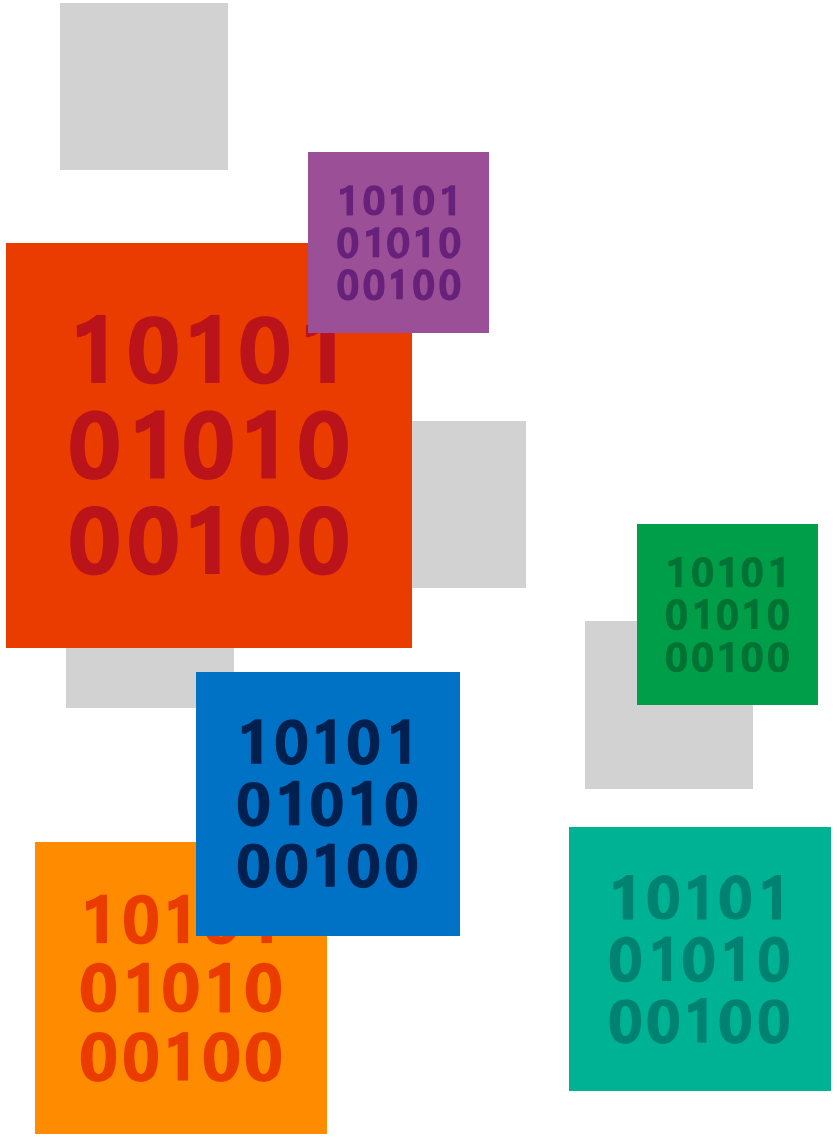


Visual Studio

My first Universal Windows App for Windows 10

Víctor Moreno

Microsoft MVP
@vmorenoz

Microsoft

What am I going to learn?

In this demo, you will learn how to develop your first universal windows app for Windows 10, using the same code you will have visibility of how it can works in three different devices:

- PC
- Smart Phone
- Tablet

Goal

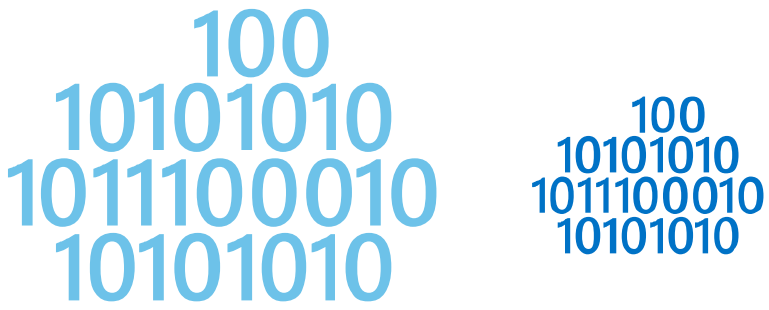
Build an universal windows app for Windows 10, letting store answers from a little form.

These data will be stored in a table on SQL Azure.

Requirements

- Windows 10 on our three devices.
- A Microsoft Azure account (if you don’t have one, you can get a test account from Azure portal).
- Visual Studio 2015.

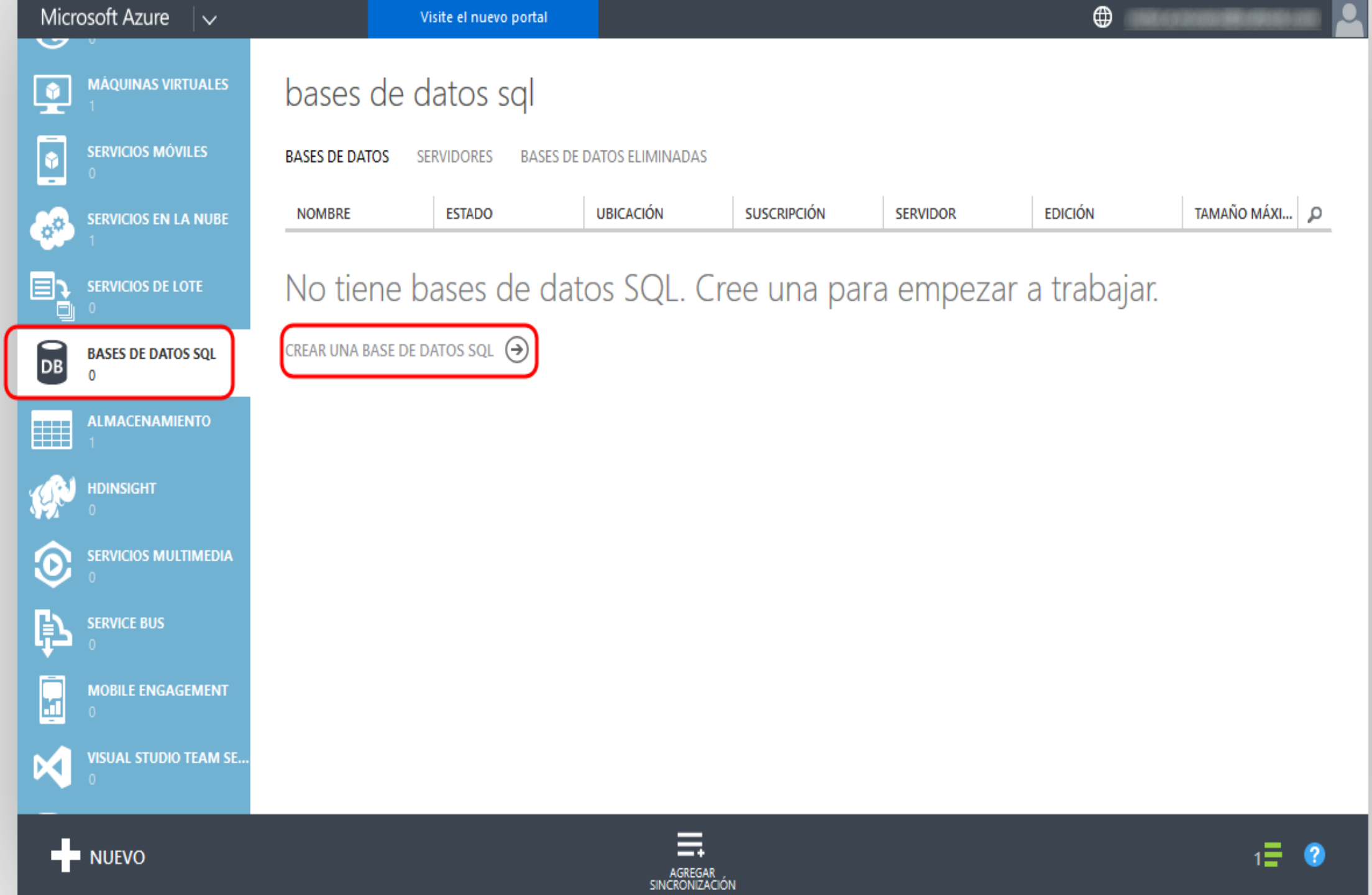
My first universal windows app for Windows 10

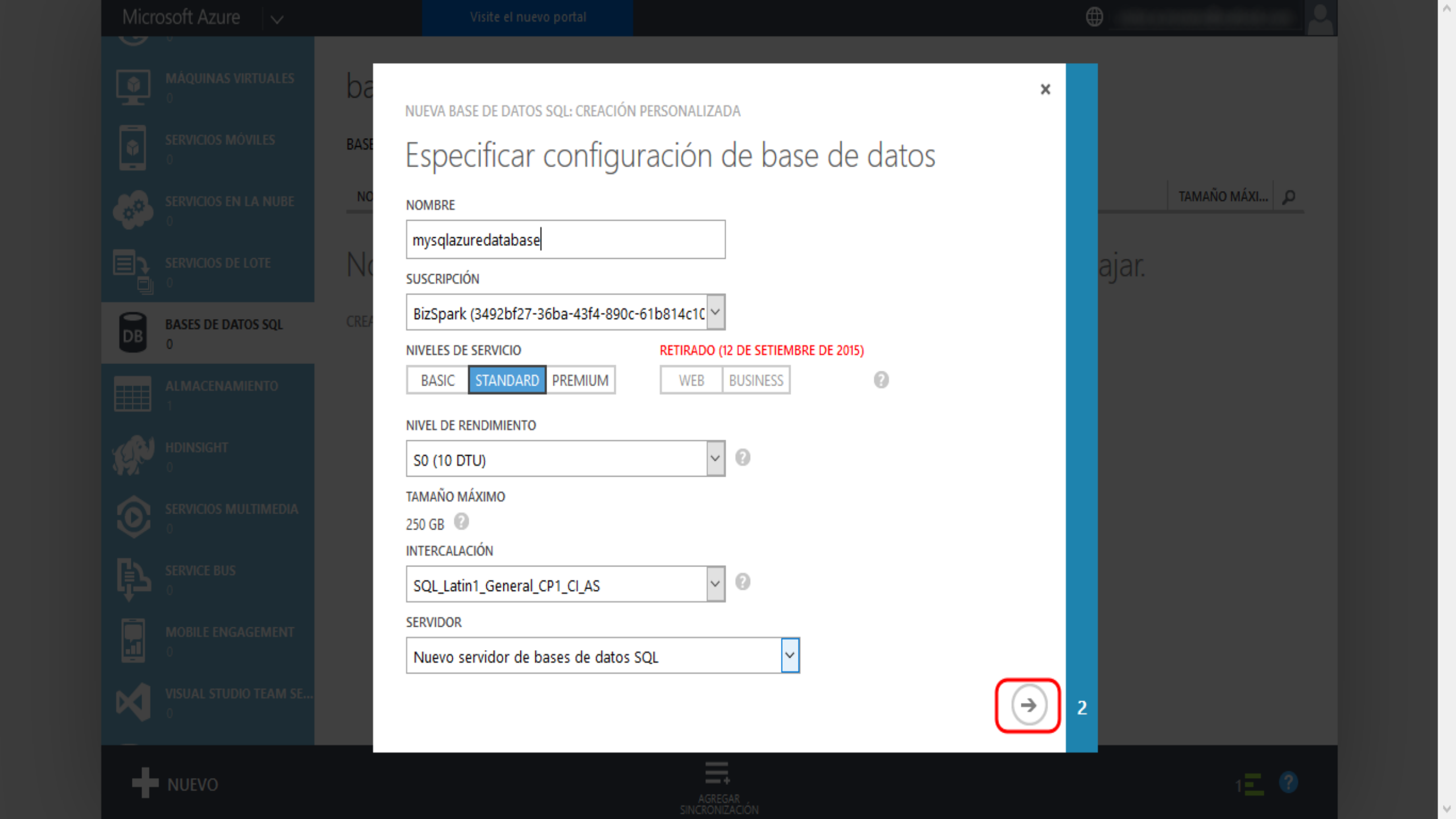


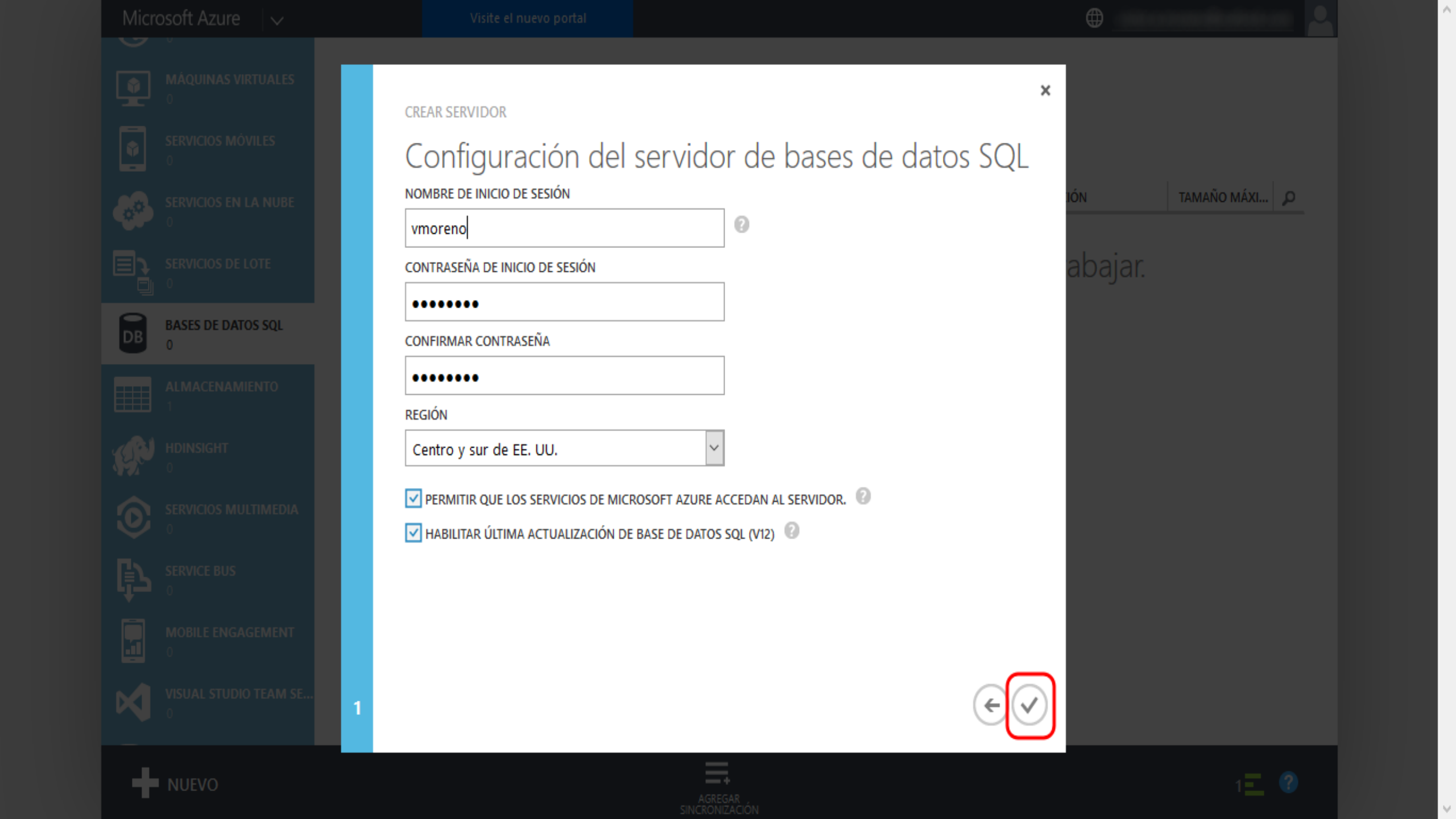
Creating our SQL Azure database

We will have to get in Microsoft Azure Portal and create a new SQL Azure database.

http://manage.windowsazure.com

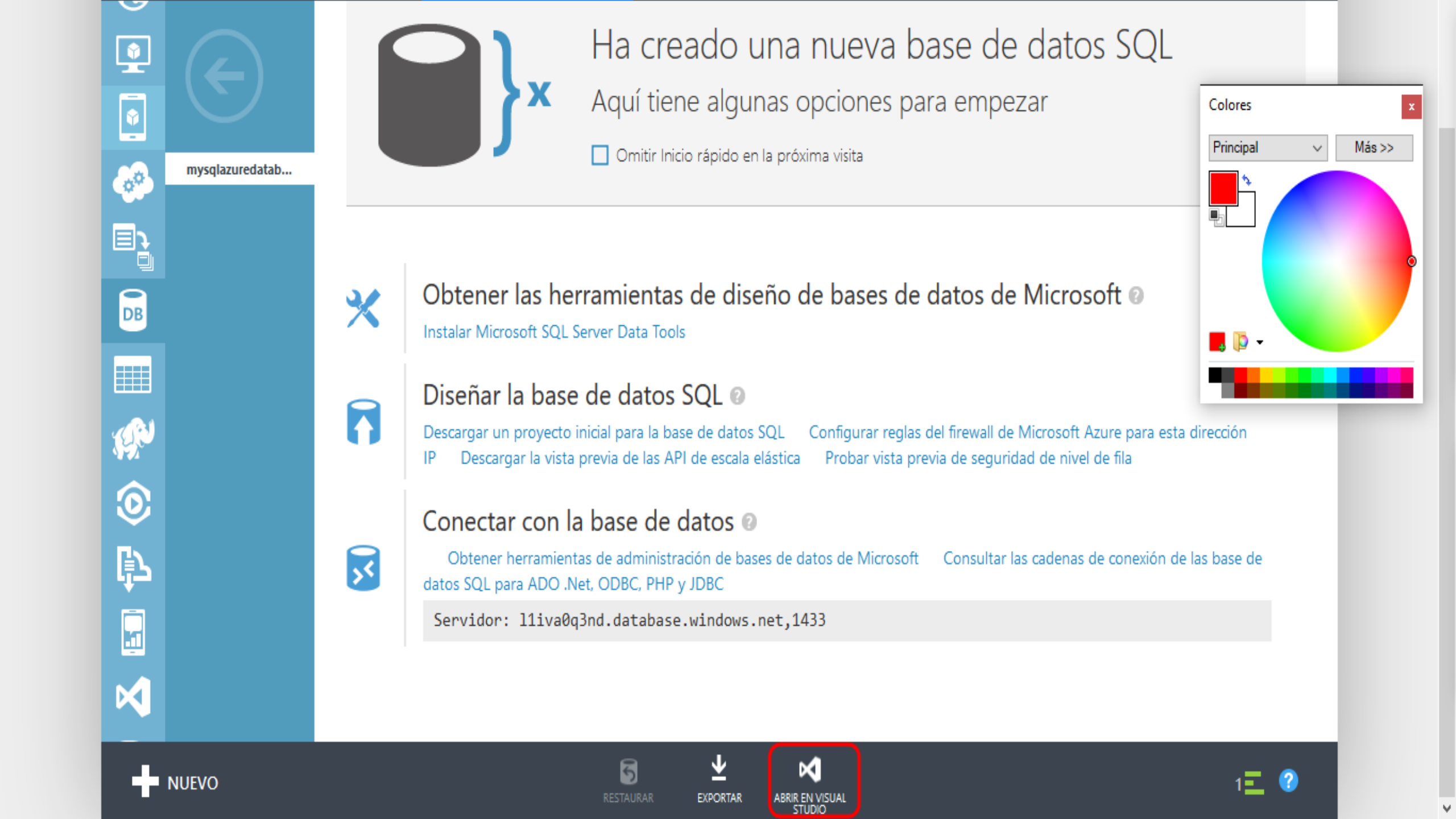

Microsoft Azure
Visite el nuevo portal
MÁQUINAS VIRTUALES
1
SERVICIOS MÓVILES
0
SERVICIOS EN LA NUBE
1
SERVICIOS DE LOTE
0
BASES DE DATOS SQL
0
ALMACENAMIENTO
1
HDINSIGHT
0
SERVICIOS MULTIMEDIA
0
SERVICE BUS
0
MOBILE ENGAGEMENT
0
VISUAL STUDIO TEAM SE...
0
bases de datos sql
BASES DE DATOS
SERVIDORES
BASES DE DATOS ELIMINADAS
NOMBRE
ESTADO
UBICACIÓN
SUSCRIPCIÓN
SERVIDOR
EDICIÓN
TAMAÑO MÁXI...
No tiene bases de datos SQL. Cree una para empezar a trabajar.
CREAR UNA BASE DE DATOS SQL
NUEVO
AGREGAR SINCRONIZACIÓN

