically in recent years. Computing capabilities moved from PCs to smartphones and wearables, while adding even more power to these devices. This advancement in technology has also changed the way we interact with our devices. Physical keyboards have been replaced with software implementations and the input methods changed from stylus to a mere tap of the fingers. It was only a matter of time before we started looking for even more effortless ways to interact with our computing devices.
Friday, January 20
Failure Anomalies alert now detects dependency failures
Friday, January 20
Manage your open source usage and security in your pipeline
Friday, January 20
New work item form in TFS 2017
Thursday, January 19

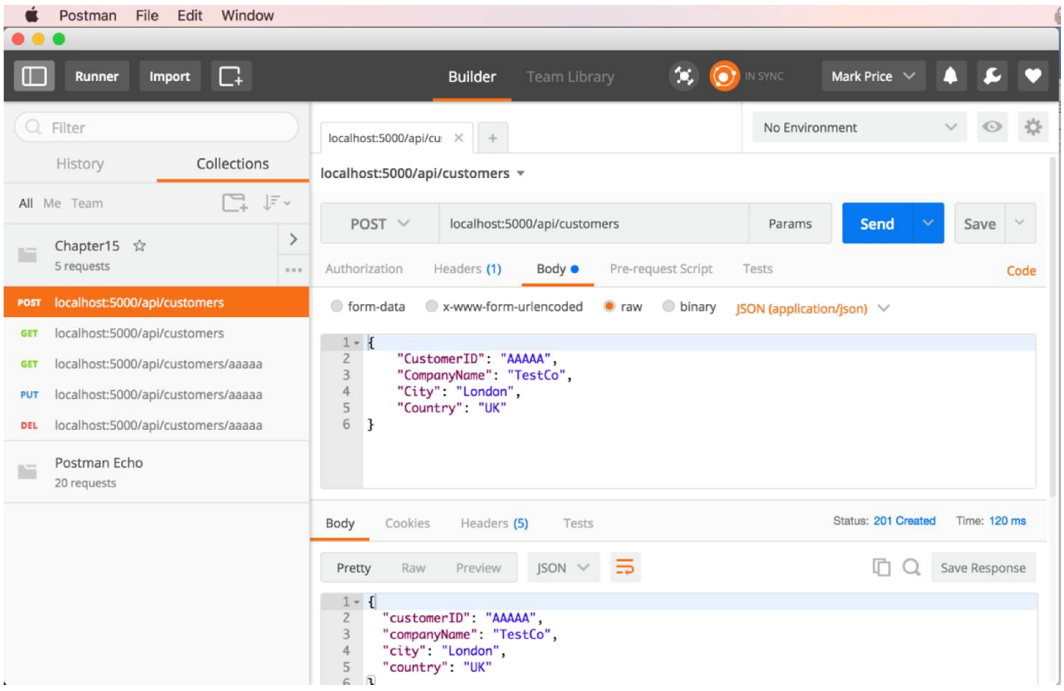

Visual Studio Update
Update channel:
Stable
Check automatically
Updates have been downloaded and are ready to install.
Visual Studio for Mac 7.0.0.1659
Downloaded
Details...
Close
Restart and Install Update

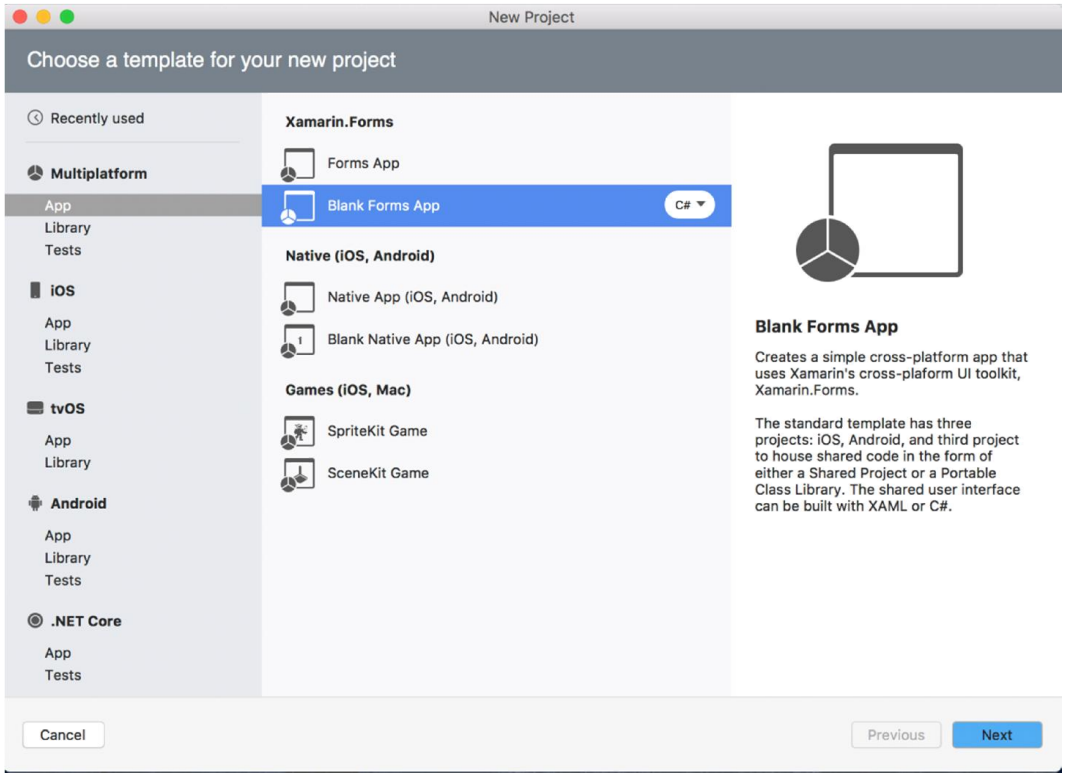

Chrome File Edit View History Bookmarks People Window Help
localhost:5000/api/customers
Mark
localhost:5000/api/customers
[{"customerID":"LAZYK","companyName":"Lazy K Kountry Store","city":"Walla Walla","country":"USA"},
{"customerID":"FISSA","companyName":"FISSA Fabrica Inter. Salchichas S.A.","city":"Madrid","country":"Spain"},
{"customerID":"TRAIH","companyName":"Trail's Head Gourmet Provisioners","city":"Kirkland","country":"USA"},
{"customerID":"GOURL","companyName":"Gourmet Lanchonetes","city":"Campinas","country":"Brazil"},
{"customerID":"QUICK","companyName":"QUICK-Stop","city":"Cunewalde","country":"Germany"},
{"customerID":"FRANS","companyName":"Franchi S.p.A.","city":"Torino","country":"Italy"},
{"customerID":"OCEAN","companyName":"Océano Atlántico Ltda.","city":"Buenos Aires","country":"Argentina"},
{"customerID":"VAFFE","companyName":"Vaffeljernet","city":"Århus","country":"Denmark"},
{"customerID":"LACOR","companyName":"La corne d'abondance","city":"Versailles","country":"France"},
{"customerID":"SANTG","companyName":"Santé Gourmet","city":"Stavern","country":"Norway"},
{"customerID":"THEBI","companyName":"The Big Cheese","city":"Portland","country":"USA"},
{"customerID":"GODOS","companyName":"Godos Cocina Típica","city":"Sevilla","country":"Spain"},
{"customerID":"EASTC","companyName":"Eastern Connection","city":"London","country":"UK"},
{"customerID":"BOTTM","companyName":"Bottom-Dollar Markets","city":"Tsawassen","country":"Canada"},

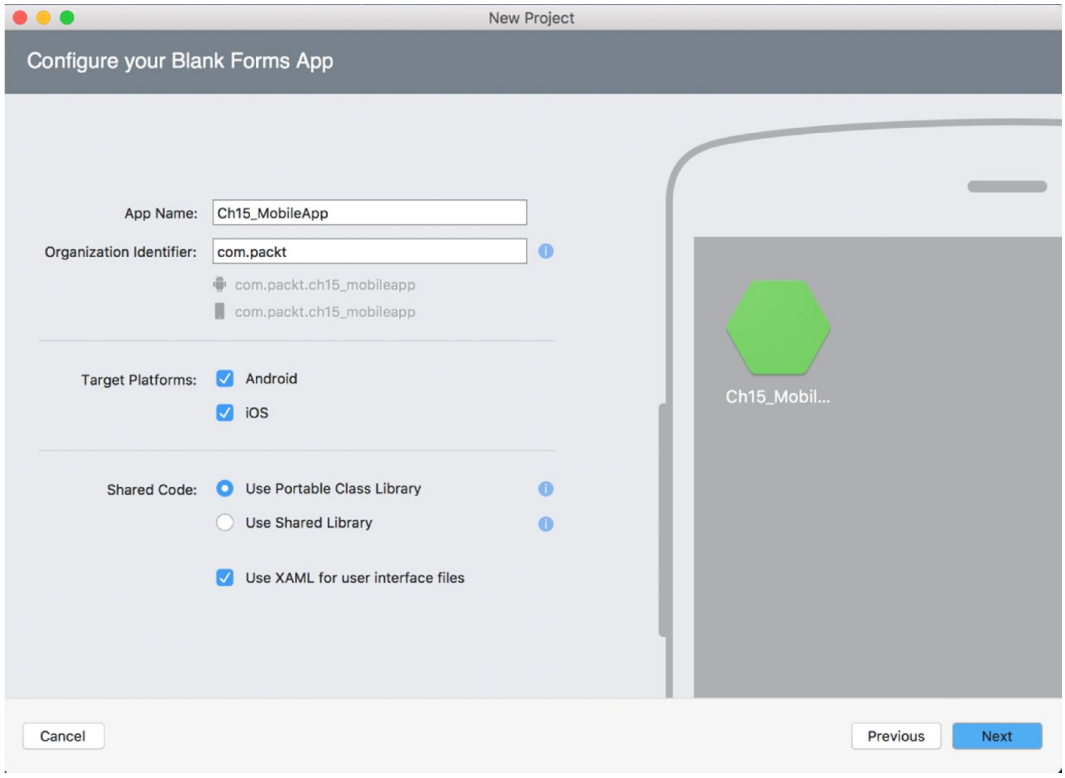


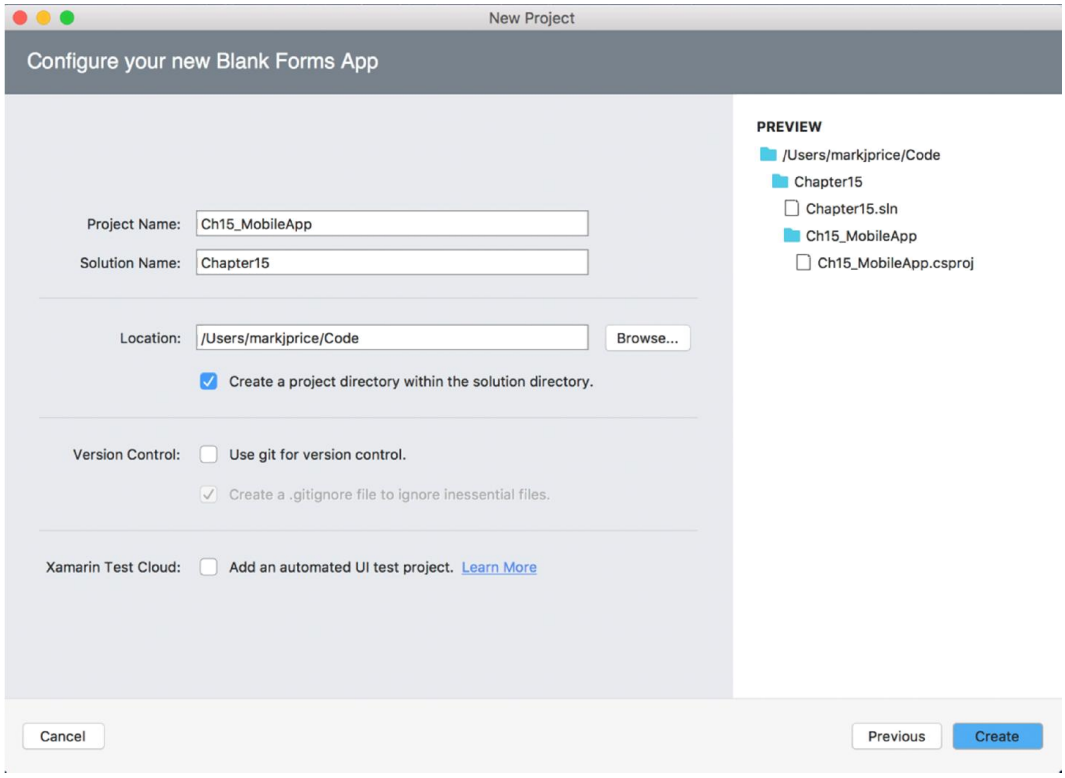

```
{"customerID":"ALFKI","companyName":"Alfreds Futterkiste","city":"Berlin","country":"Germany"}
```

