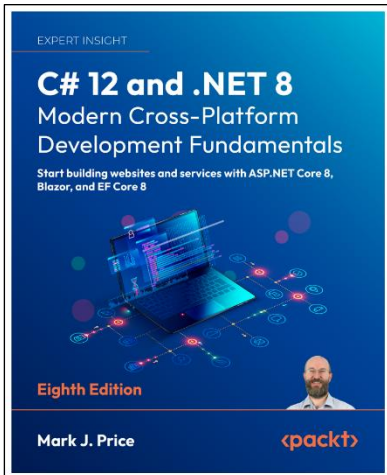
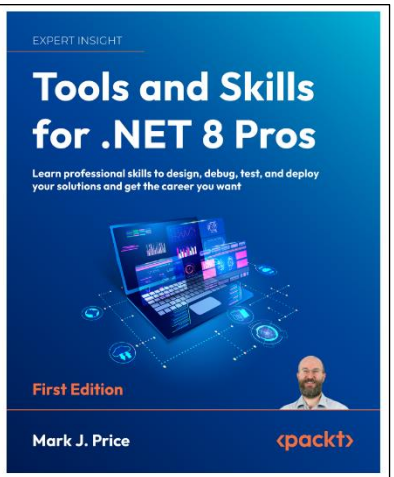
Chapter 1: Introducing Apps and Services with .NET



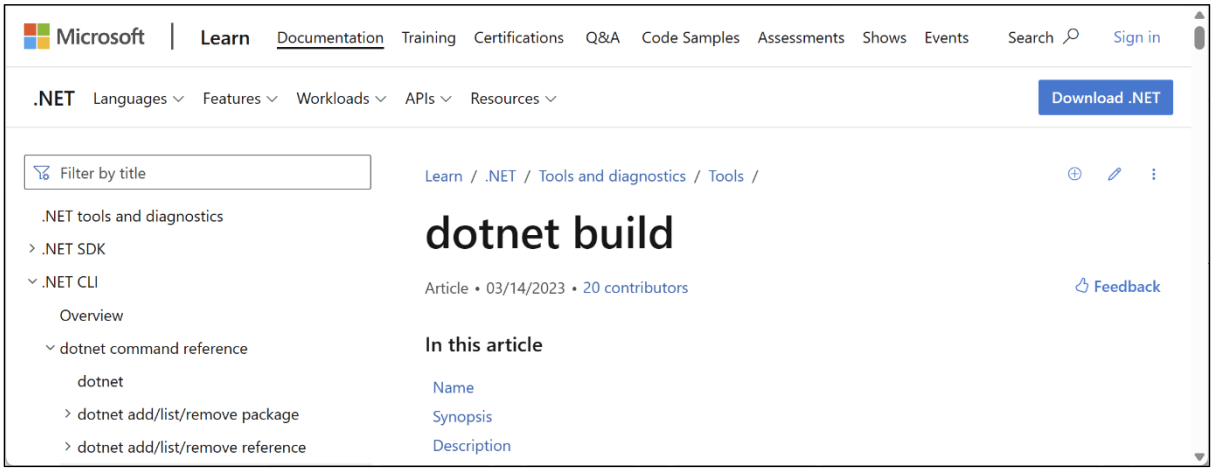
- **C# language**, including new C# 12 features, object-oriented programming, debugging, and unit testing.
- **.NET libraries**, including numbers, text, regular expressions, collections, file I/O, and data with EF Core and SQLite.
- **Websites and web services** with ASP.NET Core and Blazor.

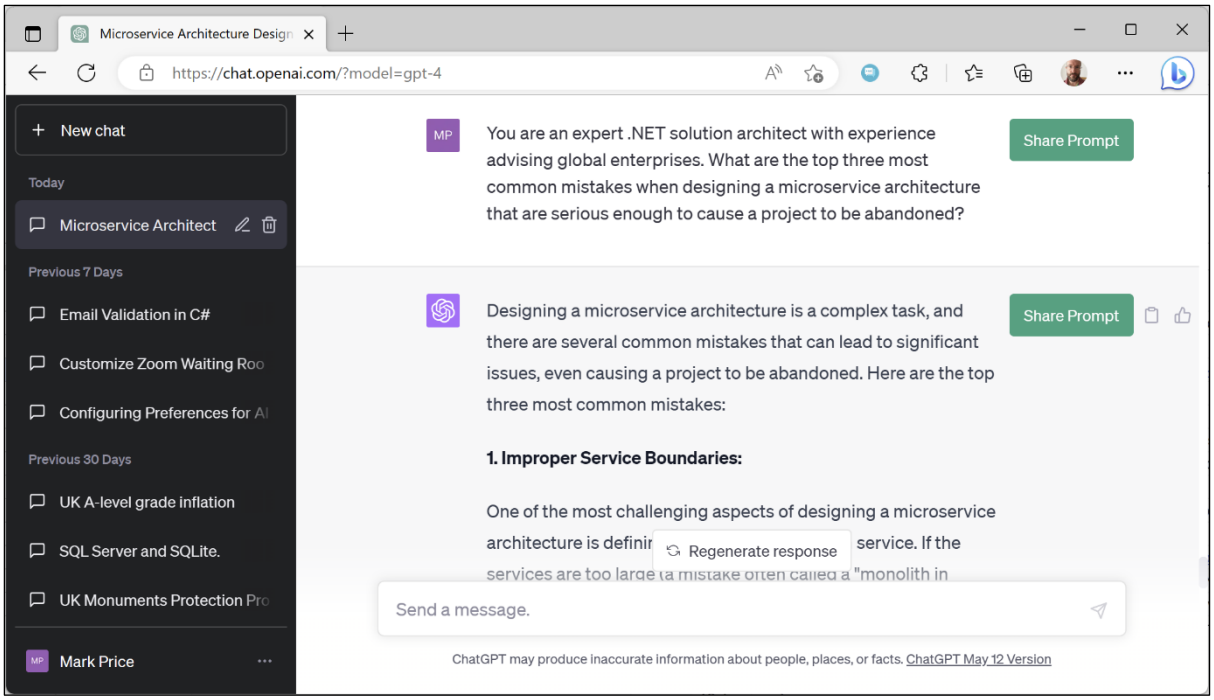


- **More libraries**: Internationalization, multitasking, and third-party packages.
- **More data**: SQL Server and Cosmos DB.
- **More services**: Caching, Queuing, Minimal API, GraphQL, gRPC, SignalR, and Azure Functions.
- **More user interfaces**: ASP.NET Core MVC, Blazor, and .NET MAUI.

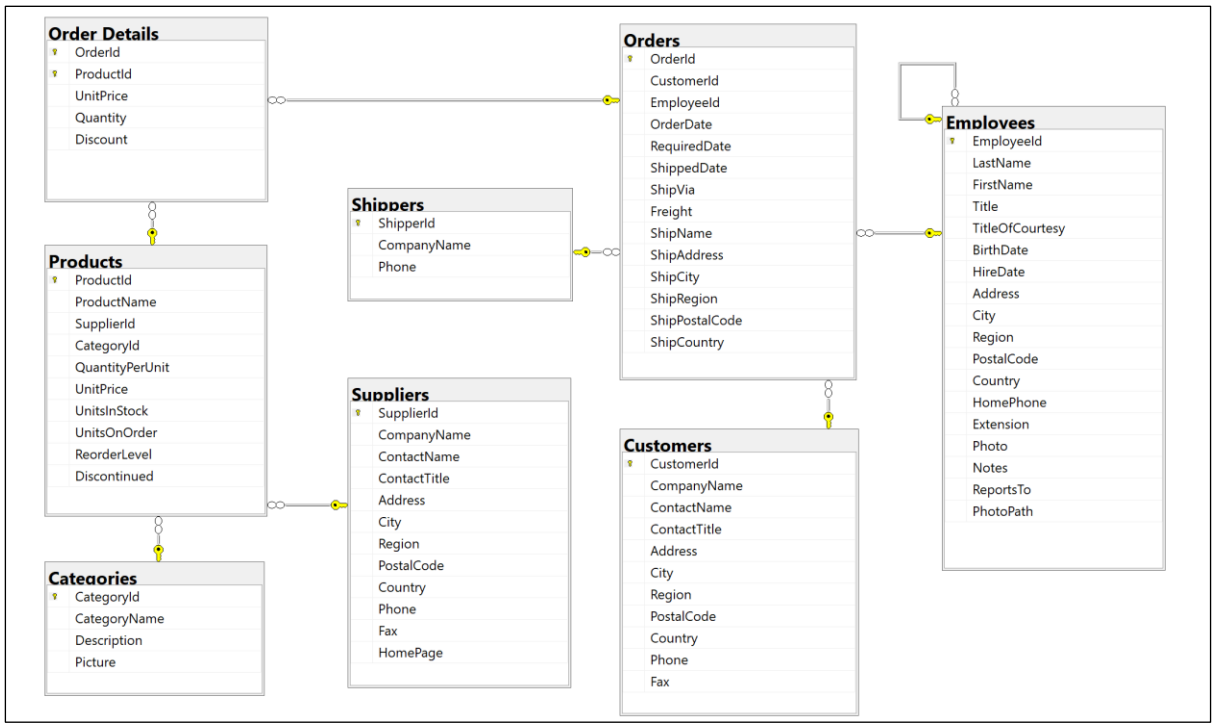


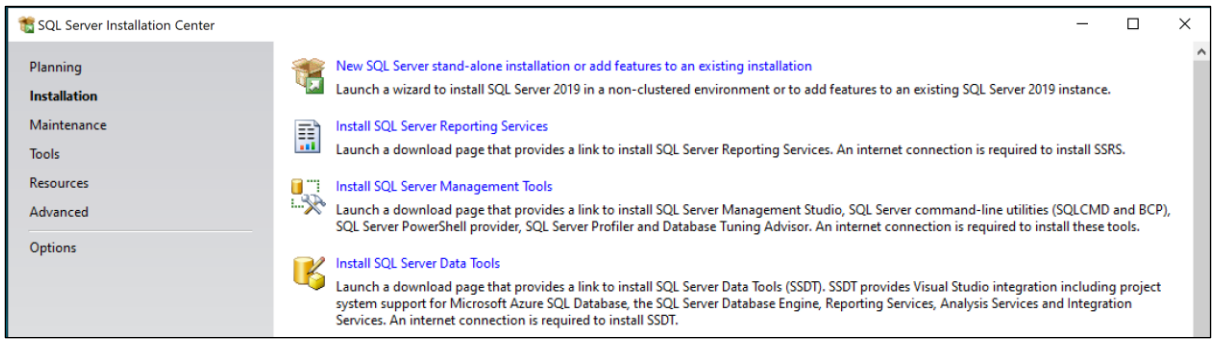
- **Tools**: IDEs, debugging, memory analysis, and AI assistants.
- **Testing**: Unit, integration, performance, system, and web, including DI and IoC.
- **Design**: Patterns and architecture.
- **Deploy**: CI/CD, Azure hosting and deployment pipelines and automation.
- **Career**: Interview preparation.

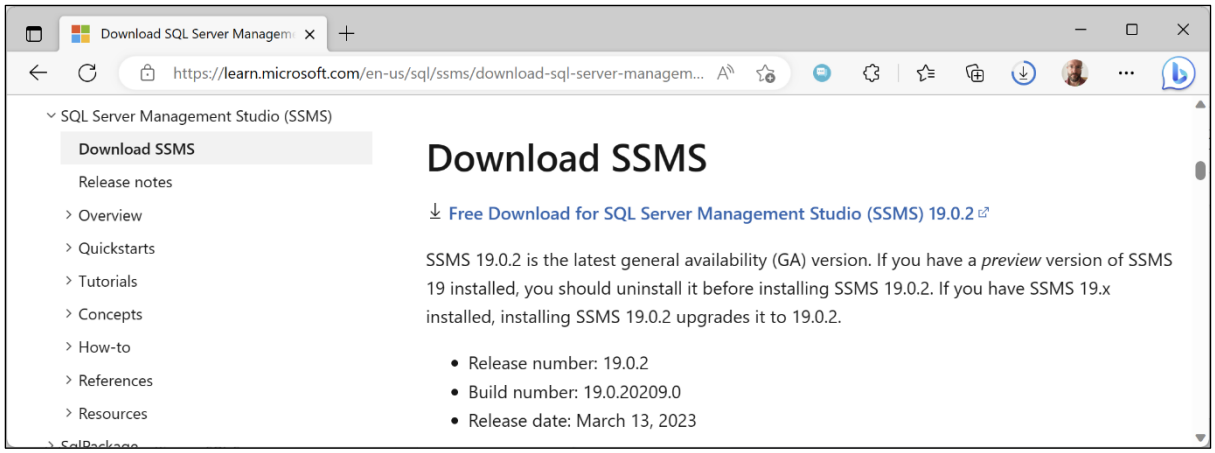


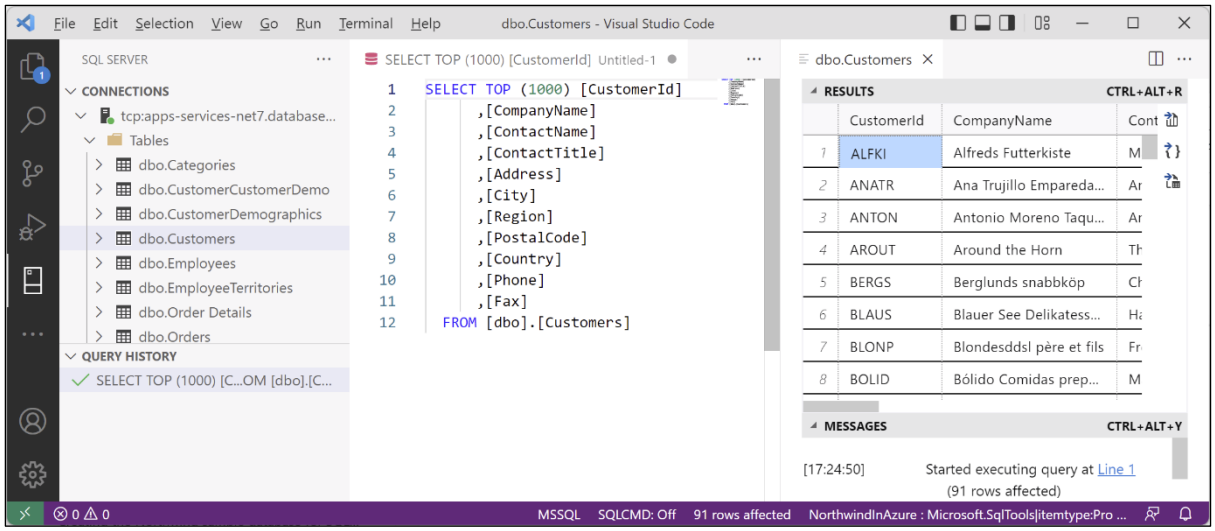

Microservice Architecture Design
https://chat.openai.com/?model=gpt-4
New chat
Today
Microservice Architect
Previous 7 Days
Email Validation in C#
Customize Zoom Waiting Roo
Configuring Preferences for AI
Previous 30 Days
UK A-level grade inflation
SQL Server and SQLite.
UK Monuments Protection Pro
Mark Price
MP
You are an expert .NET solution architect with experience advising global enterprises. What are the top three most common mistakes when designing a microservice architecture that are serious enough to cause a project to be abandoned?
Share Prompt
Designing a microservice architecture is a complex task, and there are several common mistakes that can lead to significant issues, even causing a project to be abandoned. Here are the top three most common mistakes:
1. Improper Service Boundaries:
One of the most challenging aspects of designing a microservice architecture is definir
Regenerate response
service. If the
services are too large (a mistake often called a "monolith in
Send a message.
ChatGPT may produce inaccurate information about people, places, or facts. ChatGPT May 12 Version

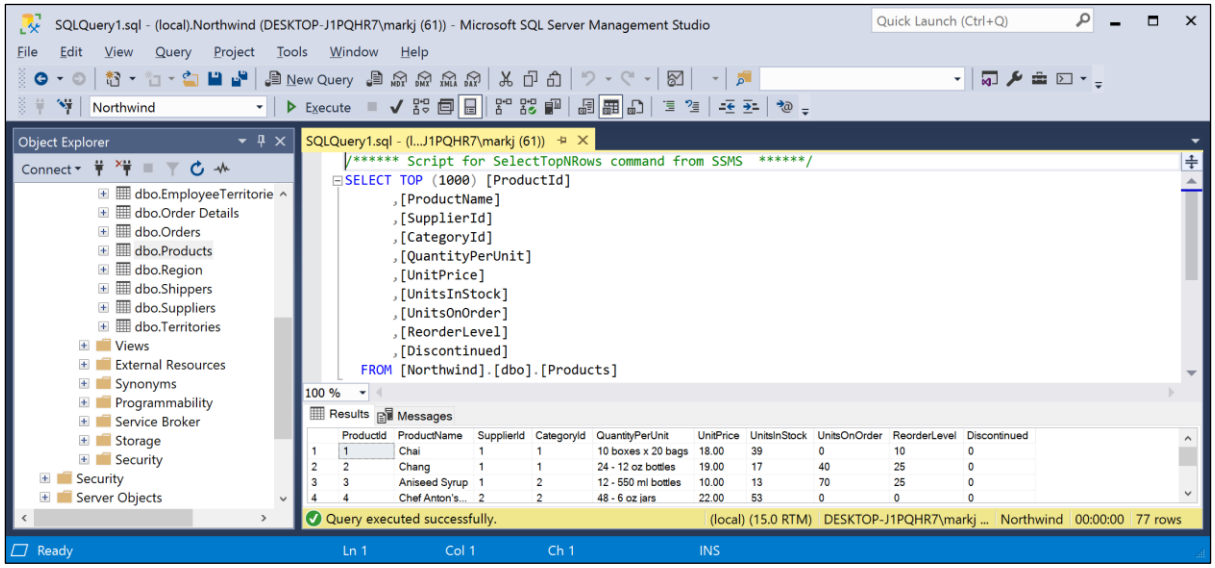
Chapter 2: Managing Relational Data Using SQL Server

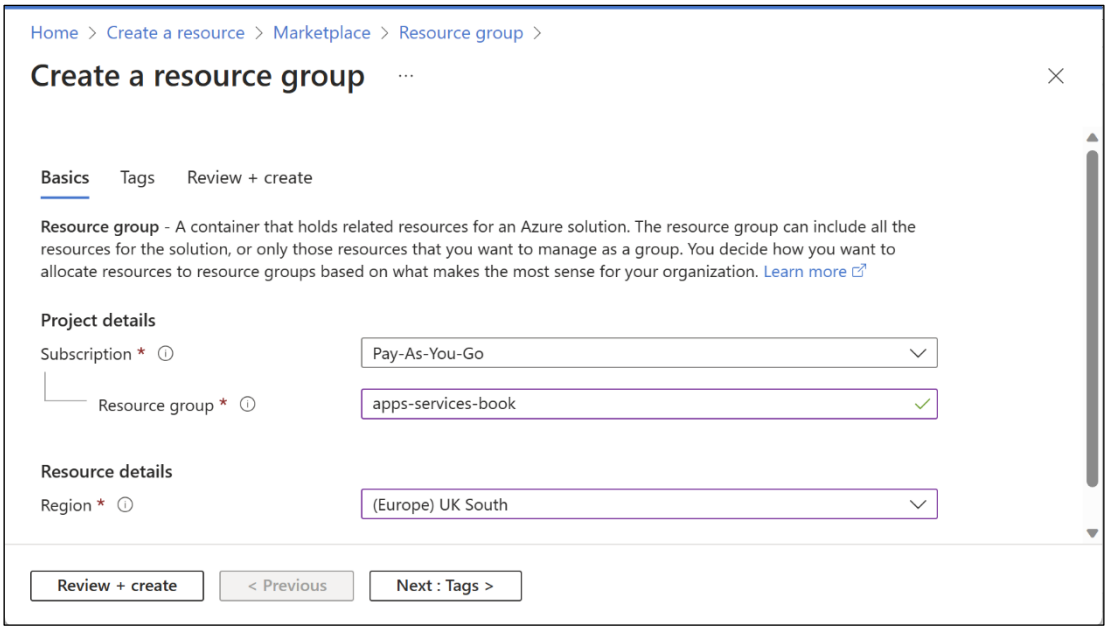


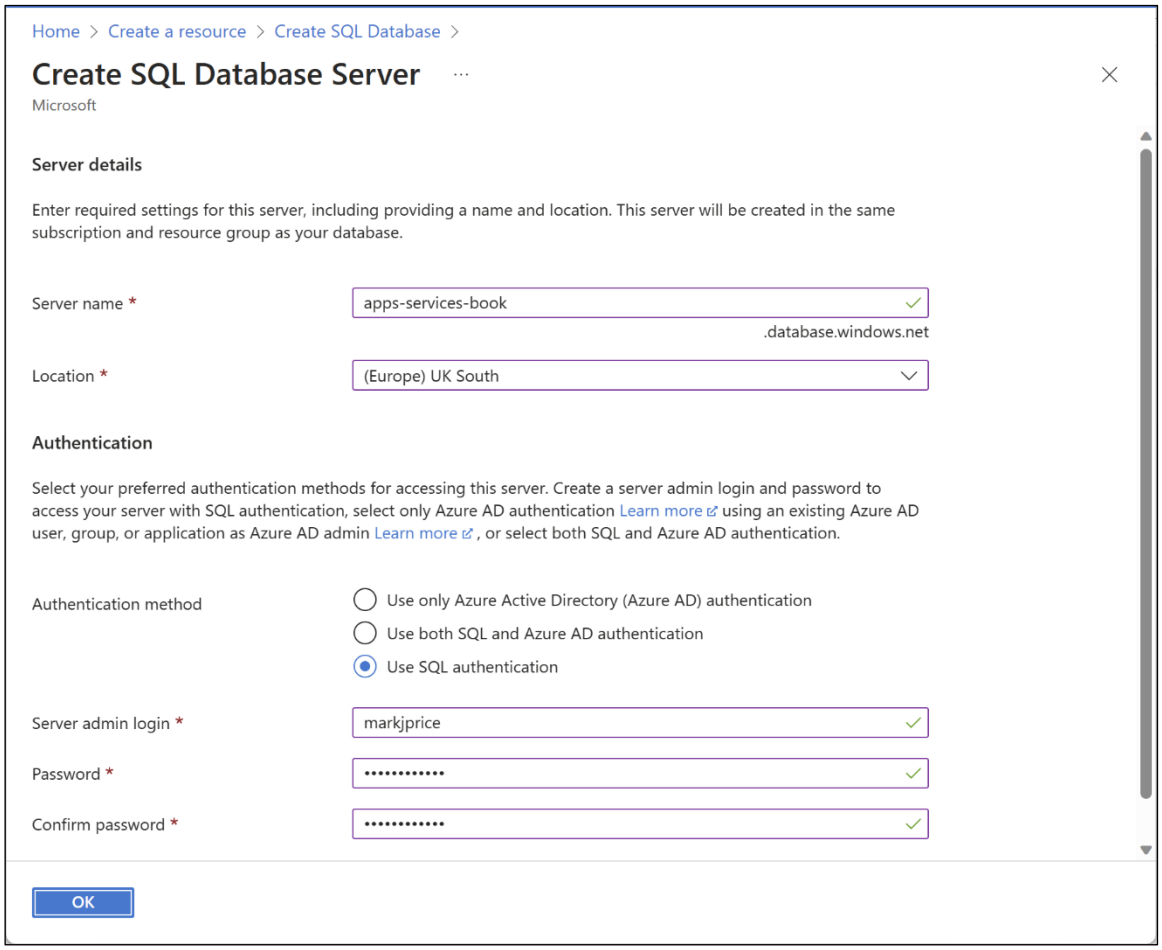


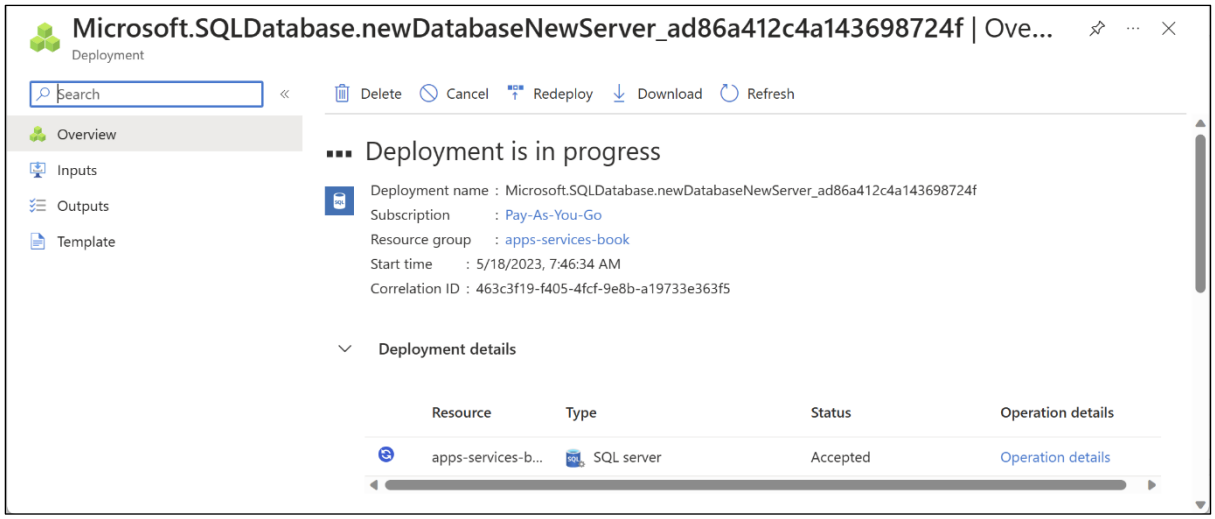


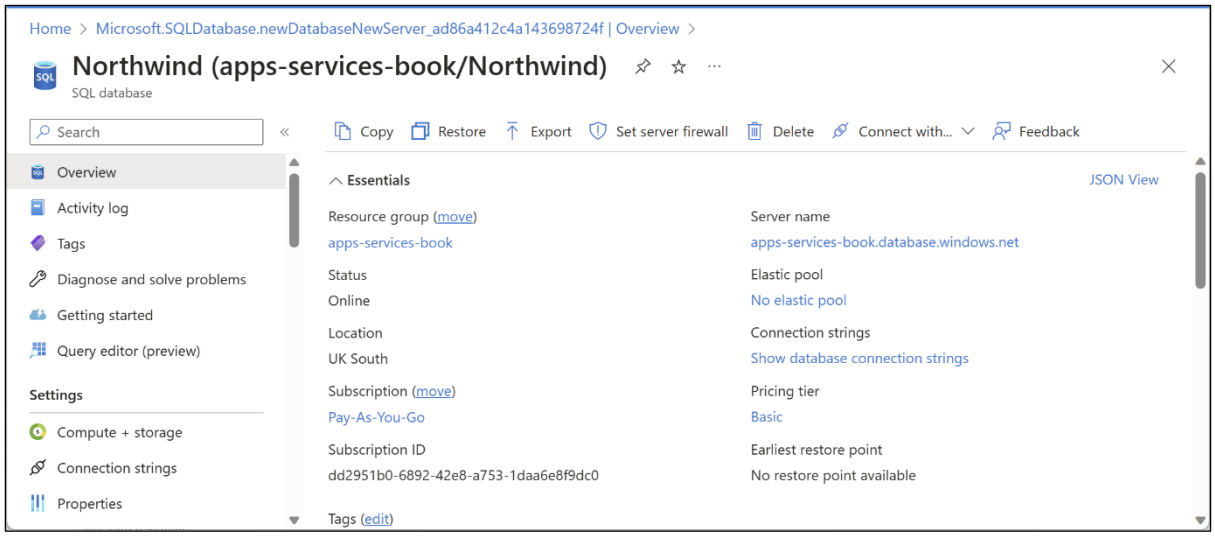

File Edit Selection View Go Run Terminal Help
dbo.Customers - Visual Studio Code
SQL SERVER
CONNECTIONS
tcp:apps-services-net7.database...
Tables
dbo.Categories
dbo.CustomerCustomerDemo
dbo.CustomerDemographics
dbo.Customers
dbo.Employees
dbo.EmployeeTerritories
dbo.Order Details
dbo.Orders
QUERY HISTORY
SELECT TOP (1000) [C...OM [dbo].[C...
SELECT TOP (1000) [CustomerId] Untitled-1
1 SELECT TOP (1000) [CustomerId]
2 ,[CompanyName]
3 ,[ContactName]
4 ,[ContactTitle]
5 ,[Address]
6 ,[City]
7 ,[Region]
8 ,[PostalCode]
9 ,[Country]
10 ,[Phone]
11 ,[Fax]
12 FROM [dbo].[Customers]
dbo.Customers
RESULTS CTRL+ALT+R
CustomerId CompanyName Cont
1 ALFKI Alfreds Futterkiste M
2 ANATR Ana Trujillo Empareda... Ar
3 ANTON Antonio Moreno Taqu... Ar
4 AROUT Around the Horn Th
5 BERGS Berglunds snabbköp Ch
6 BLAUS Blauer See Delikatess... Ha
7 BLONP Blondesddsl père et fils Fr
8 BOLID Bólido Comidas prep... M
MESSAGES CTRL+ALT+Y
[17:24:50] Started executing query at Line 1
(91 rows affected)
0 0
MSSQL SQLCMD: Off 91 rows affected NorthwindInAzure : Microsoft.SqlTools|itemtype:Pro ...

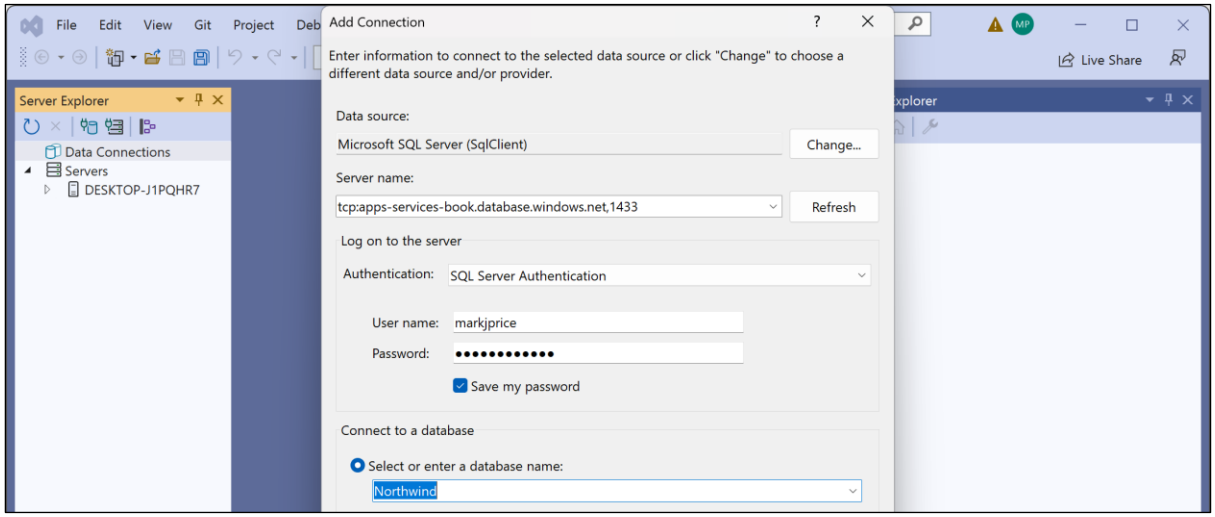

SQLQuery1.sql - (local).Northwind (DESKTOP-J1PQHR7\markj (61)) - Microsoft SQL Server Management Studio
Quick Launch (Ctrl+Q)
File Edit View Query Project Tools Window Help
New Query
Northwind
Execute
Object Explorer
Connect
dbo.EmployeeTerritorie
dbo.Order Details
dbo.Orders
dbo.Products
dbo.Region
dbo.Shippers
dbo.Suppliers
dbo.Territories
Views
External Resources
Synonyms
Programmability
Service Broker
Storage
Security
Security
Server Objects
SQLQuery1.sql - (l...J1PQHR7\markj (61))
/****** Script for SelectTopNRows command from SSMS ******/
SELECT TOP (1000) [ProductId]
,[ProductName]
,[SupplierId]
,[CategoryId]
,[QuantityPerUnit]
,[UnitPrice]
,[UnitsInStock]
,[UnitsOnOrder]
,[ReorderLevel]
,[Discontinued]
FROM [Northwind].[dbo].[Products]
100 %
Results Messages
ProductId ProductName SupplierId CategoryId QuantityPerUnit UnitPrice UnitsInStock UnitsOnOrder ReorderLevel Discontinued
1 1 Chai 1 1 10 boxes x 20 bags 18.00 39 0 10 0
2 2 Chang 1 1 24 - 12 oz bottles 19.00 17 40 25 0
3 3 Aniseed Syrup 1 2 12 - 550 ml bottles 10.00 13 70 25 0
4 4 Chef Anton's... 2 2 48 - 6 oz jars 22.00 53 0 0 0
Query executed successfully.
(local) (15.0 RTM) DESKTOP-J1PQHR7\markj ... Northwind 00:00:00 77 rows
Ready Ln 1 Col 1 Ch 1 INS

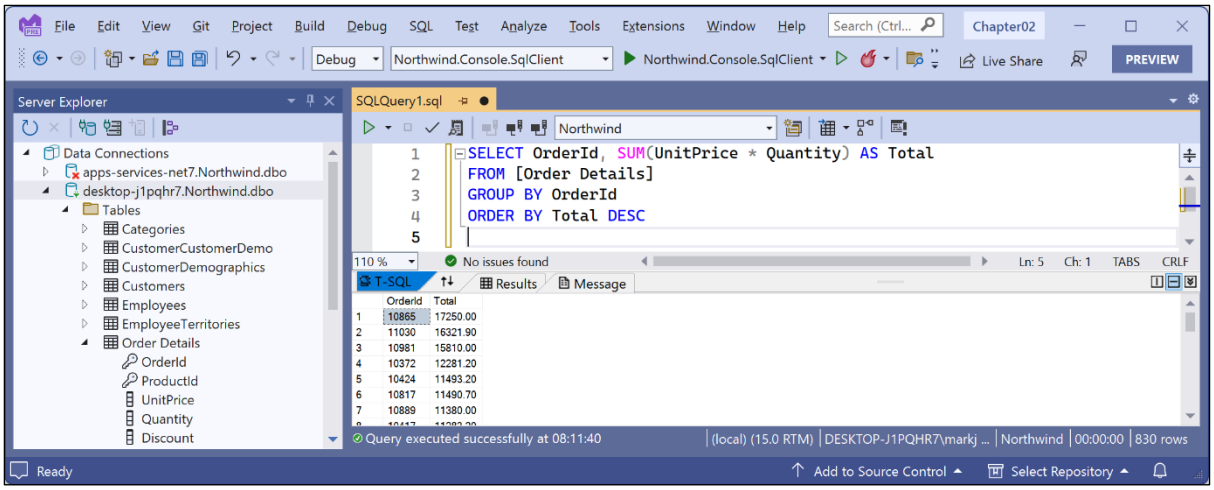

Home > Create a resource > Marketplace > Resource group >
Create a resource group
Basics
Tags
Review + create
Resource group - A container that holds related resources for an Azure solution. The resource group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource groups based on what makes the most sense for your organization. Learn more
Project details
Subscription *
Pay-As-You-Go
Resource group *
apps-services-book
Resource details
Region *
(Europe) UK South
Review + create
< Previous
Next : Tags >

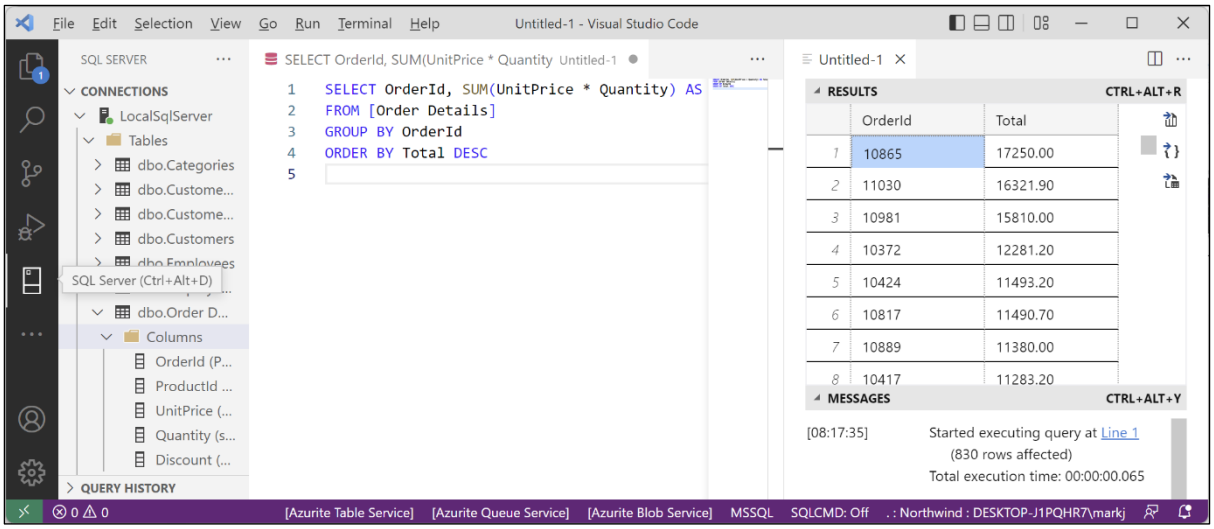

Home > Create a resource > Create SQL Database >
Create SQL Database Server
Microsoft
Server details
Enter required settings for this server, including providing a name and location. This server will be created in the same subscription and resource group as your database.
Server name *
apps-services-book
.database.windows.net
Location *
(Europe) UK South
Authentication
Select your preferred authentication methods for accessing this server. Create a server admin login and password to access your server with SQL authentication, select only Azure AD authentication Learn more using an existing Azure AD user, group, or application as Azure AD admin Learn more, or select both SQL and Azure AD authentication.
Authentication method
Use only Azure Active Directory (Azure AD) authentication
Use both SQL and Azure AD authentication
Use SQL authentication
Server admin login *
markjprice
Password *
Confirm password *
OK

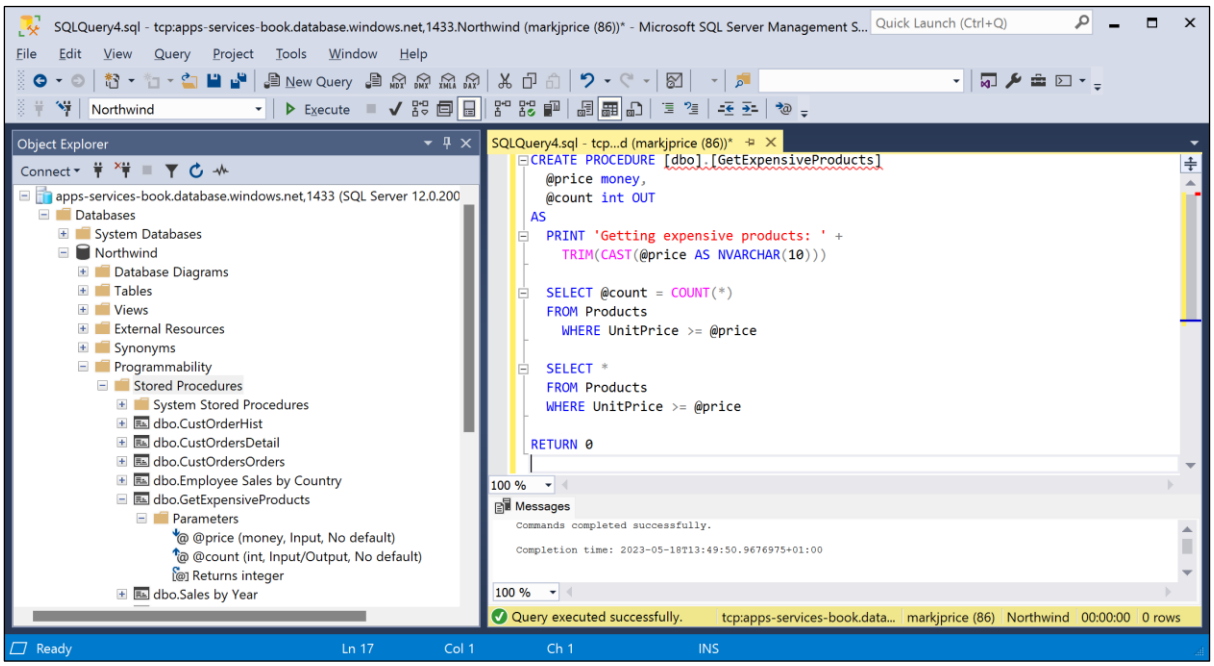

Microsoft.SQLDatabase.newDatabaseNewServer_ad86a412c4a143698724f | Ove...
Deployment
Search
Overview
Inputs
Outputs
Template
Delete
Cancel
Redeploy
Download
Refresh
Deployment is in progress
Deployment name : Microsoft.SQLDatabase.newDatabaseNewServer_ad86a412c4a143698724f
Subscription : Pay-As-You-Go
Resource group : apps-services-book
Start time : 5/18/2023, 7:46:34 AM
Correlation ID : 463c3f19-f405-4fcf-9e8b-a19733e363f5
Deployment details
Resource
Type
Status
Operation details
apps-services-b...
SQL server
Accepted
Operation details

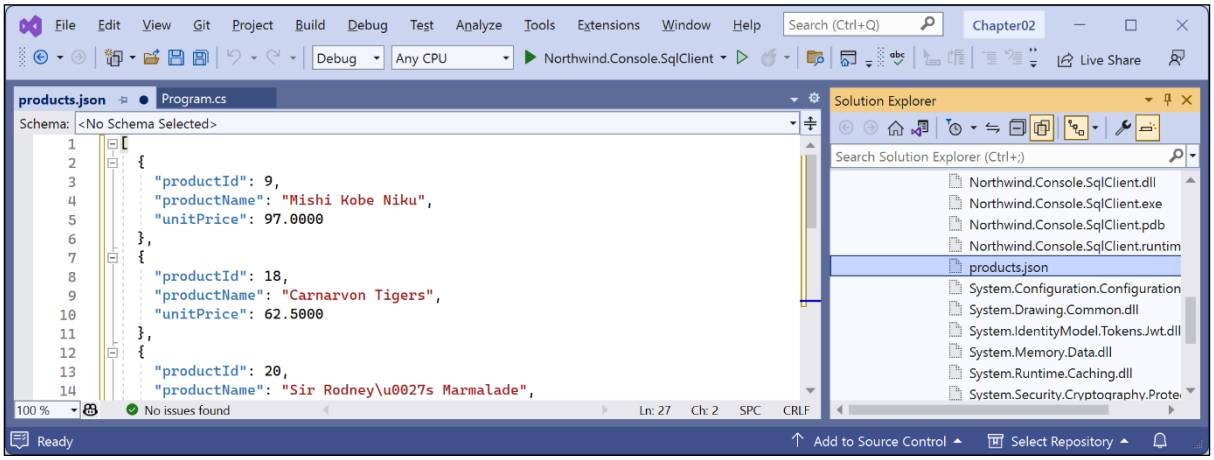

Home > Microsoft.SQLDatabase.newDatabaseNewServer_ad86a412c4a143698724f | Overview >
Northwind (apps-services-book/Northwind)
SQL database
Search
Overview
Activity log
Tags
Diagnose and solve problems
Getting started
Query editor (preview)
Settings
Compute + storage
Connection strings
Properties
Copy
Restore
Export
Set server firewall
Delete
Connect with...
Feedback
Essentials
JSON View
Resource group (move)
apps-services-book
Status
Online
Location
UK South
Subscription (move)
Pay-As-You-Go
Subscription ID
dd2951b0-6892-42e8-a753-1daa6e8f9dc0
Server name
apps-services-book.database.windows.net
Elastic pool
No elastic pool
Connection strings
Show database connection strings
Pricing tier
Basic
Earliest restore point
No restore point available
Tags (edit)