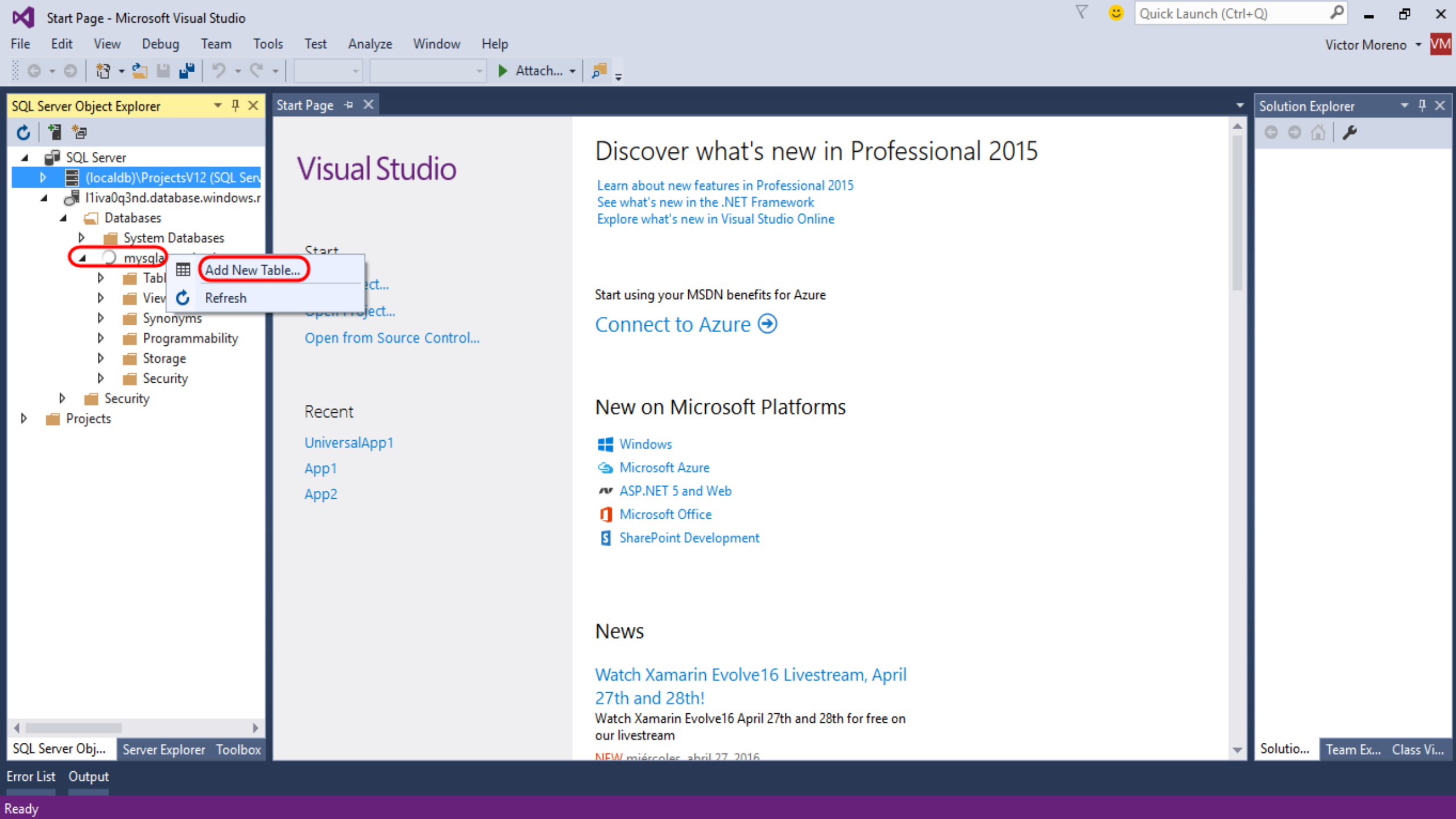

Microsoft Azure
Visite el nuevo portal
MÁQUINAS VIRTUALES
SERVICIOS MÓVILES
SERVICIOS EN LA NUBE
SERVICIOS DE LOTE
BASES DE DATOS SQL
ALMACENAMIENTO
HDINSIGHT
SERVICIOS MULTIMEDIA
SERVICE BUS
MOBILE ENGAGEMENT
VISUAL STUDIO TEAM SE...
NUEVO
AGREGAR SINCRONIZACIÓN
TAMAÑO MÁXI...
NUEVA BASE DE DATOS SQL: CREACIÓN PERSONALIZADA
Especificar configuración de base de datos
NOMBRE
mysqlazuredatabase
SUSCRIPCIÓN
BizSpark (3492bf27-36ba-43f4-890c-61b814c1
NIVELES DE SERVICIO
BASIC
STANDARD
PREMIUM
RETIRADO (12 DE SETIEMBRE DE 2015)
WEB
BUSINESS
NIVEL DE RENDIMIENTO
S0 (10 DTU)
TAMAÑO MÁXIMO
250 GB
INTERCALACIÓN
SQL_Latin1_General_CP1_CI_AS
SERVIDOR
Nuevo servidor de bases de datos SQL
2

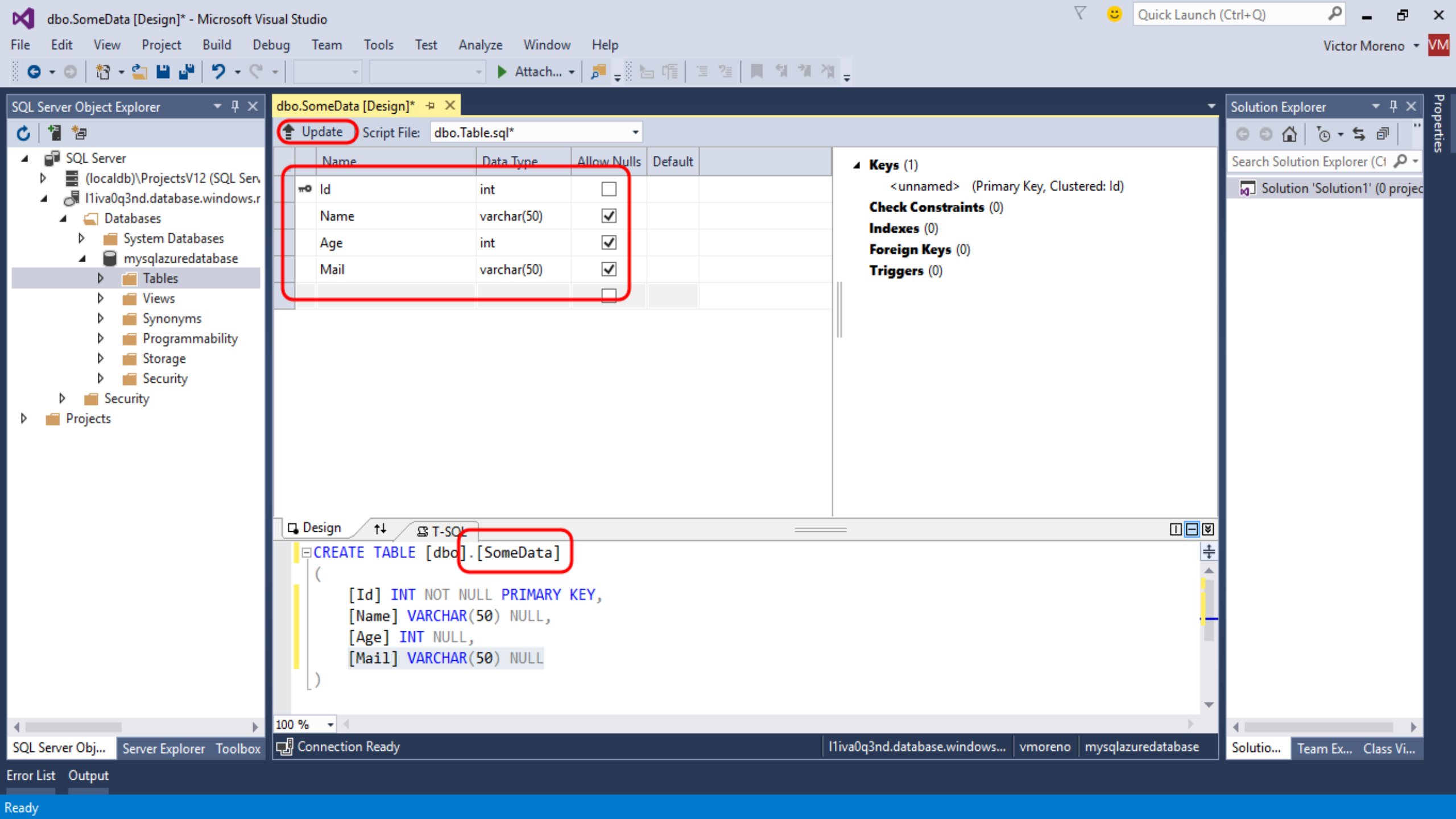

Microsoft Azure
Visite el nuevo portal
MÁQUINAS VIRTUALES
SERVICIOS MÓVILES
SERVICIOS EN LA NUBE
SERVICIOS DE LOTE
BASES DE DATOS SQL
ALMACENAMIENTO
HDINSIGHT
SERVICIOS MULTIMEDIA
SERVICE BUS
MOBILE ENGAGEMENT
VISUAL STUDIO TEAM SE...
TAMAÑO MÁXI...
abajar.
CREAR SERVIDOR
Configuración del servidor de bases de datos SQL
NOMBRE DE INICIO DE SESIÓN
vmoreno
CONTRASEÑA DE INICIO DE SESIÓN
CONFIRMAR CONTRASEÑA
REGIÓN
Centro y sur de EE. UU.
PERMITIR QUE LOS SERVICIOS DE MICROSOFT AZURE ACCEDAN AL SERVIDOR.
HABILITAR ÚLTIMA ACTUALIZACIÓN DE BASE DE DATOS SQL (V12)
1
NUEVO
AGREGAR SINCRONIZACIÓN

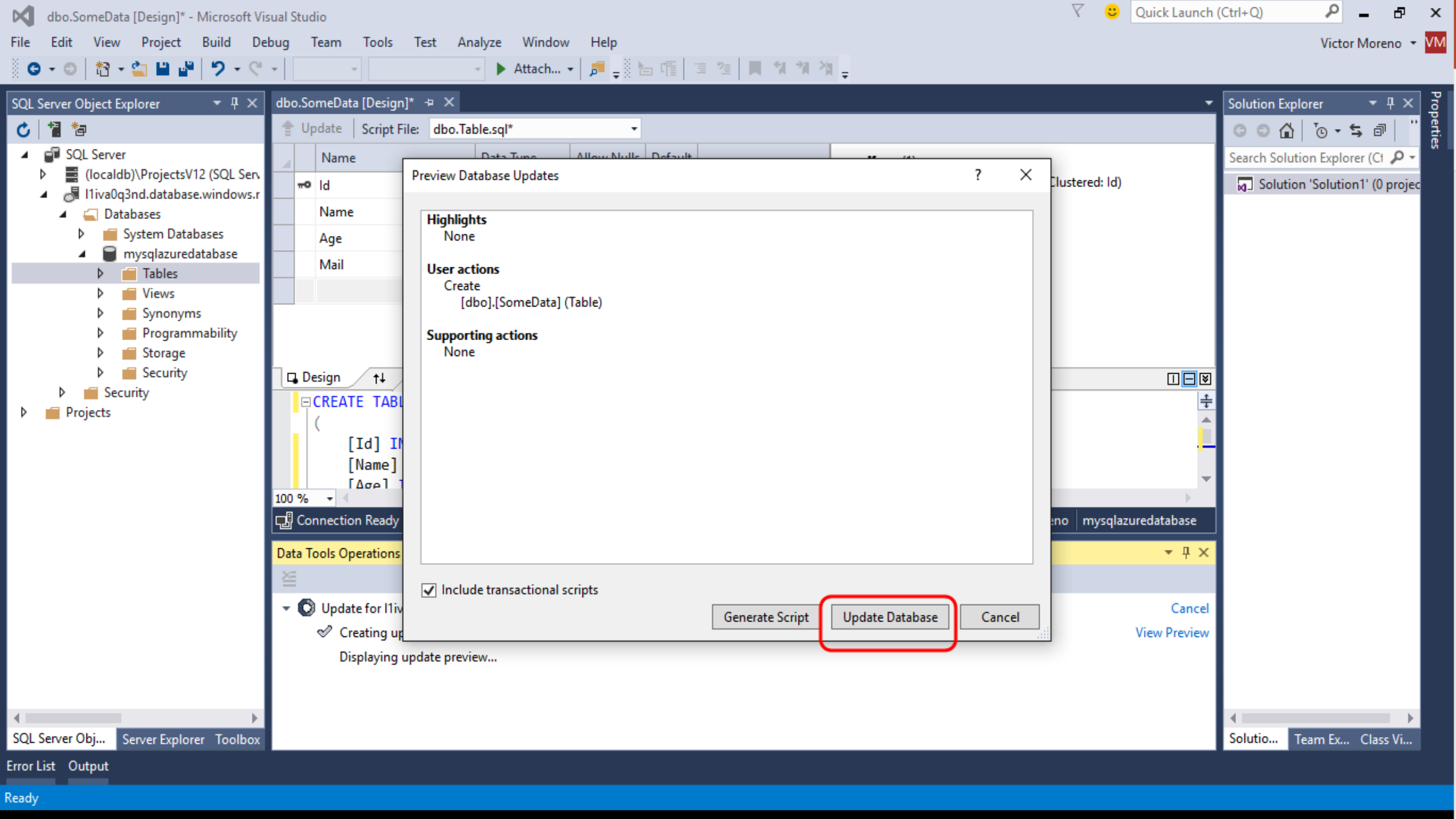
Creating table

We will open our SQL Azure database from Visual Studio to create a table which will serve us to store information.


mysqlazuredatab...
Ha creado una nueva base de datos SQL
Aquí tiene algunas opciones para empezar
Omitir Inicio rápido en la próxima visita
Colores
Principal
Más >>
Obtener las herramientas de diseño de bases de datos de Microsoft
Instalar Microsoft SQL Server Data Tools
Diseñar la base de datos SQL
Descargar un proyecto inicial para la base de datos SQL
Configurar reglas del firewall de Microsoft Azure para esta dirección IP
Descargar la vista previa de las API de escala elástica
Probar vista previa de seguridad de nivel de fila
Conectar con la base de datos
Obtener herramientas de administración de bases de datos de Microsoft
Consultar las cadenas de conexión de las base de datos SQL para ADO .Net, ODBC, PHP y JDBC
Servidor: l1iva0q3nd.database.windows.net,1433
NUEVO
RESTAURAR
EXPORTAR
ABRIR EN VISUAL STUDIO

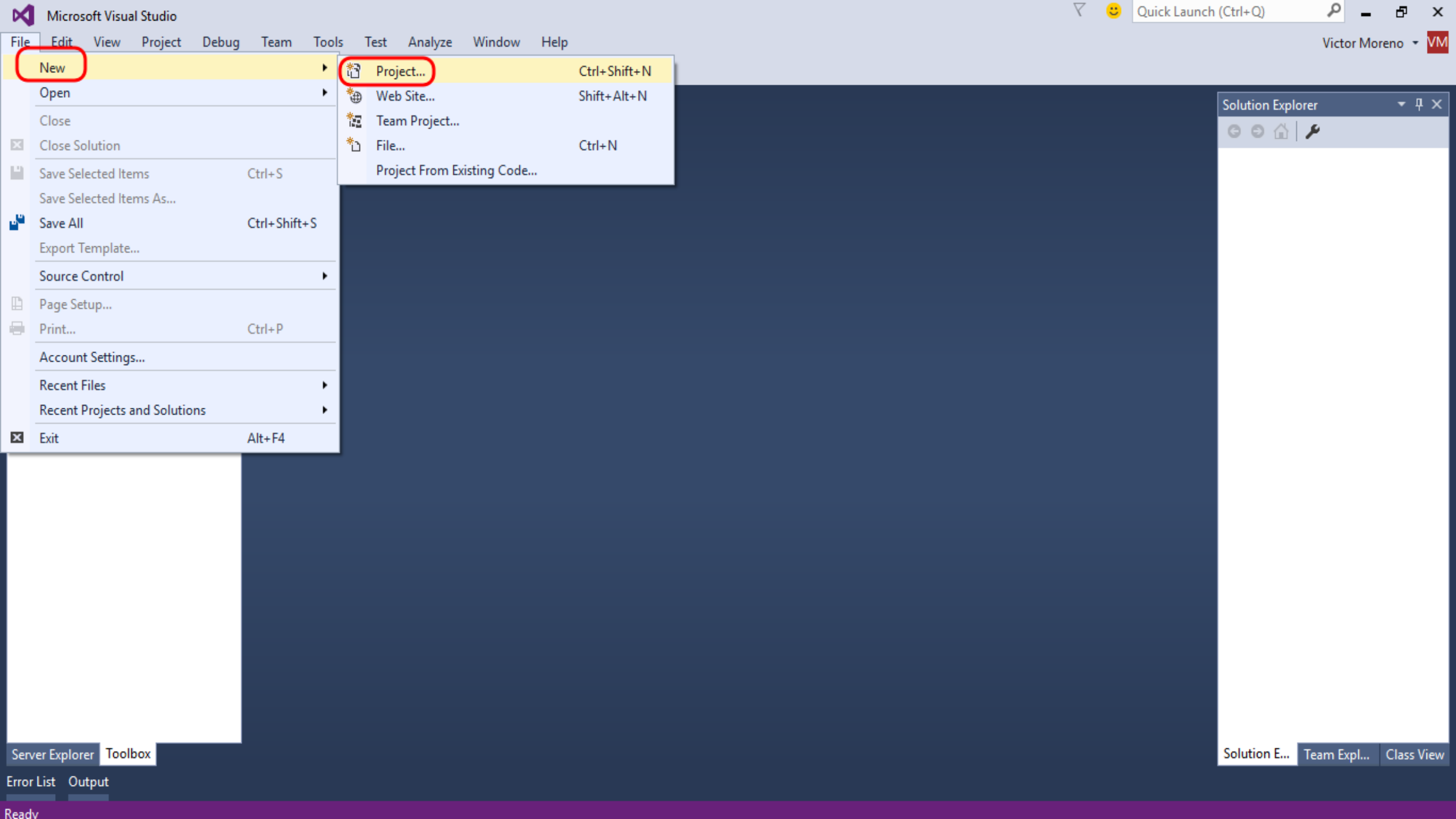

Start Page - Microsoft Visual Studio
Quick Launch (Ctrl+Q)
File Edit View Debug Team Tools Test Analyze Window Help
Victor Moreno
Attach...
SQL Server Object Explorer
SQL Server
(localdb)\ProjectsV12 (SQL Serv
l1iva0q3nd.database.windows.r
Databases
System Databases
mysqla
Add New Table...
Refresh
Tabl
View
Synonyms
Programmability
Storage
Security
Security
Projects
Start Page
Visual Studio
Start
Open from Source Control...
Recent
UniversalApp1
App1
App2
Discover what's new in Professional 2015
Learn about new features in Professional 2015
See what's new in the .NET Framework
Explore what's new in Visual Studio Online
Start using your MSDN benefits for Azure
Connect to Azure
New on Microsoft Platforms
Windows
Microsoft Azure
ASP.NET 5 and Web
Microsoft Office
SharePoint Development
News
Watch Xamarin Evolve16 Livestream, April 27th and 28th!
Watch Xamarin Evolve16 April 27th and 28th for free on our livestream
Solution Explorer
SQL Server Obj...
Server Explorer
Toolbox
Solutio...
Team Ex...
Class Vi...
Error List
Output
Ready


dbo.SomeData [Design]* - Microsoft Visual Studio
Quick Launch (Ctrl+Q)
File Edit View Project Build Debug Team Tools Test Analyze Window Help
Victor Moreno
Attach...
SQL Server Object Explorer
SQL Server
(localdb)\ProjectsV12 (SQL Serv
l1iva0q3nd.database.windows.r
Databases
System Databases
mysqlazuredatabase
Tables
Views
Synonyms
Programmability
Storage
Security
Security
Projects
dbo.SomeData [Design]*
Update
Script File: dbo.Table.sql*
Name
Data Type
Allow Nulls
Default
Id
int
Name
varchar(50)
Age
int
Mail
varchar(50)
Keys (1)
<unnamed> (Primary Key, Clustered: Id)
Check Constraints (0)
Indexes (0)
Foreign Keys (0)
Triggers (0)
Design
T-SQL
CREATE TABLE [dbo].[SomeData]
(
[Id] INT NOT NULL PRIMARY KEY,
[Name] VARCHAR(50) NULL,
[Age] INT NULL,
[Mail] VARCHAR(50) NULL
)
100 %
Connection Ready
l1iva0q3nd.database.windows...
vmoreno
mysqlazuredatabase
Solution Explorer
Search Solution Explorer (Ct
Solution 'Solution1' (0 projec
Properties
SQL Server Obj...
Server Explorer
Toolbox
Error List
Output
Solutio...
Team Ex...
Class Vi...
Ready


dbo.SomeData [Design]* - Microsoft Visual Studio
Quick Launch (Ctrl+Q)
File Edit View Project Build Debug Team Tools Test Analyze Window Help
Victor Moreno
Attach...
SQL Server Object Explorer
SQL Server
(localdb)\ProjectsV12 (SQL Serv
l1iva0q3nd.database.windows.r
Databases
System Databases
mysqlazuredatabase
Tables
Views
Synonyms
Programmability
Storage
Security
Security
Projects
dbo.SomeData [Design]*
Update
Script File: dbo.Table.sql*
Name
Id
Name
Age
Mail
Design
CREATE TABL
(
[Id] IN
[Name]
[Age]
100 %
Connection Ready
Preview Database Updates
Highlights
None
User actions
Create
[dbo].[SomeData] (Table)
Supporting actions
None
Include transactional scripts
Generate Script
Update Database
Cancel
Data Tools Operations
Update for l1iv
Creating up
Displaying update preview...
Cancel
View Preview
Solution Explorer
Search Solution Explorer (Ct
Solution 'Solution1' (0 projec
Properties
SQL Server Obj...
Server Explorer
Toolbox
Solutio...
Team Ex...
Class Vi...
Error List
Output
Ready

Creating project

We will open Visual Studio 2015 and start a new Project.


