

WORKING WITH MICROSOFT EXCEL AND SAS

CHRIS HEMEDINGER, SAS



WHAT IS THE BEST WAY GET INFO FROM EXCEL TO SAS AND FROM SAS TO EXCEL?



“...THAT DEPENDS”

“WE’RE ALL MAD HERE...”



‘Would you tell me, please, which way I ought to go from here?’

‘That depends a good deal on where you want to get to,’ said the Cat.

‘I don't much care where--’ said Alice.

‘Then it doesn't matter which way you go,’ said the Cat.

‘--so long as I get somewhere,’ Alice added as an explanation.

‘Oh, you're sure to do that,’ said the Cat, ‘if you only walk long enough.’

from *Alice's Adventures in Wonderland*

OBJECTIVES WHAT DO PEOPLE DO WITH SAS AND EXCEL?

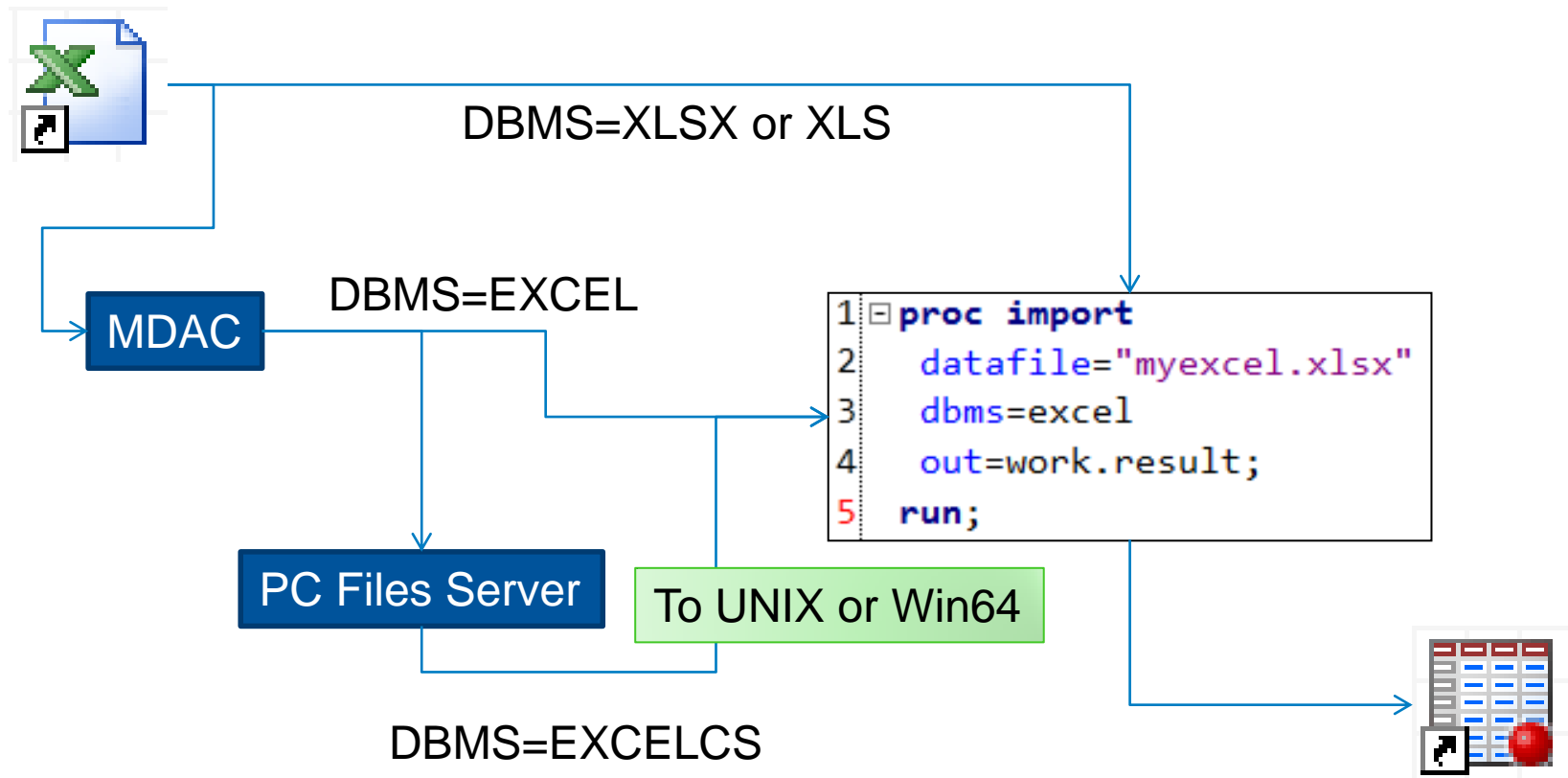
- **Import data**
 - Open Excel data into SAS
- **Export data**
 - Save SAS data into Excel sheets
- **Database treatment**
 - Using SAS libraries
- **Generate Excel-based reports**
 - SAS results into Excel-formatted reports
 - Plug in a few SAS numbers into established Excel template

