Minimal Web APIs for Data Access in .NET MAUI Labs

Perform these labs on your own computer using Visual Studio 2022 or later to ensure you understand the lessons presented in the corresponding videos and lectures.

Lab 1: Download Samples

Download the **Samples** folder and open the solution.

Lab 2: Connect Web API to SQL Server

Open the **appsettings.Development.json** file in the **AdventureWorks.MinWebAPI** project and change the connection string to point to the **AdventureWorksLT2019** database on your server.

Set Startup Project

Right mouse-click on the **AdventureWorks.MinWebAPI** project and select the **Set** as **Startup Project** menu item.

Lab 3: Add Tables to SQL Server

Bring up **SQL Server** and open a query window in the **AdventureWorksLT2019** database and run the following script.

```
USE [AdventureWorksLT2019]
GO
CREATE TABLE [dbo].[PhoneType] (
 [PhoneTypeId] [int] NOT NULL,
[TypeDescription] [nvarchar] (20) NOT NULL,
CONSTRAINT [PK PhoneType] PRIMARY KEY CLUSTERED
 [PhoneTypeId] ASC
) WITH (PAD INDEX = OFF, STATISTICS NORECOMPUTE = OFF,
IGNORE DUP KEY = OFF, ALLOW ROW LOCKS = ON,
ALLOW PAGE LOCKS = ON, OPTIMIZE FOR SEQUENTIAL KEY =
OFF) ON [PRIMARY]
) ON [PRIMARY]
GO
INSERT [dbo].[PhoneType] ([PhoneTypeId],
[TypeDescription]) VALUES (1, N'Home')
GO
INSERT [dbo].[PhoneType] ([PhoneTypeId],
[TypeDescription]) VALUES (2, N'Mobile')
INSERT [dbo].[PhoneType] ([PhoneTypeId],
[TypeDescription]) VALUES (3, N'Work')
GO
INSERT [dbo].[PhoneType] ([PhoneTypeId],
[TypeDescription]) VALUES (4, N'Other')
GO
```

