SAS® Enterprise Guide™: Hidden Gems

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Hidden Gems
Why this presentation?

- Many users stick with what they know and don’t have time to explore
- We (SAS) don’t always advertise all of the enhancements or features
Hidden Gems

SAS® Enterprise Guide is much more than a point-and-click interface to SAS. This session looks at both new and existing functionality to help the novice user as well as the long time programmer.
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Agenda

• Filtering Options
• Viewing Options
• Task Templates
• Code Templates
• Computed Columns
• Conditions in a Process Flow
• Ordered Lists
• Add SAS Code to Process Flow
• Prompts
Hidden Gems
The Swiss Army Knife of SAS

• Offers visualization of what you are doing
• Data access and manipulation
• Analysis
  • Descriptive statistics
  • Advanced analytics
  • Forecasting
• Reporting
  • Ad-hoc
  • Run programs with updated information
  • Stored Processes
• Development environment
  • Tasks
  • Coding
  • Stored process authoring
Filter Options
Filtering options – where can I?

Filter and Sort
Query Builder
Filters in Tasks
Filtering options

Filter and Sort task
Filtering options

Query Builder
Hidden Gems

Filtering options

Filters in Tasks

Filter since 4.3 not widely known
Customizing Your View
Viewing Options

Background Color
- Default
- Blue
- Red
- Green
- Yellow
- Cyan
- Black
- White

SAS Report - Distrib....
Distribut... Analysis
Filter Audis
QUERY_FOR...
GermanCars
Filter German Ca...
CARS
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Viewing Options

```sas
proc gisreplay data=maps.counties out=ZIPMAP;
where state='NC';
Runs state counties: xrun quit;
/
Create a data set containing the names of the counties /* in Florida.*/
/
/* Make the annotate macros available

%annotate;
/* Use the MAPLABEL annotate macro to create an annotate data set /* to label the counties. /* The macro parameters are: /* Input Map data set. /* Attribute data set that contains variable for the label. /* Resulting output data set for use in ANNOT in GPAP. /* Variable for label on. Can be text or numeric. /* Space-separated list of IDs that the map and attribute /* data sets are sorted on.
```
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Viewing Options

Code/Results

GOPTIONS CRACK=
GOPTIONS device=activex EDIXELE=1000 ypixel=900 ;
TITLE;FOOTNOTE;
/* Added the global macro to the Title and edited the default */
TITLE '2010 - 2012 YTD Railroad Casualties in Florida Counties';
FOOTNOTE 'Shannon Moore generated this map using SAS on YTR';
PROC GPLOT GOPTIONS=MAPCHART DATA=WORK.MAPCHARTRESPONSEFREE MAP=MO;
  3D COUNTY;
  CHART ets_be_mapped /
  midpoints=field
  ANNO=ANNO;
RUN;
QUIT;
TITLE;TITLES;FOOTNOTE;
GOPTIONS ALL=MAPCHARTMAPCHARTFREE ;
goptions reset=all;
proc sql drop view WORK.MAPCHARTRESPONSEFREE ;
proc sql; drop table WORK.ANNO , WORK.PIMAP , WORK.WINAMES ;
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Viewing Options

Log Summary - new with 6.1
Task And Code Templates
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Example: Bar Chart with Default Settings
Make changes
Task templates

3D, Cylinder, Percentages
Task templates

Create Template
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Task templates

Name the template and provide a description

Name: MEEBar
Description: 3D cylindrical bar chart with percentages
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Task templates

Reference the template
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Task templates

Select data
Task templates

Run task
Open different data and select task template
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Task templates

Select data and run
Hidden Gems

Code templates

Right click task...
Add as Code Template
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New Code Node in Process Flow

Code templates

- CARS
- Bar Chart
- SAS Report - Bar Chart...
- MEEBar
- SAS Report - MEEBar

- CLASS
- MEEBar
- SAS Report - MEEBar

Code For Bar Chart
PROC GCHART DATA=WORK.SORTTempTableSorted;

VBAR3D
MPG_Highway
/
SHAPE=CYLINDER
FRAME
TYPE=FREQ
DOT

descending
COOUTLINE=BLACK
RAXIS=AXIS1
MAXIS=AXIS2

;
/

End of task code.
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Code templates

Bar Chart

Frequency

MPG (Highway)

Run
Computed Columns
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Computed columns – Query Builder

• Point-and-click Expression Builder
• Access to many SAS functions
Computed columns
Computed columns

Query Builder: Computed Column
Computed columns

Advanced Expression
Computed columns

Enter an expression:

\( t1.\text{MPG_Highway} - t1.\text{MPG_City} \)
Computed columns

Entire library of SAS Functions available for use in expressions.
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Computed columns