Microsoft Visual Studio
Quick Launch (Ctrl+Q)
File Edit View Project Debug Team Tools Test Analyze Window Help
Victor Moreno
VM
New
Open
Close
Close Solution
Save Selected Items Ctrl+S
Save Selected Items As...
Save All Ctrl+Shift+S
Export Template...
Source Control
Page Setup...
Print... Ctrl+P
Account Settings...
Recent Files
Recent Projects and Solutions
Exit Alt+F4
Project... Ctrl+Shift+N
Web Site... Shift+Alt+N
Team Project...
File... Ctrl+N
Project From Existing Code...
Solution Explorer
Server Explorer
Toolbox
Error List
Output
Solution E...
Team Expl...
Class View
Ready

New Project

Recent

Installed

Templates
- Visual C#
  - Windows
    - Universal
    - Windows 8
    - Classic Desktop
  - Web
  - Office/SharePoint
  - Android
  - Cloud
  - Extensibility
  - iOS
  - LightSwitch
  - Reporting
  - Silverlight
  - Test
  - WCF

Online

.NET Framework 4.5.1 | Sort by: Default | Search Installed Templates (Ctrl+E)

Blank App (Universal Windows)	Visual C#
Class Library (Universal Windows)	Visual C#
Windows Runtime Component (Universal Windows)	Visual C#
Unit Test App (Universal Windows)	Visual C#
Coded UI Test Project (Windows Phone)	Visual C#
Coded UI Test Project (Windows)	Visual C#
Install Universal Windows Tools	Visual C#

Click here to go online and find templates.

Type: Visual C#

A project for a single-page Universal Windows Platform app that has no predefined controls or layout.

Show telemetry in the Windows Dev Center

Enable richer analytics with Application Insights

Learn more

Privacy statement

vicmorji@hotmail.com (Mi...

Reenter your credentials

Name: MyFirstUniversalApp

Location: C:\Users\Víctor\Documents\uwp examples\ Browse...

Solution name: MyFirstUniversalApp

Create directory for solution

Add to source control

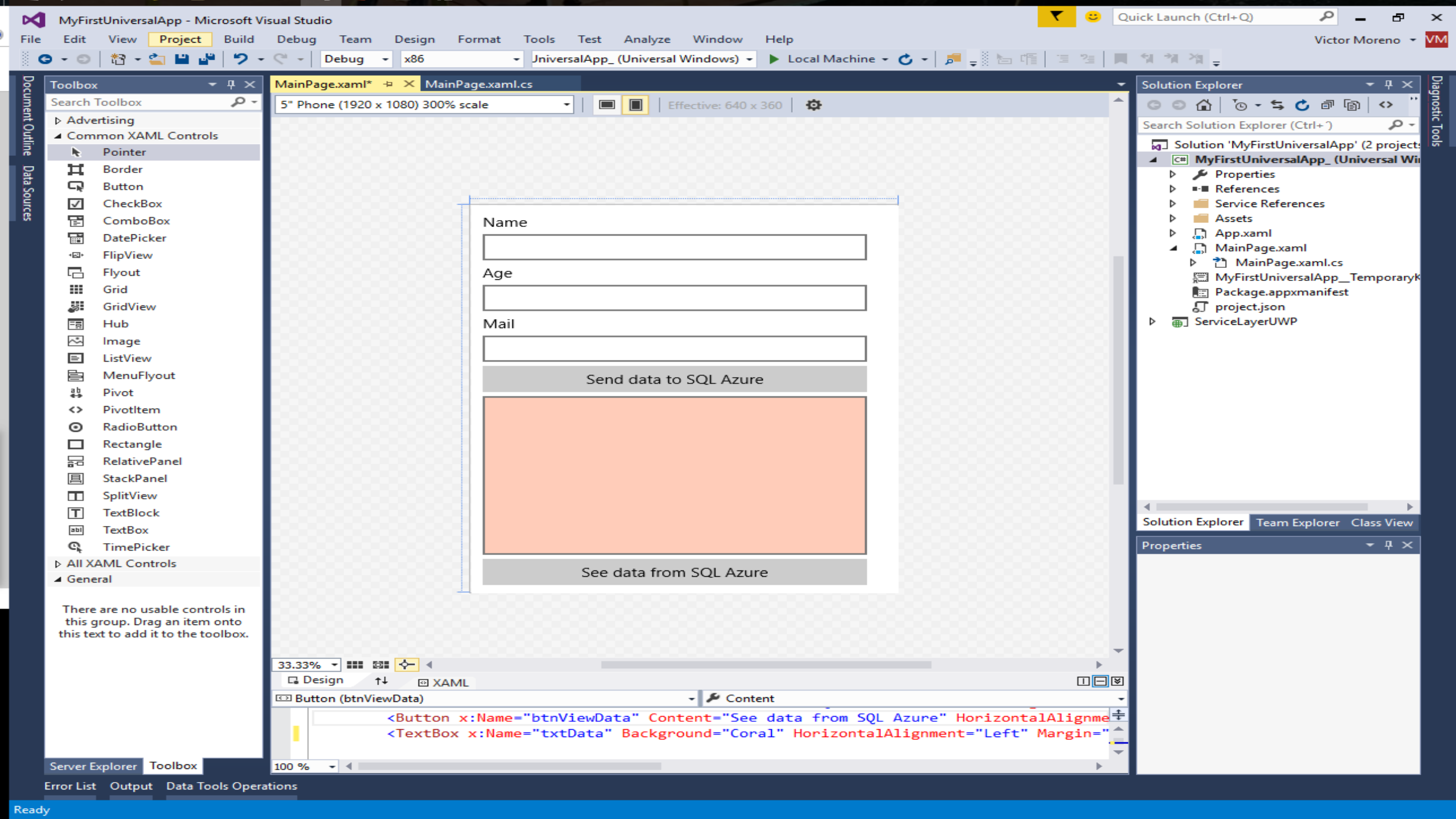
OK Cancel

Designing our graphic user interface

We will open the file “MainPage.xaml” in design mode, and add some controls to capture necessary data.

The used controls are:

- TextBlock
- TextBox
- Button


MyFirstUniversalApp - Microsoft Visual Studio
File Edit View Project Build Debug Team Design Format Tools Test Analyze Window Help
Victor Moreno
Debug
x86
Local Machine
Toolbox
Search Toolbox
Advertising
Common XAML Controls
Pointer
Border
Button
CheckBox
ComboBox
DatePicker
FlipView
Flyout
Grid
GridView
Hub
Image
ListView
MenuFlyout
Pivot
PivotItem
RadioButton
Rectangle
RelativePanel
StackPanel
SplitView
TextBlock
TextBox
TimePicker
All XAML Controls
General
There are no usable controls in this group. Drag an item onto this text to add it to the toolbox.
MainPage.xaml*
MainPage.xaml.cs
5" Phone (1920 x 1080) 300% scale
Effective: 640 x 360
Name
Age
Mail
Send data to SQL Azure
See data from SQL Azure
33.33%
Design
XAML
Button (btnViewData)
Content
<Button x:Name="btnViewData" Content="See data from SQL Azure" HorizontalAlignme
<TextBox x:Name="txtData" Background="Coral" HorizontalAlignment="Left" Margin="
100 %
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'MyFirstUniversalApp' (2 project
MyFirstUniversalApp_ (Universal Wi
Properties
References
Service References
Assets
App.xaml
MainPage.xaml
MainPage.xaml.cs
MyFirstUniversalApp__TemporaryK
Package.appxmanifest
project.json
ServiceLayerUWP
Solution Explorer Team Explorer Class View
Properties
Server Explorer Toolbox
Error List Output Data Tools Operations
Ready

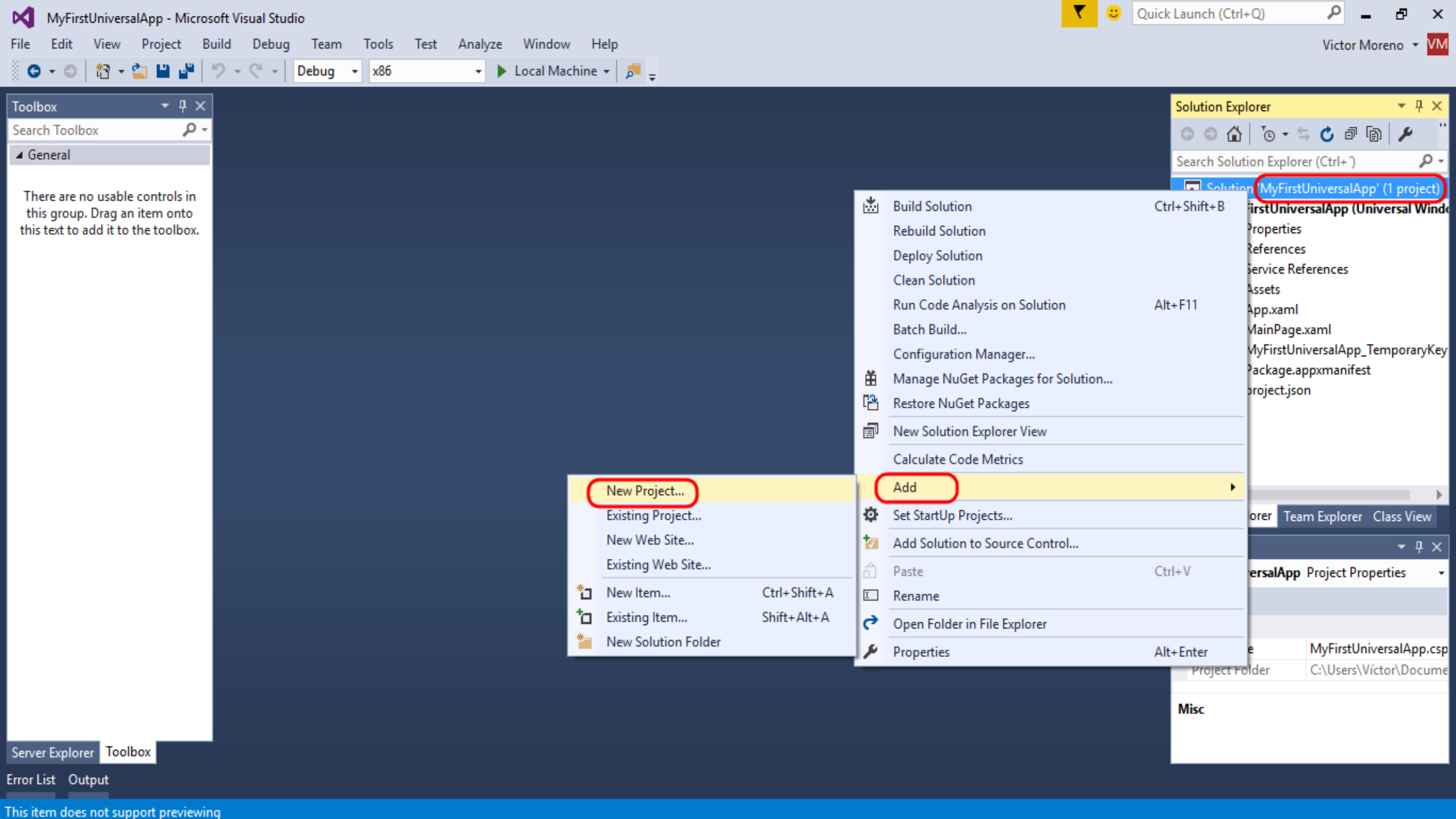
Modeling our database

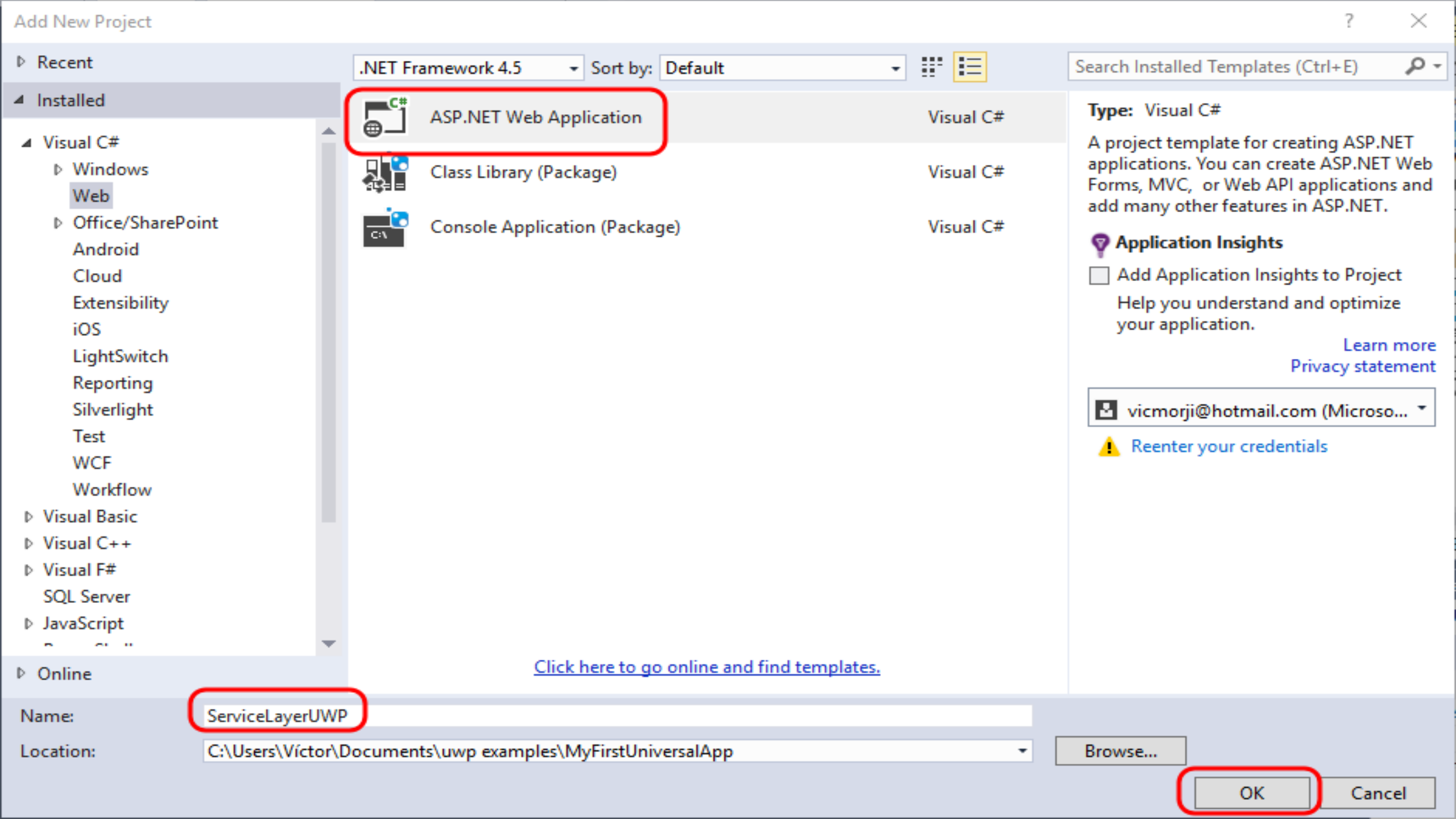
When we have our database ready, we need to model it in our project, we will use the following:

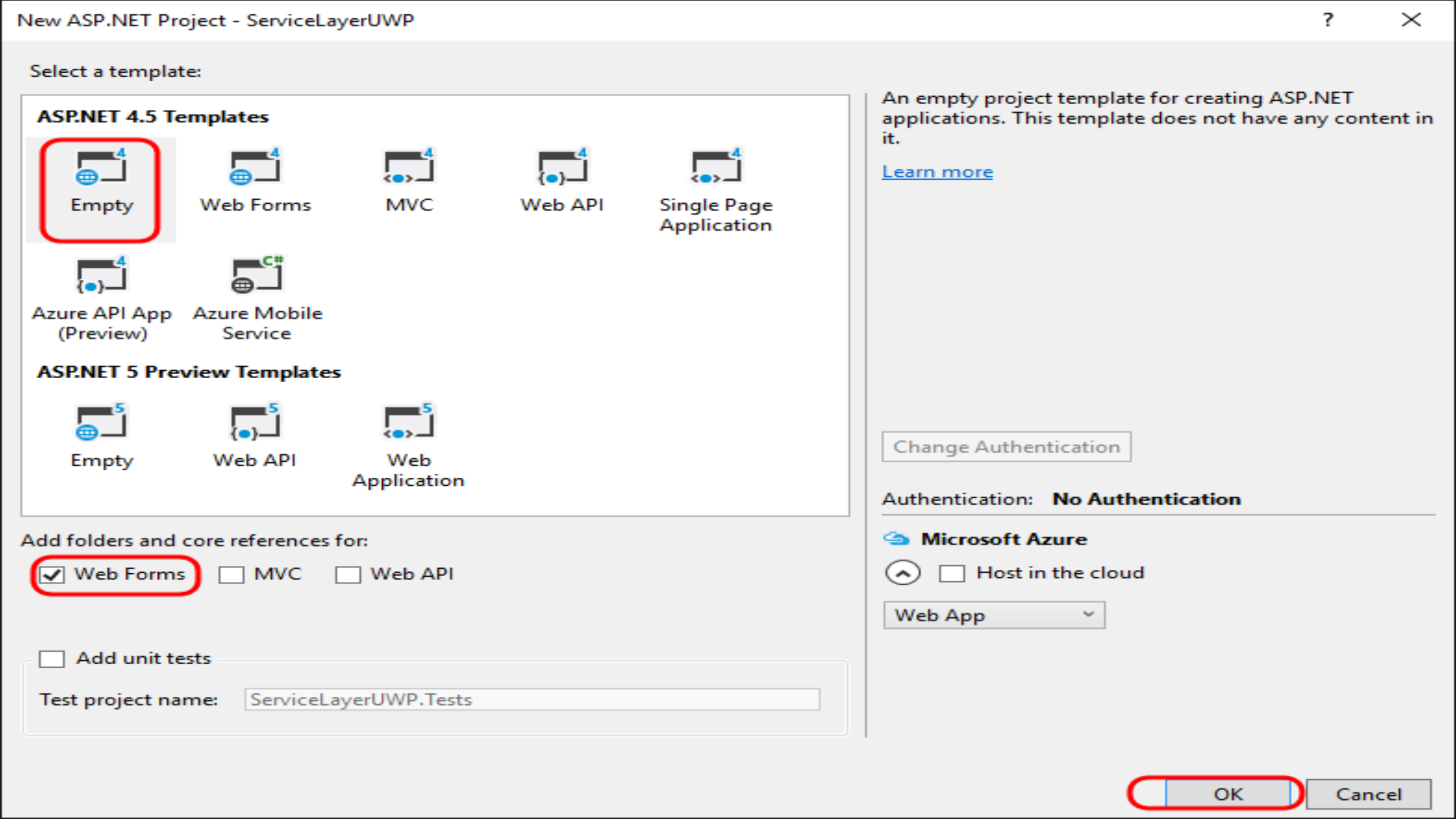
- A project working as communication layer between our universal windows app and the database (ASP .NET Project).
- Entity Framework to model our database with classes.
- A WCF service (Windows Communication Foundation) to program access to database.

Modeling our database

A project working as communication layer between our universal windows app and the database (ASP .NET Project).

