

VIEWS

International SAS Programmer Community



News, Hints, Tips and Information
for SAS® Users

Issue 80, 3rd/4th Quarter 2025

This newsletter is the home of Foundation SAS and brings you information about making the most of SAS 9 and Altair SLC. This bumper issue includes articles from this year's August and November issues, which have been combined due to holidays and illness, after my retirement in April 2025, delayed publication until now. This newsletter issue includes 2 articles from LeRoy Bessler about improving time series or trend graphs and vertical bar charts, and I have contributed a Workflow tip from an upcoming book about Altair SLC. My 2nd Editions of my "SAS Programming Experiences" and "Altair SLC" paperbacks are now available on Amazon and other resellers, but please read my article to get copies at the best available prices. As usual I have publicised some SAS-related events for the next few months, and I have also added some more SAS formats, options and functions that you may or may not have come across before, but you might find interesting, and even useful.

If you would like to contribute an article, to re-visit and improve an existing article, or just discuss the possibility of doing so, please feel free to send an email to me at views-uk@hollandnumerics.org.uk.

Philip R Holland (Newsletter Editor)

Membership of VIEWS is free and you can register for notification of all future VIEWS News issues by registering at blog.hollandnumerics.org.uk, and then emailing views-uk@hollandnumerics.org.uk, or using the blog site menu, to request access to the VIEWS UK forum. Members will receive an email notification whenever a new issue of the free quarterly VIEWS News is published on the web site, please inform us when you change your email address, otherwise your registration may be cancelled.

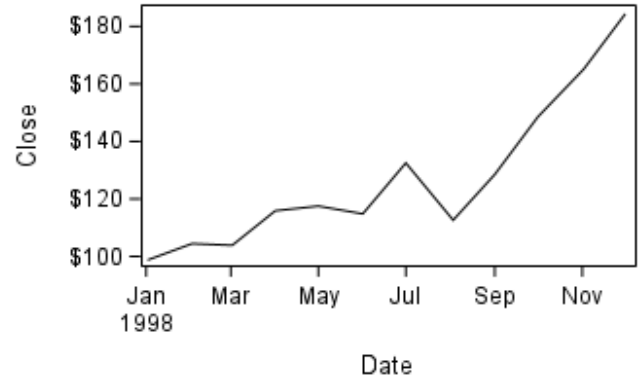
Ask The Consultant

This part of VIEWS News is where you can get your technical questions answered. Send your questions to the Editor.

What is the simplest way to present a time series or trend in full?

I am going to show you coding that is somewhat complicated. To put it in a fair context, let me first show you the under-informative EASY alternative. The only non-default coding was to size the TITLE to avoid a line break and wrapped text, and inclusion of the example's self-evaluating FOOTNOTE. Of course, that's really MY evaluation of the image.

1998 Monthly First Trading Day Close Price of IBM Shares

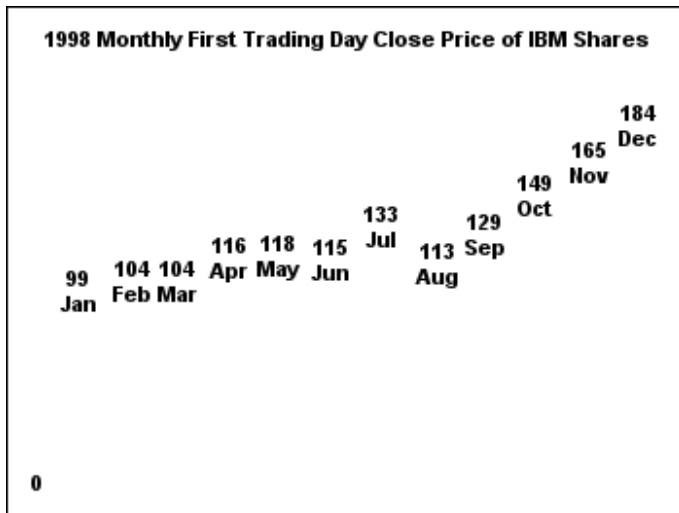


UNSATISFACTORY

I concede that this is NOT totally useless. And I could spend time and space on progressive stepwise improvements, but let's get to the best result. More tick mark values would obviously help, but the precise Y values would NEVER be actually knowable. We don't really NEED tick mark values at all, to facilitate unwise guessing what the Y values MIGHT be.

Direct annotation of the Y values is ALWAYS the better solution, but the problem with any FULL annotation of a trend line is the possibility of collisions between the annotation and the line. Collisions between annotation and marker (plot symbol) are less likely since the PROC SGPLOT annotation algorithm does its best to avoid that. When I was working on examples of time series plots for my book *Visual Data Insights Using SAS ODS Graphics: A Guide to Communication-Effective Data Visualization*, I was experimenting with ways to minimise collisions between annotation and line. I could have tried the minimum line width and a very faint line colour. Instead I decided to plot the markers, but make the line colour white. When I looked at that result, I realised that I DID NOT REALLY NEED the markers either. That is what inspired the example below.

For these images, because my ODS GRAPHICS statement includes no value for HEIGHT, the image height is 0.75 times the value of WIDTH. To fit more than one year of months without label collisions at a readable point size for the text would require a wider image than this column width of 3.65 inches can accommodate. I did verify that, for example, five years of this data could be plotted with a 7pt Arial Bold font without collisions in a 13.33 inches BY 7.5 inches image, which is the size of a wide screen slide. It IS a tight fit, and if the Close values were four digits (requiring a comma5. format), there would probably be collisions between some label pairs. That Full Annotation design would be best suited for ranges up to 3 or 4 years.