Name column. Optionally, format and summarize column.
Computed columns
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Computed Columns added to query
Hidden Gems

Computed columns

Sorting results
Computed Columns added to query results
Conditions in a Process Flow
Hidden Gems

Example branching process flow

Conditions in a Process Flow

![Example branching process flow diagram](image-url)
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Conditions in a Process Flow

Add condition
Conditions in a Process Flow

Add condition
Hidden Gems

Conditions in a Process Flow

Flags on tasks
Conditions in a Process Flow

Branching
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Restrictions

Conditions in a Process Flow

- Can’t use Conditions is Stored Processes - Use macro variables, prompts, etc. instead
- Choose Conditions for work that would stay in Enterprise Guide
Ordered Lists
What is an ordered list

In Enterprise Guide, the process flow ties related tasks together and makes it easy to run them all as a group, ensuring that tasks that produce output needed by other tasks are run first.

But what if you want to run just a subset of the tasks in your project but still keep them in a certain sequence?

The manual method would have you selecting each task one at a time, running it, waiting while it completed, and repeating this for each task in order.
What is an ordered list

Enterprise Guide has a feature — ordered lists — which lets you build simple lists of tasks from your project that you want to run in a prescribed sequence.

You can select these tasks à la carte from anywhere in your project, including across multiple process flows, running them in whatever order you need.
How to

• To create an ordered list:
  • Choose Tools->Create Ordered List
    The Ordered List window appears
  • Click Add
    The Add from Project window appears, presenting you a list of all the tasks within your project
  • Choose the tasks you want to include by clicking them; then click OK to add them to your list
  • TIP: Press Ctrl while clicking to select multiple items at once
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- This picture shows an example of the Ordered List window with a few tasks added. At this point, the tasks might not be in the correct order for your needs.
- To change the sequence for a task, select it in the list and click the Up or the Down button to move it within the list.
- When the list of tasks reflects the order that you want, click Save.
- If you want to run the tasks immediately, click Run.
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Process Flow that has a lot of items

I only want the bar chart and the one-way frequency
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Select “New Ordered List”
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Select items to run
Gems

Select items to run
New Item in Project Tree
Gems

Will only run items that are in the Ordered List
Add Code to Process Flow
Add code to process flow

From File Menu
Hidden gems

Add code to process flow

Program added to process flow
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Add code to process flow

Example Code

```sas
%let ds = SASHELP.CARS;
%let pievar = Make;
%let explode = Audi;

TITLE;
TITLE1 "M-E's Pie Chart for &pievar";
FOOTNOTE;
PROC GCHART DATA =&ds;
   PIE Make /
   NOLEGEND
   SLICE=OUTSIDE
   PERCENT=OUTSIDE
   VALUE=NULL
   OTHER=3.5
   OTHERLABEL="Other"
   COUTLINE=BLACK
   NOHEADING
   /* code to explode a slice */
   EXPLODE = "&explode"
;
RUN; QUIT;
```
Add code to process flow

Example Code

```sas
%let ds = SASHELP.CARS;
%let pievar = Make;
%let explode = Audi;

TITLE;
TITLE1 "M-E's Pie Chart for &pievar";
FOOTNOTE;
PROC GCHART DATA =&ds;
   PIE Make / NOLEGEND
   SLICE=OUTSIDE
   PERCENT=OUTSIDE
   VALUE=NONE
   OTHER=3.5
   OTHERLABEL="Other"
   COUTLINE=BLACK
   NOWEIGHTING
   /* code to explode a slice */
   EXPLODE = "&explode"
;
RUN; QUIT;
```
Add code to process flow
Add code to process flow

Manually link to a dataset
Add code to process flow

Manually link to a dataset
Add code to process flow
Using Prompts
Consider this flow. To dynamically select the Origin of interest, use Prompts.
Using Prompts

Use the Prompt Manager to add prompts
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Using Prompts

Name the prompt and provide descriptions
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Using Prompts

Set prompt type and select “Get Values”
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Using Prompts

Select the data for the prompt values and add to selected values
Using Prompts

Review values and select a default
Hidden Gems

Using Prompts

New prompt for Origin
Hidden Gems

Modify the Query Builder

Using Prompts
Select the filter and modify it
Using Prompts

Select arrow next to Value and select Prompts
Using Prompts

Select Origin prompt
Using Prompts

Modified process flow
Run the process flow and select choice when prompted
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References

• Up Close and Personal with SAS® Enterprise Guide® 5.1: Anand Chitale and Lina Clover
• Best Practices for Administering SAS® Enterprise Guide®: Smith, Casey
• Your First SAS® Stored Process: Tricia Aanderud, And Data Inc; Angela Hall, SAS Institute, Cary, NC
Thank you for your time and for using SAS!