# Hands on Lab

Building Web Service

# Goal

This HOL show you step-by-step on how to build Web Service so your data silo can be accessed from mobile app

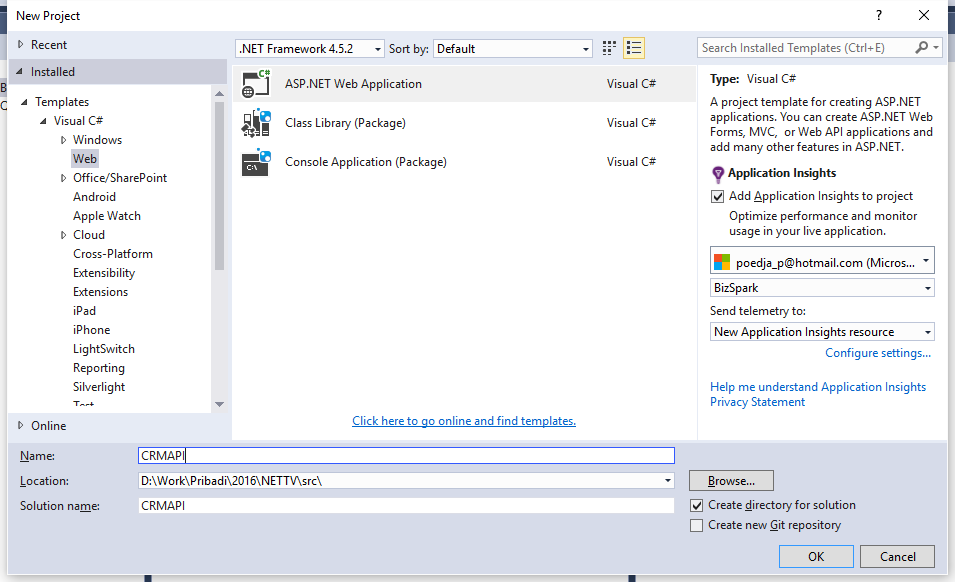
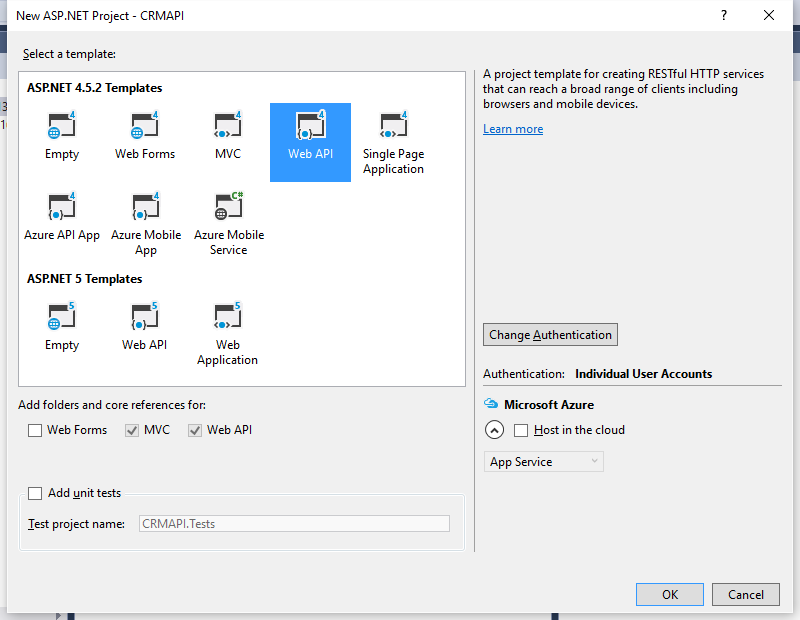
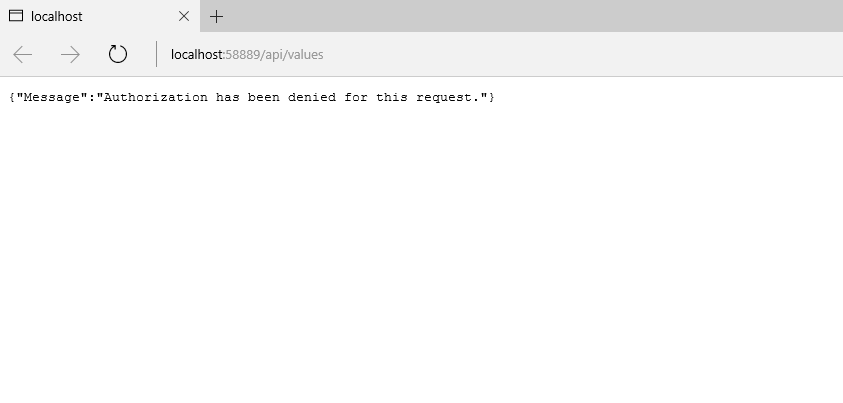
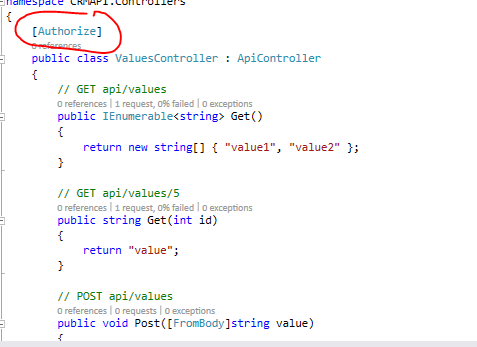
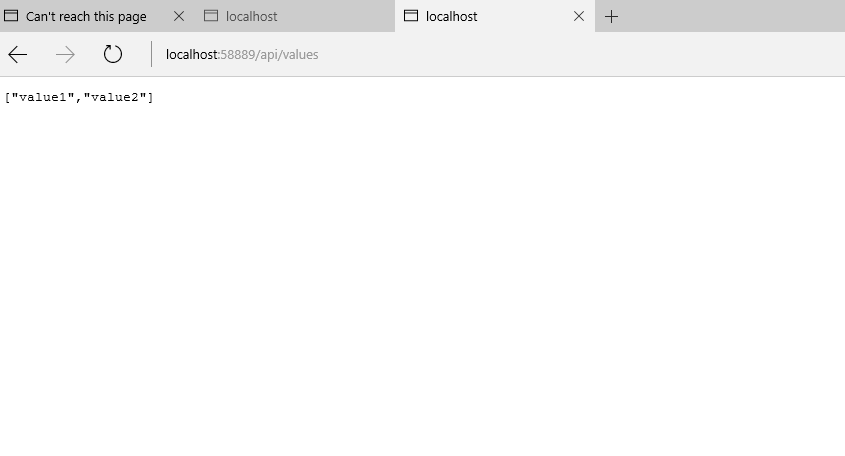
# Pre-Requisites

