Connecting to MySQL at design/run-time on C# .NET Winforms

Introduction

Connecting a TeeChart control to MySQL database at design-time using the TeeChart Editor and at run-time.

The sourcecode for this demo is available via this github resource:

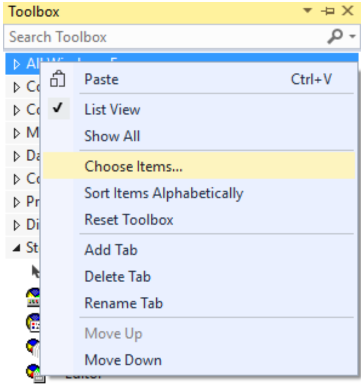
https://github.com/Steema/TeeChart-for-.NET-CSharp-WinForms-samples/tree/master/ConnectingToMySql

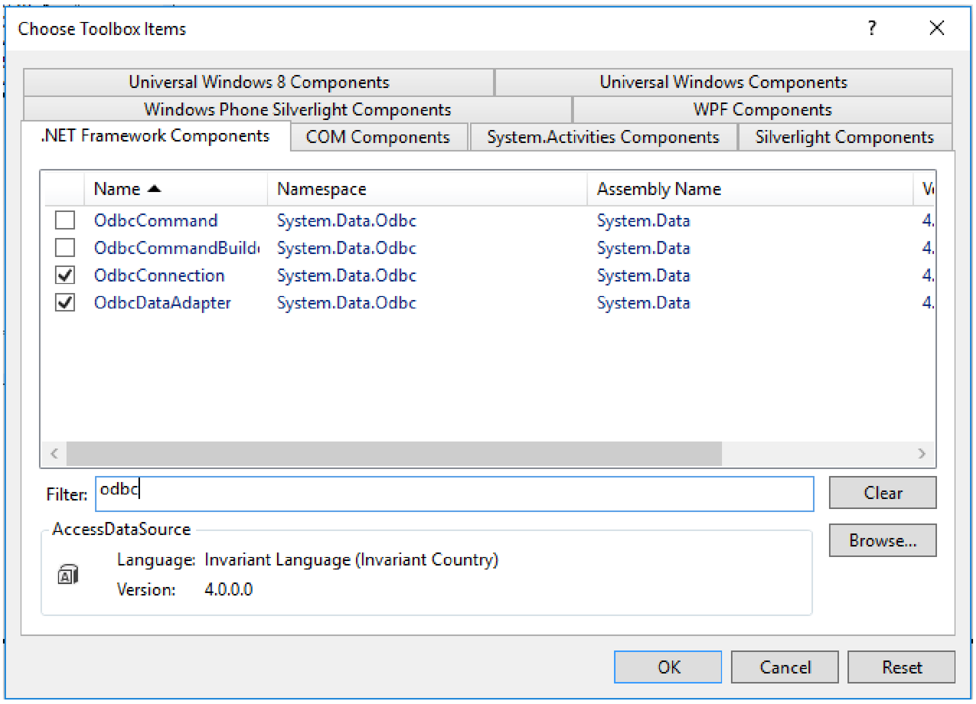
It assumes that you have a later version of TeeChart for .NET installed in your machine. You can use a TeeChart evaluation version if you don't have the registered version to hand. See this page: https://www.steema.com/downloads/net

Example 1. Connecting to MySQL at design-time

MySQL Driver

1. Download and install the MySQL Driver from https://dev.mysql.com/downloads/connector/odbc/
2. Add the OdbcConnection and the OdbcDataAdaptar to the ToolBox.




Choose Toolbox Items
?
Universal Windows 8 Components
Universal Windows Components
Windows Phone Silverlight Components
WPF Components
.NET Framework Components
COM Components
System.Activities Components
Silverlight Components
Clear
Browse...
OK
Cancel
Reset

	Name ▲	Namespace	Assembly Name	V
□	OdbcCommand	System.Data.Odbc	System.Data	4.
□	OdbcCommandBuild	System.Data.Odbc	System.Data	4.
☑	OdbcConnection	System.Data.Odbc	System.Data	4.
☑	OdbcDataAdapter	System.Data.Odbc	System.Data	4.