This image, without the customary plot line and plot markers, IS everything that the viewer needs to know and see about the data. The chain of annotations IS the trend. It is a “virtual” trend line, but the viewer does not need special VR goggles to see it.

The plot includes the display of the Y=0 point, to reassure the viewer that the whole plot is really there and that the changing slope of the invisible line is a fair representation of the time series behaviour.

Like so many value-added data graphic examples, some pre-processing is required.

First, to customise text characteristics in one fell swoop, let's use a macro to create a custom ODS style that can control all of any graph's text. Overrides by using the text characteristics controls for XAXIS, YAXIS, TITLE, and TEXT statements are nevertheless possible. This macro and the simple addition of STYLE= to your ODS destination statement (here, ODS LISTING) is always a coding time saver. Your custom style is permanently saved in your SASUSER.TEMPLAT catalog. Run the macro once for all of the font sizes that you are likely to use, and for your preferred font “family”. There is no benefit in NOT using the macro default Weight=Bold. Bold never impairs readability, unless one is averse to more easily SEEING text.

```
%MACRO AllGraphTextSetup(Size, Family=Arial,
                          Weight=Bold);
  %LET FamilyForStyle =
    %SYSFUNC(COMPRESS(&Family, ' '));
  PROC TEMPLATE;
    DEFINE STYLE
      GraphFont&FamilyForStyle.&Size.pt&Weight;
      PARENT=STYLES.LISTING;
      CLASS GRAPHFONTS /
        'GRAPHVALUEFONT' = ("&Family", &Size.pt, &Weight)
        'GRAPHLABELFONT' = ("&Family", &Size.pt, &Weight)
        'GRAPHDATAFONT' = ("&Family", &Size.pt, &Weight)
        'GRAPHTITLEFONT' = ("&Family", &Size.pt, &Weight)
        'GRAPHFOOTNOTEFONT' =
          ("&Family", &Size.pt, &Weight);
    END;
  RUN;
%MEND AllGraphTextSetup;

%AllGraphTextSetup(8);

/* Find this message in your SAS log:
NOTE: STYLE 'GraphFontArial8ptBold' has been
saved to: SASUSER.TEMPLAT */
```

```
DATA WORK.IBM1998Close;
  RETAIN MaxClose 0;
  SET SASHELP.STOCKS END=LastOne;
  WHERE YEAR(Date) EQ 1998 AND Stock EQ 'IBM';
  OUTPUT;
  MaxClose = MAX(MaxClose, Close);
  IF LastOne;
  CALL SYMPUT('MaxClose_1998', MaxClose);
RUN;

DATA work.IBM1998CloseAndDataLabels;
  KEEP Date Close DataLabelForYandX;
  LENGTH DataLabelForYandX $7;
  SET work.IBM1998Close;
  DataLabelForYandX = PUT(Close, 3.) || ','
    || PUT(Date, MONNAME3.);
RUN;

ODS RESULTS OFF;
ODS ALL CLOSE;
ODS LISTING STYLE=GraphFontArial8ptBold
  GPATH="C:\TEMP";
ODS GRAPHICS ON / RESET=ALL
  SCALE=OFF WIDTH=3.65in
  IMAGENAME="IBMMonthlyFirstTradingClose1998";

TITLE1 JUSTIFY=CENTER
  '1998 Monthly First Trading Day Close Price of
  IBM Shares';
TITLE2 COLOR=WHITE 'white space';

PROC SGPLOT DATA=WORK.IBM1998CloseAndDataLabels
  NOBORDER;
  WHERE YEAR(Date) EQ 1998;
  TEXT X=Date Y=Close TEXT=DataLabelForYandX
    / CONTRIBUTEOFFSETS=(XMIN XMAX YMAX)
  /* The purpose of the offsets is to protect
  displayed values that are near the ends of the X
  axis from being clipped. YMIN would needlessly
  raise the 0 value, and would vertically compress
  the plot. */
  SPLITCHAR=',' SPLITJUSTIFY=CENTER
  SPLITPOLICY=SPLITALWAYS;
  /* If SPLITPOLICY=SPLITALWAYS is omitted, the
  TEXT values are presented concatenated,
  rather than stacked, with collisions for many
  pairs of labels. */
  YAXIS DISPLAY=(NOLINE NOTICKS NOLABEL)
  VALUES=(0 &MaxClose_1998.)
  VALUESDISPLAY=("0" " ");
  XAXIS DISPLAY=NONE;
  FORMAT Date MONNAME3. CLOSE 3.;
RUN;

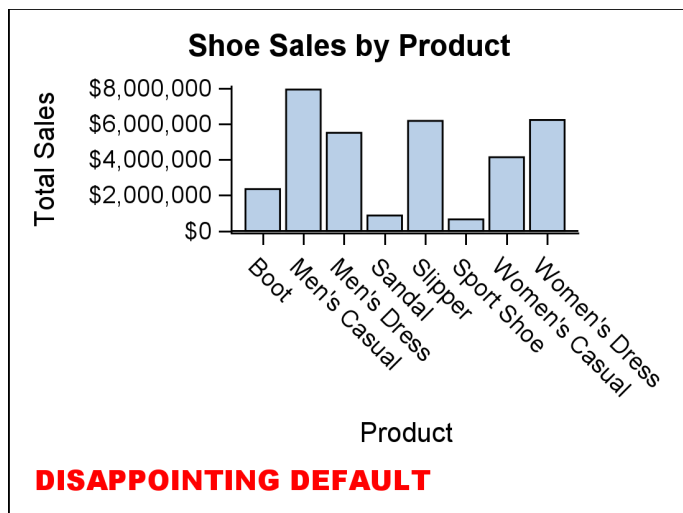
ODS LISTING CLOSE;
TITLE; FOOTNOTE;
```