* Visual Studio 2013 (at minimum) or Visual Studio 2015
* SQL Server Management Studio

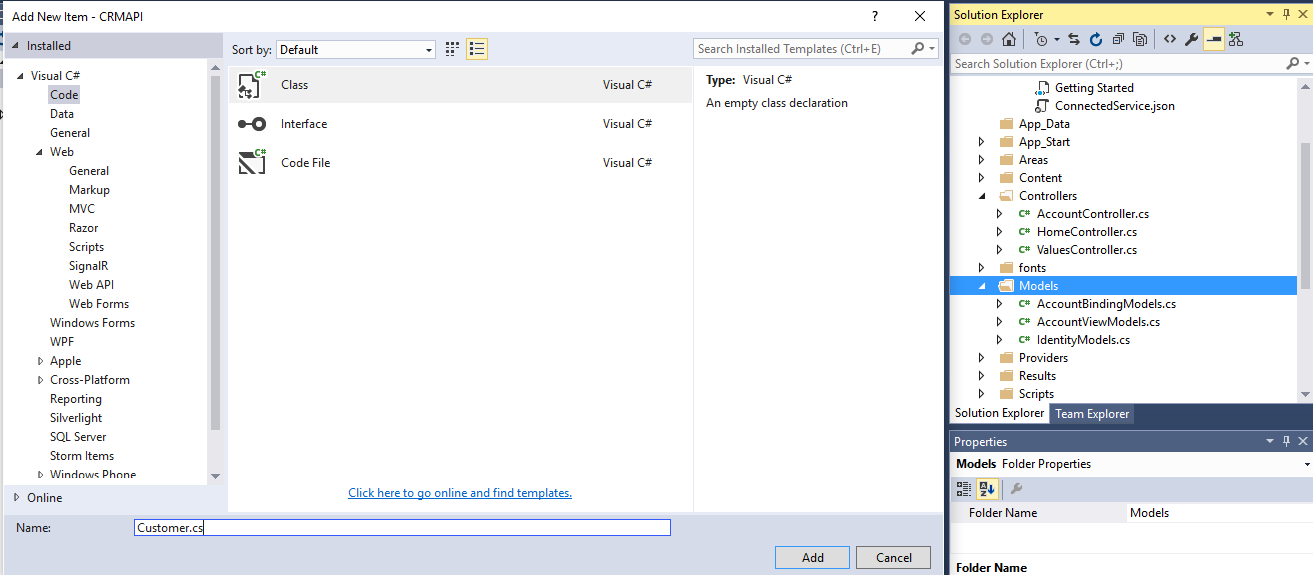
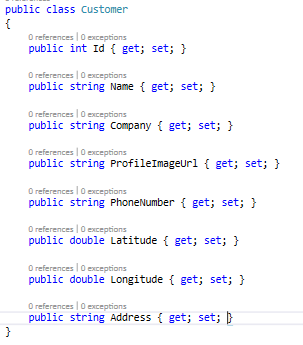
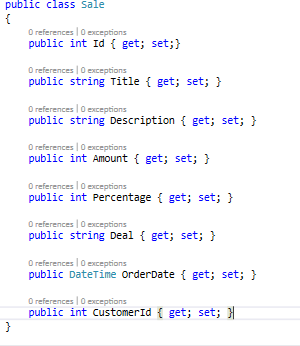
# Agenda

1. Create Web API Project
2. Create Model
3. Create Controller for Sales and Customer
4. Access Data From Database
5. Custom Route