QUESTIONS YOU MUST ASK YOURSELF

- Do you have SAS/ACCESS to PC Files?
- Is your SAS on a Windows platform? Is it 32-bit or 64-bit?
- Are you working with Excel as data, or as a report destination?
- Are you working with SAS Enterprise Guide?
- Can you run external programs from within your SAS code?
- How much programming are you willing to do?
- Is this a one-off task, or repeatable process?

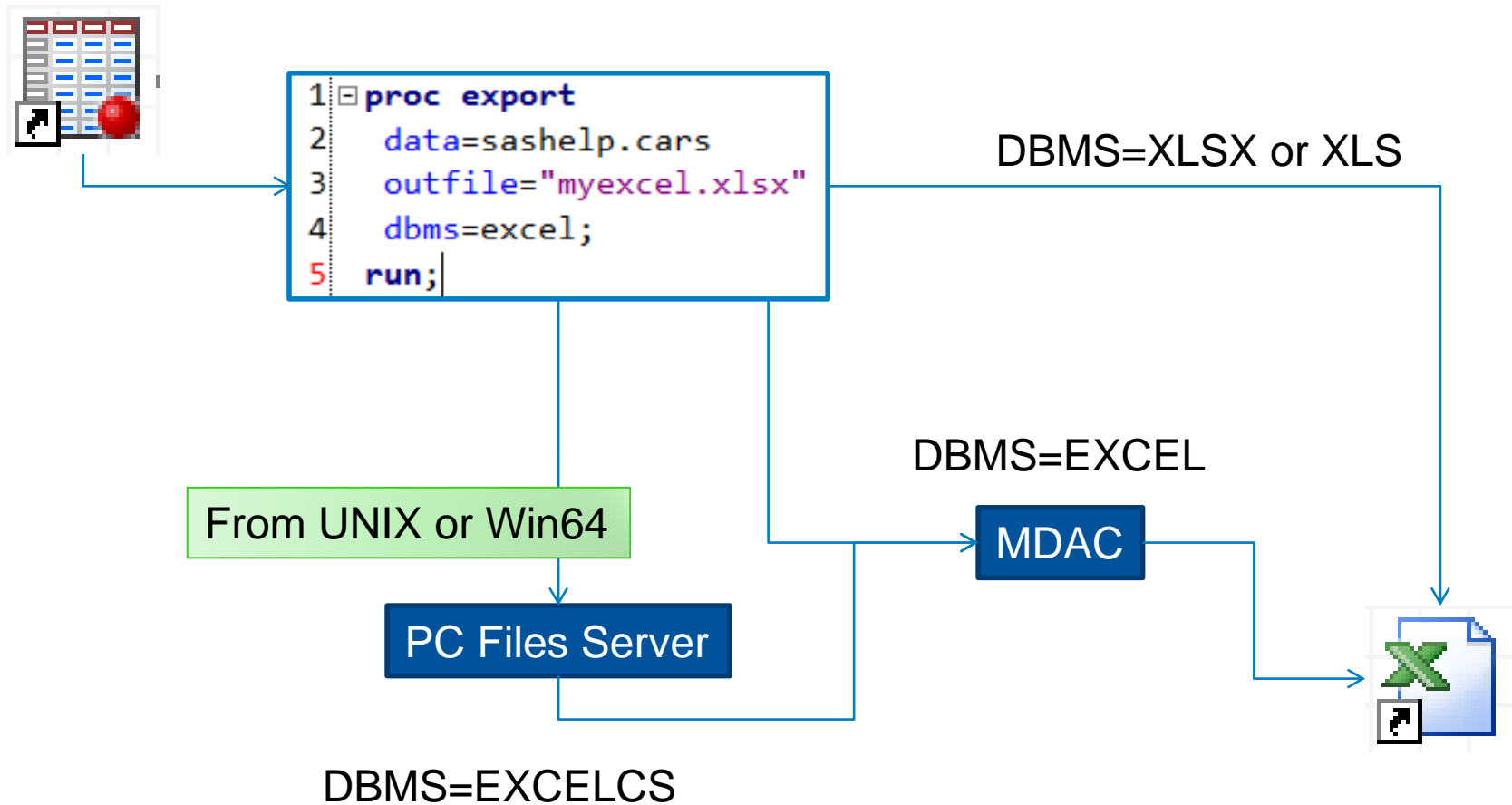
IMPORT SAS/ACCESS TO PC FILE FORMATS

- Use the SAS programming language to directly **read from** Microsoft Excel files



