Parallel Coordinates Plots Made Easy

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Abstract

A parallel coordinates plot is useful for visualizing multivariate data. Unfortunately, there isn't a PARALLEL statement in SGPLOT. In this paper we present a macro called `%parallel`. Using a minimum of parameters `(data=, var=, group=)` the macro will produce a parallel coordinates plot via SGPLOT.

Background

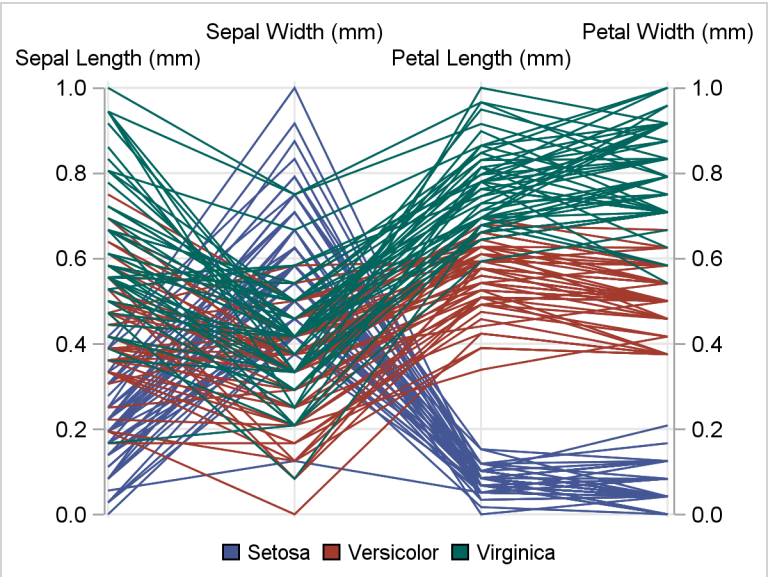
Producing a parallel coordinates plot in SAS is not straightforward. There definitely isn't a PARALLEL statement in SGPLOT. The best approach I could find online was from SAS author Prashant Hebbar in his paper from SGF 2012 (Off the Beaten Path: Creating Unusual Graphs with GTL). The outlined process certainly works, but it's written for readability and not for flexibility or scalability. I decided to experiment to see if was possible to generate a parallel coordinates plot using more flexible and scalable code. The result of this experiment is a macro called `%parallel` which is capable of producing a parallel coordinates plot with a minimum of parameters.

Macro Basics

A basic call to `%parallel` looks like this:

```
%parallel
   (data=sashelp.iris
   ,var=sepallength sepalwidth petallength petalwidth
   ,group=species
   );
```

Figure 1: Parallel Coordinates Plot for Fisher's Iris Data



The required parameters are `data=` and `var=`.

Parameter	Description
`data=`	Input dataset. Required.
`var=`	Space-separated list of variables to plot. Required.

The optional parameters that are likely to be of most interest are `group=` and `axistype=`.

Parameter	Description
`group=`	Grouping variable. Optional.
`axistype=`	Type of yaxis to create. Optional. Valid values: `percentiles | datavalues`.

Using `axistype=datavalues` changes the yaxis of the previous output as follows:

```
%parallel
   (data=sashelp.iris
   ,var=sepallength sepalwidth petallength petalwidth
   ,group=species
   ,axistype=datavalues
   );
```

Figure 2: Parallel Coordinates Plot Using Data Values