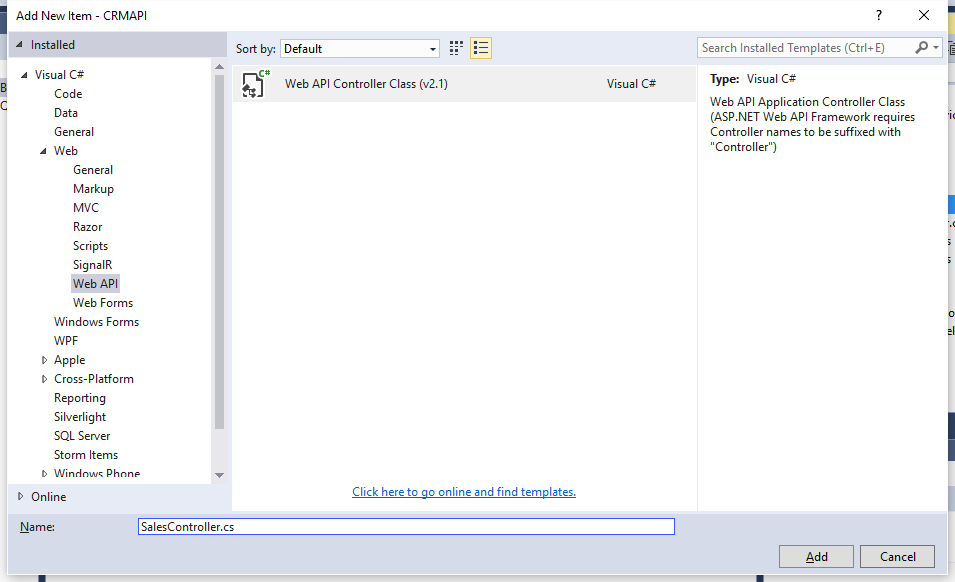
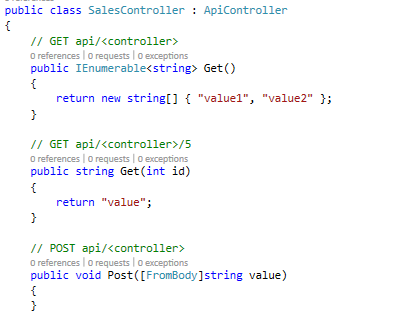
# 1. Create Web API Project

1. Open up Visual Studio and choose **Create Project.** In the pop up menu choose **Web Template -> ASPNET Web Application.**
2. In **ASPNET Template**, choose **Web API** then click **OK**.  
   
3. Try the project. Hit **F5** dan open default API controller.  
     
   Not so much we can do. Open **ValuesController** and omit [Authorize] decorator at the top of the file.  
   
4. Hit F5 again then now we can access the API.  
     
   Your WEB API project is set.

# 2. Creating Model

1. We will need two class model for our project. First, is customer to describe customer data in the application. Second, is sales to describe sales or deals made by users.
2. In **Models** folder, right clicked and choose **Add New Item.** Create a class code named Customer.cs.  
   
3. Create class definition like picture below  
   
4. In **Models** folder, right clicked and choose **Add New Item.** Create a class code named Sale.cs.
5. Create class definition like picture below  
   

# 3. Create Controller Sale & Customer

1. We will begin creating API endpoint. In **Controllers** folder, right-click add **Add New Item**. Choose **Web** and then **Web API** template.  
   
2. It will give us standard HTTP VERB operation.   
   
3. Modify **Get** method with this definition below.

public IEnumerable<Sale> Get()

{

List<Sale> sales = new List<Sale>();

sales.Add(new Sale() { Id = 1, Title = "Pembelian Xiaomi", Amount = 2000000, Deal = "New", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });

sales.Add(new Sale() { Id = 2, Title = "Pembelian Oppo", Amount = 3400000, Deal = "Won", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });

sales.Add(new Sale() { Id = 3, Title = "Pembelian Lenovo", Amount = 1800000, Deal = "Lose", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });

sales.Add(new Sale() { Id = 4, Title = "Pembelian Asus", Amount = 8900000, Deal = "Won", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });

sales.Add(new Sale() { Id = 5, Title = "Pembelian Windows Phone", Amount = 2600000, Deal = "New", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });

sales.Add(new Sale() { Id = 6, Title = "Pembelian Apple iPhone", Amount = 13000000, Deal = "New", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });

sales.Add(new Sale() { Id = 7, Title = "Pembelian Xiaomi", Amount = 2000000, Deal = "New", CustomerId = 2, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });

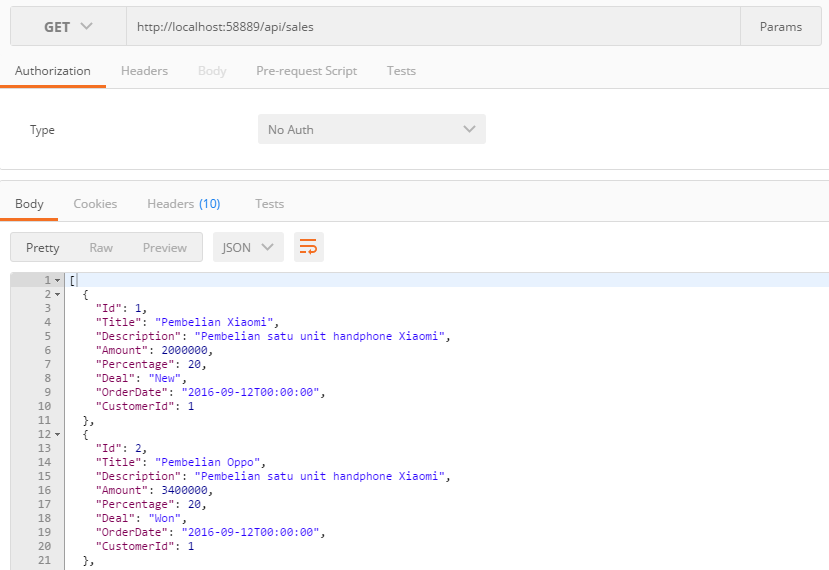
sales.Add(new Sale() { Id = 8, Title = "Pembelian Oppo", Amount = 3400000, Deal = "New", CustomerId = 2, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });

sales.Add(new Sale() { Id = 9, Title = "Pembelian Lenovo", Amount = 1800000, Deal = "Lose", CustomerId = 2, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });

sales.Add(new Sale() { Id = 10, Title = "Pembelian Asus", Amount = 8900000, Deal = "Won", CustomerId = 2, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });

return sales;

}

1. Hit **F5** to test our new method.  
     
   It works like charm
2. Modify **Get(int id**) method to look like this.

|  |
| --- |
| public Sale Get(int id)  {  List<Sale> sales = new List<Sale>();  sales.Add(new Sale() { Id = 1, Title = "Pembelian Xiaomi", Amount = 2000000, Deal = "New", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  sales.Add(new Sale() { Id = 2, Title = "Pembelian Oppo", Amount = 3400000, Deal = "Won", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  sales.Add(new Sale() { Id = 3, Title = "Pembelian Lenovo", Amount = 1800000, Deal = "Lose", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  sales.Add(new Sale() { Id = 4, Title = "Pembelian Asus", Amount = 8900000, Deal = "Won", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  sales.Add(new Sale() { Id = 5, Title = "Pembelian Windows Phone", Amount = 2600000, Deal = "New", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  sales.Add(new Sale() { Id = 6, Title = "Pembelian Apple iPhone", Amount = 13000000, Deal = "New", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  sales.Add(new Sale() { Id = 7, Title = "Pembelian Xiaomi", Amount = 2000000, Deal = "New", CustomerId = 2, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  sales.Add(new Sale() { Id = 8, Title = "Pembelian Oppo", Amount = 3400000, Deal = "New", CustomerId = 2, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  sales.Add(new Sale() { Id = 9, Title = "Pembelian Lenovo", Amount = 1800000, Deal = "Lose", CustomerId = 2, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  sales.Add(new Sale() { Id = 10, Title = "Pembelian Asus", Amount = 8900000, Deal = "Won", CustomerId = 2, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  var sale = sales.Where(item => item.Id == id).FirstOrDefault();  return sale;  } |

1. Modify **Post** method to lool like this.

|  |
| --- |
| public Sale Post(Sale value)  {  try  {  return value;  }  catch (Exception ex)  {  return null;  }  } |

For the actual function, we need to define what we want to do with data we receive from mobile. For this example, we return again the data we received.

1. We will begin creating API endpoint for **Customer**. In **Controllers** folder, right-click add **Add New Item**. Choose **Web** and then **Web API** template. Create **CustomersController.cs**.
2. Modify **Get** method with this definition below.

public IEnumerable<Customer> Get()

{

List<Customer> customers = new List<Customer>();

customers.Add(new Customer() { Id = 1, Name = "Puja Pramudya", Address = "JL A. Yani No 669", Company = "Radya Labs Teknologi", PhoneNumber = "085265204094", Latitude = -6.188088, Longitude = 106.7703243, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/458905232135565312/v3PFrCLy\_400x400.png" });

customers.Add(new Customer() { Id = 2, Name = "Tito Daniswara", Address = "JL Pasteur No 43", Company = "CV Anugrah Prima", PhoneNumber = "082263204094", Latitude = -6.167987, Longitude = 106.756685, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/530372486945189889/tj3XQ8xi\_400x400.jpeg" });

customers.Add(new Customer() { Id = 3, Name = "Albilaga", Address = "JL Sido Luhur No 43", Company = "Raion Studio", PhoneNumber = "081163234094", Latitude = -6.137277, Longitude = 106.765563, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/531025242747969536/vhoWFuuD.png" });

customers.Add(new Customer() { Id = 4, Name = "Faizal Hitobeli", Address = "JL Johari No 13", Company = "PT Master System Informatika", PhoneNumber = "081163231014", Latitude = -6.124416, Longitude = 106.776081, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/2817469495/93109782ad239625a31343dee4f6ddd1\_400x400.jpeg" });

customers.Add(new Customer() { Id = 5, Name = "Rendy Faqot", Address = "JL Taman Kopo Indah", Company = "PT BSP Prima", PhoneNumber = "081763231012", Latitude = -6.941151, Longitude = 107.560527, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/731307445604114433/LBUwu6VS.jpg" });