The data-specific code above could be revised and adapted for a general-purpose macro. If you take that on and have any problem or question, an email to me will get a reply. The macro itself would be more complicated, but once it has been written, it would be a time saver. If you do it, please share it here in a future issue of VIEWS News.

LeRoy Bessler, Bessler Consulting and Research

What is a satisfactory alternative vertical bar chart?

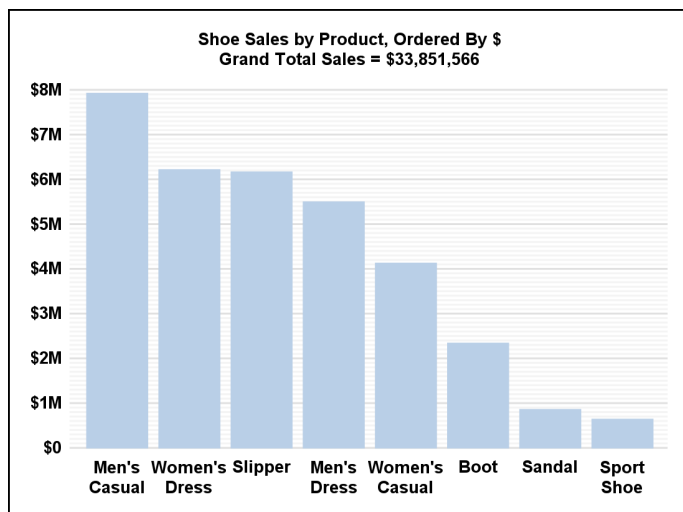
I have shown you a time series plot with no line and no markers. Now, analogously I will show how a bar chart with no bars can be a satisfactory alternative to a bar chart WITH bars.



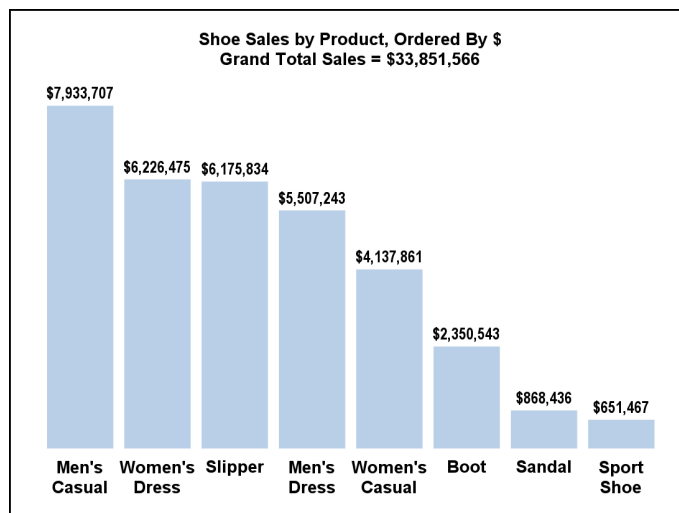
Let's look at a reasonable minimum best effort to improve this from the standpoint of knowing approximately what the sales values MIGHT be. In any case, two of my universally applicable rules for graphs of categorical data are:

(A) Rank the response (high to low [when higher is better], or low to high [when lower is better]). Show them what's important.

(B) List the Grand Total response in TITLE1 or TITLE2. Put each response value in context.



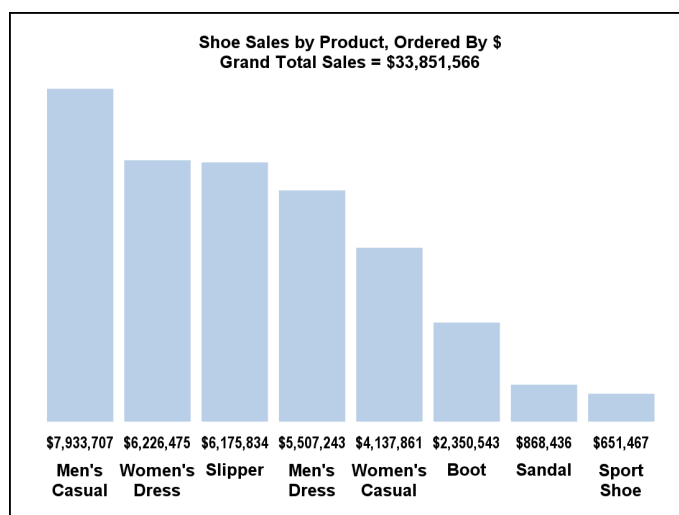
Since a grid is only an aid to estimating better, let's annotate the bars with the response values instead.