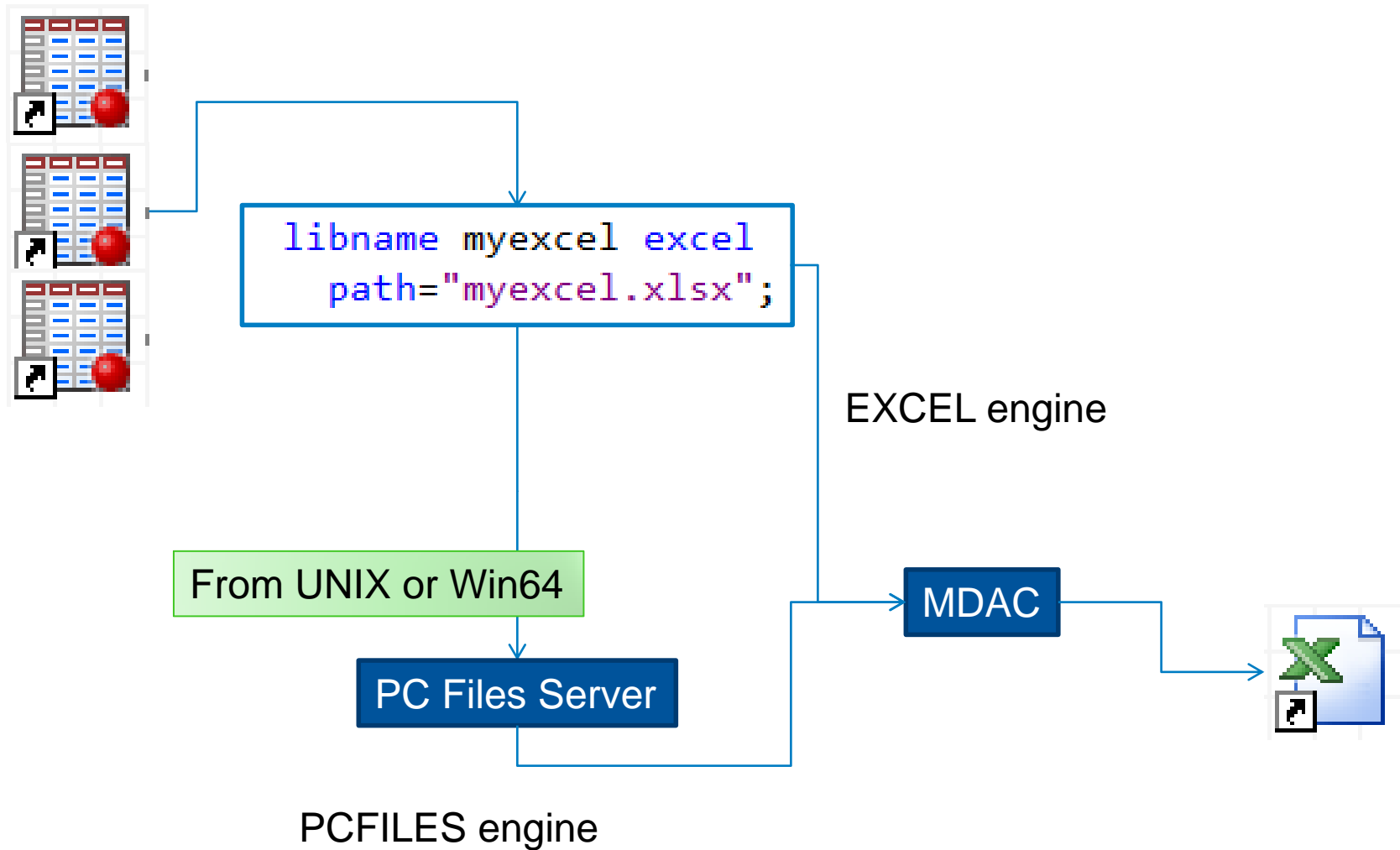
EXPORT SAS/ACCESS TO PC FILE FORMATS

- Use the SAS programming language to directly **write to** Microsoft Excel files