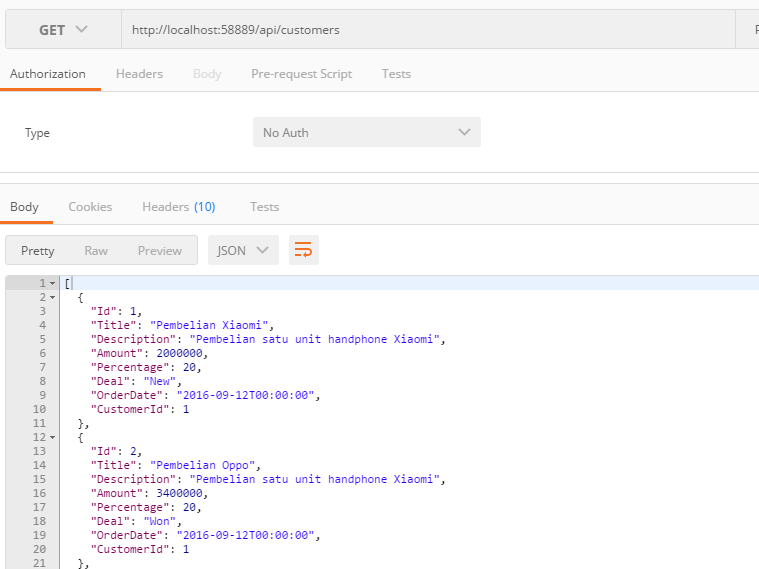
customers.Add(new Customer() { Id = 6, Name = "Irfan Afif", Address = "JL Ciheulang", Company = "PT IT Bersama", PhoneNumber = "081863236012", Latitude = -6.936504, Longitude = 107.648304, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/3114319086/7385720f1d854e6f1c1163fedb4c348a.jpeg" });

customers.Add(new Customer() { Id = 7, Name = "Hari Bagus", Address = "JL Denpasar", Company = "PT Cimanuk Solution", PhoneNumber = "081863236012", Latitude = -6.936504, Longitude = 107.648304, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/1418745373/hari.png" });

customers.Add(new Customer() { Id = 8, Name = "Ade Rifaldi", Address = "JL Jakarta", Company = "PT Rekadia Solution", PhoneNumber = "082263236072", Latitude = -6.936504, Longitude = 107.648304, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/1227963900/IMG-20110125-00063\_400x400.jpg" });

return customers;

}

1. Hit **F5** to test our new method.  
   
2. Modify **Get(int id**) method to look like this.

|  |
| --- |
| public Customer Get(int id)  {  List<Customer> customers = new List<Customer>();  customers.Add(new Customer() { Id = 1, Name = "Puja Pramudya", Address = "JL A. Yani No 669", Company = "Radya Labs Teknologi", PhoneNumber = "085265204094", Latitude = -6.188088, Longitude = 106.7703243, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/458905232135565312/v3PFrCLy\_400x400.png" });  customers.Add(new Customer() { Id = 2, Name = "Tito Daniswara", Address = "JL Pasteur No 43", Company = "CV Anugrah Prima", PhoneNumber = "082263204094", Latitude = -6.167987, Longitude = 106.756685, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/530372486945189889/tj3XQ8xi\_400x400.jpeg" });  customers.Add(new Customer() { Id = 3, Name = "Albilaga", Address = "JL Sido Luhur No 43", Company = "Raion Studio", PhoneNumber = "081163234094", Latitude = -6.137277, Longitude = 106.765563, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/531025242747969536/vhoWFuuD.png" });  customers.Add(new Customer() { Id = 4, Name = "Faizal Hitobeli", Address = "JL Johari No 13", Company = "PT Master System Informatika", PhoneNumber = "081163231014", Latitude = -6.124416, Longitude = 106.776081, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/2817469495/93109782ad239625a31343dee4f6ddd1\_400x400.jpeg" });  customers.Add(new Customer() { Id = 5, Name = "Rendy Faqot", Address = "JL Taman Kopo Indah", Company = "PT BSP Prima", PhoneNumber = "081763231012", Latitude = -6.941151, Longitude = 107.560527, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/731307445604114433/LBUwu6VS.jpg" });  customers.Add(new Customer() { Id = 6, Name = "Irfan Afif", Address = "JL Ciheulang", Company = "PT IT Bersama", PhoneNumber = "081863236012", Latitude = -6.936504, Longitude = 107.648304, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/3114319086/7385720f1d854e6f1c1163fedb4c348a.jpeg" });  customers.Add(new Customer() { Id = 7, Name = "Hari Bagus", Address = "JL Denpasar", Company = "PT Cimanuk Solution", PhoneNumber = "081863236012", Latitude = -6.936504, Longitude = 107.648304, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/1418745373/hari.png" });  customers.Add(new Customer() { Id = 8, Name = "Ade Rifaldi", Address = "JL Jakarta", Company = "PT Rekadia Solution", PhoneNumber = "082263236072", Latitude = -6.936504, Longitude = 107.648304, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/1227963900/IMG-20110125-00063\_400x400.jpg" });  var customer = customers.Where(item => item.Id == id).FirstOrDefault();    return customer;  } |