File
Edit
View
Git
Project
Live Share
Server Explorer
Data Connections
Servers
DESKTOP-J1PQHR7
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:
tcp:apps-services-book.database.windows.net,1433
Refresh
Log on to the server
Authentication:
SQL Server Authentication
User name:
markjprice
Password:
Save my password
Connect to a database
Select or enter a database name:
Northwind

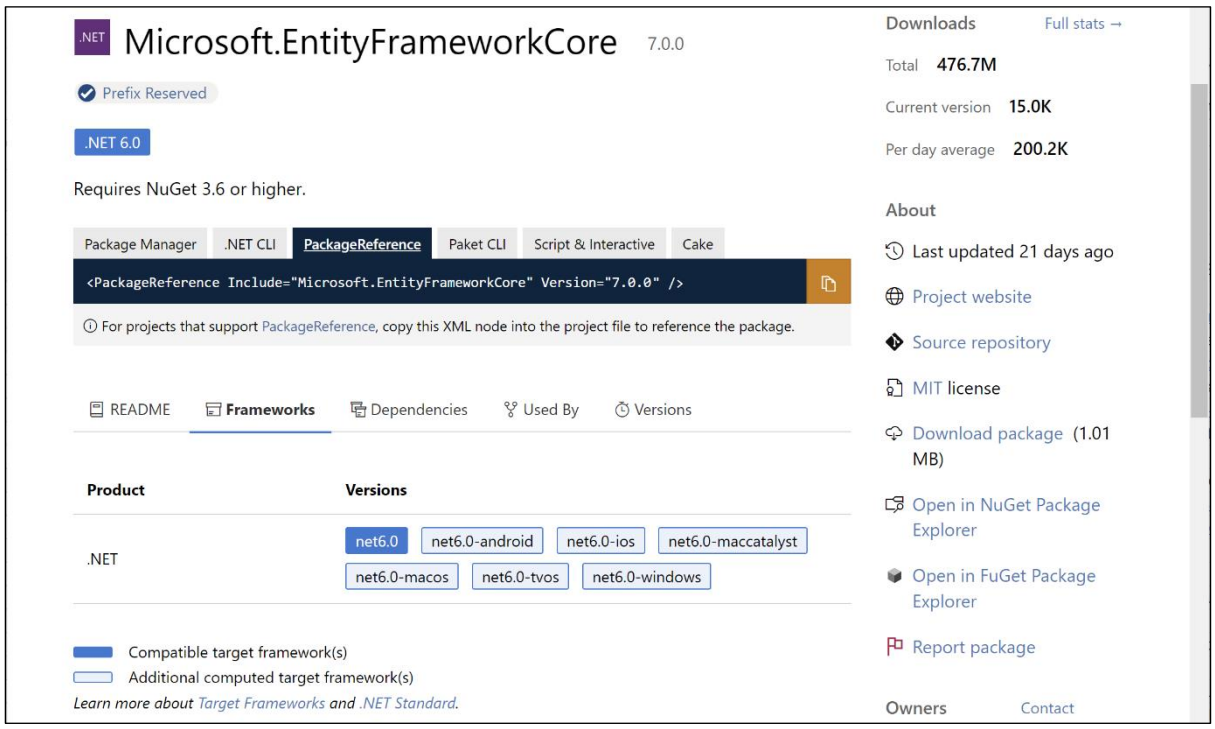

File Edit View Git Project Build Debug SQL Test Analyze Tools Extensions Window Help
Chapter02
Debug
Northwind.Console.SqlClient
Live Share
PREVIEW
Server Explorer
Data Connections
apps-services-net7.Northwind.dbo
desktop-j1pqhr7.Northwind.dbo
Tables
Categories
CustomerCustomerDemo
CustomerDemographics
Customers
Employees
EmployeeTerritories
Order Details
OrderId
ProductId
UnitPrice
Quantity
Discount
SQLQuery1.sql
Northwind
SELECT OrderId, SUM(UnitPrice * Quantity) AS Total
FROM [Order Details]
GROUP BY OrderId
ORDER BY Total DESC
No issues found
T-SQL
Results
Message
OrderId Total
1 10865 17250.00
2 11030 16321.90
3 10981 15810.00
4 10372 12281.20
5 10424 11493.20
6 10817 11490.70
7 10889 11380.00
Query executed successfully at 08:11:40
(local) (15.0 RTM)
DESKTOP-J1PQHR7\markj ...
Northwind
00:00:00
830 rows
Ready
Add to Source Control
Select Repository

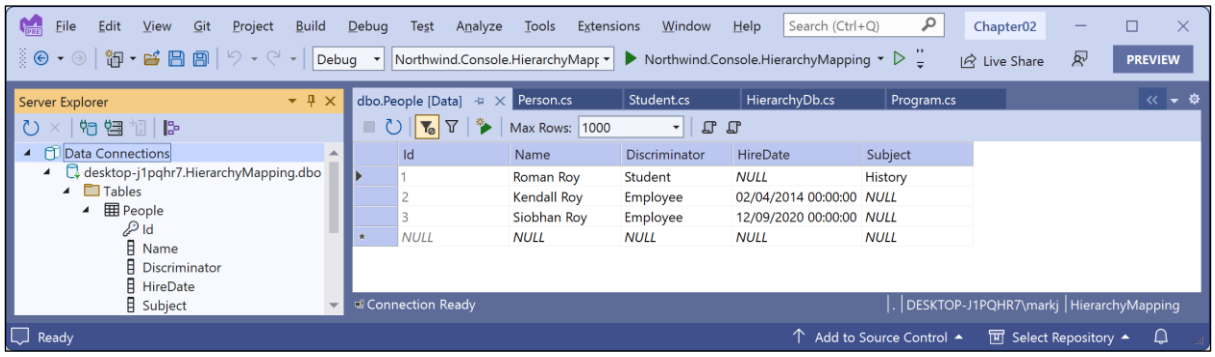

File Edit Selection View Go Run Terminal Help
Untitled-1 - Visual Studio Code
SQL SERVER
CONNECTIONS
LocalSqlServer
Tables
dbo.Categories
dbo.Custome...
dbo.Custome...
dbo.Customers
SQL Server (Ctrl+Alt+D)
dbo.Order D...
Columns
OrderId (P...
ProductId ...
UnitPrice (...
Quantity (s...
Discount (...
QUERY HISTORY
SELECT OrderId, SUM(UnitPrice * Quantity) Untitled-1
SELECT OrderId, SUM(UnitPrice * Quantity) AS
FROM [Order Details]
GROUP BY OrderId
ORDER BY Total DESC
Untitled-1
RESULTS
CTRL+ALT+R
OrderId Total
1 10865 17250.00
2 11030 16321.90
3 10981 15810.00
4 10372 12281.20
5 10424 11493.20
6 10817 11490.70
7 10889 11380.00
8 10417 11283.20
MESSAGES
CTRL+ALT+Y
[08:17:35] Started executing query at Line 1
(830 rows affected)
Total execution time: 00:00:00.065
[Azurite Table Service] [Azurite Queue Service] [Azurite Blob Service] MSSQL SQLCMD: Off .: Northwind : DESKTOP-J1PQHR7\markj

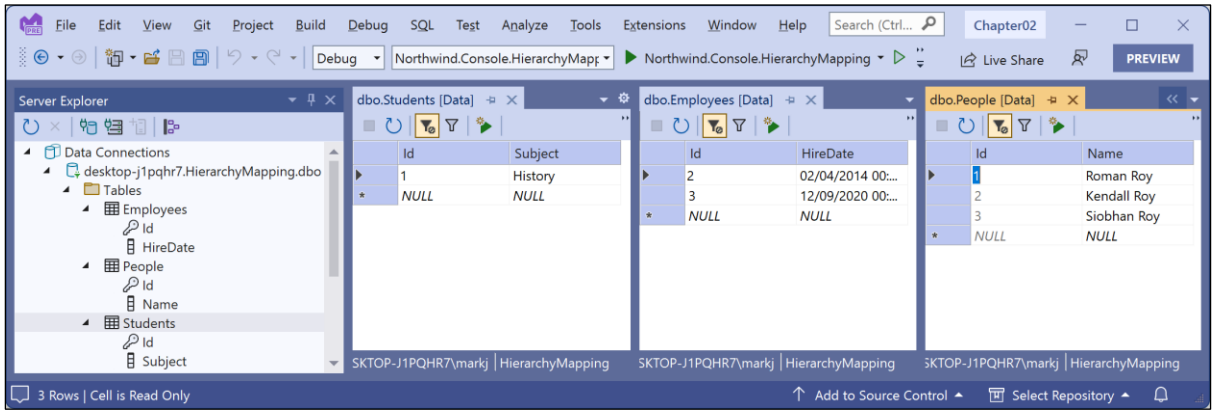

SQLQuery4.sql - tcp:apps-services-book.database.windows.net,1433.Northwind (markjprice (86))* - Microsoft SQL Server Management S...
Quick Launch (Ctrl+Q)
File Edit View Query Project Tools Window Help
New Query
Northwind
Execute
Object Explorer
Connect
apps-services-book.database.windows.net,1433 (SQL Server 12.0.200
Databases
System Databases
Northwind
Database Diagrams
Tables
Views
External Resources
Synonyms
Programmability
Stored Procedures
System Stored Procedures
dbo.CustOrderHist
dbo.CustOrdersDetail
dbo.CustOrdersOrders
dbo.Employee Sales by Country
dbo.GetExpensiveProducts
Parameters
@price (money, Input, No default)
@count (int, Input/Output, No default)
Returns integer
dbo.Sales by Year
SQLQuery4.sql - tcp...d (markjprice (86))*
CREATE PROCEDURE [dbo].[GetExpensiveProducts]
@price money,
@count int OUT
AS
PRINT 'Getting expensive products: ' +
TRIM(CAST(@price AS NVARCHAR(10)))
SELECT @count = COUNT(*)
FROM Products
WHERE UnitPrice >= @price
SELECT *
FROM Products
WHERE UnitPrice >= @price
RETURN 0
Messages
Commands completed successfully.
Completion time: 2023-05-18T13:49:50.9676975+01:00
Query executed successfully.
tcp:apps-services-book.data...
markjprice (86)
Northwind
00:00:00
0 rows
Ready
Ln 17
Col 1
Ch 1
INS

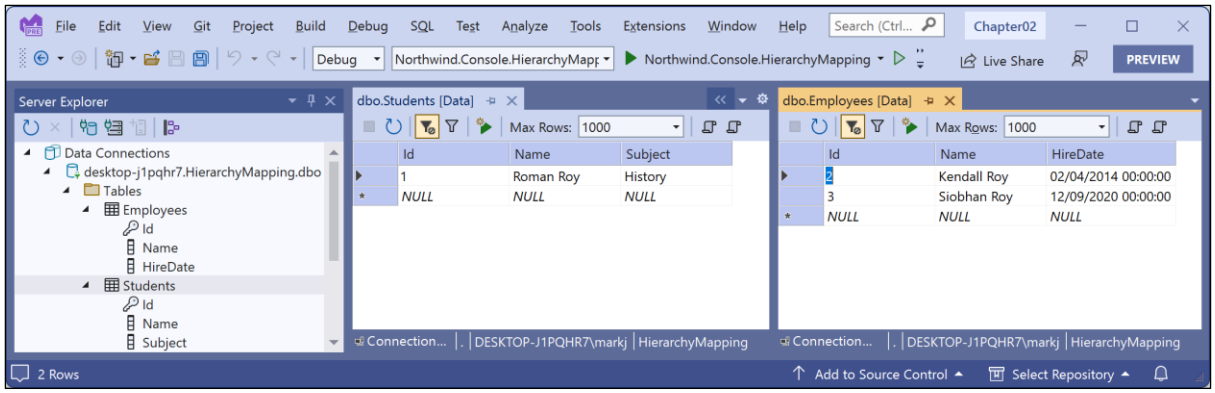

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
Search (Ctrl+Q)
Chapter02
Debug
Any CPU
Northwind.Console.SqlClient
Live Share
products.json
Program.cs
Schema: <No Schema Selected>
{
"productId": 9,
"productName": "Mishi Kobe Niku",
"unitPrice": 97.0000
},
{
"productId": 18,
"productName": "Carnarvon Tigers",
"unitPrice": 62.5000
},
{
"productId": 20,
"productName": "Sir Rodney\u0027s Marmalade",
100 %
No issues found
Ln: 27 Ch: 2 SPC CRLF
Solution Explorer
Search Solution Explorer (Ctrl+;)
Northwind.Console.SqlClient.dll
Northwind.Console.SqlClient.exe
Northwind.Console.SqlClient.pdb
Northwind.Console.SqlClient.runtim
products.json
System.Configuration.Configuration
System.Drawing.Common.dll
System.IdentityModel.Tokens.Jwt.dll
System.Memory.Data.dll
System.Runtime.Caching.dll
System.Security.Cryptography.Prote
Ready
Add to Source Control
Select Repository

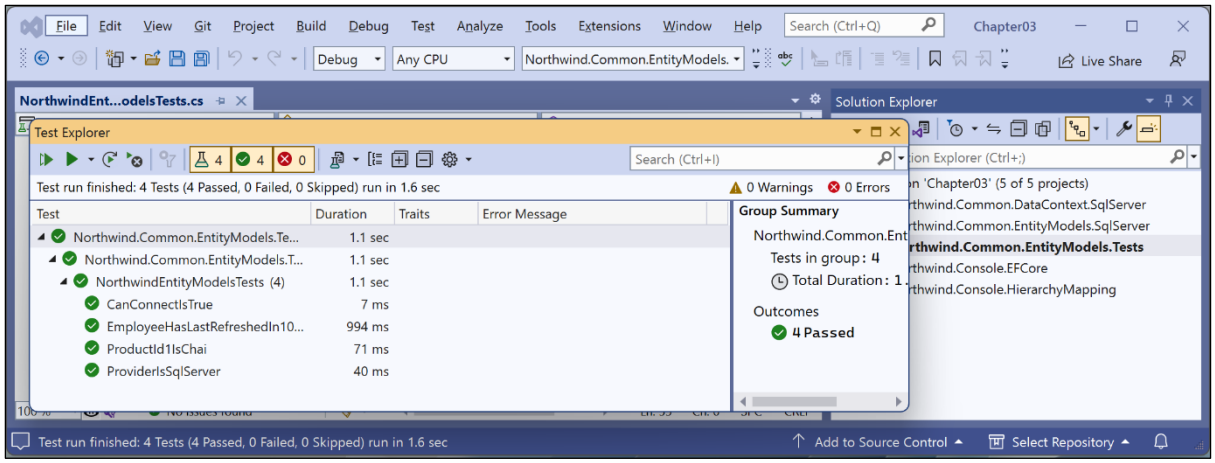
Chapter 3: Building Entity Models for SQL Server Using EF Core



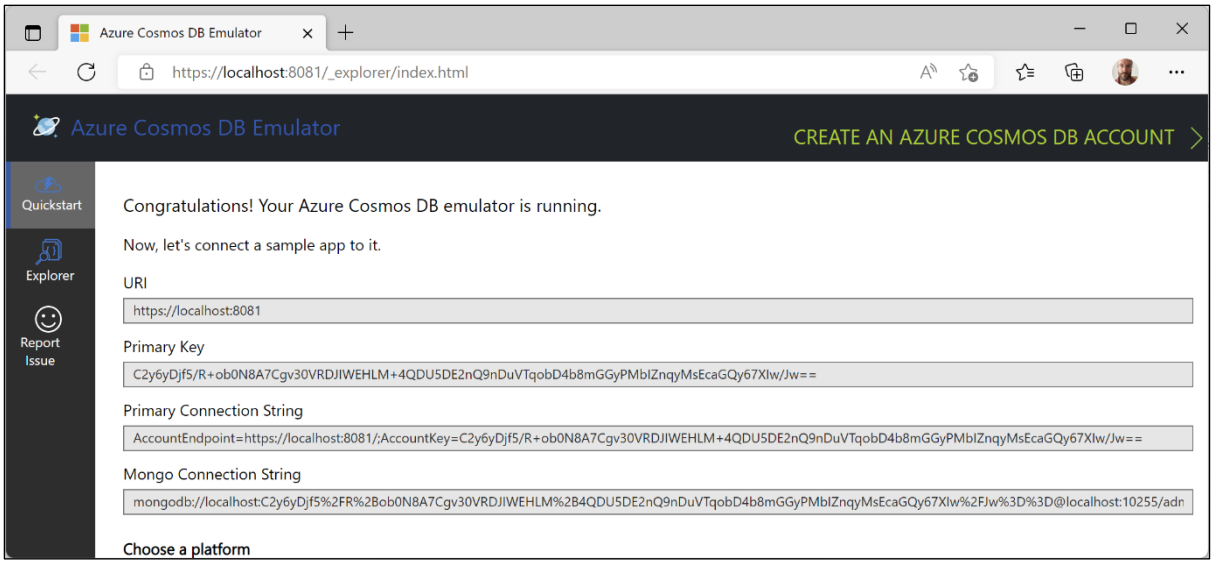


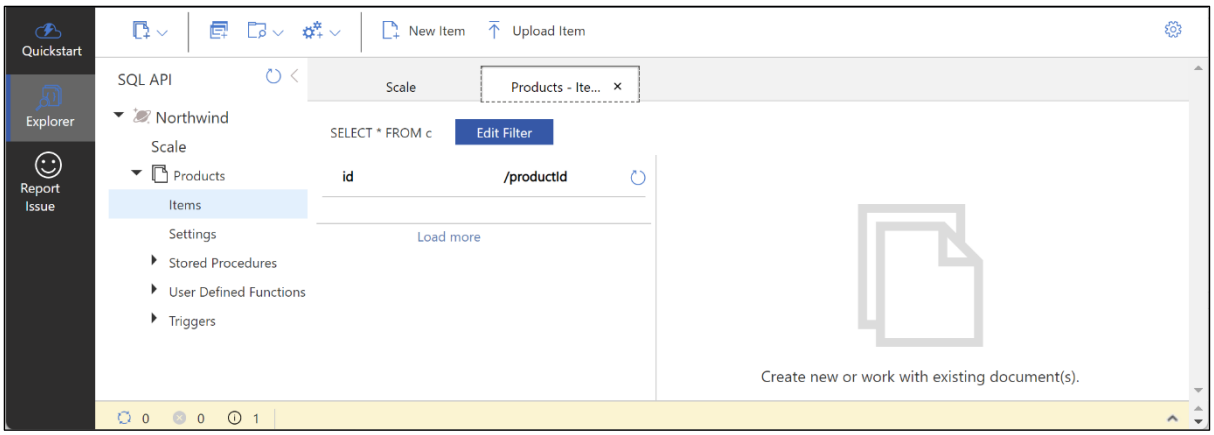


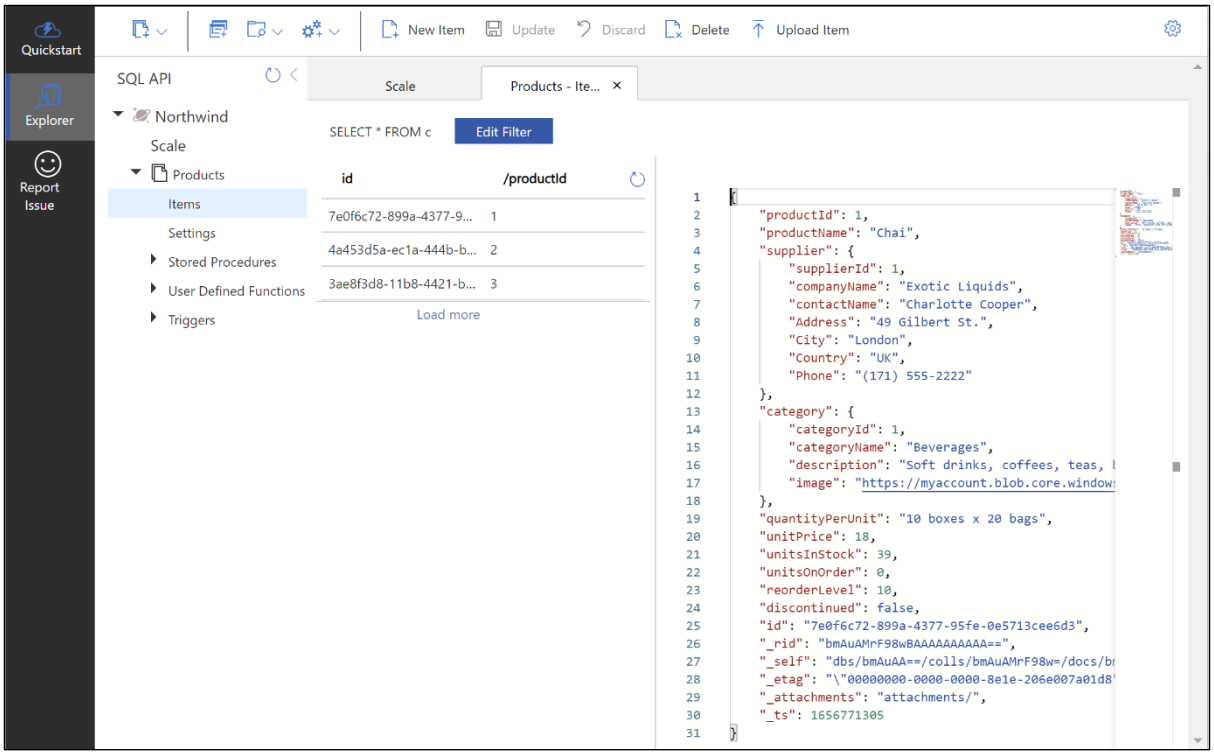

File Edit View Git Project Build Debug SQL Test Analyze Tools Extensions Window Help
Search (Ctrl...
Chapter02
Debug
Northwind.Console.HierarchyMapp
Northwind.Console.HierarchyMapping
Live Share
PREVIEW
Server Explorer
Data Connections
desktop-j1pqhr7.HierarchyMapping.dbo
Tables
Employees
Id
Name
HireDate
Students
Id
Name
Subject
dbo.Students [Data]
Max Rows: 1000
Id Name Subject
1 Roman Roy History
NULL NULL NULL
dbo.Employees [Data]
Max Rows: 1000
Id Name HireDate
2 Kendall Roy 02/04/2014 00:00:00
3 Siobhan Roy 12/09/2020 00:00:00
NULL NULL NULL
Connection... | DESKTOP-J1PQHR7\markj | HierarchyMapping
Connection... | DESKTOP-J1PQHR7\markj | HierarchyMapping
2 Rows
Add to Source Control
Select Repository

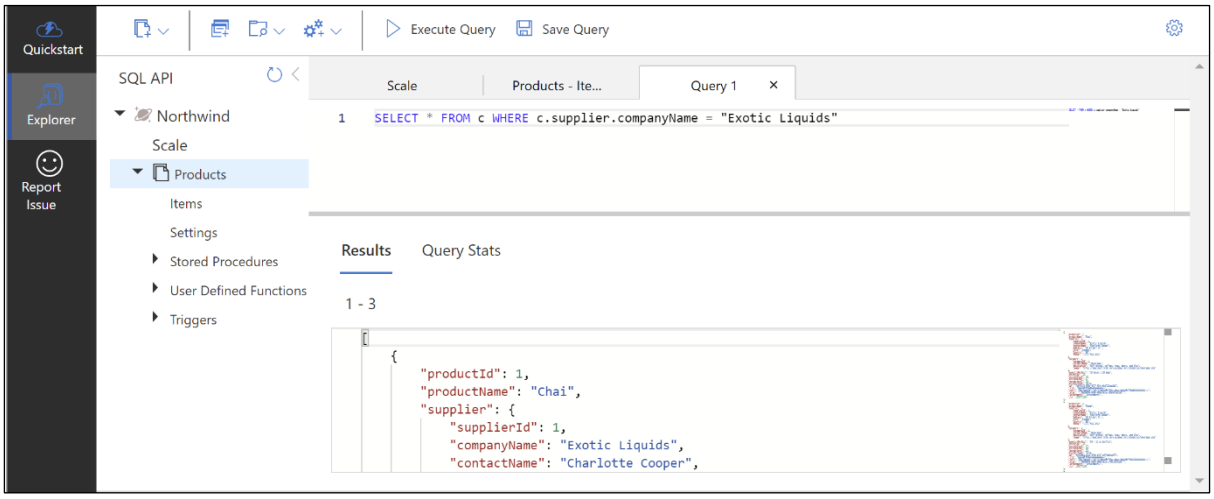

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
Search (Ctrl+Q)
Chapter03
Debug
Any CPU
Northwind.Common.EntityModels.
Live Share
NorthwindEnt...odelsTests.cs
Test Explorer
4 4 0
Search (Ctrl+I)
Test run finished: 4 Tests (4 Passed, 0 Failed, 0 Skipped) run in 1.6 sec
0 Warnings 0 Errors
Test Duration Traits Error Message
Northwind.Common.EntityModels.Te... 1.1 sec
Northwind.Common.EntityModels.T... 1.1 sec
NorthwindEntityModelsTests (4) 1.1 sec
CanConnectIsTrue 7 ms
EmployeeHasLastRefreshedIn10... 994 ms
ProductId1IsChai 71 ms
ProviderIsSqlServer 40 ms
Group Summary
Northwind.Common.Ent
Tests in group: 4
Total Duration: 1.
Outcomes
4 Passed
Solution Explorer
Solution Explorer (Ctrl+;)
n 'Chapter03' (5 of 5 projects)
thwind.Common.DataContext.SqlServer
thwind.Common.EntityModels.SqlServer
thwind.Common.EntityModels.Tests
thwind.Console.EFCore
thwind.Console.HierarchyMapping
Test run finished: 4 Tests (4 Passed, 0 Failed, 0 Skipped) run in 1.6 sec
Add to Source Control
Select Repository

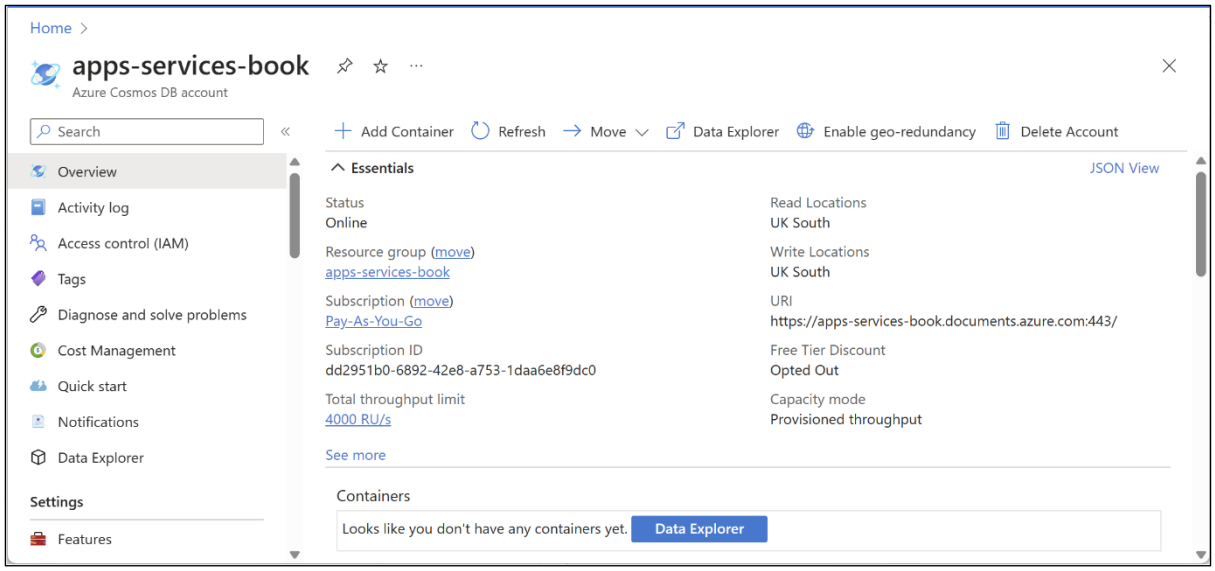
Chapter 4: Managing NoSQL Data Using Azure Cosmos DB

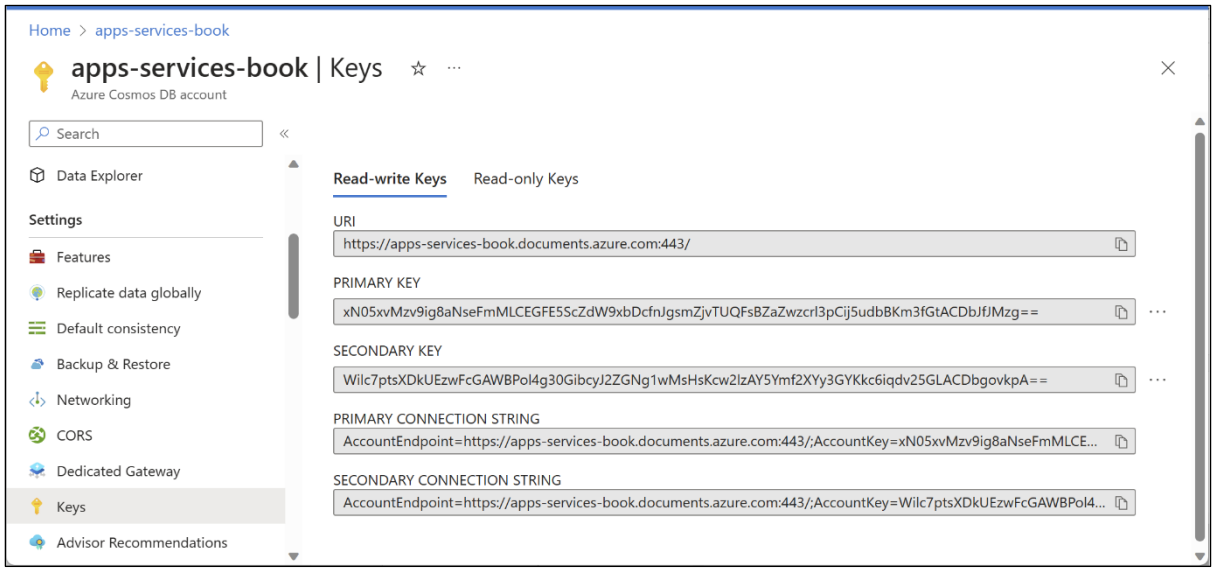


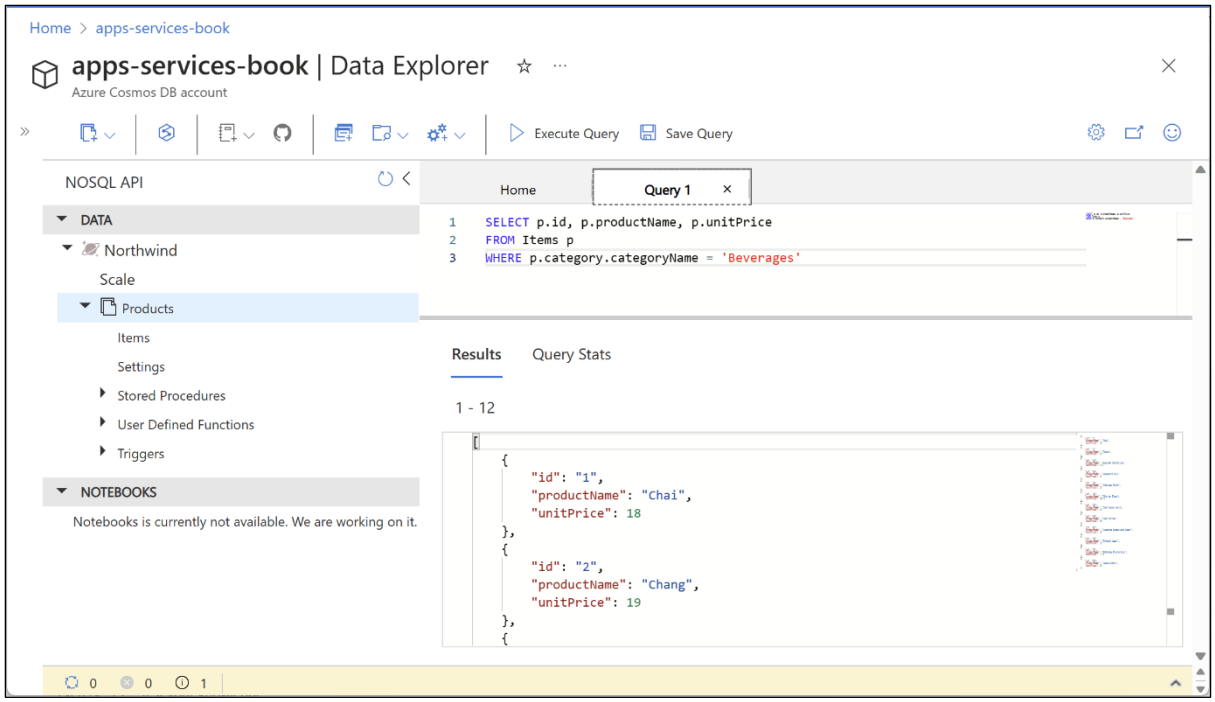


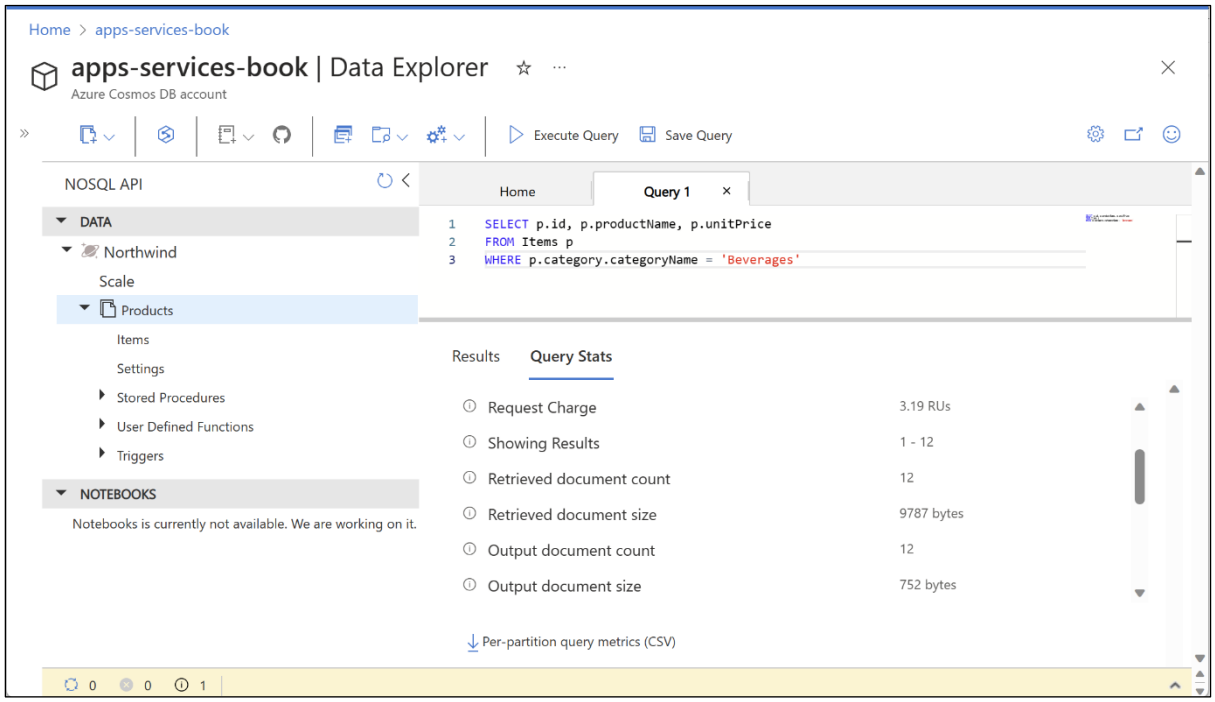

Quickstart
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New Item
Update
Discard
Delete
Upload Item
SQL API
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Stored Procedures
User Defined Functions
Triggers
Scale
Products - Ite...
SELECT * FROM c
Edit Filter
id
/productId
7e0f6c72-899a-4377-9...
1
4a453d5a-ec1a-444b-b...
2
3ae8f3d8-11b8-4421-b...
3
Load more
{
"productId": 1,
"productName": "Chai",
"supplier": {
"supplierId": 1,
"companyName": "Exotic Liquids",
"contactName": "Charlotte Cooper",
"Address": "49 Gilbert St.",
"City": "London",
"Country": "UK",
"Phone": "(171) 555-2222"
},
"category": {
"categoryId": 1,
"categoryName": "Beverages",
"description": "Soft drinks, coffees, teas,
"image": "https://myaccount.blob.core.windows
},
"quantityPerUnit": "10 boxes x 20 bags",
"unitPrice": 18,
"unitsInStock": 39,
"unitsOnOrder": 0,
"reorderLevel": 10,
"discontinued": false,
"id": "7e0f6c72-899a-4377-95fe-0e5713cee6d3",
"_rid": "bmAuAMrF98wBAAAAAAAAAA==",
"_self": "dbs/bmAuAA==/colls/bmAuAMrF98w=/docs/br
"_etag": "\"00000000-0000-0000-8e1e-206e007a01d8
"_attachments": "attachments/",
"_ts": 1656771305
}

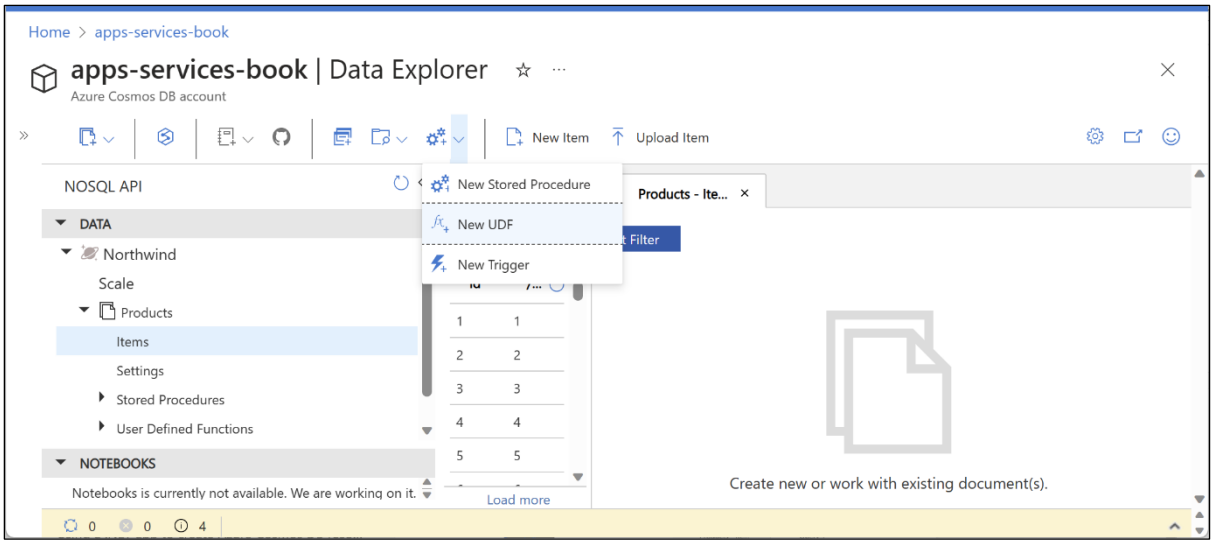

Quickstart
Explorer
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Stored Procedures
User Defined Functions
Triggers
Scale
Products - Ite...
Query 1
SELECT * FROM c WHERE c.supplier.companyName = "Exotic Liquids"
Results
Query Stats
1 - 3
[
{
"productId": 1,
"productName": "Chai",
"supplier": {
"supplierId": 1,
"companyName": "Exotic Liquids",
"contactName": "Charlotte Cooper",


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Read Locations
UK South
Resource group (move)
apps-services-book
Write Locations
UK South
Subscription (move)
Pay-As-You-Go
URI
https://apps-services-book.documents.azure.com:443/
Subscription ID
dd2951b0-6892-42e8-a753-1daa6e8f9dc0
Free Tier Discount
Opted Out
Total throughput limit
4000 RU/s
Capacity mode
Provisioned throughput
See more
Containers
Looks like you don't have any containers yet.
Data Explorer

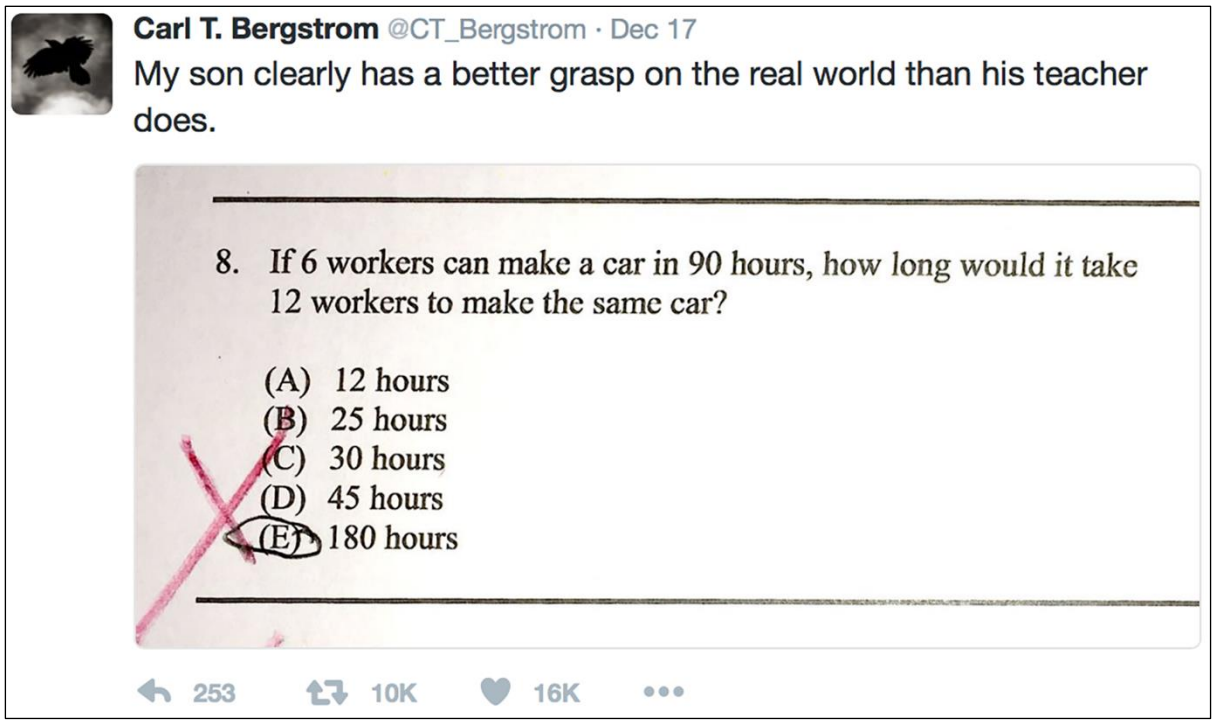

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apps-services-book | Keys
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Default consistency
Backup & Restore
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CORS
Dedicated Gateway
Keys
Advisor Recommendations
Read-write Keys
Read-only Keys
URI
https://apps-services-book.documents.azure.com:443/
PRIMARY KEY
xN05xvMzv9ig8aNseFmMLCEGFE5ScZdW9xbDcfnJgsmZjvTUQFsBZaZwzcrl3pCij5udbBKm3fGtACDbJfJMzg==
SECONDARY KEY
Wilc7ptsXDkUEzwFcGAWBPol4g30GibcyJ2ZGNg1wMsHsKcw2lzAY5Ymf2XYy3GYKkc6iqdv25GLACDbgovkpA==
PRIMARY CONNECTION STRING
AccountEndpoint=https://apps-services-book.documents.azure.com:443/;AccountKey=xN05xvMzv9ig8aNseFmMLCE...
SECONDARY CONNECTION STRING
AccountEndpoint=https://apps-services-book.documents.azure.com:443/;AccountKey=Wilc7ptsXDkUEzwFcGAWBPol4...