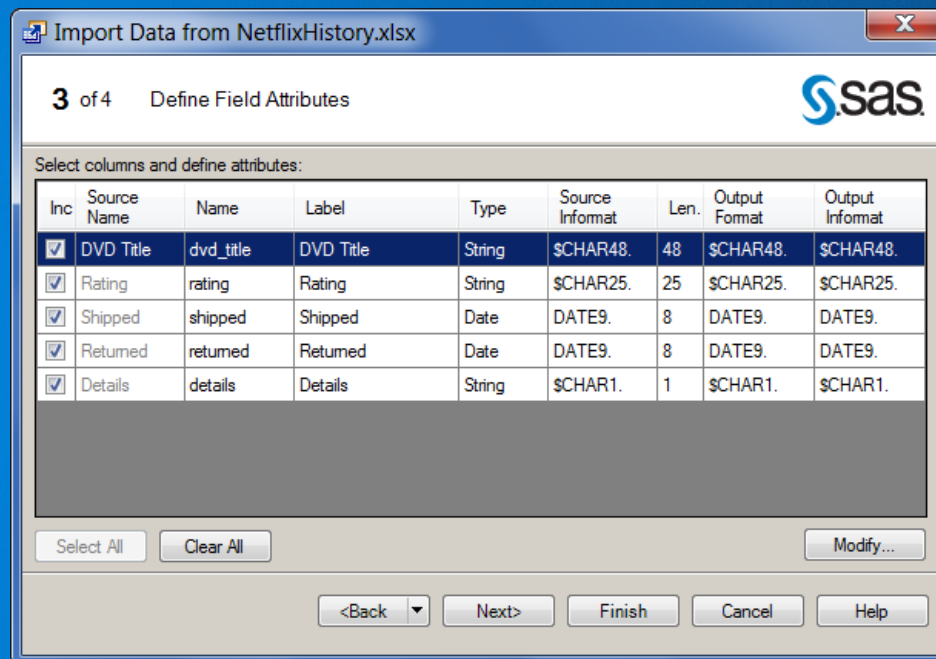


DATABASE SAS/ACCESS TO PC FILES

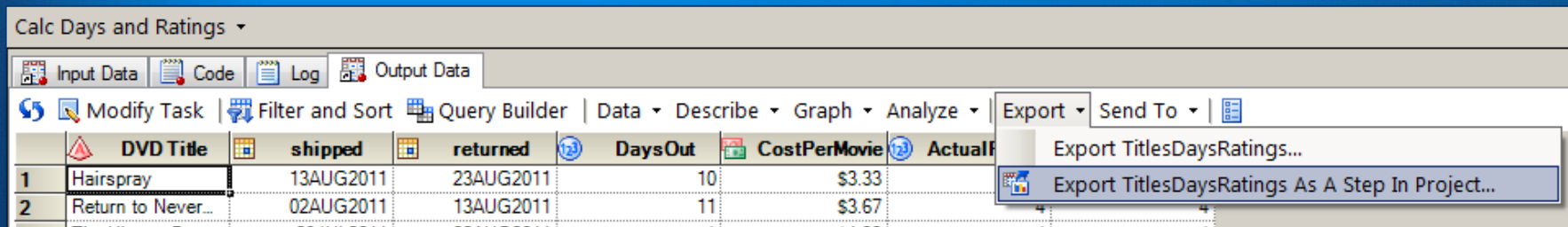
- Treat the Excel file like a SAS library