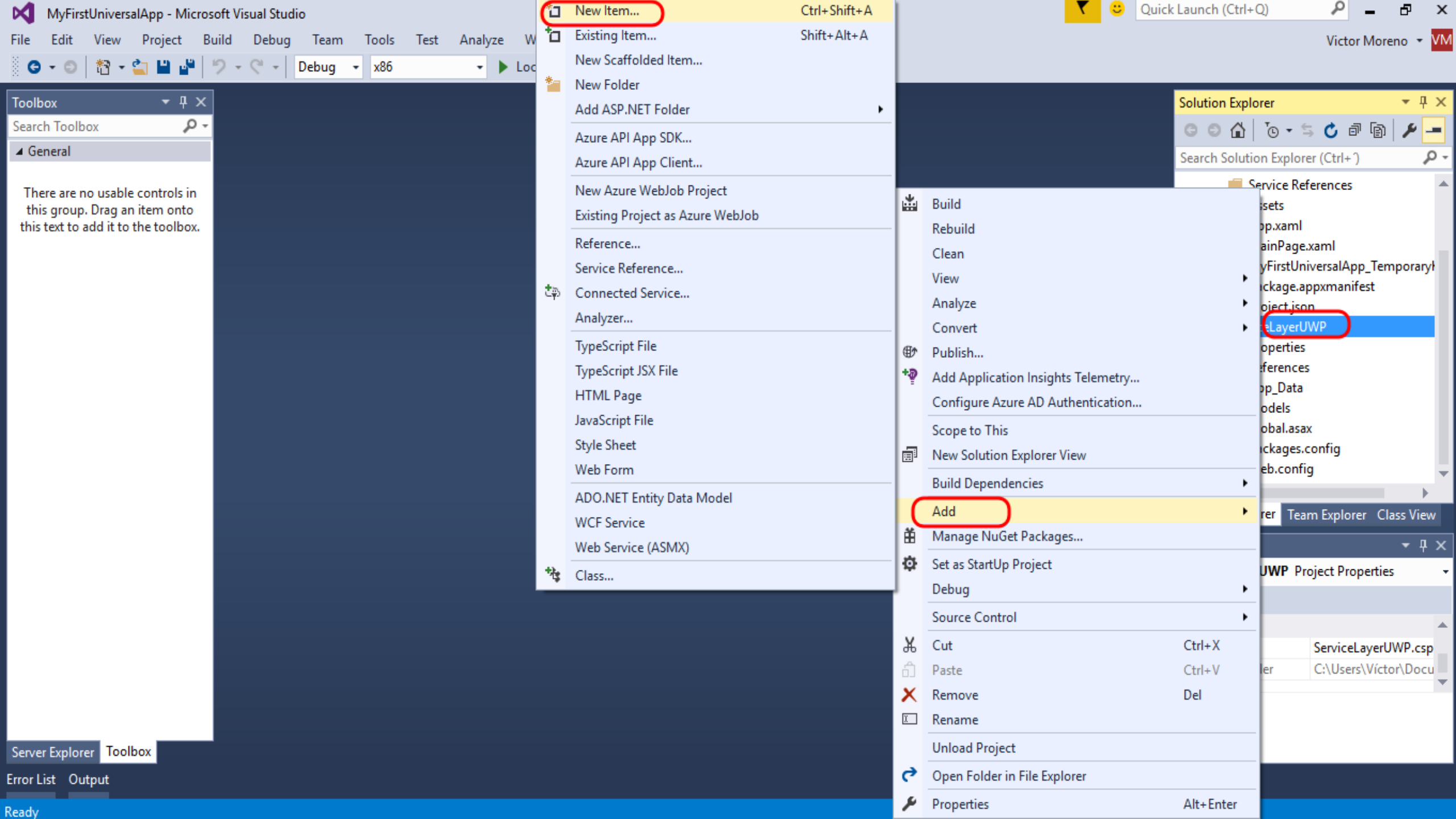

MyFirstUniversalApp - Microsoft Visual Studio
Quick Launch (Ctrl+Q)
File Edit View Project Build Debug Team Tools Test Analyze Window Help
Victor Moreno
Debug
x86
Local Machine
Toolbox
Search Toolbox
General
There are no usable controls in this group. Drag an item onto this text to add it to the toolbox.
Server Explorer
Toolbox
Error List
Output
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'MyFirstUniversalApp' (1 project)
irstUniversalApp (Universal Windo
roperties
eferences
ervice References
ssets
pp.xaml
ainPage.xaml
yFirstUniversalApp_TemporaryKey
ackage.appxmanifest
roject.json
orer
Team Explorer
Class View
ersalApp Project Properties
MyFirstUniversalApp.csp
Project Folder
C:\Users\Víctor\Docume
Misc
Build Solution Ctrl+Shift+B
Rebuild Solution
Deploy Solution
Clean Solution
Run Code Analysis on Solution Alt+F11
Batch Build...
Configuration Manager...
Manage NuGet Packages for Solution...
Restore NuGet Packages
New Solution Explorer View
Calculate Code Metrics
Add
Set StartUp Projects...
Add Solution to Source Control...
Paste Ctrl+V
Rename
Open Folder in File Explorer
Properties Alt+Enter
New Project...
Existing Project...
New Web Site...
Existing Web Site...
New Item... Ctrl+Shift+A
Existing Item... Shift+Alt+A
New Solution Folder
This item does not support previewing

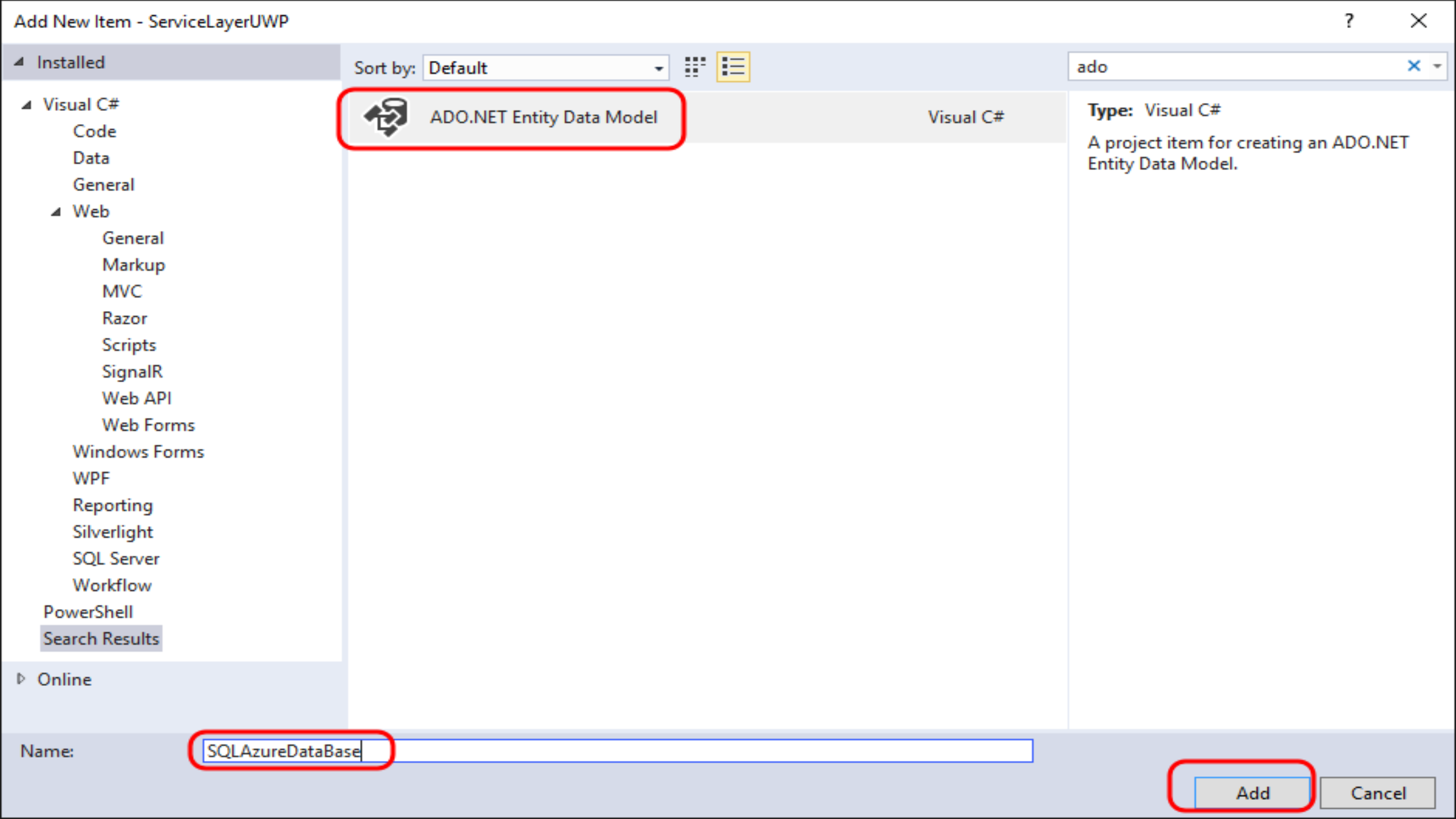

Add New Project
Recent
Installed
Visual C#
Windows
Web
Office/SharePoint
Android
Cloud
Extensibility
iOS
LightSwitch
Reporting
Silverlight
Test
WCF
Workflow
Visual Basic
Visual C++
Visual F#
SQL Server
JavaScript
Online
.NET Framework 4.5
Sort by:
Default
Search Installed Templates (Ctrl+E)
ASP.NET Web Application
Visual C#
Class Library (Package)
Visual C#
Console Application (Package)
Visual C#
Type: Visual C#
A project template for creating ASP.NET applications. You can create ASP.NET Web Forms, MVC, or Web API applications and add many other features in ASP.NET.
Application Insights
Add Application Insights to Project
Help you understand and optimize your application.
Learn more
Privacy statement
vicmorji@hotmail.com (Microso...
Reenter your credentials
Click here to go online and find templates.
Name:
ServiceLayerUWP
Location:
C:\Users\Víctor\Documents\uwp examples\MyFirstUniversalApp
Browse...
OK
Cancel

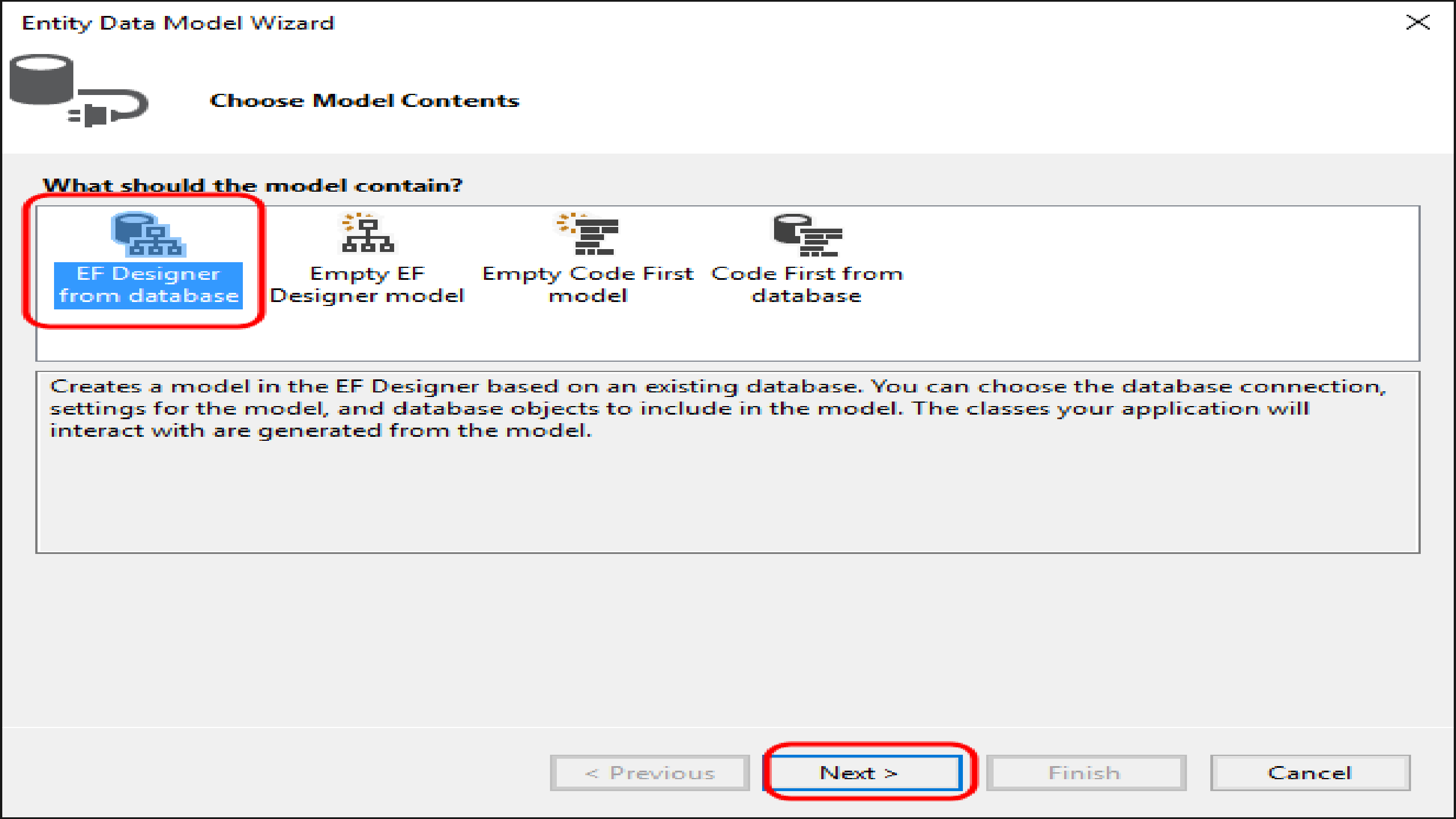

New ASP.NET Project - ServiceLayerUWP
Select a template:
ASP.NET 4.5 Templates
Empty
Web Forms
MVC
Web API
Single Page Application
Azure API App (Preview)
Azure Mobile Service
ASP.NET 5 Preview Templates
Empty
Web API
Web Application
An empty project template for creating ASP.NET applications. This template does not have any content in it.
Learn more
Change Authentication
Authentication: No Authentication
Microsoft Azure
Host in the cloud
Web App
Add folders and core references for:
Web Forms
MVC
Web API
Add unit tests
Test project name:
ServiceLayerUWP.Tests
OK
Cancel

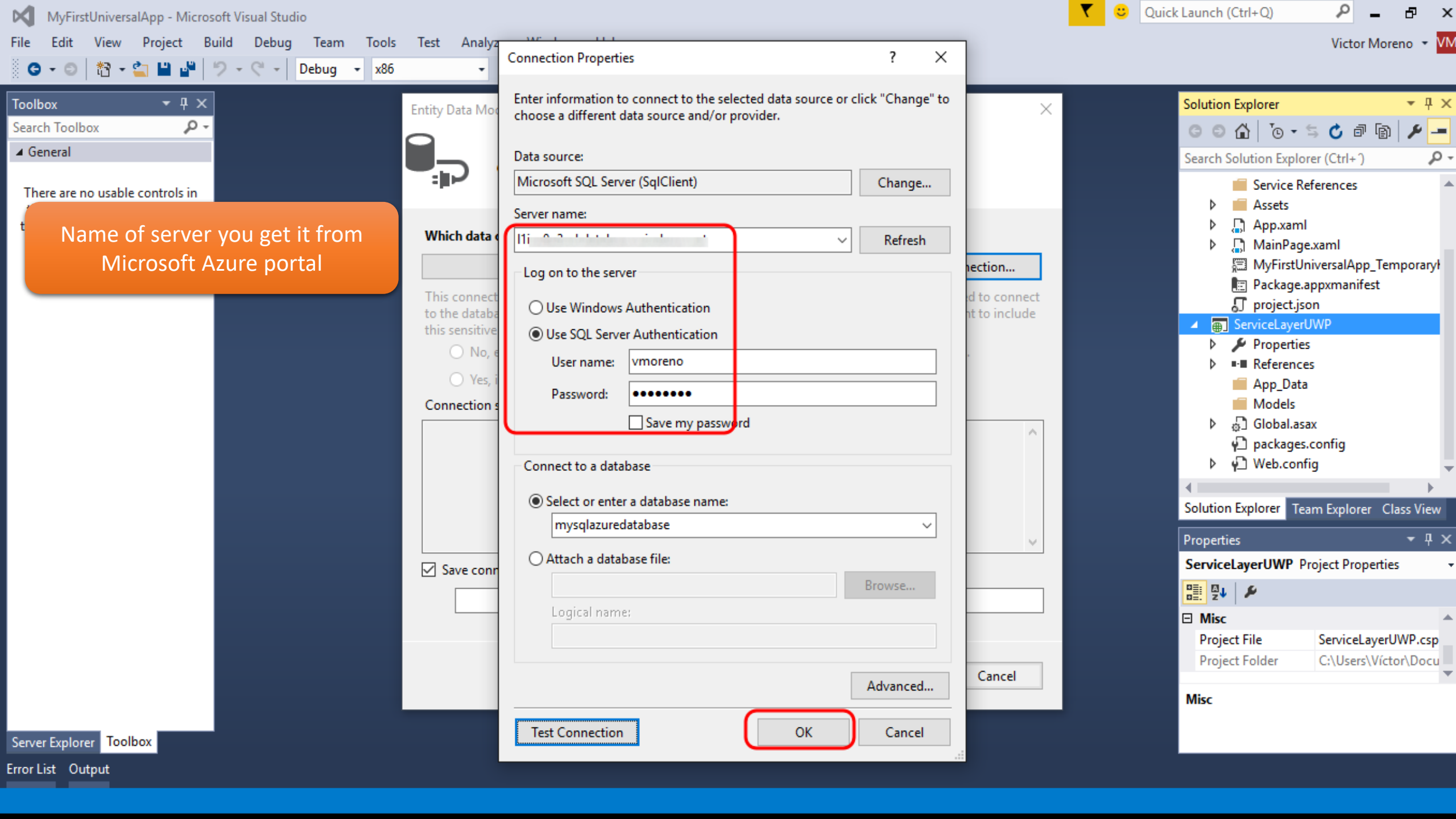
Modeling our database

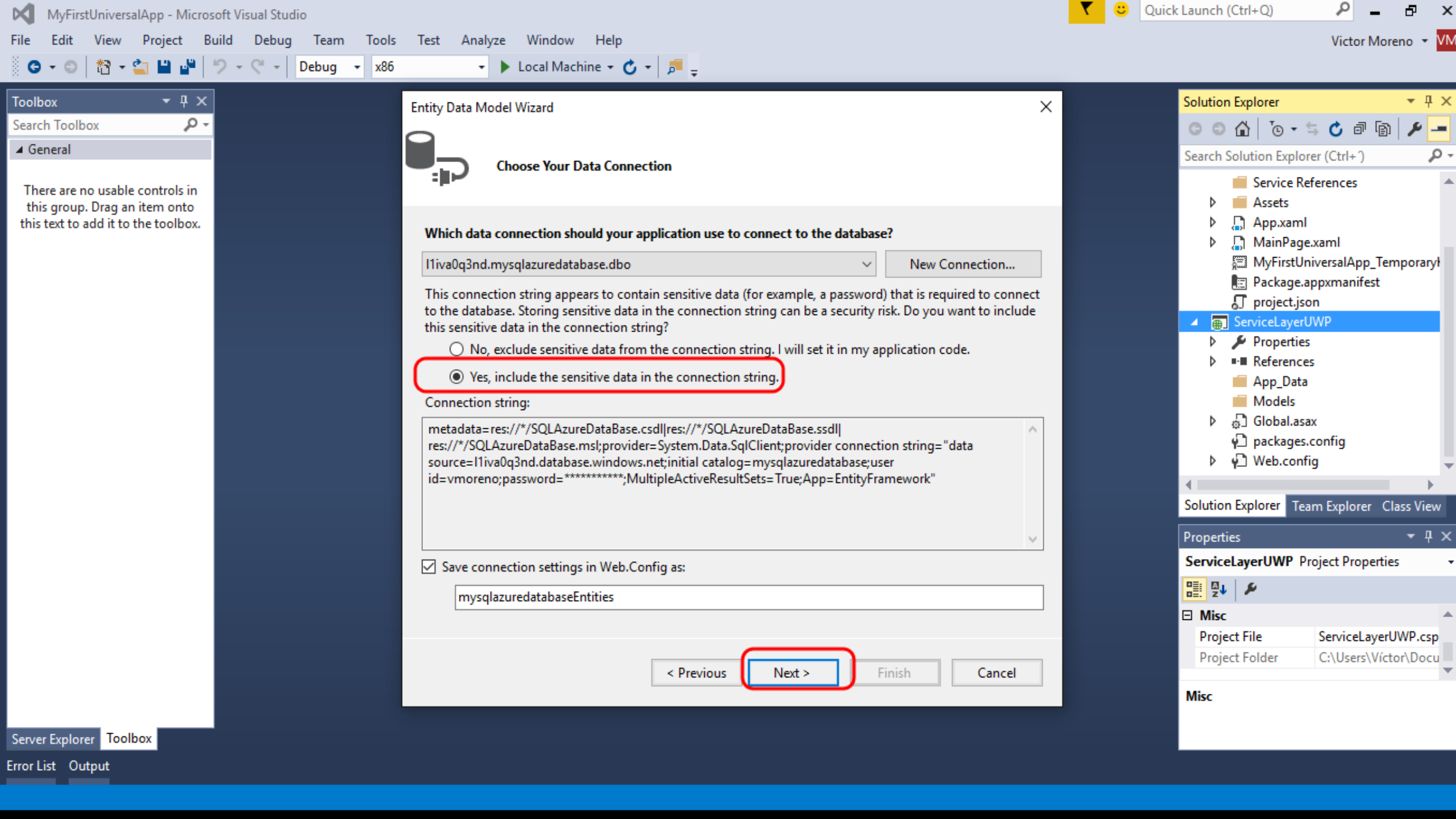
Entity Framework to model our database with classes.

