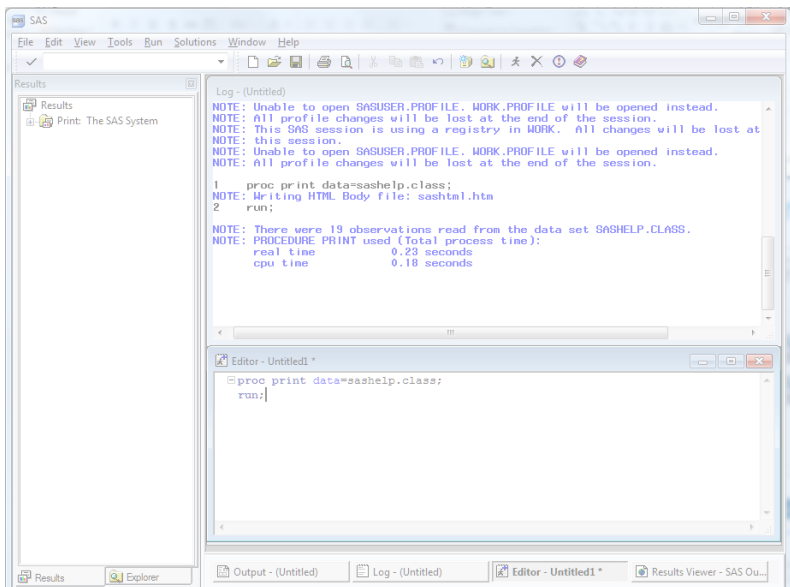


# SAS<sup>®</sup> Studio or SAS<sup>®</sup> Enterprise Guide<sup>®</sup> - What's the Best SAS Programming Interface for Me?

Amy Peters, Product Manager, SAS

# Where We've Come From

## SAS Display Manager, SAS Enterprise Guide, SAS Studio



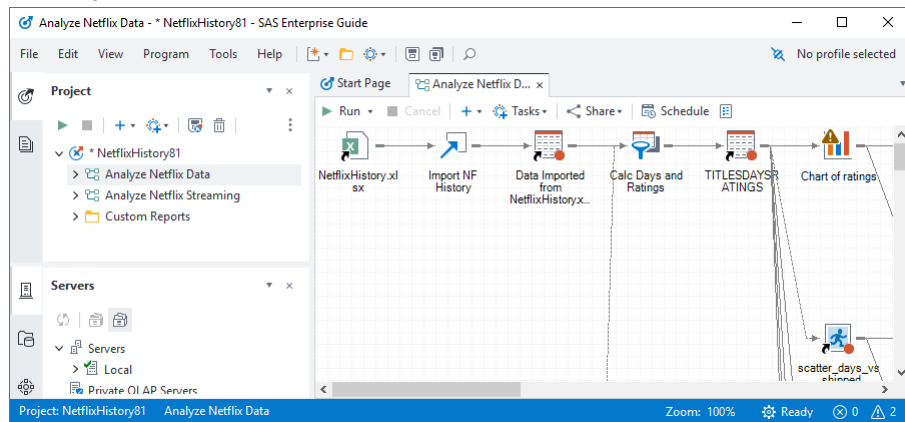
The screenshot shows the SAS Display Manager interface. The top menu bar includes File, Edit, View, Tools, Run, Solutions, Window, and Help. The main area is divided into two panes. The left pane, titled 'Results', contains a log window with the following text:

```
Log - (Untitled)
NOTE: Unable to open SASUSER.PROFILE. WORK.PROFILE will be opened instead.
NOTE: All profile changes will be lost at the end of the session.
NOTE: This SAS session is using a registry in WORK. All changes will be lost at
NOTE: this session.
NOTE: Unable to open SASUSER.PROFILE. WORK.PROFILE will be opened instead.
NOTE: All profile changes will be lost at the end of the session.

1 proc print data=sashelp.class;
2 run;
NOTE: There were 19 observations read from the data set SASHELP.CLASS.
NOTE: PROCEDURE PRINT used (Total process time):
      real time      0.23 seconds
      cpu time       0.18 seconds
```

The right pane, titled 'Editor - Untitled1\*', contains the following code:

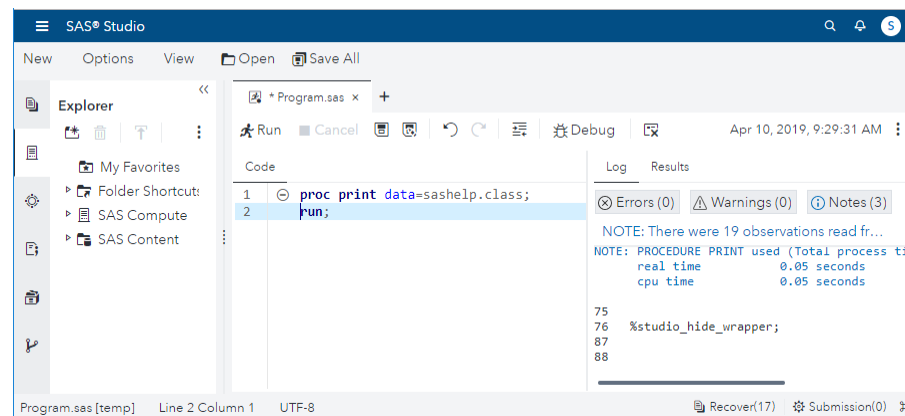
```
proc print data=sashelp.class;
run;
```



The screenshot shows the SAS Enterprise Guide interface. The title bar reads 'Analyze Netflix Data - \* NetflixHistory81 - SAS Enterprise Guide'. The menu bar includes File, Edit, View, Program, Tools, Help. The main area displays a project workflow with the following steps:

- NetflixHistory.xlsx
- Import NF History
- Data Imported from NetflixHistory.x...
- Calc Days and Ratings
- TITLESDAYS/ RATINGS
- Chart of ratings
- scatter\_days\_vs...