- No SAS/ACCESS necessary
- Generates SAS program, but relies on Windows APIs
- Provides options for using SAS/ACCESS if you have it



- Supports one data set to one workbook/sheet
- Supports XLS and XLSX (in 5.1)
- Custom task for XLSX (4.3)
- One-off or “as a step”
- Relies on Windows APIs (no SAS/ACCESS)

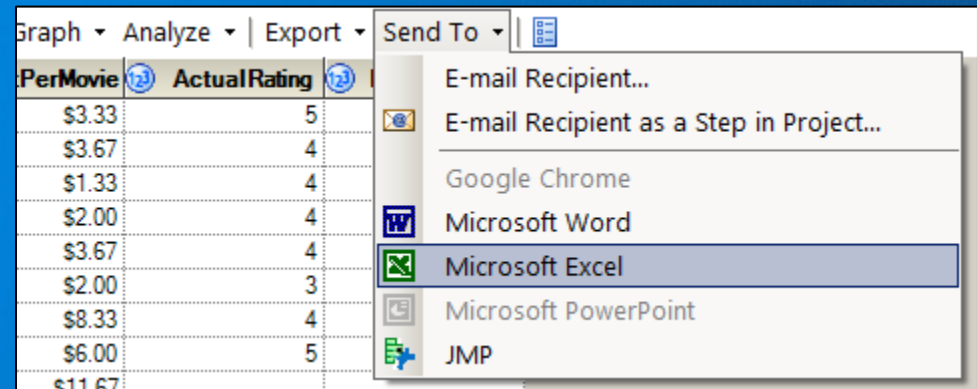


The screenshot shows the SAS Enterprise Guide interface for a task named "Calc Days and Ratings". The interface includes a menu bar with options like "Input Data", "Code", "Log", and "Output Data". Below the menu bar is a toolbar with icons for "Modify Task", "Filter and Sort", "Query Builder", "Data", "Describe", "Graph", "Analyze", "Export", and "Send To". The main area displays a data table with the following columns: DVD Title, shipped, returned, DaysOut, CostPerMovie, and Actual. The table contains two rows of data:

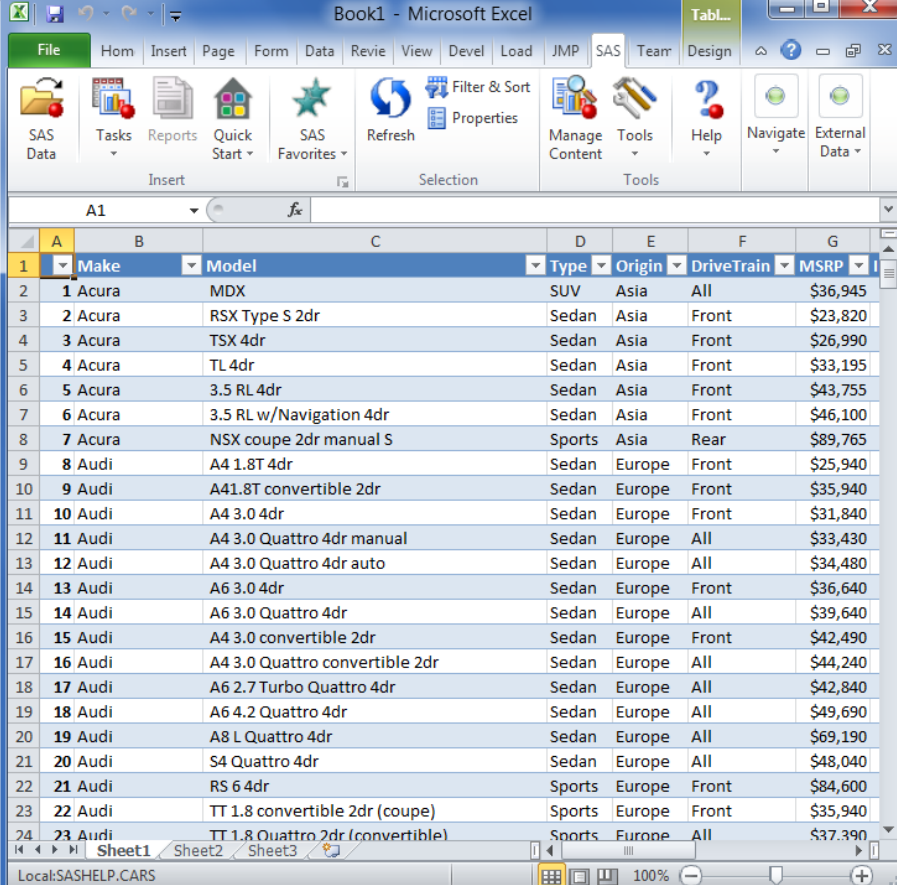
	DVD Title	shipped	returned	DaysOut	CostPerMovie	Actual
1	Hairspray	13AUG2011	23AUG2011	10	\$3.33	
2	Return to Never...	02AUG2011	13AUG2011	11	\$3.67	

