Lab: XAM427 - Enterprise WCF

Prerequisites

You will need a development environment, either a Windows PC with the Android SDK, Visual Studio and either Xamarin.iOS or Xamarin.Android installed. We will be using the Android emulator to test the code we are building, so make sure to have a virtual device already configured and ready to run. See the **Visual Studio with Xamarin** setup documentation if you need help getting your environment setup: http://docs.xamarin.com/guides/cross-platform/getting_started/visual_studio_with_xamarin/

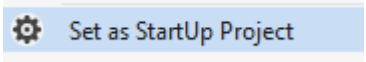
Lab Goals

The goal of this lab will be to build a simple WCF service, build a client for that service and then consume it from within our app

Steps

Open the Starting Solution

1. Launch Visual Studio.
2. Open up the project **Xamarin_EnterpriseWCF_Begin**
3. Right-Click and set the **WcfServiceHost** project as the startup project



Creating the WCF Service

1. Locate the comment `TODO: Step 1 - Define our service contract` and uncomment the code

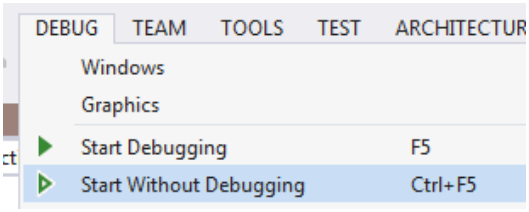
```
[OperationContract]
string GetRandomMonkeyName();


[OperationContract]
IEnumerable<MonkeyInformation> GetMonkeyMatch(MonkeyQuery query);
```

2. Locate the comment `TODO: Step 2 - Create an implementation our service implementation` and uncomment the code below

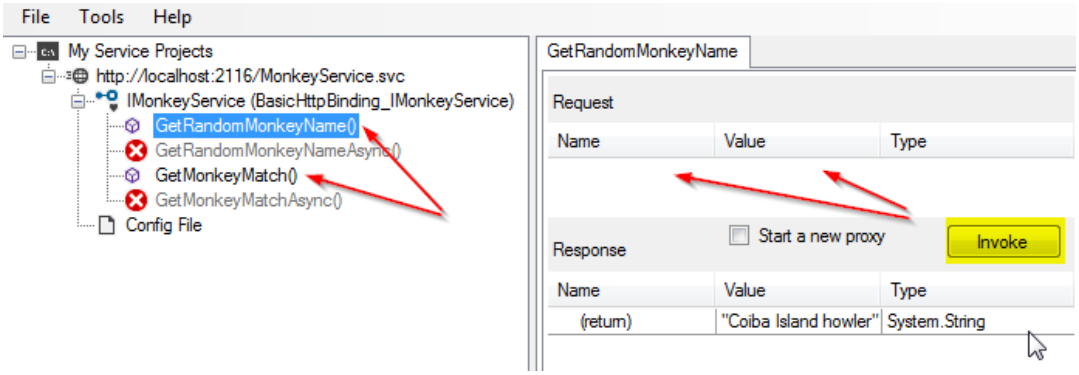
```
public string GetRandomMonkeyName()
{
    var random = new Random();
```

```
    var monkeyInformation = MonkeyData.GetMonkeyInformation();


    return
        monkeyInformation.Any()
            ? monkeyInformation.ElementAt(random.Next(monkeyInformatio
n.Count)).CommonName
            : string.Empty;
}


public IEnumerable<MonkeyInformation> GetMonkeyMatch(MonkeyQuery query
)
{
    var monkeyInformation = MonkeyData.GetMonkeyInformation();


    return
        query == null || (String.IsNullOrEmpty(query.Family) && String
.IsNullOrEmpty(query.Subfamily) && String.IsNullOrEmpty(query.Genus))
        ? Enumerable.Empty<MonkeyInformation>()
        : monkeyInformation
            .Where(mi => String.IsNullOrEmpty(query.Family) || mi.Fami
ly.IndexOf(query.Family, StringComparison.OrdinalIgnoreCase) >= 0)
            .Where(mi => String.IsNullOrEmpty(query.Subfamily) || mi.S
ubfamily.IndexOf(query.Subfamily, StringComparison.OrdinalIgnoreCase)
>= 0)
            .Where(mi => String.IsNullOrEmpty(query.Genus) || mi.Genus
.IndexOf(query.Genus, StringComparison.OrdinalIgnoreCase) >= 0);
}
```