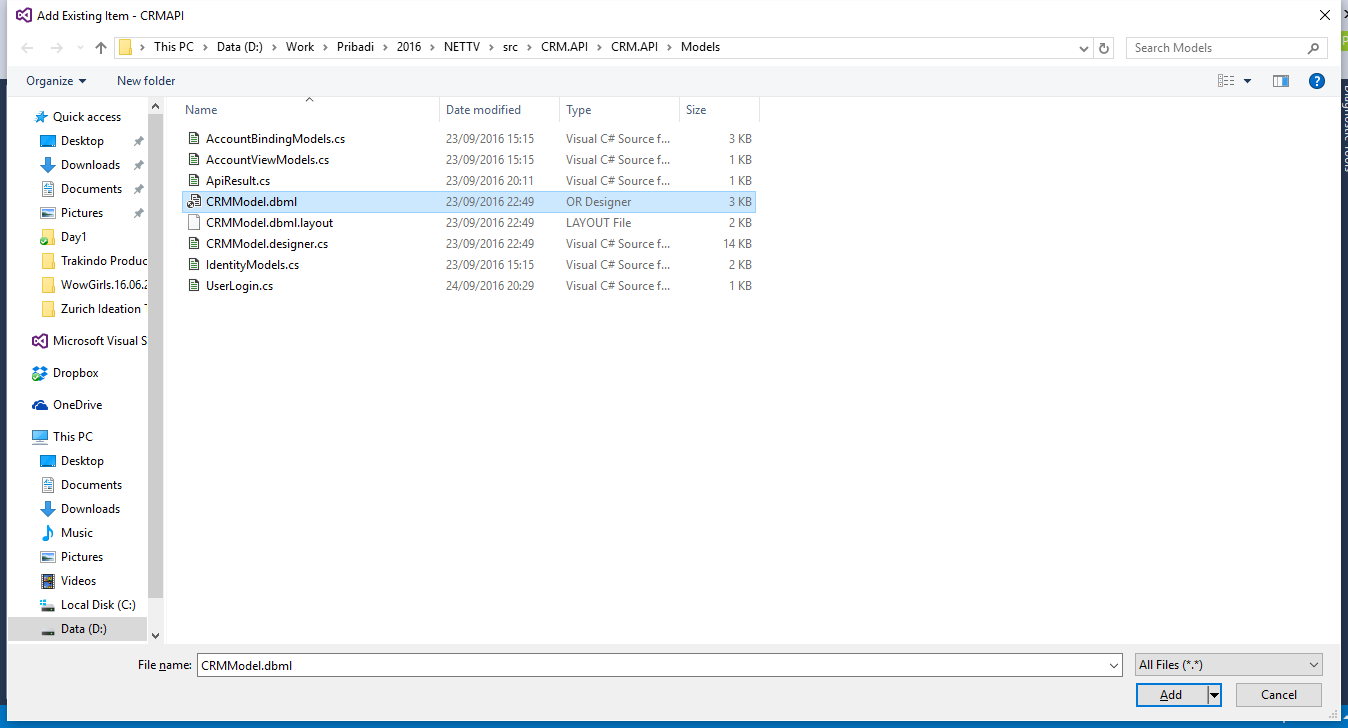
1. Modify **Post** method to lool like this.

|  |
| --- |
| public Customer Post(Customer value)  {  try  {  return value;  }  catch (Exception ex)  {  return null;  }  } |

For the actual function, we need to define what we want to do with data we receive from mobile. For this example, we return again the data we received.

# 4. Access Data From Database

1. In models folder, right-click and choose **Add Existing Item.** Add LINQ to SQL Class (dbml file) from dropbox folder (<https://www.dropbox.com/home/Public/NETTV/Asset/WebService> );.



1. It will bring error due to model class duplication. Just remove Customer & Sales class we made before.
2. In Web Config, add following databasestring connection.  
     
    <!--<add name="CRMConnectionString" connectionString="Data Source=RADYA-ASUS;Initial Catalog=CRM;Integrated Security=True;MultipleActiveResultSets=True;Application Name=EntityFramework"

providerName="System.Data.SqlClient" />-->

<add name="CRMConnectionString" connectionString="Data Source=mixradio.database.windows.net;Initial Catalog=mixradio;Persist Security Info=True;User ID=mixradio;Password=AKUsayangLINE17081945" providerName="System.Data.SqlClient" />

Use one that satisfy your condition.