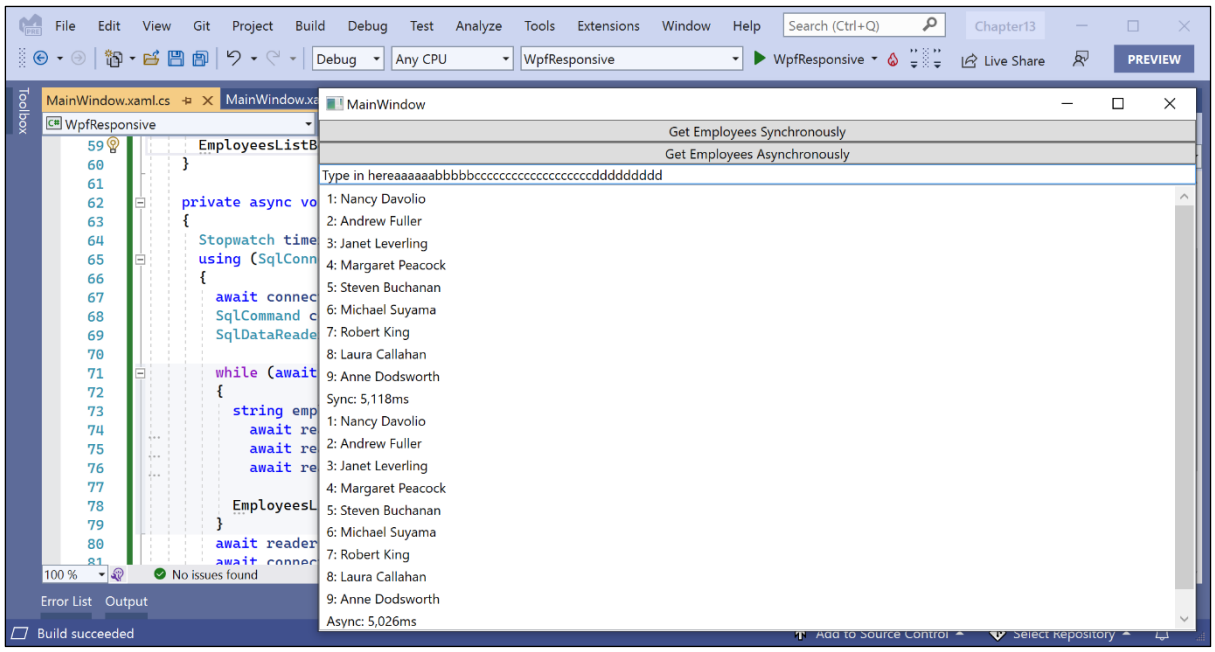

Home > apps-services-book
apps-services-book | Data Explorer
Azure Cosmos DB account
Execute Query
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Northwind
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NOTEBOOKS
Notebooks is currently not available. We are working on it.
Home
Query 1
1 SELECT p.id, p.productName, p.unitPrice
2 FROM Items p
3 WHERE p.category.categoryName = 'Beverages'
Results
Query Stats
1 - 12
{
"id": "1",
"productName": "Chai",
"unitPrice": 18
},
{
"id": "2",
"productName": "Chang",
"unitPrice": 19
},
0 0 1


Home > apps-services-book
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Triggers
NOTEBOOKS
Notebooks is currently not available. We are working on it.
Home
Query 1
1 SELECT p.id, p.productName, p.unitPrice
2 FROM Items p
3 WHERE p.category.categoryName = 'Beverages'
Results
Query Stats
Request Charge 3.19 RUs
Showing Results 1 - 12
Retrieved document count 12
Retrieved document size 9787 bytes
Output document count 12
Output document size 752 bytes
Per-partition query metrics (CSV)
0 0 1

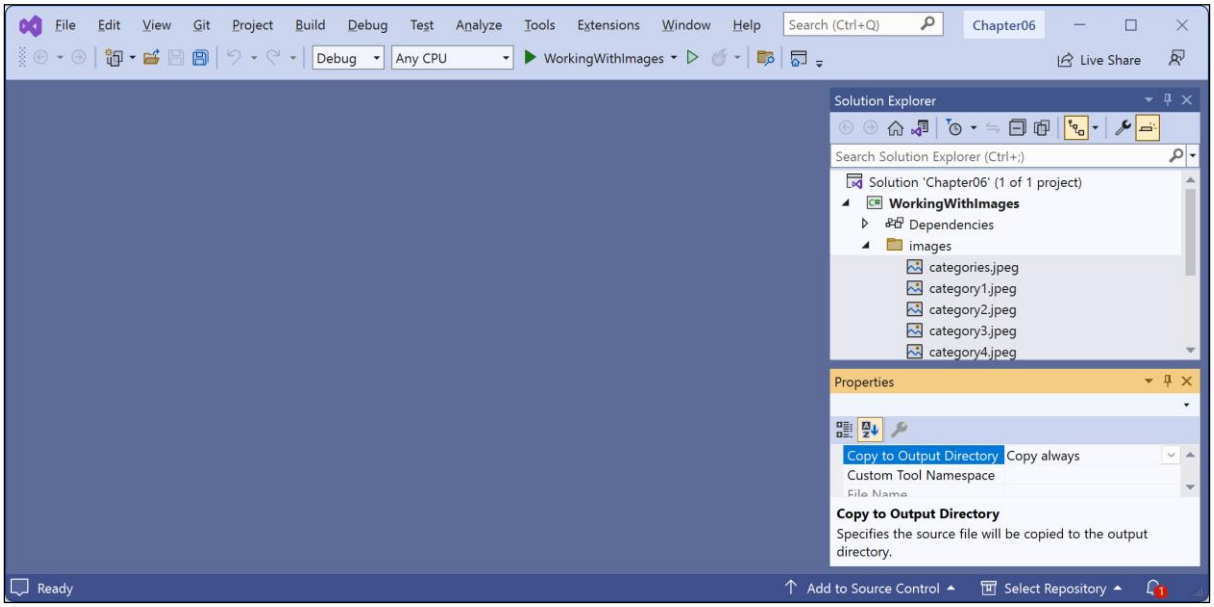

Home > apps-services-book
apps-services-book | Data Explorer
Azure Cosmos DB account
New Item
Upload Item
NOSQL API
New Stored Procedure
New UDF
New Trigger
DATA
Northwind
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Products
Items
Settings
Stored Procedures
User Defined Functions
NOTEBOOKS
Notebooks is currently not available. We are working on it.
Products - Ite...
Filter
Load more
Create new or work with existing document(s).

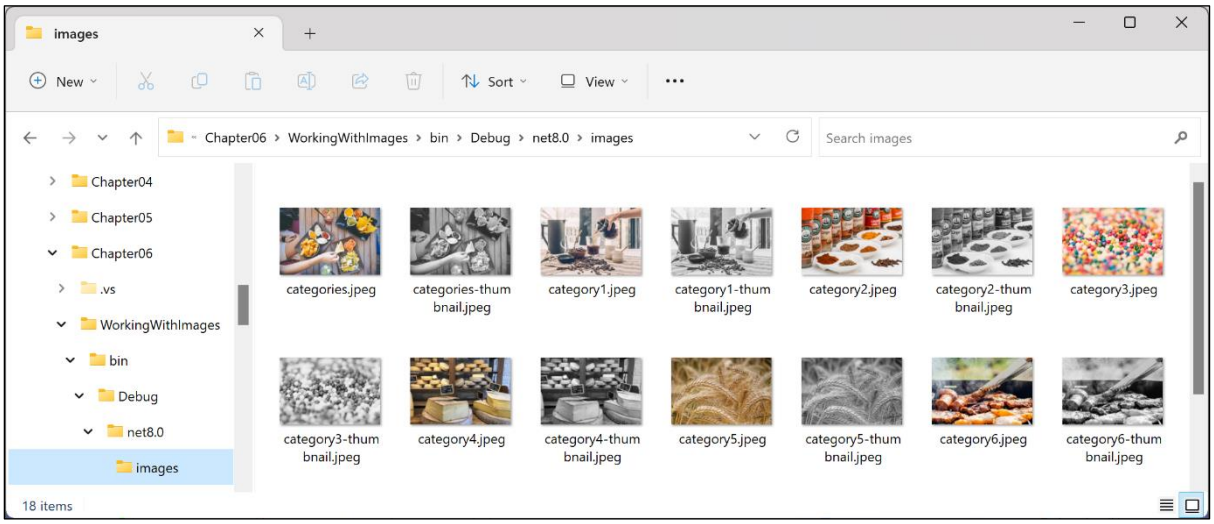
Chapter 5: Multitasking and Concurrency

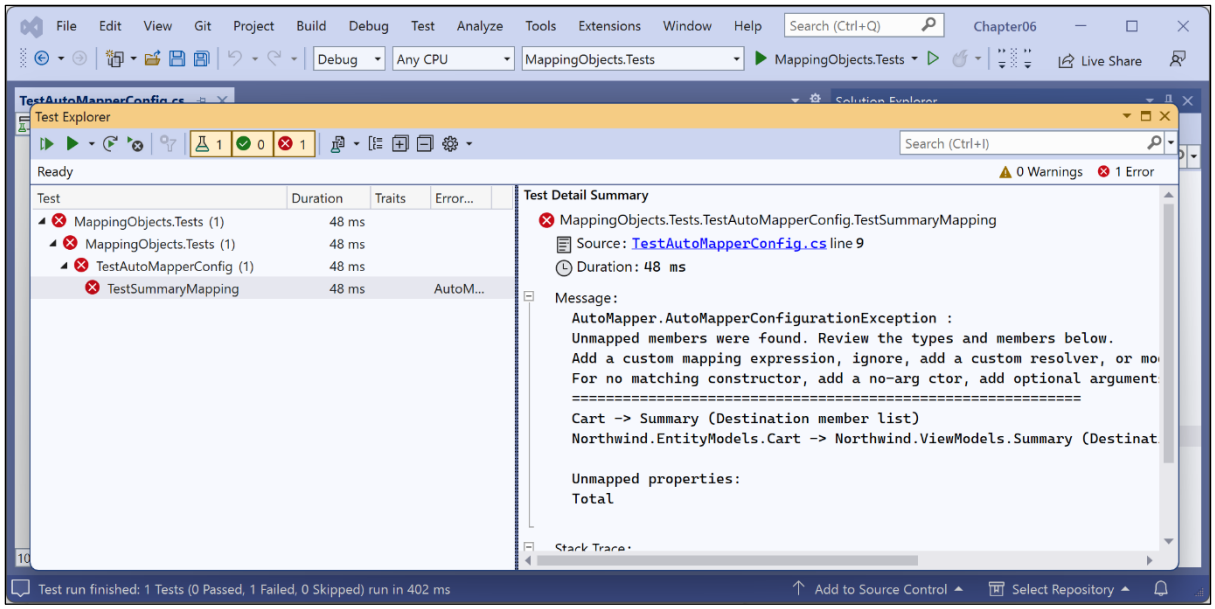


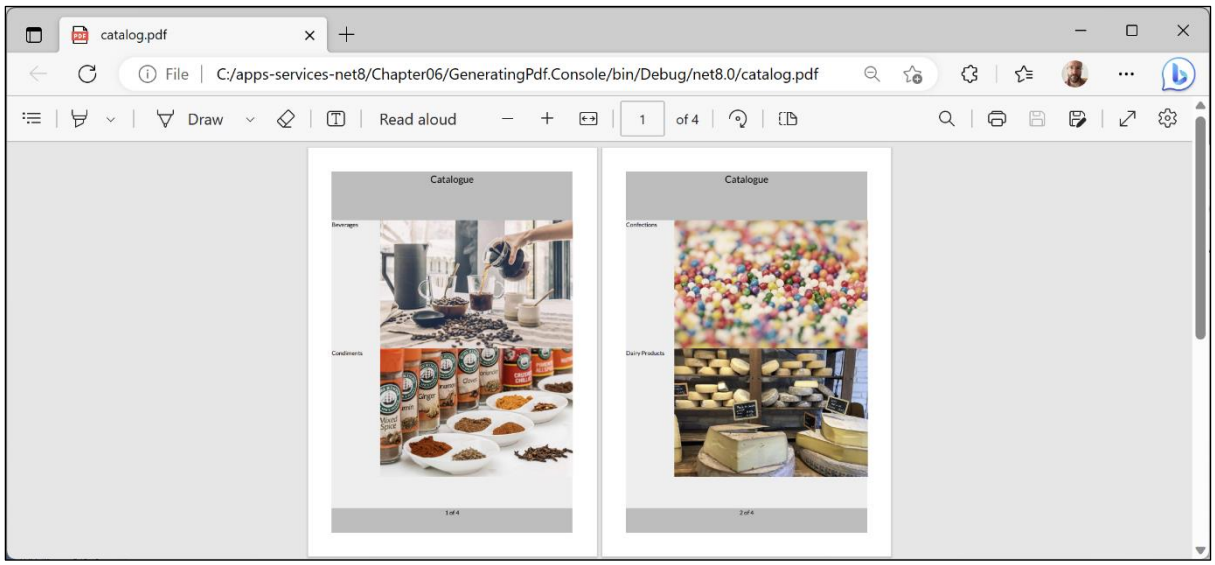


Chapter 6: Using Popular Third-Party Libraries

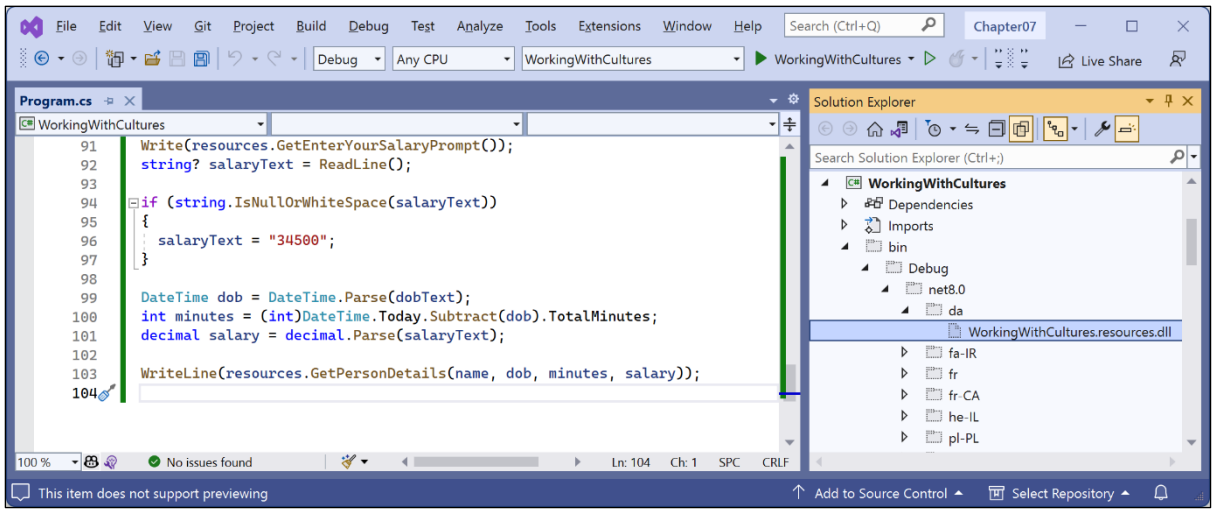


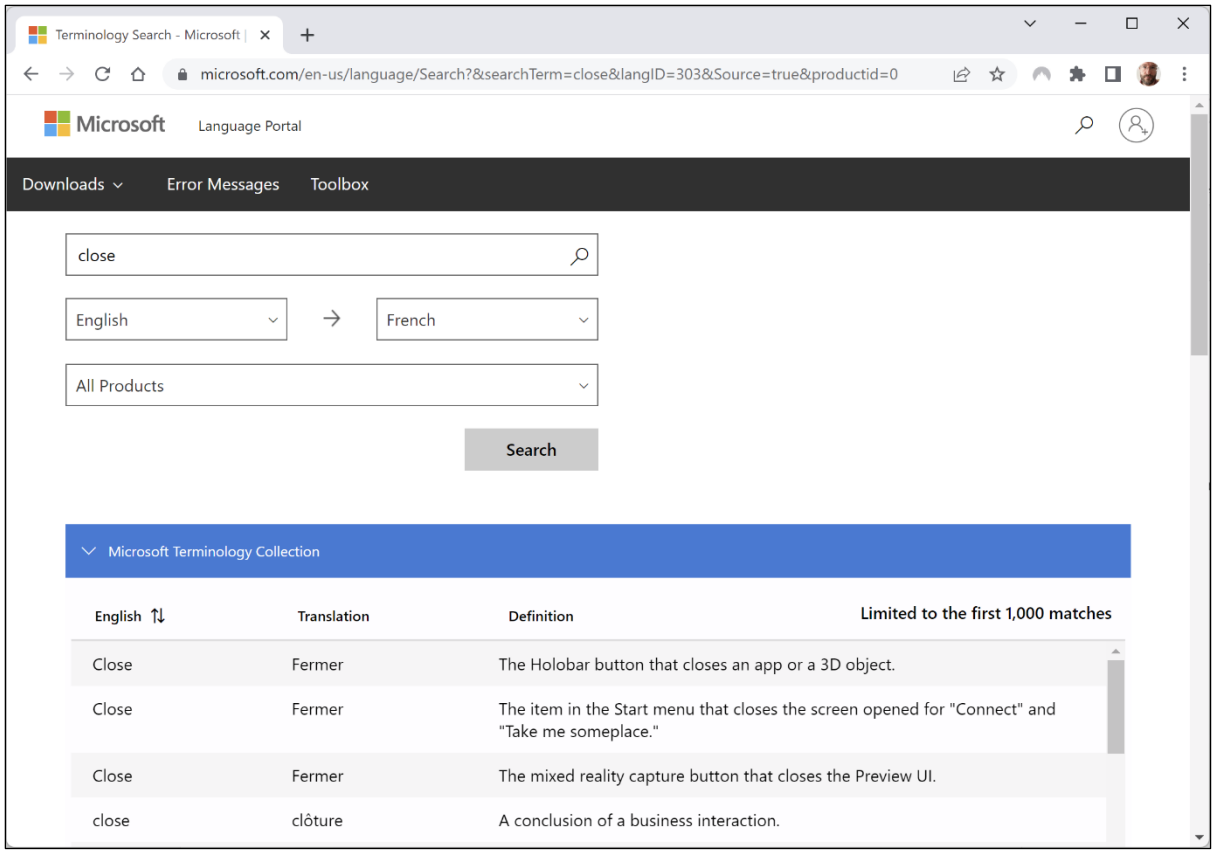


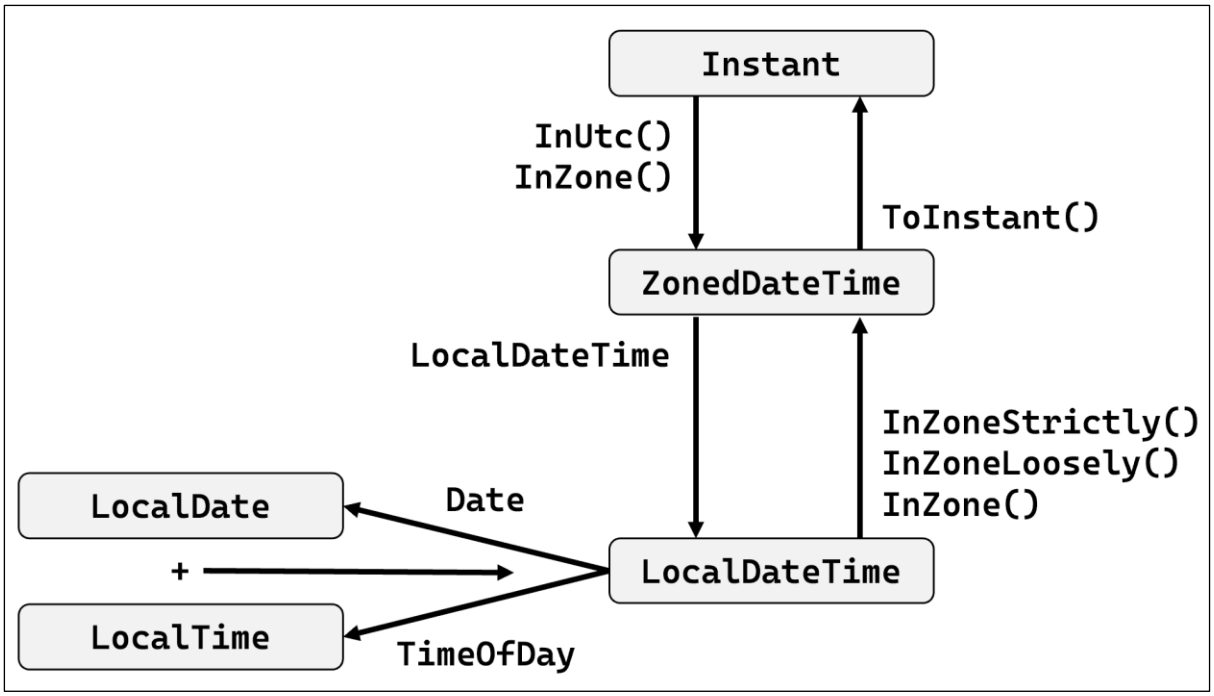

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
Search (Ctrl+Q)
Chapter06
Debug
Any CPU
MappingObjects.Tests
Live Share
Test Explorer
Ready
0 Warnings
1 Error
Test
Duration
Traits
Error...
MappingObjects.Tests (1) 48 ms
MappingObjects.Tests (1) 48 ms
TestAutoMapperConfig (1) 48 ms
TestSummaryMapping 48 ms AutoM...
Test Detail Summary
MappingObjects.Tests.TestAutoMapperConfig.TestSummaryMapping
Source: TestAutoMapperConfig.cs line 9
Duration: 48 ms
Message:
AutoMapper.AutoMapperConfigurationException :
Unmapped members were found. Review the types and members below.
Add a custom mapping expression, ignore, add a custom resolver, or mo
For no matching constructor, add a no-arg ctor, add optional argument
Cart -> Summary (Destination member list)
Northwind.EntityModels.Cart -> Northwind.ViewModels.Summary (Destinat
Unmapped properties:
Total
Stack Trace:
Test run finished: 1 Tests (0 Passed, 1 Failed, 0 Skipped) run in 402 ms
Add to Source Control
Select Repository


catalog.pdf
File C:/apps-services-net8/Chapter06/GeneratingPdf.Console/bin/Debug/net8.0/catalog.pdf
Draw
Read aloud
1
of 4
Catalogue
Beverages
Condiments
Catalogue
Confections
Dairy Products

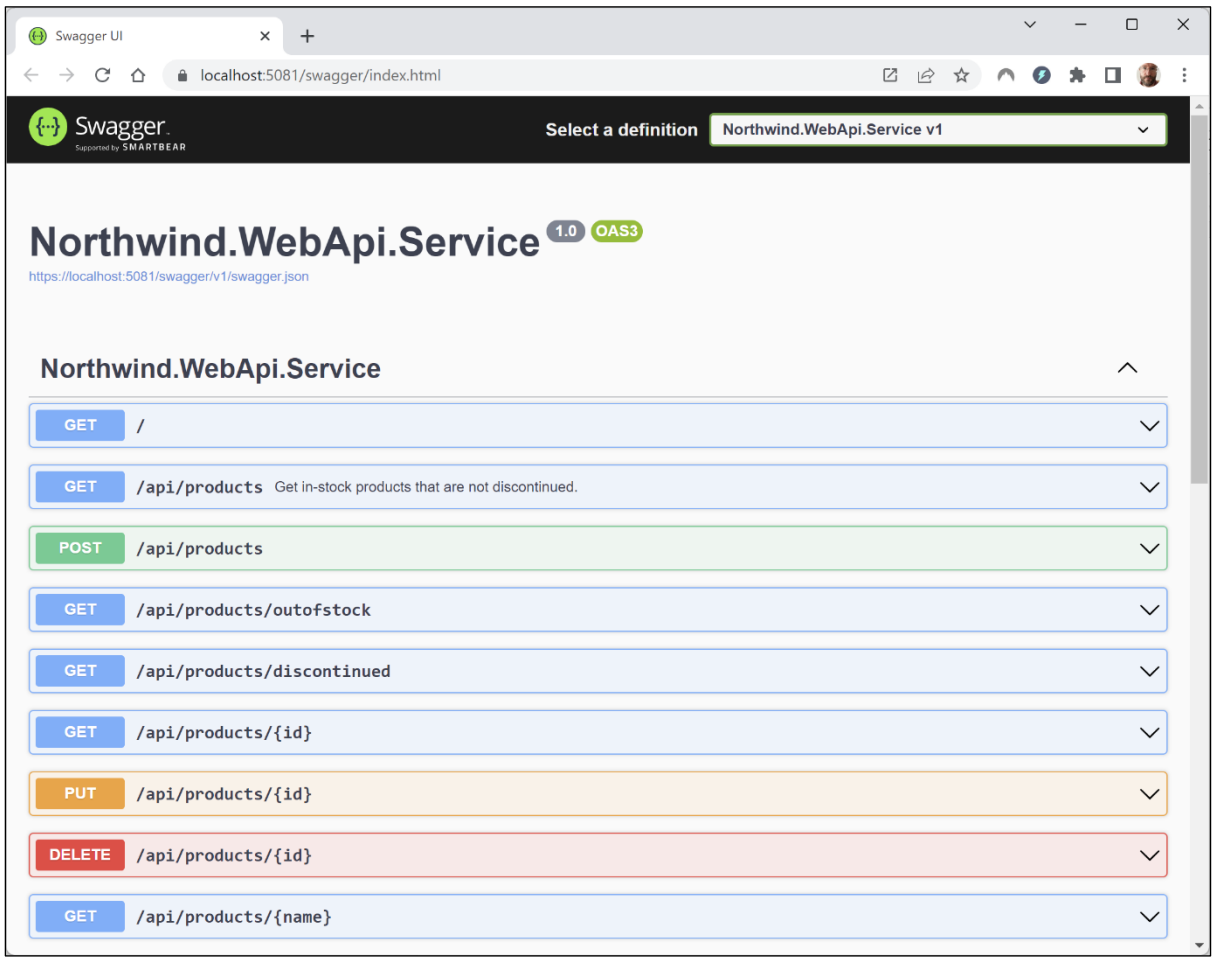
Chapter 7: Handling Dates, Times, and Internationalization

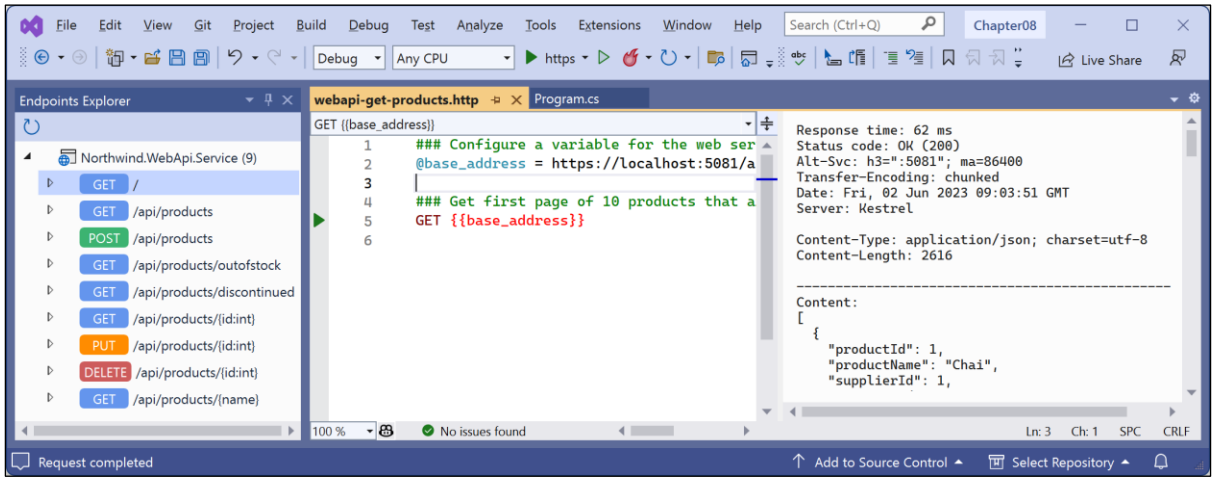


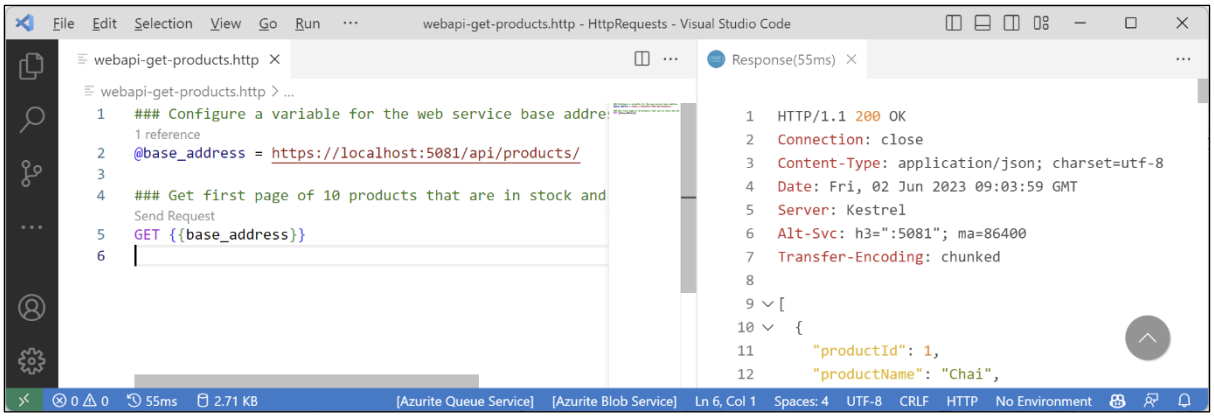


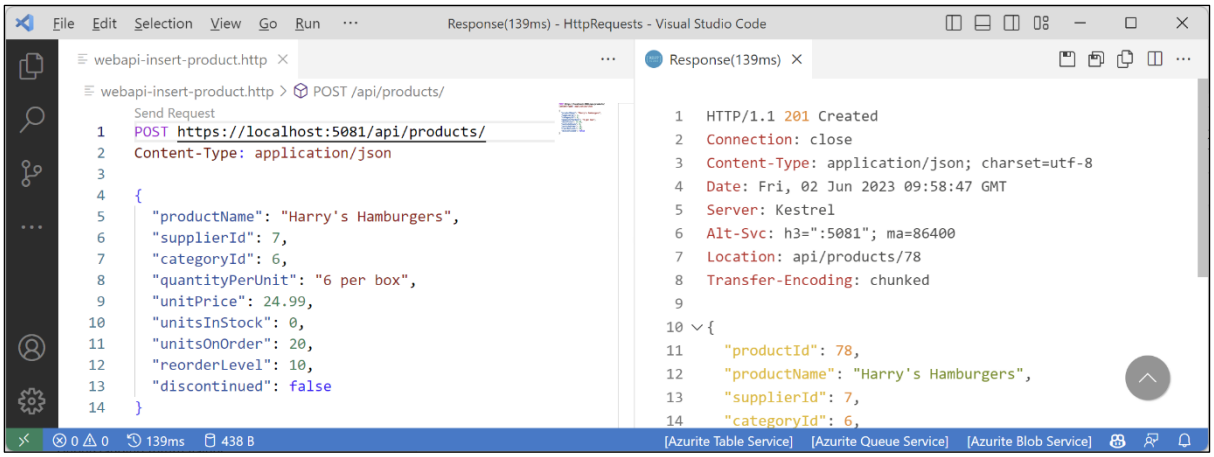

Instant
InUtc()
InZone()
ToInstant()
ZonedDateTime
LocalDateTime
InZoneStrictly()
InZoneLoosely()
InZone()
LocalDate
Date
+
LocalDateTime
LocalTime
TimeOfDay

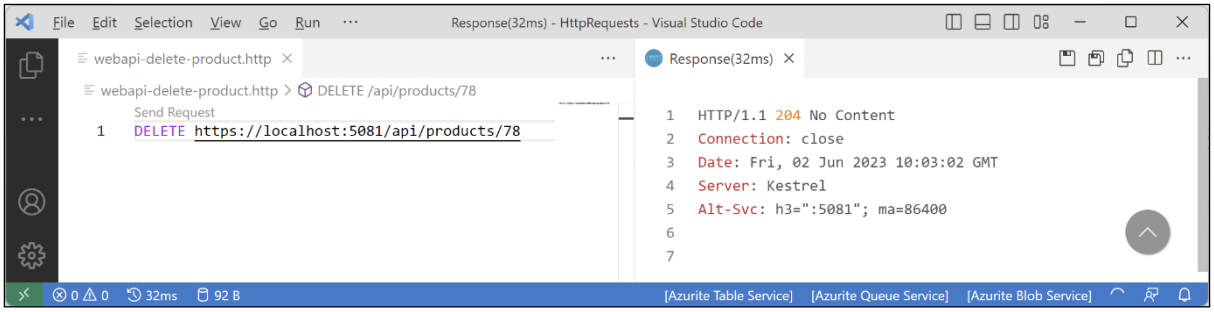
Chapter 8: Building and Securing Web Services Using Minimal APIs

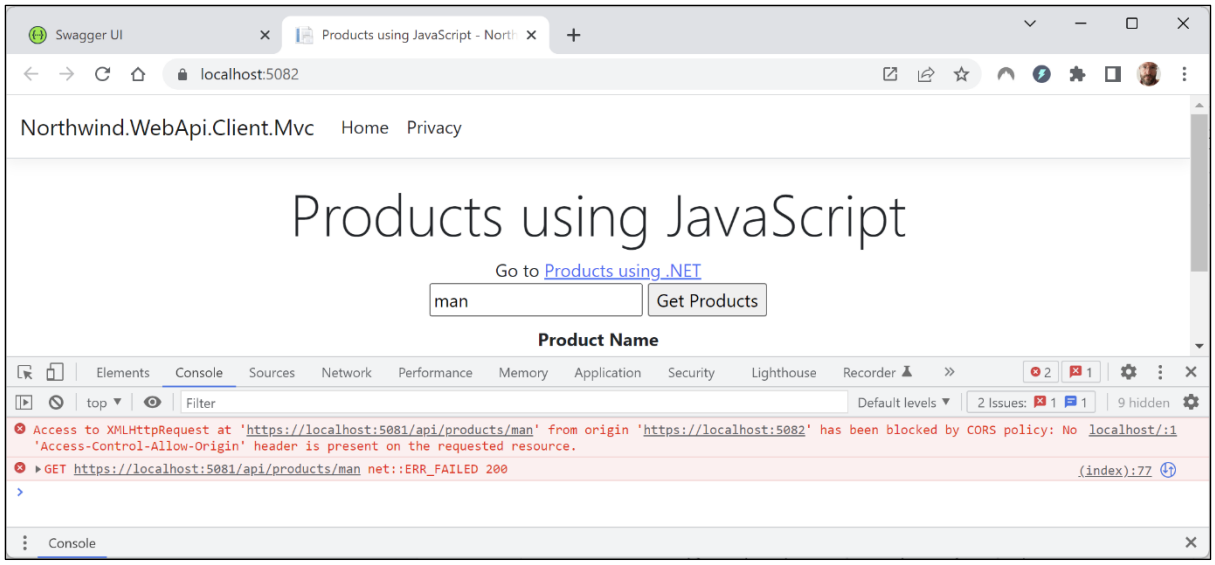


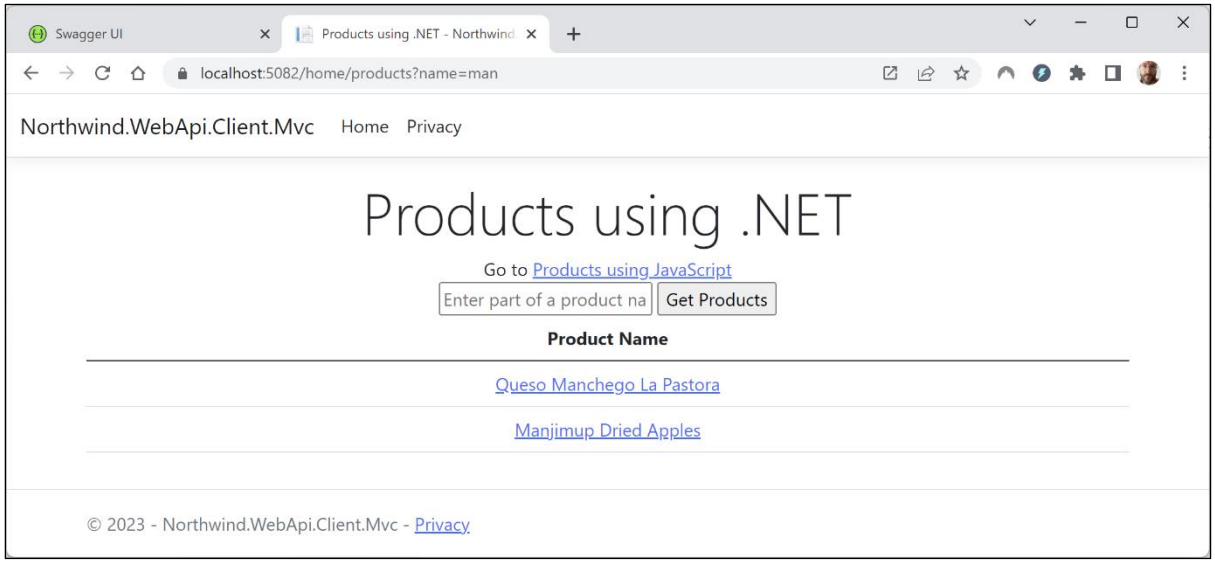


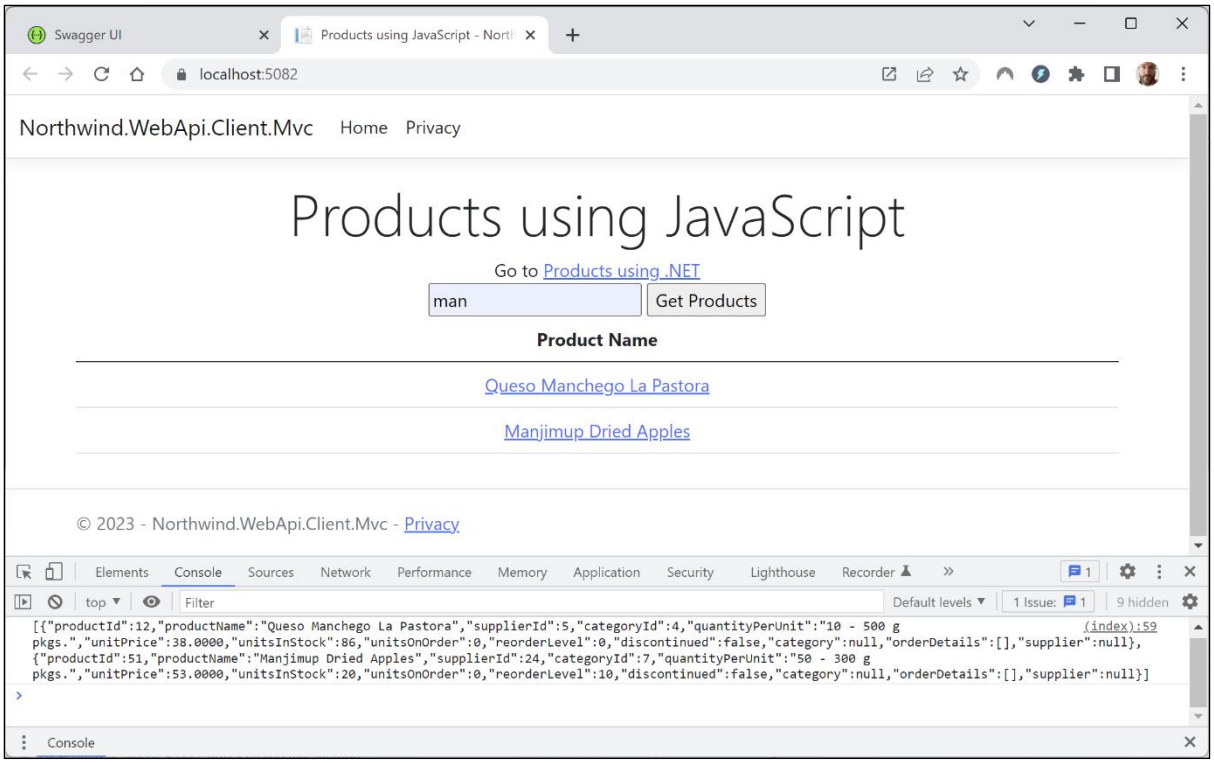

File Edit Selection View Go Run ··· webapi-get-products.http - HttpRequests - Visual Studio Code
webapi-get-products.http
webapi-get-products.http > ...
1 ### Configure a variable for the web service base addre
1 reference
2 @base_address = https://localhost:5081/api/products/
3
4 ### Get first page of 10 products that are in stock and
Send Request
5 GET {{base_address}}
6
Response(55ms)
1 HTTP/1.1 200 OK
2 Connection: close
3 Content-Type: application/json; charset=utf-8
4 Date: Fri, 02 Jun 2023 09:03:59 GMT
5 Server: Kestrel
6 Alt-Svc: h3=":5081"; ma=86400
7 Transfer-Encoding: chunked
8
9 [
10 {
11 "productId": 1,
12 "productName": "Chai",
0 0 55ms 2.71 KB [Azurite Queue Service] [Azurite Blob Service] Ln 6, Col 1 Spaces: 4 UTF-8 CRLF HTTP No Environment

