

Cross Platform Charting

Brian Becker (16 August 2018)



Overview

- Examine two cross-platform charting options available with Dyalog APL
 - SharpPlot
 - Available since 2005 (its roots date back much earlier to RainPro)
 - Originally developed by Adrian Smith
 - As a .NET assembly with an APL interface
 - Nicolas Delcros took over development in 2014
 - Produced a version that can run on other platforms
 - Syncfusion Essential JavaScript I
 - Available with MiServer since 2013
 - WC2 interface
 - Runs under HTMLRenderer and/or MiServer

Cross-Platform

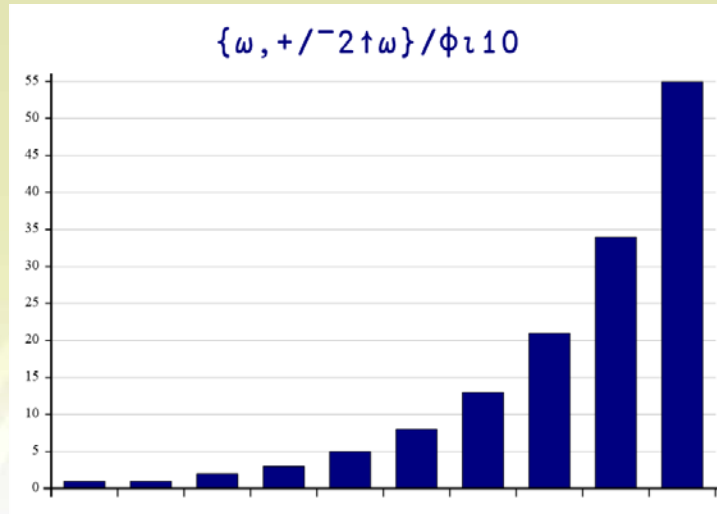
- Cross-Platform = any platform where Dyalog runs
 - Windows, macOS, Linux, AIX
- Cross-Platform may be important to you if you...
 - develop on a platform other than Windows
 - develop on Windows but deploy elsewhere
 - distribute a product to run on multiple platforms
 - want to provide an interface on the net
- Same code on all platforms
 - Write once, run everywhere

Charting

- Data visualization

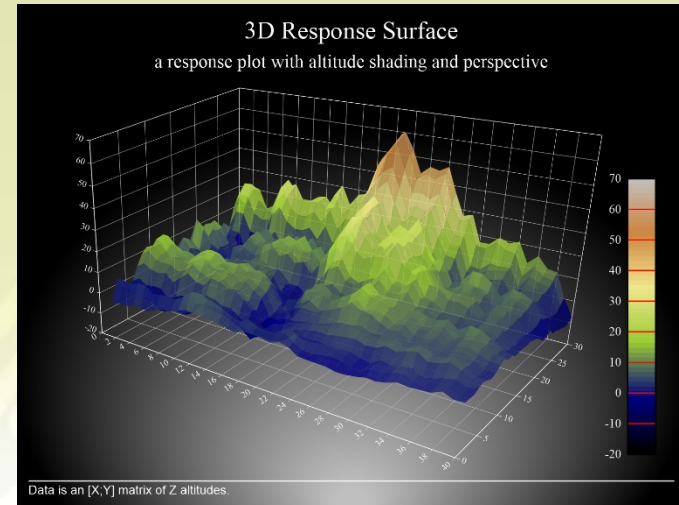
Charting

- Data visualization



Charting

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Charting

- Data visualization
- How is it going to be used?
 - Interactive?
 - Dynamically generated?
 - Animated on generation?
 - Responsive to user interaction?
 - Static?
 - Print or electronic publication (e.g. PDF)?

Today's Goals

➤ Goals

- Make you aware of the "off-the-shelf" options available with Dyalog
- Supply enough information for you to start exploring


➤ Non-goals

- Teach you the details of SharpPlot or Syncfusion
 - Either could easily fill a full day workshop (or more)
- Recommend one solution or the other
 - It really depends on your needs

Environment

- Today's demonstrations will be
 - Geared toward interactive use, not static publication
 - Using MiServer and WC2
 - WC2 is a Dyalog framework for generating HTML/CSS/JavaScript
 - Later this year WC2 will be split out on its own to provide a common framework for delivering desktop applications using HTMLRender and networked applications using MiServer

A tale of two pies...