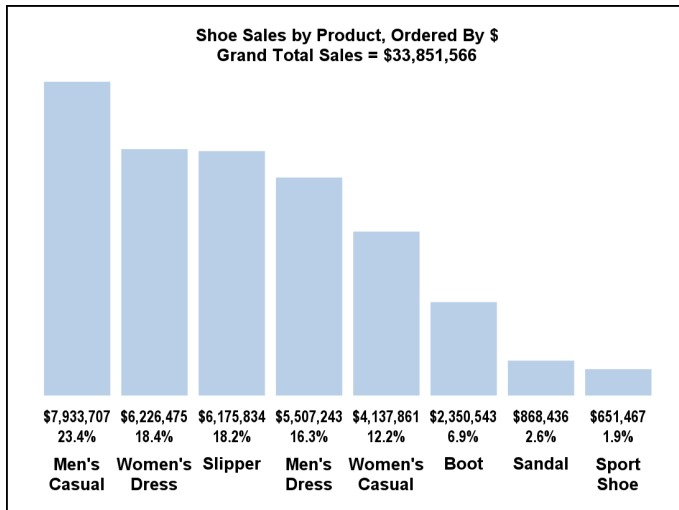
The data labels at the top of the bars are rendered with the Arial Narrow font with the same font size as the remaining Arial text.

Those data labels, if Arial, would be drawn vertically up from the bar tops. I do not read with my head tipped sideways at 90 degrees.

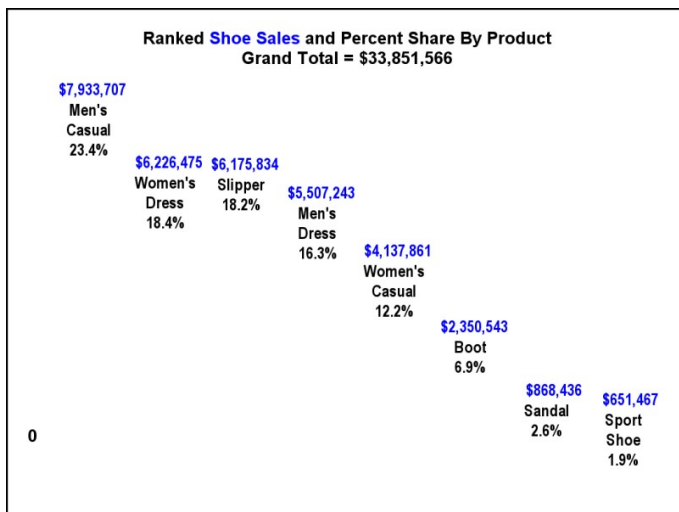
Data labels at the top of bars is the default position. An easy courtesy to provide your viewer is to display them at the bottom of the bars. Then category and response value are in immediate association. One looks at the bars and their heights only for visual comparison, not for precise knowledge.



Besides Grand Total response in a title or subtitle, as context, each category's response as Percent of Grand Total is a sharper indicator of context. A pair of X axis tables provides both response and percent.



Having all three of the key data elements for a chart of categorical data in immediate association as shown above inspired me to **use them stand-alone** as a surrogate for the bar ends. Here is my vertical bar chart without bars.



The bar ends, if drawn, would be halfway between the response value and the first (or only) line of the category and percent values. Here, the percent value in the category-percent string drops into the body of the bar. If the width of this newsletter column were wide enough, a much better version of this chart would display the un-split value of the category and percent on one line. The undrawn bar end would be in the middle of only two lines of information.

This image, without the customary bars, IS everything that the viewer needs to know and see about the data, and it does show how the categories compare.

One of the most important of the design principles for communication-effective data visualisation is:

Deliver Visual AND Precise Numbers: Visual for quick easy inference plus Precise Numbers for reliable accurate inference.

Visual - For Impression:

1. Immediate
2. Easy
3. Memorable ("Sticky")

Precise Numbers - For Knowledge:

1. Clear
2. Certain
3. Correct ("The Right Answer")

In the bar chart without bars, the precise numbers (and category value) ARE the visual.

The plot includes the display of the Y=0 point, to reassure the viewer that the whole chart is really there and it is a fair comparison of the categories.

