Exploring JMP® 8 Integration with SAS® 9.2:

Mike Vorburger, SAS Institute Inc.

ABSTRACT

Come see how JMP® 8 offers a rich client environment to develop applications that exploit the dynamic graphical environment of JMP. The JMP Scripting Language (JSL) can be used to create user dialogs, submit SAS code, create native JMP reports from SAS output, surface ODS output, and integrate SAS output into native JMP output/reports.

CONTACT INFORMATION

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Exploring JMP® 8 Integration with SAS® 9.2:

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Topics

- Basics of JMP and SAS integration
- Submitting SAS code
- Moving Data
- Handling SAS output
- Integrating SAS and JMP output
- JSL as a dialog language
SAS Menu Items
SAS Connection Preferences

- User can set up default SAS Metadata Server connection info, allow password to be securely stored.
- SAS Programmers may want to choose to display the SAS log in a separate window and always show the SAS log.
- Options to generate ODS and consume results are also available in the preference controls.
Server Connections

- Use the File -> SAS (or SAS toolbar) dialogs to control:
  - Connections to:
    - Physical SAS server (local or remote)
    - A SAS Metadata server
    - Or manage the connection to a current connection
  - Launch the SAS add-ins
  - Open a new SAS program editor
  - View the Log or Output Windows
  - Browse SAS data or SAS folders on the server
    - Used to query/import SAS data
    - Execute SAS Stored Processes
Using JMP as a programming environment for SAS
JMP 7 Being Used as a Programming Interface to SAS

- Remember to set the preferences such that the SAS log is always displayed and viewed in a separate window.
- Choose the SAS log icon on the SAS toolbar to display the SAS log.
- Open a new SAS program editor to write SAS code.
- If you want to retrieve or view data on the SAS server, choose the Browse Data tool.
JMP 8 Being Used as a Programming Interface to SAS

```bash
1  data random;
2   do x = 3 to 1000;
3      y = 2 * x + 1;
4     end;
5  run;
6  proc reg data=random;
7      model y = x;
8     output out=residual residual = resid;
9  quit;
```

**Analysis of Variance**

<table>
<thead>
<tr>
<th>Variable</th>
<th>DF</th>
<th>Estimate</th>
<th>Error</th>
<th>Pr &gt; F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1</td>
<td>5.2805</td>
<td>0.0306</td>
<td>0.0032</td>
</tr>
</tbody>
</table>

**Parameter Estimates**

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**Panel of Fit Diagnostics for y**

- Residuals vs. Fits
- Normal Probability Plot
- Histogram
- Scale Location
- Cook's Distance
- Leverage

**Select Data**

- Import Options
- Column Details
- Parts Browser

**NOTE:** The data set WORK.REG has 1000 observations and 3 variables.
### Simple JSL for SAS integration

<table>
<thead>
<tr>
<th>Functionality is in SAS</th>
<th>Data is on the JMP Client</th>
<th>Data on the SAS Server</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Use SASExportData to move data to server, run SAS code, retrieve results or data via SASImportData</td>
<td>Use EG 4.2 to create a stored process to deliver the needed SAS content</td>
</tr>
<tr>
<td>Functionality is in JMP</td>
<td>No SAS involved, use native analytics and graphics in the JMP client</td>
<td>Use EG 4.2 and the JMP packager to create a SAS Stored Process or JLS/SAS program that returns data and JSL to launch the desired JMP analysis</td>
</tr>
<tr>
<td>Functionality is needed from JMP and SAS</td>
<td>Use SASExportData to move data to SAS, perform that analysis, return the data, then run the JSL to launch the desired JMP analysis</td>
<td>Use EG 4.2 and the JMP packager to create a SAS Stored Process or JLS/SAS program that returns data and JSL to launch the desired JMP analysis</td>
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Simple JSL for SAS integration

- With some regularity we are asked about statistical routines that do not exist in JMP, many times there are workarounds, but some times there is a real need to produce some result that can not be generated by JMP "out-of-the-box". One option is to write a routine in JSL to fill the gap

- A second option is to build a JSL program that submits the data and SAS code to the server, generated the desired statistical results, then returns the processed data or output back to JMP. JSL may then be used to nicely display the results.
Simple JSL for SAS integration

- Consider the problem of comparing many distributions. This can be performed with the distribution platform, but it is hard to see them all at once.
  - One option is to use the Fit Y by X platform and choose the CDF plot.
  - Another option is to use the SAS PROC KDE routine to generate kernel density estimates.
Simple JSL for SAS integration

- The first set of output was generated by using the Fit Y by X platform and choosing the CDF plot.
- The second graphic was generated by the Graph Builder platform using data from SAS PROC KDE.
Simple JSL for SAS integration

- Your job is to build a JSL program to generate an overlay plot of kernel density estimates for height and weight by sex. This is to be done for the Big Class data set.