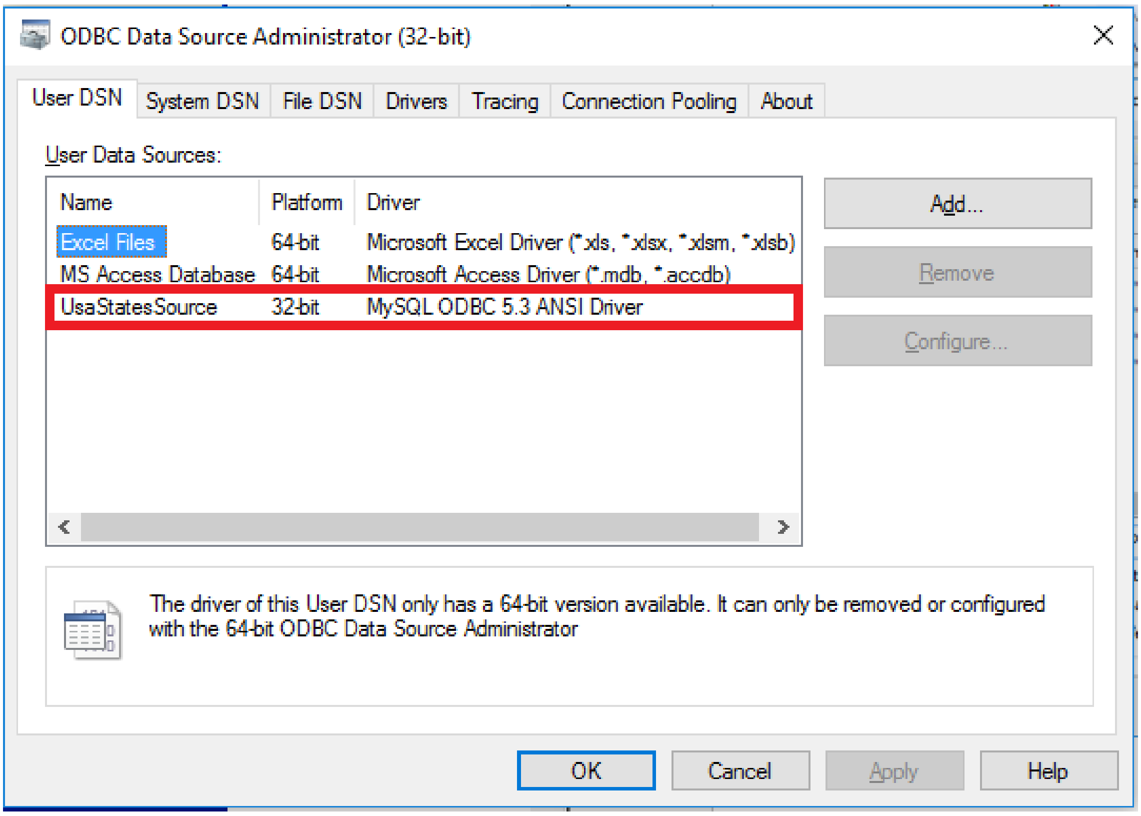
Filter: odbc

AccessDataSource

Language: Invariant Language (Invariant Country)