Below is the code for the chart with two X axis tables and for the bar chart without bars. Use whichever solution you prefer. Both deliver everything needed and are equally communication-effective.

```
PROC SUMMARY DATA=sashelp.shoes;
  CLASS Product;
  VAR Sales;
  OUTPUT OUT=work.AllTotals SUM=Sales;
RUN;

DATA work.ToChart;
  LENGTH ProductAndPercent $21;
  RETAIN GrandTotal 0 MaxSales 0;
  SET work.AllTotals END=LastOne;
  IF _TYPE_ EQ 0 THEN DO;
    GrandTotal = Sales;
    CALL SYMPUT('GrandTotal',
      PUT(GrandTotal, DOLLAR11.));
  END;
  ELSE DO;
    MaxSales = MAX(Sales, MaxSales);
    IF LastOne
      THEN CALL SYMPUT('MaxSales', MaxSales);
    ProductAndPercent = TRIM(LEFT(Product))
      || ' ' ||
      PUT(((Sales / GrandTotal) * 100), 4.1)
      || '%';
    OUTPUT;
  END;
RUN;

ODS RESULTS OFF;
ODS _ALL_ CLOSE;
ODS LISTING GPATH="C:\temp" DPI=300;
ODS GRAPHICS ON /
  RESET=ALL SCALE=OFF WIDTH=3.65IN
  IMAGE="RankedVbarChartWithTwoXaxisTables";

TITLE1 JUSTIFY=CENTER HEIGHT=6PT
  "Shoe Sales by Product, Ordered By $";
TITLE2 JUSTIFY=CENTER HEIGHT=6PT
  "Grand Total Sales = &GrandTotal.";

PROC SGPLOT DATA=sashelp.shoes NOBORDER;
  VBAR Product / RESPONSE=Sales
  CATEGORYORDER=RESPDESC
  DISPLAYBASELINE=OFF NOOUTLINE;
  XAXISTABLE Sales / STAT=SUM
  VALUEATTRS=(FAMILY='Arial Narrow'
    SIZE=6PT WEIGHT=BOLD)
  POSITION=BOTTOM /* below the bars */
  LOCATION=INSIDE /* above axis values */
  NOLABEL;
```

```

XAXISTABLE Sales / STAT=PERCENT
  VALUEATTRS=(FAMILY='Arial Narrow'
    SIZE=6PT WEIGHT=BOLD)
  POSITION=BOTTOM /* below the bars */
  LOCATION=INSIDE /* above axis values AND
    below any previously defined X axis
    table */
  NOLABEL;
YAXIS DISPLAY=NONE;
XAXIS DISPLAY=(NOLINE NOTICKS NOLABEL)
  VALUEATTRS=(SIZE=6PT WEIGHT=BOLD)
  FITPOLICY=SPLITALWAYS SPLITCHAR=' ';
RUN;

ODS LISTING CLOSE;

PROC SORT DATA=work.ToChart
  OUT=work.ByDescendingSales;
  BY DESCENDING Sales;
RUN;

ODS RESULTS OFF;
ODS _ALL_ CLOSE;
ODS LISTING GPATH="C:\temp" DPI=300;
ODS GRAPHICS ON /
  RESET=ALL SCALE=OFF WIDTH=3.65IN
  IMAGENAME="RankedVbarChartWithoutBars";

TITLE JUSTIFY=CENTER HEIGHT=6PT BOLD
  COLOR=BLACK 'Ranked ' COLOR=Blue 'Shoe Sales'
  COLOR=BLACK ' and Percent Share By Product';
TITLE2 JUSTIFY=CENTER HEIGHT=6PT BOLD
  "Grand Total = &GrandTotal.";

PROC SGPLOT DATA=work.ByDescendingSales
  NOBORDER NOAUTOLEGEND;
  TEXT X=Product Y=Sales TEXT=Sales /
  POSITION=TOP
  TEXTATTRS=(COLOR=Blue FAMILY='Arial Narrow'
    SIZE=6PT WEIGHT=BOLD);
  TEXT X=Product Y=Sales TEXT=ProductAndPercent/
  POSITION=BOTTOM
  TEXTATTRS=(COLOR=BLACK FAMILY='Arial Narrow'
    SIZE=6PT WEIGHT=BOLD)
  SPLITPOLICY=SPLITALWAYS SPLITWIDTH=7
  SPLITCHAR=' ' SPLITJUSTIFY=CENTER;
YAXIS DISPLAY=(NOLINE NOTICKS NOLABEL)
  VALUEATTRS=(SIZE=6PT WEIGHT=BOLD)
  VALUES=(0 &MaxSales.)
  VALUESDISPLAY=('0 ' ');
XAXIS DISPLAY=NONE;
RUN;

ODS LISTING CLOSE;

```

To recap, my rules for bar charts are:

- Order the bars (real or virtual) by size, i.e. response value.
- Provide Percentage of Grand Total Response, not only the response value.
- Include the Grand Total in the chart title or subtitle.

LeRoy Bessler, Bessler Consulting and Research

Did You Know?

If you have a useful hint or tip, please send it to the Editor, and share it with the VIEWS membership.

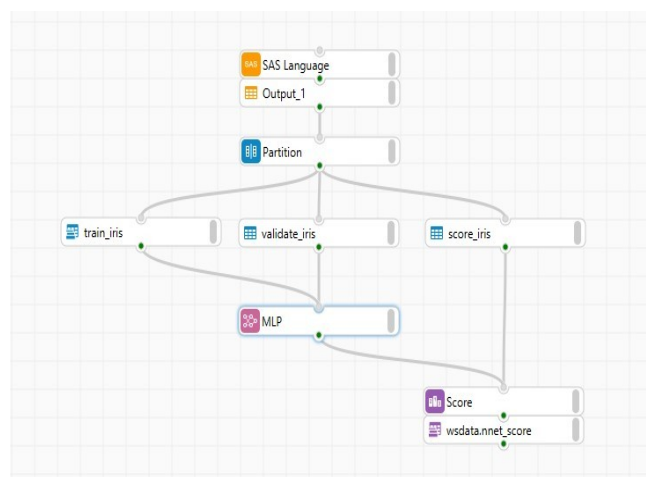
Altair SLC Workflows include functionality similar to SAS Viya

[Altair SLC 2025] Altair SLC can read and write both SAS7BDAT and WPD data sets, and uses WPD data sets in its WORK library and in Workflows. SAS software can only read and write SAS7BDAT data sets.