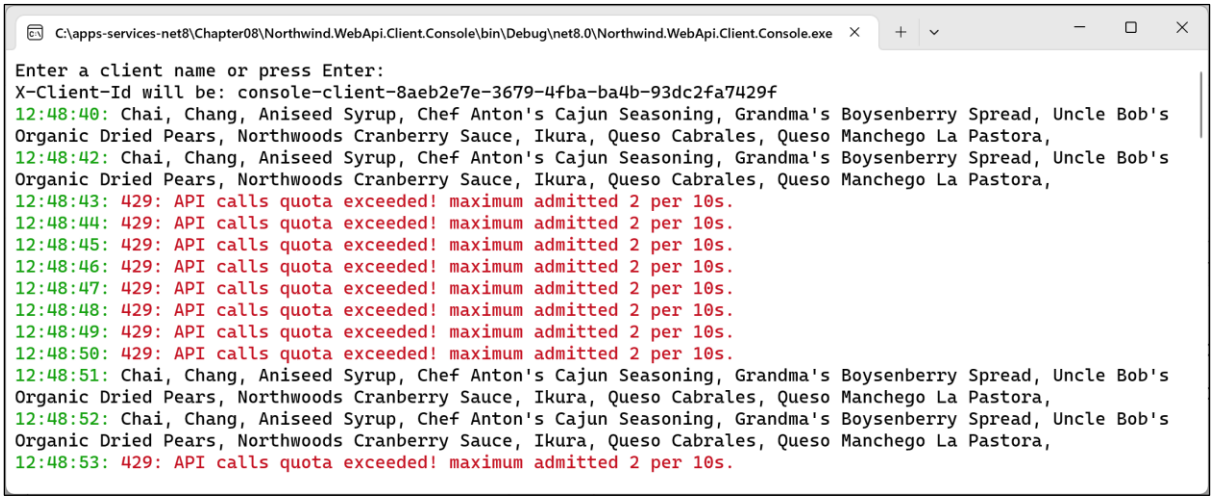

File Edit Selection View Go Run ··· Response(139ms) - HttpRequests - Visual Studio Code
webapi-insert-product.http
webapi-insert-product.http > POST /api/products/
Send Request
1 POST https://localhost:5081/api/products/
2 Content-Type: application/json
3
4 {
5 "productName": "Harry's Hamburgers",
6 "supplierId": 7,
7 "categoryId": 6,
8 "quantityPerUnit": "6 per box",
9 "unitPrice": 24.99,
10 "unitsInStock": 0,
11 "unitsOnOrder": 20,
12 "reorderLevel": 10,
13 "discontinued": false
14 }
Response(139ms)
1 HTTP/1.1 201 Created
2 Connection: close
3 Content-Type: application/json; charset=utf-8
4 Date: Fri, 02 Jun 2023 09:58:47 GMT
5 Server: Kestrel
6 Alt-Svc: h3=":5081"; ma=86400
7 Location: api/products/78
8 Transfer-Encoding: chunked
9
10 {
11 "productId": 78,
12 "productName": "Harry's Hamburgers",
13 "supplierId": 7,
14 "categoryId": 6,
0 0 139ms 438 B [Azurite Table Service] [Azurite Queue Service] [Azurite Blob Service]

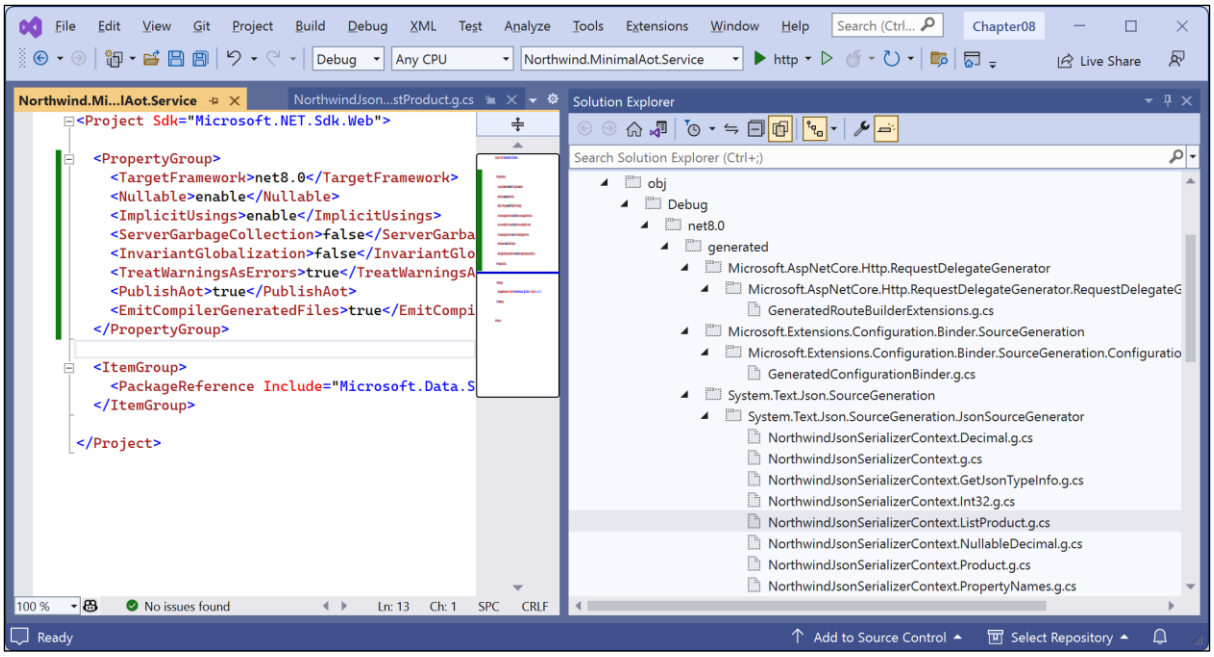

File Edit Selection View Go Run ··· Response(32ms) - HttpRequests - Visual Studio Code
webapi-delete-product.http
webapi-delete-product.http > DELETE /api/products/78
Send Request
1 DELETE https://localhost:5081/api/products/78
Response(32ms)
1 HTTP/1.1 204 No Content
2 Connection: close
3 Date: Fri, 02 Jun 2023 10:03:02 GMT
4 Server: Kestrel
5 Alt-Svc: h3=":5081"; ma=86400
6
7
0 0 32ms 92 B [Azurite Table Service] [Azurite Queue Service] [Azurite Blob Service]

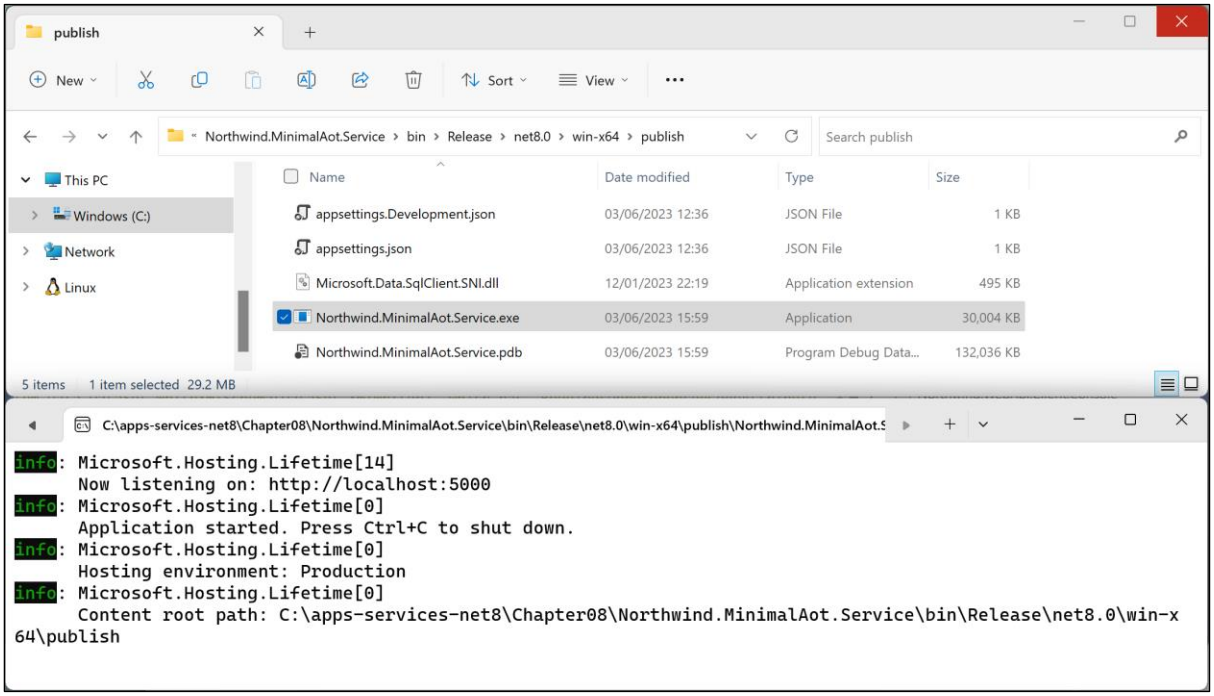

Swagger UI
Products using JavaScript - North
localhost:5082
Northwind.WebApi.Client.Mvc
Home
Privacy
Products using JavaScript
Go to Products using .NET
man
Get Products
Product Name
Elements
Console
Sources
Network
Performance
Memory
Application
Security
Lighthouse
Recorder
Filter
Default levels
2 Issues:
9 hidden
Access to XMLHttpRequest at 'https://localhost:5081/api/products/man' from origin 'https://localhost:5082' has been blocked by CORS policy: No 'Access-Control-Allow-Origin' header is present on the requested resource.
GET https://localhost:5081/api/products/man net::ERR_FAILED 200
(index):77
Console


Swagger UI
Products using .NET - Northwind
localhost:5082/home/products?name=man
Northwind.WebApi.Client.Mvc
Home
Privacy
Products using .NET
Go to Products using JavaScript
Enter part of a product na
Get Products
Product Name
Queso Manchego La Pastora
Manjimup Dried Apples
© 2023 - Northwind.WebApi.Client.Mvc - Privacy

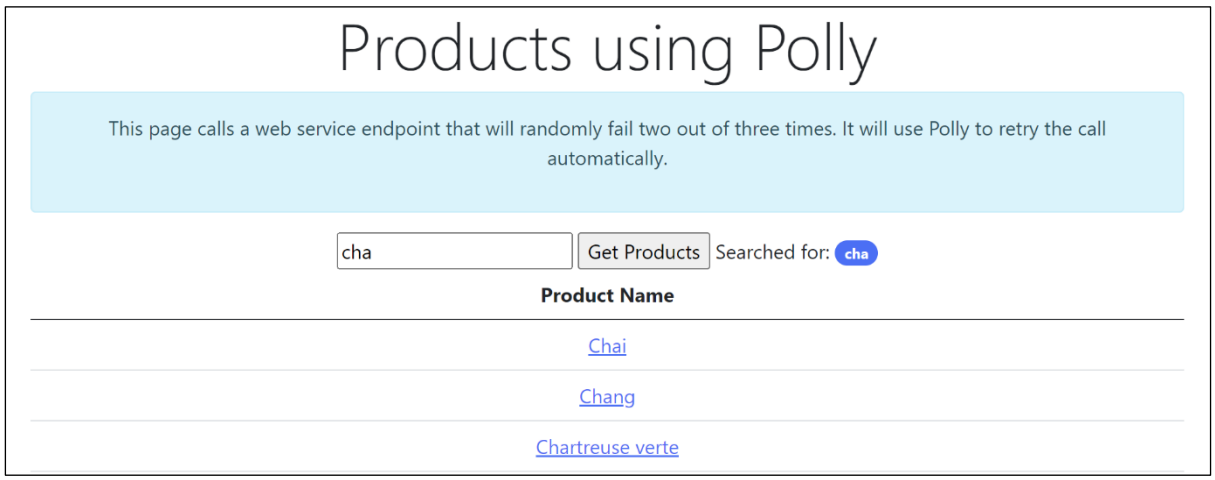

Swagger UI
Products using JavaScript - North
localhost:5082
Northwind.WebApi.Client.Mvc
Home
Privacy
Products using JavaScript
Go to Products using .NET
man
Get Products
Product Name
Queso Manchego La Pastora
Manjimup Dried Apples
© 2023 - Northwind.WebApi.Client.Mvc - Privacy
Elements
Console
Sources
Network
Performance
Memory
Application
Security
Lighthouse
Recorder
[{"productId":12,"productName":"Queso Manchego La Pastora","supplierId":5,"categoryId":4,"quantityPerUnit":"10 - 500 g
pkgs.","unitPrice":38.0000,"unitsInStock":86,"unitsOnOrder":0,"reorderLevel":0,"discontinued":false,"category":null,"orderDetails":[],"supplier":null},
{"productId":51,"productName":"Manjimup Dried Apples","supplierId":24,"categoryId":7,"quantityPerUnit":"50 - 300 g
pkgs.","unitPrice":53.0000,"unitsInStock":20,"unitsOnOrder":0,"reorderLevel":10,"discontinued":false,"category":null,"orderDetails":[],"supplier":null}]
(index):59
Console

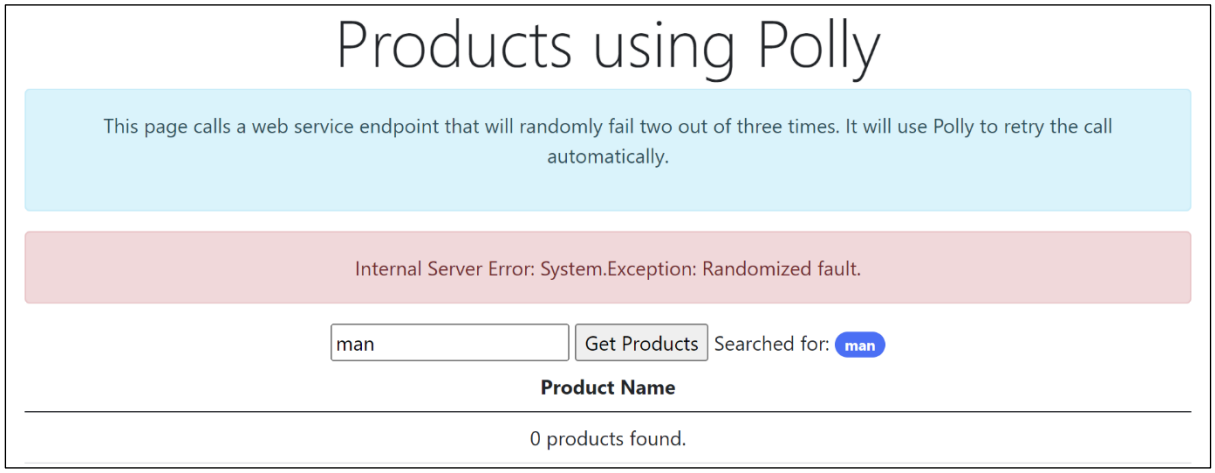

C:\apps-services-net8\Chapter08\Northwind.WebApi.Client.Console\bin\Debug\net8.0\Northwind.WebApi.Client.Console.exe
Enter a client name or press Enter:
X-Client-Id will be: console-client-8aeb2e7e-3679-4fba-ba4b-93dc2fa7429f
12:48:40: Chai, Chang, Aniseed Syrup, Chef Anton's Cajun Seasoning, Grandma's Boysenberry Spread, Uncle Bob's Organic Dried Pears, Northwoods Cranberry Sauce, Ikura, Queso Cabrales, Queso Manchego La Pastora,
12:48:42: Chai, Chang, Aniseed Syrup, Chef Anton's Cajun Seasoning, Grandma's Boysenberry Spread, Uncle Bob's Organic Dried Pears, Northwoods Cranberry Sauce, Ikura, Queso Cabrales, Queso Manchego La Pastora,
12:48:43: 429: API calls quota exceeded! maximum admitted 2 per 10s.
12:48:44: 429: API calls quota exceeded! maximum admitted 2 per 10s.
12:48:45: 429: API calls quota exceeded! maximum admitted 2 per 10s.
12:48:46: 429: API calls quota exceeded! maximum admitted 2 per 10s.
12:48:47: 429: API calls quota exceeded! maximum admitted 2 per 10s.
12:48:48: 429: API calls quota exceeded! maximum admitted 2 per 10s.
12:48:49: 429: API calls quota exceeded! maximum admitted 2 per 10s.
12:48:50: 429: API calls quota exceeded! maximum admitted 2 per 10s.
12:48:51: Chai, Chang, Aniseed Syrup, Chef Anton's Cajun Seasoning, Grandma's Boysenberry Spread, Uncle Bob's Organic Dried Pears, Northwoods Cranberry Sauce, Ikura, Queso Cabrales, Queso Manchego La Pastora,
12:48:52: Chai, Chang, Aniseed Syrup, Chef Anton's Cajun Seasoning, Grandma's Boysenberry Spread, Uncle Bob's Organic Dried Pears, Northwoods Cranberry Sauce, Ikura, Queso Cabrales, Queso Manchego La Pastora,
12:48:53: 429: API calls quota exceeded! maximum admitted 2 per 10s.

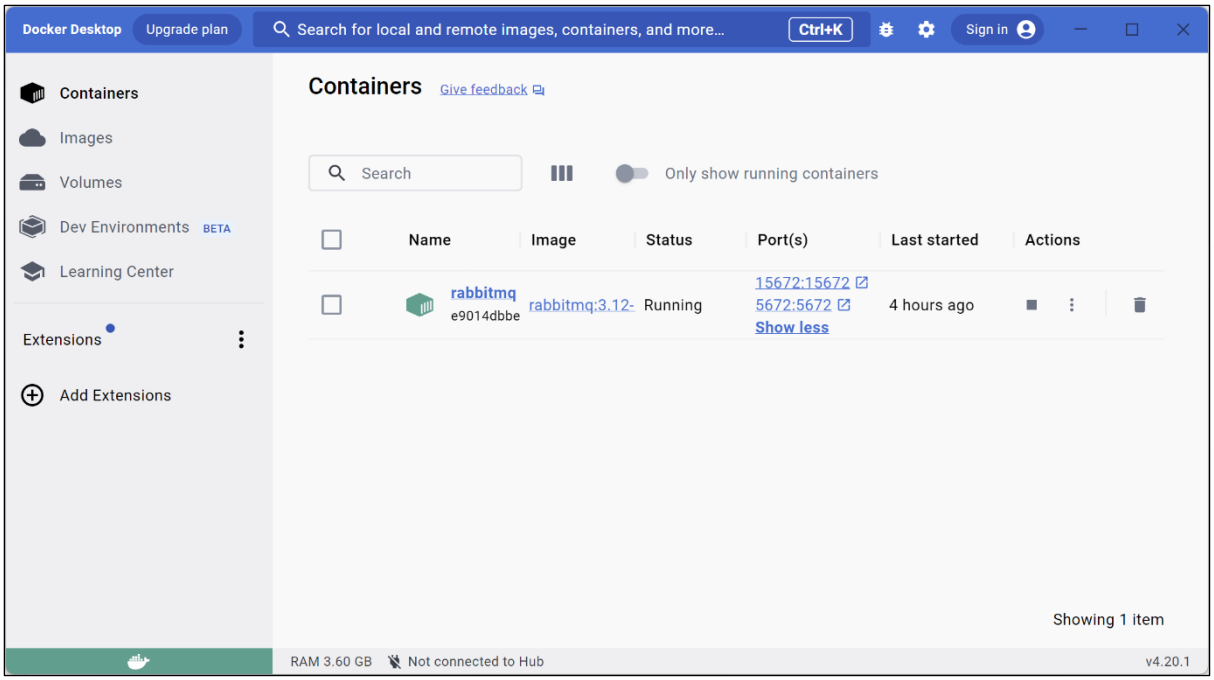

File Edit View Git Project Build Debug XML Test Analyze Tools Extensions Window Help
Chapter08
Debug
Any CPU
Northwind.MinimalAot.Service
Live Share
Northwind.Mi...lAot.Service
NorthwindJson...stProduct.g.cs
Solution Explorer
Search Solution Explorer (Ctrl+;)
<Project Sdk="Microsoft.NET.Sdk.Web">
<PropertyGroup>
<TargetFramework>net8.0</TargetFramework>
<Nullable>enable</Nullable>
<ImplicitUsings>enable</ImplicitUsings>
<ServerGarbageCollection>false</ServerGarba
<InvariantGlobalization>false</InvariantGlo
<TreatWarningsAsErrors>true</TreatWarningsA
<PublishAot>true</PublishAot>
<EmitCompilerGeneratedFiles>true</EmitCompi
</PropertyGroup>
<ItemGroup>
<PackageReference Include="Microsoft.Data.S
</ItemGroup>
</Project>
obj
Debug
net8.0
generated
Microsoft.AspNetCore.Http.RequestDelegateGenerator
Microsoft.AspNetCore.Http.RequestDelegateGenerator.RequestDelegateG
GeneratedRouteBuilderExtensions.g.cs
Microsoft.Extensions.Configuration.Binder.SourceGeneration
Microsoft.Extensions.Configuration.Binder.SourceGeneration.Configuratio
GeneratedConfigurationBinder.g.cs
System.Text.Json.SourceGeneration
System.Text.Json.SourceGeneration.JsonSourceGenerator
NorthwindJsonSerializerContext.Decimal.g.cs
NorthwindJsonSerializerContext.g.cs
NorthwindJsonSerializerContext.GetJsonTypeInfo.g.cs
NorthwindJsonSerializerContext.Int32.g.cs
NorthwindJsonSerializerContext.ListProduct.g.cs
NorthwindJsonSerializerContext.NullableDecimal.g.cs
NorthwindJsonSerializerContext.Product.g.cs
NorthwindJsonSerializerContext.PropertyNames.g.cs
100 %
No issues found
Ln: 13 Ch: 1 SPC CRLF
Ready
Add to Source Control
Select Repository

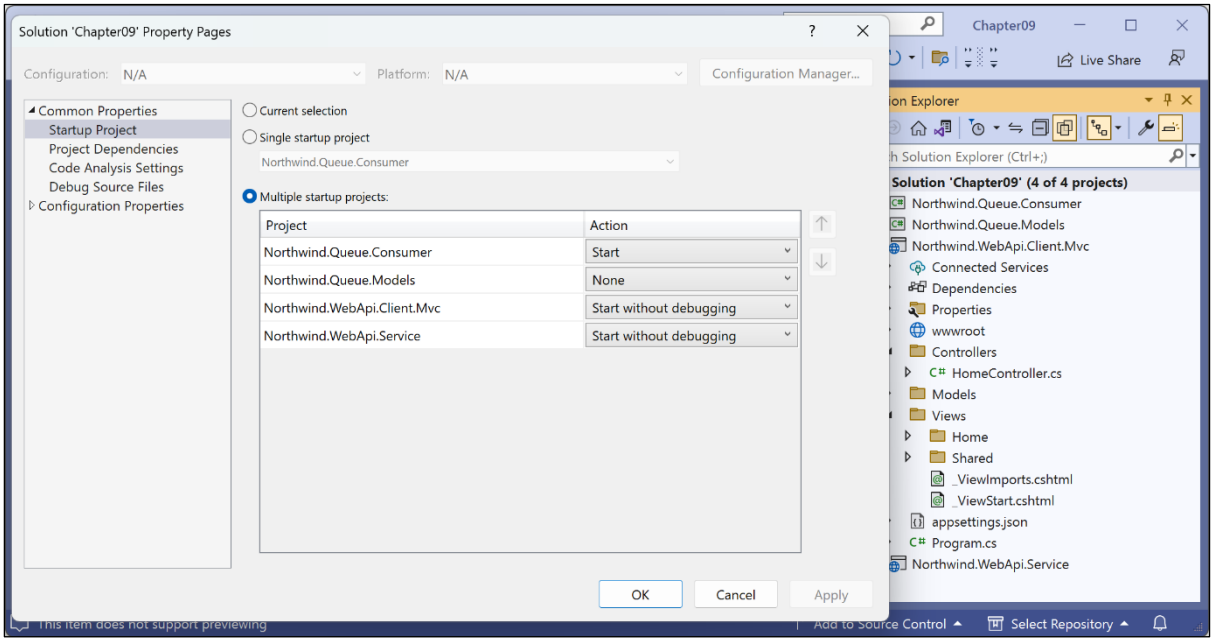

publish
New
Sort
View
Northwind.MinimalAot.Service › bin › Release › net8.0 › win-x64 › publish
Search publish
This PC
Windows (C:)
Network
Linux
Name
Date modified
Type
Size
appsettings.Development.json 03/06/2023 12:36 JSON File 1 KB
appsettings.json 03/06/2023 12:36 JSON File 1 KB
Microsoft.Data.SqlClient.SNI.dll 12/01/2023 22:19 Application extension 495 KB
Northwind.MinimalAot.Service.exe 03/06/2023 15:59 Application 30,004 KB
Northwind.MinimalAot.Service.pdb 03/06/2023 15:59 Program Debug Data... 132,036 KB
5 items
1 item selected 29.2 MB
C:\apps-services-net8\Chapter08\Northwind.MinimalAot.Service\bin\Release\net8.0\win-x64\publish\Northwind.MinimalAot.S
info: Microsoft.Hosting.Lifetime[14]
Now listening on: http://localhost:5000
info: Microsoft.Hosting.Lifetime[0]
Application started. Press Ctrl+C to shut down.
info: Microsoft.Hosting.Lifetime[0]
Hosting environment: Production
info: Microsoft.Hosting.Lifetime[0]
Content root path: C:\apps-services-net8\Chapter08\Northwind.MinimalAot.Service\bin\Release\net8.0\win-x
64\publish

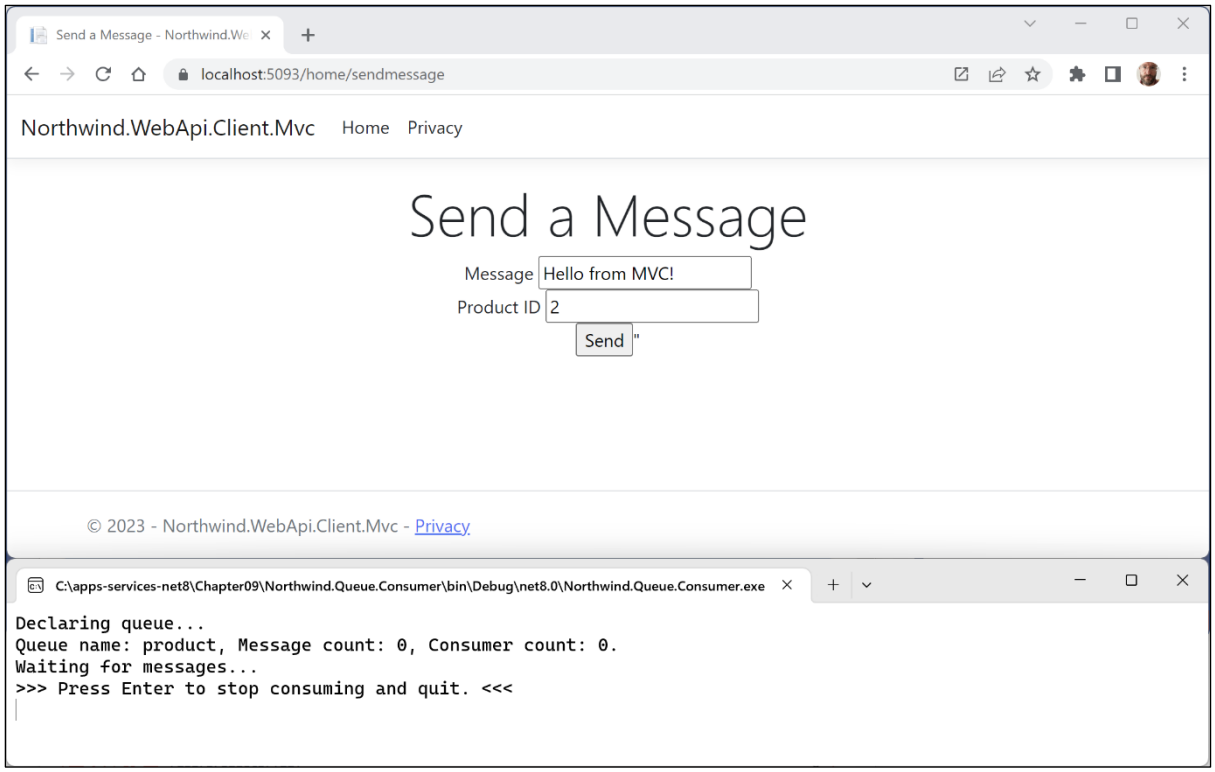
Chapter 9: Caching, Queuing, and Resilient Background Services

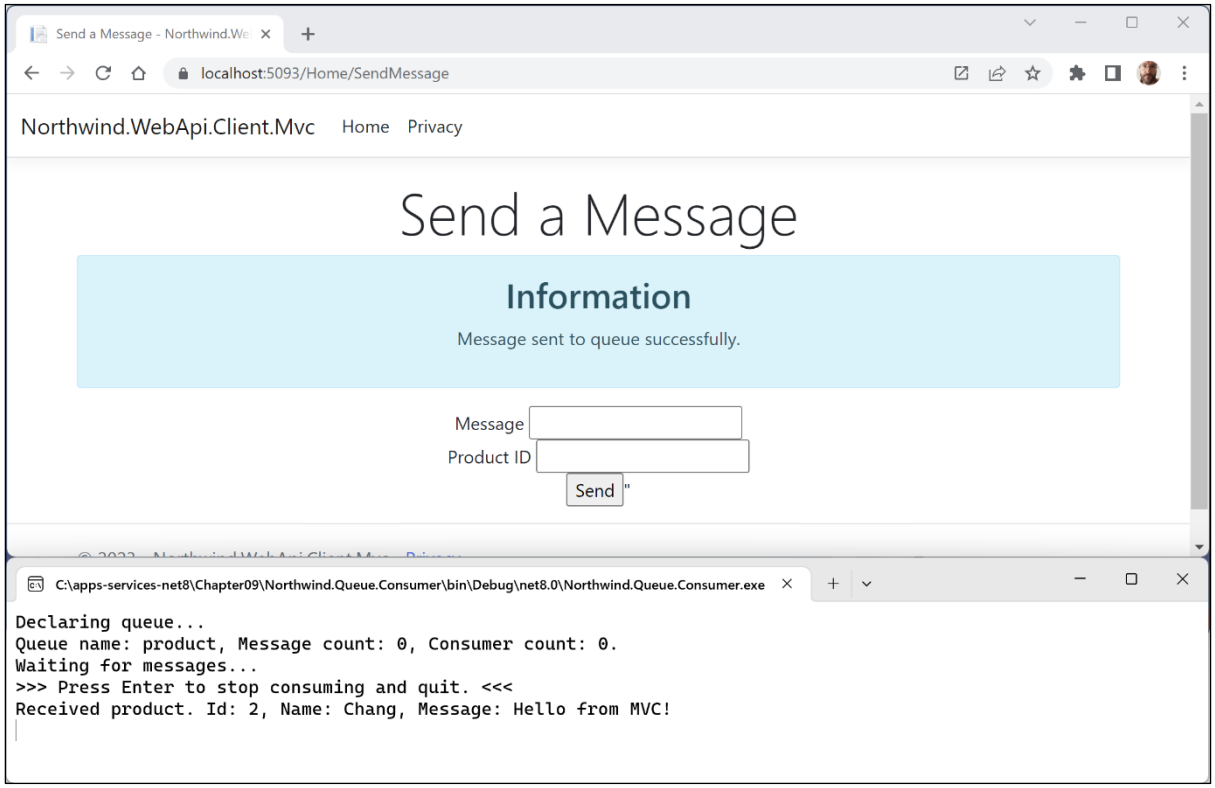


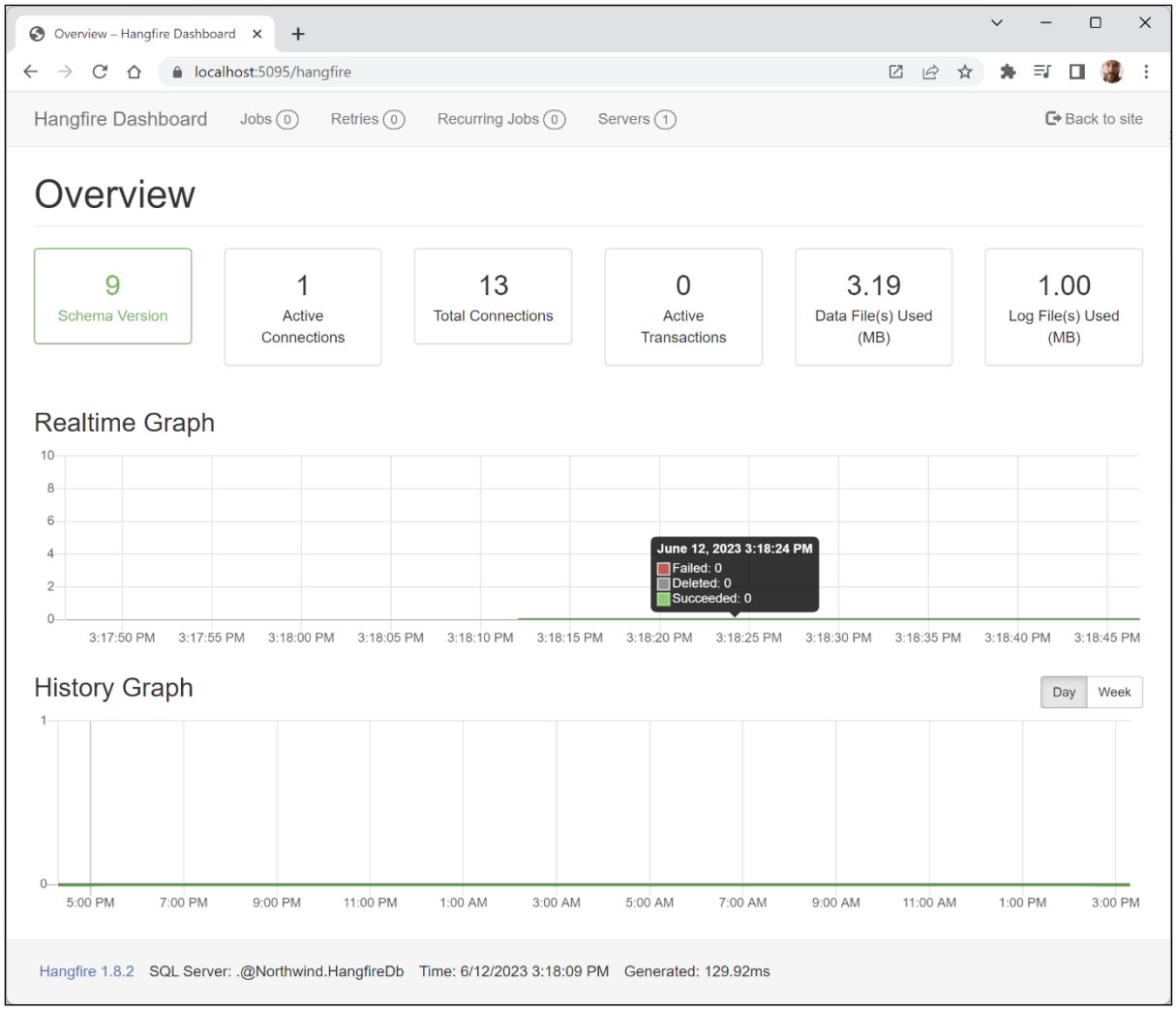


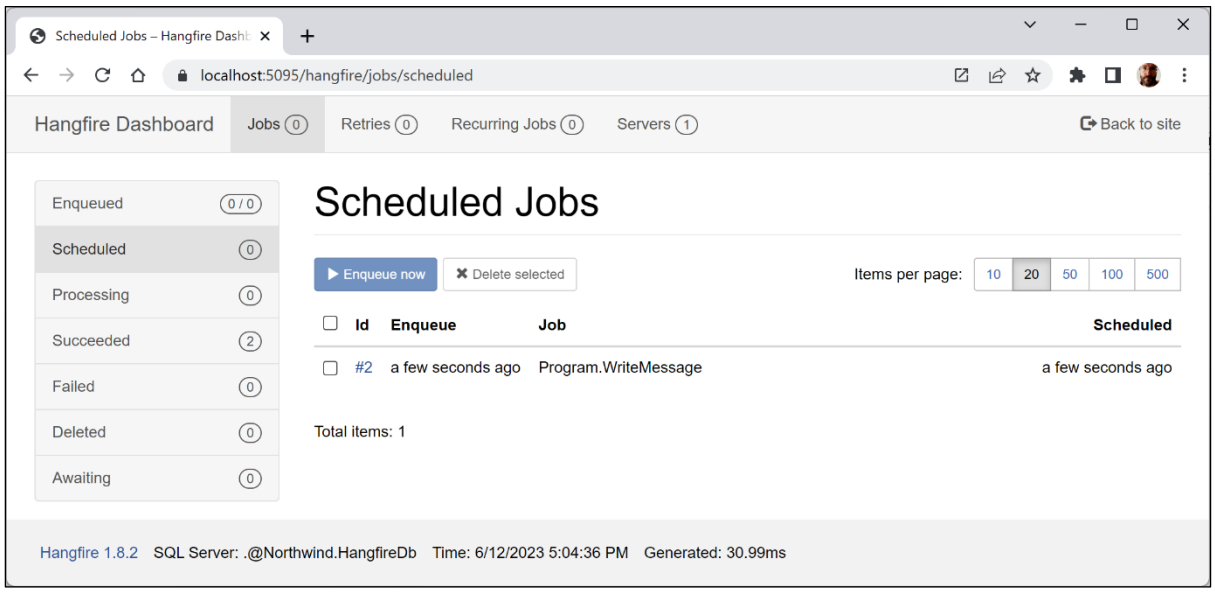

Docker Desktop
Upgrade plan
Search for local and remote images, containers, and more...
Ctrl+K
Sign in
Containers
Images
Volumes
Dev Environments
BETA
Learning Center
Extensions
Add Extensions
Containers
Give feedback
Search
Only show running containers
Name
Image
Status
Port(s)
Last started
Actions
rabbitmq
e9014dbbe
rabbitmq:3.12-
Running
15672:15672
5672:5672
Show less
4 hours ago
Showing 1 item
RAM 3.60 GB
Not connected to Hub
v4.20.1

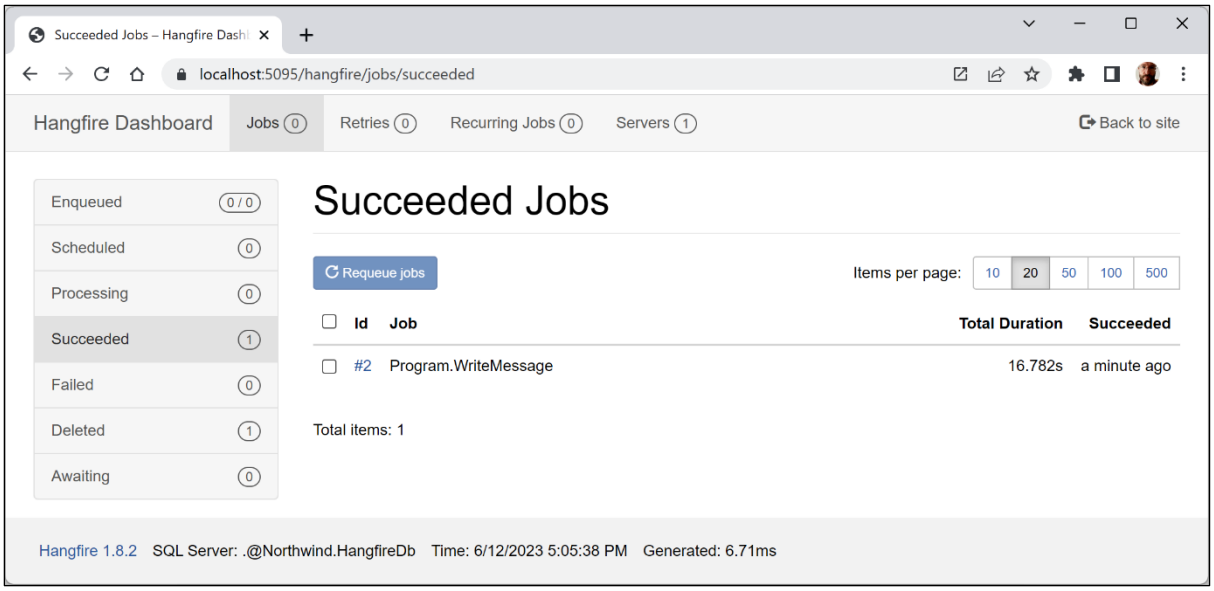

Solution 'Chapter09' Property Pages
Configuration: N/A
Platform: N/A
Configuration Manager...
Common Properties
Startup Project
Project Dependencies
Code Analysis Settings
Debug Source Files
Configuration Properties
Current selection
Single startup project
Northwind.Queue.Consumer
Multiple startup projects:
Project
Action
Northwind.Queue.Consumer
Start
Northwind.Queue.Models
None
Northwind.WebApi.Client.Mvc
Start without debugging
Northwind.WebApi.Service
Start without debugging
OK
Cancel
Apply
Chapter09
Live Share
Solution Explorer
Solution 'Chapter09' (4 of 4 projects)
Northwind.Queue.Consumer
Northwind.Queue.Models
Northwind.WebApi.Client.Mvc
Connected Services
Dependencies
Properties
wwwroot
Controllers
HomeController.cs
Models
Views
Home
Shared
_ViewImports.cshtml
_ViewStart.cshtml
appsettings.json
Program.cs
Northwind.WebApi.Service
Add to Source Control
Select Repository


Send a Message - Northwind.We
localhost:5093/home/sendmessage
Northwind.WebApi.Client.Mvc
Home
Privacy
Send a Message
Message
Hello from MVC!
Product ID
2
Send
"
© 2023 - Northwind.WebApi.Client.Mvc - Privacy
C:\apps-services-net8\Chapter09\Northwind.Queue.Consumer\bin\Debug\net8.0\Northwind.Queue.Consumer.exe
Declaring queue...
Queue name: product, Message count: 0, Consumer count: 0.
Waiting for messages...
>>> Press Enter to stop consuming and quit. <<<

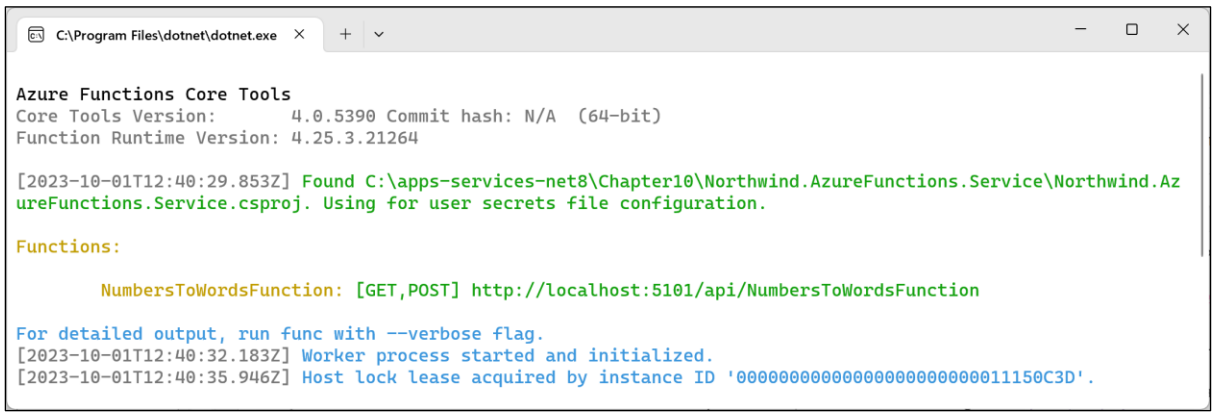

Send a Message - Northwind.We
localhost:5093/Home/SendMessage
Northwind.WebApi.Client.Mvc
Home
Privacy
Send a Message
Information
Message sent to queue successfully.
Message
Product ID
Send
"
C:\apps-services-net8\Chapter09\Northwind.Queue.Consumer\bin\Debug\net8.0\Northwind.Queue.Consumer.exe
Declaring queue...
Queue name: product, Message count: 0, Consumer count: 0.
Waiting for messages...
>>> Press Enter to stop consuming and quit. <<<
Received product. Id: 2, Name: Chang, Message: Hello from MVC!