- Develop 2 similar pie charts under each of SharpPlot and Syncfusion
 - Start simple
 - Build a page
 - Add a minimal chart
 - Render
 - Enhance
- 

Demo Time

➤ Demo Pies



SharpPlot

- Windows users have an advantage when using SharpPlot
 - The Chart Wizard provides an interactive chart designer (the resulting code will run on any platform)
 - The SharpPlot engine is compiled into C# and renders some charts significantly faster
- SharpPlot generates output in a variety of standard format
 - SVG, PDF, PostScript
 - These can be used on other platforms or incorporated into documents
- Our approach for today is to generate SVG which can be
 - rendered by HTMLRenderer (locally)
 - rendered by MiServer (network)
 - saved as a file and then included in an HTML page or document

Demo Time

- Demo SharpPlot and Chart Wizard

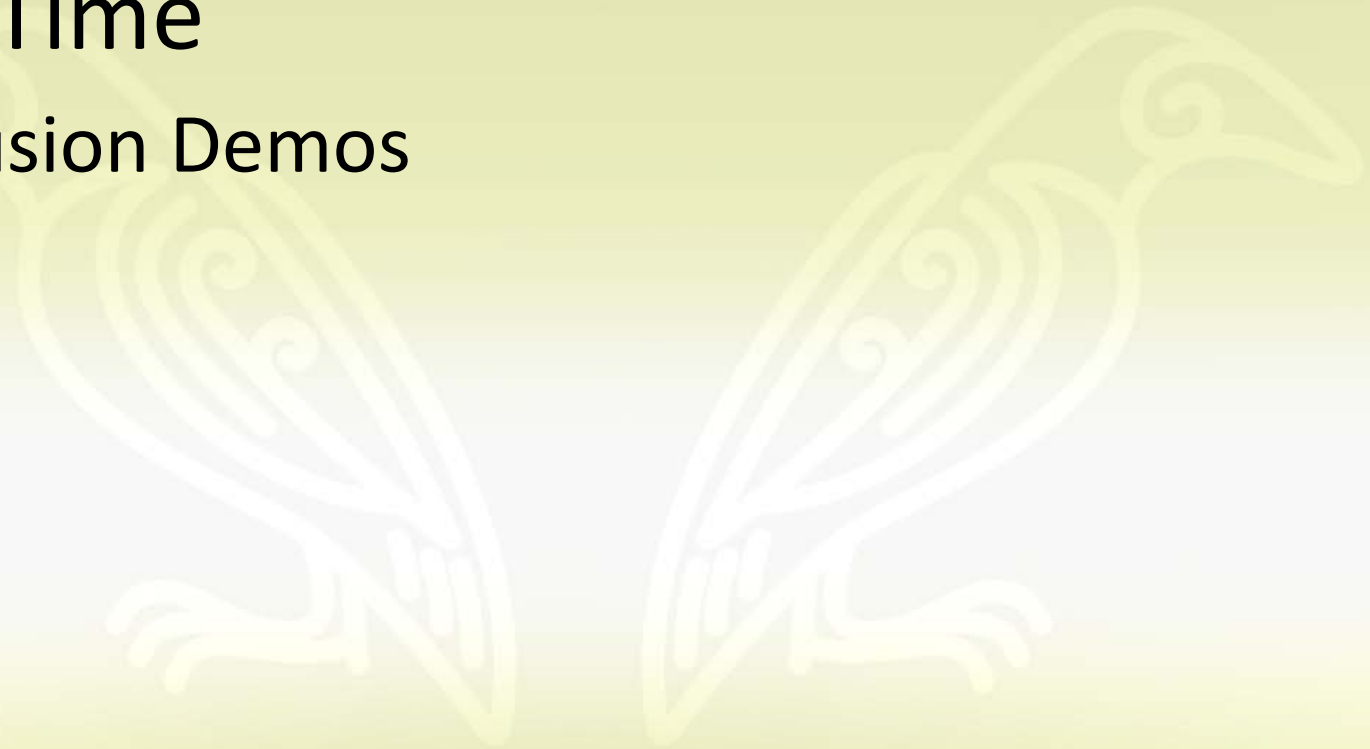


C#	APL (WC2)
SharpPlot sp = new SharpPlot()	sp←NEW Causeway.SharpPlot
sp.Heading="Hi!"	sp.Heading←'Hi!'
sp.KeyStyles=KeyStyles.Center KeyStyles.Bottom	sp.KeyStyles←Causeway.KeyStyles.(Center+Bottom)
sp.DrawPieChart(data pie)	sp.DrawPieChart(data pie)
sp.SetKeyText(key)	sp.SetKeyText ←key

SharpPlot C#/APL Syntax

Demo Time

- Syncfusion Demos



Language	Syntax
JavaScript	<pre>series: [{ marker: { datalabel: { visible: true, shape: 'none' } } }]</pre>
APL/WC2	<pre>'series[1].marker.datalabel.(visible shape)' myChart.Set _true 'none'</pre>

Syncfusion JavaScript/APL Syntax

Chart Variety

➤ SharpPlot

- 23 chart types (3 are 3D)

➤ Syncfusion

- 28 chart types (8 can be 3D)
- 16 other data visualization controls
some of which correspond to SharpPlot
chart types

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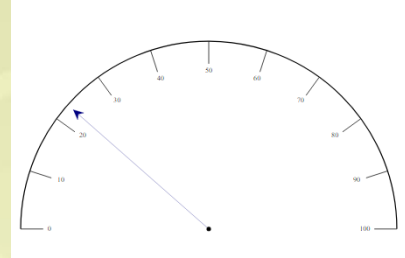