The bottom status bar shows 'Project: NetflixHistory81 Analyze Netflix Data' and 'Zoom: 100% Ready'.



The screenshot shows the SAS Studio interface. The title bar reads 'SAS® Studio'. The menu bar includes New, Options, View, Open, Save All. The main area is divided into three panes. The left pane, titled 'Explorer', shows a tree view with 'My Favorites', 'Folder Shortcuts', 'SAS Compute', and 'SAS Content'. The middle pane, titled 'Code', shows the following code:

```
1 proc print data=sashelp.class;
2 run;
```

The right pane, titled 'Log Results', shows the following text:

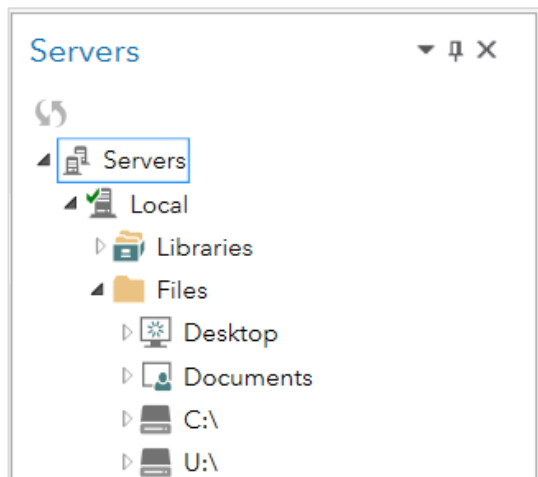
```
NOTE: There were 19 observations read fr...
NOTE: PROCEDURE PRINT used (Total process ti
      real time      0.05 seconds
      cpu time       0.05 seconds

75
76 %studio_hide_wrapper;
87
88
```

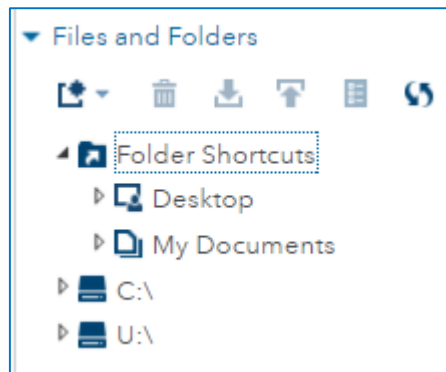
The bottom status bar shows 'Program.sas [temp] Line 2 Column 1 UTF-8' and 'Recover(17) Submission(0)'.

# What's common between SAS Enterprise Guide and SAS Studio

- Common file navigation



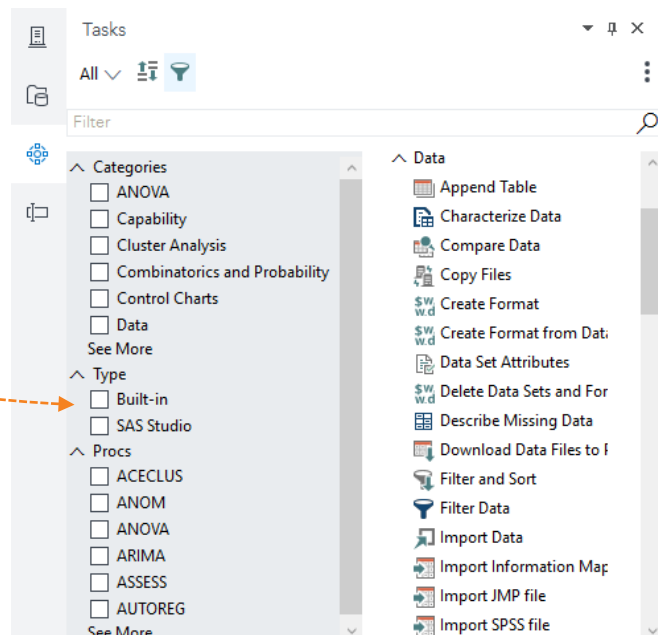
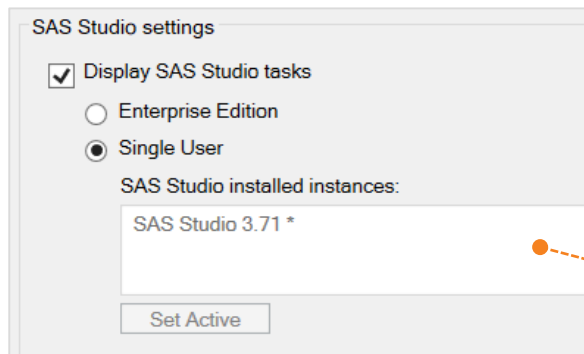
SAS Enterprise Guide