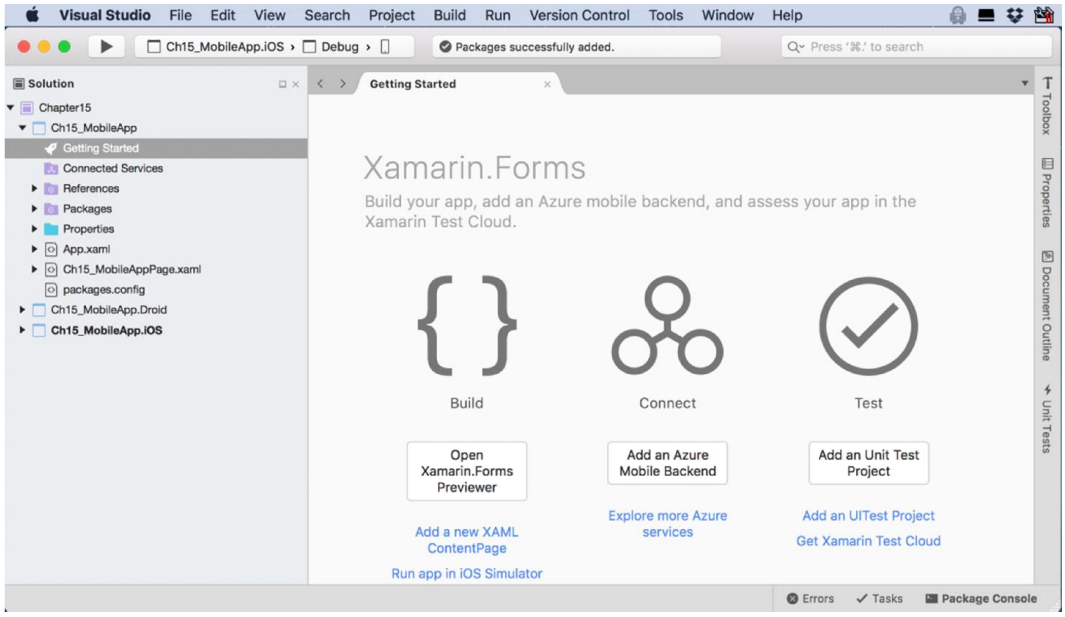
```
[{"customerID":"LAZYK","companyName":"Lazy K Kountry Store","city":"Walla Walla","country":"USA"},
{"customerID":"TRAIH","companyName":"Trail's Head Gourmet Provisioners","city":"Kirkland","country":"USA"},
{"customerID":"THEBI","companyName":"The Big Cheese","city":"Portland","country":"USA"},
{"customerID":"SPLIR","companyName":"Split Rail Beer & Ale","city":"Lander","country":"USA"},
{"customerID":"RATTC","companyName":"Rattlesnake Canyon Grocery","city":"Albuquerque","country":"USA"},
{"customerID":"LONEP","companyName":"Lonesome Pine Restaurant","city":"Portland","country":"USA"},
{"customerID":"WHITC","companyName":"White Clover Markets","city":"Seattle","country":"USA"},
{"customerID":"HUNGC","companyName":"Hungry Coyote Import Store","city":"Elgin","country":"USA"},
{"customerID":"LETSS","companyName":"Let's Stop N Shop","city":"San Francisco","country":"USA"},
{"customerID":"OLDWO","companyName":"Old World Delicatessen","city":"Anchorage","country":"USA"},
{"customerID":"GREAL","companyName":"Great Lakes Food Market","city":"Eugene","country":"USA"},
{"customerID":"THECR","companyName":"The Cracker Box","city":"Butte","country":"USA"},
{"customerID":"SAVEA","companyName":"Save-a-lot Markets","city":"Boise","country":"USA"}]
```

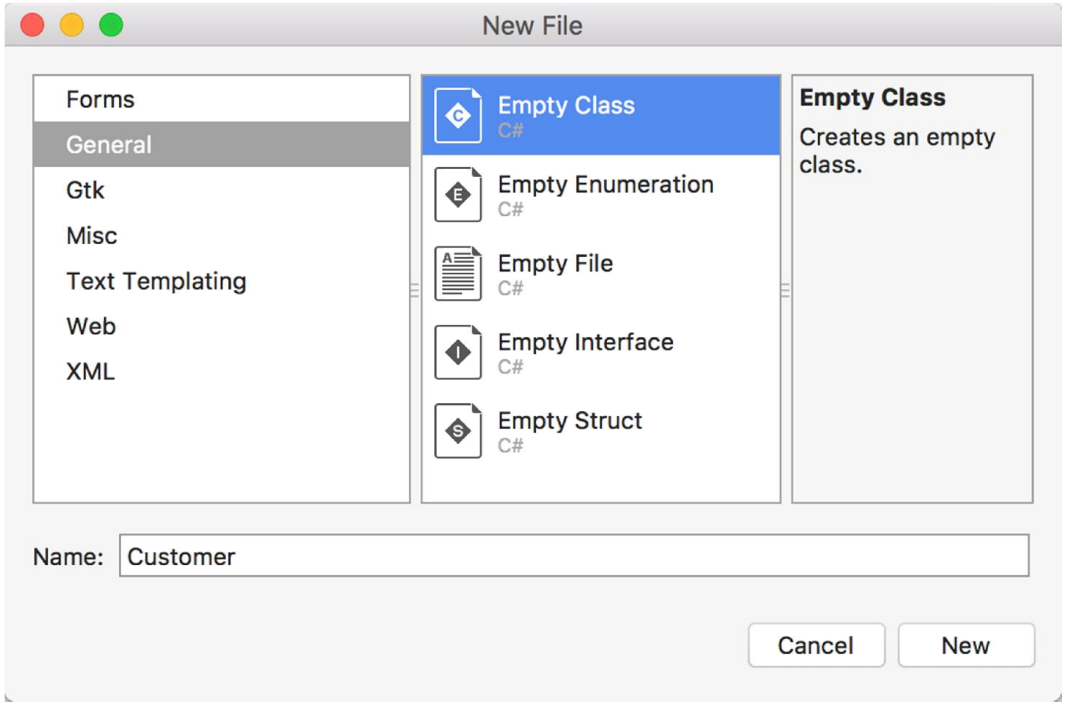



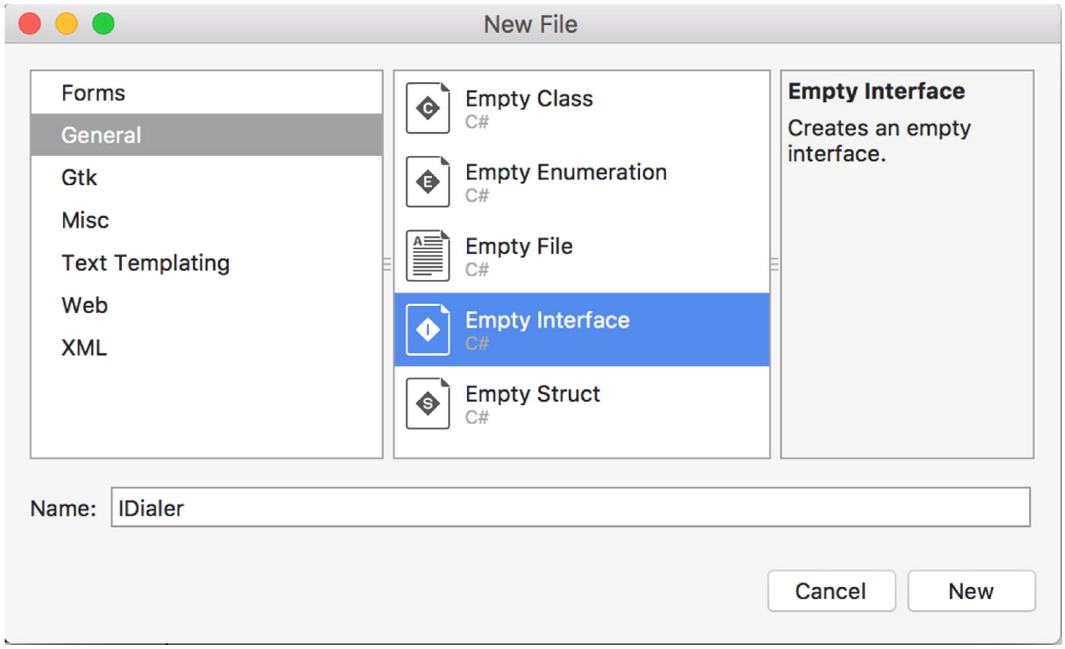

New Project
Choose a template for your new project
Recently used
Multiplatform
App
Library
Tests
iOS
App
Library
Tests
tvOS
App
Library
Android
App
Library
Tests
.NET Core
App
Tests
Xamarin.Forms
Forms App
Blank Forms App
C#
Native (iOS, Android)
Native App (iOS, Android)
Blank Native App (iOS, Android)
Games (iOS, Mac)
SpriteKit Game
SceneKit Game
Blank Forms App
Creates a simple cross-platform app that uses Xamarin's cross-plaform UI toolkit, Xamarin.Forms.
The standard template has three projects: iOS, Android, and third project to house shared code in the form of either a Shared Project or a Portable Class Library. The shared user interface can be built with XAML or C#.
Cancel
Previous
Next

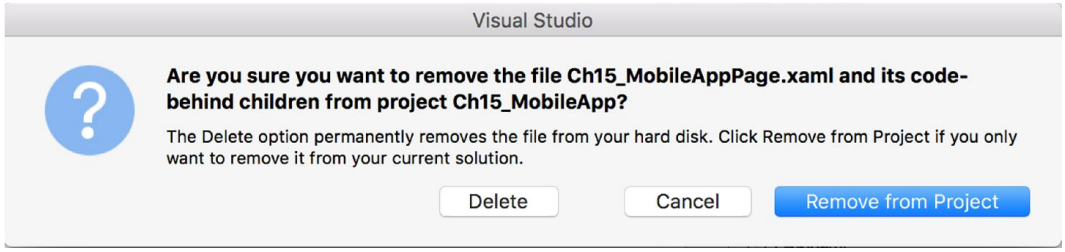

New Project
Configure your Blank Forms App
App Name:
Ch15_MobileApp
Organization Identifier:
com.packt
com.packt.ch15_mobileapp
com.packt.ch15_mobileapp
Target Platforms:
Android
iOS
Shared Code:
Use Portable Class Library
Use Shared Library
Use XAML for user interface files
Ch15_Mobil...
Cancel
Previous
Next