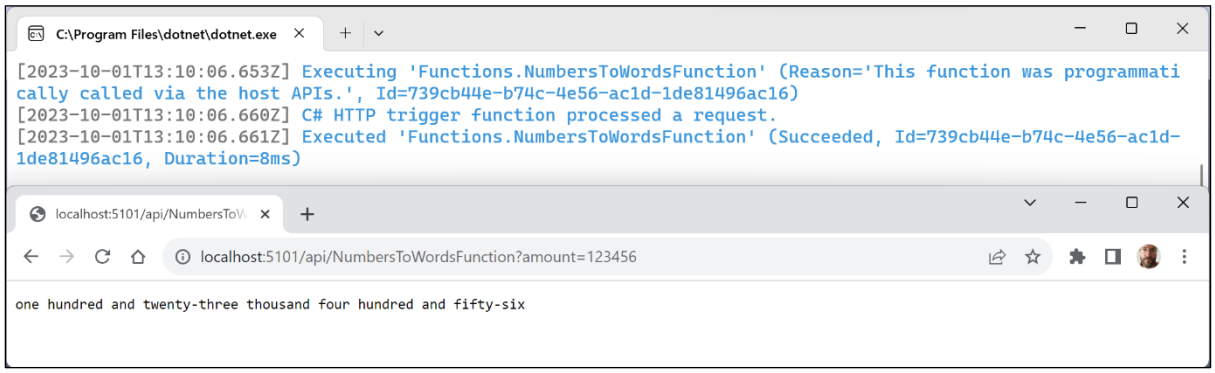

Overview – Hangfire Dashboard
localhost:5095/hangfire
Hangfire Dashboard
Jobs 0
Retries 0
Recurring Jobs 0
Servers 1
Back to site
Overview
9
Schema Version
1
Active Connections
13
Total Connections
0
Active Transactions
3.19
Data File(s) Used (MB)
1.00
Log File(s) Used (MB)
Realtime Graph
10
8
6
4
2
0
June 12, 2023 3:18:24 PM
Failed: 0
Deleted: 0
Succeeded: 0
3:17:50 PM
3:17:55 PM
3:18:00 PM
3:18:05 PM
3:18:10 PM
3:18:15 PM
3:18:20 PM
3:18:25 PM
3:18:30 PM
3:18:35 PM
3:18:40 PM
3:18:45 PM
History Graph
Day
Week
1
0
5:00 PM
7:00 PM
9:00 PM
11:00 PM
1:00 AM
3:00 AM
5:00 AM
7:00 AM
9:00 AM
11:00 AM
1:00 PM
3:00 PM
Hangfire 1.8.2 SQL Server: .@Northwind.HangfireDb Time: 6/12/2023 3:18:09 PM Generated: 129.92ms

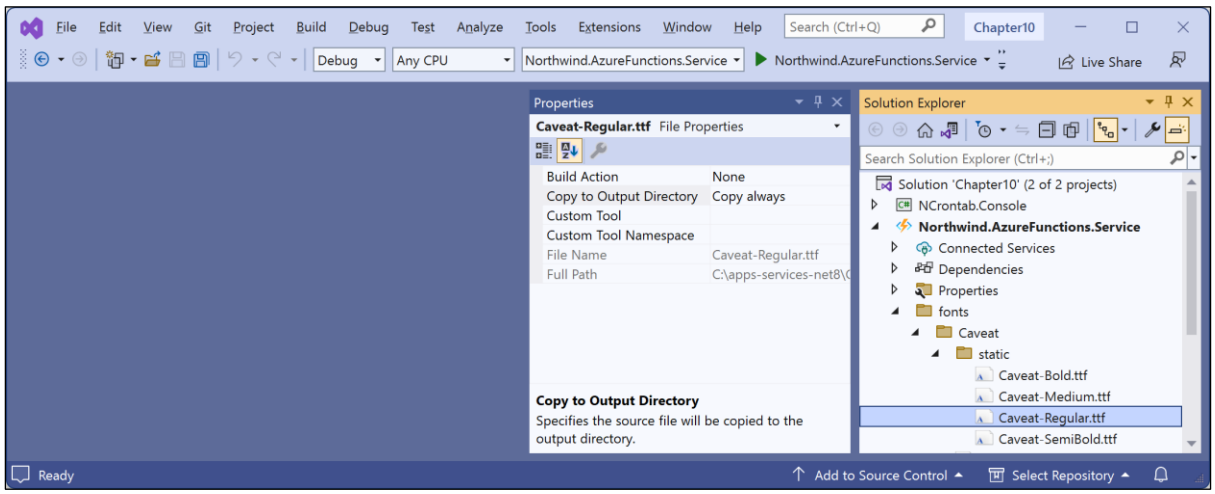

Scheduled Jobs – Hangfire Dashb
localhost:5095/hangfire/jobs/scheduled
Hangfire Dashboard
Jobs 0
Retries 0
Recurring Jobs 0
Servers 1
Back to site
Enqueued 0 / 0
Scheduled 0
Processing 0
Succeeded 2
Failed 0
Deleted 0
Awaiting 0
Scheduled Jobs
Enqueue now
Delete selected
Items per page: 10 20 50 100 500
Id Enqueue Job Scheduled
#2 a few seconds ago Program.WriteMessage a few seconds ago
Total items: 1
Hangfire 1.8.2 SQL Server: .@Northwind.HangfireDb Time: 6/12/2023 5:04:36 PM Generated: 30.99ms

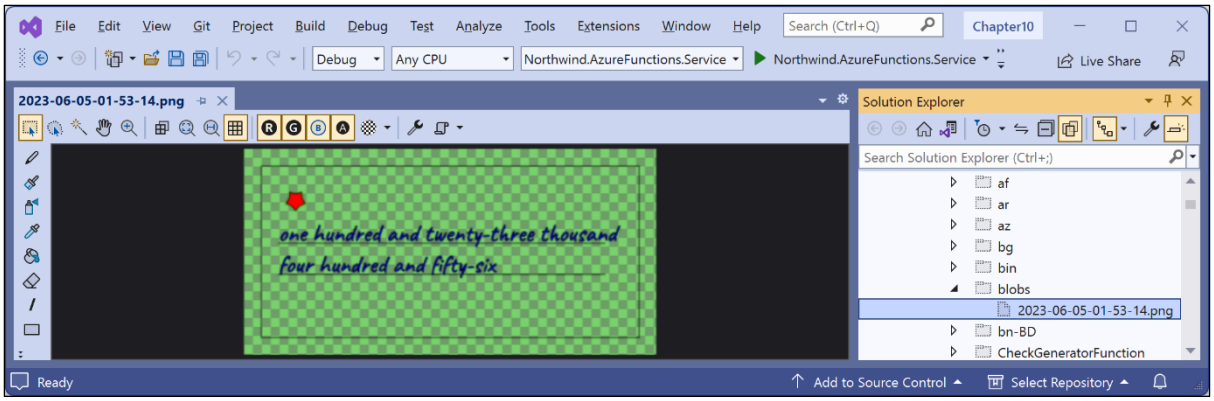

Succeeded Jobs – Hangfire Dashl
localhost:5095/hangfire/jobs/succeeded
Hangfire Dashboard
Jobs 0
Retries 0
Recurring Jobs 0
Servers 1
Back to site
Enqueued 0 / 0
Scheduled 0
Processing 0
Succeeded 1
Failed 0
Deleted 1
Awaiting 0
Succeeded Jobs
Requeue jobs
Items per page: 10 20 50 100 500
Id Job Total Duration Succeeded
#2 Program.WriteMessage 16.782s a minute ago
Total items: 1
Hangfire 1.8.2 SQL Server: .@Northwind.HangfireDb Time: 6/12/2023 5:05:38 PM Generated: 6.71ms

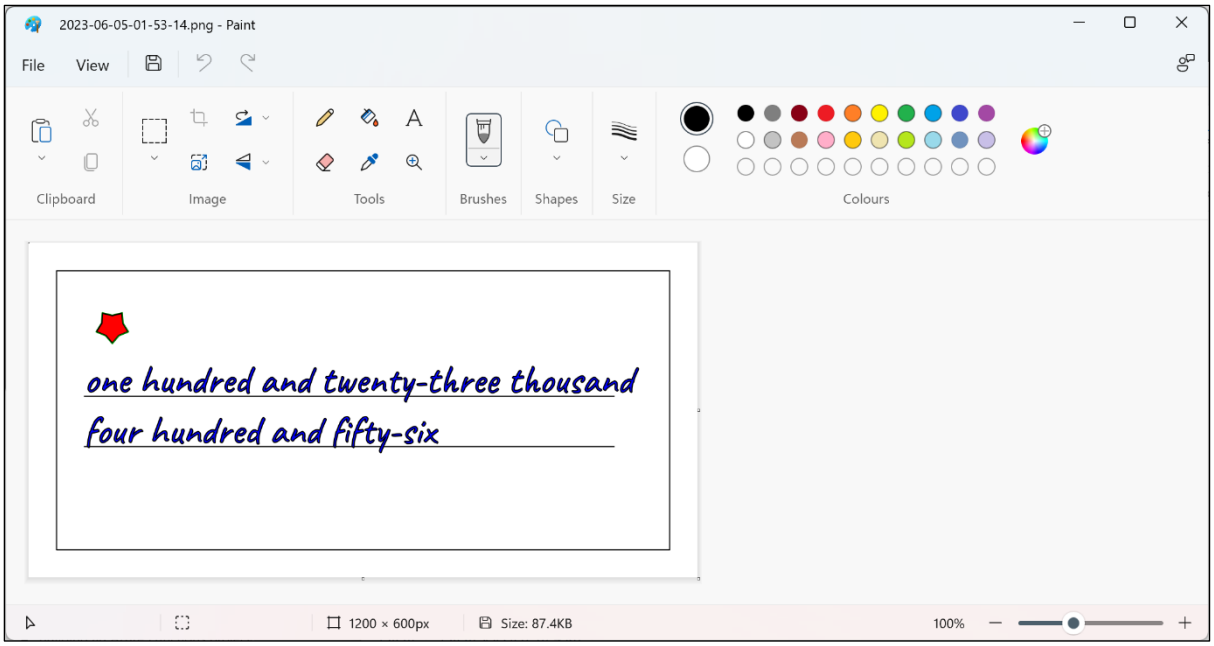
Chapter 10: Building Serverless Nanoservices Using Azure Functions

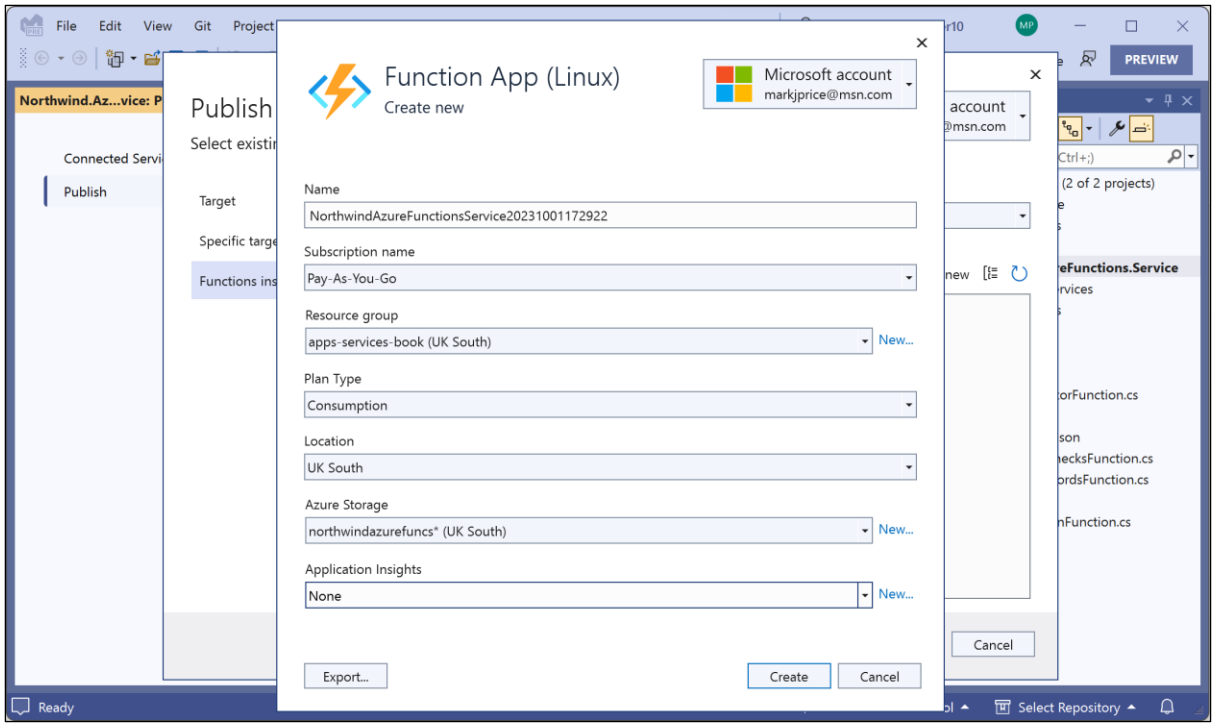


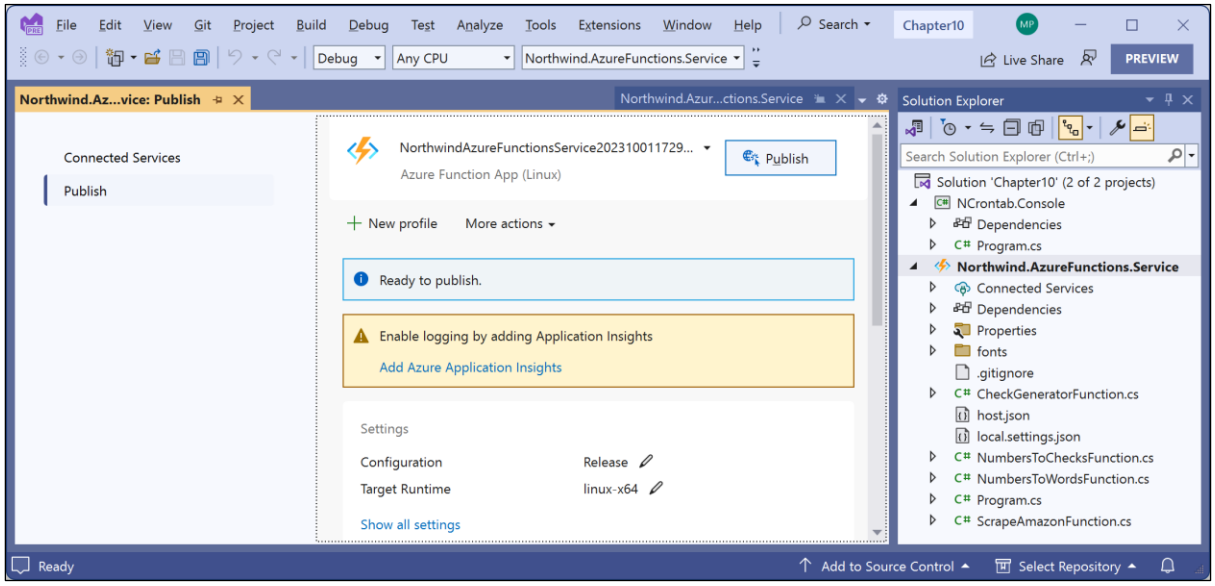


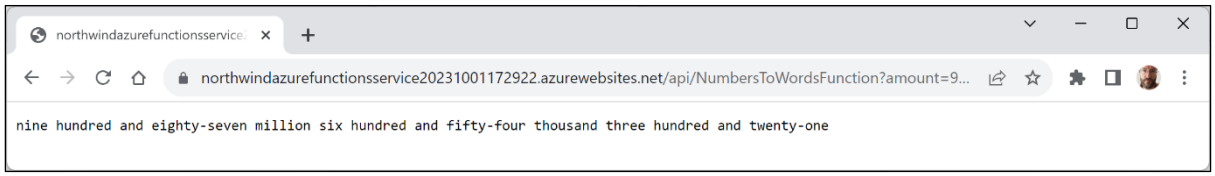



File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
Search (Ctrl+Q)
Chapter10
Debug
Any CPU
Northwind.AzureFunctions.Service
Live Share
2023-06-05-01-53-14.png
one hundred and twenty-three thousand
four hundred and fifty-six
Solution Explorer
Search Solution Explorer (Ctrl+;)
af
ar
az
bg
bin
blobs
2023-06-05-01-53-14.png
bn-BD
CheckGeneratorFunction
Ready
Add to Source Control
Select Repository

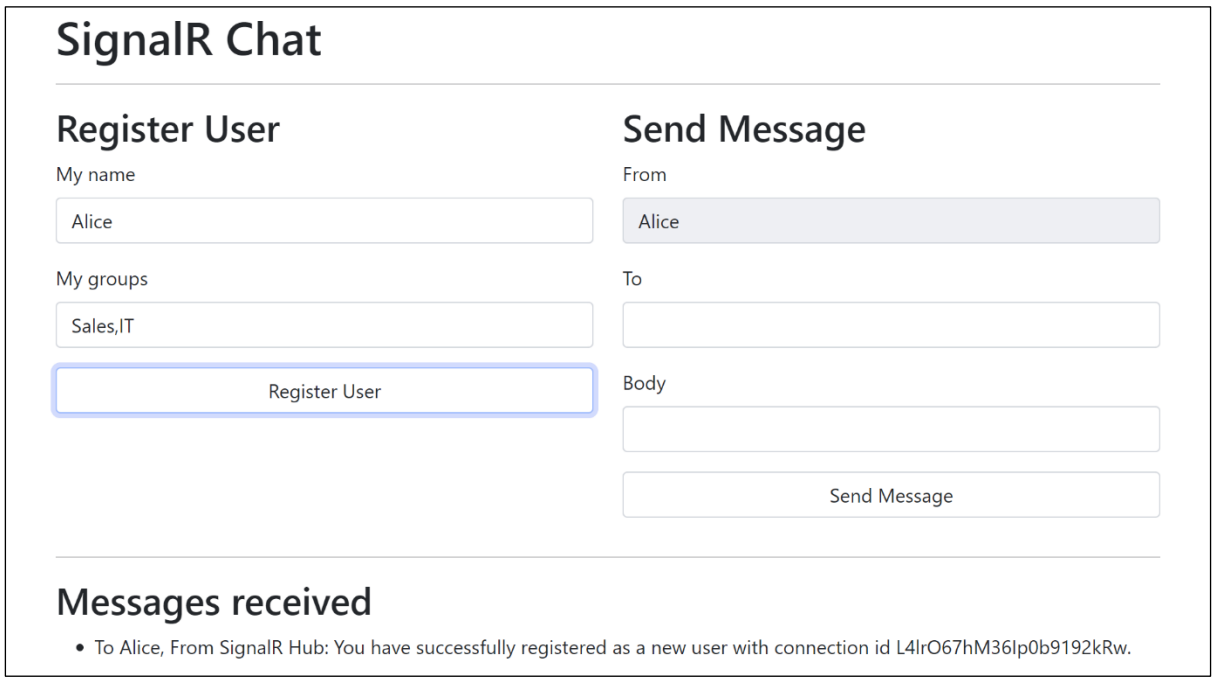

2023-06-05-01-53-14.png - Paint
File
View
Clipboard
Image
Tools
Brushes
Shapes
Size
Colours
one hundred and twenty-three thousand
four hundred and fifty-six
1200 × 600px
Size: 87.4KB
100%

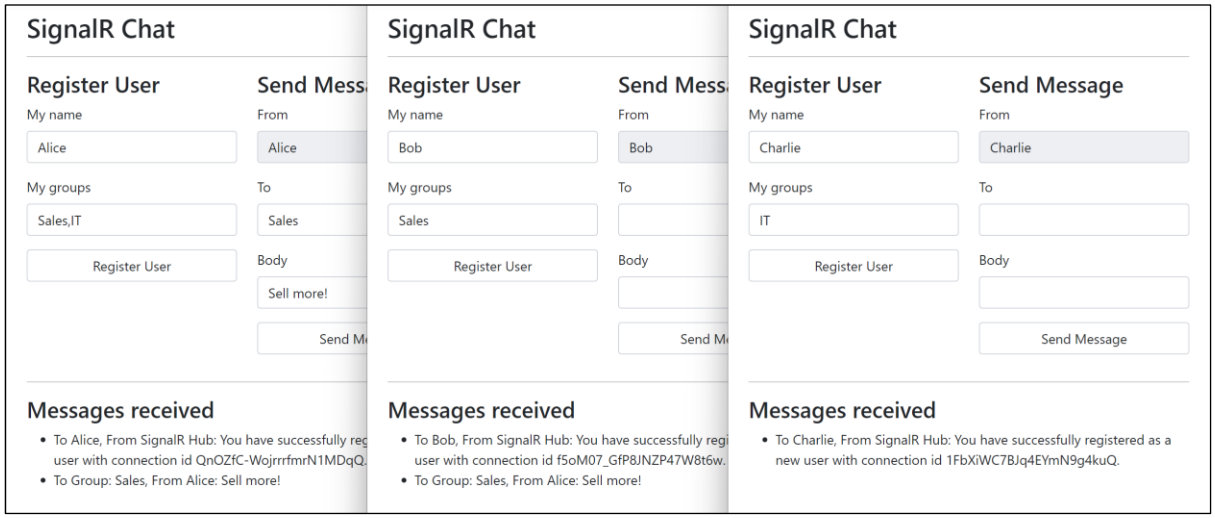

Function App (Linux)
Create new
Microsoft account
markjprice@msn.com
Name
NorthwindAzureFunctionsService20231001172922
Subscription name
Pay-As-You-Go
Resource group
apps-services-book (UK South)
New...
Plan Type
Consumption
Location
UK South
Azure Storage
northwindazurefuncs* (UK South)
New...
Application Insights
None
New...
Export...
Create
Cancel
Publish
Select existi
Target
Specific targe
Functions ins
Connected Servi
Publish
Northwind.Az...vice: P
Ready
Select Repository
PREVIEW

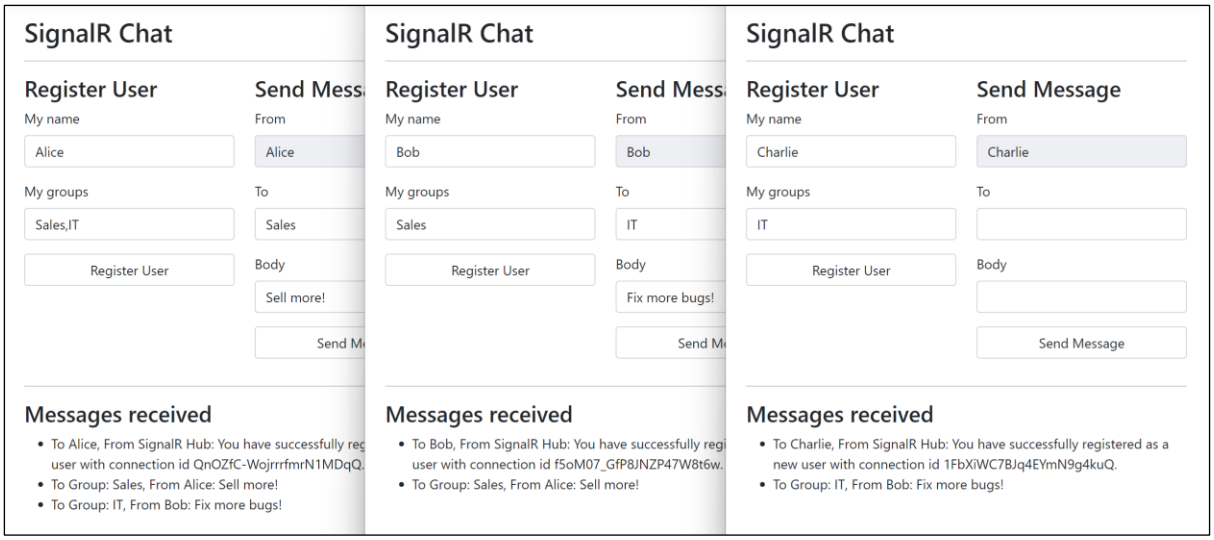

Northwind.Az...vice: Publish
Connected Services
Publish
NorthwindAzureFunctionsService202310011729...
Azure Function App (Linux)
Publish
New profile
More actions
Ready to publish.
Enable logging by adding Application Insights
Add Azure Application Insights
Settings
Configuration
Release
Target Runtime
linux-x64
Show all settings
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Chapter10' (2 of 2 projects)
NCrontab.Console
Dependencies
Program.cs
Northwind.AzureFunctions.Service
Connected Services
Dependencies
Properties
fonts
.gitignore
CheckGeneratorFunction.cs
host.json
local.settings.json
NumbersToChecksFunction.cs
NumbersToWordsFunction.cs
Program.cs
ScrapeAmazonFunction.cs
Ready
Add to Source Control
Select Repository
PREVIEW

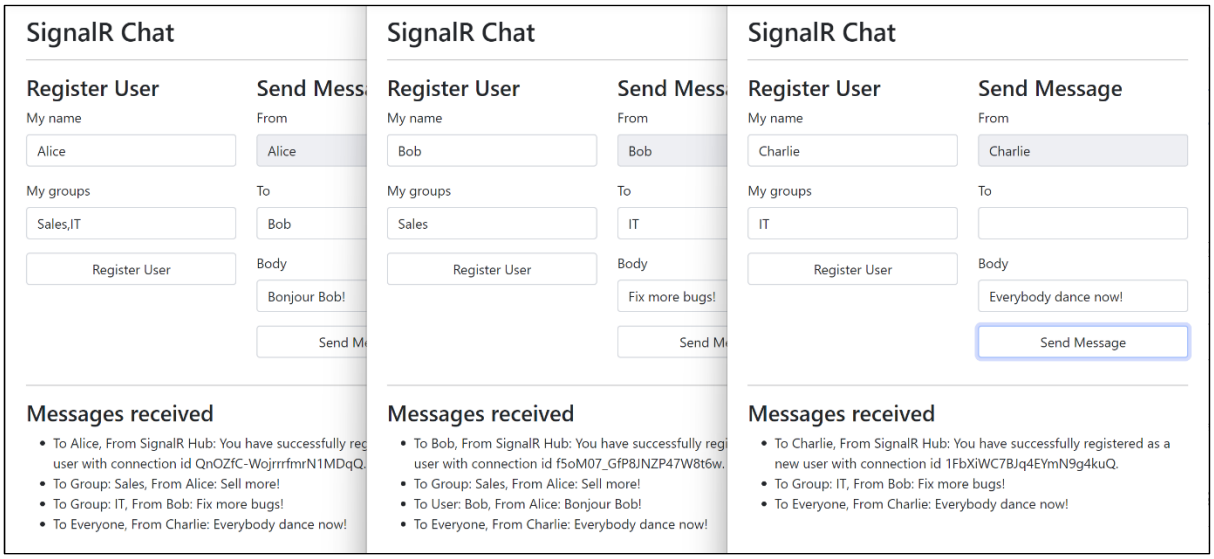

northwindazurefunctionsservice20231001172922.azurewebsites.net/api/NumbersToWordsFunction?amount=9...
nine hundred and eighty-seven million six hundred and fifty-four thousand three hundred and twenty-one

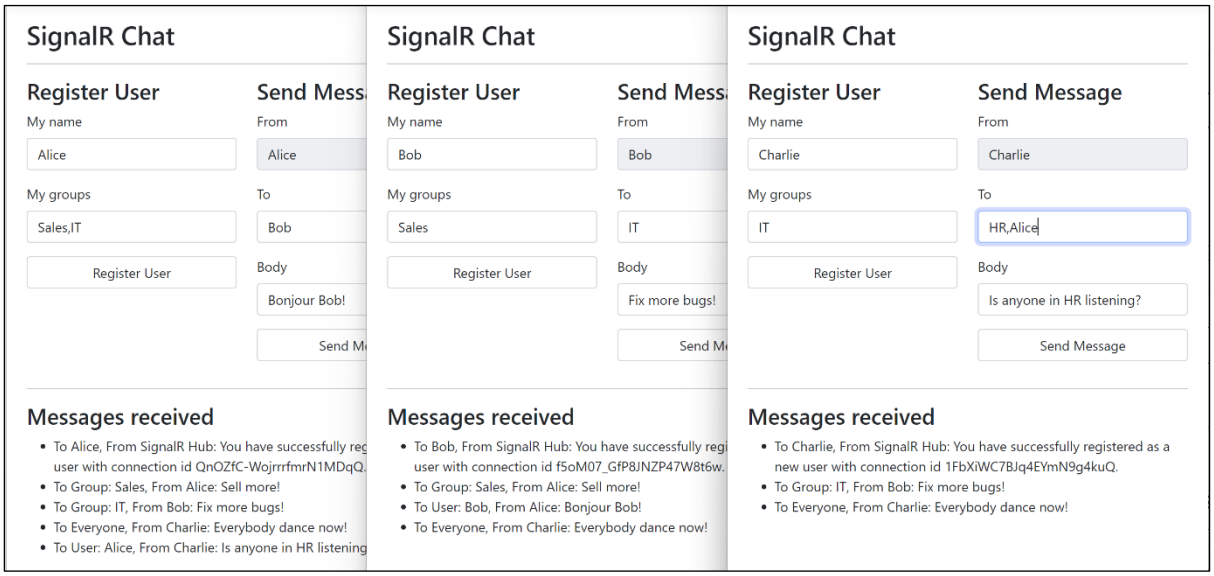
Chapter 11: Broadcasting Real-Time Communication Using SignalR

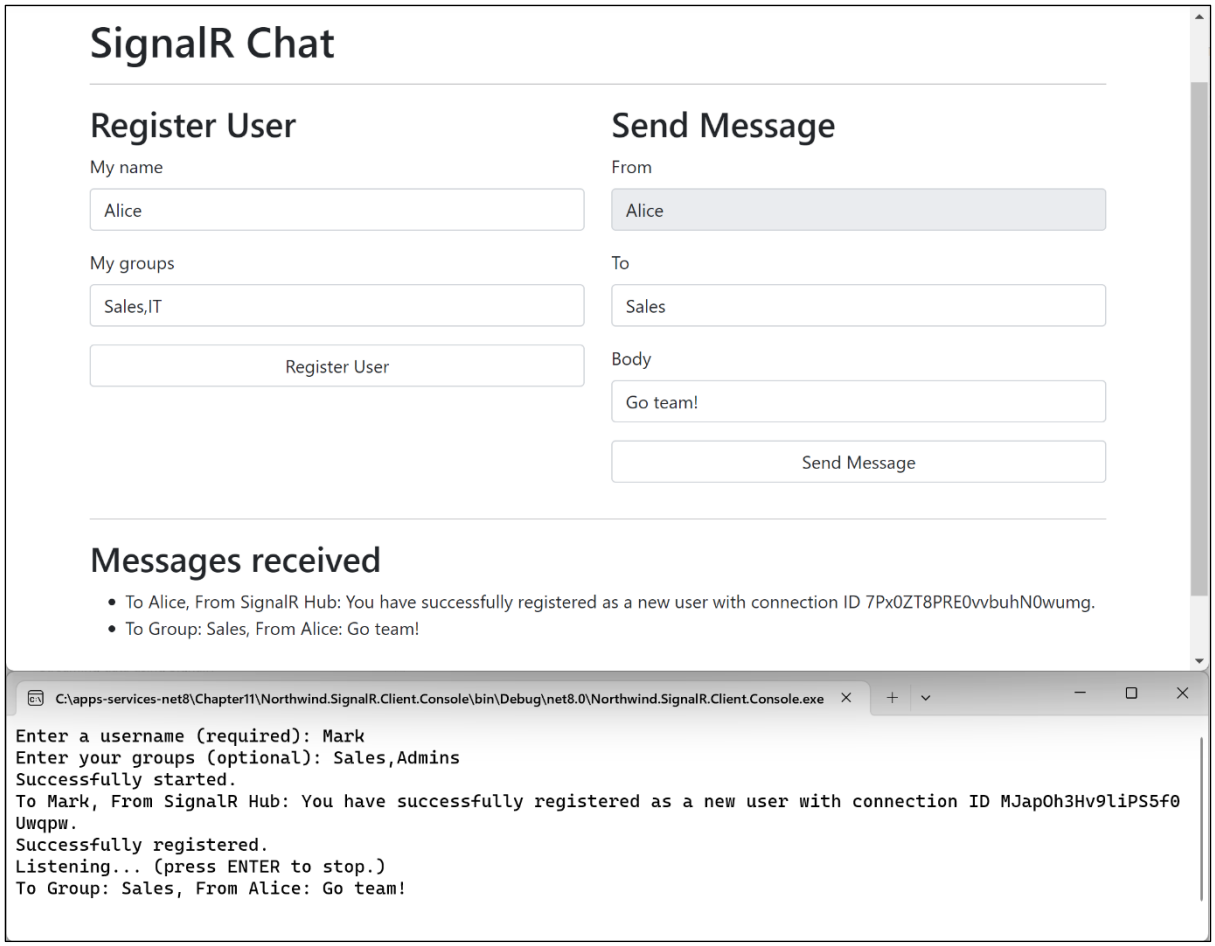





SignalR Chat
Register User
My name
Alice
My groups
Sales,IT
Register User
Send Mess
From
Alice
To
Sales
Body
Sell more!
Send M
Messages received
To Alice, From SignalR Hub: You have successfully reg
user with connection id QnOZfC-WojrrrfmrN1MDqQ.
To Group: Sales, From Alice: Sell more!
To Group: IT, From Bob: Fix more bugs!
SignalR Chat
Register User
My name
Bob
My groups
Sales
Register User
Send Mess
From
Bob
To
IT
Body
Fix more bugs!
Send M
Messages received
To Bob, From SignalR Hub: You have successfully regi
user with connection id f5oM07_GfP8JNZP47W8t6w.
To Group: Sales, From Alice: Sell more!
SignalR Chat
Register User
My name
Charlie
My groups
IT
Register User
Send Message
From
Charlie
To
Body
Send Message
Messages received
To Charlie, From SignalR Hub: You have successfully registered as a
new user with connection id 1FbXiWC7BJq4EYmN9g4kuQ.
To Group: IT, From Bob: Fix more bugs!

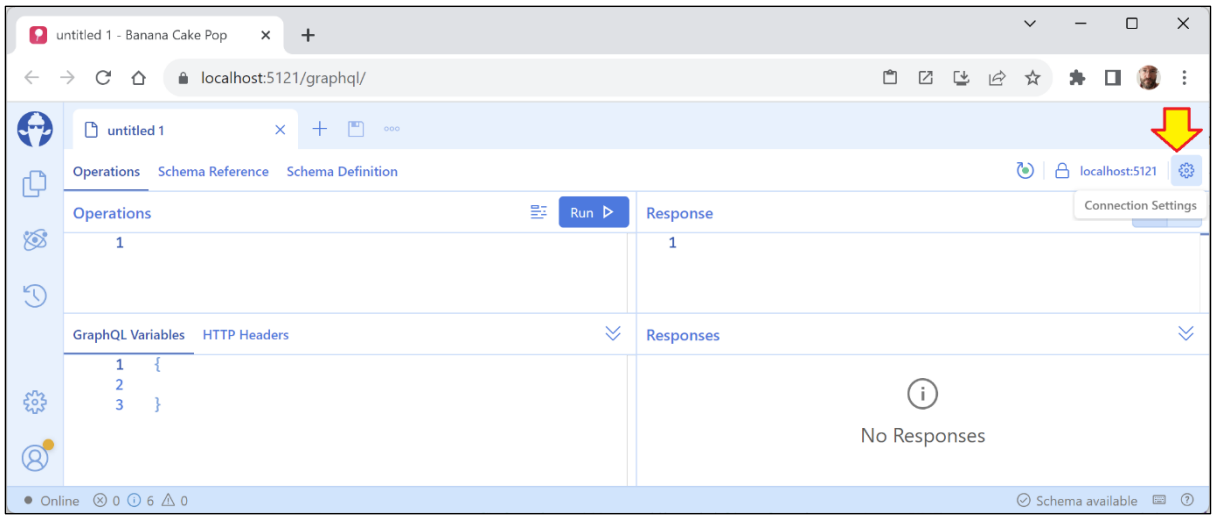

SignalR Chat
Register User
My name
Alice
My groups
Sales,IT
Register User
Send Mess
From
Alice
To
Bob
Body
Bonjour Bob!
Send M
Messages received
To Alice, From SignalR Hub: You have successfully reg
user with connection id QnOZfC-WojrrrfmrN1MDqQ.
To Group: Sales, From Alice: Sell more!
To Group: IT, From Bob: Fix more bugs!
To Everyone, From Charlie: Everybody dance now!
SignalR Chat
Register User
My name
Bob
My groups
Sales
Register User
Send Mess
From
Bob
To
IT
Body
Fix more bugs!
Send M
Messages received
To Bob, From SignalR Hub: You have successfully regi
user with connection id f5oM07_GfP8JNZP47W8t6w.
To Group: Sales, From Alice: Sell more!
To User: Bob, From Alice: Bonjour Bob!
To Everyone, From Charlie: Everybody dance now!
SignalR Chat
Register User
My name
Charlie
My groups
IT
Register User
Send Message
From
Charlie
To
Body
Everybody dance now!
Send Message
Messages received
To Charlie, From SignalR Hub: You have successfully registered as a
new user with connection id 1FbXiWC7BJq4EYmN9g4kuQ.
To Group: IT, From Bob: Fix more bugs!
To Everyone, From Charlie: Everybody dance now!

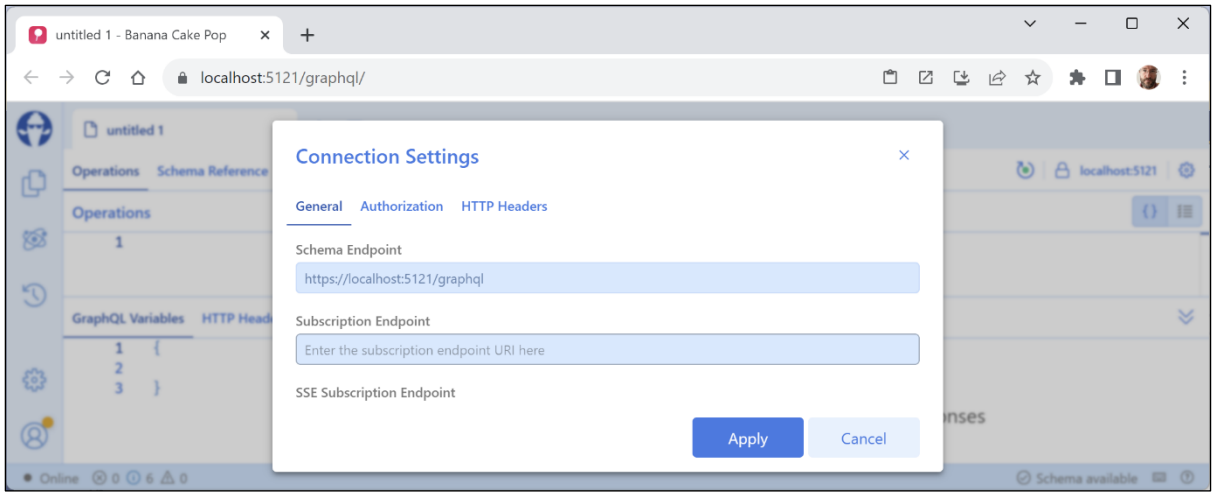

SignalR Chat
Register User
My name
Alice
My groups
Sales,IT
Register User
Send Mess
From
Alice
To
Bob
Body
Bonjour Bob!
Send M
Messages received
To Alice, From SignalR Hub: You have successfully reg
user with connection id QnOZfC-WojrrrfmrN1MDqQ.
To Group: Sales, From Alice: Sell more!
To Group: IT, From Bob: Fix more bugs!
To Everyone, From Charlie: Everybody dance now!
To User: Alice, From Charlie: Is anyone in HR listening
SignalR Chat
Register User
My name
Bob
My groups
Sales
Register User
Send Mess
From
Bob
To
IT
Body
Fix more bugs!
Send M
Messages received
To Bob, From SignalR Hub: You have successfully regi
user with connection id f5oM07_GfP8JNZP47W8t6w.
To Group: Sales, From Alice: Sell more!
To User: Bob, From Alice: Bonjour Bob!
To Everyone, From Charlie: Everybody dance now!
SignalR Chat
Register User
My name
Charlie
My groups
IT
Register User
Send Message
From
Charlie
To
HR,Alice
Body
Is anyone in HR listening?
Send Message
Messages received
To Charlie, From SignalR Hub: You have successfully registered as a
new user with connection id 1FbXiWC7BJq4EYmN9g4kuQ.
To Group: IT, From Bob: Fix more bugs!
To Everyone, From Charlie: Everybody dance now!

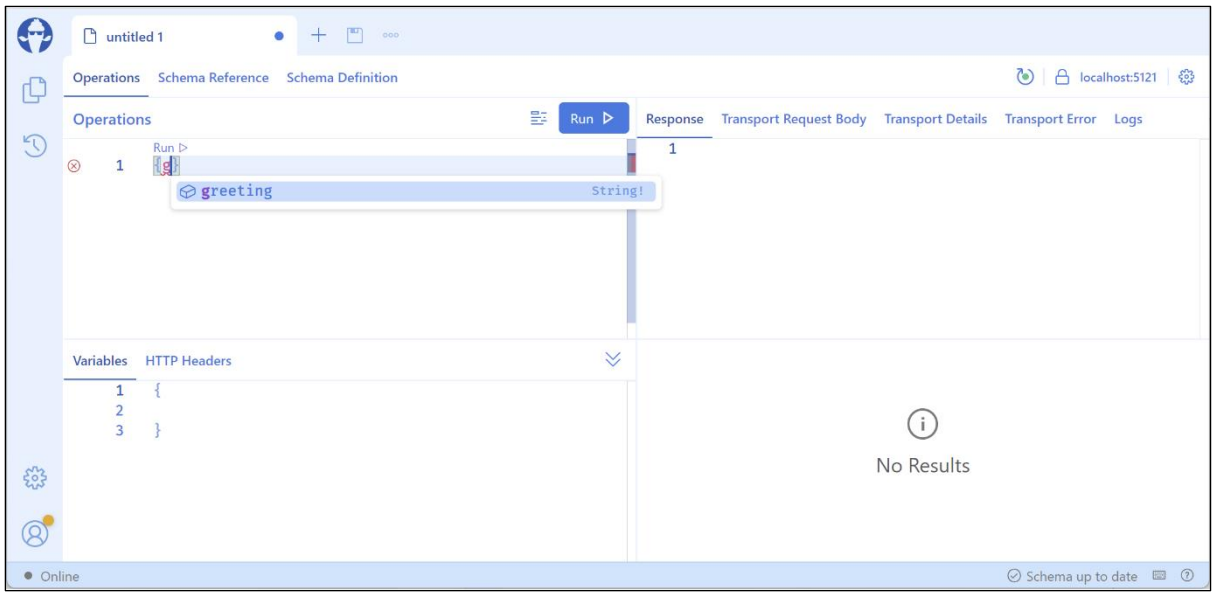

SignalR Chat
Register User
My name
Alice
My groups
Sales,IT
Register User
Send Message
From
Alice
To
Sales
Body
Go team!
Send Message
Messages received
To Alice, From SignalR Hub: You have successfully registered as a new user with connection ID 7Px0ZT8PRE0vvbuhN0wumg.
To Group: Sales, From Alice: Go team!