SAS Studio

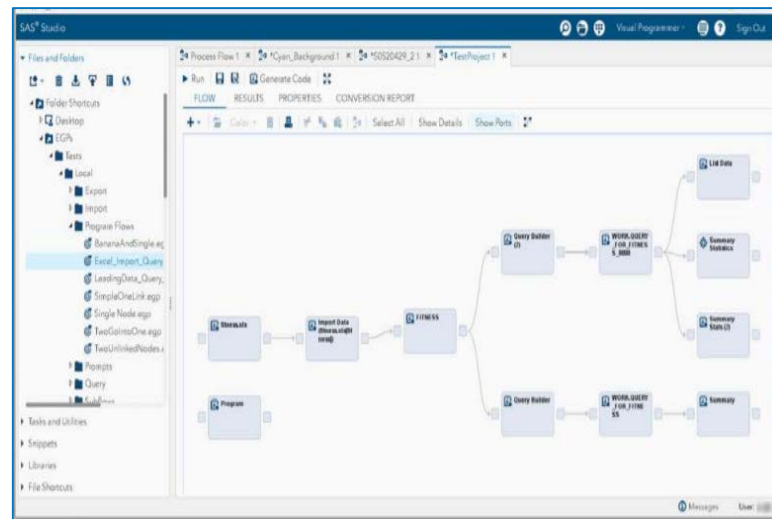
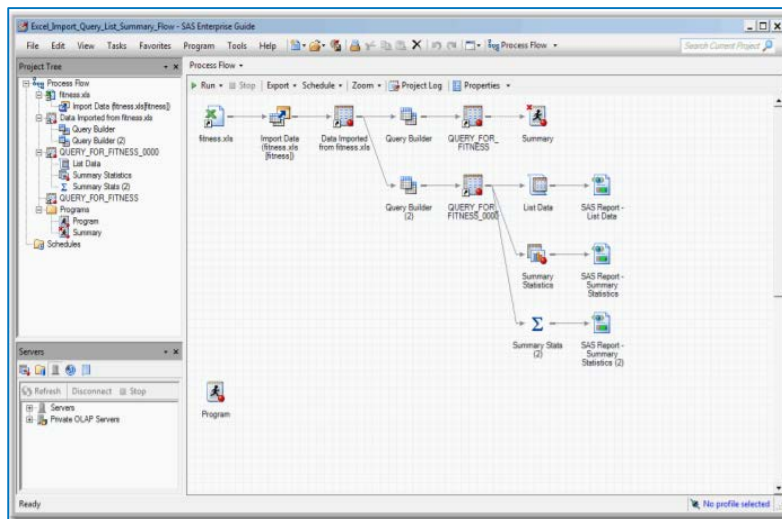
# What's common between SAS Enterprise Guide and SAS Studio

- Use SAS Studio tasks in SAS Enterprise Guide



# What's common between SAS Enterprise Guide and SAS Studio

- Convert EGP files to SAS Studio process flows (experimental for SAS Studio 3.6, production 3.7)