The following Workflow functionality is included in the [free](#) Personal Edition of Altair SLC from version 2025.

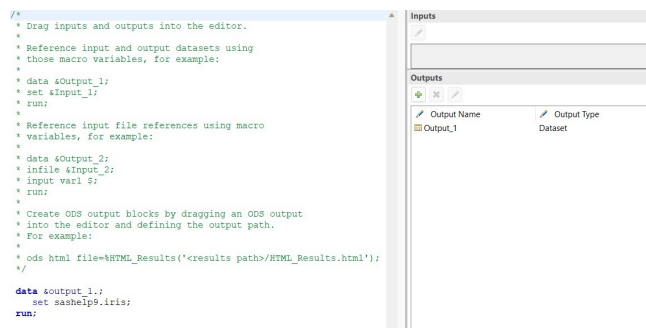
Creating a Neural Network

The following Workflow example uses the **sashelp9.iris** data set used in the SAS Viya neural network example. However, the intermediate and final files are specific to Altair SLC, and are not readable by SAS software.



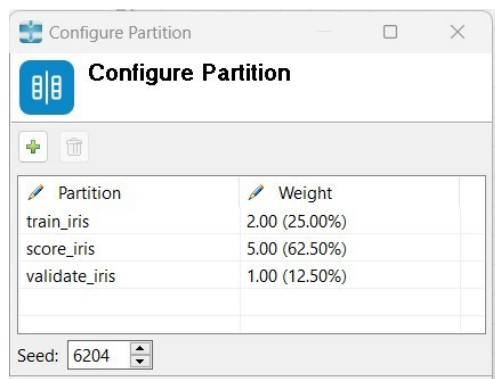
SAS Language

Note that the **sashelp9** library reference points to a SAS Software installation. This node copies the SAS data set into the expected temporary WPD data set, which is referred to by **&output_1**. There is also an **iris.csv** file in the installation file **doc/en/sample-en.zip** file that contains the same information, as the data is in the public domain.



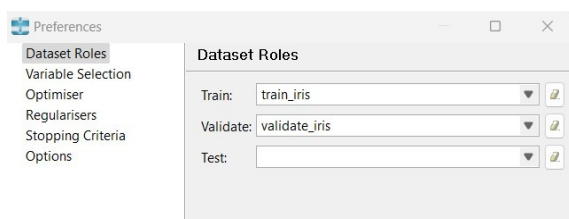
Partition

The Partition node splits the input data set into 3 parts.

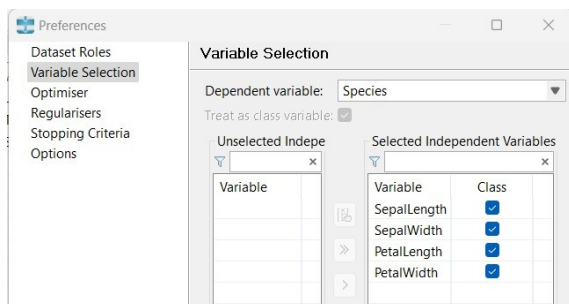


Multilayer Processing (MLP)

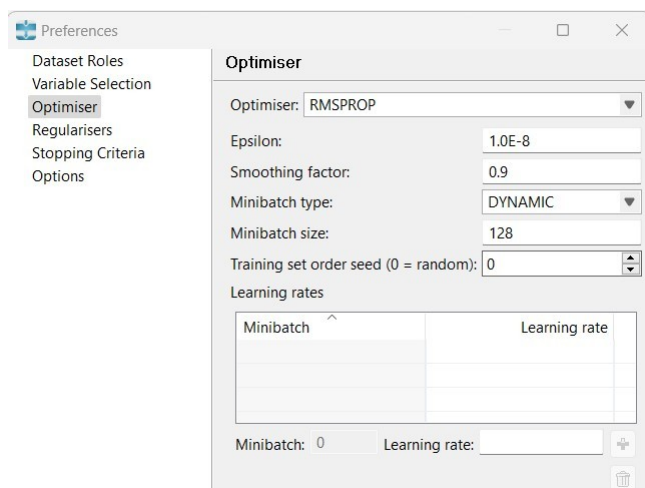
Multilayer processing is used in the SAS Viya neural network example. No test dataset role needs to be specified, because the `score_iris` is one of the input datasets to the Score node.



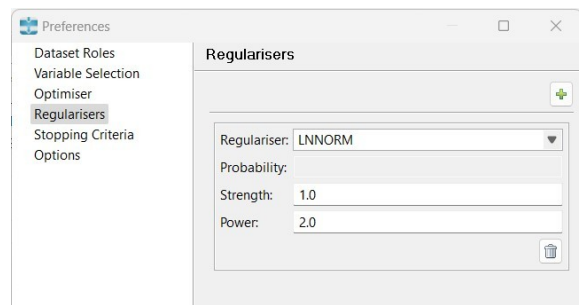
In the SAS Viya example the target variable is Species, and the Interval Variables are SepalLength, SepalWidth, PetalLength and PetalWidth.



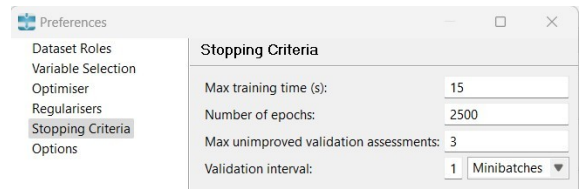
While not equivalent to the SAS Viya example, the Optimiser settings were selected here for the Workflow example.



