

Creating Charts with the Microsoft Chart Control

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Paul Litwin

- **Developer**

- Focus: ASP.NET, ASP, C#, SQL Server, Reporting Services
- MCSD
- Microsoft MVP
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- *AppDev SQL Server 2005 & 2008 Reporting Services Courses*
- *ASP.NET for Developers*
- *Access Cookbook*
- *Access 2002 Desktop/Enterprise Dev Handbook*

Updated Slides & Samples Download

- You can download them from:
 - www.deeptraining.com/litwin

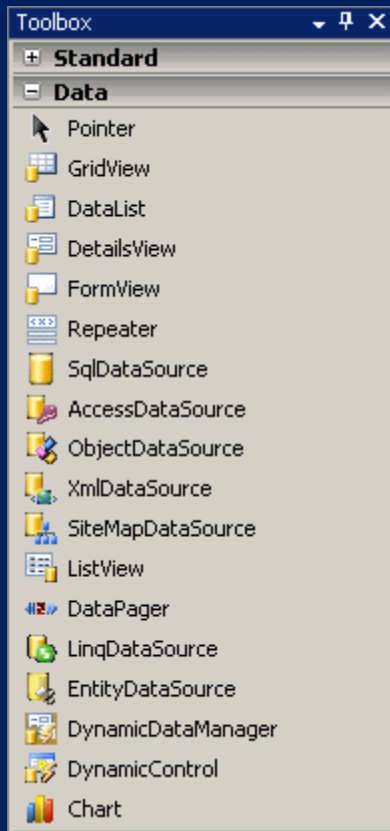
Microsoft Chart Control for ASP.NET 3.5

- Install Visual Studio 2008 SP1 / ASP.NET 3.5
- Download Microsoft Chart Controls for .NET 3.5 from msdn.microsoft.com
 - Use this shortcut
 - <http://tinyurl.com/mschartcontrol35>
- Download Microsoft Chart Control Add-On for Visual Studio 2008
 - Use this shortcut
 - <http://tinyurl.com/mschartcontrol35vs2008>
- You can also download help docs
 - Use this shortcut
 - <http://tinyurl.com/mschartcontrol35docs>

Microsoft Chart Control for ASP.NET 4

- Install Visual Studio 2010
- Automatically included

Using ASP.NET 3.5/4 Chart Controls



- Drag Chart control from Data tab and drop it onto ASP.NET page
- Or add `<asp:Chart runat="server">` element to page

Chart Control Demo #1

StaticChart1.aspx

- Demo of control created with just markup
- Markup for a chart

```
<asp:Chart>
  <Series>
    <asp:Series>
      <Points>
      </Points>
    </asp:Series>
  </Series>
  <ChartArea>
    <asp:ChartArea>
      <AxisX>
      <AxisY>
    </asp:ChartArea>
  </ChartArea>
</asp:Chart>
```

Chart Object Model Basics

- Key pieces of chart object model
 - Series is a child collection of Chart
 - You bind data to series
 - You select the ChartType here as well
 - ChartAreas is a child collection of Chart
 - AxisX and AxisY are children of ChartAreas
 - Titles is a child collection of Chart
 - Legend is a child collection of Chart
- Programming a chart can be a combination of declarative code and procedural code

Chart Control Demo #2

StaticChart2.aspx

- Customizing a chart
 - Modify size
 - Change palette
 - Add a title

Chart Data Binding

- Chart control provides a number of ways to bind data, including...
 - Declaratively bind to DataSource control
 - Manual series population
 - Chart.DataBindTable method
 - Chart.DataSource property
 - Points.DataBind method

Data Binding Technique Comparison

Chart.DataBindTable	<ul style="list-style-type: none"> •Simple binding for X and Y values. •Automatic series creation, based on the number of columns in the data source. 	<ul style="list-style-type: none"> •No multiple Y values per series. •All series have same X value, or it is not set. •No binding for extended chart properties like tooltips.
Chart.DataSource and Chart.DataBind	<ul style="list-style-type: none"> •Can be used at design-time. •Supports multiple Y values. 	<ul style="list-style-type: none"> •No binding for extended chart properties like tooltips.
Points.DataBind(X)Y	<ul style="list-style-type: none"> •Supports multiple data sources, including separate data source for X and Y values. •Supports multiple Y values. •Provides more flexibility than methods above 	<ul style="list-style-type: none"> •No binding for extended chart properties like tooltips.
Points.DataBind	<ul style="list-style-type: none"> •Same as the above, plus: •Supports binding for extended chart properties like tooltips. 	<ul style="list-style-type: none"> •Does not support different data sources for X and Y values of a series.
Chart.DataBindCrossTab	<ul style="list-style-type: none"> •Automatically creates series for each unique value in specified column used to group the data. 	<ul style="list-style-type: none"> •Only single level grouping is supported.

Chart Control Demo #3

DataSourceWizard.aspx

- Use data source wizard

Chart Control Demo #4

ManualBind.aspx

- Using manual series population
- You have a lot of control
- Basic idea
 - Within loop for each row of data, call
 - `chart.Series[i].Points.AddXY(xvalue, yvalue)`

Chart Control Demo #5

DataBindTable.aspx

- Using Chart.DataBindTable method
- Very simple
- Supports only one Y value

Chart Control Demo #6

DataSourceProperty.aspx

- Using Chart.DataSource property
- Allows binding at design time
- Illustrates using 3 series with different chart types for each series
 - Each series added using Series.Add method
- Example also illustrates use of ScaleBreak

Chart Control Demo #7

PointsDataBind.aspx

- Also uses DataSource property
- Using Points.DataBind method
- Supports binding of extended properties
 - E.g., tooltip

Chart Control Demo #8

PointsDataBind2.aspx

- Using Points.DataBind method to create StackedColumn chart
- Notice use of 3 queries

Chart Control Demo #9

AnnotatedChart.aspx

- Adding an Annotation to a chart
- Uses CallOut Annotation that is anchored to point

Chart Types

- Column Charts
- Line Charts
- Shape Charts
- Bar Charts
- Area Charts
- Range Charts
- Scatter Charts
- Polar Charts

Chart Control Demo #10

DynamicChart.aspx

- Creating a dynamically-changing chart using manual series population
- Shows off different chart types
- Shows using 3D style

Chart Coding Tip

- If you can't figure out how to do something from code, try doing it declaratively using Property sheet and that should give you an idea of how accomplish it from code

Charting Tips

- More you understand data you are charting, the more successful you will be in creating informative charts
- Charts work best with numeric data
 - You'll want to make sure your Y-Axis and data fields are numeric
- It's usually best to summarize data before you chart it
 - Most charts will not look good with large amounts of data
- Null, zero, and blank values can cause problems
 - You may want to filter these values out in data source

Resources

- .NET 4 Help
- .NET 3.5 Chart Documentation
 - <http://tinyurl.com/mschartcontrol35docs>
- Samples Environment for Chart Controls (3.5)
 - <http://code.msdn.microsoft.com/mschart>
- Blog Posts (search each blog for Chart)
 - Scott Mitchell: <http://www.4guysfromrolla.com>
 - Scott Guthrie: <http://weblogs.asp.net/scottgu>
 - Alex Gorev: <http://blogs.msdn.com/alexgor>
 - Dan Wahlin: <http://weblogs.asp.net/dwahlin>

Thank You!

- Contact: paul@deeptesting.com
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