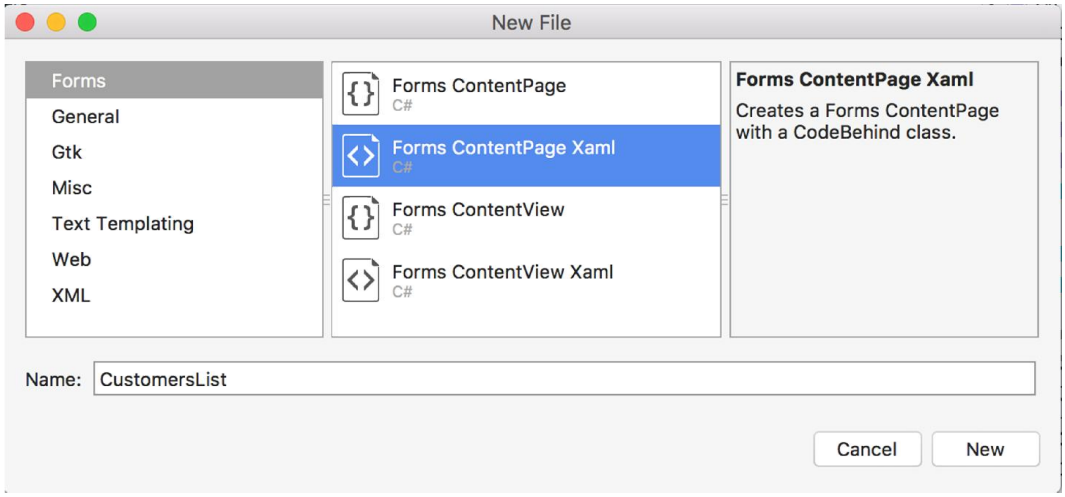

New Project
Configure your new Blank Forms App
PREVIEW
/Users/markjprice/Code
Chapter15
Chapter15.sln
Ch15_MobileApp
Ch15_MobileApp.csproj
Project Name:
Ch15_MobileApp
Solution Name:
Chapter15
Location:
/Users/markjprice/Code
Browse...
Create a project directory within the solution directory.
Version Control:
Use git for version control.
Create a .gitignore file to ignore inessential files.
Xamarin Test Cloud:
Add an automated UI test project.
Learn More
Cancel
Previous
Create

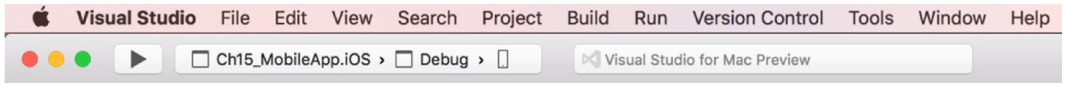

Visual Studio File Edit View Search Project Build Run Version Control Tools Window Help
Ch15_MobileApp.iOS › Debug ›
Packages successfully added.
Press '⌘.' to search
Solution
Chapter15
Ch15_MobileApp
Getting Started
Connected Services
References
Packages
Properties
App.xaml
Ch15_MobileAppPage.xaml
packages.config
Ch15_MobileApp.Droid
Ch15_MobileApp.iOS
Getting Started
Xamarin.Forms
Build your app, add an Azure mobile backend, and assess your app in the Xamarin Test Cloud.
Build
Connect
Test
Open Xamarin.Forms Previewer
Add a new XAML ContentPage
Run app in iOS Simulator
Add an Azure Mobile Backend
Explore more Azure services
Add an Unit Test Project
Add an UITest Project
Get Xamarin Test Cloud
Toolbox
Properties
Document Outline
Unit Tests
Errors
Tasks
Package Console

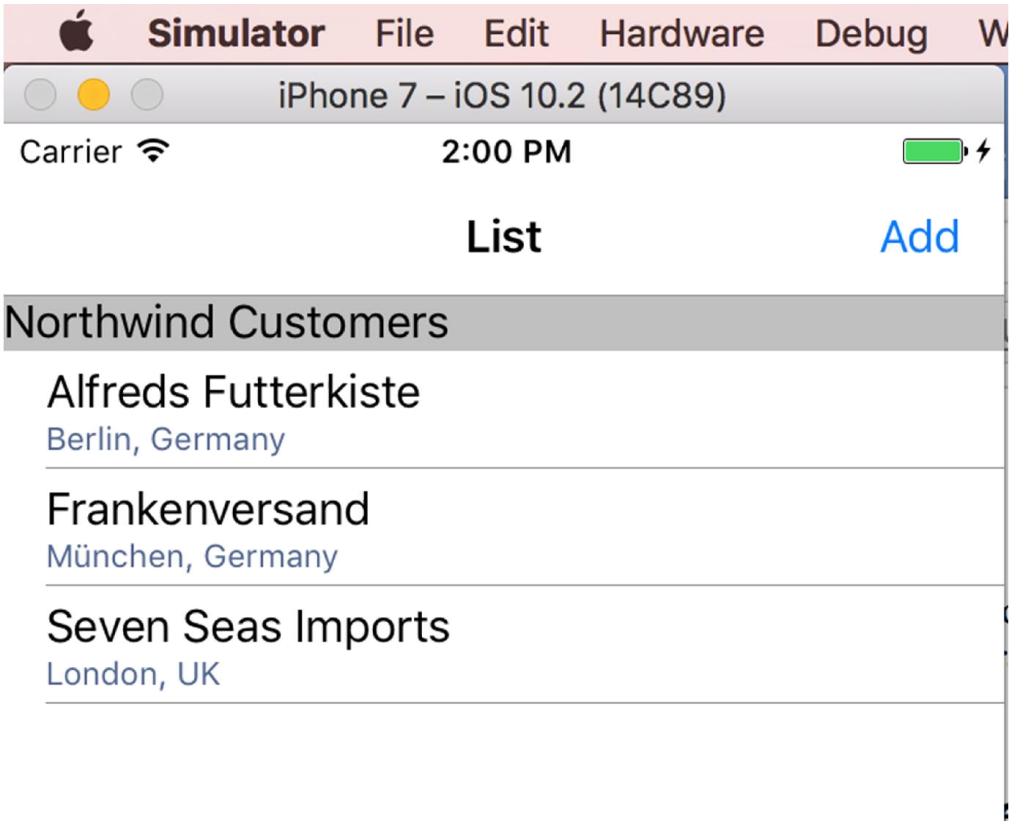

New File
Forms
General
Gtk
Misc
Text Templating
Web
XML
Empty Class
C#
Empty Enumeration
C#
Empty File
C#
Empty Interface
C#
Empty Struct
C#
Empty Class
Creates an empty class.
Name:
Customer
Cancel
New

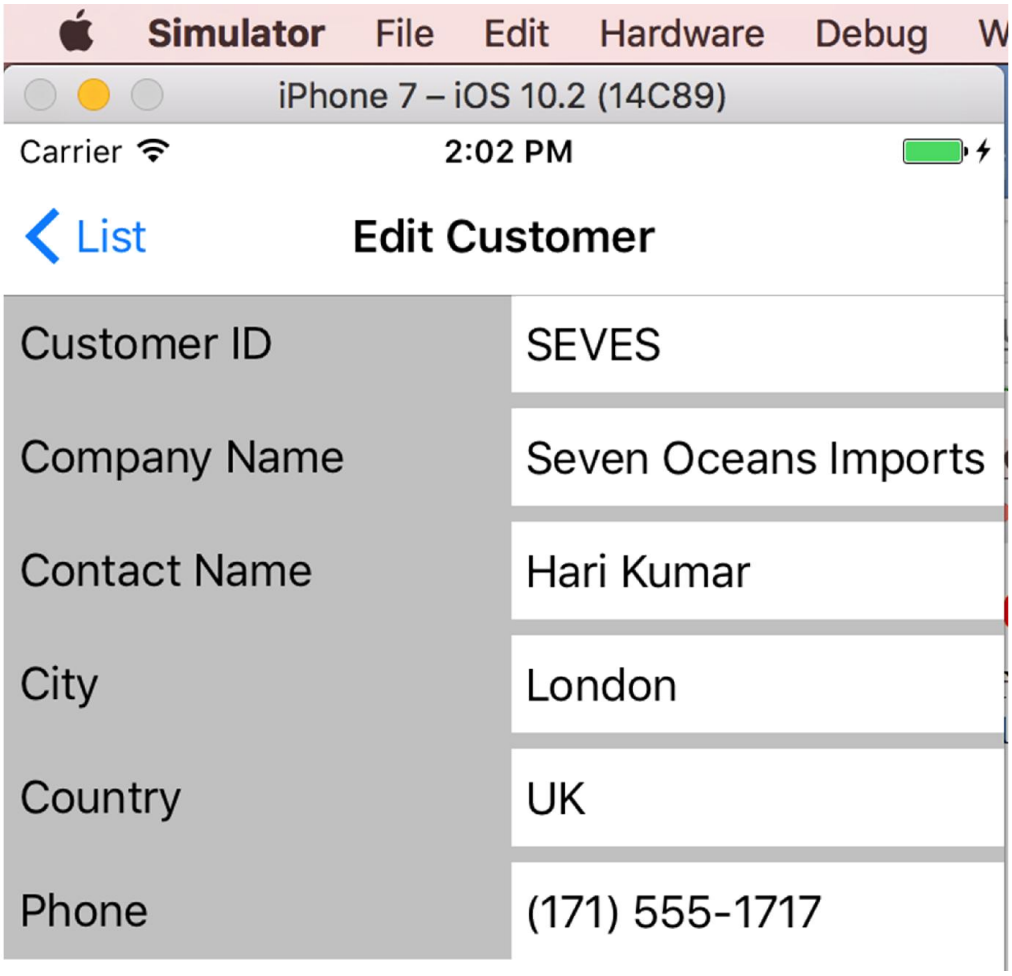

New File
Forms
General
Gtk
Misc
Text Templating
Web
XML
Empty Class
C#
Empty Enumeration
C#
Empty File
C#
Empty Interface
C#
Empty Struct
C#
Empty Interface
Creates an empty interface.
Name:
IDialer
Cancel
New

