What is RainPro?

- Charting package in APL
  - APL scripts generating charts from data
  - Output: Raster, Vector, Web, GUI

- Philosophy
  - Publication-quality output (PostScript)
  - Maximising data readability
  - Avoiding fashionable spurious decorations
  - Have a good set of defaults
What is SharpPlot?

• APL-to-C# machine-translation of RainPro
  – Functionally equivalent
  – Compilation performance
  – .Net portability
  – .Net graphics quality
  – Clarity (code + doc refactoring)
  – Stability (out-of-workspace processing)
Aero sample in RainPro
Aero sample in SharpPlot

Paper Aeroplane Flight Data
Illustrates flexcurve with flexibility=2.5 and least-squares fit to parabola (order=2)

Data from Bootham School, York
How to use it?

- **PostScript-oriented state machine**

  - **Set Frame**
    ```apl```
    USING←',sharpplot.dll',system.drawing.dll'
    sp←NEW Causeway.SharpPlot (800 600)
    ```apl```

  - **Set Parameters**
    ```apl```
    sp.Heading←'My Chart'
    sp.LineGraphStyle←Causeway.LineGraphStyles.GridLines
    ```apl```

  - **Draw**
    ```apl```
    sp.DrawLineGraph ⊂(+\−40+?100p100)
    ```apl```

  - **Output**
    ```apl```
    sp.SaveImage 'C:\mychart.png'
How to use it?
Chart Types : 1-d

- Pie
- Dial
Chart Types : 2-d

- Line
- Trace
- Scatter
- Bar
Chart Types : Specific 2-d

- MinMax
- Step
- Vectors
- Polar
Chart Types: Statistical

- Histogram
- Box & Whiskers
Chart Types : 3d

- Tower
- Cloud
- Response Surface
Chart Types: Readable 3d

- Bubble
- Contour
Chart Types: Misc

- Gantt

- Triangle

- Table

- Venn diagram
Multiple Charts

- Re-used/multiple axes
- Multiple frames
- Trellis
- Nested charts
Multiple Charts

Temperature

Water

Wind

Polar Wind

Latitude = 26.31; Longitude = -80.12
Chart Wizard (v14.0)

- Graphical data explorer
- SharpPlot script generator
- NOT a full wrapper of SharpPlot
- Example:
  
  ```apl
  key←'Angle' 'Sine' 'Cosine'
data←key,{⍵⍪1 2×.○⍵}○2×(0,⍳100)÷100
  ```
Come to the workshop!

- More Chart Wizard examples
- SharpPlot in depth
- SharpRain (migration from RainPro)
- Exercises with internet data
- Whatever you want
Interesting links

- http://conference.dyalog.com → TP03
- www.sharpplot.com
- www.findicator.fi