# Do I Have SAS Enterprise Guide or SAS Studio?

## SAS release older than SAS 9.4?

**ENTERPRISE GUIDE** Available since SAS 8.0.

**SAS STUDIO** Not available as introduced in SAS 9.4.

## Available on SAS Viya?

**ENTERPRISE GUIDE** Can connect to SAS Viya.

**SAS STUDIO** Can connect to SAS Viya and available as a native SAS Viya application.

## Not Installed?

**ENTERPRISE GUIDE** Your IT policy may not allow desktop apps. If they are, ask your administrator to install.

**SAS STUDIO** Ask your administrator to configure SAS Studio and provide you with an URL.

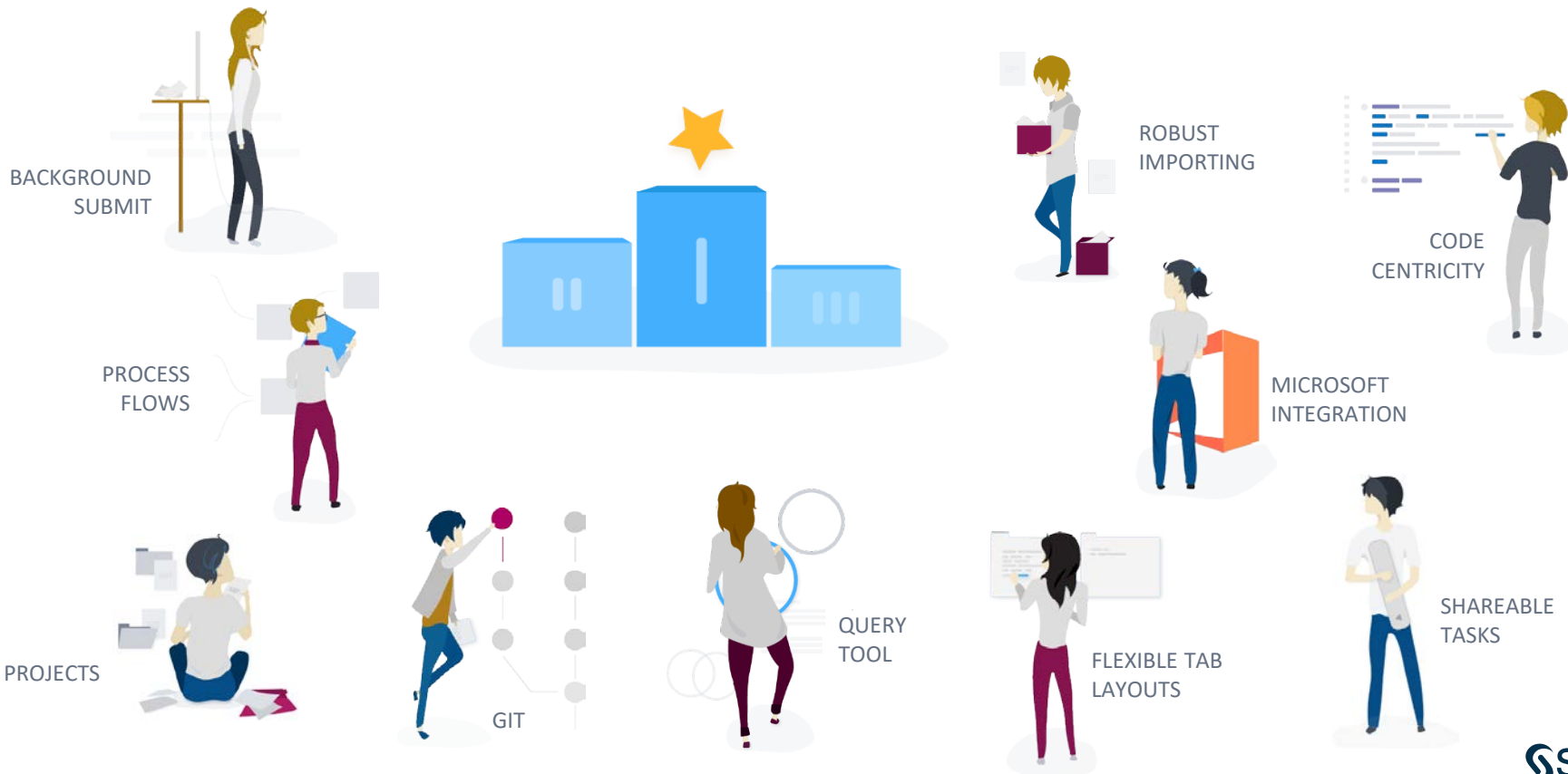
## Not Licensed?

**ENTERPRISE GUIDE** Some licenses have unlimited seats, some are restricted.

**SAS STUDIO** Free with any SAS license.



# What are the Major Differences in Capability?





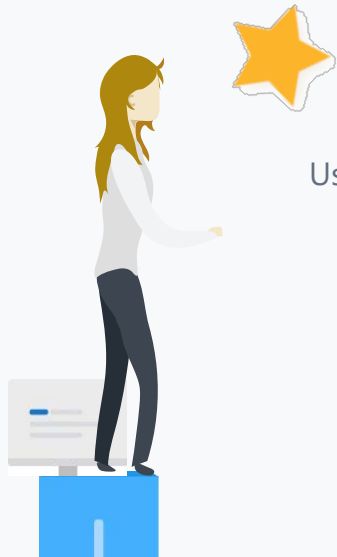
# The Only Winner Is...

Organize work in a project



Use **Enterprise Guide**

Submit code in the background



Use **SAS Studio**





# Winner and Runner Up Are...

Query Tool

Process Flows

Robust Importing

Flexible Tab Layouts

Microsoft Office Integration





# Winner and Runner Up Are...



SAS Studio  
more robust




Enterprise Guide  
very close

Code Centricity  
Shareable Tasks  
Git Integration



# Need an Understanding of Features & Releases?

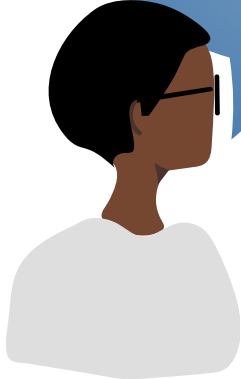
[http://support.sas.com/software/products/sas-studio/faq/SASStudio\\_vsEG.htm](http://support.sas.com/software/products/sas-studio/faq/SASStudio_vsEG.htm)



Do you know if there is a debugger in EG?



What version of Studio supports Git?



Append log?  
Is that available?

[FAQ \(Help Center\)](#)



[FAQ \(Help Center\)](#)

SAS® Enterprise Guide		SAS® Studio		
SAS 9		SAS Viya		
7.1x	8.1	3.8	5.1	5.x

**Programming**

DATA Step debugger	✓	✓			✓
Append log			✓	✓	✓

**General**

Background submit			✓		✓
Git integration	✓	✓	✓		✓
Keyboard management	✓	✓			✓
Schedule	✓	✓			✓