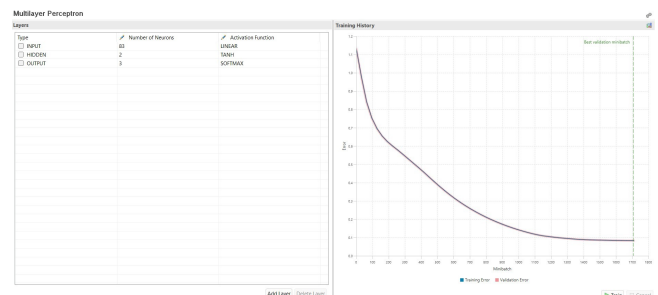
Likewise, the Regularisers settings were selected here for the Workflow example.



Finally, the Stopping Criteria were selected to ensure that the neural network finished its analysis.



The results are shown below:

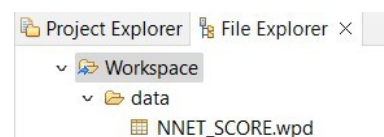


Results	
Result	Value
Last training set data error	0.0830046
Last partial separation	Yes
Last complete separation	Yes
Last validation set data error	0.0831875
Last Ln-norm1	0.1476468
Last total regularization err...	0.1476468
Last total training set error	0.2306514
Termination epoch	1709
Termination minibatch	1709
Termination time (s)	1
Best validation set error	0.0830008
Best validation set epoch	1706
Best validation set minibat...	1706

Stopping Reasons	
Reasons for Stopping	
Best validation error did not improve within the required number of minibatches.	

Score

The location of the output dataset is specified in the Score node.



The results look like this:

	Species	SepalLength	SepalWidth	PetalLength	PetalWidth	_FROM_	_INTO_	P_Setosa	P_Versicolor	P_Virginica
50	Versicolor	55	24	37	10	Versicolor	Versic	0.02869044..	0.93413805..	0.037171495
51	Versicolor	58	27	39	12	Versicolor	Versic	0.07396087..	0.53627579..	0.38976333..
52	Versicolor	60	22	40	10	Versicolor	Virgin	0.05893898..	0.14848324..	0.79257776..
53	Versicolor	67	31	47	15	Versicolor	Versic	0.04021369..	0.89767016..	0.06211613..
54	Versicolor	63	23	44	13	Versicolor	Versic	0.03384197..	0.91092156..	0.05523646..
55	Versicolor	61	28	47	12	Versicolor	Versic	0.03313078..	0.912382012	0.05448720..
56	Versicolor	51	25	30	11	Versicolor	Setosa	0.492098015	0.45904783..	0.04885415..
57	Versicolor	57	28	41	13	Versicolor	Versic	0.03238453..	0.91715164..	0.05046382..
58	Versicolor	56	29	36	13	Versicolor	Versic	0.03104228..	0.93186374..	0.03709397..

The `_INFO_` variable has been truncated, because it has assumed its length from the first value seen, which is 6 characters long: "Setosa". The scoring code can be improved, as follows:

```
o1=activi2_1;
o2=activi2_2;
o3=activi2_3;
_FROM_=Species;
_maxProb=o1;
_INTO_="Setosa";
if (o2 gt _maxProb) then do;
_maxProb=o2;
_INTO_="Versicolor";
end;
if (o3 gt _maxProb) then do;
_maxProb=o3;
_INTO_="Virginica";
end;
'P_Setosa'n=o1;
'P_Versicolor'n=o2;
'P_Virginica'n=o3;
```

`_INTO_` will default to \$6,
because the 1st value is
"Setosa". Need to add here
`LENGTH _INTO_ $10;`

*This example is taken from a draft copy of "Advanced Altair SLC"
by Philip R Holland and Pablo Orosco Joerger
due to be published in 2026.*

Philip R Holland (Newsletter Editor)

Formats, Options, and Functions

This section is devoted to the description of useful, or unusual, SAS Formats, Options, and Functions. Please read the SAS Software and/or Altair SLC documentation to find out more about them.

[SAS and Altair SLC] The numeric formats **EUROW.d** and **EUROXw.d** display values in a similar way to **DOLLARw.d** and **DOLLARXw.d**, respectively, but with a prefix of "€" instead of "\$". **EUROW.d** uses "," for a thousands separator and "." for a decimal separator, while **EUROXw.d** uses "." for a thousands separator and "," for a decimal separator, as is commonly used in Continental Europe. There are also informats with the same names that can be used to read character Euro values into numeric values.

[SAS and Altair SLC] The **EMAILHOST=** system option specifies one or more Simple Mail Transfer Protocol (SMTP) server domain names for your site to be used for sending emails directly from a program.

[SAS and Altair SLC] The **CALL SOUND()** routine, which is only available on Windows platforms, generates a sound with a specific frequency and duration.

Good examples for CALL SOUND can be found in "I'm Going to Pop Some Tags: Using SAS® CALL SOUND Routines" by Richard Dirmyer at www.lexjansen.com/nesug/nesug13/33_Final_Paper.pdf

Book Releases

SAS Programming Experiences and Altair SLC paperbacks are now on Amazon and other reseller sites

The original editions only included details of the 2024 versions of Altair SLC, but with the release of 2025 versions of Altair SLC, it seemed right to revise my SAS Programming Experiences and Altair SLC paperbacks and ebooks to include the new features of Altair SLC 2025.

