Background

To create a graph in SAS®, a programmer has different options at hand. They may use procedures such as PROC SGPLOT, PROC SG PANEL or PROC SG SCATTER or they may opt for the more adaptable graph template language (GTL). Within SAS®, it is possible to create graphs with different layouts including various types of plots. Furthermore, special attributes like the legend, titles or the labels of the axes can be embedded into the graphs. However, to create more complicated graphs, it is worth considering the use of the combination of PROC TEMPLATE and PROC SGRENDER, belonging to the GTL. With this language, it is far more effective to create a graph just the way the programmer would like and it can simplify the programming of a good graph in SAS®. However, the syntax of this language is often quite complex. The programmer should therefore be able to assess in which situations it is worth to use the GTL.

SAS® graph procedures

Graph template language (GTL)

Create a template -> PROC TEMPLATE

- DEFINE STATGRAPH: Choose the name of your template
- DYNAMIC: Define one or more dynamic variables
- BEGINGRAPH: Start to specify your graph:
  - ENTRYTITLE: Define the title of your graph
  - DISCRETEATTRMAP: Define different attributes of your graph
  - LAYOUT/ENDLAYOUT: Choose the layout of your graph
  - LAYOUT OVERLAY: Display a 2D plot in a single cell
  - LAYOUT GRIDDED: Display several independent plots in a multi-cell layout
  - LAYOUT LATTICE: Display several plots in a multi-cell layout across different ROWS and COLUMNS with chosen ROW WEIGHTS and COLUMN WEIGHTS
  - Define the attributes of your ROWAXES and COLUMNAXES
  - Define plot statements within the layout statement
  - Add a DISCRETELEGEND or a MERGEDLEGEND to your plot(s)
  - If necessary, define further nested layout statements
  - New in SAS® 9.4: If desired, add an ANNOTATE statement to include annotation objects into the graph
  - ENDGRAPH: End the specification of the graph
- END: End the creation of the template

Generate the figure -> PROC SGRENDER

- Choose the template and the dataset that contains the plot variables
- New in SAS® 9.4: Specify SGANNO, to embed an annotation dataset into the graph
- Define DYNAMIC variables if necessary

References:

- SAS® procedures can be used for programming simple graphs
- GTL has a complex syntax
- GTL is more adaptable than SAS® graph procedures
- Templates can be used to produce the same output from different datasets