Version: 4.0.0.0

3. Create a new user or system data source using ODBC Data Sources (32bits/64bits).

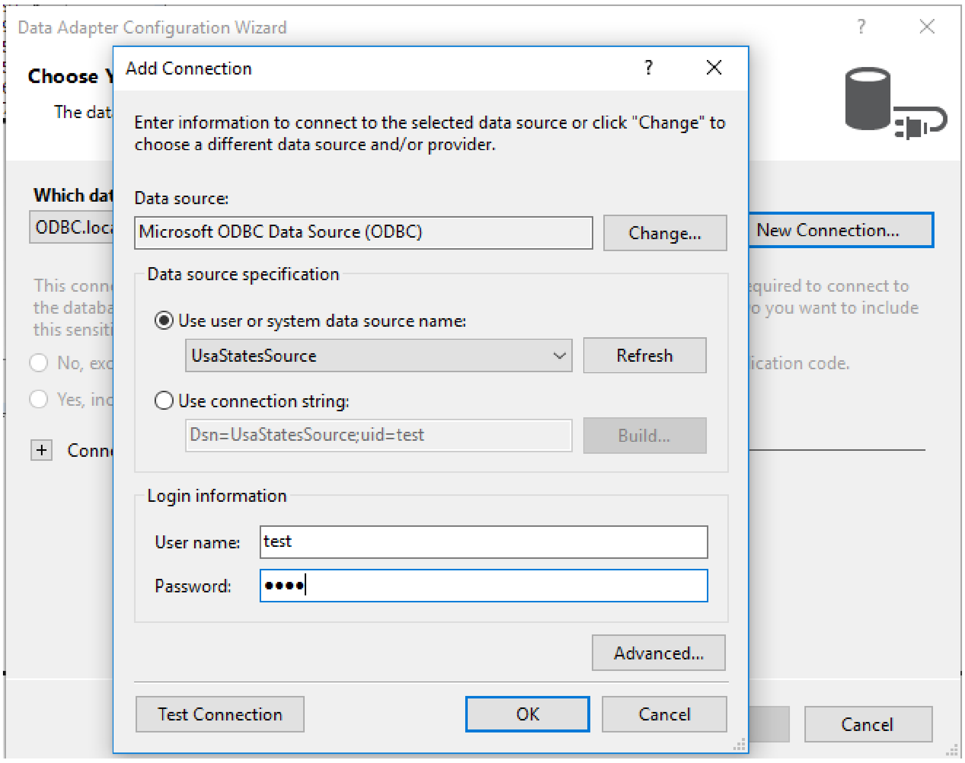


User Data Sources:

Name	Platform	Driver
Excel Files	64-bit	Microsoft Excel Driver (*.xls, *.xlsx, *.xlsm, *.xlsb)
MS Access Database	64-bit	Microsoft Access Driver (*.mdb, *.accdb)
UsaStatesSource	32-bit	MySQL ODBC 5.3 ANSI Driver

The driver of this User DSN only has a 64-bit version available. It can only be removed or configured with the 64-bit ODBC Data Source Administrator

4. Drag an OdbcDataAdapter onto a WinForm with a TeeChart for .NET object on it. Add a New Connection on the Data Adapter Configuration Wizard.



Data Adapter Configuration Wizard

Add Connection

Enter information to connect to the selected data source or click "Change" to choose a different data source and/or provider.

Data source: Microsoft ODBC Data Source (ODBC)

Data source specification

● Use user or system data source name: UsaStatesSource

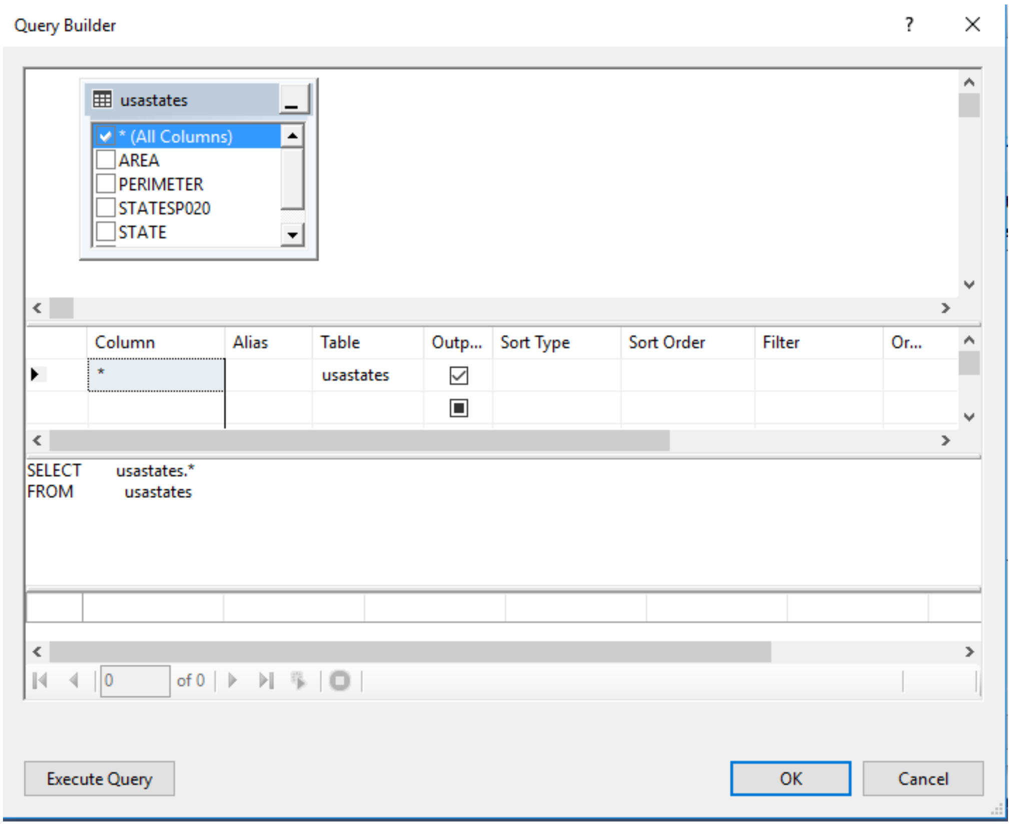
○ Use connection string: Dsn=UsaStatesSource;uid=test