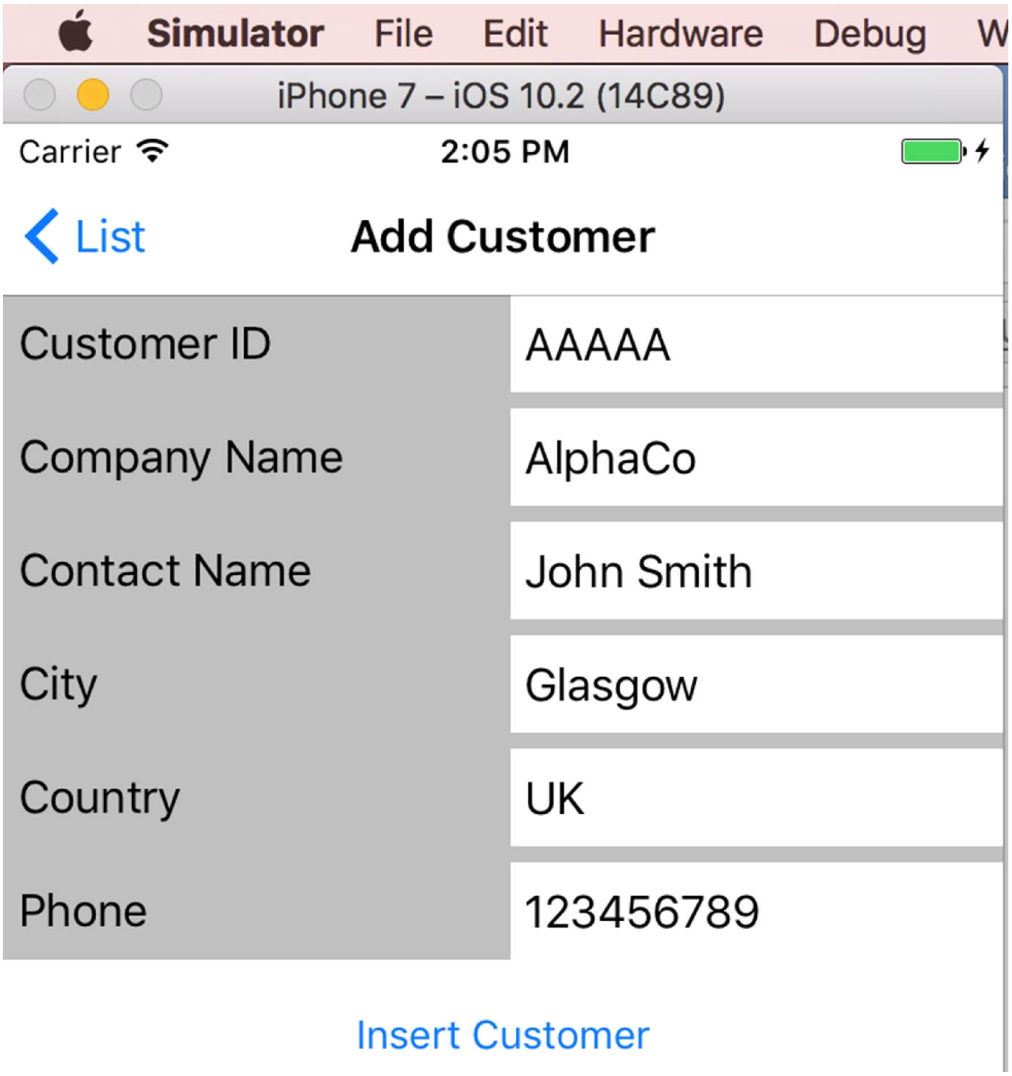

Visual Studio
Are you sure you want to remove the file Ch15_MobileAppPage.xaml and its code-behind children from project Ch15_MobileApp?
The Delete option permanently removes the file from your hard disk. Click Remove from Project if you only want to remove it from your current solution.
Delete
Cancel
Remove from Project

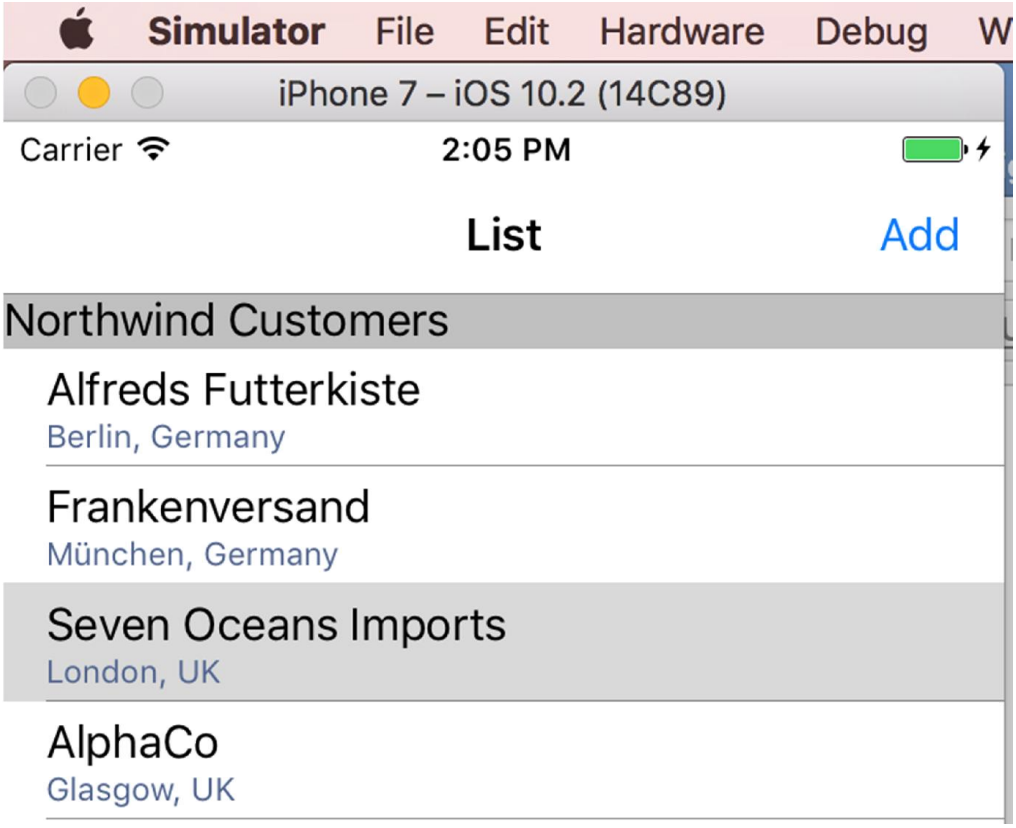

New File
Forms
General
Gtk
Misc
Text Templating
Web
XML
Forms ContentPage
C#
Forms ContentPage Xaml
C#
Forms ContentView
C#
Forms ContentView Xaml
C#
Forms ContentPage Xaml
Creates a Forms ContentPage with a CodeBehind class.
Name:
CustomersList
Cancel
New

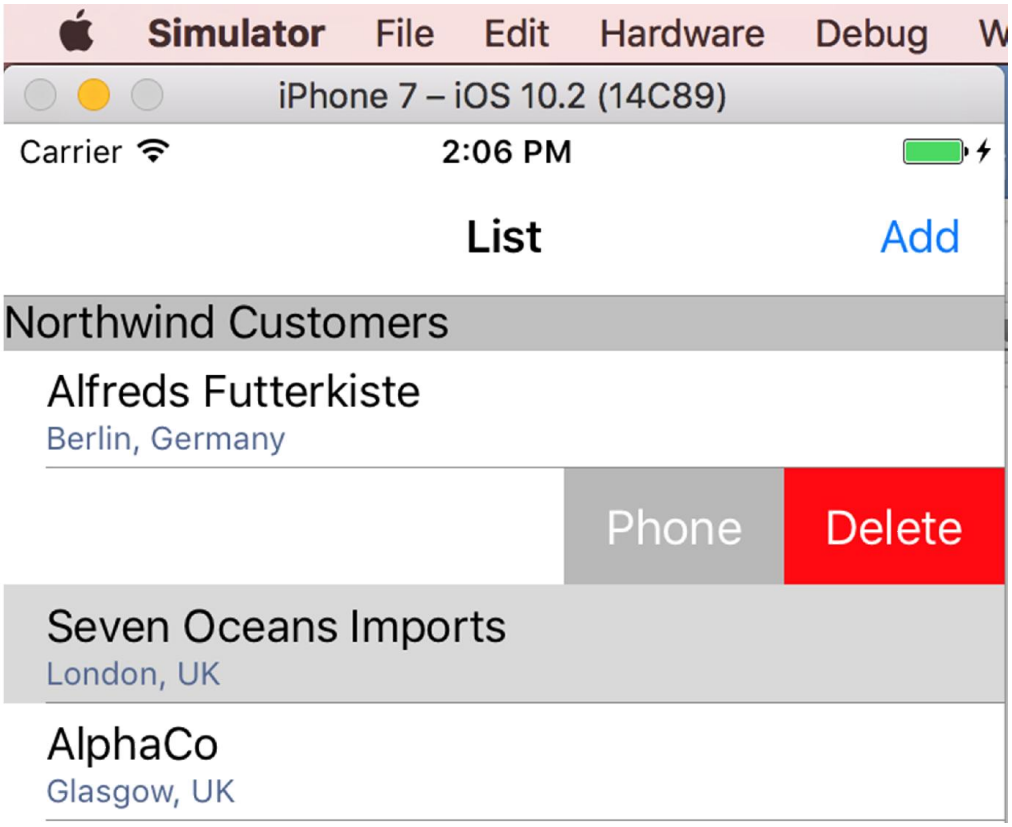

Visual Studio
File
Edit
View
Search
Project
Build
Run
Version Control
Tools
Window
Help
Ch15_MobileApp.iOS
Debug
Visual Studio for Mac Preview

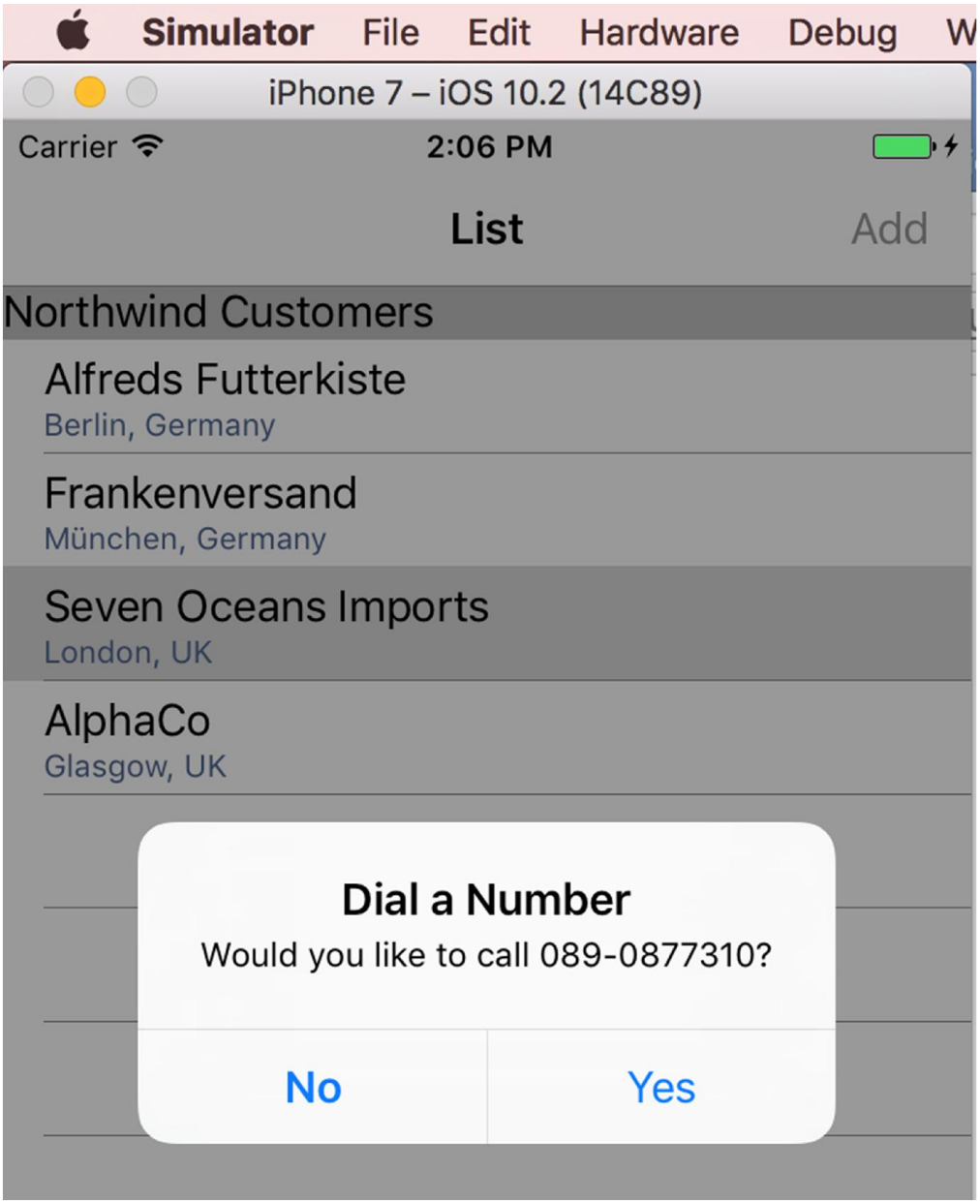

Simulator File Edit Hardware Debug W
iPhone 7 – iOS 10.2 (14C89)
Carrier
2:00 PM
List
Add
Northwind Customers
Alfreds Futterkiste
Berlin, Germany
Frankenversand
München, Germany
Seven Seas Imports
London, UK