3. Highlight the MonkeyService.svc file and select BUILD > Start Without Debugging



4. You should get a WCF Test Client displayed. Click a service such as `GetRandomMonkeyName` and select **Invoke**

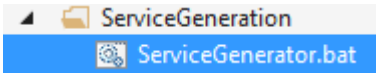


5. You should get a result based on the data that you provided

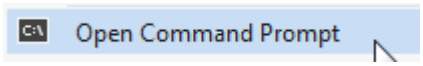
> **TIP:** This project is running under IIS Express and will only be available locally. If you would like to configure IIS Express to work remotely, follow the steps located here: http://www.microsoft.com/en-us/download/details.aspx?id=28359

Create the WCF Service Client

6. Locate the **ServiceGenerator.bat** file as part of the solution

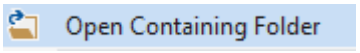


7. Right-Click on this file and select **Open Command Prompt**

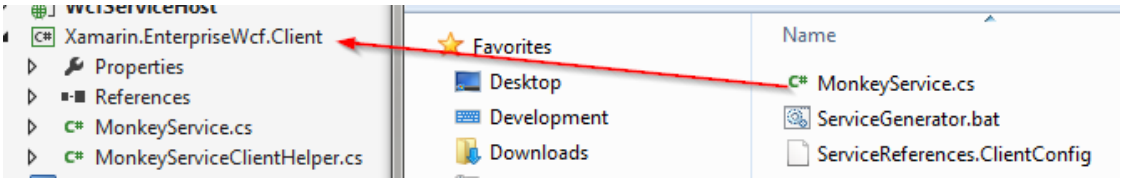


8. Run the ServiceGenerator.bat file

9. Return to Visual Studio
10. Right-Click the ServiceGenerator.bat file and Select Open Containing Folder



11. Drag-and-Drop the MonkeyService.cs file into the Xamarin.EnterpriseWcf.Client Project



12. Locate `TODO: Step 3 - Define the service endpoint` and uncomment the code below

```
private static readonly EndpointAddress ServiceEndPoint = new Endpoint
Address("http://developer.xamarin.com/xamu-wcf/MonkeyService.svc");
```

13. If you would like to use your own version of the service, just change the address above to the proper IP address and endpoint.
14. Locate `TODO: Step 4 - Create our binding` and uncomment the code below

```
private static BasicHttpBinding CreateBasicHttpBinding()
{
    var binding = new BasicHttpBinding
    {
        Name = "basicHttpBinding",
        MaxBufferSize = 2147483647,
        MaxReceivedMessageSize = 2147483647
    };

    var timeout = new TimeSpan(0, 0, 30);
    binding.SendTimeout = timeout;
    binding.OpenTimeout = timeout;
    binding.ReceiveTimeout = timeout;

    return binding;
}
```

15. Locate `Step 5 - Create a method that provides a configured service client` and uncomment the code below

```
public static MonkeyServiceClient CreateMonkeyServiceClient()
{
    return new MonkeyServiceClient(CreateBasicHttpBinding(), ServiceEn
dPoint);
}
```

16. Build the solution

Add the Client to Android or iOS

1. Locate `Step 6 - Android/iOS - Initialize our Service` and uncomment the code below

```
private void InitializeHelloWorldServiceClient()
{
    monkeyServiceClient = MonkeyServiceClientHelper.CreateMonkeyServic
eClient();
    monkeyServiceClient.GetMonkeyMatchCompleted += GetMonkeyMatchCompl
eted;
```

```
    monkeyServiceClient.GetRandomMonkeyNameCompleted += GetRandomMonke
yNameCompleted;
}
```

2. Build and run the application on your preferred platform

Summary

In this lab, we learned how a mobile application built with Xamarin can consume a WCF web service using the BasicHttpBinding.