Login information

User name: test

Password: ••••

5. Now click on the "Query Builder" button and add in the "usastates" Table. Close the "Add Table" window and select the "*(All Columns)" CheckBox:



Query Builder

usastates

☑ * (All Columns)
□ AREA
□ PERIMETER
□ STATESP020
□ STATE

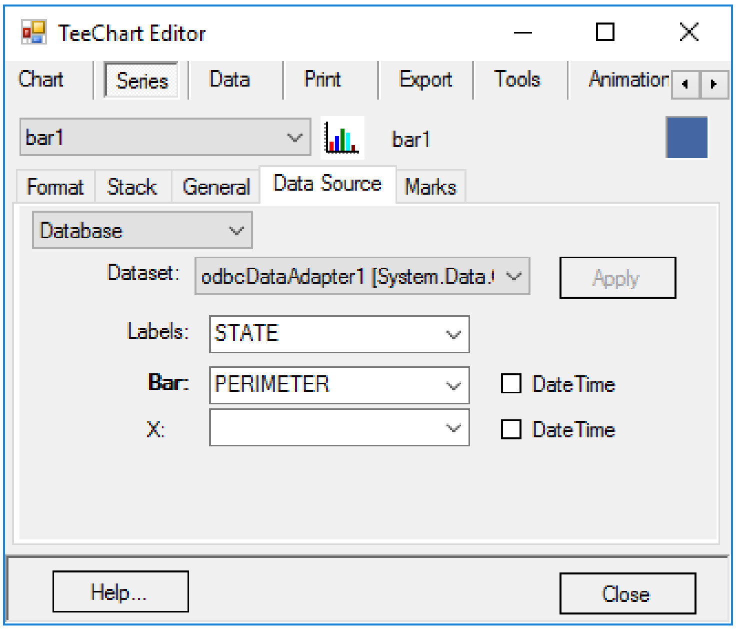
Column	Alias	Table	Outp...	Sort Type	Sort Order	Filter	Or...
*		usastates	☑				

```
SELECT    usastates.*
FROM      usastates
```

6. Click “Ok”, “Next” and “Finish”.

7. Assuming you have placed a TeeChart on a form, now open the TeeChart Editor and add a new Series.

8. Click on the “Series” tab and choose the data that you wish to plot. In this case, select “Database”, choose the Dataset previously created and select the data that you want to use.