Next create the User table in another query window.

```
USE [AdventureWorksLT2019]
GO
CREATE TABLE [dbo].[User](
 [UserId] [int] IDENTITY(2,1) NOT NULL,
 [LoginId] [nvarchar] (50) NOT NULL,
 [FirstName] [dbo].[Name] NOT NULL,
 [LastName] [dbo].[Name] NOT NULL,
 [Email] [nvarchar] (256) NOT NULL,
 [Password] [nvarchar] (50) NOT NULL,
 [Phone] [dbo].[Phone] NOT NULL,
 [PhoneType] [nvarchar] (10) NULL,
 [IsFullTime] [bit] NULL,
 [IsEnrolledIn401k] [bit] NULL,
 [IsEnrolledInHealthCare] [bit] NULL,
 [IsEnrolledInHSA] [bit] NULL,
 [IsEnrolledInFlexTime] [bit] NULL,
 [IsActive] [bit] NULL,
 [BirthDate] [date] NULL,
 [StartTime] [time](7) NULL,
 CONSTRAINT [PK User] PRIMARY KEY CLUSTERED
 [UserId] ASC
) WITH (PAD INDEX = OFF, STATISTICS NORECOMPUTE = OFF,
IGNORE DUP KEY = OFF, ALLOW ROW LOCKS = ON,
ALLOW PAGE LOCKS = ON, OPTIMIZE FOR SEQUENTIAL KEY =
OFF) ON [PRIMARY]
) ON [PRIMARY]
SET IDENTITY INSERT [dbo].[User] ON
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (1, N'MichaelThomason', N'Michael',
N'Thomason', N'MichaelThomason@advworks.com',
N'MThomason@Word123', N'615.555.3333', N'Mobile', 1, 1,
1, 0, 0, 1, CAST(N'1985-03-15' AS Date), NULL)
GO
```

```
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (2, N'SheilaCleverly', N'Sheila',
N'Cleverly', N'SheilaCleverly@advworks.com',
N'Re!asdf#992', N'615.123.3456', N'Work', 1, 0, 1, 0, 0,
1, CAST(N'1981-06-09' AS Date), NULL)
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (3, N'CatherineAbel', N'Catherine',
N'Abel', N'CatherineAbel@advworks.com', N'Tx*99 pass',
N'615.998.3332', N'Mobile', 1, 1, 1, 1, 1, 1,
CAST (N'1979-04-05' AS Date), NULL)
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (4, N'KimAbercrombie', N'Kim',
N'Abercrombie', N'KimAbercrombie@advworks.com',
N'PwdKim#Abercrombie123', N'615.555.3333', N'Work', 1,
0, 0, 1, 0, 1, CAST(N'1995-03-08' AS Date), NULL)
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (7, N'JimWalker', N'Jim', N'Walker',
N'JimWalker@advworks.com', N'azembolrous!123',
N'615.369.9372', N'Mobile', 1, 1, 1, 0, 1, 1,
CAST(N'1999-07-29' AS Date), NULL)
GO
```

```
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (8, N'SamAbolrous', N'Sam',
N'Abolrous', N'SamAbolrous@advworks.com',
N'Abolrous #PwdSam*987', N'615.555.3333', N'Work', 0, 0,
0, 0, 1, 1, CAST(N'2000-12-03' AS Date),
CAST(N'07:00:00' AS Time))
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (9, N'RichardDudely', N'Richard',
N'Dudely', N'RichardDudely@advworks.com',
N'Avacodo#567', N'615.987.3782', N'Mobile', 1, 1, 0, 0,
1, 1, CAST(N'1997-08-23' AS Date), NULL)
GΟ
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (10, N'ScottBerton', N'Scott',
N'Berton', N'ScottBerton@advworks.com',
N'gustavo#chong%87', N'615.555.3333', N'Work', 0, 0, 0,
1, 0, 1, CAST(N'2001-02-12' AS Date), CAST(N'08:00:00'
AS Time))
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (11, N'PaulShaefer', N'Paul
', N'Shaefer', N'Pauls@netinc.com', N'P@sswORd', N'(714)
399-9212', N'Work', 1, 1, 1, 0, 0, 1, CAST(N'1963-02-05'
AS Date), NULL)
GO
```

```
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (12, N'MichaelKawoski', N'Michael
', N'Kawoski', N'Michaelk@netinc.com', N'P@sswORd',
N'(714) 939-0002', N'Mobile', 1, 1, 1, 1, 0, 1,
CAST(N'1953-07-05' AS Date), NULL)
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (13, N'SaraWinchell', N'Sara
', N'Winchell', N'Saraw@netinc.com', N'P@sswORd',
N'(714) 738-9382', N'Work', 1, 1, 1, 0, 0, 0,
CAST(N'1978-08-02' AS Date), NULL)
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (14, N'JohnKroon', N'John
', N'Kroon', N'Johnk@netinc.com', N'P@sswORd', N'(949)
667-7347', N'Work', 1, 1, 1, 0, 1, 1, CAST(N'1970-03-23'
AS Date), NULL)
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (15, N'TimNicker', N'Tim
', N'Nicker', N'Timn@netinc.com', N'P@sswORd', N'(714)
767-3747', N'Work', 1, 1, 1, 0, 1, 1, CAST(N'1975-04-05'
AS Date), NULL)
GO
```

```
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (16, N'RussMartlog', N'Russ
', N'Martlog', N'Russm@netinc.com', N'P@sswORd', N'(714)
334-5643', N'Work', 1, 1, 1, 1, 0, 1, CAST(N'1969-05-05'
AS Date), NULL)
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (17, N'JohnBoron', N'John
', N'Boron', N'Johnb@netinc.com', N'P@ssw0Rd', N'(714)
939-9993', N'Mobile', 1, 0, 0, 0, 0, CAST(N'1965-03-
02' AS Date), NULL)
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (18, N'JamesBirdy', N'James
', N'Birdy', N'Jamesb@netinc.com', N'P@sswORd', N'(310)
939-9932', N'Work', 1, 0, 0, 0, 1, CAST(N'1966-06-23'
AS Date), NULL)
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (19, N'TreyChen', N'Trey