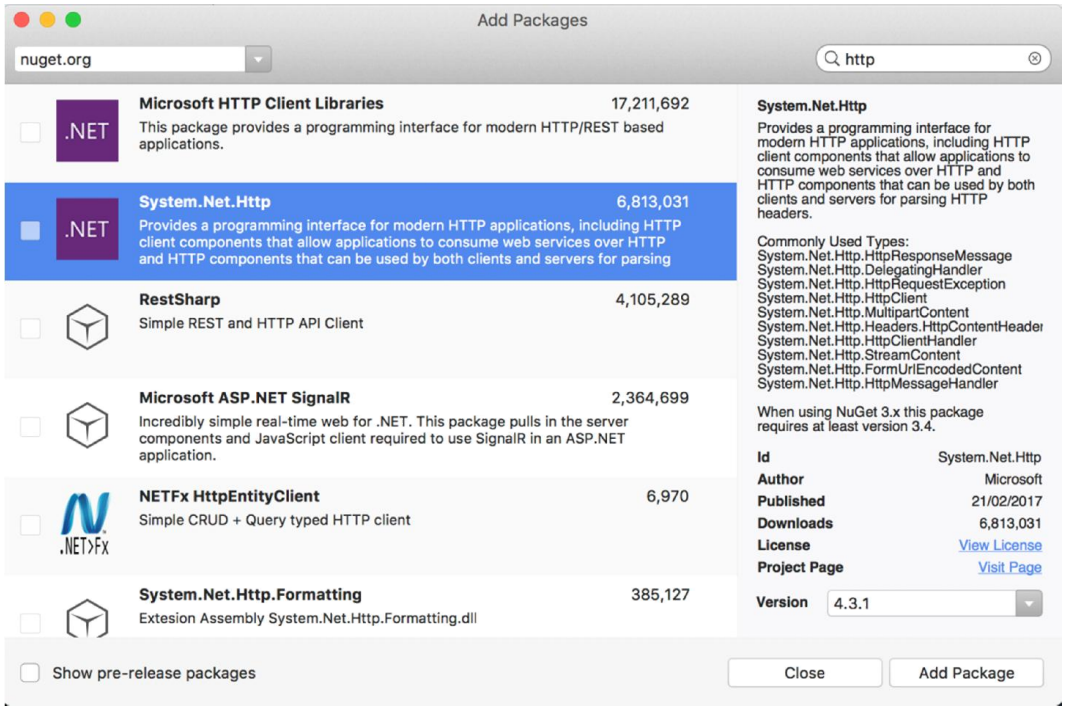

Simulator File Edit Hardware Debug W
iPhone 7 – iOS 10.2 (14C89)
Carrier
2:02 PM
List
Edit Customer
Customer ID
SEVES
Company Name
Seven Oceans Imports
Contact Name
Hari Kumar
City
London
Country
UK
Phone
(171) 555-1717

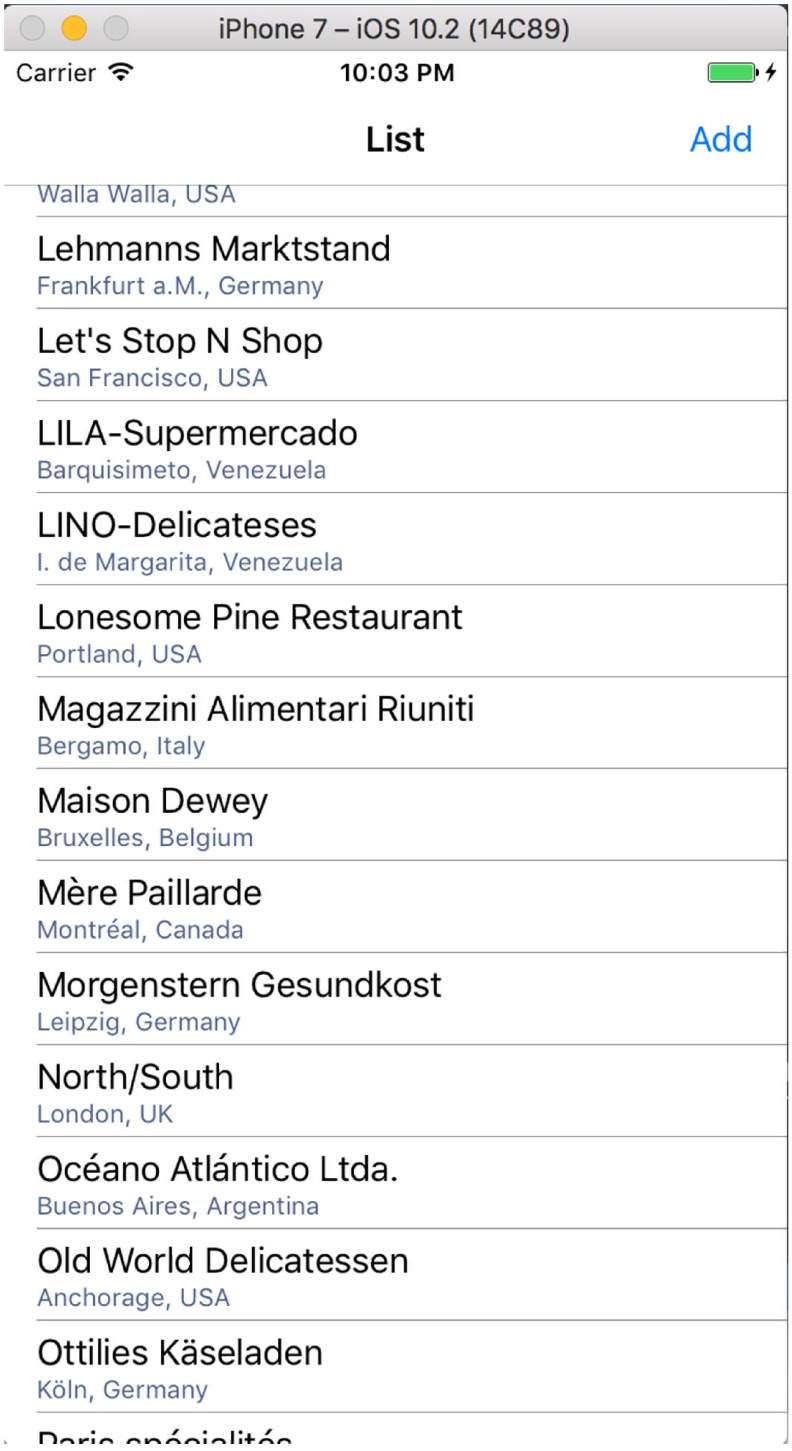

Simulator File Edit Hardware Debug W
iPhone 7 – iOS 10.2 (14C89)
Carrier
2:05 PM
List
Add Customer
Customer ID
AAAAA
Company Name
AlphaCo
Contact Name
John Smith
City
Glasgow
Country
UK
Phone
123456789
Insert Customer


Simulator File Edit Hardware Debug W
iPhone 7 – iOS 10.2 (14C89)
Carrier
2:05 PM
List
Add
Northwind Customers
Alfreds Futterkiste
Berlin, Germany
Frankenversand
München, Germany
Seven Oceans Imports
London, UK
AlphaCo
Glasgow, UK

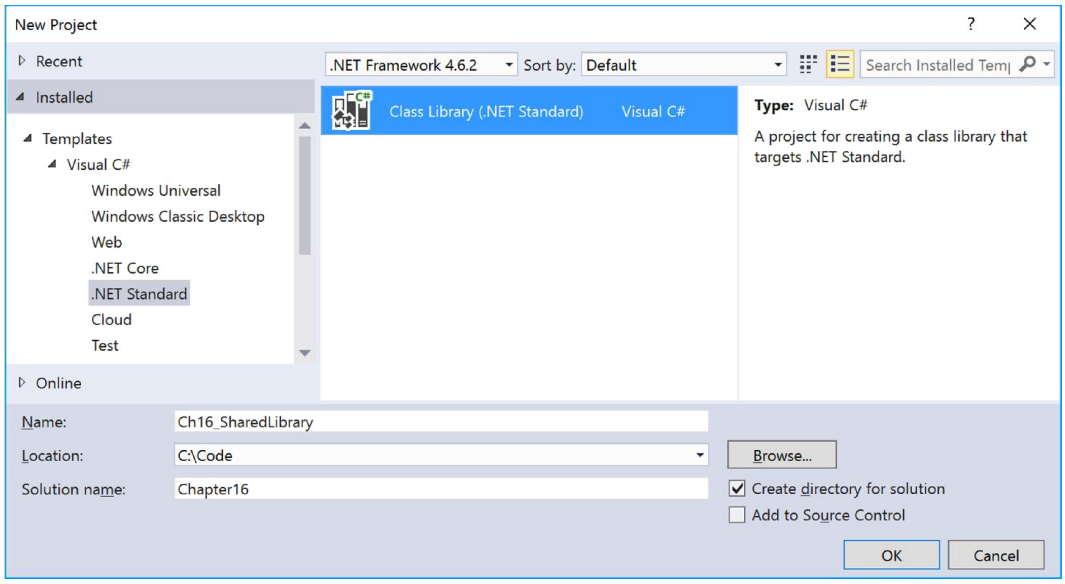

Simulator File Edit Hardware Debug W
iPhone 7 – iOS 10.2 (14C89)
Carrier
2:06 PM
List
Add
Northwind Customers
Alfreds Futterkiste
Berlin, Germany
Phone
Delete
Seven Oceans Imports
London, UK
AlphaCo
Glasgow, UK

