

## Lab 5

```
clCityList.cs  X
C# myCity myCity.clCityLi

1  using System;
2  using System.Data;
3  using System.Collections.Generic;
4  using System.Linq;
5  using System.Text;
6  using System.Threading.Tasks;
7  using MySql.Data.MySqlClient;
8
9  namespace myCity
10 {
11     5 references
12     public class clCityList
13     {
14         private string _name;
15         private int _population;
16         private string _countryCode;
17
18         1 reference
19         public string Name
20         {
21             get { return _name; }
22             set { _name = value; }
23         }
24
25         1 reference
26         public int Population
27         {
28             get { return _population; }
29             set { _population = value; }
30         }
31
32         1 reference
33         public string CountryCode
34         {
35             get { return _countryCode; }
36             set { _countryCode = value; }
37         }
38     }
39 }
```

```

0 references
public List<clCityList> GetAll()
{
    List<clCityList> results = new List<clCityList>();

    MySqlConnection con = new MySqlConnection("server=localhost;User Id=root;password=password;database=world");
    MySqlCommand cmd = new MySqlCommand("SELECT Name, Population, CountryCode FROM City;", con);
    using (con)
    {
        con.Open();
        MySqlDataReader reader = cmd.ExecuteReader();

        while (reader.Read())
        {
            clCityList newCity = new clCityList();
            newCity.Name = (string)reader["Name"];
            newCity.Population = (int)reader["Population"];
            newCity.CountryCode = (string)reader["CountryCode"];
            results.Add(newCity);
        }
    }
    con.Close();
    return results;
}

```

This middleware has three parts. The clCityList class has a method GetAll() that creates a list that stores the data incoming from the mySQL database server. The second part is the MySqlDataReader SQL query that runs to retrieve specific data from the city table. We added population into the clCityList.cs and were able to add it as a column to the web based GUI. Third, the DLL file gets built.

```

1>C:\Program Files\Microsoft Visual Studio\2022\Community\MSBuild\Current\Bin\amd64\Microsoft.Common.CurrentVersion.targets(2301,5): warning MSB3277:
1>C:\Program Files\Microsoft Visual Studio\2022\Community\MSBuild\Current\Bin\amd64\Microsoft.Common.CurrentVersion.targets(2301,5): warning MSB3277:
1>C:\Program Files\Microsoft Visual Studio\2022\Community\MSBuild\Current\Bin\amd64\Microsoft.Common.CurrentVersion.targets(2301,5): warning MSB3277:
1>C:\Program Files\Microsoft Visual Studio\2022\Community\MSBuild\Current\Bin\amd64\Microsoft.Common.CurrentVersion.targets(2301,5): warning MSB3277:
1> myCity -> C:\Users\Daniel\Desktop\School\CSI\Spring2022\CSC 430 Software Engineering\labs\lab5\CityList\myCity\myCity\bin\Debug\myCity.dll
***** Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped *****

```

Then it will be linked to the ASPX file which will display the information from the DLL.

```
ShowCity1.aspx  web.config
4
5 <script runat="server">
6
7 </script>
8
9 <html xmlns="http://www.w3.org/1999/xhtml">
10 <head runat="server">
11 <title></title>
12 </head>
13 <body>
14 <form id="form1" runat="server">
15 <div>
16
17 <h3>
18 List of City</h3>
19
20 </div>
21 <asp:GridView ID="GridView1" runat="server" AllowPaging="True"
22 AutoGenerateColumns="False" BackColor="#DEBA84" BorderColor="#DEBA84"
23 BorderStyle="None" BorderWidth="1px" CellPadding="3" CellSpacing="2"
24 DataSourceID="city" PageSize="20">
25 <Columns>
26 <asp:BoundField DataField="Name" HeaderText="Name" SortExpression="Name" />
27 <asp:BoundField DataField="Population" HeaderText="Population" SortExpression="Population" />
28 <asp:BoundField DataField="CountryCode" HeaderText="CountryCode" SortExpression="CountryCode" />
29 </Columns>
30 <FooterStyle BackColor="#ffffff" ForeColor="#8C4510" />
31 <HeaderStyle BackColor="#A55129" Font-Bold="True" ForeColor="White" />
32 <PagerStyle ForeColor="#8C4510" HorizontalAlign="Center" />
33 <RowStyle BackColor="#111111" ForeColor="FFFFFF" />
34 <SelectedRowStyle BackColor="#000045" Font-Bold="True" ForeColor="White" />
35 <SortedAscendingCellStyle BackColor="#FFF1D4" />
36 <SortedAscendingHeaderStyle BackColor="#B95C30" />
37 <SortedDescendingCellStyle BackColor="#F1E5CE" />
38 <SortedDescendingHeaderStyle BackColor="#93451F" />
39 </asp:GridView>
40 <asp:ObjectDataSource ID="city" runat="server" SelectMethod="GetAll" TypeName="myCity.clCityList"></asp:ObjectDataSource>
41 </form>
42 </body>
43 </html>
44
```

The asp element with the “Population” Datafield needed to be added.

This aspx outputted the following into the browser:

## List of City

Name	Population	CountryCode
Kabul	1780000	AFG
Qandahar	237500	AFG
Herat	186800	AFG
Mazar-e-Sharif	127800	AFG
Amsterdam	731200	NLD
Rotterdam	593321	NLD
Haag	440900	NLD
Utrecht	234323	NLD
Eindhoven	201843	NLD
Tilburg	193238	NLD
Groningen	172701	NLD
Breda	160398	NLD
Apeldoorn	153491	NLD
Nijmegen	152463	NLD
Enschede	149544	NLD
Haarlem	148772	NLD
Almere	142465	NLD
Arnhem	138020	NLD
Zaanstad	135621	NLD
Â's-Hertogenbosch	129170	NLD
1 2 3 4 5 6 7 8 9 10 ...		

We also ran it with a modified query showing the top 10 cities with  $\leq 150,000$  population.

```
MySQLCommand cmd = new MySQLCommand("" +  
    "SELECT Name, Population, CountryCode FROM City WHERE population <= 150000 ORDER BY population DESC LIMIT 10;", con)  
using (con)
```

Output for <= 150000 population ordered by population DESC

### **TOP 10 CITIES WITH POPULATION <= 150,000**

<b>Name</b>	<b>Population</b>	<b>CountryCode</b>
Rufisque	150000	SEN
North Dum Dum	149965	IND
Cabo de Santo Agostinho	149964	BRA
Mandi Burewala	149900	PAK
Dijon	149867	FRA
Matsue	149821	JPN
Kawanishi	149794	JPN
Kabankalan	149769	PHL
Neuss	149702	DEU
Baia Mare	149665	ROM