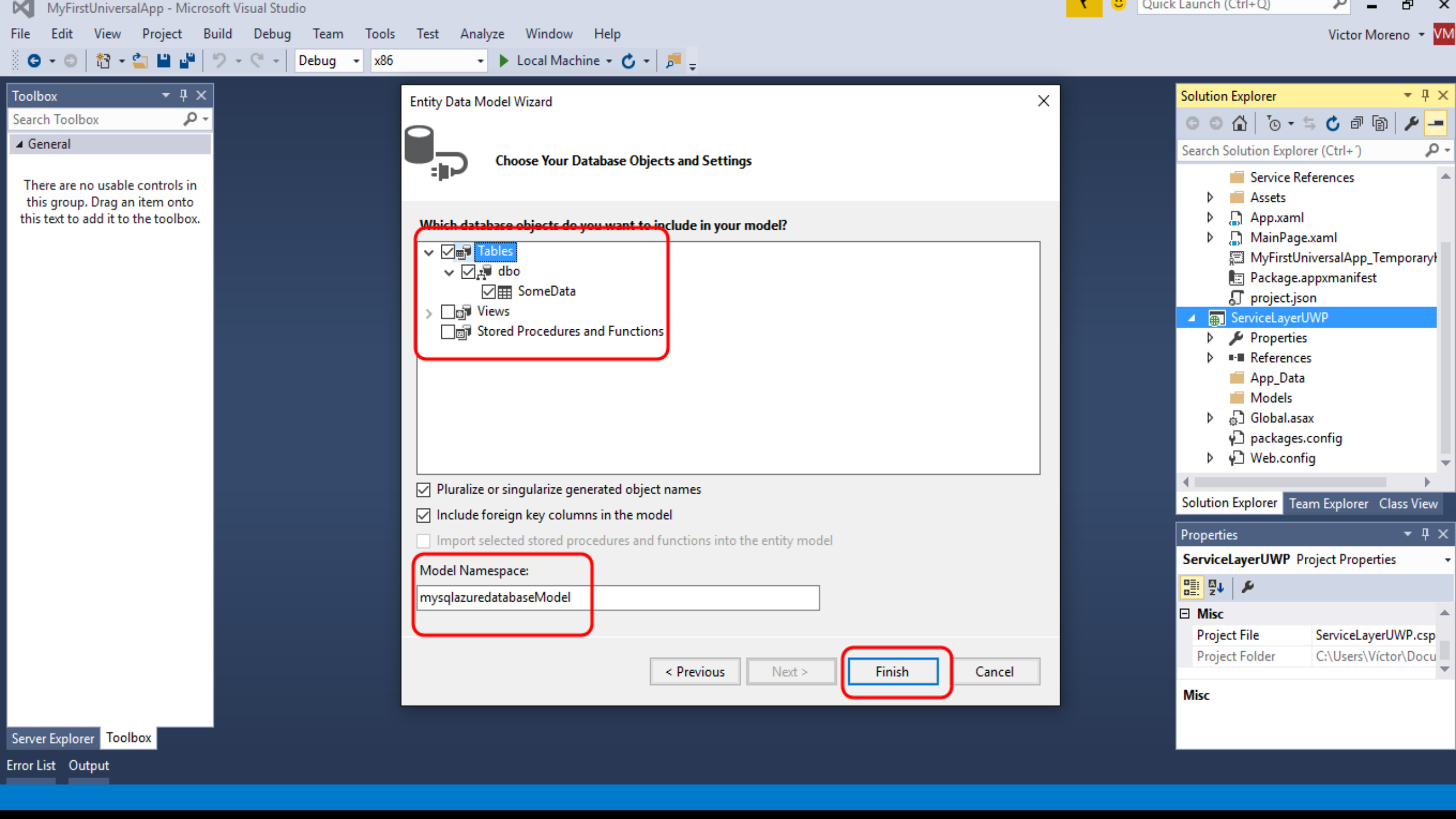

MyFirstUniversalApp - Microsoft Visual Studio
File Edit View Project Build Debug Team Tools Test Analyze
Debug
x86
Victor Moreno
Toolbox
Search Toolbox
General
There are no usable controls in this group. Drag an item onto this text to add it to the toolbox.
Server Explorer
Toolbox
Error List
Output
Ready
New Item... Ctrl+Shift+A
Existing Item... Shift+Alt+A
New Scaffolded Item...
New Folder
Add ASP.NET Folder
Azure API App SDK...
Azure API App Client...
New Azure WebJob Project
Existing Project as Azure WebJob
Reference...
Service Reference...
Connected Service...
Analyzer...
TypeScript File
TypeScript JSX File
HTML Page
JavaScript File
Style Sheet
Web Form
ADO.NET Entity Data Model
WCF Service
Web Service (ASMX)
Class...
Build
Rebuild
Clean
View
Analyze
Convert
Publish...
Add Application Insights Telemetry...
Configure Azure AD Authentication...
Scope to This
New Solution Explorer View
Build Dependencies
Add
Manage NuGet Packages...
Set as StartUp Project
Debug
Source Control
Cut Ctrl+X
Paste Ctrl+V
Remove Del
Rename
Unload Project
Open Folder in File Explorer
Properties Alt+Enter
Solution Explorer
Search Solution Explorer (Ctrl+;)
Service References
sets
p.xaml
ainPage.xaml
yFirstUniversalApp_Temporary
ckage.appxmanifest
oject.json
eLayerUWP
operties
ferences
p_Data
odels
obal.asax
ckages.config
eb.config
Team Explorer
Class View
UWP Project Properties
ServiceLayerUWP.csp
C:\Users\Víctor\Docu


Add New Item - ServiceLayerUWP
Installed
Visual C#
Code
Data
General
Web
General
Markup
MVC
Razor
Scripts
SignalR
Web API
Web Forms
Windows Forms
WPF
Reporting
Silverlight
SQL Server
Workflow
PowerShell
Search Results
Online
Sort by:
Default
ADO.NET Entity Data Model
Visual C#
ado
Type: Visual C#
A project item for creating an ADO.NET Entity Data Model.
Name:
SQLAzureDataBase
Add
Cancel


Entity Data Model Wizard
Choose Model Contents
What should the model contain?
EF Designer from database
Empty EF Designer model
Empty Code First model
Code First from database
Creates a model in the EF Designer based on an existing database. You can choose the database connection, settings for the model, and database objects to include in the model. The classes your application will interact with are generated from the model.
< Previous
Next >
Finish
Cancel

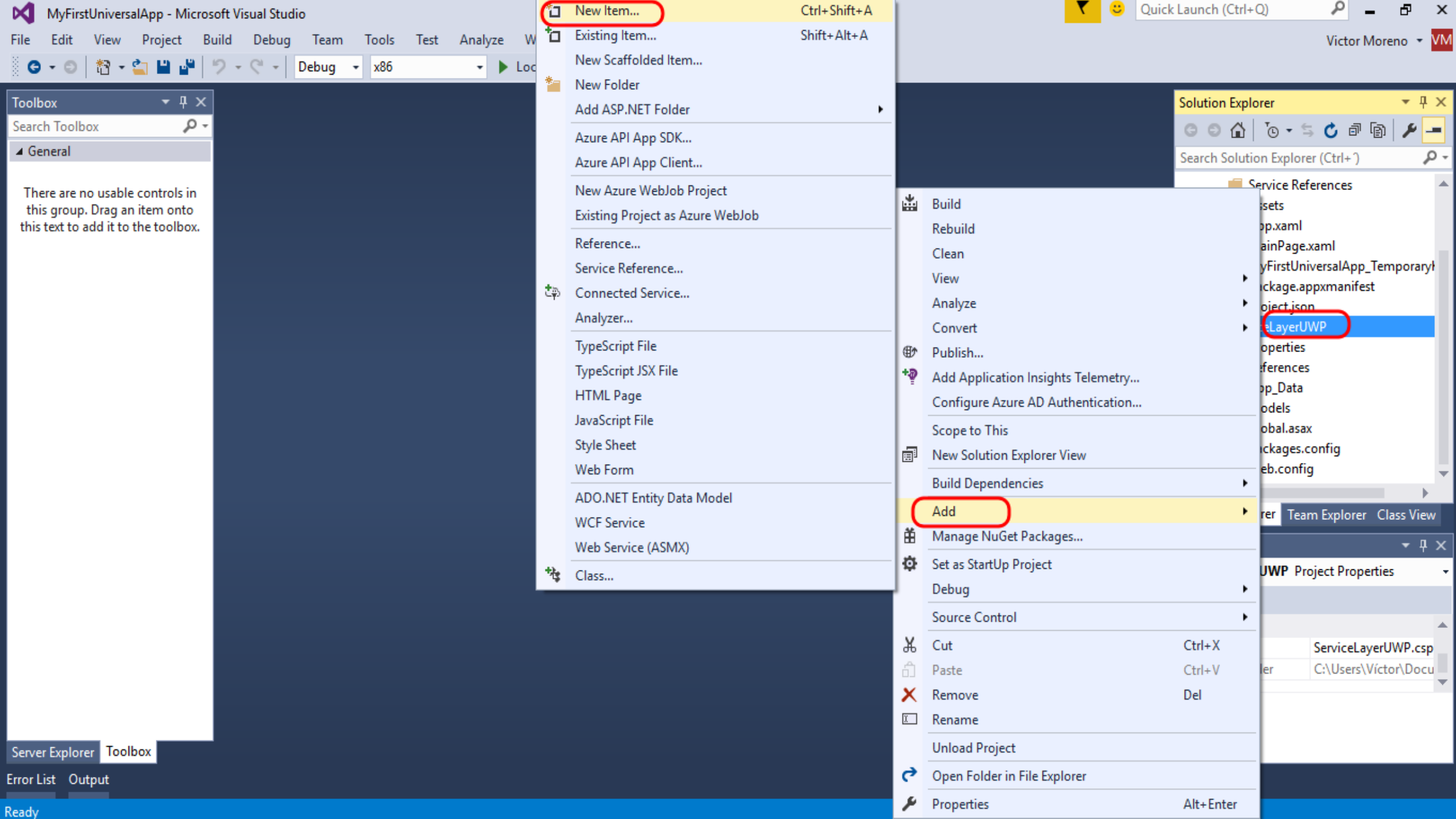

MyFirstUniversalApp - Microsoft Visual Studio
Quick Launch (Ctrl+Q)
File Edit View Project Build Debug Team Tools Test
Victor Moreno
Debug
x86
Toolbox
Search Toolbox
General
There are no usable controls in
Name of server you get it from Microsoft Azure portal
Connection Properties
Enter information to 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:
Refresh
Log on to the server
Use Windows Authentication
Use SQL Server Authentication
User name:
vmoreno
Password:
Save my password
Connect to a database
Select or enter a database name:
mysqlazuredatabase
Attach a database file:
Browse...
Logical name:
Advanced...
Test Connection
OK
Cancel
Solution Explorer
Search Solution Explorer (Ctrl+;)
Service References
Assets
App.xaml
MainPage.xaml
Package.appxmanifest
project.json
ServiceLayerUWP
Properties
References
App_Data
Models
Global.asax
packages.config
Web.config
Solution Explorer Team Explorer Class View
Properties
ServiceLayerUWP Project Properties
Misc
Project File
ServiceLayerUWP.csp
Project Folder
C:\Users\Víctor\Docu
Misc
Server Explorer Toolbox
Error List Output

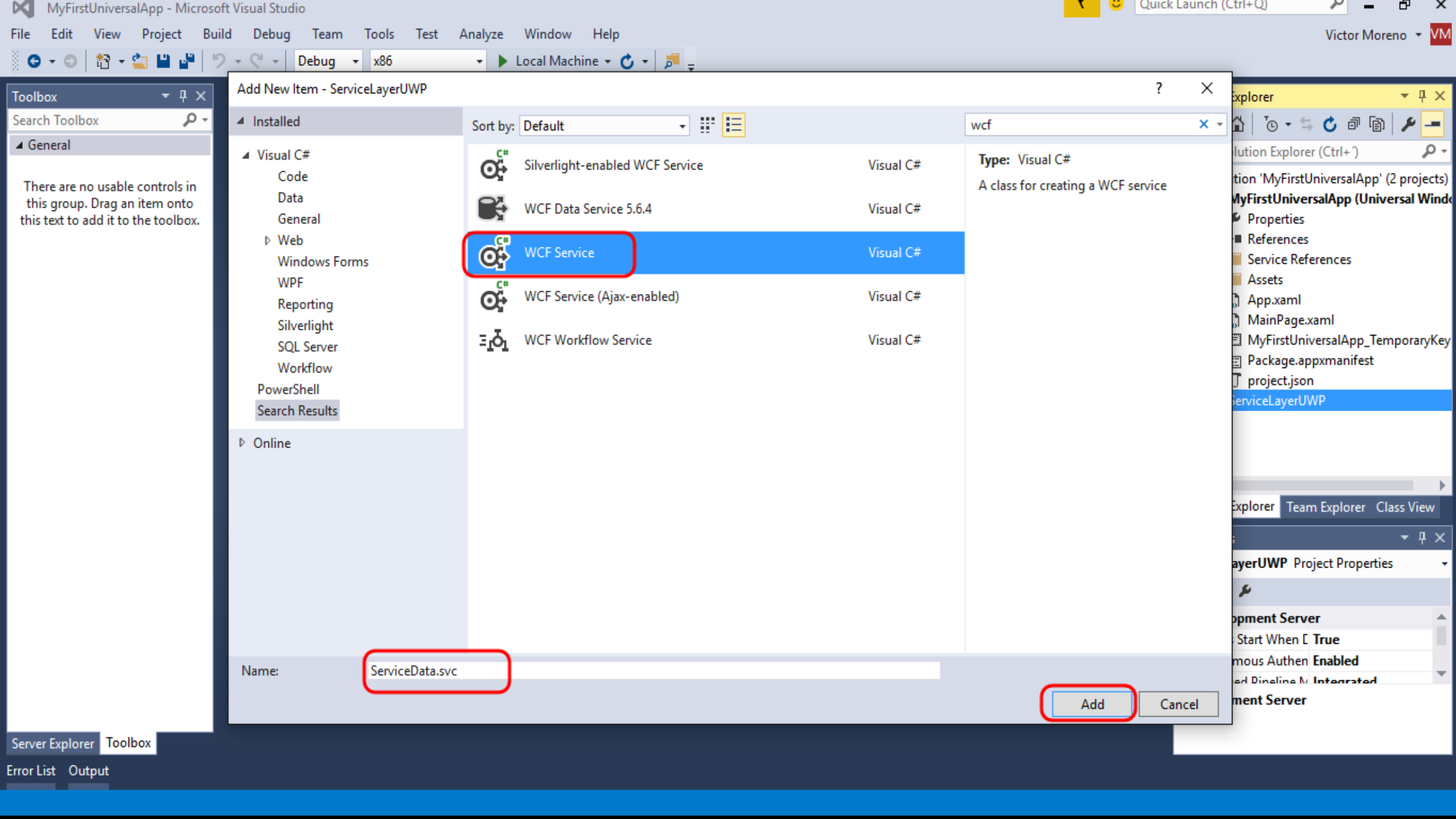

MyFirstUniversalApp - Microsoft Visual Studio
Quick Launch (Ctrl+Q)
File Edit View Project Build Debug Team Tools Test Analyze Window Help
Victor Moreno
Debug
x86
Local Machine
Toolbox
Search Toolbox
General
There are no usable controls in this group. Drag an item onto this text to add it to the toolbox.
Server Explorer
Toolbox
Error List
Output
Entity Data Model Wizard
Choose Your Data Connection
Which data connection should your application use to connect to the database?
l1iva0q3nd.mysqlazuredatabase.dbo
New Connection...
This connection string appears to contain sensitive data (for example, a password) that is required to connect to the database. Storing sensitive data in the connection string can be a security risk. Do you want to include this sensitive data in the connection string?
No, exclude sensitive data from the connection string. I will set it in my application code.
Yes, include the sensitive data in the connection string.
Connection string:
metadata=res://*/SQLAzureDataBase.csdl|res://*/SQLAzureDataBase.ssdl|
res://*/SQLAzureDataBase.msl;provider=System.Data.SqlClient;provider connection string="data
source=l1iva0q3nd.database.windows.net;initial catalog=mysqlazuredatabase;user
id=vmoreno;password=**********;MultipleActiveResultSets=True;App=EntityFramework"
Save connection settings in Web.Config as:
mysqlazuredatabaseEntities
< Previous
Next >
Finish
Cancel
Solution Explorer
Search Solution Explorer (Ctrl+;)
Service References
Assets
App.xaml
MainPage.xaml
MyFirstUniversalApp_Temporary
Package.appxmanifest
project.json
ServiceLayerUWP
Properties
References
App_Data
Models
Global.asax
packages.config
Web.config
Solution Explorer
Team Explorer
Class View
Properties
ServiceLayerUWP Project Properties
Misc
Project File
ServiceLayerUWP.csp
Project Folder
C:\Users\Víctor\Docu
Misc


MyFirstUniversalApp - Microsoft Visual Studio
File Edit View Project Build Debug Team Tools Test Analyze Window Help
Victor Moreno
Debug
x86
Local Machine
Toolbox
Search Toolbox
General
There are no usable controls in this group. Drag an item onto this text to add it to the toolbox.
Server Explorer
Toolbox
Error List
Output
Entity Data Model Wizard
Choose Your Database Objects and Settings
Which database objects do you want to include in your model?
Tables
dbo
SomeData
Views
Stored Procedures and Functions
Pluralize or singularize generated object names
Include foreign key columns in the model
Import selected stored procedures and functions into the entity model
Model Namespace:
mysqlazuredatabaseModel
< Previous
Next >
Finish
Cancel
Solution Explorer
Search Solution Explorer (Ctrl+;)
Service References
Assets
App.xaml
MainPage.xaml
MyFirstUniversalApp_Temporary
Package.appxmanifest
project.json
ServiceLayerUWP
Properties
References
App_Data
Models
Global.asax
packages.config
Web.config
Solution Explorer
Team Explorer
Class View
Properties
ServiceLayerUWP Project Properties
Misc
Project File
ServiceLayerUWP.csp
Project Folder
C:\Users\Víctor\Docu
Misc

Modeling our database

A WCF service (Windows Communication Foundation) to program access to database.


MyFirstUniversalApp - Microsoft Visual Studio
File Edit View Project Build Debug Team Tools Test Analyze
Debug
x86
Victor Moreno
Toolbox
Search Toolbox
General
There are no usable controls in this group. Drag an item onto this text to add it to the toolbox.
Server Explorer
Toolbox
Error List
Output
Ready
New Item... Ctrl+Shift+A
Existing Item... Shift+Alt+A
New Scaffolded Item...
New Folder
Add ASP.NET Folder
Azure API App SDK...
Azure API App Client...
New Azure WebJob Project
Existing Project as Azure WebJob
Reference...
Service Reference...
Connected Service...
Analyzer...
TypeScript File
TypeScript JSX File
HTML Page
JavaScript File
Style Sheet
Web Form
ADO.NET Entity Data Model
WCF Service
Web Service (ASMX)
Class...
Build
Rebuild
Clean
View
Analyze
Convert
Publish...
Add Application Insights Telemetry...
Configure Azure AD Authentication...
Scope to This
New Solution Explorer View
Build Dependencies
Add
Manage NuGet Packages...
Set as StartUp Project
Debug
Source Control
Cut Ctrl+X
Paste Ctrl+V
Remove Del
Rename
Unload Project
Open Folder in File Explorer
Properties Alt+Enter
Solution Explorer
Search Solution Explorer (Ctrl+;)
Service References
sets
p.xaml
ainPage.xaml
yFirstUniversalApp_Temporary
ckage.appxmanifest
oject.json
eLayerUWP
operties
ferences
p_Data
odels
obal.asax
ckages.config
eb.config
Team Explorer
Class View
UWP Project Properties
ServiceLayerUWP.csp
C:\Users\Víctor\Docu


MyFirstUniversalApp - Microsoft Visual Studio
File Edit View Project Build Debug Team Tools Test Analyze Window Help
Victor Moreno
Debug
x86
Local Machine
Toolbox
Search Toolbox
General
There are no usable controls in this group. Drag an item onto this text to add it to the toolbox.
Add New Item - ServiceLayerUWP
Installed
Visual C#
Code
Data
General
Web
Windows Forms
WPF
Reporting
Silverlight
SQL Server
Workflow
PowerShell
Search Results
Online
Sort by: Default
wcf
Silverlight-enabled WCF Service Visual C#
WCF Data Service 5.6.4 Visual C#
WCF Service Visual C#
WCF Service (Ajax-enabled) Visual C#
WCF Workflow Service Visual C#
Type: Visual C#
A class for creating a WCF service
Name: ServiceData.svc
Add
Cancel
Explorer
Properties
References
Service References
Assets
App.xaml
MainPage.xaml
MyFirstUniversalApp_TemporaryKey
Package.appxmanifest
project.json
ServiceLayerUWP
Team Explorer
Class View
Project Properties
Start When
True
Enabled
Server Explorer
Toolbox
Error List
Output

MyFirstUniversalApp - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Victor Moreno

Debug x86 Local Machine

Toolbox

Search Toolbox

General

There are no usable controls in this group. Drag an item onto this text to add it to the toolbox.