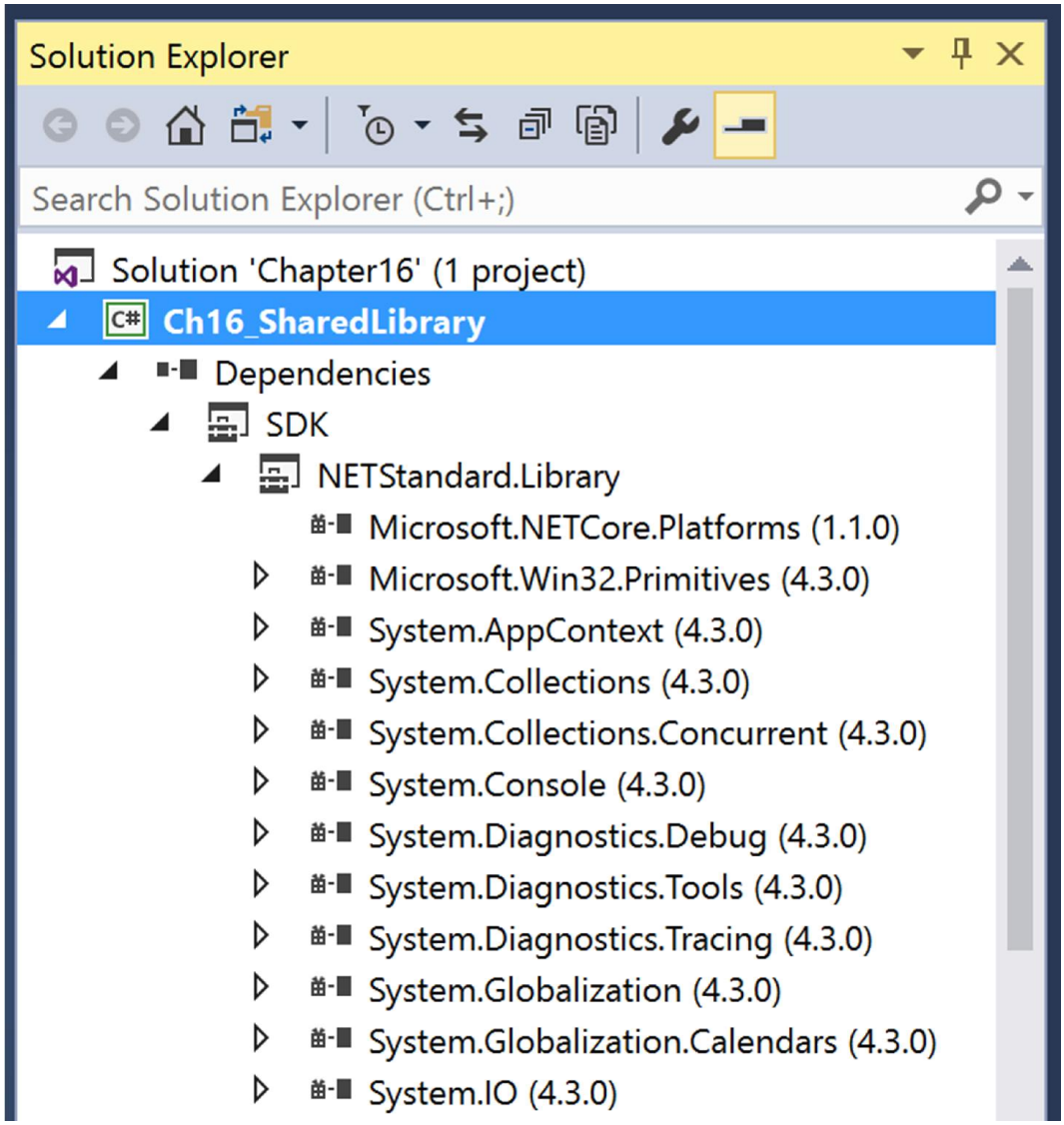

Simulator File Edit Hardware Debug W
iPhone 7 – iOS 10.2 (14C89)
Carrier
2:06 PM
List
Add
Northwind Customers
Alfreds Futterkiste
Berlin, Germany
Frankenversand
München, Germany
Seven Oceans Imports
London, UK
AlphaCo
Glasgow, UK
Dial a Number
Would you like to call 089-0877310?
No
Yes

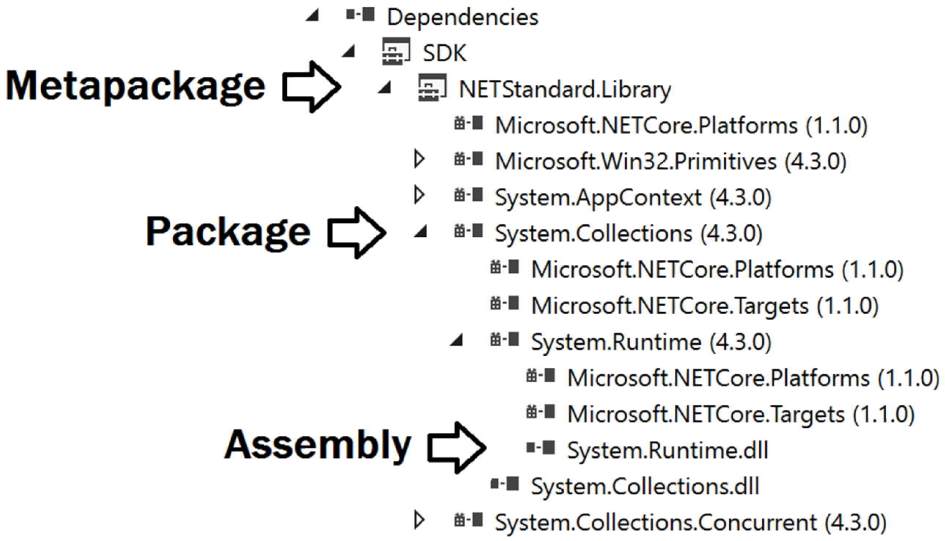

Add Packages
nuget.org
http
Microsoft HTTP Client Libraries
17,211,692
This package provides a programming interface for modern HTTP/REST based applications.
System.Net.Http
6,813,031
Provides a programming interface for modern HTTP applications, including HTTP client components that allow applications to consume web services over HTTP and HTTP components that can be used by both clients and servers for parsing
RestSharp
4,105,289
Simple REST and HTTP API Client
Microsoft ASP.NET SignalR
2,364,699
Incredibly simple real-time web for .NET. This package pulls in the server components and JavaScript client required to use SignalR in an ASP.NET application.
NETFx HttpEntityClient
6,970
Simple CRUD + Query typed HTTP client
System.Net.Http.Formatting
385,127
Extesion Assembly System.Net.Http.Formatting.dll
System.Net.Http
Provides a programming interface for modern HTTP applications, including HTTP client components that allow applications to consume web services over HTTP and HTTP components that can be used by both clients and servers for parsing HTTP headers.
Commonly Used Types:
System.Net.Http.HttpResponseMessage
System.Net.Http.DelegatingHandler
System.Net.Http.HttpRequestException
System.Net.Http.HttpClient
System.Net.Http.MultipartContent
System.Net.Http.Headers.HttpContentHeader
System.Net.Http.HttpClientHandler
System.Net.Http.StreamContent
System.Net.Http.FormUrlEncodedContent
System.Net.Http.HttpMessageHandler
When using NuGet 3.x this package requires at least version 3.4.
Id
System.Net.Http
Author
Microsoft
Published
21/02/2017
Downloads
6,813,031
License
View License
Project Page
Visit Page
Version
4.3.1
Show pre-release packages
Close
Add Package


iPhone 7 – iOS 10.2 (14C89)
Carrier
10:03 PM
List
Add
Walla Walla, USA
Lehmanns Marktstand
Frankfurt a.M., Germany
Let's Stop N Shop
San Francisco, USA
LILA-Supermercado
Barquisimeto, Venezuela
LINO-Delicateses
I. de Margarita, Venezuela
Lonesome Pine Restaurant
Portland, USA
Magazzini Alimentari Riuniti
Bergamo, Italy
Maison Dewey
Bruxelles, Belgium
Mère Paillarde
Montréal, Canada
Morgenstern Gesundkost
Leipzig, Germany
North/South
London, UK
Océano Atlántico Ltda.
Buenos Aires, Argentina
Old World Delicatessen
Anchorage, USA
Ottilies Käseladen
Köln, Germany

Chapter 16: Packaging and Deploying Your Code Cross-Platform




Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Chapter16' (1 project)
Ch16_SharedLibrary
Dependencies
SDK
NETStandard.Library
Microsoft.NETCore.Platforms (1.1.0)
Microsoft.Win32.Primitives (4.3.0)
System.AppContext (4.3.0)
System.Collections (4.3.0)
System.Collections.Concurrent (4.3.0)
System.Console (4.3.0)
System.Diagnostics.Debug (4.3.0)
System.Diagnostics.Tools (4.3.0)
System.Diagnostics.Tracing (4.3.0)
System.Globalization (4.3.0)
System.Globalization.Calendars (4.3.0)
System.IO (4.3.0)



Microsoft.NETCore.App 1.1.1

A set of .NET API's that are included in the default .NET Core application model.

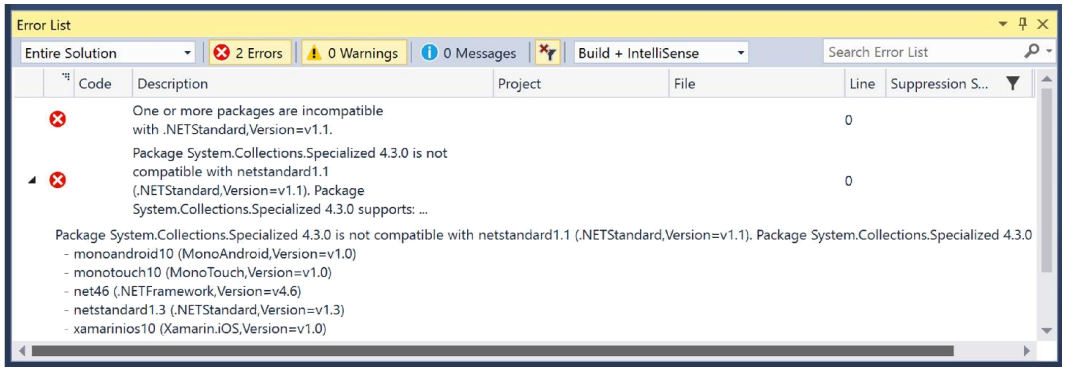
When using NuGet 3.x this package requires at least version 3.4.

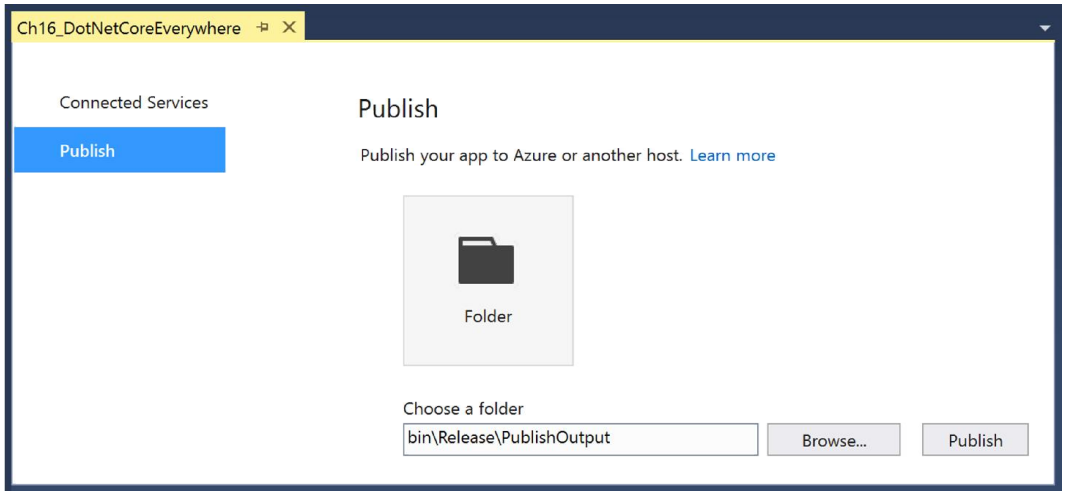
To install Microsoft.NETCore.App, run the following command in the Package Manager Console

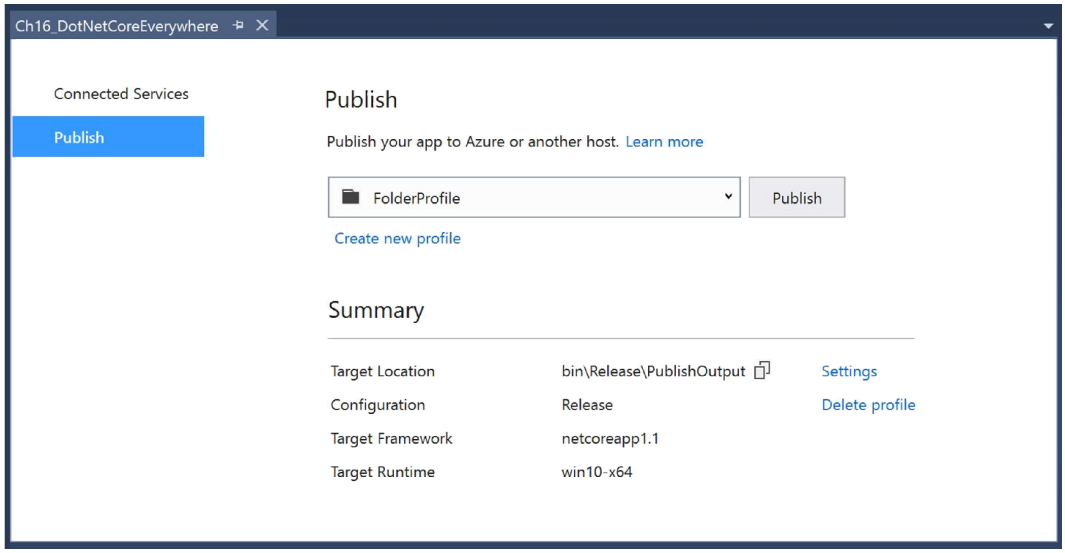
```
PM> Install-Package Microsoft.NETCore.App
```