Some of the windows in Altair Analytics Workbench have changed significantly between 2024 and 2025, but the major difference you will see is that the 2nd Editions are now available on Amazon, Barnes & Noble and Ingram, etc.. However, please do not buy these editions there, as the resellers inflate their prices, but wait for discounted prices for the paperbacks on Lulu.com (which should be in every "odd" month: Jan, Mar, May, Jul, Sep and Nov), or download the equivalent ebooks instead from <https://hollandnumerics.org.uk/book-table>, which is where the lowest prices for paperbacks and ebooks can always be found.

A new edition of the Altair SLC book may be released in 2026, which focuses on the 2026 version. Anyone downloading the ebook from <https://hollandnumerics.org.uk/book-table> will be able to upgrade their previous download at no extra cost.

Also, the 3 books about Altair SLC I am co-authoring with Pablo Orosco Joerger are focusing on the current 2026 versions. These new books are planned for publication in early 2026 with the following provisional titles:

- **Advanced Altair SLC**

The target audience will be specifically SAS programmers using the free Personal Edition Altair SLC software, although all users of Altair SLC will benefit from this book.

- **Altair SLC for Business Users**

The target audience will be SAS programmers working in businesses using fully licensed Altair SLC software.

- **Altair SLC for Companies**

The target audience will be companies planning to migrate from SAS Software installations to Altair SLC installations.

Philip R Holland (Newsletter Editor)

In Brief

- Back issues of *VIEWS News* are available from the VIEWS UK forum at blog.hollandnumerics.org.uk. Please register for free membership on the blog, and then request free access to the VIEWS UK forum.
- The SAS Professional Forum group on LinkedIn, which currently has over 41,300 members. Everyone is welcome to request to join, but discussions here are restricted to SAS-related topics: www.linkedin.com/groups?gid=70702.
- The SAS Opportunities group on LinkedIn, which currently has over 23,300 members. Everyone is welcome to request to join, but discussions here are also restricted to SAS-related topics: www.linkedin.com/groups?gid=805217.
- Altair SLC Personal Edition provides named users with free access to Altair SLC and Analytics Workbench software (formerly WPS) including a SAS language compiler with coding and workflow tools on unlimited data volumes, with interfaces to a wide range of databases, as well as integrated R and Python programming environments. When the Personal Edition software is downloaded, it includes a licence for up to 12 months. At the end of this term, users should download a new copy of the software to renew their licence and/or to upgrade to the latest available full version. Download the software from altairone.com/Marketplace. No technical support service is offered with the Personal Edition, but assistance can be requested using the Community forums at community.altair.com. The current General Access version of Altair SLC is 5.26.0 (2026).
- Do you use Microsoft Visual Studio Code Editor?
 - You may be interested in a SAS-related extension called **SASjs - DevOps for SAS**. You can develop SAS applications and run code on local SAS installations, SAS Viya, SAS 9 EBI, SASjs Server or local Altair SLC! Just set up the target, and click the running man to execute your SAS code. The SASjs Server could be your local SAS or Altair SLC installation. SASjs is an open source project, and can be obtained from the Visual Studio Code Marketplace, where the current version is v2.6.0.
 - The SAS Institute has also been developing its own extension called **SAS**. You can develop SAS applications and run code on local SAS installations, SAS Viya, or SAS OnDemand for Academics! Just set up the target, and click the running man to execute your SAS code. The extension can be obtained from the Visual Studio Code Marketplace, where the current version is v1.18.0.
 - Another Microsoft Visual Studio Code Editor extension has just been released called **Altair SLC**. This extension currently only allows you to connect to local Altair SLC installations, even if, until now, you have only been able to use Altair Analytics Workbench to access Altair SLC. The current version in the Visual Studio Code Marketplace is v0.7.1 (pre-release).

Diary

Are you organising an event that would be of interest to the VIEWS readership? Let us know as we are interested in all non-profit making events related to SAS.

March 2026

22-26 **PhUSE US Connect**, Austin, TX, USA

The PhUSE Community allows you to enhance your learning and gain insights from our experts on today's most critical industry topics through a variety of engaging presentations, workshops, and networking opportunities. Individuals from all areas of the industry will be gathered in one place, providing an opportunity not only for you to advance your career but also to heighten the pharmaceutical industry's influence and findings. Full details at www.phuse.eu.

May 2026

31 May-3 June **PharmaSUG 2026**, Boston, MA, USA

2.5 days of live presentations, hands-on training, e-posters and panel discussions. Pre- and post-conference in-person training seminars. Networking opportunities during the conference. Full details at www.pharmasug.org.

November 2026

15-18 **PhUSE EU Connect**, Glasgow, UK

The PhUSE Community allows you to enhance your learning and gain insights from our experts on today's most critical industry topics through a variety of engaging presentations, workshops, and networking opportunities. Individuals from all areas of the industry will be gathered in one place, providing an opportunity not only for you to advance your career but also to heighten the pharmaceutical industry's influence and findings. Full details at www.phuse.eu.

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***VIEWS News** is published quarterly for the VIEWS International SAS Programmer Community by Philip R Holland.*