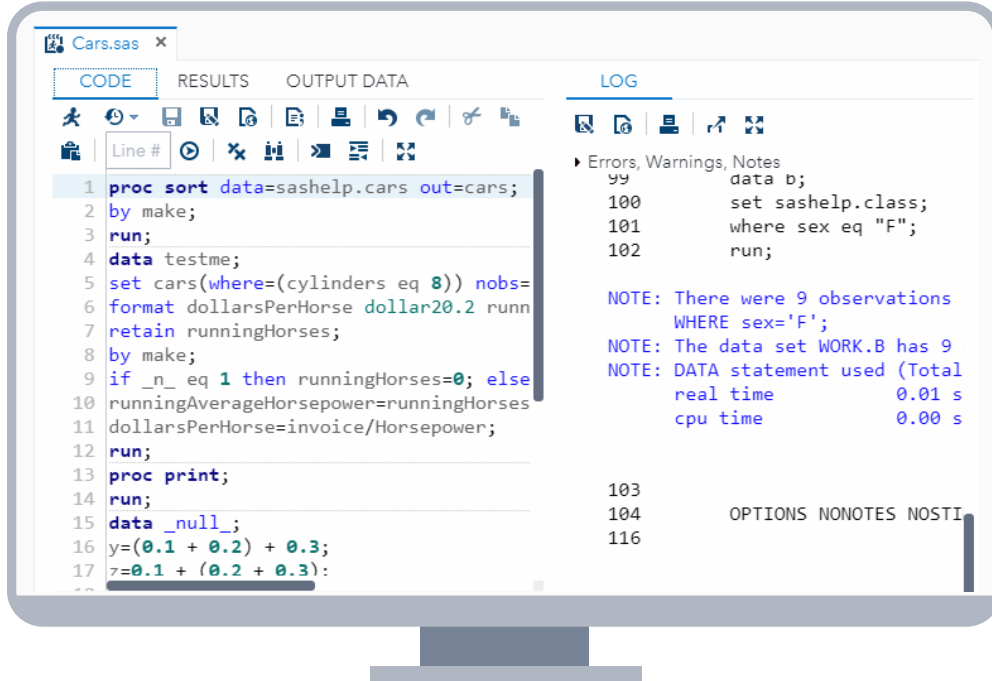
**Data**

Freeze columns				✓	✓
Query Builder	✓	✓	✓		✓
Calculated columns	✓	✓			✓

5.x is under development

# Efficiency Tips

## Layout Tabs to Maximize Workspace - SAS Studio



The screenshot shows the SAS Studio interface with a code editor on the left and a log window on the right. The code editor contains the following SAS code:

```
1 proc sort data=sashelp.cars out=cars;
2 by make;
3 run;
4 data testme;
5 set cars(where=(cylinders eq 8)) nobs=
6 format dollarsPerHorse dollar20.2 runn
7 retain runningHorses;
8 by make;
9 if _n_ eq 1 then runningHorses=0; else
10 runningAverageHorsepower=runningHorses
11 dollarsPerHorse=invoice/Horsepower;
12 run;
13 proc print;
14 run;
15 data _null_;
16 y=(0.1 + 0.2) + 0.3;
17 z=0.1 + (0.2 + 0.3);
```

The log window on the right displays the following output:

```
LOG
Errors, Warnings, Notes
99 data b;
100 set sashelp.class;
101 where sex eq "F";
102 run;

NOTE: There were 9 observations
WHERE sex='F';
NOTE: The data set WORK.B has 9
NOTE: DATA statement used (Total
real time 0.01 s
cpu time 0.00 s

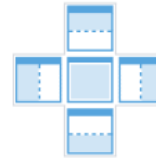
103
104 OPTIONS NONOTES NOSTI
116
```

- Layout primary (main) tabs side-by-side horizontally or vertically
- Layout tabs within a program

# Efficiency Tips

## Layout Tabs to Maximize Workspace - SAS Enterprise Guide

- Very flexible tab layout
  - Drag tabs anywhere – use the Layout Guide
  - Tear off tabs – great for >1 monitors



Obs	Make	Model	Type	Origin	Drive
1	Audi	A6 4.2 Quattro 4dr	Sedan	Europe	All
2	Audi	A8 L Quattro 4dr	Sedan	Europe	All
3	Audi	S4 Quattro 4dr	Sedan	Europe	All

```
39      proc print;
40      run;

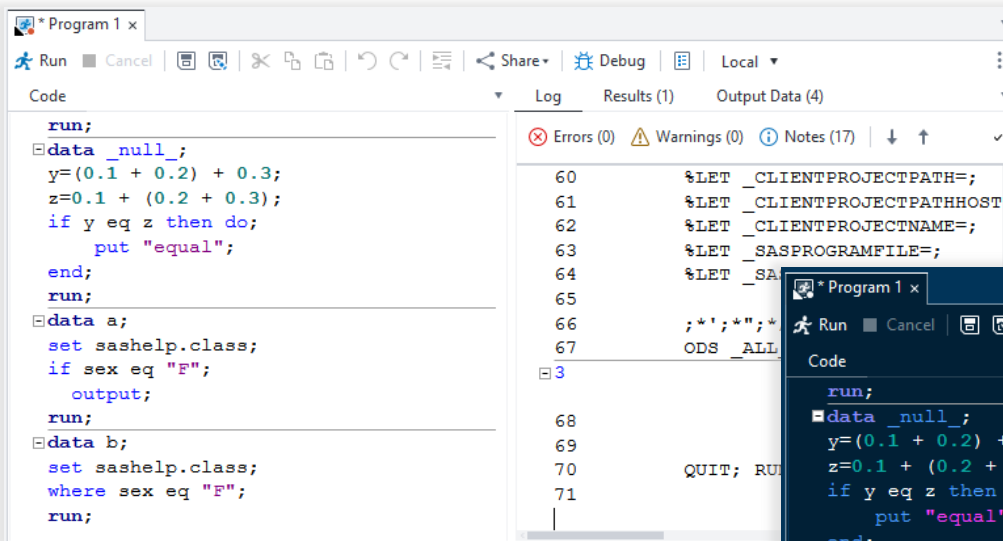
NOTE: There were 87 observations read from the data set WORK.TESTME.
NOTE: PROCEDURE PRINT used (Total process time):
      real time           0.19 seconds
      cpu time            0.20 seconds

41      data _null_;
42      y=(0.1 + 0.2) + 0.3;
43      z=0.1 + (0.2 + 0.3);
44      if y eq z then do;
45          put "equal";
46      end;
```