Database

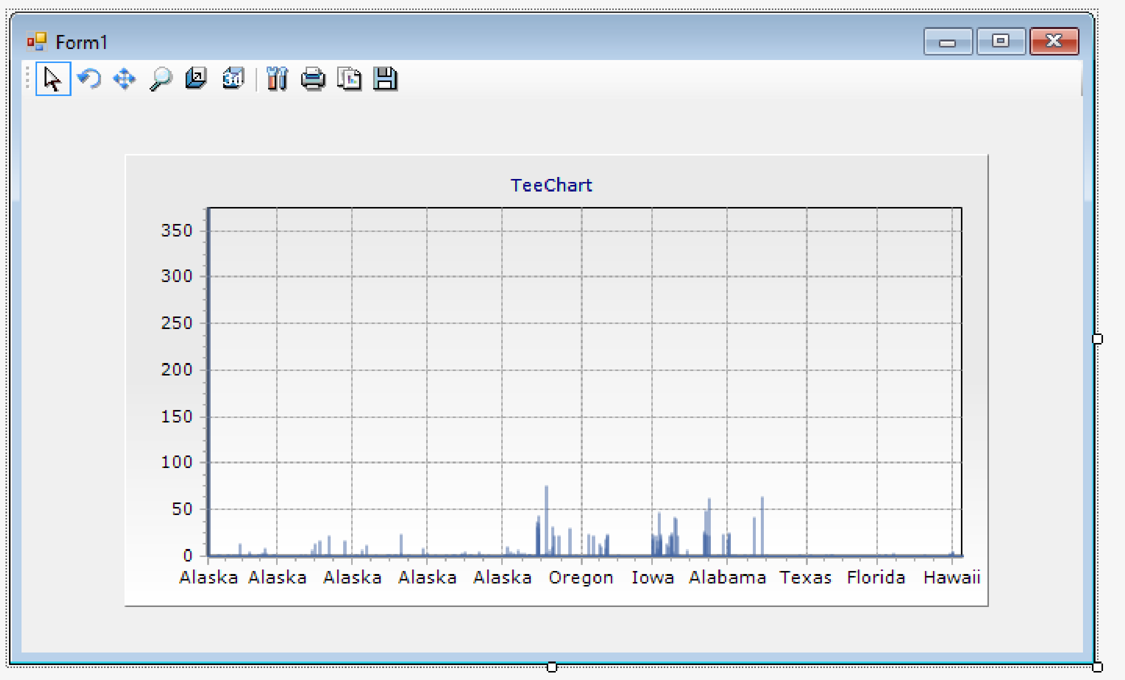
Dataset: odbcDataAdapter1 [System.Data.(

Labels: STATE

Bar: PERIMETER ☐ DateTime

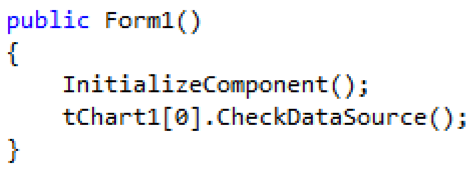
X: ☐ DateTime

9. Click “Apply”. You should now have something like the following in the design-time:



10. Add the following line of code to apply the changes in design-time of the chart when you execute the form:

    ```
    tChart1[0].CheckDataSource();
    ```



```
public Form1()
{
    InitializeComponent();
    tChart1[0].CheckDataSource();
}
```

This demo has loaded data into a TeeChart Bar Series as a test exercise. The data plotted in this way generated a simple chart based on Perimeter values for states in the USA. Whilst the exercise has been of interest as a generic exercise, the datasource content itself leads us on to the second exercise which will use the data from the source in a more suitable manner. The data is ESRI shapefile map data and for the second exercise we'll plot it as a map.

Example 2. Connecting TeeChart to a MySQL datasource at runtime

For this part of the exercise we'll use an ESRI shape file to load a world map into TeeChart. TeeChart already has its own map resources so loading this map isn't strictly necessary to be able to view a World Map series, but as the ESRI shapefile format is widely used (see this document for some specification details: https://www.esri.com/library/whitepapers/pdfs/shapefile.pdf) the example may be useful to help you to plot your own shapefile data.

