

# AFR302: Bring Charting to Your ASP.NET Sites with the Chart Control

Paul Litwin

Fred Hutchinson Cancer Research Center /  
Deep Training

[paul@deeptesting.com](mailto:paul@deeptesting.com)

[twitter.com/plitwin](https://twitter.com/plitwin)



# Paul Litwin

- **Developer**

- Focus: ASP.NET, ASP, C#, SQL Server, Reporting Services
- MCSD
- Microsoft MVP
- Programmer Manger with Fred Hutchinson Cancer Research Center (Seattle)

- **Co-Founder and Senior Trainer**

- Deep Training
  - [www.deeptraining.com](http://www.deeptraining.com)

- **Conference Chair/Speaker**

- Chair, Microsoft ASP.NET Connections
- Member INETA Speakers Bureau

- **Author of over a dozen books & courses, including...**

- *AppDev SQL Server 2005 & 2008 Reporting Services Courses*
- *ASP.NET for Developers*
- *Access Cookbook*
- *Access 2002 Desktop/Enterprise Dev Handbook*



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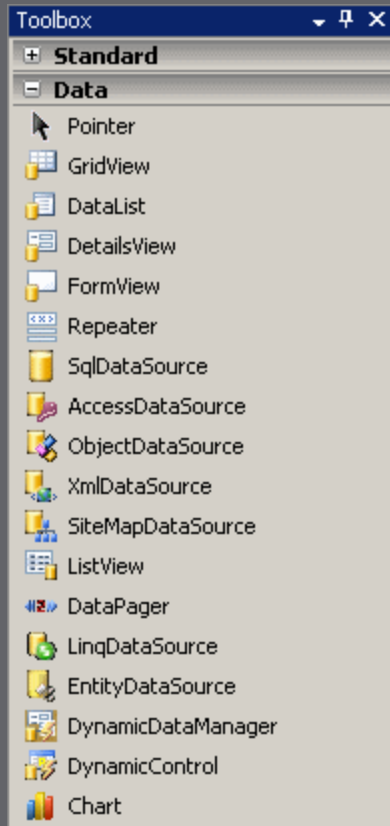
# Microsoft Chart Control for ASP.NET 3.5

- Install Visual Studio 2008 SP1 / ASP.NET 3.5
- Download Microsoft Chart Controls for .NET 3.5 from [msdn.microsoft.com](http://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
    - Can be used at design time
  - Manual series population
    - Can control individual points
  - Chart.DataBindTable method
    - Simple set-oriented binding
  - Chart.DataSource property
    - Similar to binding other data-bound controls
  - Points.DataBind method
    - Set-oriented; supports multiple data sources

# 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 Control Demo #11

## DrillDownFrom.aspx & DrillDownTo.aspx

- Drilling down from one chart to another
- Example uses Url property of datapoint to embed hyperlink

# 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>
    - Includes post on using Chart control in ASP.NET MVC apps
  - Scott Guthrie: <http://weblogs.asp.net/scottgu>
  - Alex Gorev: <http://blogs.msdn.com/alexgor>

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