# Efficiency Tips

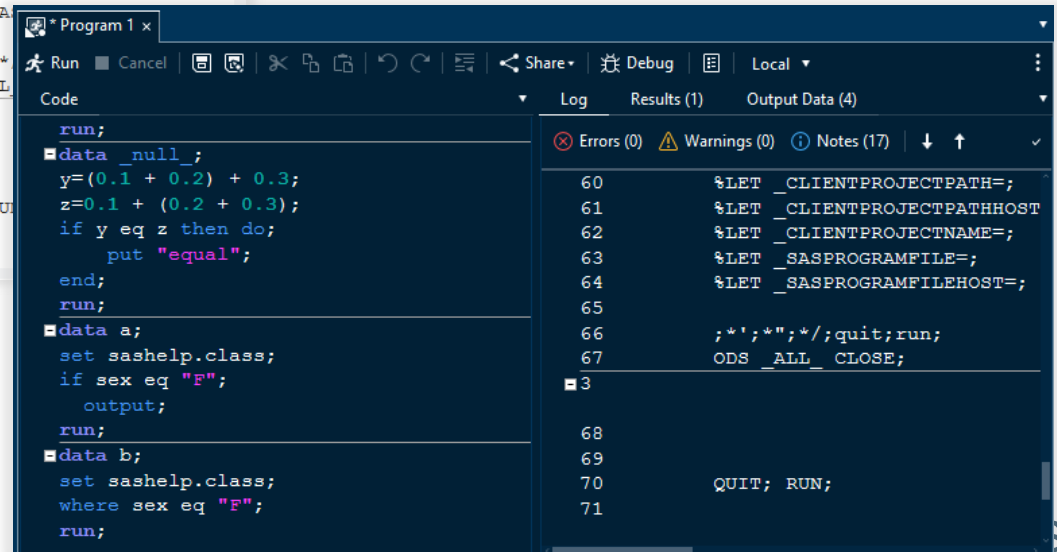
## Change the Editor's Appearance

- Change theme
- Change font
- Change syntax colors



A screenshot of the SAS Enterprise Guide editor interface in a light theme. The window title is '\* Program 1 x'. The top menu bar includes 'Run', 'Cancel', 'Share', 'Debug', and 'Local'. Below the menu bar are tabs for 'Code', 'Log', 'Results (1)', and 'Output Data (4)'. The 'Code' tab is active, showing SAS code with syntax highlighting. The 'Log' tab is also visible, showing a list of log entries with line numbers and code snippets.

```
run;
data _null_;
  y=(0.1 + 0.2) + 0.3;
  z=0.1 + (0.2 + 0.3);
  if y eq z then do;
    put "equal";
  end;
run;
data a;
  set sashelp.class;
  if sex eq "F";
  output;
run;
data b;
  set sashelp.class;
  where sex eq "F";
run;
```



A screenshot of the SAS Enterprise Guide editor interface in a dark theme. The window title is '\* Program 1 x'. The top menu bar includes 'Run', 'Cancel', 'Share', 'Debug', and 'Local'. Below the menu bar are tabs for 'Code', 'Log', 'Results (1)', and 'Output Data (4)'. The 'Code' tab is active, showing the same SAS code as the light theme screenshot, but with a dark background and different syntax colors. The 'Log' tab is also visible, showing the same log entries.

```
run;
data _null_;
  y=(0.1 + 0.2) + 0.3;
  z=0.1 + (0.2 + 0.3);
  if y eq z then do;
    put "equal";
  end;
run;
data a;
  set sashelp.class;
  if sex eq "F";
  output;
run;
data b;
  set sashelp.class;
  where sex eq "F";
run;
```

