

# Plotchart

Arjen Markus

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# Design goals

- Easy to use: just a few commands for a plot
- Wide range of plot and chart types
- Extendable

Its predecessor: `emu_graph` by Steve Cassidy

# Design decisions

- Use the whole canvas
- Fix the layout
- Simple form of clipping
- Do *not* manage the data (duplication)
- Changing the appearance takes effect for new data only

# Interface

- Create the plot of the chosen type – new command
- Fill in the data via subcommands
- Details differ per plot type

# Implementation

Some code – linking method names to procedures:

```
set methodProc(xyplot,title)           DrawTitle
set methodProc(xyplot,xtext)          DrawXtext
set methodProc(xyplot,plot)           DrawData
set methodProc(xyplot,dot)            DrawDot
set methodProc(xyplot,dotconfig)      DotConfigure
set methodProc(xyplot,interval)       DrawInterval
set methodProc(xyplot,trend)          DrawTrendLine
set methodProc(piechart,plot)         DrawPie
set methodProc(piechart,saveplot)     SavePlot
```

# Implementation – part 2

```
proc ::Plotchart::createPiechart { w } {
    variable data_series

    foreach s [array names data_series "$w,*"] {
        unset data_series($s)
    }

    set newchart "piechart_$w"
    interp alias {} $newchart {} ::Plotchart::PlotHandler piechart $w
    CopyConfig piechart $w

    foreach {pxmin pymin pxmax pymax} [MarginsCircle $w] {break}

    viewport $w $pxmin $pymin $pxmax $pymax
    $w create oval $pxmin $pymin $pxmax $pymax

    SetColours $w blue lightblue green yellow orange red magenta brown
    DefaultLegend $w
    DefaultBalloon $w

    return $newchart
}
```

# Implementation – part 3

```
proc ::Plotchart::PlotHandler { type w command args } {  
    variable methodProc  
    if { [info exists methodProc($type,$command)] } {  
        eval $methodProc($type,$command) $w $args  
    } else {  
        return -code error "No such method - $command"  
    }  
}
```

# Implementation: contributions

Many people have contributed with code or suggestions:

Mark Stucky, Stefan Finzel, Paul Vogel, Dave Hanks, Michael Baudin, Steve Blinkhorn, ...

Jos DeCoster has developed xyplot on top of Plotchart



# Currently supported types

- XY-plots (also logarithmic axes)
- Contour plots (2D and 3D)
- Histograms and piecharts
- Time charts and Gantt charts
- Radial charts

Also:

- various types of annotation
- Combining plots in one canvas

# Demos

- A few examples of Plotchart itself
- Jos DeCoster's xyplot
- Experimental: SCADA display