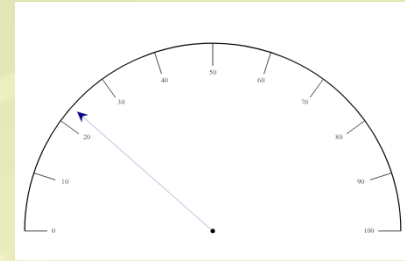
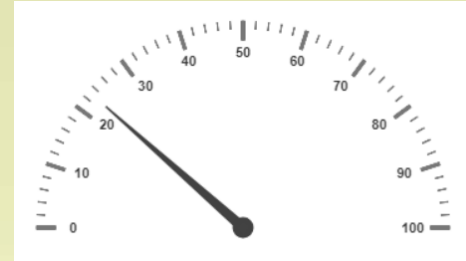
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SharpPlot Resources

- <https://www.sharpplot.com>
- Tutorials, Chart Samples, and Reference
- Examples are in C#
 - Translating to APL is straightforward
- Chart Wizard (Windows only)

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- Chart Wizard (Windows only) (for now)

Syncfusion Resources

- <https://help.syncfusion.com/js> – API reference
- Extensive demos with use cases -
<http://js.syncfusion.com/demos/web/>
- Examples are in JavaScript
 - Translation to APL is straightforward
- WC2 examples - <https://miserver.dyalog.com>

Interactivity and Layout

➤ SharpPlot

- Interactive, not animated
- Extensive layout control
- Part of Dyalog (nothing to download)
- Can be run standalone and generate output for publication

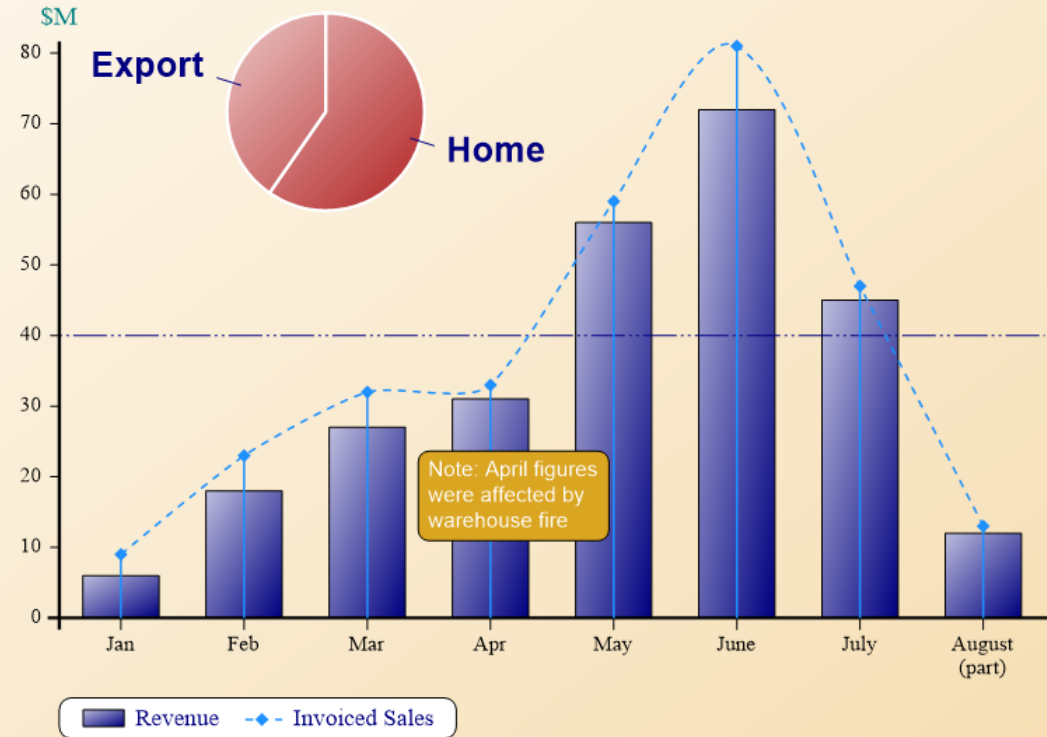
➤ Syncfusion

- Interactivity on many charts
- Themed styling, Localization
- Layout control is good
- Part of MiServer/WC2 (needs to be downloaded)

In



Financial Summary for Current Year



Application

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In Conclusion

- Both SharpPlot and Syncfusion are capable of
 - producing a wide variety of quality, highly customizable, charts
 - animation and interaction with the user
- SharpPlot is good
 - For print or publication media (doesn't need a web server framework)
 - If you need fine control over layout
- Syncfusion is good
 - For web dashboards and applications
- It's not an either/or choice
 - You can use both!

Thank you!

- Follow up sessions?
 - Email: brian@dyalog.com
- Questions?

Upcoming Webinars

Please suggest topics for webinars and web casts!

- September 20th:
 - Jupyter Notebooks (Adám Brudzewsky)
- There will not be an October webinar.
 - We'll be at Dyalog'18 in Belfast! 😊
 - Some presentations will be streamed live. Video recordings of presentations will be online in the weeks following.