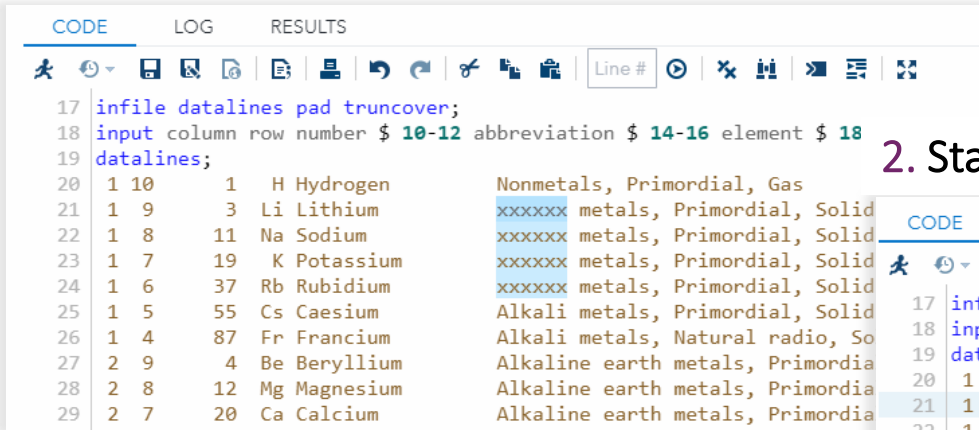
Example taken from SAS Enterprise Guide

# Efficiency Tips

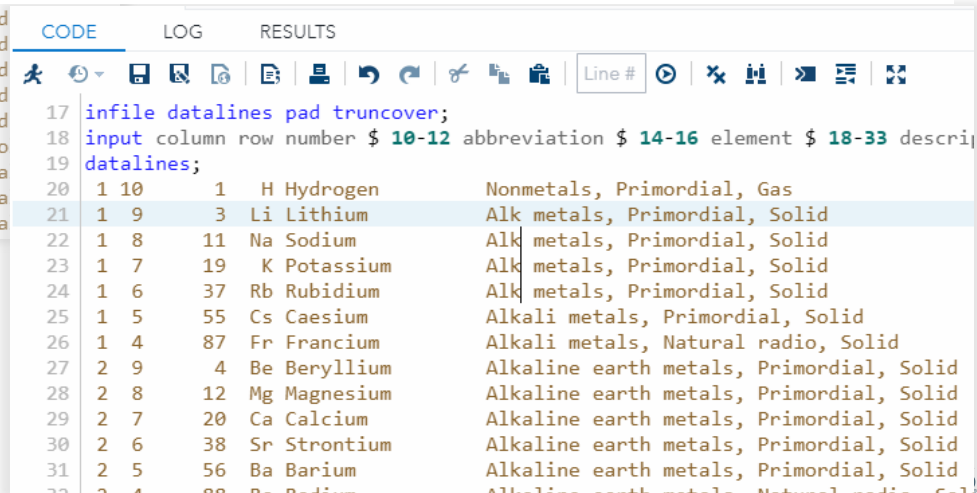
## Select and Edit Columns

1. Hold down the Alt key and drag mouse over text area you want to work with (Alt+Select).

2. Start typing to replace selected code.



```
CODE LOG RESULTS
infile datalines pad truncover;
input column row number $ 10-12 abbreviation $ 14-16 element $ 18
datalines;
1 10 1 H Hydrogen Nonmetals, Primordial, Gas
1 9 3 Li Lithium xxxxxx metals, Primordial, Solid
1 8 11 Na Sodium xxxxxx metals, Primordial, Solid
1 7 19 K Potassium xxxxxx metals, Primordial, Solid
1 6 37 Rb Rubidium xxxxxx metals, Primordial, Solid
1 5 55 Cs Caesium Alkali metals, Primordial, Solid
1 4 87 Fr Francium Alkali metals, Natural radio, So
2 9 4 Be Beryllium Alkaline earth metals, Primordia
2 8 12 Mg Magnesium Alkaline earth metals, Primordia
2 7 20 Ca Calcium Alkaline earth metals, Primordia
```



```
CODE LOG RESULTS
infile datalines pad truncover;
input column row number $ 10-12 abbreviation $ 14-16 element $ 18-33 descri
datalines;
1 10 1 H Hydrogen Nonmetals, Primordial, Gas
21 1 9 3 Li Lithium Alk metals, Primordial, Solid
22 1 8 11 Na Sodium Alk metals, Primordial, Solid
23 1 7 19 K Potassium Alk metals, Primordial, Solid
24 1 6 37 Rb Rubidium Alk metals, Primordial, Solid
25 1 5 55 Cs Caesium Alkali metals, Primordial, Solid
26 1 4 87 Fr Francium Alkali metals, Natural radio, Solid
27 2 9 4 Be Beryllium Alkaline earth metals, Primordial, Solid
28 2 8 12 Mg Magnesium Alkaline earth metals, Primordial, Solid
29 2 7 20 Ca Calcium Alkaline earth metals, Primordial, Solid
30 2 6 38 Sr Strontium Alkaline earth metals, Primordial, Solid
31 2 5 56 Ba Barium Alkaline earth metals, Primordial, Solid
32 2 4 88 Ra Radium Alkaline earth metals, Natural radio, Solid
```

Example taken from SAS Studio





# Efficiency Tips

## Snippets to Insert Reusable Code

1. Name and define the snippet of code.

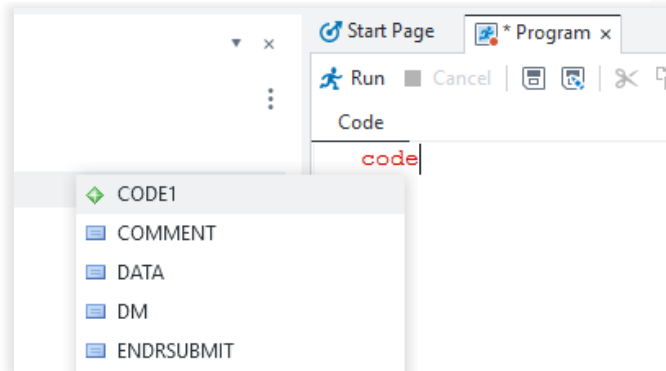
Edit Keyboard Macro

Keyboard macro name:

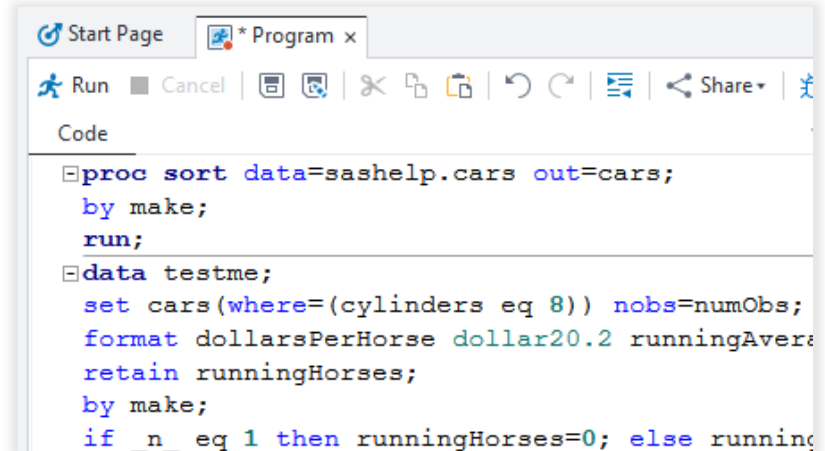
Keyboard macro description:

Command category:  Keyboard macro contents:

2. Start typing the snippet name.



3. Select and press Enter to insert snippet.



Example taken from SAS Enterprise Guide

# What Else Can I Use?

jupyter Untitled1 Last Checkpoint: 09/21/2017 (autosaved)

File Edit View Insert Cell Kernel Help Trusted Python 3

Default

```
In [1]: import saspy
sas = saspy.SASsession(results='HTML')
```

Using SAS Config named: default  
SAS Connection established. Subprocess id is 6164

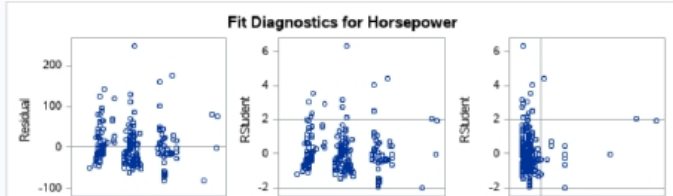
```
In [2]: cars = sas.sasdata('cars', libref='sashelp')
stat = sas.stat()
stat_results = stat.reg(model='horsepower = cylinders EngineSize', data=cars)
stat_results.DIAGNOSTICSPANEL
```

Out[2]:

## DIAGNOSTICSPANEL

The SAS System

The REG Procedure  
Model: MODEL1  
Dependent Variable: Horsepower



The figure displays three diagnostic plots for the regression model. The first plot is a Residual vs. Predicted plot, showing residuals ranging from -100 to 200. The second plot is a Studentized Residual vs. Predicted plot, with residuals ranging from -2 to 6. The third plot is a Cook's Distance plot, with values ranging from 0 to 6. All plots show data points as blue circles.

# Be a Part of the Discussion

## Connect with us!

### On SAS Communities

- [SAS Studio community](#) – find it under SAS Programming
- [SAS Enterprise Guide community](#) – find it under Business Intelligence
- [SASware ballot ideas](#)

The screenshot displays the SAS Support Communities homepage. At the top, the SAS logo is followed by the tagline 'THE POWER TO KNOW'. Navigation links include 'Products & Solutions', 'Industries', 'Support', 'Learn', 'Partners', 'Connect', and 'About SAS'. A 'Communities' button is highlighted. The main heading reads 'Welcome to SAS Support Communities', with links for 'Register', 'Sign In', and 'Help'. A central banner features the text 'Stuck on a problem? Ask the community for help.' and 'While you're here, get a SAS tip and share what you know. This community of SAS experts is here to help you to succeed!', accompanied by a 'Join Now' button and a photo of a man. Below the banner is a search bar with a 'Community' dropdown and a 'Search' button. A 'Find a Community' button is also present. The 'Latest Activity' section includes tabs for 'Featured Posts', 'Popular Posts', and 'Unanswered Questions'. A table lists recent posts with their titles, locations, authors, and engagement metrics (Views and Likes). On the right, statistics show 149,288 members, 341 online users, and 381,515 posts, with a 'Post a Question' button below.

Post Title	Location	Author	Views	Likes
Code Like It Matters: Best Practices from Software Engineering, Applied to SAS Programming	In: SAS Communities Library	Latest Post by: paulkaefer	1847	10
Fun with SAS Visual Analytics Graphics: Challenge accepted!	In: SAS Visual Analytics	Latest Post by: Renslo_sas	2111	9
Concatenate function using underlying/assigned format	In: SASware Ballot Ideas	Latest Post by: Reeza	125	7
Re: SAS problem solving skill	In: General SAS Programming	Latest Post by: Reeza	314	7
Enhanced RENAME syntax to handle variable lists	In: SASware Ballot Ideas	Latest Post by: Tom	224	11



[sas.com](https://sas.com)