1. Modify **Get** method in CustomersController**.** Now you can access data from database instead of from dummy list.

|  |
| --- |
| public IEnumerable<Customer> Get()  {  //List<Customer> customers = new List<Customer>();  //customers.Add(new Customer() { Id = 1, Name = "Puja Pramudya", Address = "JL A. Yani No 669", Company = "Radya Labs Teknologi", PhoneNumber = "085265204094", Latitude = -6.188088, Longitude = 106.7703243, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/458905232135565312/v3PFrCLy\_400x400.png" });  //customers.Add(new Customer() { Id = 2, Name = "Tito Daniswara", Address = "JL Pasteur No 43", Company = "CV Anugrah Prima", PhoneNumber = "082263204094", Latitude = -6.167987, Longitude = 106.756685, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/530372486945189889/tj3XQ8xi\_400x400.jpeg" });  //customers.Add(new Customer() { Id = 3, Name = "Albilaga", Address = "JL Sido Luhur No 43", Company = "Raion Studio", PhoneNumber = "081163234094", Latitude = -6.137277, Longitude = 106.765563, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/531025242747969536/vhoWFuuD.png" });  //customers.Add(new Customer() { Id = 4, Name = "Faizal Hitobeli", Address = "JL Johari No 13", Company = "PT Master System Informatika", PhoneNumber = "081163231014", Latitude = -6.124416, Longitude = 106.776081, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/2817469495/93109782ad239625a31343dee4f6ddd1\_400x400.jpeg" });  //customers.Add(new Customer() { Id = 5, Name = "Rendy Faqot", Address = "JL Taman Kopo Indah", Company = "PT BSP Prima", PhoneNumber = "081763231012", Latitude = -6.941151, Longitude = 107.560527, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/731307445604114433/LBUwu6VS.jpg" });  //customers.Add(new Customer() { Id = 6, Name = "Irfan Afif", Address = "JL Ciheulang", Company = "PT IT Bersama", PhoneNumber = "081863236012", Latitude = -6.936504, Longitude = 107.648304, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/3114319086/7385720f1d854e6f1c1163fedb4c348a.jpeg" });  //customers.Add(new Customer() { Id = 7, Name = "Hari Bagus", Address = "JL Denpasar", Company = "PT Cimanuk Solution", PhoneNumber = "081863236012", Latitude = -6.936504, Longitude = 107.648304, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/1418745373/hari.png" });  //customers.Add(new Customer() { Id = 8, Name = "Ade Rifaldi", Address = "JL Jakarta", Company = "PT Rekadia Solution", PhoneNumber = "082263236072", Latitude = -6.936504, Longitude = 107.648304, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/1227963900/IMG-20110125-00063\_400x400.jpg" });  CRMModelDataContext db = new CRMModelDataContext();  var customers = db.Customers.ToList();  return customers;  } |

1. Change **Get (int id)** into like this.

|  |
| --- |
| public Customer Get(int id)  {  //List<Customer> customers = new List<Customer>();  //customers.Add(new Customer() { Id = 1, Name = "Puja Pramudya", Address = "JL A. Yani No 669", Company = "Radya Labs Teknologi", PhoneNumber = "085265204094", Latitude = -6.188088, Longitude = 106.7703243, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/458905232135565312/v3PFrCLy\_400x400.png" });  //customers.Add(new Customer() { Id = 2, Name = "Tito Daniswara", Address = "JL Pasteur No 43", Company = "CV Anugrah Prima", PhoneNumber = "082263204094", Latitude = -6.167987, Longitude = 106.756685, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/530372486945189889/tj3XQ8xi\_400x400.jpeg" });  //customers.Add(new Customer() { Id = 3, Name = "Albilaga", Address = "JL Sido Luhur No 43", Company = "Raion Studio", PhoneNumber = "081163234094", Latitude = -6.137277, Longitude = 106.765563, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/531025242747969536/vhoWFuuD.png" });  //customers.Add(new Customer() { Id = 4, Name = "Faizal Hitobeli", Address = "JL Johari No 13", Company = "PT Master System Informatika", PhoneNumber = "081163231014", Latitude = -6.124416, Longitude = 106.776081, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/2817469495/93109782ad239625a31343dee4f6ddd1\_400x400.jpeg" });  //customers.Add(new Customer() { Id = 5, Name = "Rendy Faqot", Address = "JL Taman Kopo Indah", Company = "PT BSP Prima", PhoneNumber = "081763231012", Latitude = -6.941151, Longitude = 107.560527, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/731307445604114433/LBUwu6VS.jpg" });  //customers.Add(new Customer() { Id = 6, Name = "Irfan Afif", Address = "JL Ciheulang", Company = "PT IT Bersama", PhoneNumber = "081863236012", Latitude = -6.936504, Longitude = 107.648304, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/3114319086/7385720f1d854e6f1c1163fedb4c348a.jpeg" });  //customers.Add(new Customer() { Id = 7, Name = "Hari Bagus", Address = "JL Denpasar", Company = "PT Cimanuk Solution", PhoneNumber = "081863236012", Latitude = -6.936504, Longitude = 107.648304, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/1418745373/hari.png" });  //customers.Add(new Customer() { Id = 8, Name = "Ade Rifaldi", Address = "JL Jakarta", Company = "PT Rekadia Solution", PhoneNumber = "082263236072", Latitude = -6.936504, Longitude = 107.648304, ProfileImageUrl = "https://pbs.twimg.com/profile\_images/1227963900/IMG-20110125-00063\_400x400.jpg" });  //var customer = customers.Where(item => item.Id == id).FirstOrDefault();  CRMModelDataContext db = new CRMModelDataContext();  var customer = db.Customers.Where(item => item.Id == id).FirstOrDefault();  return customer;  } |