ServiceData.svc.cs* IServiceData.cs

ServiceLayerUWP ServiceLayerUWP.IServiceData AddData_Async(string Name, string Email, int Age)

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Runtime.Serialization;
using System.ServiceModel;
using System.Text;
using System.Threading.Tasks;

namespace ServiceLayerUWP
{
    // NOTE: You can use the "Rename" command on the "Refactor" menu to change the interface name "IServi
    [ServiceContract]
    1 reference
    public interface IServiceData
    {
        [OperationContract]
        1 reference
        Task <List<SomeData>> GetData_Async();

        [OperationContract]
        1 reference
        Task <bool> AddData_Async(string Name, string Email, int Age);
    }
}
```

100 %

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'MyFirstUniversalApp' (2 proj

MyFirstUniversalApp (Universal W

ServiceLayerUWP

Properties

References

App_Data

Models

Global.asax

IServiceData.cs

packages.config

ServiceData.svc

SQLAzureDataBase.edmx

Web.config

Solution Exp... Team Explorer Class View

Properties

Server Explorer Toolbox

Error List Output

Item(s) Saved Ln 17 Col 9 Ch 9 INS

MyFirstUniversalApp - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Debug x86 Local Machine

Toolbox

Search Toolbox

General

There are no usable controls in this group. Drag an item onto this text to add it to the toolbox.

ServiceData.svc.cs* IServiceData.cs

ServiceLayerUWP ServiceLayerUWP.ServiceData AddData_Async(string Name, string Mail, int Age)

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Runtime.Serialization;
using System.ServiceModel;
using System.Text;
using System.Threading.Tasks;

namespace ServiceLayerUWP
{
    // NOTE: You can use the "Rename" command on the "Refactor" menu to change the class name "ServiceData" in code, sv
    // NOTE: In order to launch WCF Test Client for testing this service, please select ServiceData.svc or ServiceData.
    0 references
    public class ServiceData : IServiceData
    {
        1 reference
        public async Task<List<SomeData>> GetData_Async()
        {
            return await Task.Factory.StartNew(() => GetData());
        }

        1 reference
        public List<SomeData> GetData()
        {
            mysqlazuredatabaseEntities DataBaseSQLAzure = new mysqlazuredatabaseEntities();
            return DataBaseSQLAzure.SomeDatas.ToList();
        }
```

100 %

Solution E...

Search Solution

Solution 'MyFirs
MyFirstUniv
ServiceLayerU
Propertie
Reference
App_Data
Models
Global.as
IServiceD
packages
ServiceDa
SQLAzure
Web.conf

Properties

Server Explorer Toolbox

Error List Output

Item(s) Saved Ln 37 Col 9 Ch 9 INS

MyFirstUniversalApp - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Victor Moreno

Debug x86 Local Machine

Toolbox

Search Toolbox

General

There are no usable controls in this group. Drag an item onto this text to add it to the toolbox.

ServiceData.svc.cs* IServiceData.cs

ServiceLayerUWP ServiceLayerUWP.ServiceData GetData_Async()

```
        1 reference
        public async Task<bool> AddData_Async(string Name, string Mail, int Age)
        {
            return await Task.Factory.StartNew(() => AddData(Name, Mail, Age));
        }

        1 reference
        public bool AddData(string Name, string Mail, int Age)
        {
            mysqlazuredatabaseEntities DataBaseSQLAzure = new mysqlazuredatabaseEntities();

            SomeData NewData = new SomeData()
            {
                 Age = Age,
                  Mail = Mail,
                   Name = Name,
            };

            DataBaseSQLAzure.SomeDatas.Add(NewData);
            DataBaseSQLAzure.SaveChanges();

            return true;
        }
    }
}
```

100 %

Solution E...

Search Solution

Solution 'MyFirs

MyFirstUniv

ServiceLayerU

Propertie

Reference

App_Data

Models

Global.as

IServiceD

packages

ServiceDa

SQLAzure

Web.conf

Properties

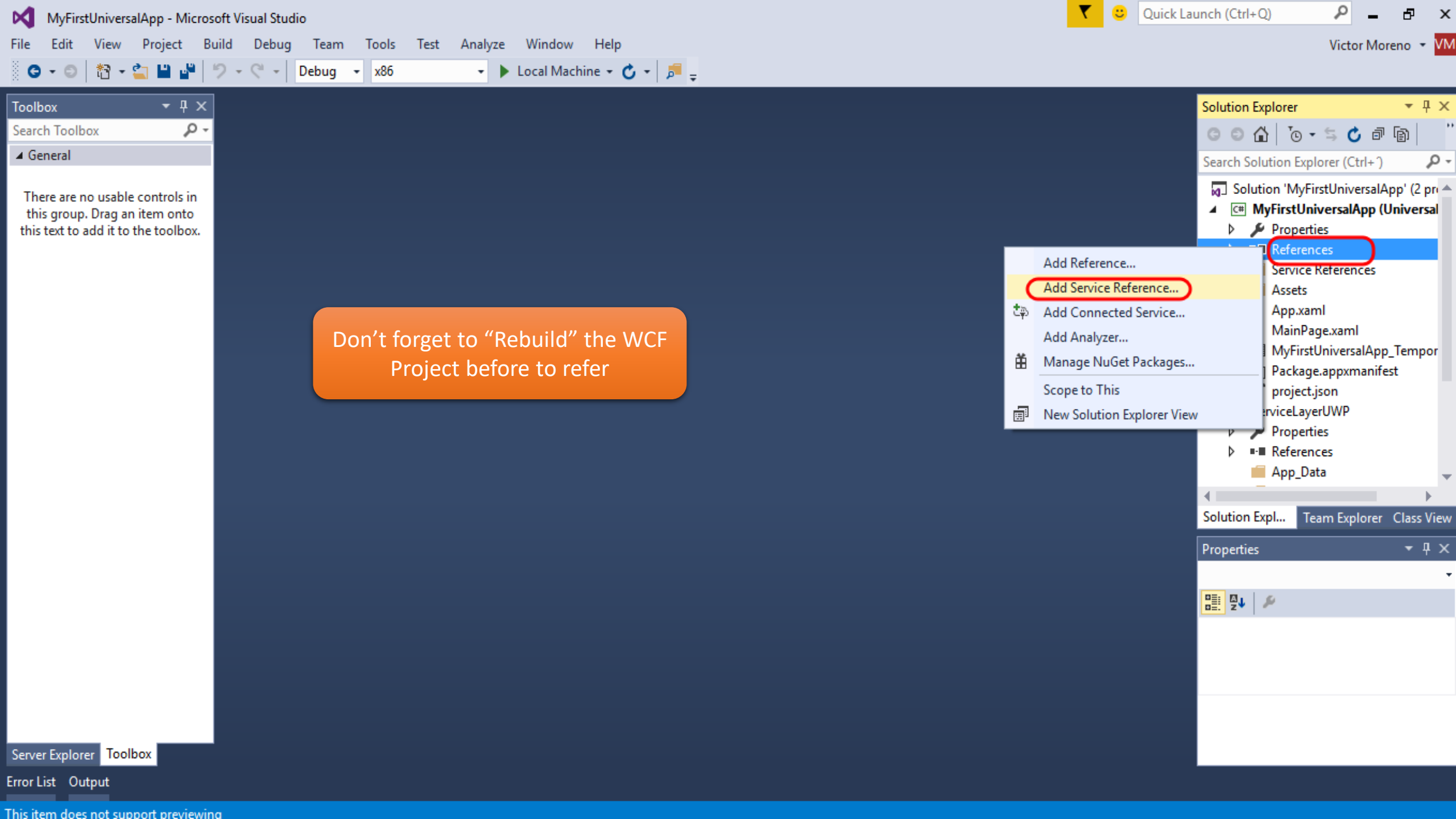
Server Explorer Toolbox

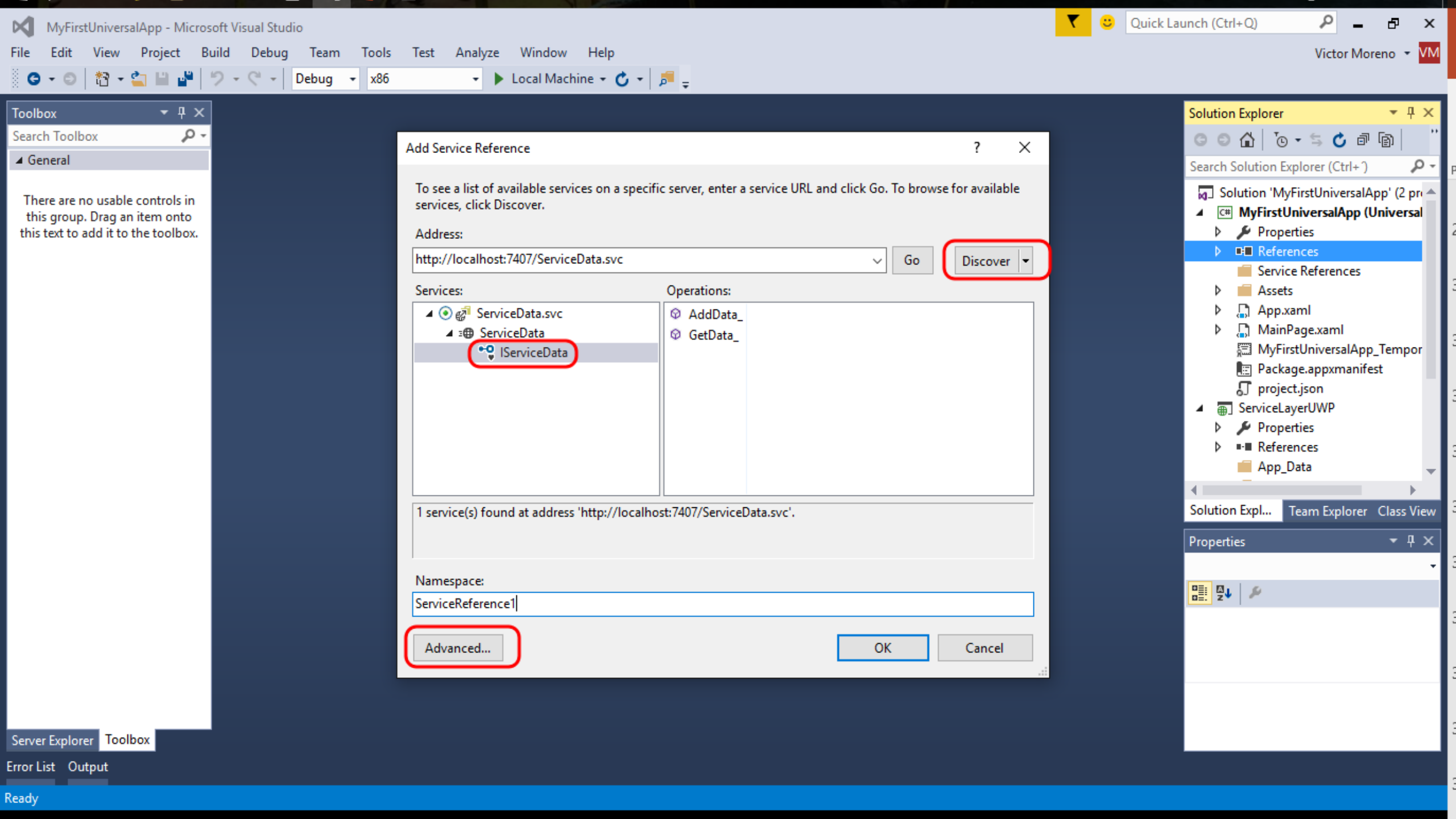
Error List Output

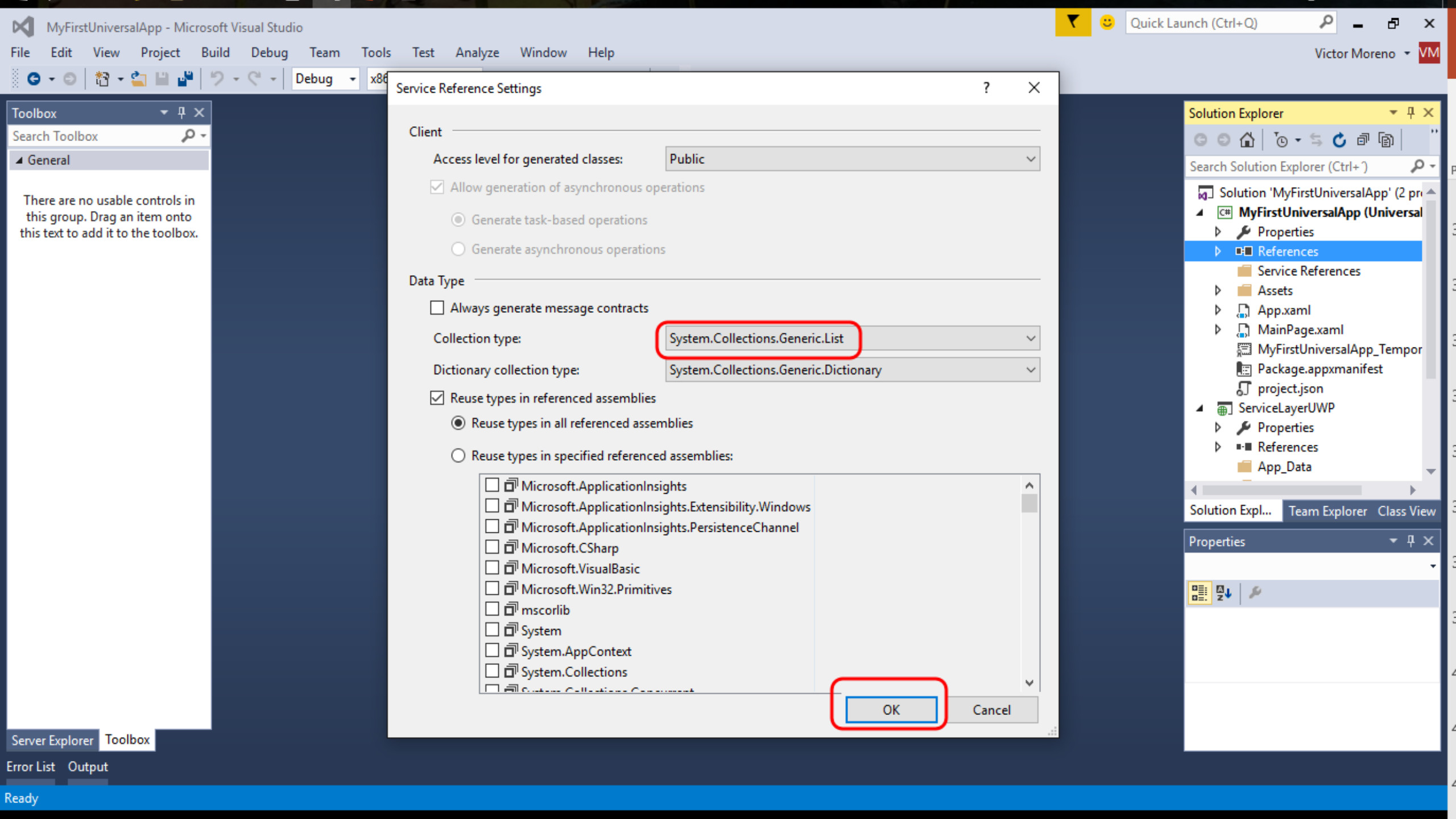
Item(s) Saved Ln 49 Col 1 Ch 1 INS

Calling WCF Service

Now that we have our WCF service programmed, we need to link it to our “Universal Windows Project” and develop the corresponding operations.


MyFirstUniversalApp - Microsoft Visual Studio
Quick Launch (Ctrl+Q)
File Edit View Project Build Debug Team Tools Test Analyze Window Help
Victor Moreno
Debug
x86
Local Machine
Toolbox
Search Toolbox
General
There are no usable controls in this group. Drag an item onto this text to add it to the toolbox.
Server Explorer
Toolbox
Error List
Output
Don’t forget to “Rebuild” the WCF Project before to refer
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'MyFirstUniversalApp' (2 pr
MyFirstUniversalApp (Universal
Properties
References
Service References
Assets
App.xaml
MainPage.xaml
MyFirstUniversalApp_Tempor
Package.appxmanifest
project.json
rviceLayerUWP
Properties
References
App_Data
Add Reference...
Add Service Reference...
Add Connected Service...
Add Analyzer...
Manage NuGet Packages...
Scope to This
New Solution Explorer View
Solution Expl...
Team Explorer
Class View
Properties
This item does not support previewing


MyFirstUniversalApp - Microsoft Visual Studio
Quick Launch (Ctrl+Q)
File Edit View Project Build Debug Team Tools Test Analyze Window Help
Victor Moreno
Debug
x86
Local Machine
Toolbox
Search Toolbox
General
There are no usable controls in this group. Drag an item onto this text to add it to the toolbox.
Add Service Reference
To see a list of available services on a specific server, enter a service URL and click Go. To browse for available services, click Discover.
Address:
http://localhost:7407/ServiceData.svc
Go
Discover
Services:
Operations:
ServiceData.svc
ServiceData
IServiceData
AddData_
GetData_
1 service(s) found at address 'http://localhost:7407/ServiceData.svc'.
Namespace:
ServiceReference1
Advanced...
OK
Cancel
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'MyFirstUniversalApp' (2 pr
MyFirstUniversalApp (Universal
Properties
References
Service References
Assets
App.xaml
MainPage.xaml
MyFirstUniversalApp_Tempor
Package.appxmanifest
project.json
ServiceLayerUWP
Properties
References
App_Data
Solution Expl...
Team Explorer
Class View
Properties
Server Explorer
Toolbox
Error List
Output
Ready


MyFirstUniversalApp - Microsoft Visual Studio
Quick Launch (Ctrl+Q)
File Edit View Project Build Debug Team Tools Test Analyze Window Help
Victor Moreno
Debug
Toolbox
Search Toolbox
General
There are no usable controls in this group. Drag an item onto this text to add it to the toolbox.
Server Explorer
Toolbox
Error List
Output
Service Reference Settings
Client
Access level for generated classes:
Public
Allow generation of asynchronous operations
Generate task-based operations
Generate asynchronous operations
Data Type
Always generate message contracts
Collection type:
System.Collections.Generic.List
Dictionary collection type:
System.Collections.Generic.Dictionary
Reuse types in referenced assemblies
Reuse types in all referenced assemblies
Reuse types in specified referenced assemblies:
Microsoft.ApplicationInsights
Microsoft.ApplicationInsights.Extensibility.Windows
Microsoft.ApplicationInsights.PersistenceChannel
Microsoft.CSharp
Microsoft.VisualBasic
Microsoft.Win32.Primitives
mscorlib
System
System.AppContext
System.Collections
OK
Cancel
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'MyFirstUniversalApp' (2 pr
MyFirstUniversalApp (Universal
Properties
References
Service References
Assets
App.xaml
MainPage.xaml
MyFirstUniversalApp_Tempor
Package.appxmanifest
project.json
ServiceLayerUWP
Properties
References
App_Data
Solution Expl...
Team Explorer
Class View
Properties
Ready

MyFirstUniversalApp - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Victor Moreno

Debug x86 Local Machine

Toolbox

Search Toolbox

General

There are no usable controls in this group. Drag an item onto this text to add it to the toolbox.