', N'Chen', N'Treyc@netinc.com', N'P@sswORd', N'(562)
991-0009', N'Work', 1, 1, 0, 0, 0, 1, CAST(N'1961-07-11'
AS Date), NULL)
GO
```

```
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (20, N'JimJones', N'Jim
', N'Jones', N'Jimj@netinc.com', N'P@sswORd', N'(714)
223-0029', N'Mobile', 1, 0, 1, 0, 0, 1, CAST(N'1970-01-
20' AS Date), NULL)
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (21, N'JohnPittsburgh', N'John
', N'Pittsburgh', N'Johnp@netinc.com', N'P@sswORd',
N'(714) 554-0493', N'Work', 1, 0, 1, 0, 0, 1,
CAST(N'1978-08-06' AS Date), NULL)
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (22, N'JeanneRussell', N'Jeanne
', N'Russell', N'Jeanner@netinc.com', N'P@sswORd',
N'(949) 339-0000', N'Mobile', 1, 1, 0, 1, 0, 1,
CAST(N'1966-08-15' AS Date), NULL)
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (23, N'DavidLafeet', N'David
', N'Lafeet', N'Davidl@netinc.com', N'P@sswORd', N'(949)
399-9232', N'Work', 1, 1, 0, 1, 0, 1, CAST(N'1973-10-14'
AS Date), NULL)
GO
```

```
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (24, N'KhanhVoon', N'Khanh
', N'Voon', N'Khanhv@netinc.com', N'P@sswORd', N'(714)
342-3232', N'Work', 1, 1, 0, 1, 1, 1, CAST(N'1962-11-20'
AS Date), NULL)
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (25, N'JimRussell', N'Jim
', N'Russell', N'Jimr@netinc.com', N'P@sswORd', N'(714)
123-2343', N'Work', 1, 1, 0, 0, 1, 1, CAST(N'1960-12-10'
AS Date), NULL)
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (26, N'DavidTarkas', N'David
', N'Tarkas', N'Davidt@netinc.com', N'P@sswORd', N'(714)
893-7361', N'Mobile', 1, 1, 0, 0, 1, 1, CAST(N'1967-03-
15' AS Date), NULL)
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (27, N'CraigShowman', N'Craig
', N'Showman', N'Craigs@netinc.com', N'P@ssw0Rd',
N'(949) 938-1234', N'Mobile', 1, 1, 0, 1, 0, 1,
CAST(N'1974-04-06' AS Date), NULL)
GO
```

```
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (28, N'BrooksAnderson', N'Brooks
', N'Anderson', N'Brooksa@netinc.com', N'P@sswORd',
N'(949) 777-3929', N'Mobile', 1, 1, 1, 0, 0, 1,
CAST(N'1959-08-30' AS Date), NULL)
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (29, N'MarkParks', N'Mark
', N'Parks', N'Markp@netinc.com', N'P@sswORd', N'(425)
377-7333', N'Mobile', 0, 1, 0, 0, 1, 1, CAST(N'1968-10-
19' AS Date), CAST(N'06:00:00' AS Time))
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (30, N'KeithNashville', N'Keith
', N'Nashville', N'Keithn@netinc.com', N'P@sswORd',
N'(702) 773-0093', N'Mobile', 1, 0, 0, 1, 1, 0,
CAST(N'1972-01-31' AS Date), NULL)
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (31, N'JaneJoan', N'Jane
', N'Joan', N'Janej@netinc.com', N'P@sswORd', N'(408)
939-9993', N'Work', 1, 0, 0, 0, 1, CAST(N'1962-12-07'
AS Date), NULL)
GO
```

```
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (33, N'BrianGossling', N'Brian',
N'Gossling', N'BrianGossling@advworks.com', N'P@sswORd',
N'916.234.8372', N'Work', 1, 0, 1, 1, 0, 1, CAST(N'1993-
05-16' AS Date), NULL)
GO
INSERT [dbo].[User] ([UserId], [LoginId], [FirstName],
[LastName], [Email], [Password], [Phone], [PhoneType],
[IsFullTime], [IsEnrolledIn401k],
[IsEnrolledInHealthCare], [IsEnrolledInHSA],
[IsEnrolledInFlexTime], [IsActive], [BirthDate],
[StartTime]) VALUES (34, N'BenQueen', N'Ben', N'Queen',
N'BenQueen@advworks.com', N'P@ssw0Rd', N'615.339.9032',
N'Mobile', 1, 1, 1, 1, 1, CAST(N'1996-11-01' AS
Date), NULL)
GO
SET IDENTITY INSERT [dbo].[User] OFF
GO
ALTER TABLE [dbo].[User] ADD CONSTRAINT
[DF User IsFullTime] DEFAULT ((0)) FOR [IsFullTime]
GO
ALTER TABLE [dbo].[User] ADD CONSTRAINT
[DF User IsEnrolledIn401k] DEFAULT ((0)) FOR
[IsEnrolledIn401k]
GO
ALTER TABLE [dbo].[User] ADD CONSTRAINT
[DF User IsEnrolledInHealthCare] DEFAULT ((0)) FOR
[IsEnrolledInHealthCare]
GO
ALTER TABLE [dbo].[User] ADD CONSTRAINT
[DF User IsEnrolledInHSA] DEFAULT ((0)) FOR
[IsEnrolledInHSA]
GΟ
ALTER TABLE [dbo].[User] ADD CONSTRAINT
[DF User IsEnrolledInFlexTime] DEFAULT ((0)) FOR
[IsEnrolledInFlexTime]
GO
ALTER TABLE [dbo].[User] ADD CONSTRAINT
[DF User IsActive] DEFAULT ((1)) FOR [IsActive]
GO
```

Try It Out

Run the application.

Click on the **GET** /api/PhoneType button, then click on the **Try it out** button.

Click the **Execute** button and you should see **phone types** data from the SQL Server appear.

Click on the **GET** /api/Product button, then click on the **Try it out** button.

Click the **Execute** button and you should see **product** data from the SQL Server appear.

Click on the GET /api/User button, then click on the Try it out button.

Click the **Execute** button and you should see **user** data from the SQL Server appear.