1. Change **Post** method into like this

|  |
| --- |
| public Sale Post(Sale value)  {  try  {  CRMModelDataContext db = new CRMModelDataContext();  db.Customers.InsertOnSubmit(value);  db.SubmitChanges();  return value;  }  catch (Exception ex)  {  return null;  }  } |

1. Change **SalesController** as well.

|  |
| --- |
| public IEnumerable<Sale> Get()  {  //List<Sale> sales = new List<Sale>();  //sales.Add(new Sale() { Id = 1, Title = "Pembelian Xiaomi", Amount = 2000000, Deal = "New", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  //sales.Add(new Sale() { Id = 2, Title = "Pembelian Oppo", Amount = 3400000, Deal = "Won", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  //sales.Add(new Sale() { Id = 3, Title = "Pembelian Lenovo", Amount = 1800000, Deal = "Lose", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  //sales.Add(new Sale() { Id = 4, Title = "Pembelian Asus", Amount = 8900000, Deal = "Won", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  //sales.Add(new Sale() { Id = 5, Title = "Pembelian Windows Phone", Amount = 2600000, Deal = "New", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  //sales.Add(new Sale() { Id = 6, Title = "Pembelian Apple iPhone", Amount = 13000000, Deal = "New", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  //sales.Add(new Sale() { Id = 7, Title = "Pembelian Xiaomi", Amount = 2000000, Deal = "New", CustomerId = 2, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  //sales.Add(new Sale() { Id = 8, Title = "Pembelian Oppo", Amount = 3400000, Deal = "New", CustomerId = 2, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  //sales.Add(new Sale() { Id = 9, Title = "Pembelian Lenovo", Amount = 1800000, Deal = "Lose", CustomerId = 2, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  //sales.Add(new Sale() { Id = 10, Title = "Pembelian Asus", Amount = 8900000, Deal = "Won", CustomerId = 2, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  CRMModelDataContext db = new CRMModelDataContext();  var sales = db.Sales.ToList();  return sales;  }  public Sale Get(int id)  {  //List<Sale> sales = new List<Sale>();  //sales.Add(new Sale() { Id = 1, Title = "Pembelian Xiaomi", Amount = 2000000, Deal = "New", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  //sales.Add(new Sale() { Id = 2, Title = "Pembelian Oppo", Amount = 3400000, Deal = "Won", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  //sales.Add(new Sale() { Id = 3, Title = "Pembelian Lenovo", Amount = 1800000, Deal = "Lose", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  //sales.Add(new Sale() { Id = 4, Title = "Pembelian Asus", Amount = 8900000, Deal = "Won", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  //sales.Add(new Sale() { Id = 5, Title = "Pembelian Windows Phone", Amount = 2600000, Deal = "New", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  //sales.Add(new Sale() { Id = 6, Title = "Pembelian Apple iPhone", Amount = 13000000, Deal = "New", CustomerId = 1, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  //sales.Add(new Sale() { Id = 7, Title = "Pembelian Xiaomi", Amount = 2000000, Deal = "New", CustomerId = 2, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  //sales.Add(new Sale() { Id = 8, Title = "Pembelian Oppo", Amount = 3400000, Deal = "New", CustomerId = 2, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  //sales.Add(new Sale() { Id = 9, Title = "Pembelian Lenovo", Amount = 1800000, Deal = "Lose", CustomerId = 2, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  //sales.Add(new Sale() { Id = 10, Title = "Pembelian Asus", Amount = 8900000, Deal = "Won", CustomerId = 2, Description = "Pembelian satu unit handphone Xiaomi", OrderDate = new DateTime(2016, 9, 12), Percentage = 20 });  //var customer = sales.Where(item => item.Id == id).FirstOrDefault();  CRMModelDataContext db = new CRMModelDataContext();  var customer = db.Sales.Where(item => item.Id == id).FirstOrDefault();  return customer;  }  // POST api/values  public Sale Post(Sale value)  {  try  {  CRMModelDataContext db = new CRMModelDataContext();  db.Sales.InsertOnSubmit(value);  db.SubmitChanges();  return value;  }  catch (Exception ex)  {  return null;  }  } |

1. Hit **F5** and now the Api return data from our database.

# 5. Custom Route

1. Add method GetSalesByCustomer to **SalesController**. It will return all sales by particular customer.

|  |
| --- |
| public IEnumerable<Sale> GetSalesByCustomer(int id)  {    CRMModelDataContext db = new CRMModelDataContext();  var retVal = db.Sales.Where(item => item.CustomerId == id).ToList();  return retVal;  } |

1. Modify the API Route Config. Open **WebApiConfig.cs** in folder **App\_Start.** Add the custom route before the default route.

|  |
| --- |
| config.Routes.MapHttpRoute(  name: "DealApi",  routeTemplate: "api/customers/{id}/sales",  defaults: new { controller = "Sales", action = "GetSalesByCustomer" }  ); |

1. Hit F5 to show the result.