MainPage.xaml* MainPage.xaml.cs

MyFirstUniversalApp MyFirstUniversalApp.MainPage SendData()

```
// The Blank Page item template is documented at http://go.microsoft.com/fwlink/?LinkId=402352&cl

namespace MyFirstUniversalApp
{
    /// <summary>
    /// An empty page that can be used on its own or navigated to within a Frame.
    /// </summary>
    3 references
    public sealed partial class MainPage : Page
    {
        ServiceDataClient ServiceWCF = new ServiceDataClient();
        0 references
        public MainPage()
        {
            this.InitializeComponent();
        }

        0 references
        private void btnSend_Click(object sender, RoutedEventArgs e)
        {
            SendData();
        }

        1 reference
        private async void SendData()
        {
            await ServiceWCF.AddData_Async(txtName.Text.Trim(),
                                           txtMail.Text.Trim(),
                                           Convert.ToInt32(txtAge.Text.Trim()));

            MessageDialog Message = new MessageDialog("Data Sent", "Hello UWP in Windows 10");
        }
    }
}
```

100 %

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'MyFirstUniversalApp' (2

MyFirstUniversalApp (Univer

Properties
References
Service References
ServiceReference1
Assets
App.xaml
MainPage.xaml
MainPage.xaml.cs
MyFirstUniversalApp_Temp
Package.appxmanifest
project.json

ServiceLayerUWP

Properties
References
App_Data
Models
Global.
IServiceDat
packages.config
ServiceData.svc
SQLAzureDataBase.edmx
Web.config

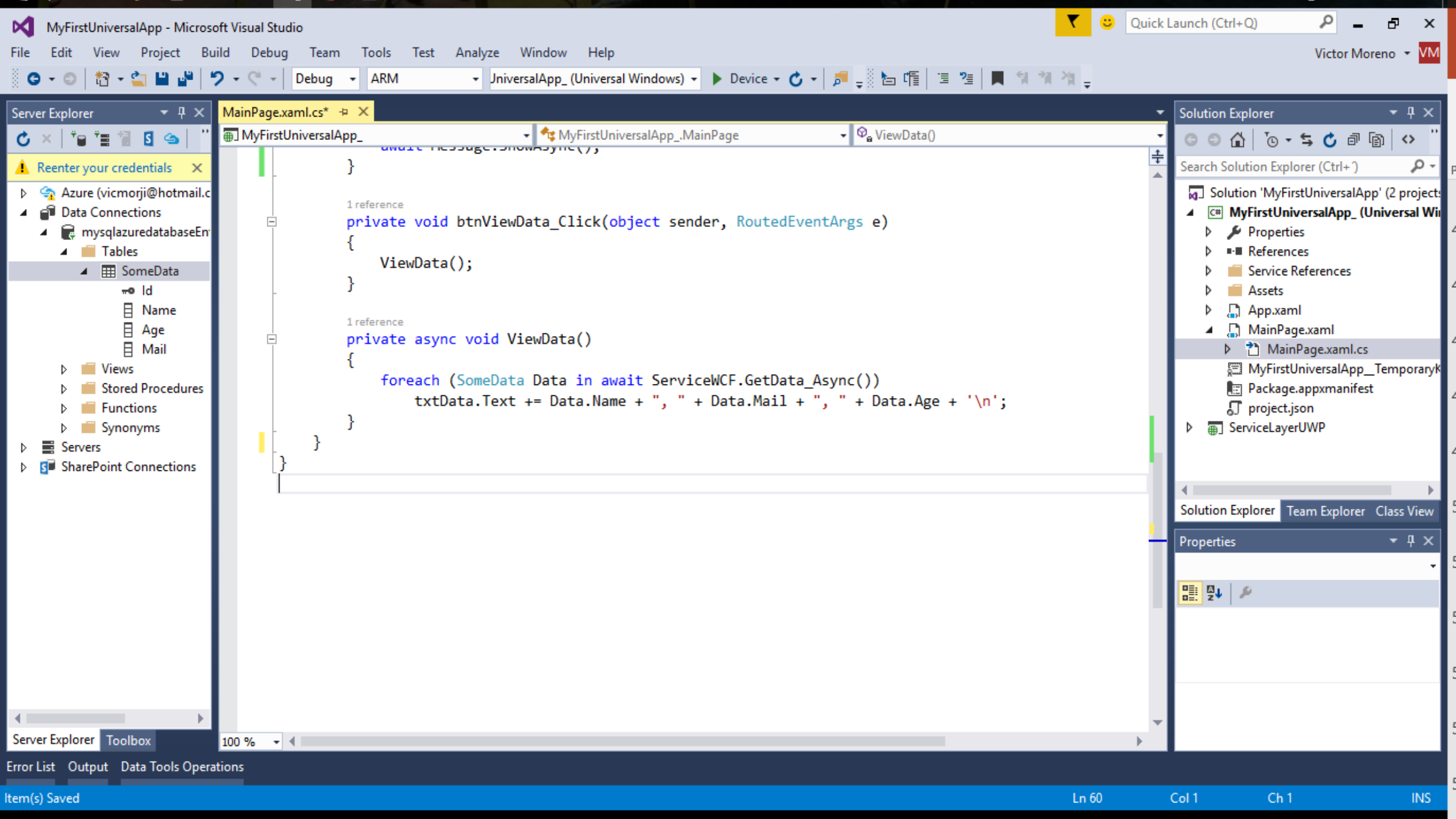
Solution E... Team Expl... Class View

Properties

Server Explorer Toolbox

Error List Output

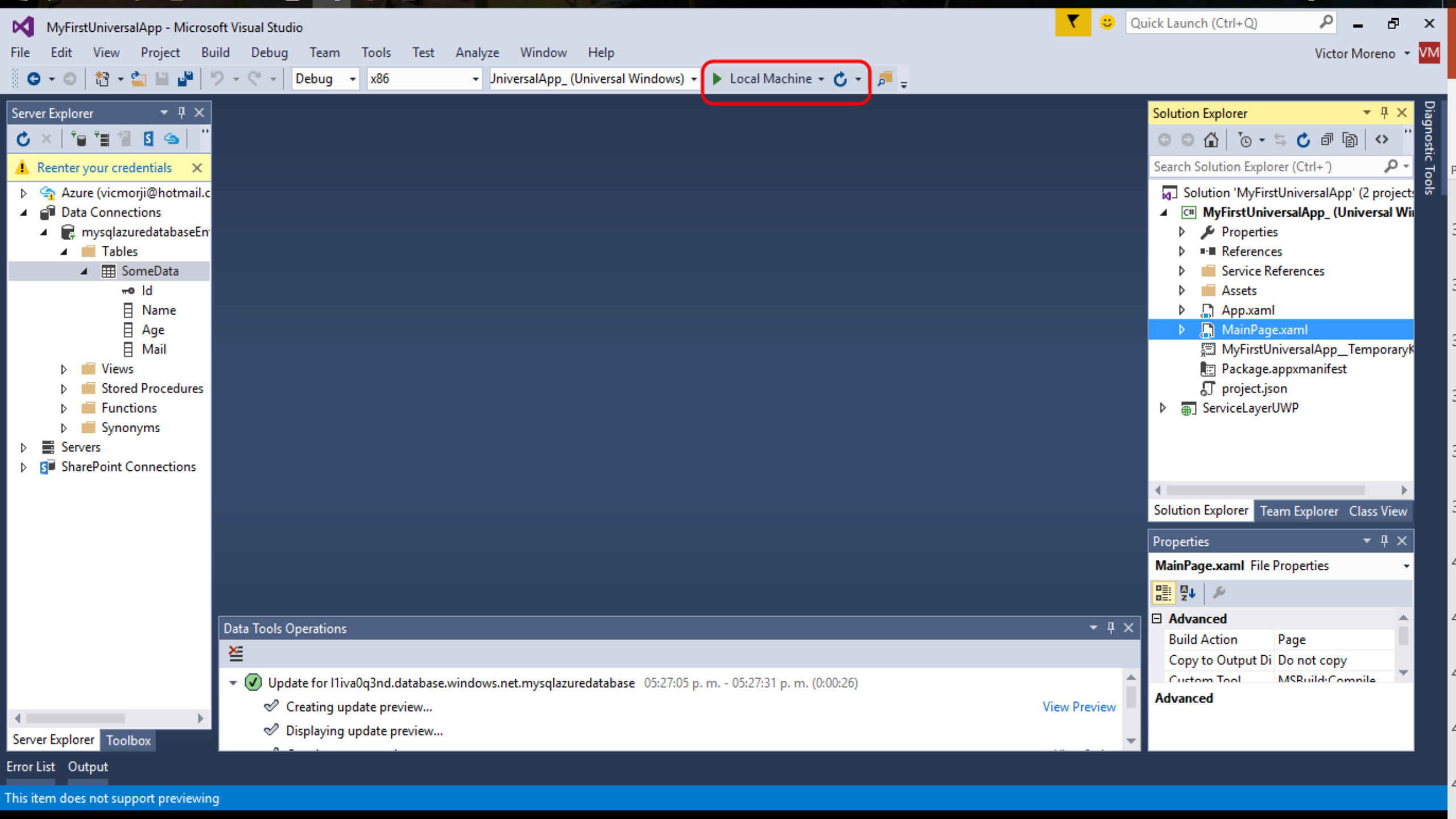
Item(s) Saved Ln 41 Col 64 Ch 64 INS

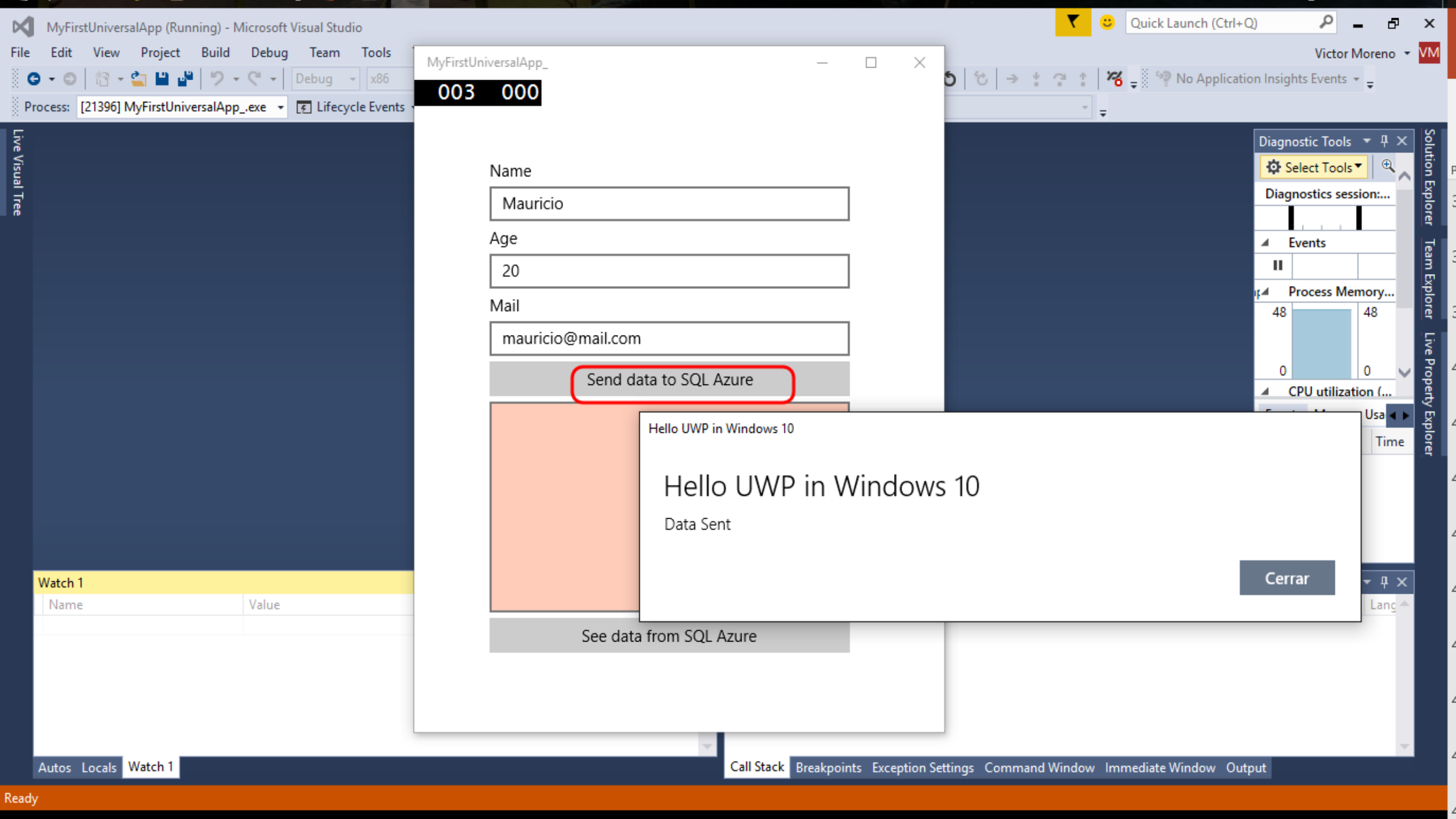

MyFirstUniversalApp - Microsoft Visual Studio
Quick Launch (Ctrl+Q)
File Edit View Project Build Debug Team Tools Test Analyze Window Help
Victor Moreno
Debug
ARM
JniversalApp_ (Universal Windows)
Device
Server Explorer
Reenter your credentials
Azure (vicmorji@hotmail.c
Data Connections
mysqlazuredatabaseEn
Tables
SomeData
Id
Name
Age
Mail
Views
Stored Procedures
Functions
Synonyms
Servers
SharePoint Connections
MainPage.xaml.cs*
MyFirstUniversalApp_
MyFirstUniversalApp_.MainPage
ViewData()
}
1 reference
private void btnViewData_Click(object sender, RoutedEventArgs e)
{
ViewData();
}
1 reference
private async void ViewData()
{
foreach (SomeData Data in await ServiceWCF.GetData_Async())
txtData.Text += Data.Name + ", " + Data.Mail + ", " + Data.Age + '\n';
}
}
}
100 %
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'MyFirstUniversalApp' (2 projects
MyFirstUniversalApp_ (Universal Wi
Properties
References
Service References
Assets
App.xaml
MainPage.xaml
MainPage.xaml.cs
MyFirstUniversalApp_TemporaryK
Package.appxmanifest
project.json
ServiceLayerUWP
Solution Explorer Team Explorer Class View
Properties
Server Explorer Toolbox
Error List Output Data Tools Operations
Item(s) Saved
Ln 60 Col 1 Ch 1 INS

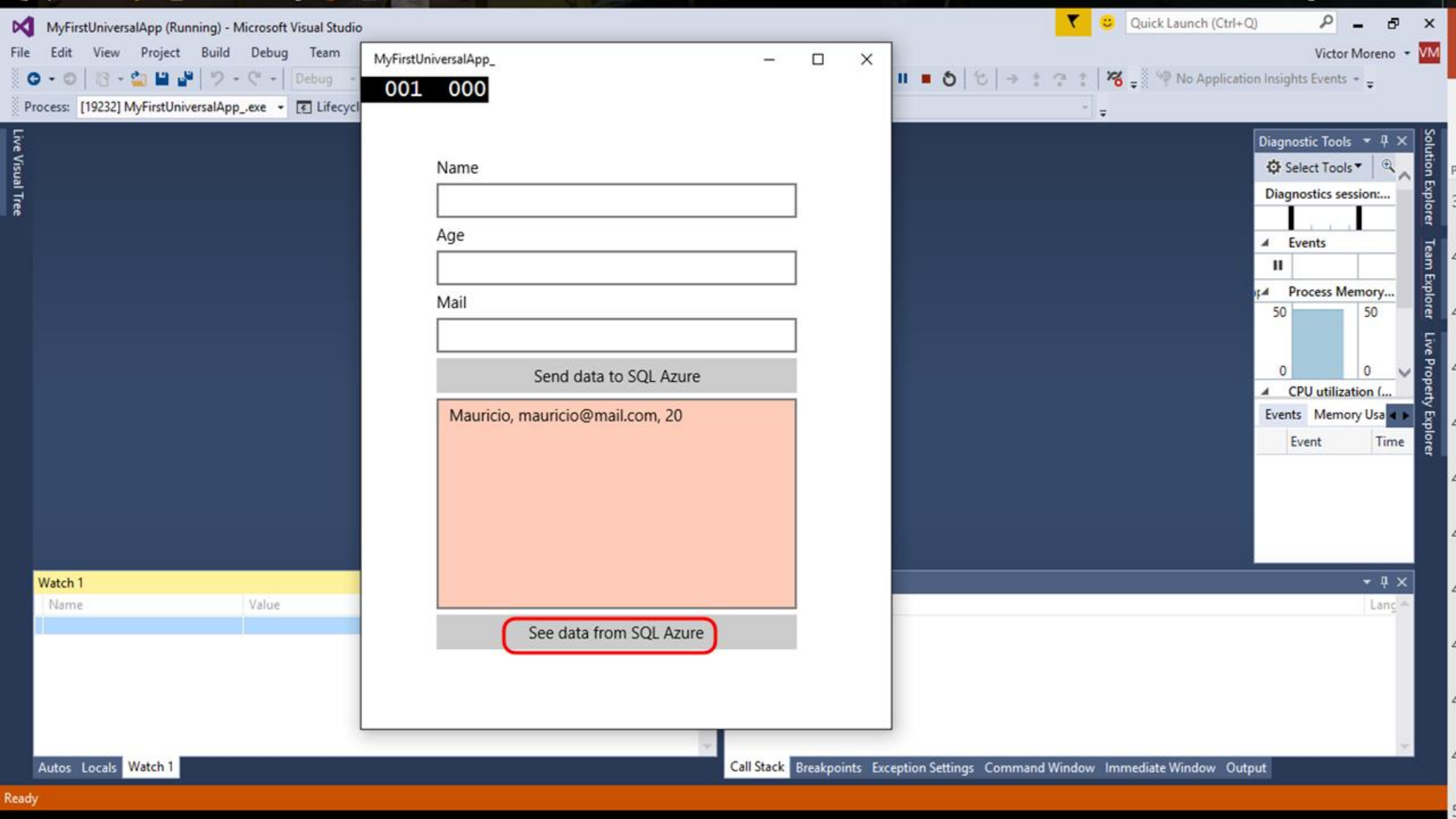
Running our application

Ending to develop our project, now we see how it works in:

- PC


MyFirstUniversalApp - Microsoft Visual Studio
Quick Launch (Ctrl+Q)
File Edit View Project Build Debug Team Tools Test Analyze Window Help
Victor Moreno
Debug
x86
JniversalApp_ (Universal Windows)
Local Machine
Server Explorer
Reenter your credentials
Azure (vicmorji@hotmail.c
Data Connections
mysqlazuredatabaseEn
Tables
SomeData
Id
Name
Age
Mail
Views
Stored Procedures
Functions
Synonyms
Servers
SharePoint Connections
Server Explorer
Toolbox
Data Tools Operations
Update for l1iva0q3nd.database.windows.net.mysqlazuredatabase 05:27:05 p. m. - 05:27:31 p. m. (0:00:26)
Creating update preview...
View Preview
Displaying update preview...
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'MyFirstUniversalApp' (2 project
MyFirstUniversalApp_ (Universal Wi
Properties
References
Service References
Assets
App.xaml
MainPage.xaml
MyFirstUniversalApp__TemporaryK
Package.appxmanifest
project.json
ServiceLayerUWP
Solution Explorer
Team Explorer
Class View
Properties
MainPage.xaml File Properties
Advanced
Build Action
Page
Copy to Output Di
Do not copy
Advanced
Diagnostic Tools
Error List
Output
This item does not support previewing

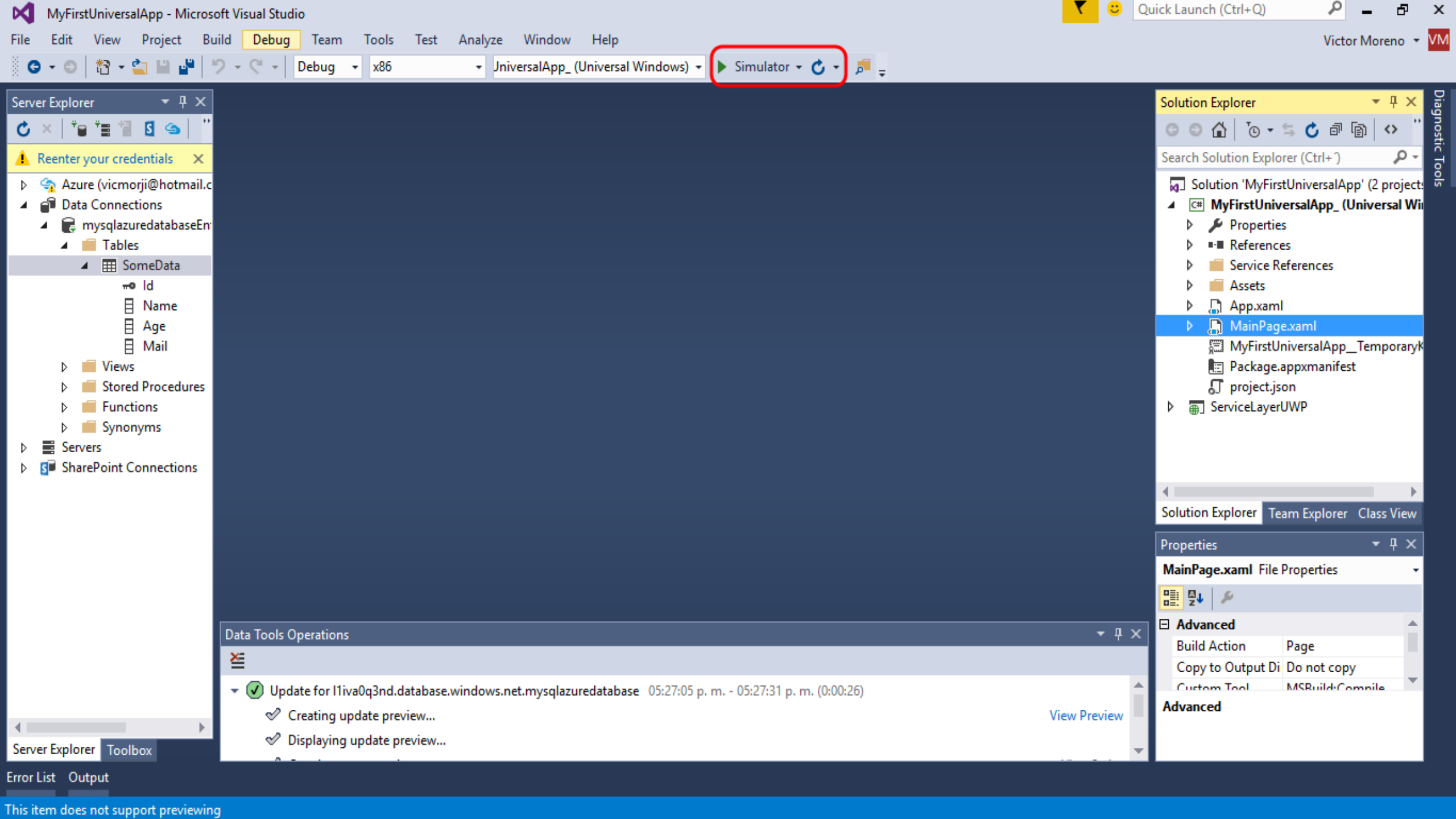

MyFirstUniversalApp (Running) - Microsoft Visual Studio
File Edit View Project Build Debug Team Tools
Quick Launch (Ctrl+Q)
Victor Moreno
Process: [21396] MyFirstUniversalApp_.exe
Lifecycle Events
No Application Insights Events
Live Visual Tree
MyFirstUniversalApp_
003 000
Name
Mauricio
Age
20
Mail
mauricio@mail.com
Send data to SQL Azure
See data from SQL Azure
Hello UWP in Windows 10
Hello UWP in Windows 10
Data Sent
Cerrar
Diagnostic Tools
Select Tools
Diagnostics session:...
Events
Process Memory...
48
48
0
0
CPU utilization (...
Time
Solution Explorer
Team Explorer
Live Property Explorer
Watch 1
Name
Value
Autos Locals Watch 1
Call Stack Breakpoints Exception Settings Command Window Immediate Window Output
Ready