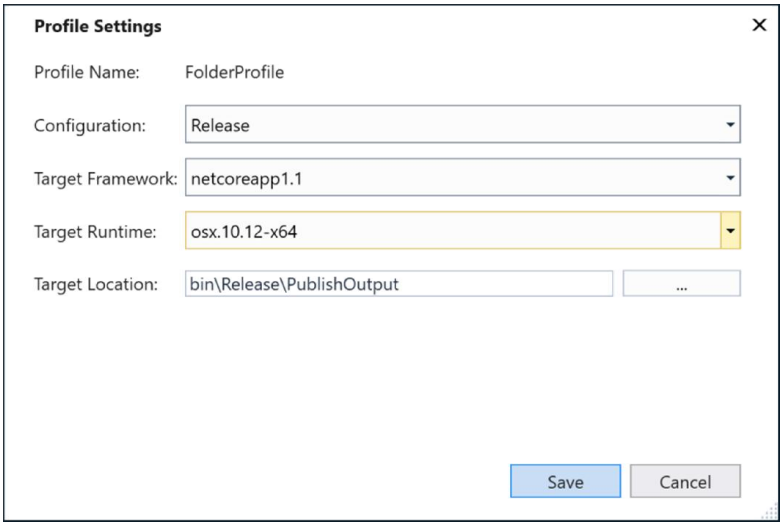
.NETCoreApp 1.1

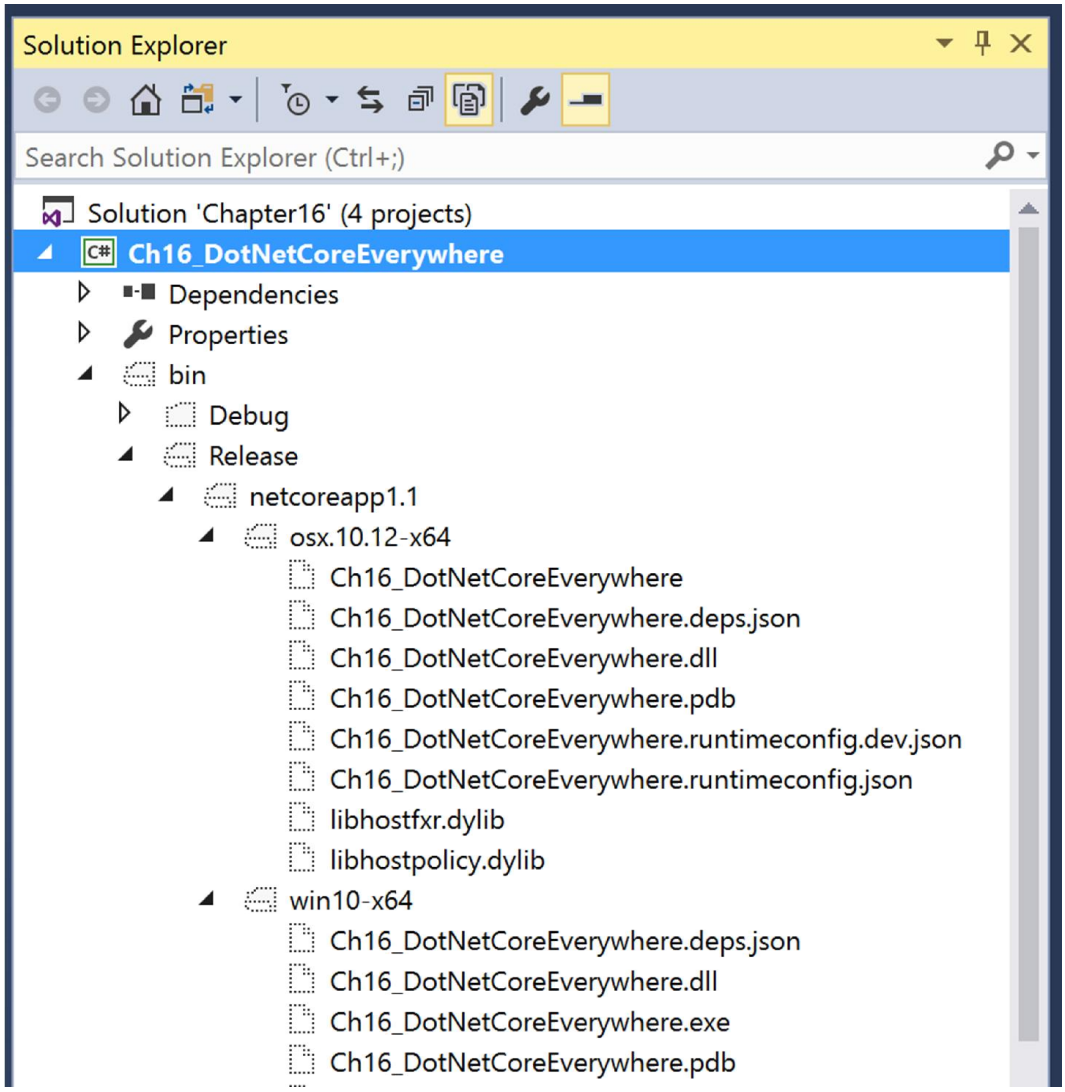
Libuv (>= 1.9.1)
Microsoft.CodeAnalysis.CSharp (>= 1.3.0)
Microsoft.CodeAnalysis.VisualBasic (>= 1.3.0)
Microsoft.CSharp (>= 4.3.0)
Microsoft.DiaSymReader.Native (>= 1.4.1)
Microsoft.NETCore.DotNetHostPolicy (>= 1.1.0)
Microsoft.NETCore.Runtime.CoreCLR (>= 1.1.1)
Microsoft.VisualBasic (>= 10.1.0)
NETStandard.Library (>= 1.6.1)
System.Buffers (>= 4.3.0)
System.Collections.Immutable (>= 1.3.0)

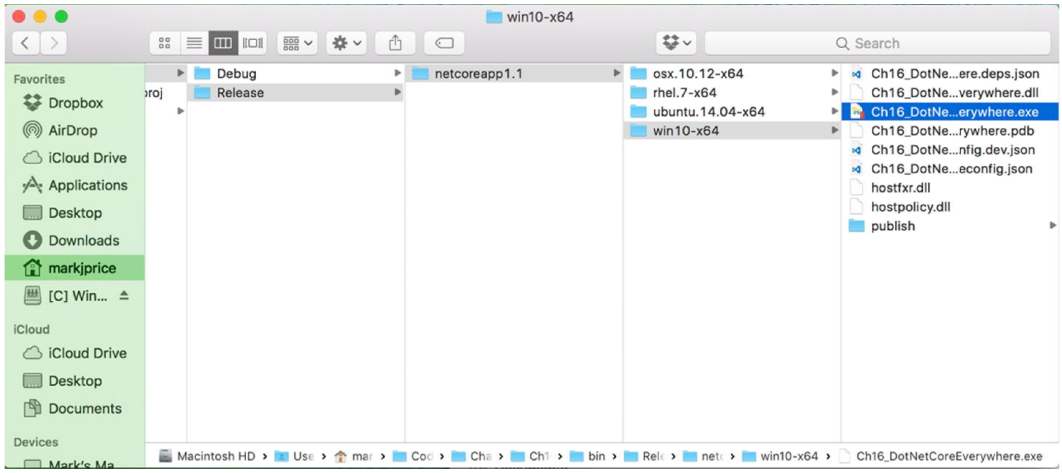



Ch16_DotNetCoreEverywhere
Connected Services
Publish
Publish
Publish your app to Azure or another host. Learn more
Folder
Choose a folder
bin\Release\PublishOutput
Browse...
Publish


Ch16_DotNetCoreEverywhere
Connected Services
Publish
Publish
Publish your app to Azure or another host. Learn more
FolderProfile
Publish
Create new profile
Summary
Target Location
bin\Release\PublishOutput
Settings
Configuration
Release
Delete profile
Target Framework
netcoreapp1.1
Target Runtime
win10-x64


Profile Settings
Profile Name:
FolderProfile
Configuration:
Release
Target Framework:
netcoreapp1.1
Target Runtime:
osx.10.12-x64
Target Location:
bin\Release\PublishOutput
...
Save
Cancel


Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Chapter16' (4 projects)
Ch16_DotNetCoreEverywhere
Dependencies
Properties
bin
Debug
Release
netcoreapp1.1
osx.10.12-x64
Ch16_DotNetCoreEverywhere
Ch16_DotNetCoreEverywhere.deps.json
Ch16_DotNetCoreEverywhere.dll
Ch16_DotNetCoreEverywhere.pdb
Ch16_DotNetCoreEverywhere.runtimeconfig.dev.json
Ch16_DotNetCoreEverywhere.runtimeconfig.json
libhostfxr.dylib
libhostpolicy.dylib
win10-x64
Ch16_DotNetCoreEverywhere.deps.json
Ch16_DotNetCoreEverywhere.dll
Ch16_DotNetCoreEverywhere.exe
Ch16_DotNetCoreEverywhere.pdb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Documents
Devices
Debug
Release
netcoreapp1.1
osx.10.12-x64
rhel.7-x64
ubuntu.14.04-x64
win10-x64
Ch16_DotNe...ere.deps.json
Ch16_DotNe...verywhere.dll
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Ch16_DotNe...nfig.dev.json
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hostfxr.dll
hostpolicy.dll
publish
Macintosh HD
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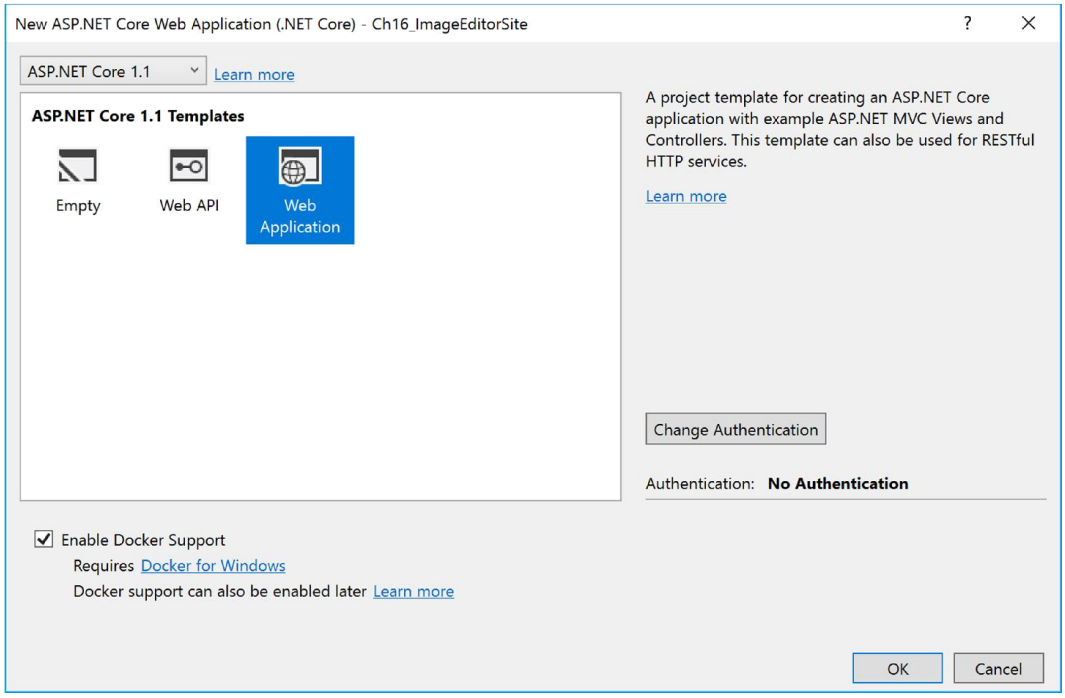
Ch16_DotNetCoreEverywhere.exe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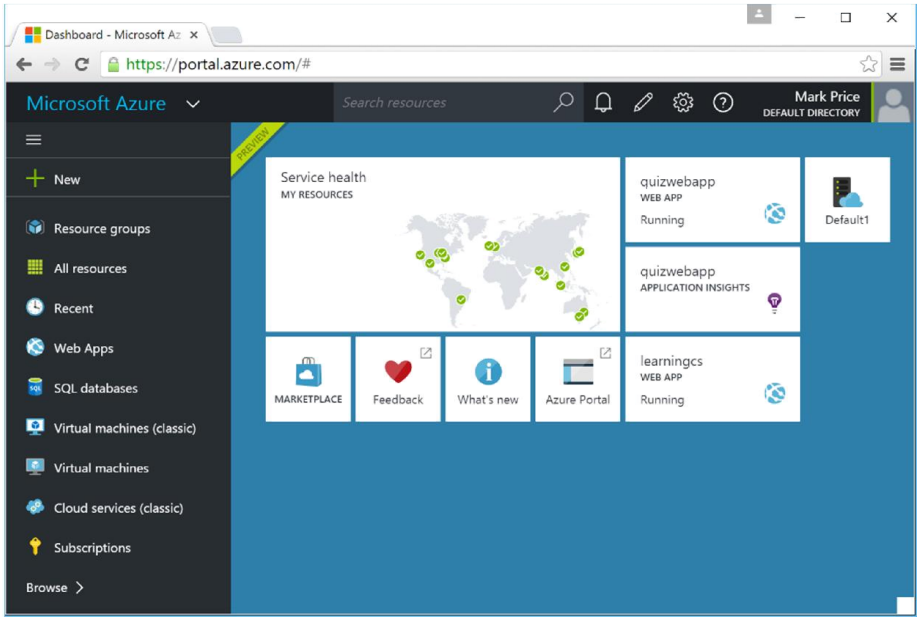
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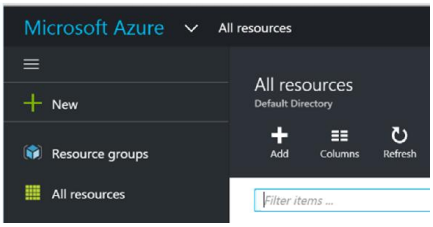
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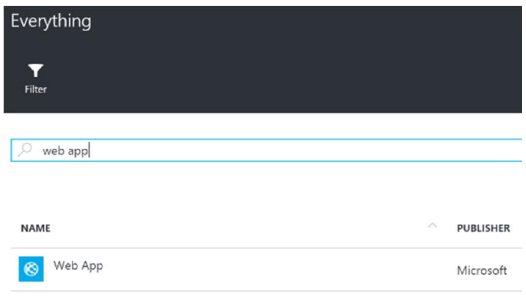
Everything
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web app
NAME
PUBLISHER
Web App
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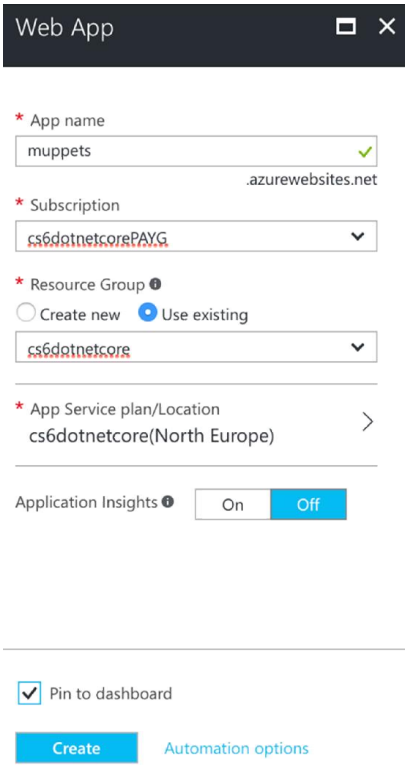
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* Subscription
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* Resource Group
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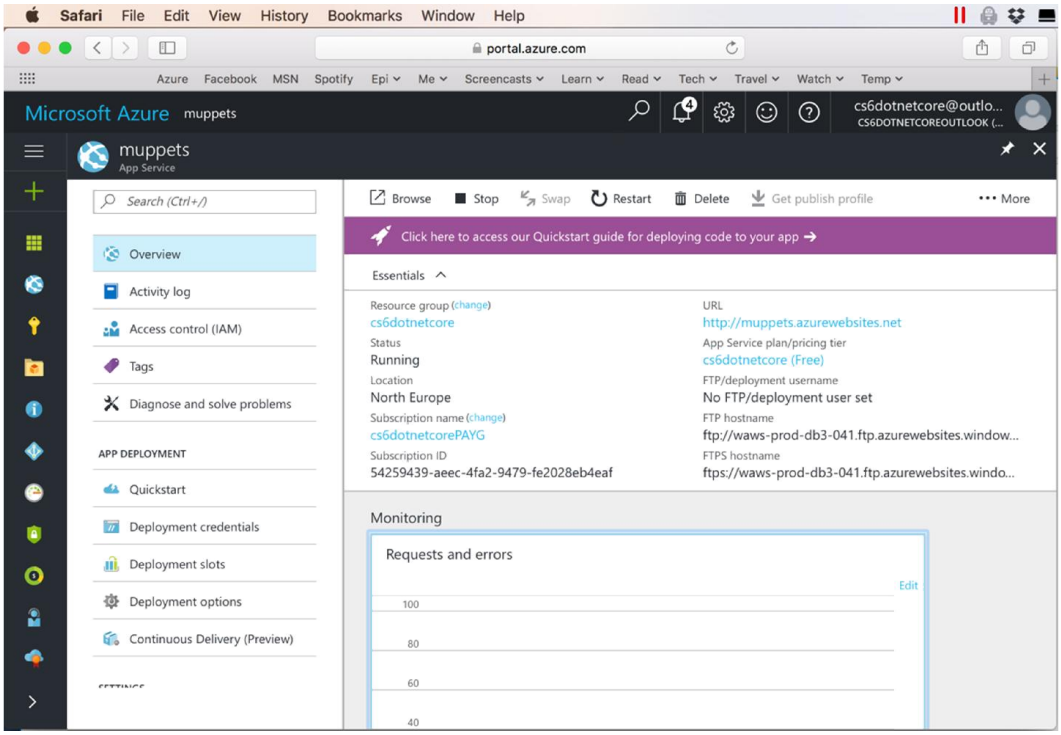
Use existing
cs6dotnetcore
* App Service plan/Location
cs6dotnetcore(North Europe)
Application Insights
On
Off
Pin to dashboard
Create
Automation options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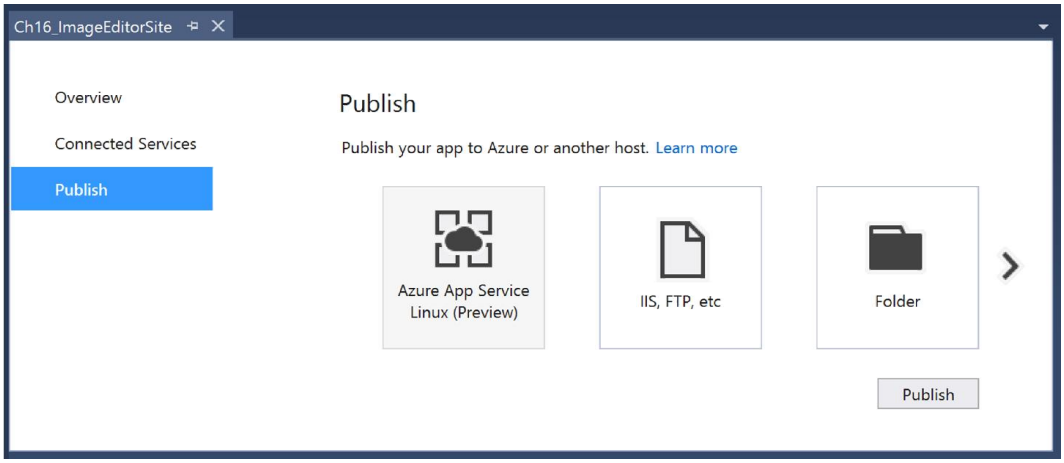
Subscription ID
54259439-aeec-4fa2-9479-fe2028eb4eaf
URL
http://muppets.azurewebsites.net
App Service plan/pricing tier
cs6dotnetcore (Free)
FTP/deployment username
No FTP/deployment user set
FTP hostname
ftp://waws-prod-db3-041.ftp.azurewebsites.window...
FTPS hostname
ftps://waws-prod-db3-041.ftp.azurewebsites.windo...
Monitoring
Requests and errors
Edit
100
80
60
40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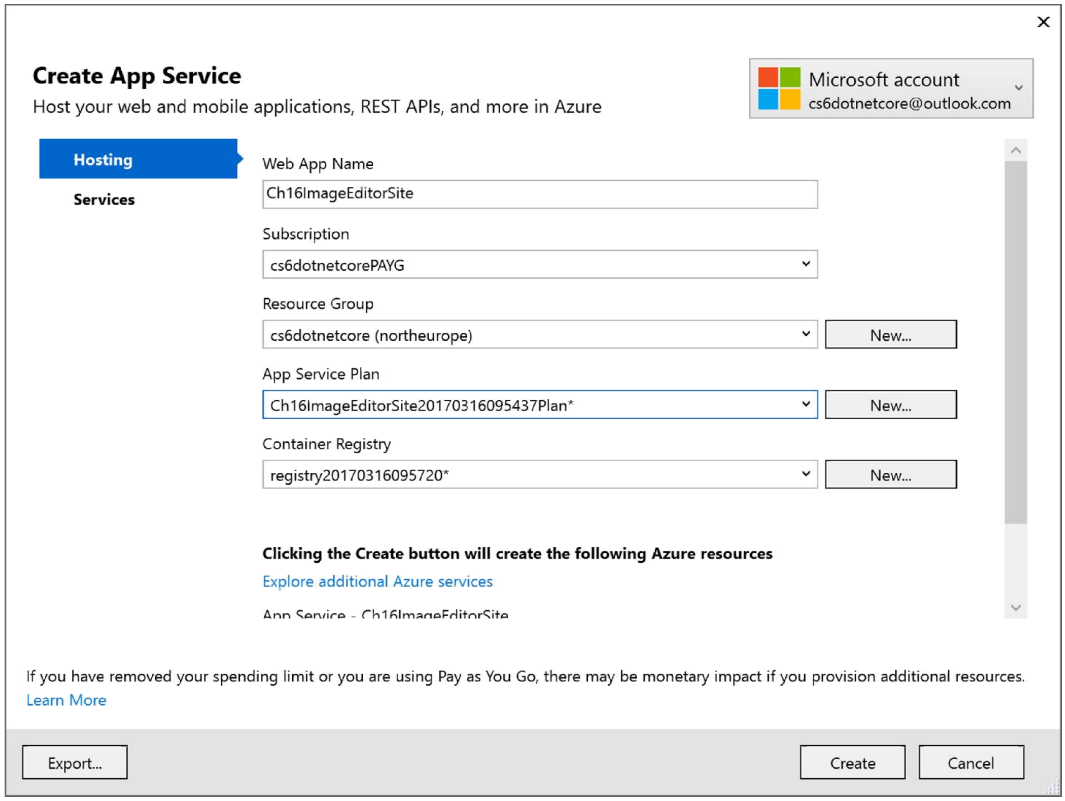
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