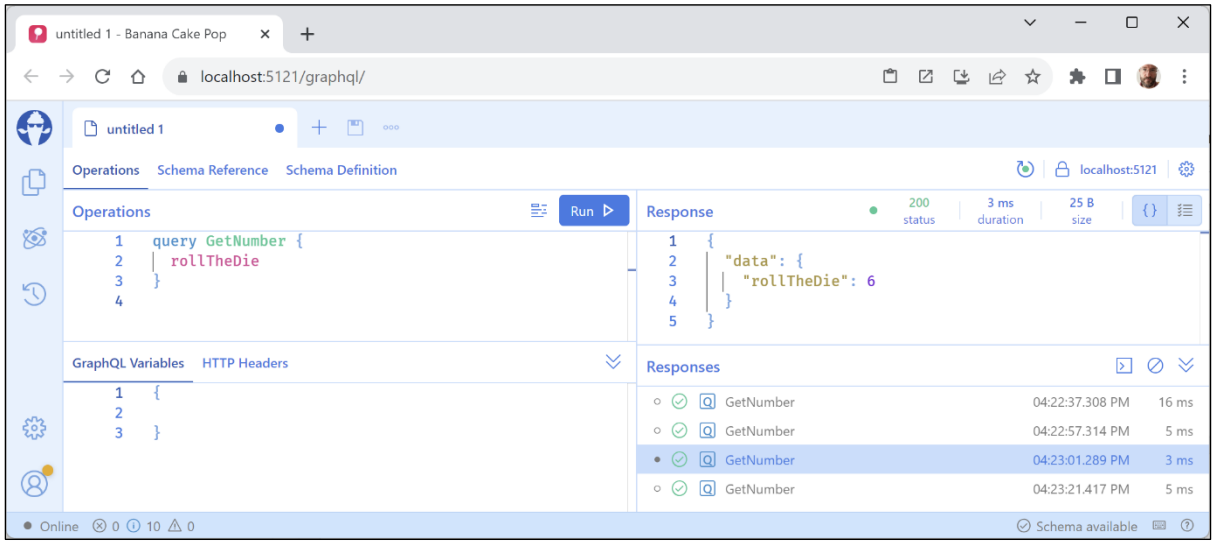
C:\apps-services-net8\Chapter11\Northwind.SignalR.Client.Console\bin\Debug\net8.0\Northwind.SignalR.Client.Console.exe
Enter a username (required): Mark
Enter your groups (optional): Sales,Admins
Successfully started.
To Mark, From SignalR Hub: You have successfully registered as a new user with connection ID MJapOh3Hv9liPS5f0Uwqpw.
Successfully registered.
Listening... (press ENTER to stop.)
To Group: Sales, From Alice: Go team!

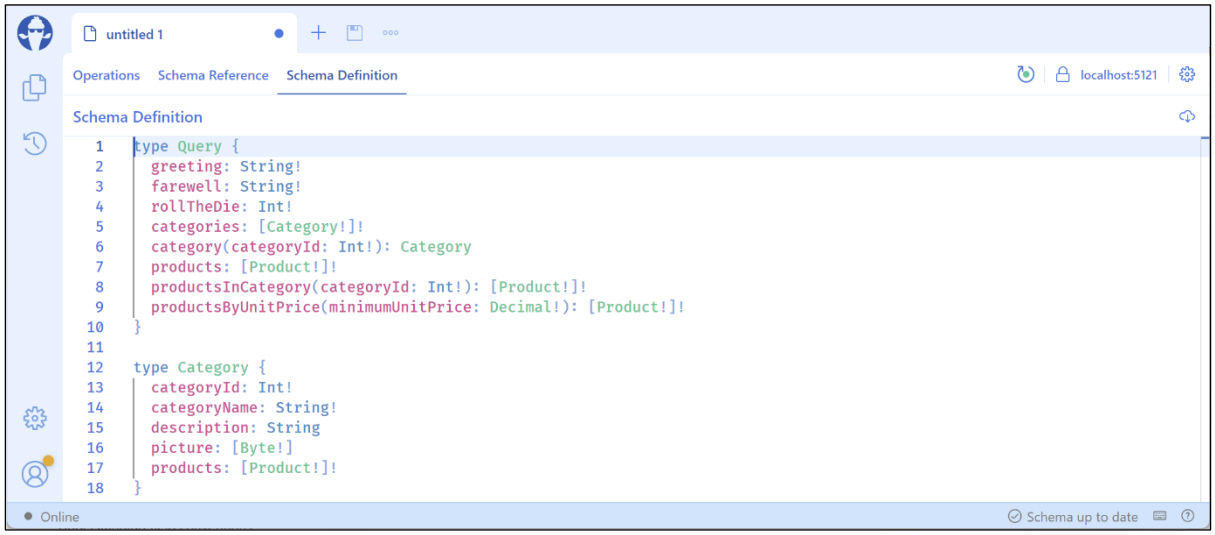
Chapter 12: Combining Data Sources Using GraphQL

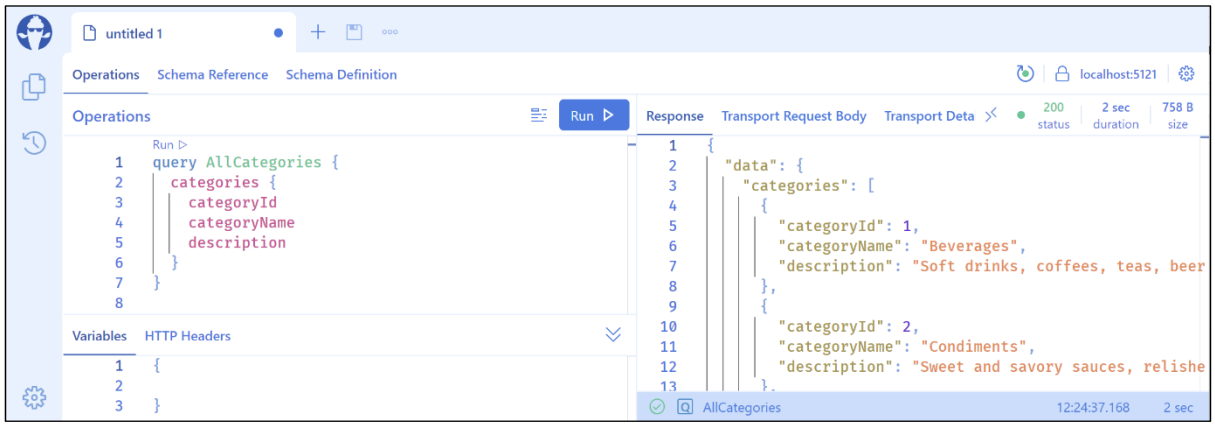


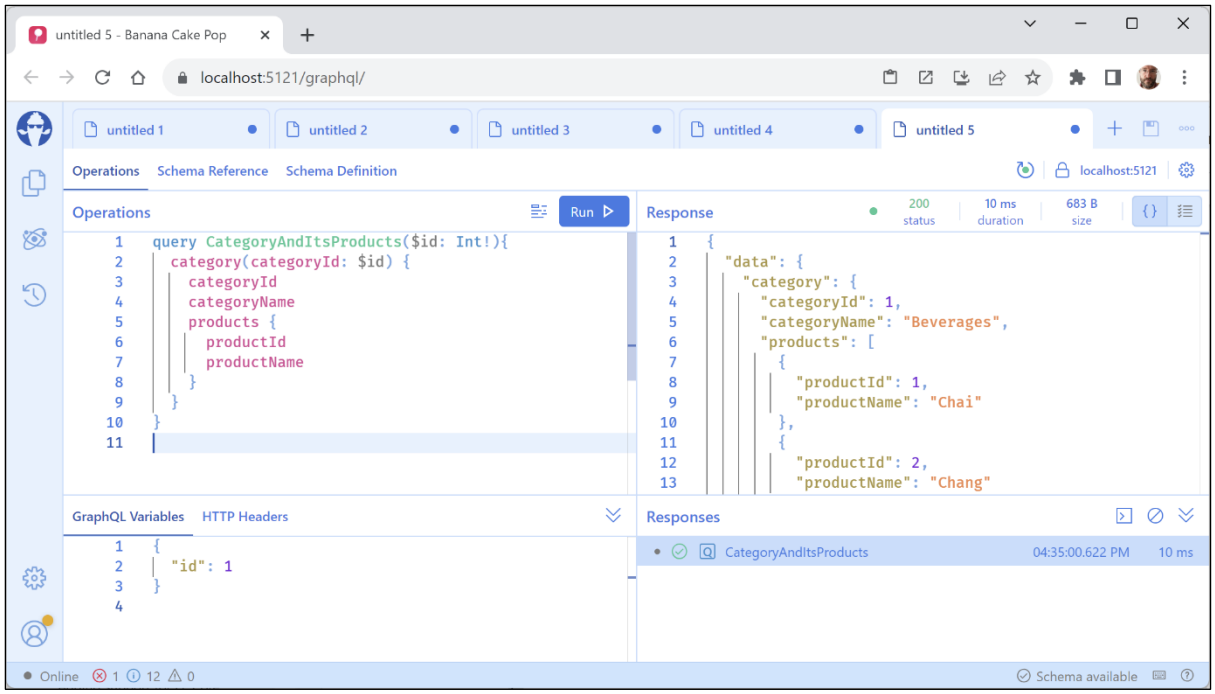


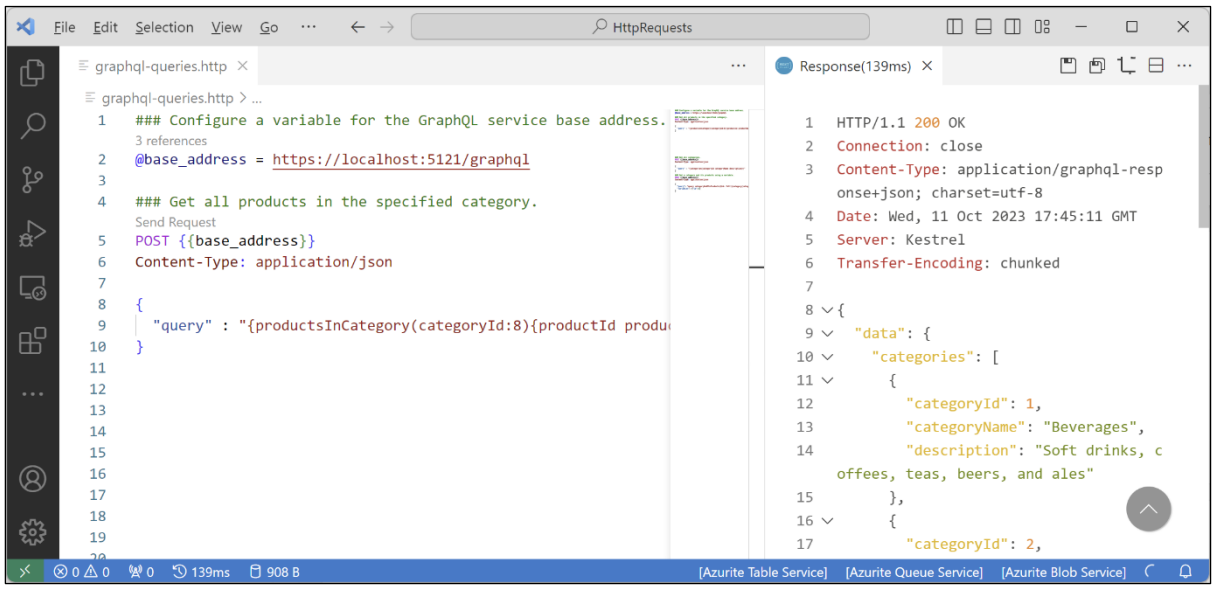


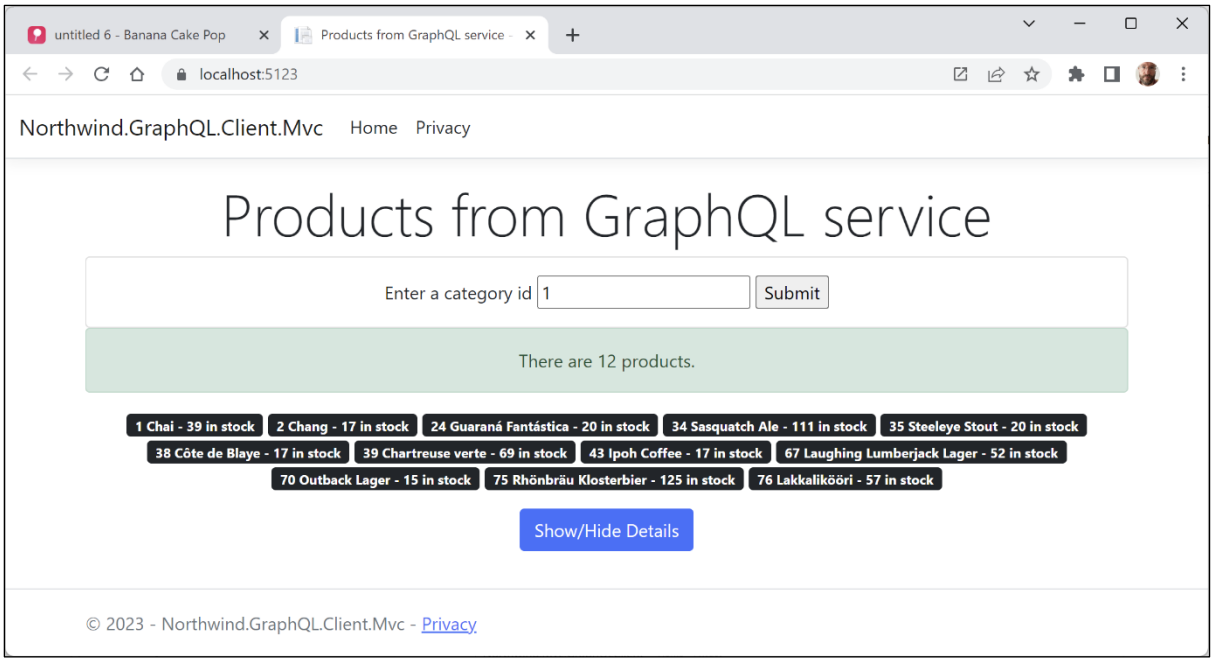

untitled 1 - Banana Cake Pop
localhost:5121/graphql/
untitled 1
Operations
Schema Reference
Schema Definition
localhost:5121
Operations
Run
query GetNumber {
rollTheDie
}
Response
200 status
3 ms duration
25 B size
{
"data": {
"rollTheDie": 6
}
}
GraphQL Variables
HTTP Headers
{
}
Responses
GetNumber 04:22:37.308 PM 16 ms
GetNumber 04:22:57.314 PM 5 ms
GetNumber 04:23:01.289 PM 3 ms
GetNumber 04:23:21.417 PM 5 ms
Online
0 10 0
Schema available

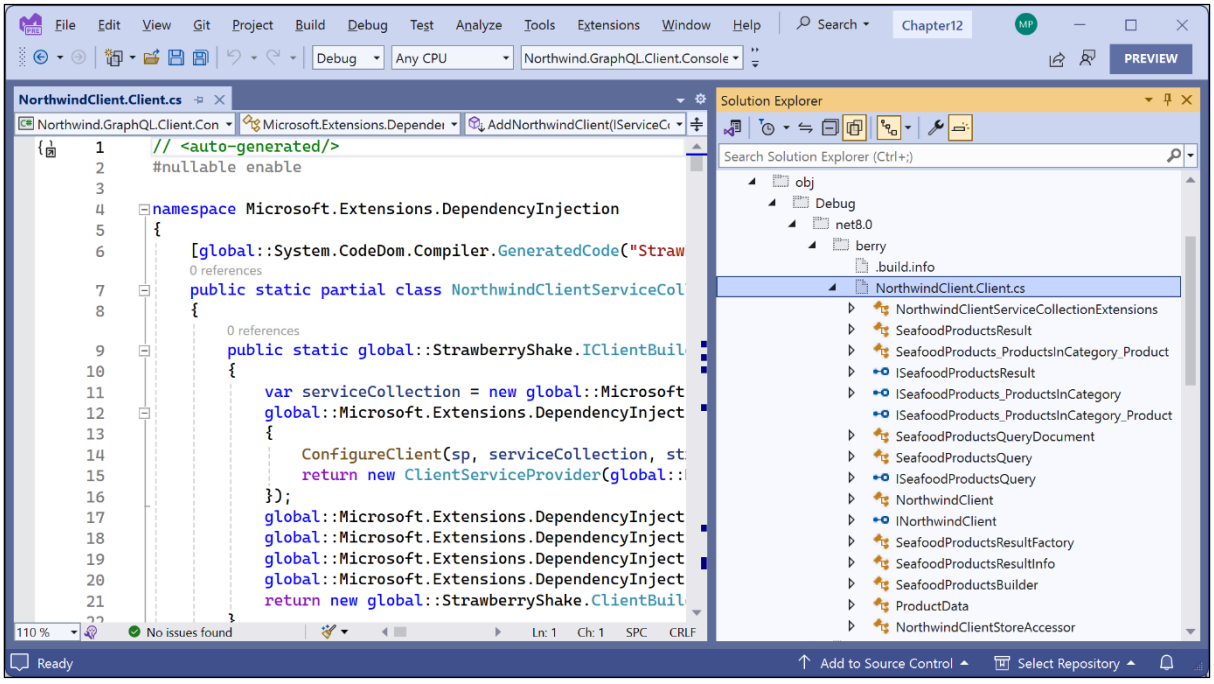

untitled 1
Operations
Schema Reference
Schema Definition
localhost:5121
Schema Definition
type Query {
greeting: String!
farewell: String!
rollTheDie: Int!
categories: [Category!]!
category(categoryId: Int!): Category
products: [Product!]!
productsInCategory(categoryId: Int!): [Product!]!
productsByUnitPrice(minimumUnitPrice: Decimal!): [Product!]!
}
type Category {
categoryId: Int!
categoryName: String!
description: String
picture: [Byte!]
products: [Product!]!
}
Online
Schema up to date

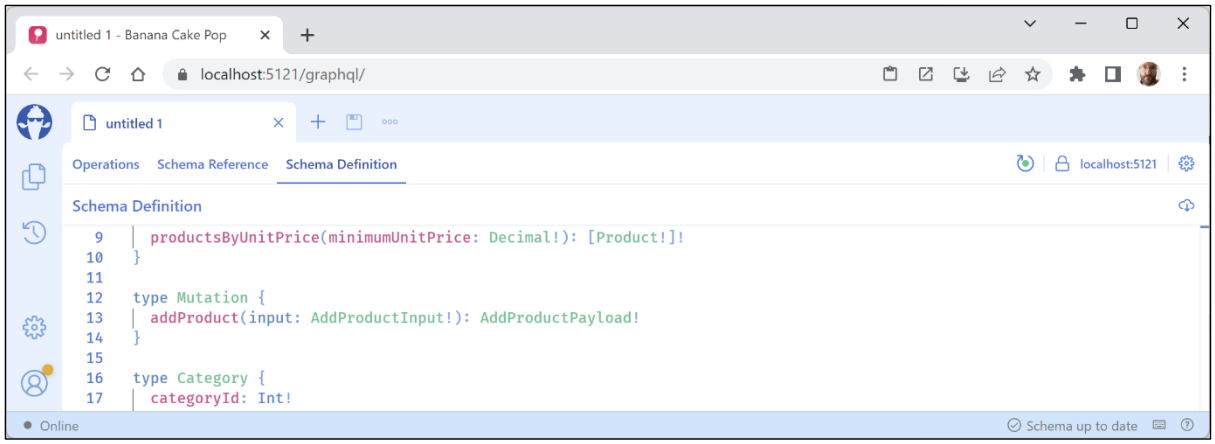

untitled 1
Operations
Schema Reference
Schema Definition
localhost:5121
Operations
Run
Run ▷
query AllCategories {
categories {
categoryId
categoryName
description
}
}
Response
Transport Request Body
Transport Deta
200 status
2 sec duration
758 B size
{
"data": {
"categories": [
{
"categoryId": 1,
"categoryName": "Beverages",
"description": "Soft drinks, coffees, teas, beer
},
{
"categoryId": 2,
"categoryName": "Condiments",
"description": "Sweet and savory sauces, relishe
},
Variables
HTTP Headers
{
}
AllCategories 12:24:37.168 2 sec

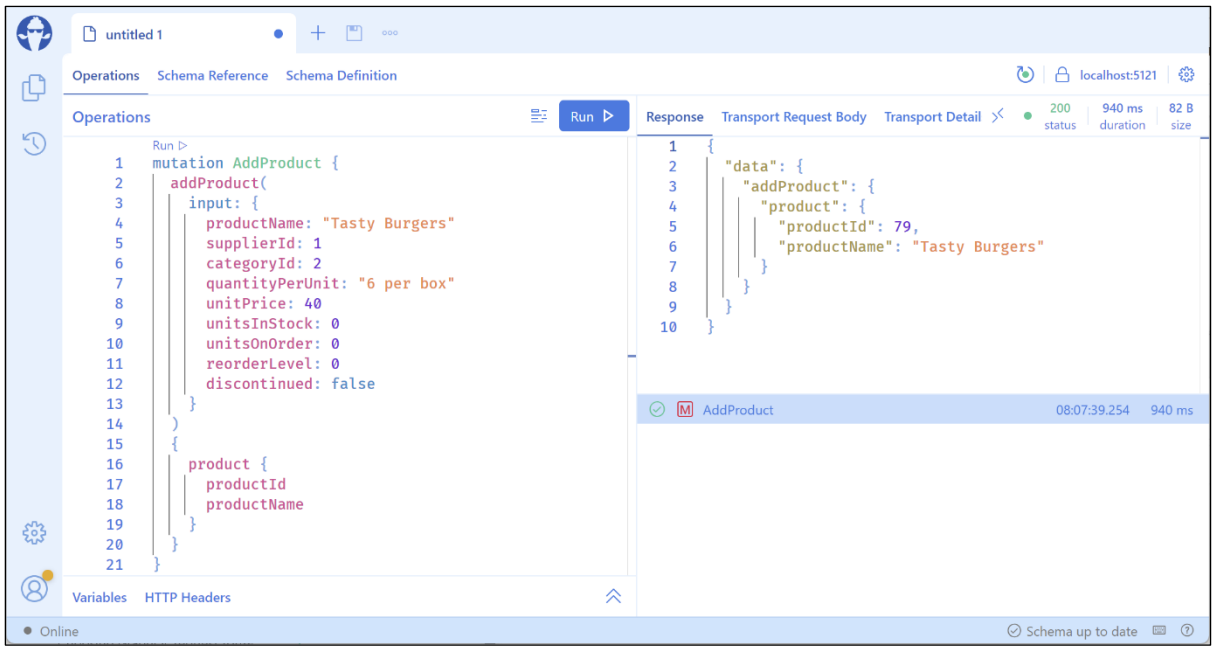

untitled 5 - Banana Cake Pop
localhost:5121/graphql/
untitled 1
untitled 2
untitled 3
untitled 4
untitled 5
Operations
Schema Reference
Schema Definition
localhost:5121
Operations
Run
query CategoryAndItsProducts($id: Int!){
category(categoryId: $id) {
categoryId
categoryName
products {
productId
productName
}
}
}
Response
200
status
10 ms
duration
683 B
size
{
"data": {
"category": {
"categoryId": 1,
"categoryName": "Beverages",
"products": [
{
"productId": 1,
"productName": "Chai"
},
{
"productId": 2,
"productName": "Chang"
GraphQL Variables
HTTP Headers
{
"id": 1
}
Responses
CategoryAndItsProducts
04:35:00.622 PM
10 ms
Online
1
12
0
Schema available

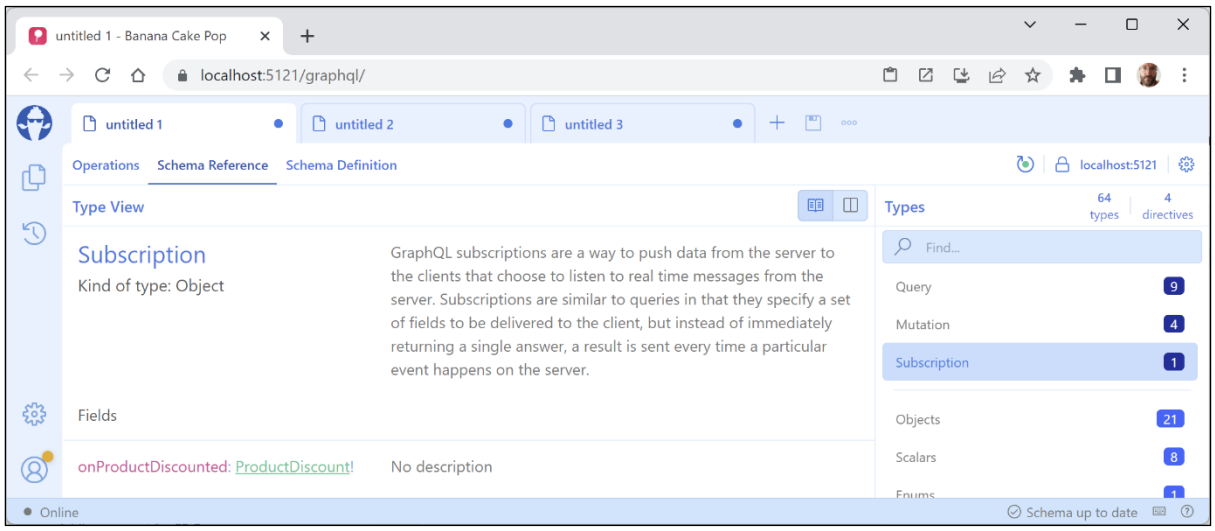

File
Edit
Selection
View
Go
HttpRequests
graphql-queries.http
graphql-queries.http > ...
Configure a variable for the GraphQL service base address.
3 references
@base_address = https://localhost:5121/graphql
Get all products in the specified category.
Send Request
POST {{base_address}}
Content-Type: application/json
{
"query" : "{productsInCategory(categoryId:8){productId produ
}
Response(139ms)
HTTP/1.1 200 OK
Connection: close
Content-Type: application/graphql-response+json; charset=utf-8
Date: Wed, 11 Oct 2023 17:45:11 GMT
Server: Kestrel
Transfer-Encoding: chunked
{
"data": {
"categories": [
{
"categoryId": 1,
"categoryName": "Beverages",
"description": "Soft drinks, coffees, teas, beers, and ales"
},
{
"categoryId": 2,
0 0
0
139ms
908 B
[Azurite Table Service]
[Azurite Queue Service]
[Azurite Blob Service]

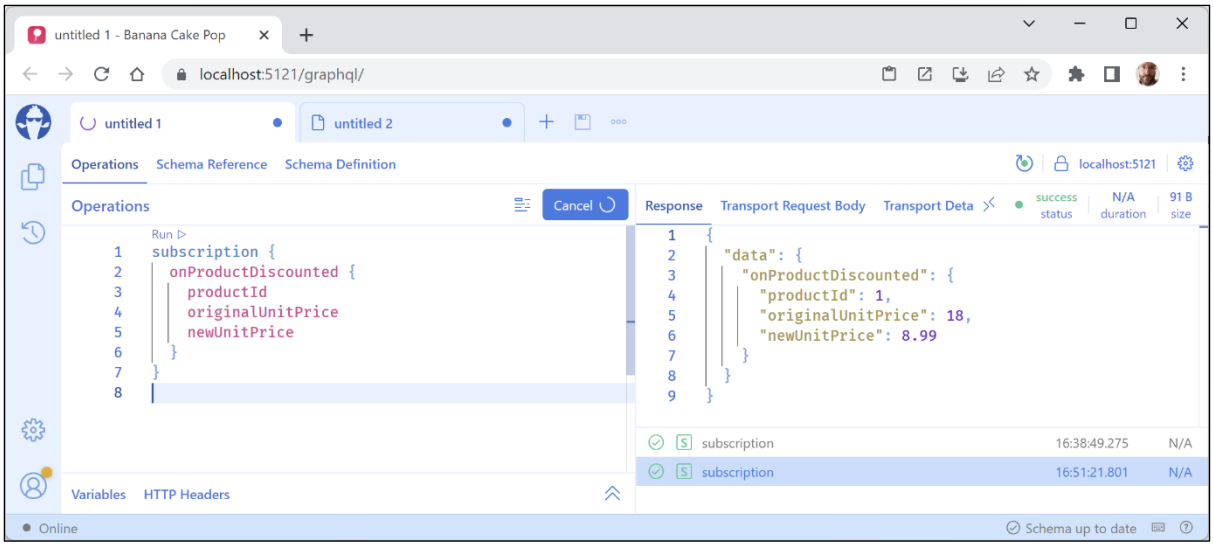

untitled 6 - Banana Cake Pop
Products from GraphQL service
localhost:5123
Northwind.GraphQL.Client.Mvc
Home
Privacy
Products from GraphQL service
Enter a category id
1
Submit
There are 12 products.
1 Chai - 39 in stock
2 Chang - 17 in stock
24 Guaraná Fantástica - 20 in stock
34 Sasquatch Ale - 111 in stock
35 Steeleye Stout - 20 in stock
38 Côte de Blaye - 17 in stock
39 Chartreuse verte - 69 in stock
43 Ipoh Coffee - 17 in stock
67 Laughing Lumberjack Lager - 52 in stock
70 Outback Lager - 15 in stock
75 Rhönbräu Klosterbier - 125 in stock
76 Lakkalikööri - 57 in stock
Show/Hide Details
© 2023 - Northwind.GraphQL.Client.Mvc - Privacy


File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
Search
Chapter12
Debug
Any CPU
Northwind.GraphQL.Client.Console
PREVIEW
NorthwindClient.Client.cs
Solution Explorer
Search Solution Explorer (Ctrl+;)
// <auto-generated/>
#nullable enable
namespace Microsoft.Extensions.DependencyInjection
public static partial class NorthwindClientServiceCol
public static global::StrawberryShake.IClientBuil
var serviceCollection = new global::Microsoft
global::Microsoft.Extensions.DependencyInject
ConfigureClient(sp, serviceCollection, st
return new ClientServiceProvider(global::
return new global::StrawberryShake.ClientBuil
obj
Debug
net8.0
berry
.build.info
NorthwindClient.Client.cs
NorthwindClientServiceCollectionExtensions
SeafoodProductsResult
SeafoodProducts_ProductsInCategory_Product
ISeafoodProductsResult
ISeafoodProducts_ProductsInCategory
ISeafoodProducts_ProductsInCategory_Product
SeafoodProductsQueryDocument
SeafoodProductsQuery
ISeafoodProductsQuery
NorthwindClient
INorthwindClient
SeafoodProductsResultFactory
SeafoodProductsResultInfo
SeafoodProductsBuilder
ProductData
NorthwindClientStoreAccessor
No issues found
Ln: 1 Ch: 1 SPC CRLF
Ready
Add to Source Control
Select Repository

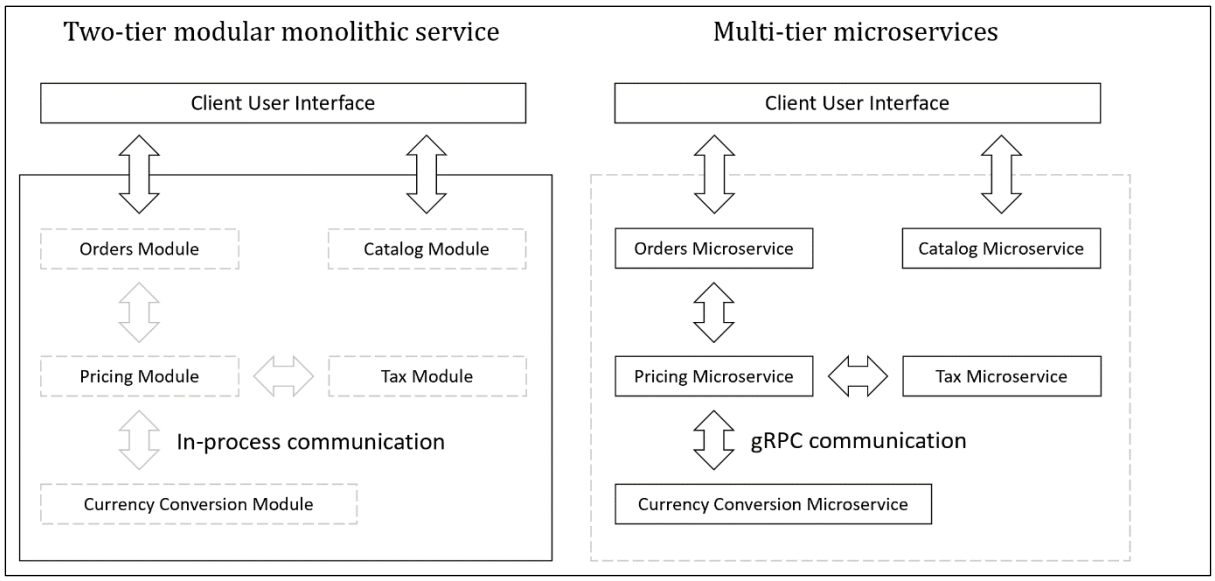

untitled 1 - Banana Cake Pop
localhost:5121/graphql/
untitled 1
Operations
Schema Reference
Schema Definition
localhost:5121
Schema Definition
9 productsByUnitPrice(minimumUnitPrice: Decimal!): [Product!]!
10 }
11
12 type Mutation {
13 addProduct(input: AddProductInput!): AddProductPayload!
14 }
15
16 type Category {
17 categoryId: Int!
Online
Schema up to date

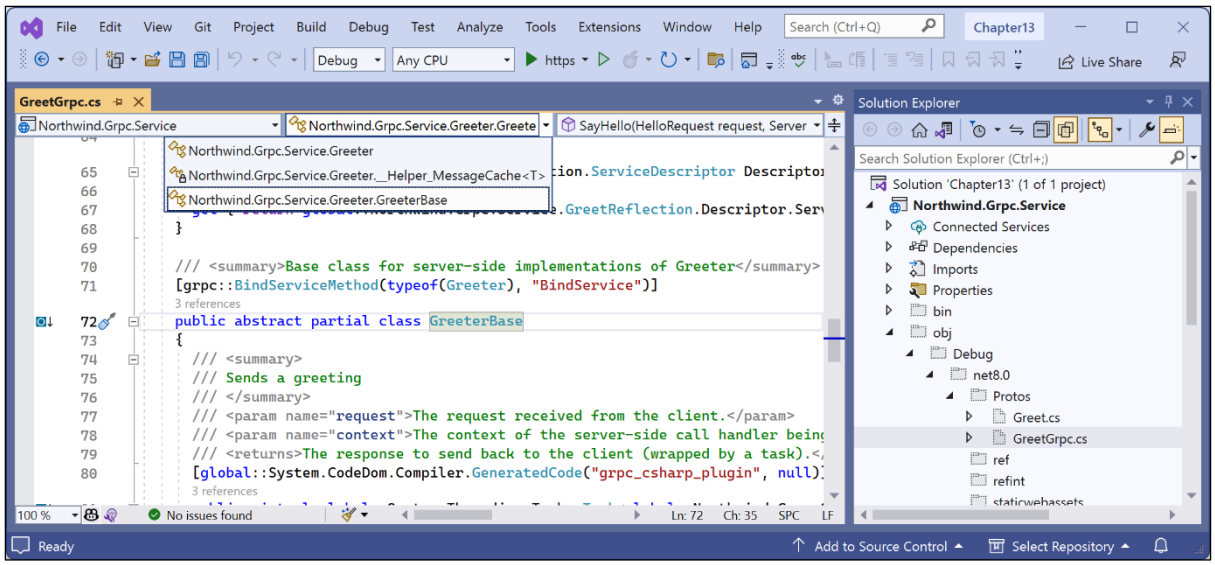

untitled 1
Operations
Schema Reference
Schema Definition
localhost:5121
Operations
Run
Response
Transport Request Body
Transport Detail
200 status
940 ms duration
82 B size
Run
1 mutation AddProduct {
2 addProduct(
3 input: {
4 productName: "Tasty Burgers"
5 supplierId: 1
6 categoryId: 2
7 quantityPerUnit: "6 per box"
8 unitPrice: 40
9 unitsInStock: 0
10 unitsOnOrder: 0
11 reorderLevel: 0
12 discontinued: false
13 }
14)
15 {
16 product {
17 productId
18 productName
19 }
20 }
21 }
1 {
2 "data": {
3 "addProduct": {
4 "product": {
5 "productId": 79,
6 "productName": "Tasty Burgers"
7 }
8 }
9 }
10 }
AddProduct
08:07:39.254
940 ms
Variables
HTTP Headers
Online
Schema up to date

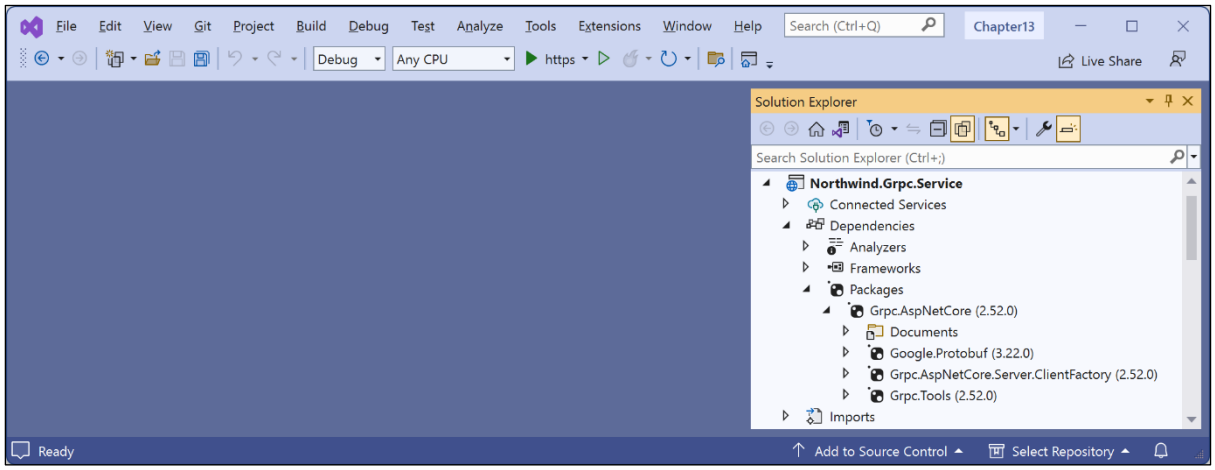

untitled 1 - Banana Cake Pop
localhost:5121/graphql/
untitled 1
untitled 2
untitled 3
Operations
Schema Reference
Schema Definition
localhost:5121
Type View
Subscription
Kind of type: Object
GraphQL subscriptions are a way to push data from the server to the clients that choose to listen to real time messages from the server. Subscriptions are similar to queries in that they specify a set of fields to be delivered to the client, but instead of immediately returning a single answer, a result is sent every time a particular event happens on the server.
Fields
onProductDiscounted: ProductDiscount!
No description
Types
64 types
4 directives
Find...
Query 9
Mutation 4
Subscription 1
Objects 21
Scalars 8
Enums 1
Online
Schema up to date


untitled 1 - Banana Cake Pop
localhost:5121/graphql/
untitled 1
untitled 2
Operations
Schema Reference
Schema Definition
localhost:5121
Operations
Cancel
Response
Transport Request Body
Transport Deta
success status
N/A duration
91 B size
Run
subscription {
onProductDiscounted {
productId
originalUnitPrice
newUnitPrice
}
}
{
"data": {
"onProductDiscounted": {
"productId": 1,
"originalUnitPrice": 18,
"newUnitPrice": 8.99
}
}
}
subscription 16:38:49.275 N/A
subscription 16:51:21.801 N/A
Variables
HTTP Headers
Online
Schema up to date

Chapter 13: Building Efficient Microservices Using gRPC







Northwind.Grpc.Client.Mvc Home Privacy

Welcome

Enter your name Submit

Greeting from gRPC service: Hello Henrietta

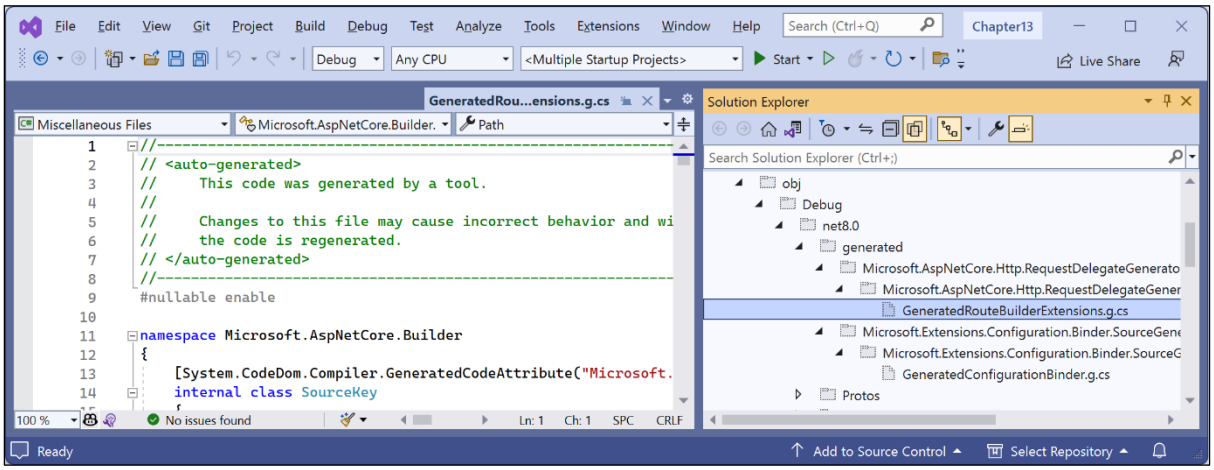
Welcome

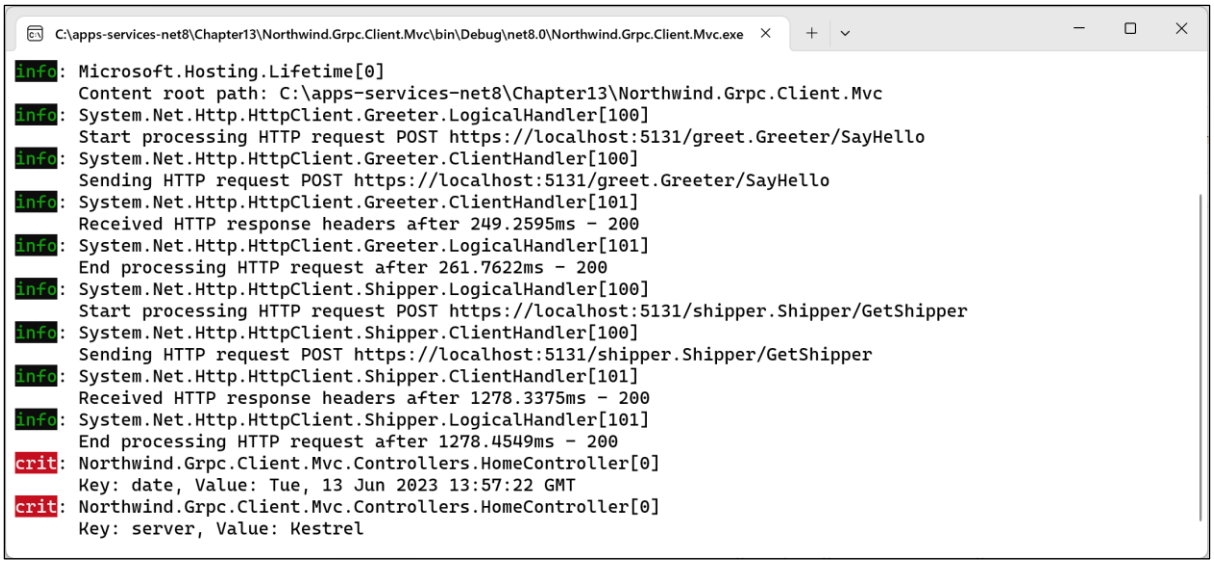
Enter your name Submit

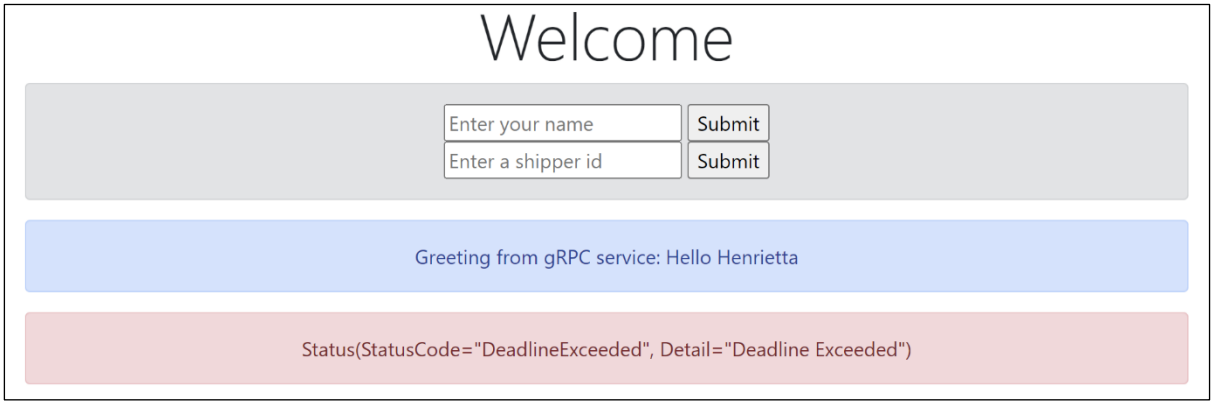
Enter a shipper id Submit

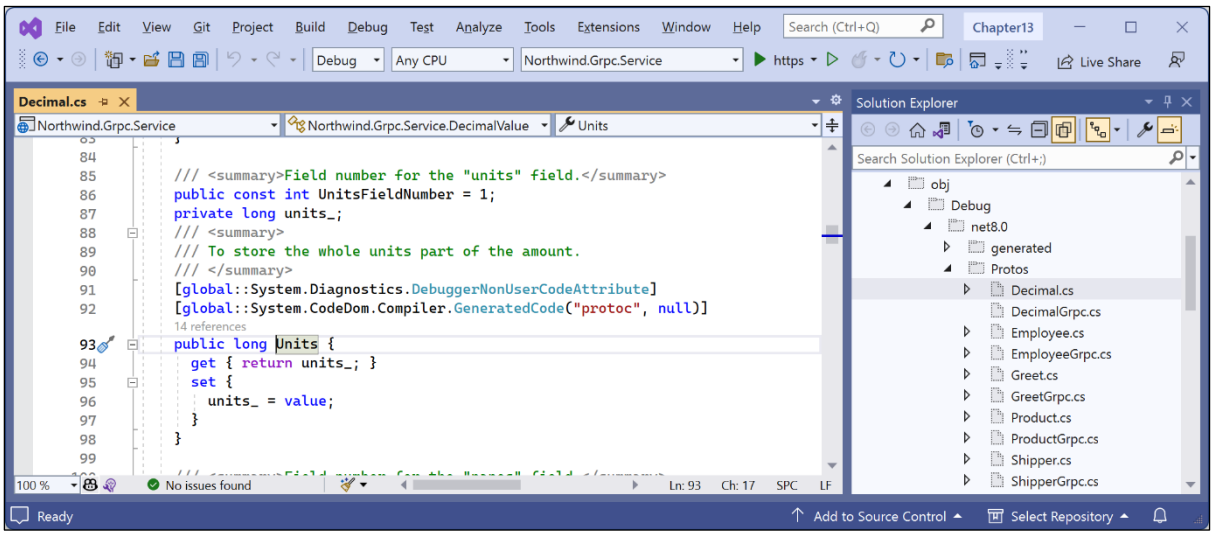
Greeting from gRPC service: Hello Henrietta

Shipper from gRPC service: ID: 1, Name: Speedy Express, Phone: (503) 555-9831.