1. Select the TChart component from the Toolbox and drag it onto your form.

2. Select an ODBCAdapter component and an ODBCConnection component and place them on your form. You can use the component wizards to connect to you datasource. For the purpsoses of our exercise it will generate code similar to the following code:

```
// odbcDataAdapter1
//
this.odbcDataAdapter1.SelectCommand = this.odbcSelectCommand1;
this.odbcDataAdapter1.TableMappings.AddRange(new
System.Data.Common.DataTableMapping[] {
            new System.Data.Common.DataTableMapping("Table", "Table", new
System.Data.Common.DataColumnMapping[] {
```

```
          new System.Data.Common.DataColumnMapping("CODE", "CODE"),
          new System.Data.Common.DataColumnMapping("CNTRY_NAME", "CNTRY_NAME"),
          new System.Data.Common.DataColumnMapping("POP_CNTRY", "POP_CNTRY"),
          new System.Data.Common.DataColumnMapping("CURR_TYPE", "CURR_TYPE"),
          new System.Data.Common.DataColumnMapping("CURR_CODE", "CURR_CODE"),
          new System.Data.Common.DataColumnMapping("FIPS", "FIPS")})});
//
// odbcSelectCommand1
//
this.odbcSelectCommand1.CommandText = "SELECT   world.*\r\nFROM       world";
this.odbcSelectCommand1.Connection = this.odbcConnection1;
//
// odbcConnection1
//
this.odbcConnection1.ConnectionString = "Dsn=world_map;uid=flute_16_r;";
```

We have used a test database configured on a MySQL server at db154.pair.com:

Database Name=flute_examples; Username=flute_16_r, Password=P2TXnnjs. We'll be keeping this database active for some time into the future so you can run your test project to it if you like.

3. We're loading the data to the project from an ESRI shape file and using the database to source value-add data such as country names.

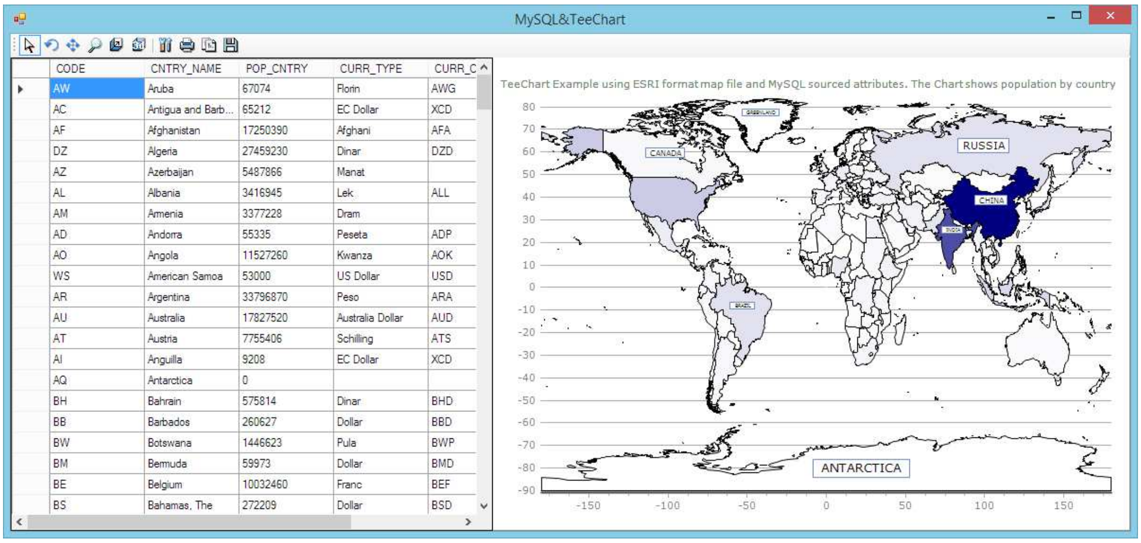
The following code run at form_load time, loads the chart and a datagridview that accompanies the chart on the form.

```
    public Form2()
   {
       InitializeComponent();

       TeeSHP teeSHP = new TeeSHP();
       odbcDataAdapter1.Fill(dataSet1);
       teeSHP.LoadMap(map1,Path.GetFullPath(Path.GetDirectoryName(Application.Exe
       cutablePath) + "..\\..\\..\\Maps\\world.shp"), dataSet1.Tables[0],
       "CNTRY_NAME", "POP_CNTRY", null, null);

      this.dataGridView1.DataSource = dataSet1.Tables[0];
    }
```

You'll see we're using two fields for highlighting in the chart. The map will use the country names (CNTRY_NAME) as label and will use the country population figures (POP_CNTRY) to colourcode each country according to its population ranking.

4. When you run the project you should see the data loading into the chart as a world map with colourcodings to represent the relative population figures by country. We'll activate the Marks by code at form load time to display the country labels on each country.