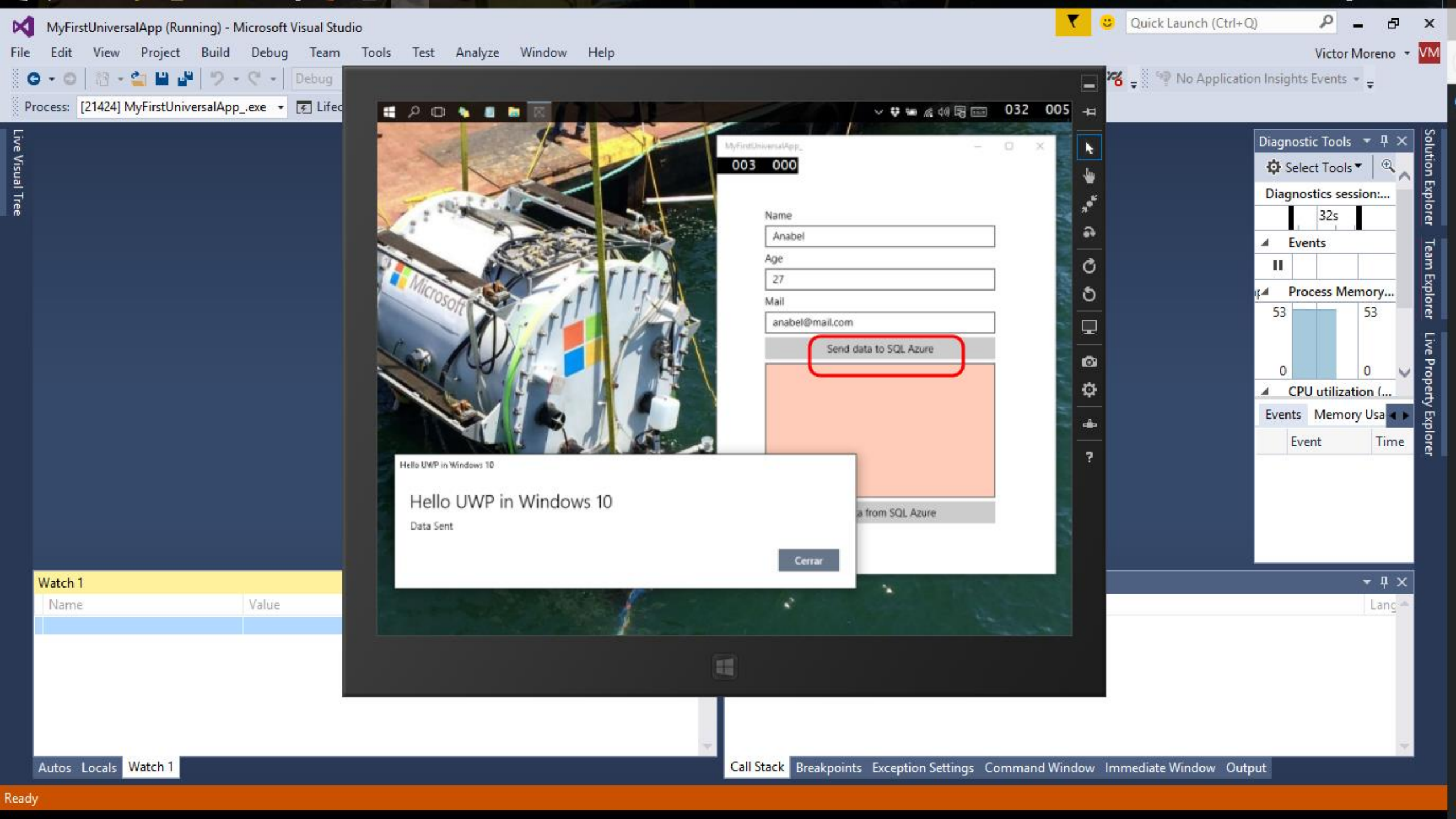

MyFirstUniversalApp (Running) - Microsoft Visual Studio
File Edit View Project Build Debug Team
Quick Launch (Ctrl+Q)
Victor Moreno
Process: [19232] MyFirstUniversalApp_.exe
No Application Insights Events
MyFirstUniversalApp_
001 000
Name
Age
Mail
Send data to SQL Azure
Mauricio, mauricio@mail.com, 20
See data from SQL Azure
Diagnostic Tools
Select Tools
Diagnostics session:...
Events
Process Memory...
50
0
50
0
CPU utilization (...
Events
Memory Usa
Event
Time
Watch 1
Name
Value
Autos Locals Watch 1
Call Stack Breakpoints Exception Settings Command Window Immediate Window Output
Ready

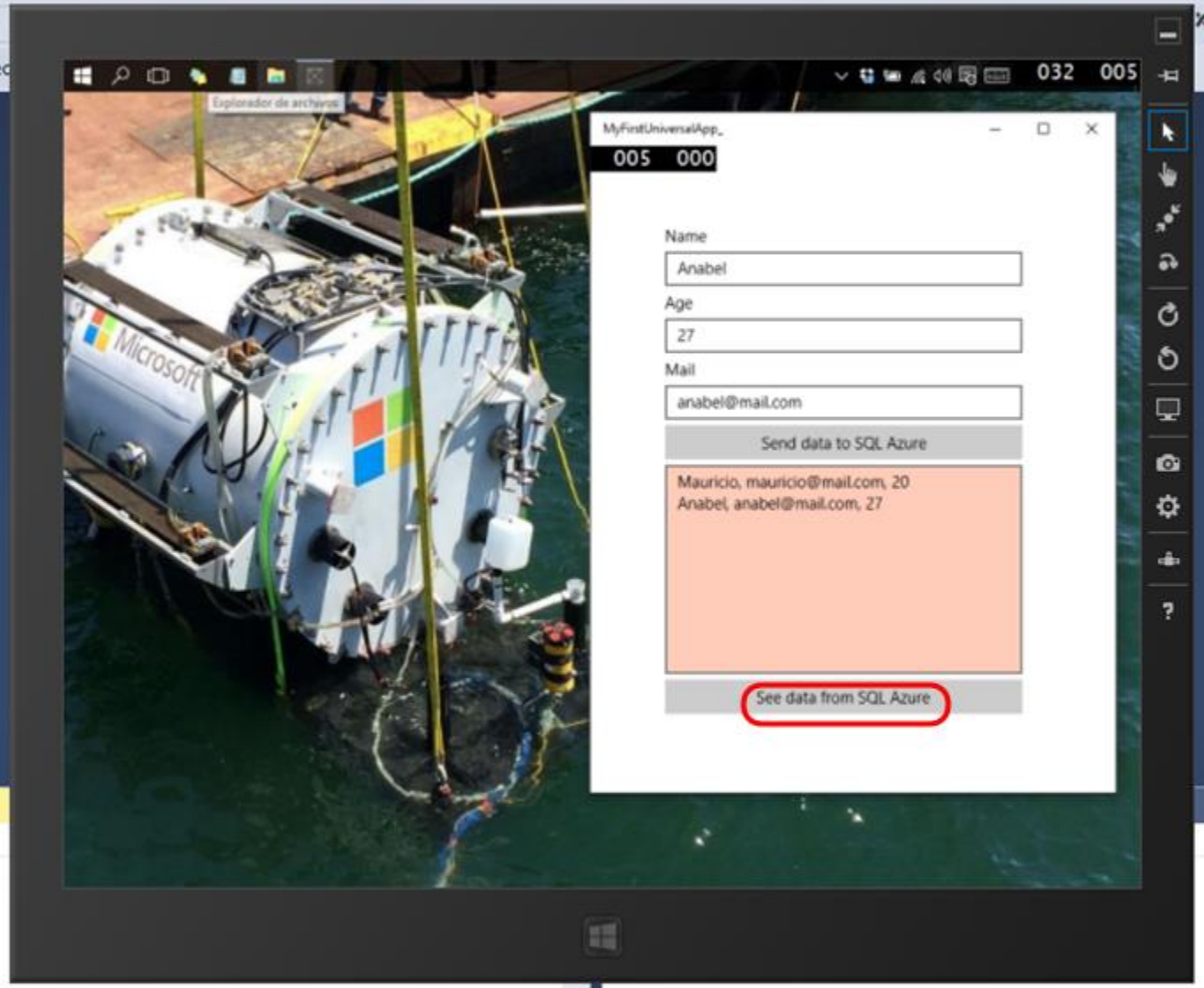
Running our application

Ending to develop our Project, now we see how it works in:

- Tablet


MyFirstUniversalApp - Microsoft Visual Studio
Quick Launch (Ctrl+Q)
File Edit View Project Build Debug Team Tools Test Analyze Window Help
Victor Moreno
Debug
x86
JniversalApp_ (Universal Windows)
Simulator
Server Explorer
Reenter your credentials
Azure (vicmorji@hotmail.c
Data Connections
mysqlazuredatabaseEn
Tables
SomeData
Id
Name
Age
Mail
Views
Stored Procedures
Functions
Synonyms
Servers
SharePoint Connections
Server Explorer
Toolbox
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'MyFirstUniversalApp' (2 project
MyFirstUniversalApp_ (Universal Wi
Properties
References
Service References
Assets
App.xaml
MainPage.xaml
MyFirstUniversalApp_TemporaryK
Package.appxmanifest
project.json
ServiceLayerUWP
Solution Explorer
Team Explorer
Class View
Properties
MainPage.xaml File Properties
Advanced
Build Action
Page
Copy to Output Di
Do not copy
Advanced
Data Tools Operations
Update for l1iva0q3nd.database.windows.net.mysqlazuredatabase
05:27:05 p. m. - 05:27:31 p. m. (0:00:26)
Creating update preview...
View Preview
Displaying update preview...
Diagnostic Tools
Error List
Output
This item does not support previewing


MyFirstUniversalApp (Running) - Microsoft Visual Studio
File Edit View Project Build Debug Team Tools Test Analyze Window Help
Victor Moreno
Quick Launch (Ctrl+Q)
Process: [21424] MyFirstUniversalApp_.exe
No Application Insights Events
Live Visual Tree
Diagnostic Tools
Select Tools
Diagnostics session:...
32s
Events
Process Memory...
53
0
CPU utilization (...
Events
Memory Usa
Event
Time
Solution Explorer
Team Explorer
Live Property Explorer
032 005
003 000
Name
Anabel
Age
27
Mail
anabel@mail.com
Send data to SQL Azure
Hello UWP in Windows 10
Hello UWP in Windows 10
Data Sent
Cerrar
Watch 1
Name
Value
Autos Locals Watch 1
Call Stack Breakpoints Exception Settings Command Window Immediate Window Output
Ready



MyFirstUniversalApp (Running) - Microsoft Visual Studio

File Edit View Project Build Debug Team Tools Test Analyze Window Help

Quick Launch (Ctrl+Q)

Victor Moreno

Process: [21424] MyFirstUniversalApp_.exe

No Application Insights Events

Live Visual Tree

Diagnostic Tools

Select Tools

Diagnostics session:...

Events

Process Memory...

53 0 53 0

CPU utilization (...

Events Memory Usa

Event Time

Solution Explorer Team Explorer Live Property Explorer

Watch 1

Name Value

Autos Locals Watch 1

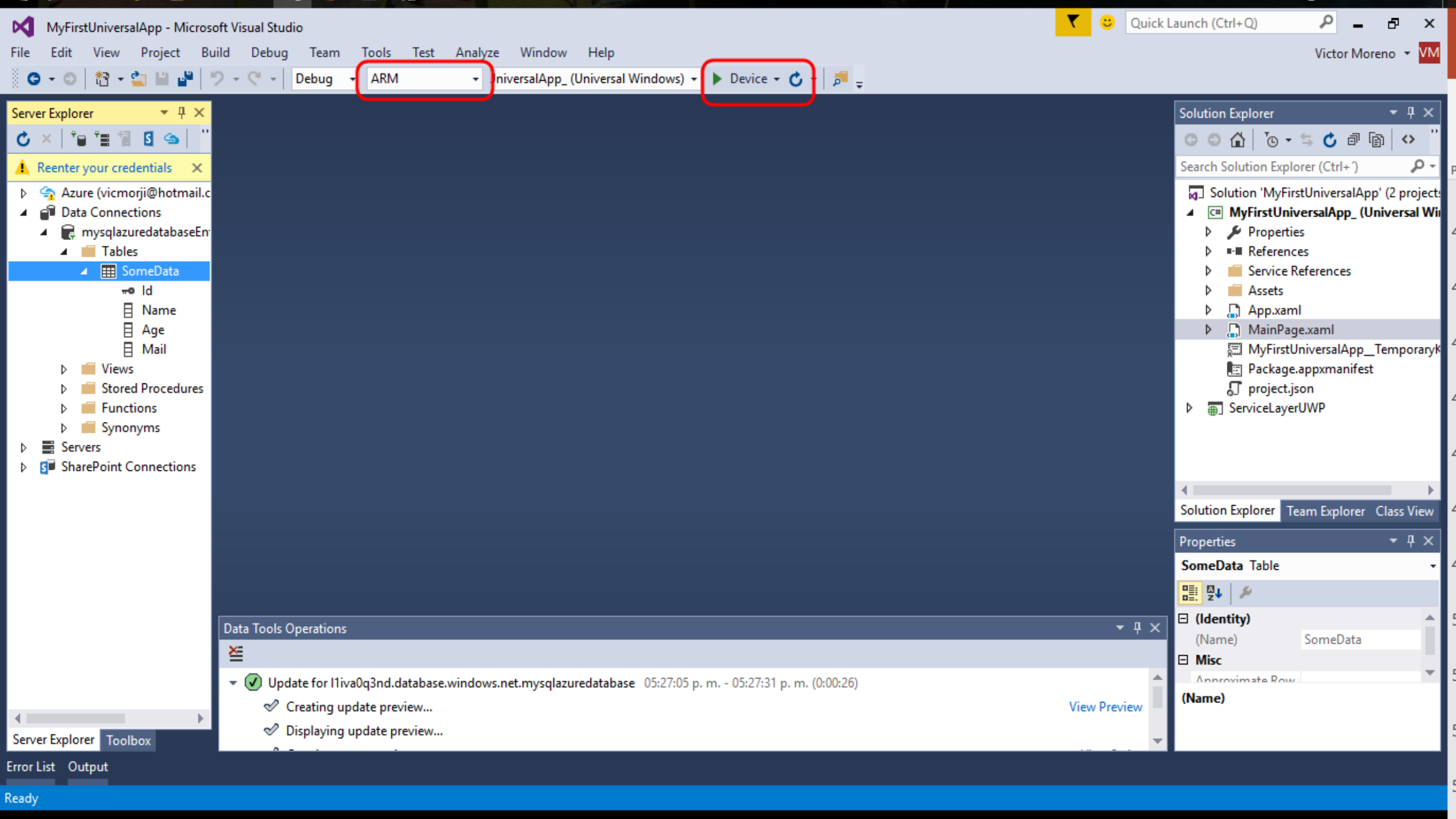
Call Stack Breakpoints Exception Settings Command Window Immediate Window Output

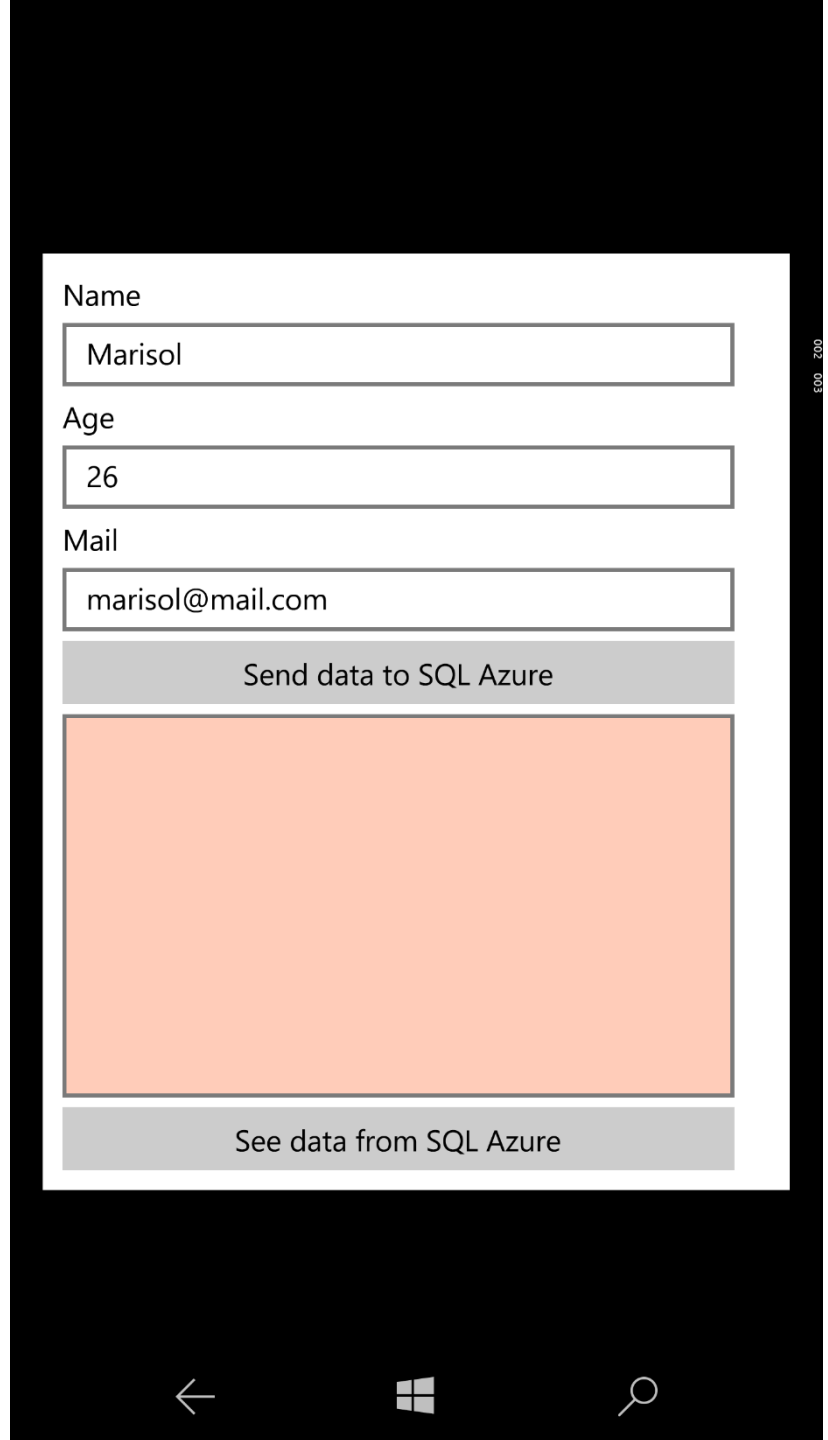
Ready

Running our application

Ending to develop our Project, now we see how it works in:

- Windows Mobile 10 (Here I'm using a physical pone, but also you can use a simulator).


MyFirstUniversalApp - Microsoft Visual Studio
Quick Launch (Ctrl+Q)
File Edit View Project Build Debug Team Tools Test Analyze Window Help
Victor Moreno
Debug
ARM
niversalApp_ (Universal Windows)
Device
Server Explorer
Reenter your credentials
Azure (vicmorji@hotmail.c
Data Connections
mysqlazuredatabaseEn
Tables
SomeData
Id
Name
Age
Mail
Views
Stored Procedures
Functions
Synonyms
Servers
SharePoint Connections
Server Explorer
Toolbox
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'MyFirstUniversalApp' (2 projects
MyFirstUniversalApp_ (Universal Wi
Properties
References
Service References
Assets
App.xaml
MainPage.xaml
MyFirstUniversalApp__TemporaryK
Package.appxmanifest
project.json
ServiceLayerUWP
Solution Explorer
Team Explorer
Class View
Properties
SomeData Table
(Identity)
(Name)
SomeData
Misc
(Name)
Data Tools Operations
Update for l1iva0q3nd.database.windows.net.mysqlazuredatabase 05:27:05 p. m. - 05:27:31 p. m. (0:00:26)
Creating update preview...
View Preview
Displaying update preview...
Error List
Output
Ready


Name
Marisol
Age
26
Mail
marisol@mail.com
Send data to SQL Azure
See data from SQL Azure

Conclusions

As you can realize, was used a same code to execute in different devices, this is one of the features more powerful of the universal windows apps.

You can download this project directly from GitHub:

https://github.com/vemoreno/MyFirstUniversalWindowsApp

Visual Studio

Víctor Moreno
@vmorenoz
http://blogs.itpro.es/eduardocloud

Microsoft