C:\apps-services-net8\Chapter13\Northwind.Grpc.Client.Mvc\bin\Debug\net8.0\Northwind.Grpc.Client.Mvc.exe
info: Microsoft.Hosting.Lifetime[0]
Content root path: C:\apps-services-net8\Chapter13\Northwind.Grpc.Client.Mvc
info: System.Net.Http.HttpClient.Greeter.LogicalHandler[100]
Start processing HTTP request POST https://localhost:5131/greet.Greeter/SayHello
info: System.Net.Http.HttpClient.Greeter.ClientHandler[100]
Sending HTTP request POST https://localhost:5131/greet.Greeter/SayHello
info: System.Net.Http.HttpClient.Greeter.ClientHandler[101]
Received HTTP response headers after 249.2595ms - 200
info: System.Net.Http.HttpClient.Greeter.LogicalHandler[101]
End processing HTTP request after 261.7622ms - 200
info: System.Net.Http.HttpClient.Shipper.LogicalHandler[100]
Start processing HTTP request POST https://localhost:5131/shipper.Shipper/GetShipper
info: System.Net.Http.HttpClient.Shipper.ClientHandler[100]
Sending HTTP request POST https://localhost:5131/shipper.Shipper/GetShipper
info: System.Net.Http.HttpClient.Shipper.ClientHandler[101]
Received HTTP response headers after 1278.3375ms - 200
info: System.Net.Http.HttpClient.Shipper.LogicalHandler[101]
End processing HTTP request after 1278.4549ms - 200
crit: Northwind.Grpc.Client.Mvc.Controllers.HomeController[0]
Key: date, Value: Tue, 13 Jun 2023 13:57:22 GMT
crit: Northwind.Grpc.Client.Mvc.Controllers.HomeController[0]
Key: server, Value: Kestrel


Welcome
Enter your name
Submit
Enter a shipper id
Submit
Greeting from gRPC service: Hello Henrietta
Status(StatusCode="DeadlineExceeded", Detail="Deadline Exceeded")


File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
Search (Ctrl+Q)
Chapter13
Debug
Any CPU
Northwind.Grpc.Service
https
Live Share
Decimal.cs
Northwind.Grpc.Service
Northwind.Grpc.Service.DecimalValue
Units
/// <summary>Field number for the "units" field.</summary>
public const int UnitsFieldNumber = 1;
private long units_;
/// <summary>
/// To store the whole units part of the amount.
/// </summary>
[global::System.Diagnostics.DebuggerNonUserCodeAttribute]
[global::System.CodeDom.Compiler.GeneratedCode("protoc", null)]
14 references
public long Units {
get { return units_; }
set {
units_ = value;
}
}
Solution Explorer
Search Solution Explorer (Ctrl+;)
obj
Debug
net8.0
generated
Protos
Decimal.cs
DecimalGrpc.cs
Employee.cs
EmployeeGrpc.cs
Greet.cs
GreetGrpc.cs
Product.cs
ProductGrpc.cs
Shipper.cs
ShipperGrpc.cs
100 %
No issues found
Ln: 93
Ch: 17
SPC
LF
Ready
Add to Source Control
Select Repository

Products - Northwind.Grpc.Client

localhost:5133/Home/Products

Northwind.Grpc.Client.Mvc Home Products Employees Privacy

Products

Enter a minimum unit pric | Filter Products

Product ID	Product Name	Unit Price	Units In Stock	Units On Order	Reorder Level	Discontinued
1	Chai	£9.99	39	0	10	False
2	Chang	£19.00	17	40	25	False
3	Aniseed Syrup	£10.00	13	70	25	False
4	Chef Anton's Cajun Seasoning	£22.00	53	0	0	False

Employees - Northwind.Grpc.Clie

localhost:5133/Home/Employees

Northwind.Grpc.Client.Mvc Home Products Employees Privacy

Employees

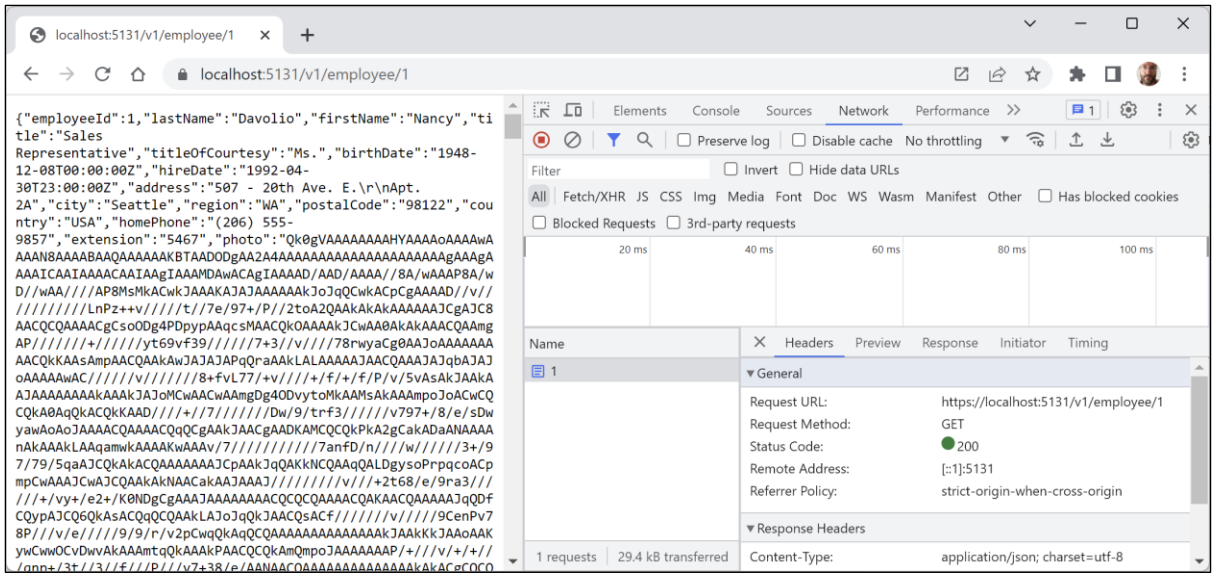
Employee ID	Full Name	Job Title	Address	Birth Date	Photo
1	Ms. Nancy Davolio	Sales Representative	507 - 20th Ave. E. Apt. 2A Seattle WA 98122 USA	08 December 1948	

Welcome

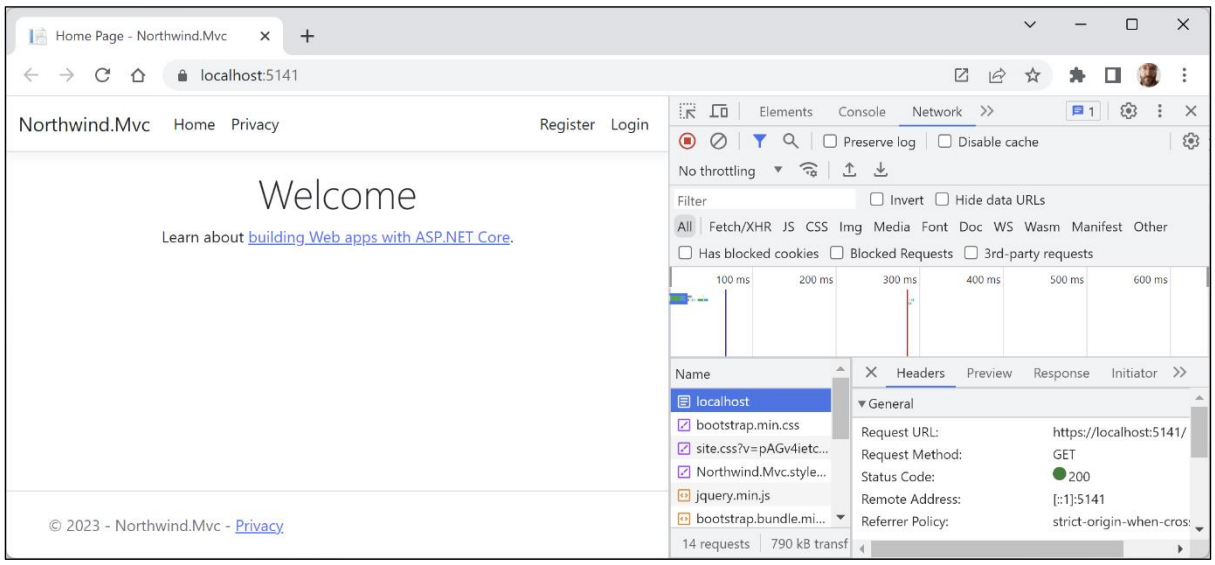
Enter your name | Submit

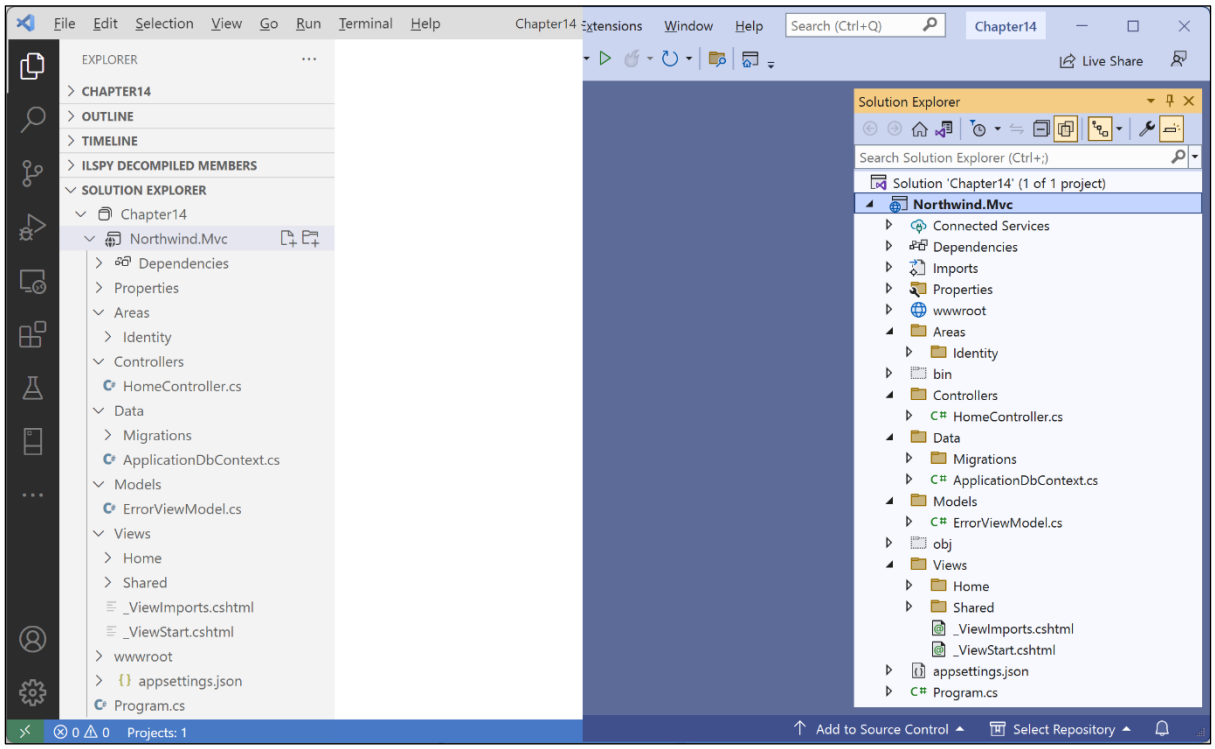
Enter a shipper id | Submit

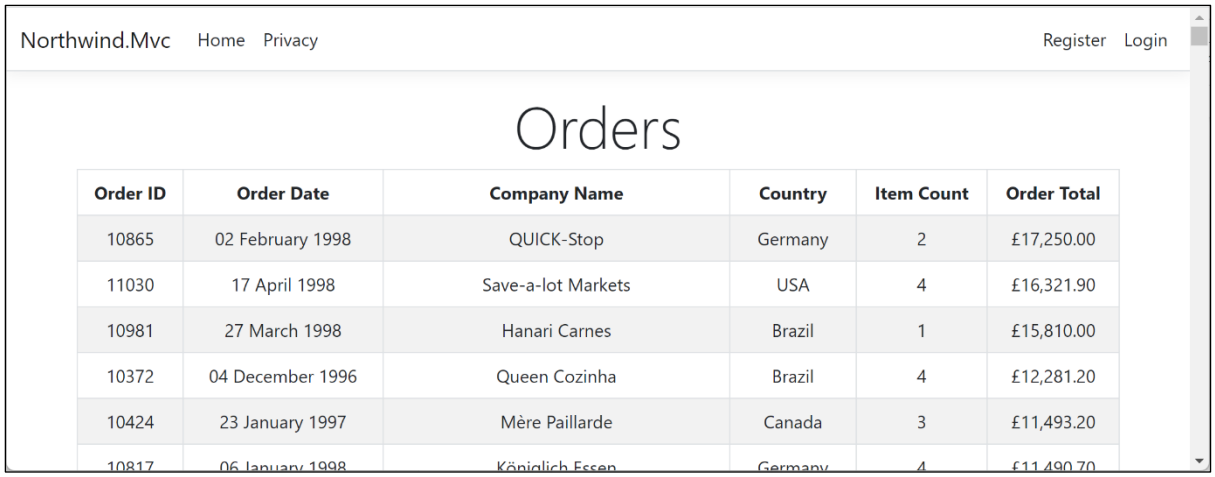
Status(StatusCode="Unavailable", Detail="Service is temporarily unavailable. Try again later.")

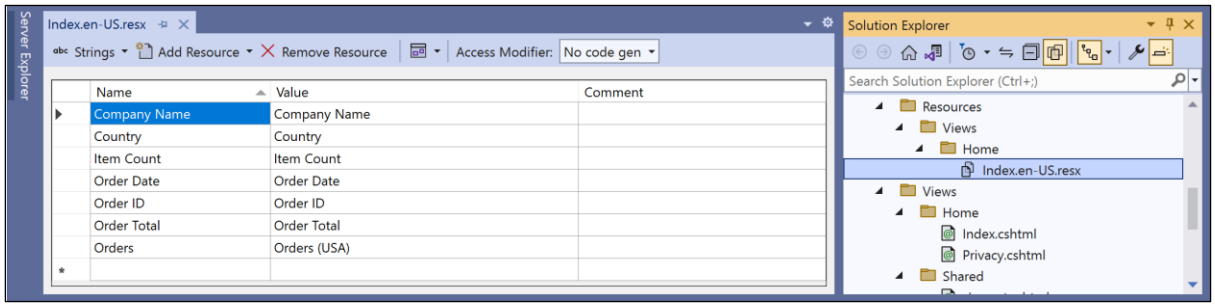

localhost:5131/v1/employee/1
localhost:5131/v1/employee/1
{"employeeId":1,"lastName":"Davolio","firstName":"Nancy","title":"Sales Representative","titleOfCourtesy":"Ms.","birthDate":"1948-12-08T00:00:00Z","hireDate":"1992-04-30T23:00:00Z","address":"507 - 20th Ave. E.\r\nApt. 2A","city":"Seattle","region":"WA","postalCode":"98122","country":"USA","homePhone":"(206) 555-9857","extension":"5467","photo":"Qk0gVAAAAAAAAHYAAAAoAAAAwAAAN8AAAABAAQAAAAAAKBTAADODgAA2A4AAAAAAAAAAAAAAAAAAAAAAAAgAAAgAAAICAAIAAAACAAIAAgIAAAMDAwACAgIAAAAD/AAD/AAAA//8A/wAAAP8A/wD//wAA////AP8MsMkACwkJAAAKAJAJAAAAAAkJoJqQCwkACpCgAAAAD//v//////////LnPz++v////t//7e/97+/P//2toA2QAAkAkAkAAAAAJCgAJC8AACQCQAAAACgCsoODg4PDpypAAqcsMAACQkOAAAAkJCwAA0AkAkAAACQAAmgAP//////+//////yt69vf39//////7+3//v////78rwyaCg0AAJoAAAAAAAACQkKAAsAmpAACQAAkAwJAJAJAPqQraAAkLALAAAAAJAACQAAAJAJqbAJAJoAAAAAwAC//////v///////8+fvL77/+v////+/f/+/f/P/v/5vAsAkJAAkAAJAAAAAAAkAAAkJAJoMCwAACwAAmgDg4ODvytoMkAAMsAkAAAmpoJoACwCQCQkA0AqQkACQkKAAD///+//7/////Dw/9/trf3/////v797+/8/e/sDwyawAoAoJAAAACQAAAACQqQCgAAkJAACgAADKAMCQCQkPkA2gCakADaANAAAAnAkAAAkLAAqamwkAAAAKwAAAv/7/////////7anfD/n////w/////3+/97/79/5qaAJCQkAkACQAAAAAAAJCpAAkJqQAKkNCQAAqQALDgysoPrpqcoACpmpCwAAAJCwAJCQAAkAkNAACakAAJAAAJ/////////v///+2t68/e/9ra3////+/vy+/e2+/K0NDgCgAAAJAAAAAAAACQCQCQAAAACQAKAACQAAAAAJqQDfCQypAJCQ6QkAsACQqQCQAAkLAJoJqQkJAACQsACf//////v/////9CenPv78P///v/e////9/9/r/v2pCwqQkAqQCQAAAAAAAAAAAAAkJAAkKkJAAoAAKywCwwOCvDwvAkAAAmtqQkAAAkPAACQCQkAmQmpoJAAAAAAAP/+///v/+/+//(gnp+/3t//3//f///P///v7+38/e/AANAACQAAAAAAAAAAAAAkAkACgCQCQ
Elements
Console
Sources
Network
Performance
Preserve log
Disable cache
No throttling
Filter
Invert
Hide data URLs
All
Fetch/XHR
JS
CSS
Img
Media
Font
Doc
WS
Wasm
Manifest
Other
Has blocked cookies
Blocked Requests
3rd-party requests
20 ms
40 ms
60 ms
80 ms
100 ms
Name
1
Headers
Preview
Response
Initiator
Timing
General
Request URL:
https://localhost:5131/v1/employee/1
Request Method:
GET
Status Code:
200
Remote Address:
[::1]:5131
Referrer Policy:
strict-origin-when-cross-origin
Response Headers
1 requests
29.4 kB transferred
Content-Type:
application/json; charset=utf-8

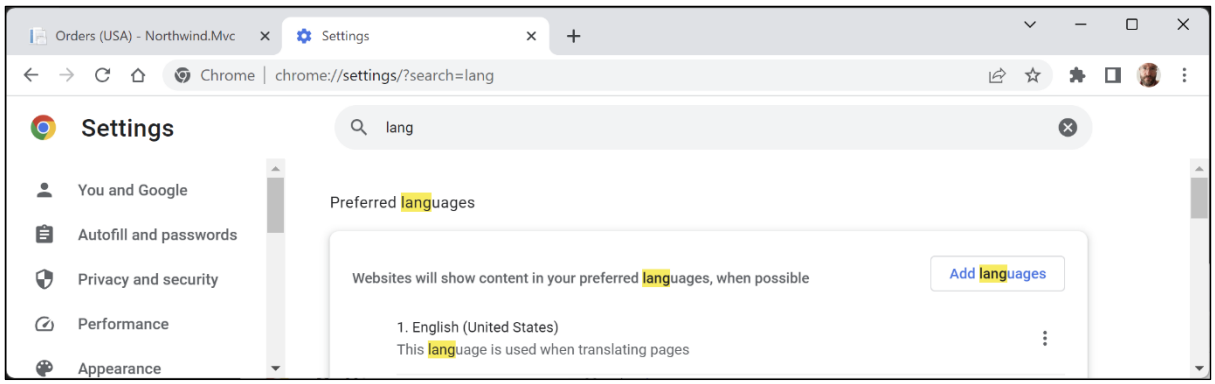
Chapter 14: Building Web User Interfaces Using ASP.NET Core





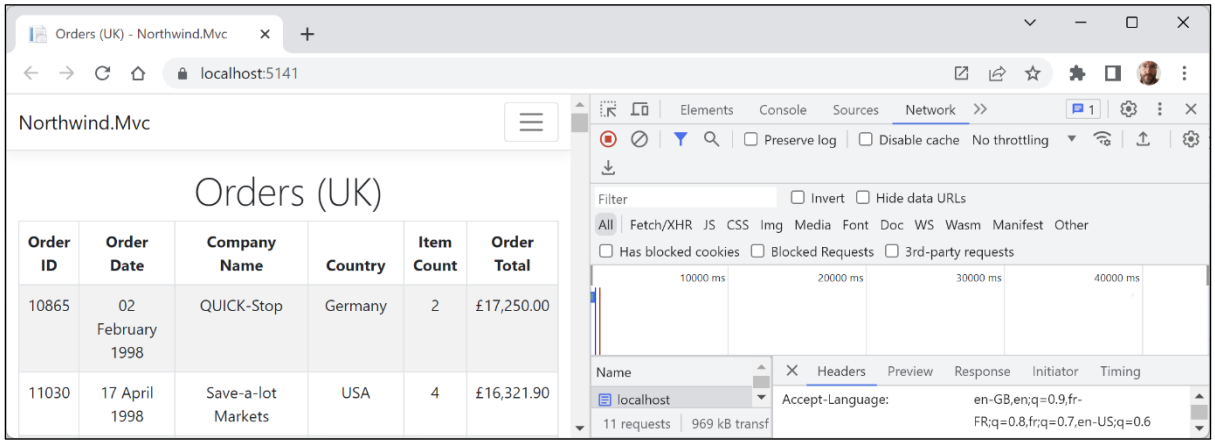


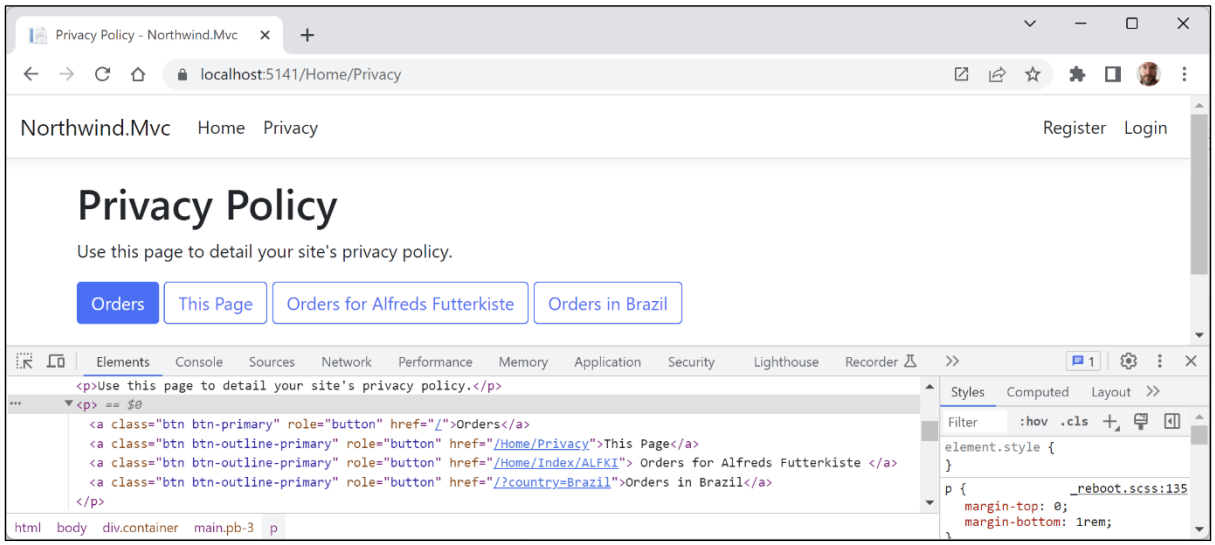




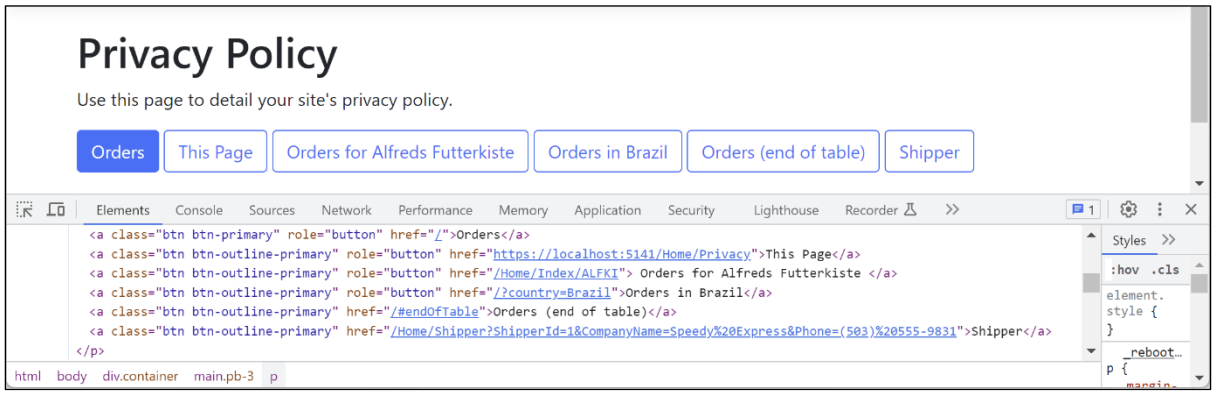
Commandes (France)

Numéro de commande	Date de commande	Nom de l'entreprise	Pays	Nombre d'éléments	Total de la commande
10865	lundi 2 février 1998	QUICK-Stop	Germany	2	17 250,00 €
11030	vendredi 17 avril 1998	Save-a-lot Markets	USA	4	16 321,90 €
10981	vendredi 27 mars 1998	Hanari Carnes	Brazil	1	15 810,00 €
10372	mercredi 4 décembre 1996	Queen Cozinha	Brazil	4	12 281,20 €
10424	jeudi 23 janvier 1997	Mère Paillarde	Canada	3	11 493,20 €

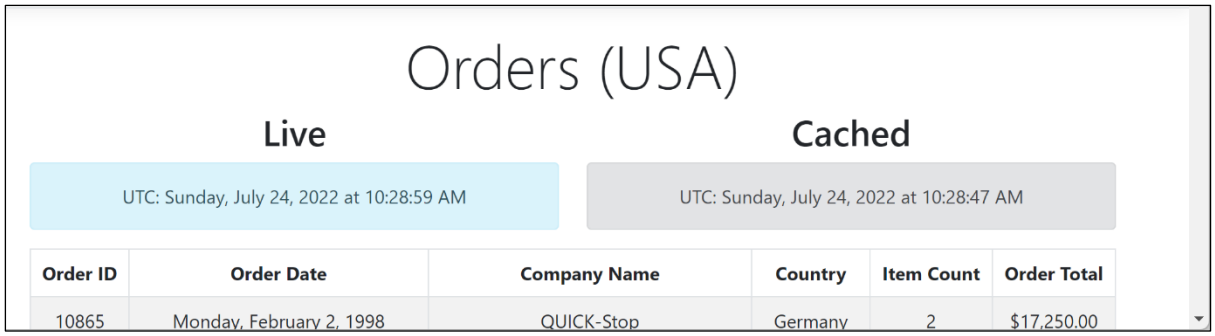

Orders (UK) - Northwind.Mvc
localhost:5141
Northwind.Mvc
Orders (UK)
Order ID
Order Date
Company Name
Country
Item Count
Order Total
10865
02 February 1998
QUICK-Stop
Germany
2
£17,250.00
11030
17 April 1998
Save-a-lot Markets
USA
4
£16,321.90
Elements
Console
Sources
Network
Preserve log
Disable cache
No throttling
Filter
Invert
Hide data URLs
All
Fetch/XHR
JS
CSS
Img
Media
Font
Doc
WS
Wasm
Manifest
Other
Has blocked cookies
Blocked Requests
3rd-party requests
10000 ms
20000 ms
30000 ms
40000 ms
Name
localhost
11 requests
969 kB transf
Headers
Preview
Response
Initiator
Timing
Accept-Language:
en-GB,en;q=0.9,fr-FR;q=0.8,fr;q=0.7,en-US;q=0.6

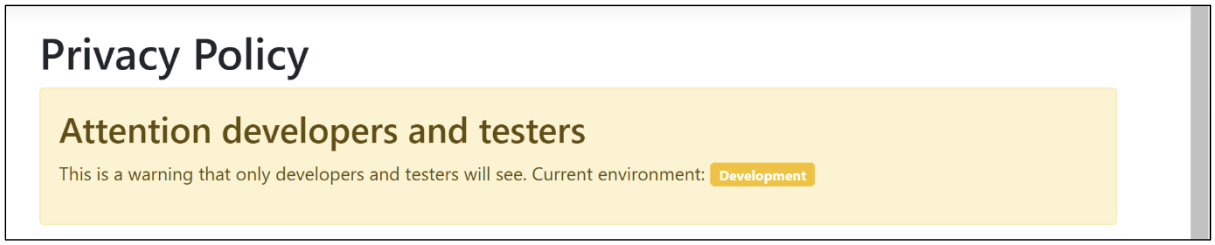

Privacy Policy - Northwind.Mvc
localhost:5141/Home/Privacy
Northwind.Mvc
Home
Privacy
Register
Login
Privacy Policy
Use this page to detail your site's privacy policy.
Orders
This Page
Orders for Alfreds Futterkiste
Orders in Brazil
Elements
Console
Sources
Network
Performance
Memory
Application
Security
Lighthouse
Recorder
Use this page to detail your site's privacy policy.
 == $0
Orders
This Page
 Orders for Alfreds Futterkiste
Orders in Brazil

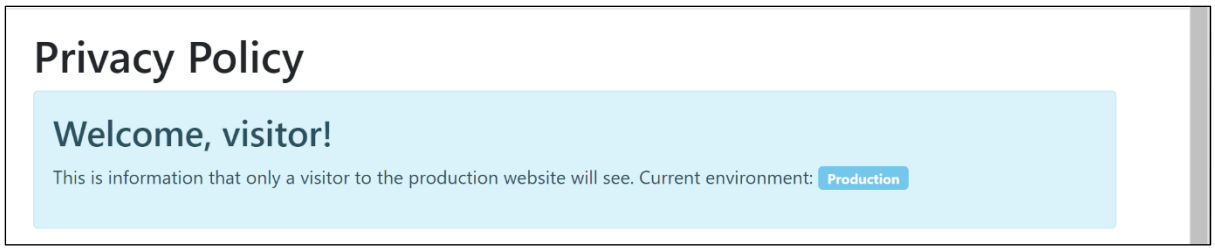
html
body
div.container
main.pb-3
p
Styles
Computed
Layout
Filter
:hov
.cls
element.style {
}
p {
_reboot.scss:135
margin-top: 0;
margin-bottom: 1rem;
}


Privacy Policy
Use this page to detail your site's privacy policy.
Orders
This Page
Orders for Alfreds Futterkiste
Orders in Brazil
Orders (end of table)
Shipper
Elements
Console
Sources
Network
Performance
Memory
Application
Security
Lighthouse
Recorder
Orders
This Page
 Orders for Alfreds Futterkiste
Orders in Brazil
Orders (end of table)
Shipper

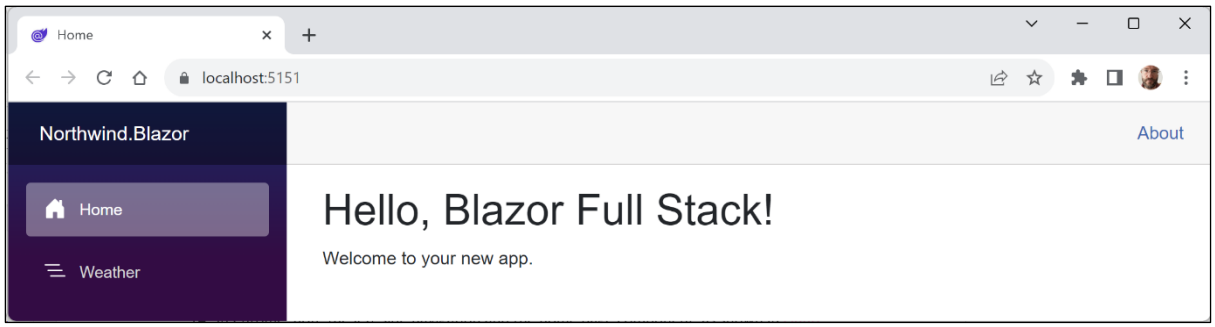
html
body
div.container
main.pb-3
p
Styles
:hov
.cls
element.style {
}
p {

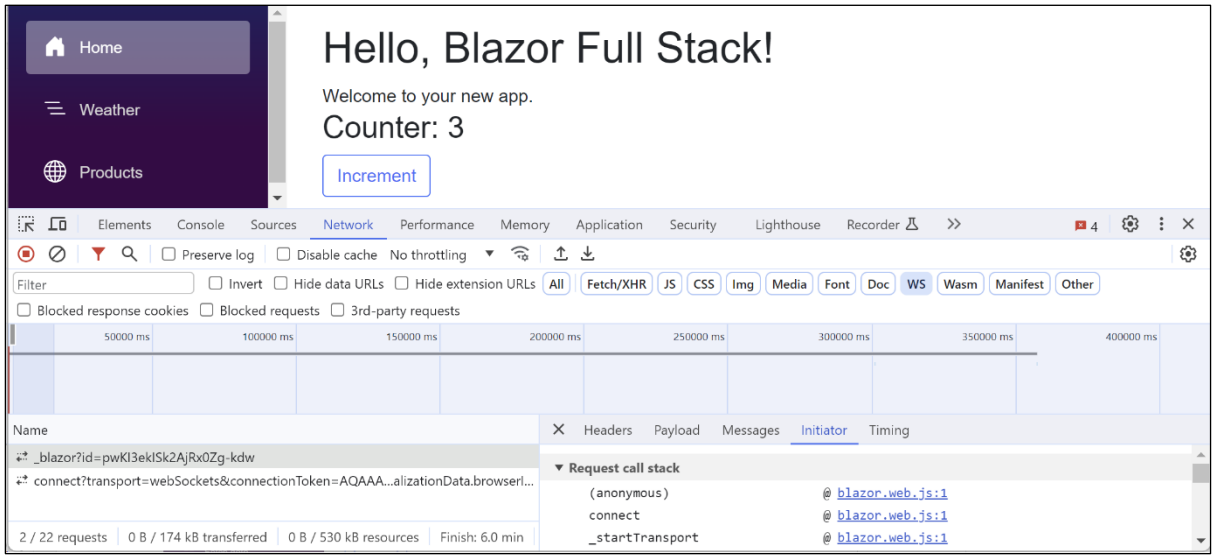

Orders (USA)
Live
Cached
UTC: Sunday, July 24, 2022 at 10:28:59 AM
UTC: Sunday, July 24, 2022 at 10:28:47 AM
Order ID
Order Date
Company Name
Country
Item Count
Order Total
10865
Monday, February 2, 1998
QUICK-Stop
Germany
2
$17,250.00

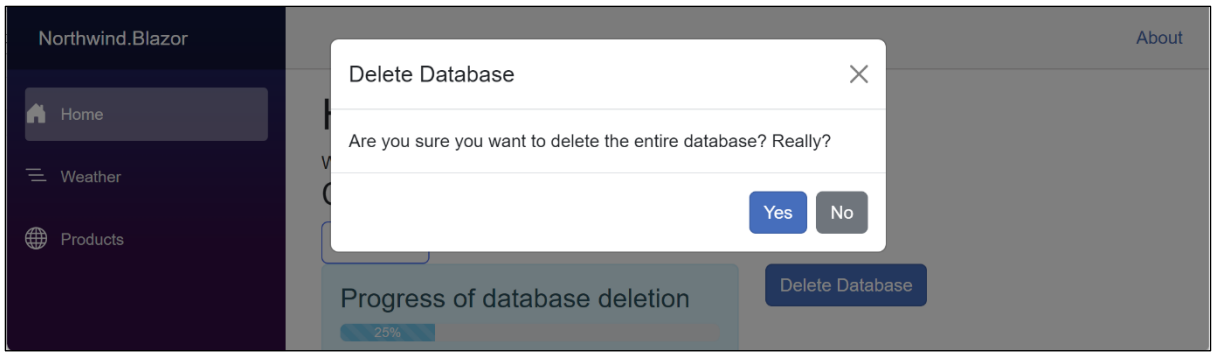

Privacy Policy
Attention developers and testers
This is a warning that only developers and testers will see. Current environment: Development


Privacy Policy
Welcome, visitor!
This is information that only a visitor to the production website will see. Current environment: Production

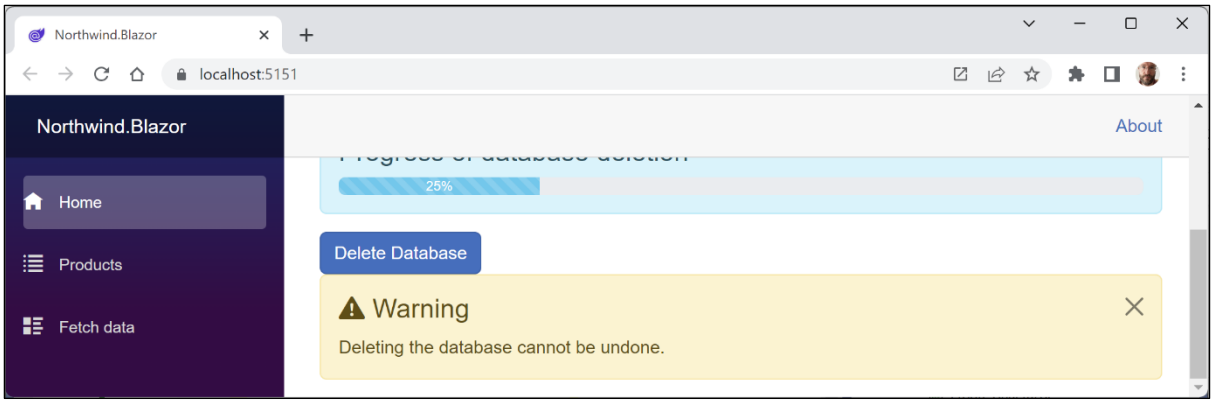
Chapter 15: Building Web Components Using Blazor

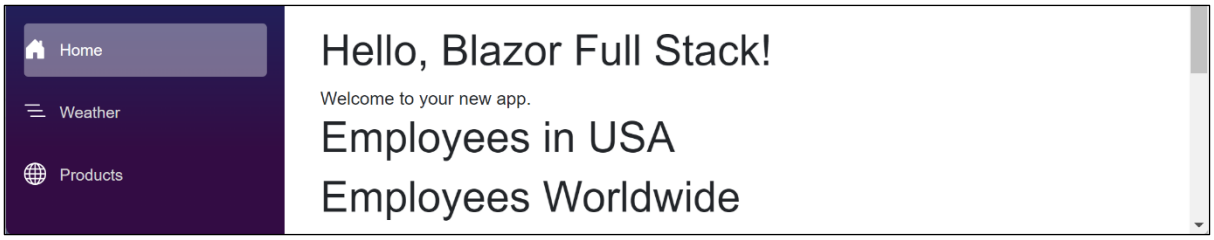






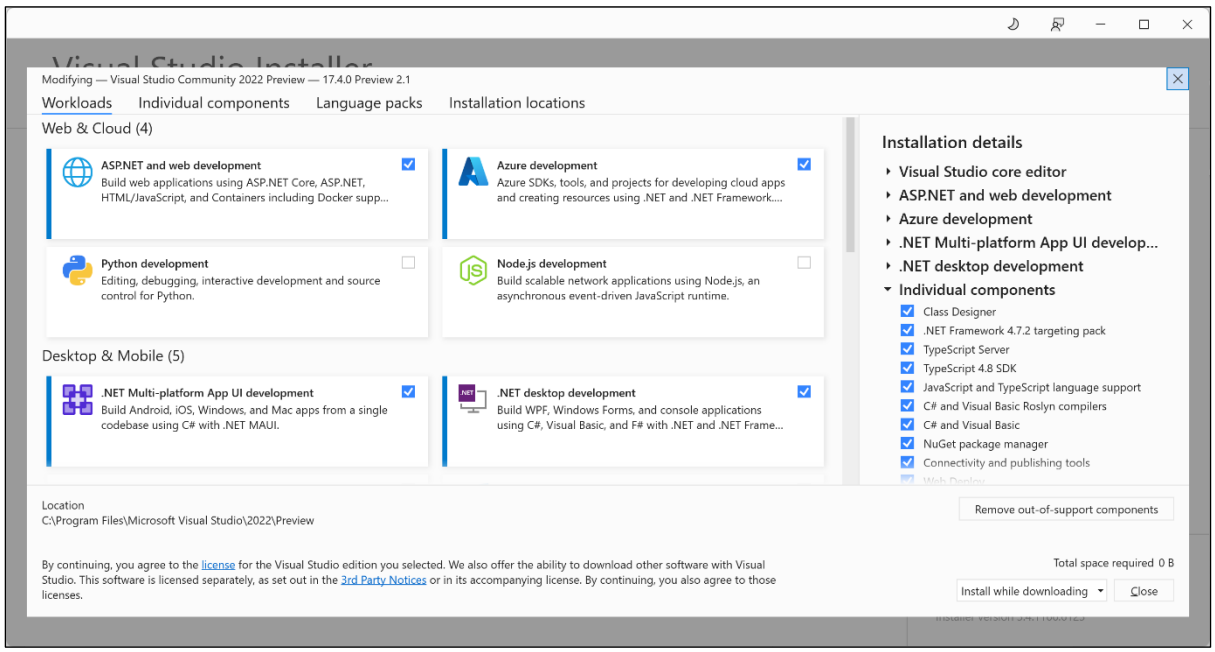


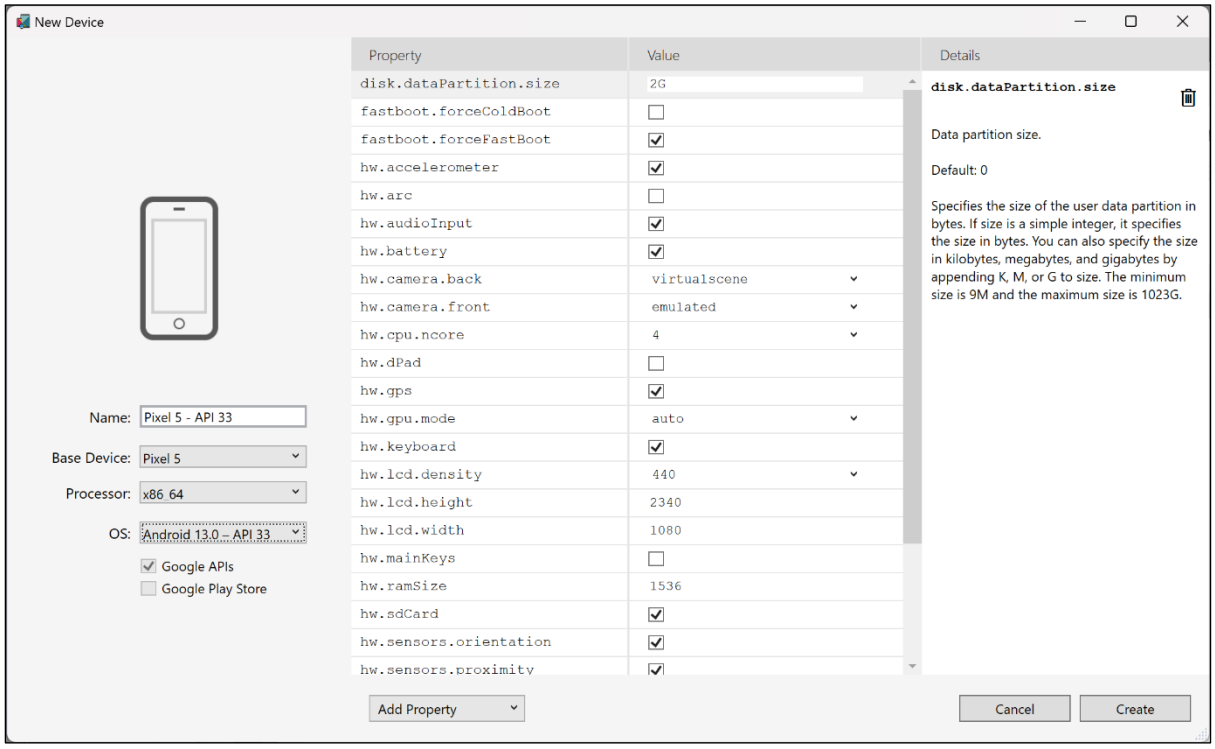

Northwind.Blazor
localhost:5151
Northwind.Blazor
About
Home
Products
Fetch data
25%
Delete Database
Warning
Deleting the database cannot be undone.