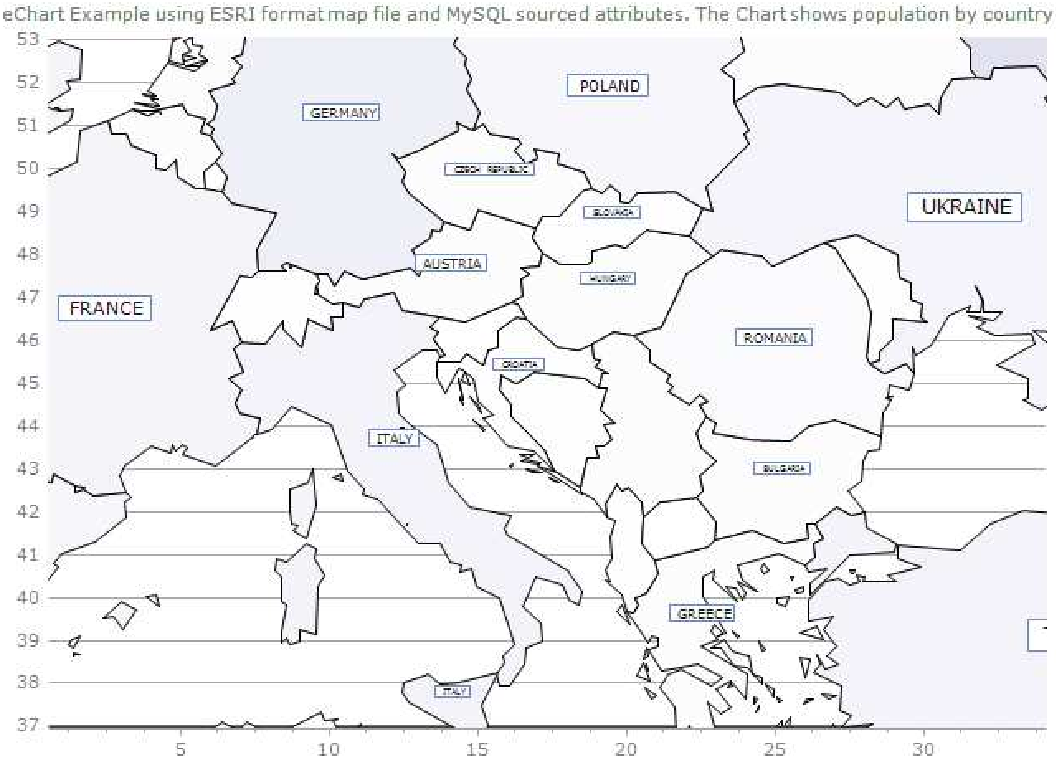
```
    private void Form1_Load(object sender, EventArgs e)
    {
      tChart1[0].Marks.Visible = true;
    }
```



CODE	CNTRY_NAME	POP_CNTRY	CURR_TYPE	CURR_C
AW	Aruba	67074	Florin	AWG
AC	Antigua and Barb...	65212	EC Dollar	XCD
AF	Afghanistan	17250390	Afghani	AFA
DZ	Algeria	27459230	Dinar	DZD
AZ	Azerbaijan	5487866	Manat	
AL	Albania	3416945	Lek	ALL
AM	Armenia	3377228	Dram	
AD	Andorra	55335	Peseta	ADP
AO	Angola	11527260	Kwanza	AOK
WS	American Samoa	53000	US Dollar	USD
AR	Argentina	33796870	Peso	ARA
AU	Australia	17827520	Australia Dollar	AUD
AT	Austria	7755406	Schilling	ATS
AI	Anguilla	9208	EC Dollar	XCD
AQ	Antarctica	0		
BH	Bahrain	575814	Dinar	BHD
BB	Barbados	260627	Dollar	BBD
BW	Botswana	1446623	Pula	BWP
BM	Bermuda	59973	Dollar	BMD
BE	Belgium	10032460	Franc	BEF
BS	Bahamas, The	272209	Dollar	BSD

When running the application you should see the above result. Notice that the country names are not visible on all countries; that's because the label autosizes and if it's considered that the text is too small to read the label isn't plotted. Auto-sizing can be disabled or simply zoom the map over the country to see the label displayed.

Example below:



That's all from the demo project, we hope you may have found it of interest!