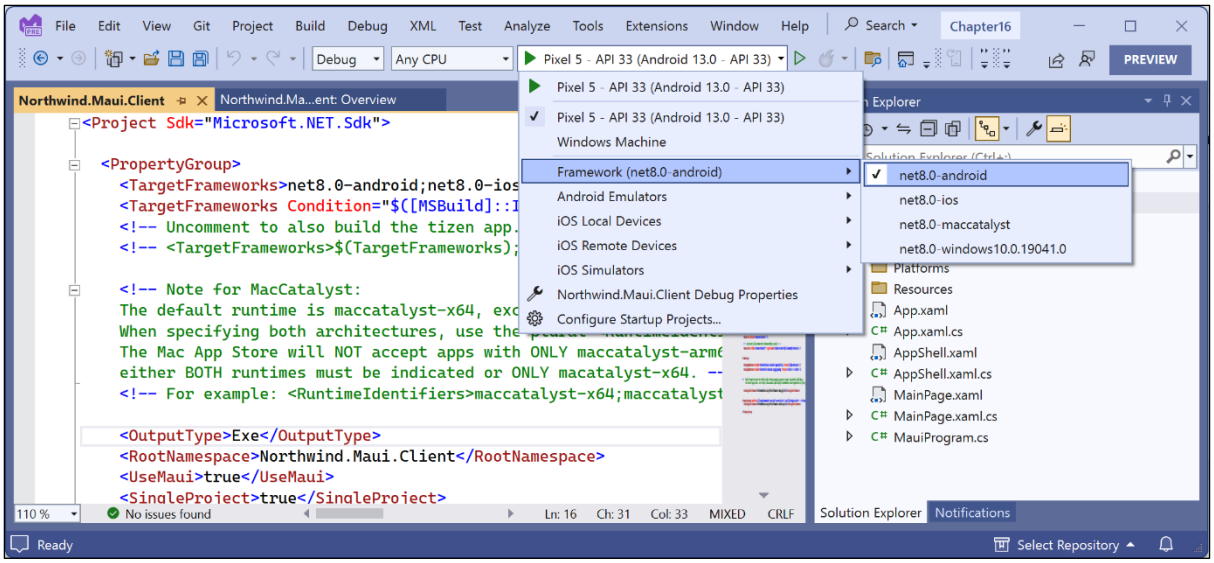

Home
Weather
Products
Hello, Blazor Full Stack!
Welcome to your new app.
Employees in USA
Employees Worldwide


Home
Weather
Products
Worldwide
Employees in USA
Employees in UK
Employees in USA
ID FirstName LastName City Country HireDate
1 Nancy Davolio Seattle USA 1992-05-01
2 Andrew Fuller Tacoma USA 1992-08-14
3 Janet Leverling Kirkland USA 1992-04-01
4 Margaret Peacock Redmond USA 1993-05-03
8 Laura Callahan Seattle USA 1994-03-05

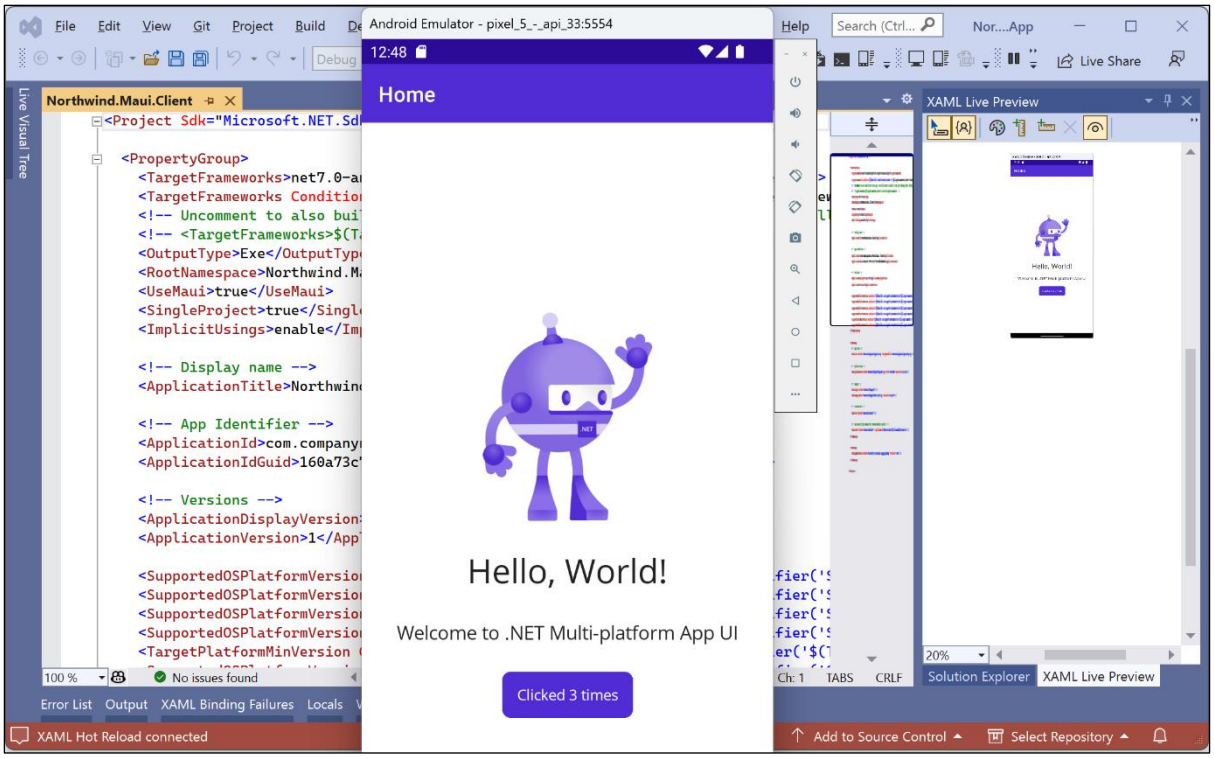
Chapter 16: Building Mobile and Desktop Apps Using .NET MAUI

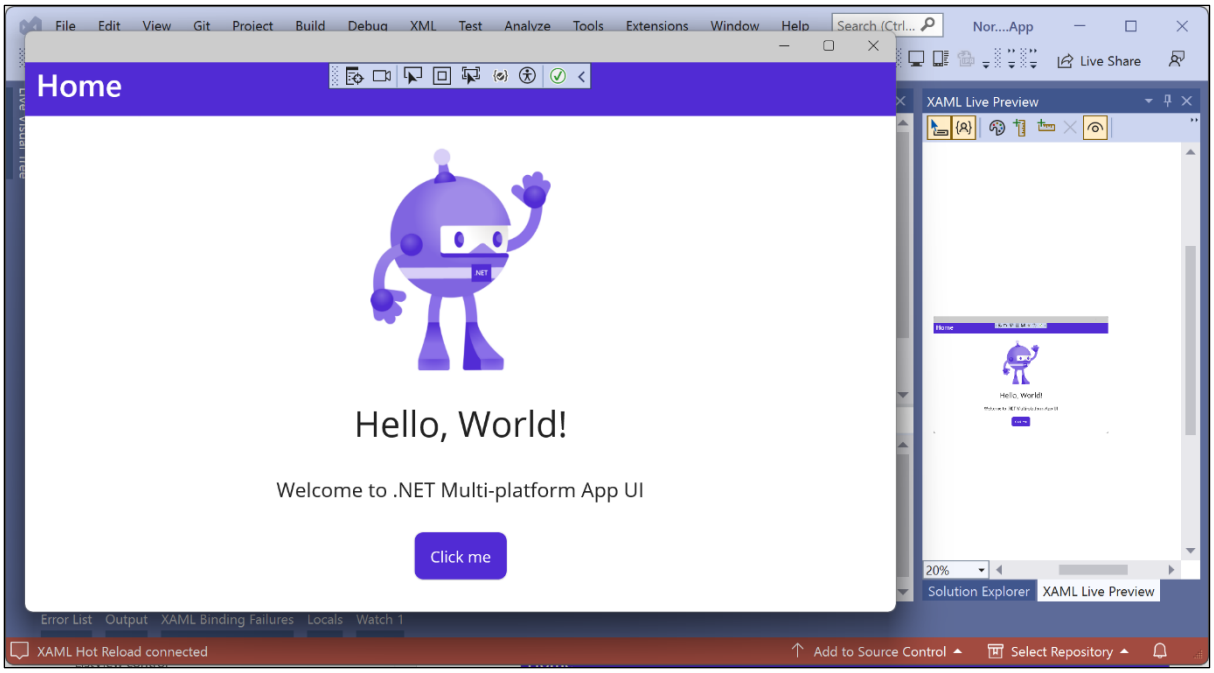


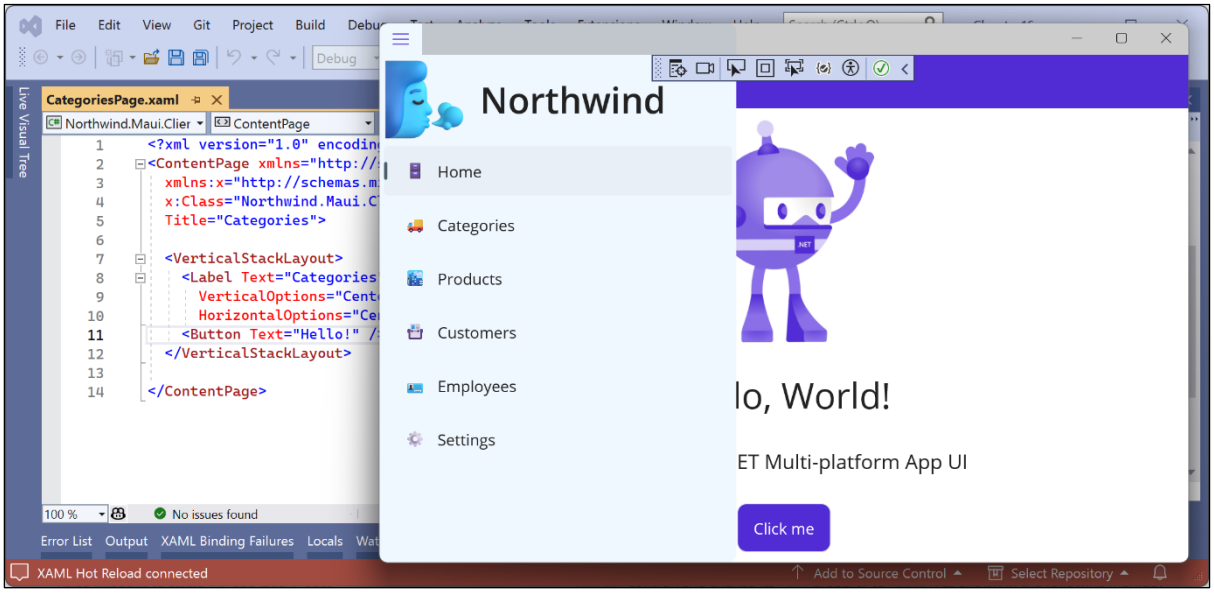


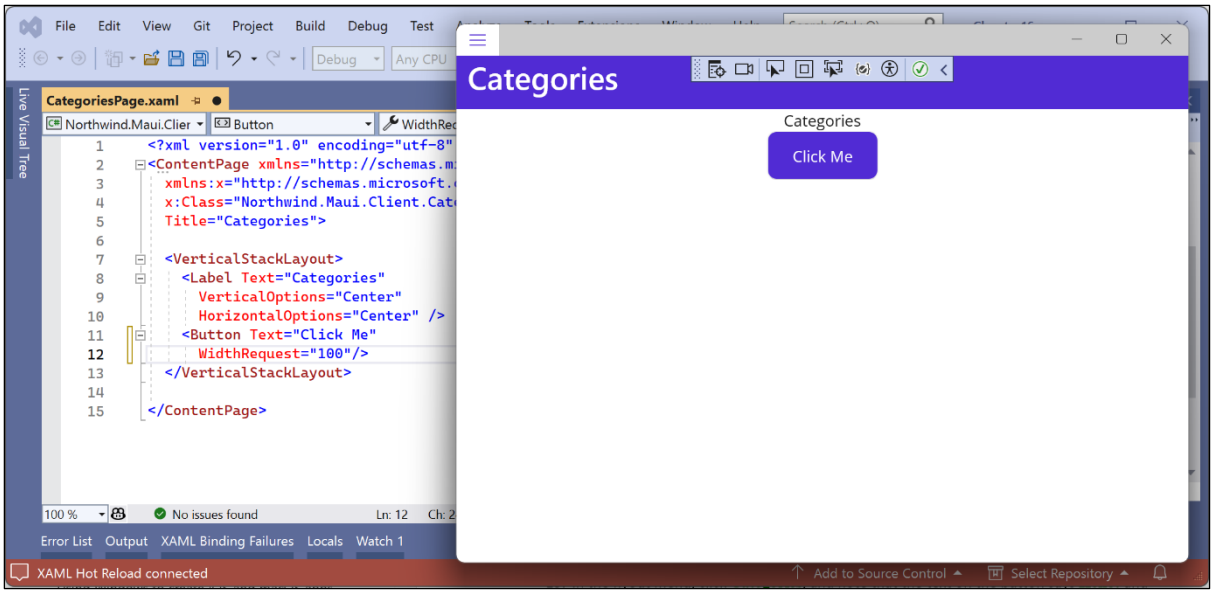

File Edit View Git Project Build Debug XML Test Analyze Tools Extensions Window Help
Search
Chapter16
Debug
Any CPU
Pixel 5 - API 33 (Android 13.0 - API 33)
PREVIEW
Northwind.Maui.Client
Northwind.Ma...ent: Overview
Pixel 5 - API 33 (Android 13.0 - API 33)
Pixel 5 - API 33 (Android 13.0 - API 33)
Windows Machine
Framework (net8.0-android)
Android Emulators
iOS Local Devices
iOS Remote Devices
iOS Simulators
Northwind.Maui.Client Debug Properties
Configure Startup Projects...
net8.0-android
net8.0-ios
net8.0-maccatalyst
net8.0-windows10.0.19041.0
<Project Sdk="Microsoft.NET.Sdk">
<PropertyGroup>
<TargetFrameworks>net8.0-android;net8.0-ios
<TargetFrameworks Condition="$([MSBuild]::I
<!-- Uncomment to also build the tizen app.
<!-- <TargetFrameworks>$(TargetFrameworks);
<!-- Note for MacCatalyst:
The default runtime is maccatalyst-x64, exc
When specifying both architectures, use the
The Mac App Store will NOT accept apps with ONLY maccatalyst-arm
either BOTH runtimes must be indicated or ONLY macatalyst-x64. --
<!-- For example: <RuntimeIdentifiers>maccatalyst-x64;maccatalyst
<OutputType>Exe</OutputType>
<RootNamespace>Northwind.Maui.Client</RootNamespace>
<UseMaui>true</UseMaui>
<SingleProject>true</SingleProject>
Platforms
Resources
App.xaml
App.xaml.cs
AppShell.xaml
AppShell.xaml.cs
MainPage.xaml
MainPage.xaml.cs
MauiProgram.cs
110 %
No issues found
Ln: 16 Ch: 31 Col: 33 MIXED CRLF
Solution Explorer
Notifications
Ready
Select Repository

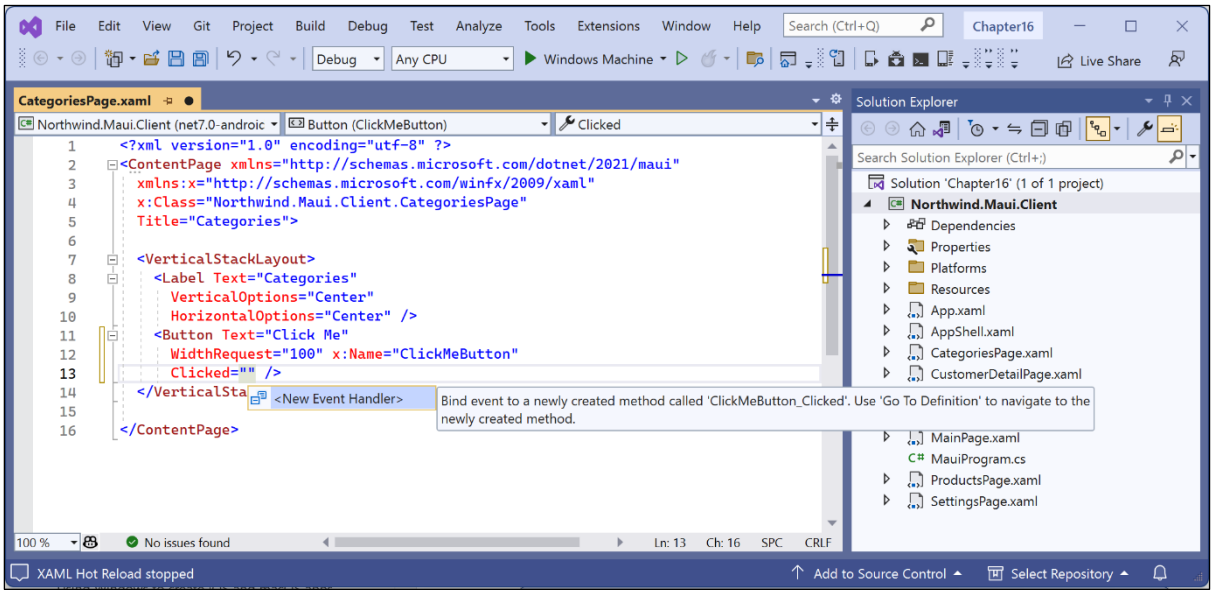

100 %
No issues found
Ln: 1 Ch: 1 TABS CRLF
Deploying to pixel_5_-_api_33 ...
Add to Source Control
Select Repository

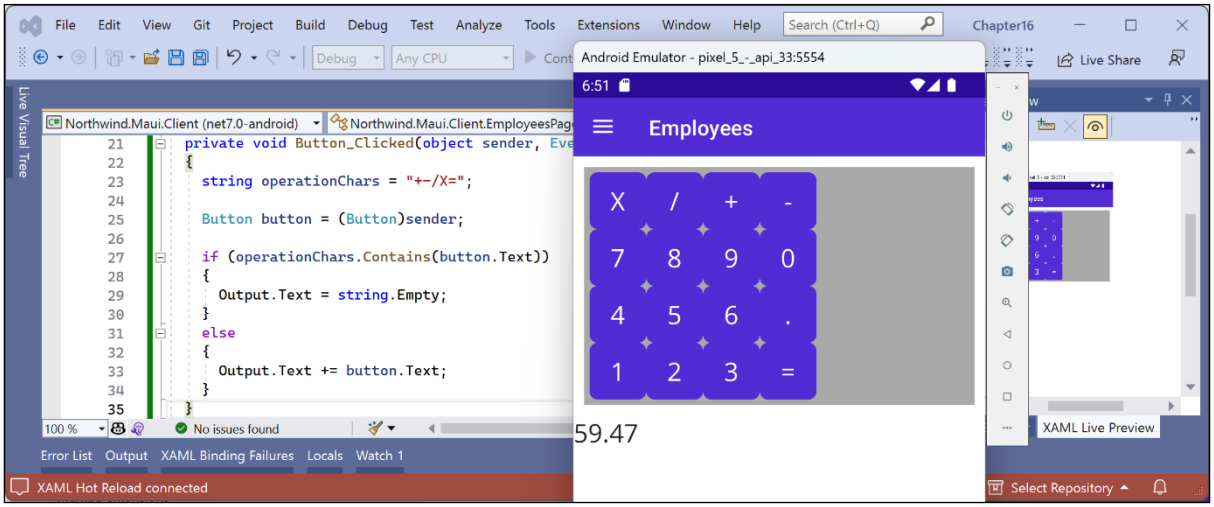

File Edit View Git Project Build
Android Emulator - pixel_5_-_api_33:5554
12:48
Home
Hello, World!
Welcome to .NET Multi-platform App UI
Clicked 3 times
Help
Search (Ctrl...
Live Share
Northwind.Maui.Client
XAML Live Preview
<Project Sdk="Microsoft.NET.Sd
<PropertyGroup>
<TargetFrameworks>net7.0-a
<TargetFrameworks Condition
<!-- Uncomment to also bui
<!-- <TargetFrameworks>$(T
<OutputType>Exe</OutputTyp
<RootNamespace>Northwind.M
<UseMaui>true</UseMaui>
<SingleProject>true</Singl
<ImplicitUsings>enable</Im
<!-- Display name -->
<ApplicationTitle>Northwin
<!-- App Identifier -->
<ApplicationId>com.company
<ApplicationIdGuid>160a73c
<!-- Versions -->
<ApplicationDisplayVersion
<ApplicationVersion>1</App
<SupportedOSPlatformVersio
<SupportedOSPlatformVersio
<SupportedOSPlatformVersio
<SupportedOSPlatformVersio
<TargetPlatformMinVersion
100 %
No issues found
Ln: 1 Ch: 1 TABS CRLF
20%
Solution Explorer
XAML Live Preview
Error List
Output
XAML Binding Failures
Locals
XAML Hot Reload connected
Add to Source Control
Select Repository

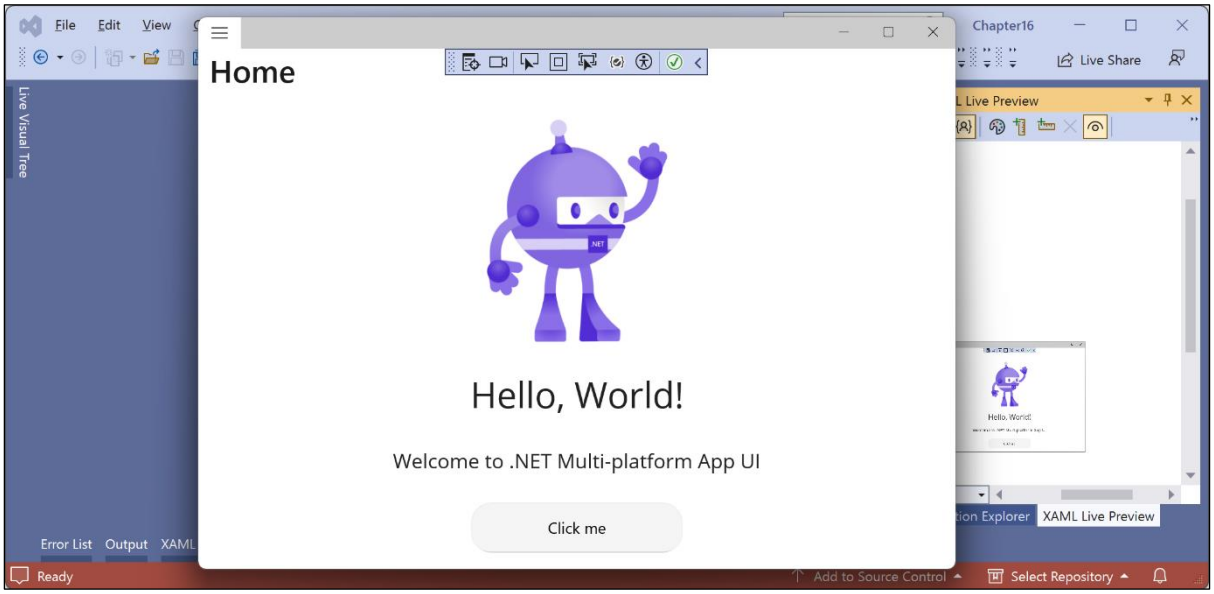

Home
Hello, World!
Welcome to .NET Multi-platform App UI
Click me
XAML Live Preview
Solution Explorer
XAML Live Preview
XAML Hot Reload connected

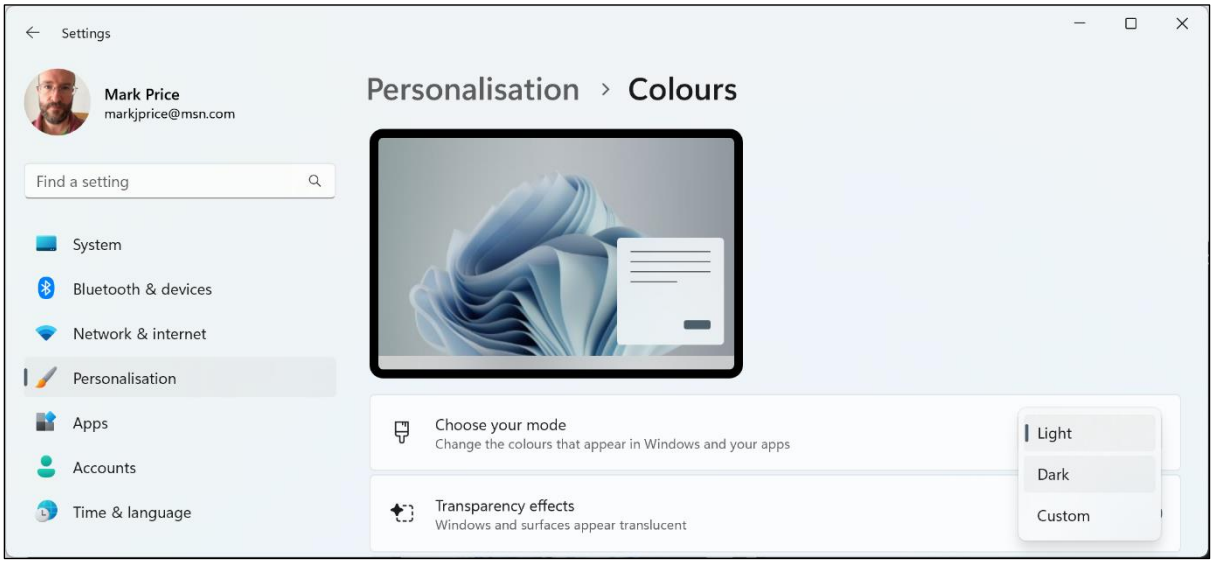

CategoriesPage.xaml
Northwind
Home
Categories
Products
Customers
Employees
Settings
Click me
No issues found
XAML Hot Reload connected

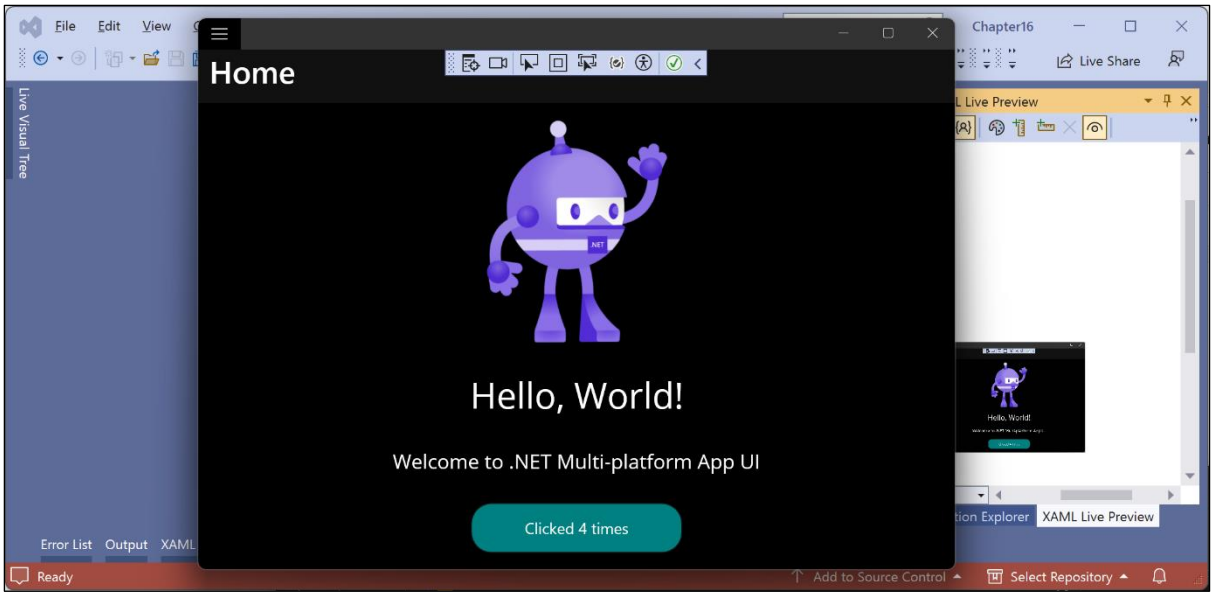

File Edit View Git Project Build Debug Test
CategoriesPage.xaml
Northwind.Maui.Clier
Button
WidthRec
1 <?xml version="1.0" encoding="utf-8"
2 <ContentPage xmlns="http://schemas.m
3 xmlns:x="http://schemas.microsoft.
4 x:Class="Northwind.Maui.Client.Cat
5 Title="Categories">
6
7 <VerticalStackLayout>
8 <Label Text="Categories"
9 VerticalOptions="Center"
10 HorizontalOptions="Center" />
11 <Button Text="Click Me"
12 WidthRequest="100"/>
13 </VerticalStackLayout>
14
15 </ContentPage>
100 %
No issues found
Ln: 12
Error List
Output
XAML Binding Failures
Locals
Watch 1
XAML Hot Reload connected
Add to Source Control
Select Repository
Categories
Categories
Click Me

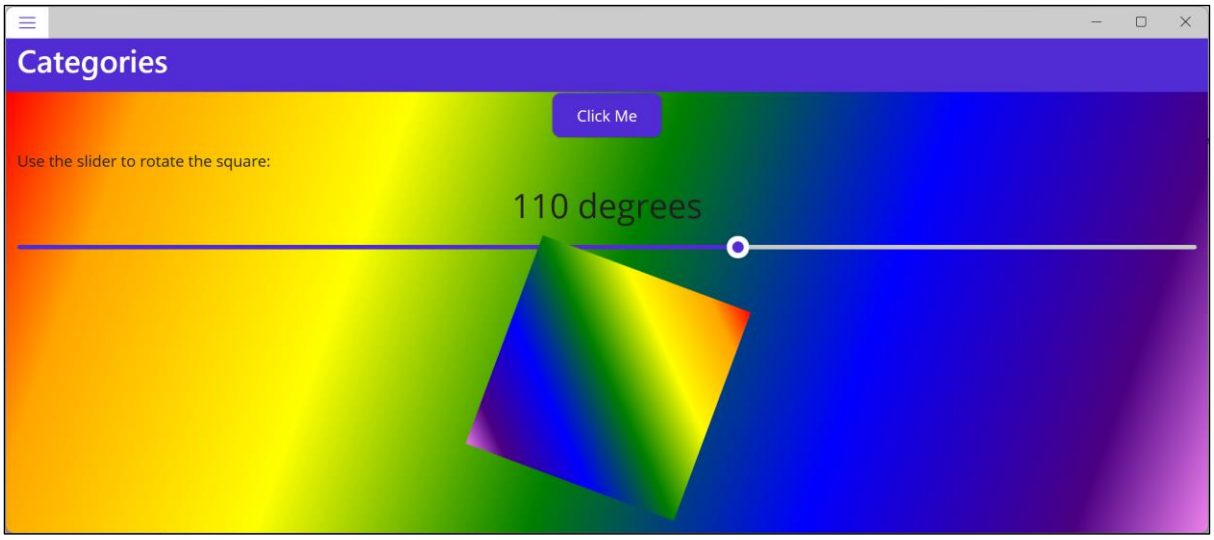

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
Search (Ctrl+Q)
Chapter16
Debug
Any CPU
Windows Machine
Live Share
CategoriesPage.xaml
Northwind.Maui.Client (net7.0-androic
Button (ClickMeButton)
Clicked
1 <?xml version="1.0" encoding="utf-8" ?>
2 <ContentPage xmlns="http://schemas.microsoft.com/dotnet/2021/maui"
3 xmlns:x="http://schemas.microsoft.com/winfx/2009/xaml"
4 x:Class="Northwind.Maui.Client.CategoriesPage"
5 Title="Categories">
6
7 <VerticalStackLayout>
8 <Label Text="Categories"
9 VerticalOptions="Center"
10 HorizontalOptions="Center" />
11 <Button Text="Click Me"
12 WidthRequest="100" x:Name="ClickMeButton"
13 Clicked="" />
14 </VerticalSta
<New Event Handler>
Bind event to a newly created method called 'ClickMeButton_Clicked'. Use 'Go To Definition' to navigate to the newly created method.
15
16 </ContentPage>
100 %
No issues found
Ln: 13
Ch: 16
SPC
CRLF
XAML Hot Reload stopped
Add to Source Control
Select Repository
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'Chapter16' (1 of 1 project)
Northwind.Maui.Client
Dependencies
Properties
Platforms
Resources
App.xaml
AppShell.xaml
CategoriesPage.xaml
CustomerDetailPage.xaml
MainPage.xaml
MauiProgram.cs
ProductsPage.xaml
SettingsPage.xaml


File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
Search (Ctrl+Q)
Chapter16
Debug
Any CPU
Live Share
Live Visual Tree
Northwind.Maui.Client (net7.0-android)
Northwind.Maui.Client.EmployeesPag
21 private void Button_Clicked(object sender, Eve
22 {
23 string operationChars = "+-/X=";
24
25 Button button = (Button)sender;
26
27 if (operationChars.Contains(button.Text))
28 {
29 Output.Text = string.Empty;
30 }
31 else
32 {
33 Output.Text += button.Text;
34 }
35 }
100 %
No issues found
Error List
Output
XAML Binding Failures
Locals
Watch 1
XAML Hot Reload connected
Android Emulator - pixel_5_-_api_33:5554
6:51
Employees
X / + -
7 8 9 0
4 5 6 .
1 2 3 =
59.47
XAML Live Preview
Select Repository

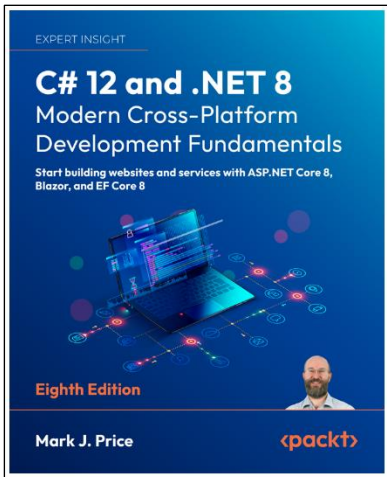

File
Edit
View
Chapter16
Live Share
Live Visual Tree
Home
Hello, World!
Welcome to .NET Multi-platform App UI
Click me
Live Preview
XAML Live Preview
Error List
Output
Ready
Add to Source Control
Select Repository


Settings
Mark Price
markjprice@msn.com
Find a setting
System
Bluetooth & devices
Network & internet
Personalisation
Apps
Accounts
Time & language
Personalisation › Colours
Choose your mode
Change the colours that appear in Windows and your apps
Light
Dark
Custom
Transparency effects
Windows and surfaces appear translucent

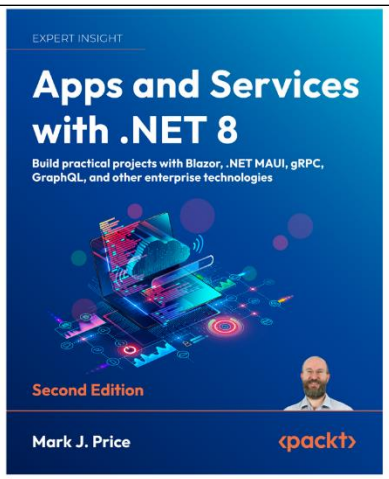

File Edit View
Chapter16
Live Share
Home
Live Visual Tree
Live Preview
Hello, World!
Welcome to .NET Multi-platform App UI
Clicked 4 times
Error List Output XAML
XAML Live Preview
Ready
Add to Source Control
Select Repository


Categories
Click Me
Use the slider to rotate the square:
110 degrees

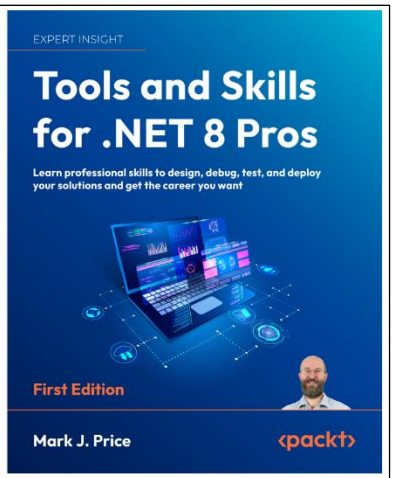
Epilogue



- **C# language**, including new C# 12 features, object-oriented programming, debugging, and unit testing.
- **.NET libraries**, including numbers, text, regular expressions, collections, file I/O, and data with EF Core and SQLite.
- **Websites and web services** with ASP.NET Core and Blazor.



- **More libraries**: Internationalization, multitasking, and third-party packages.
- **More data**: SQL Server and Cosmos DB.
- **More services**: Minimal APIs, caching, queuing, GraphQL, gRPC, SignalR, and Azure Functions.
- **More user interfaces**: ASP.NET Core MVC, Blazor, and .NET MAUI.



- **Tools**: IDEs, debugging, memory analysis, and AI assistants.
- **Testing**: Unit, integration, performance, system, and web, including DI and IoC.
- **Design**: Patterns and architecture.
- **Deploy**: Continuous Integration/ Deployment, and Azure hosting.
- **Career**: Interview preparation.