An "Export" menu is open, showing two options: "Export TitlesDaysRatings..." and "Export TitlesDaysRatings As A Step In Project...".

- Automates local Microsoft Excel
- “Enters” all data content into a new worksheet
- With SAS Add-In for MS Office, report content supported
- Interactive only



GO NATIVE SAS ADD-IN FOR MICROSOFT OFFICE



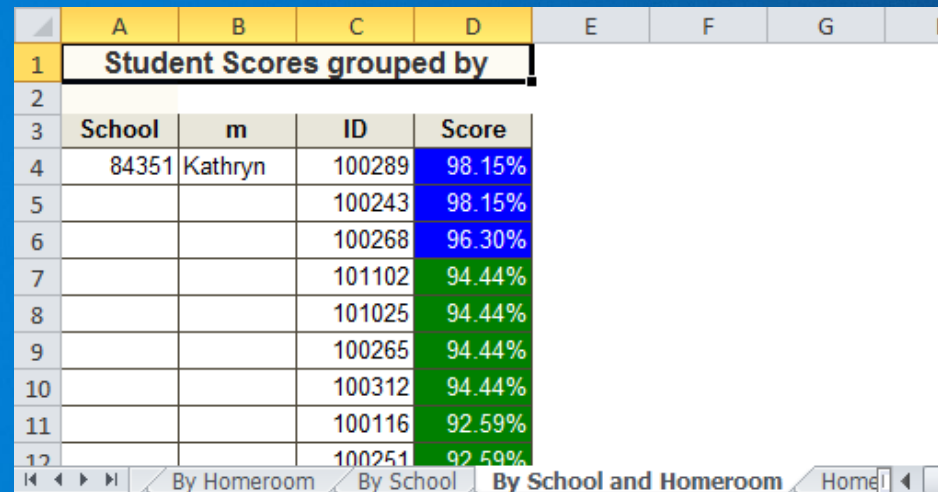
The screenshot shows the Microsoft Excel interface with the SAS add-in ribbon. The ribbon includes tabs for File, Home, Insert, Page, Form, Data, Revie, View, Devel, Load, JMP, SAS, Team, Design, and Tabl... The SAS ribbon contains various tool groups: SAS Data, Tasks, Reports, Quick Start, SAS Favorites, Refresh, Filter & Sort, Properties, Selection, Manage Content, Tools, Help, Navigate, and External Data. The main workspace displays a data table with columns for Make, Model, Type, Origin, DriveTrain, and MSRP. The data is organized into a table with 24 rows and 6 columns.

	Make	Model	Type	Origin	DriveTrain	MSRP	
1	1	Acura	MDX	SUV	Asia	All	\$36,945
2	2	Acura	RSX Type S 2dr	Sedan	Asia	Front	\$23,820
3	3	Acura	TSX 4dr	Sedan	Asia	Front	\$26,990
4	4	Acura	TL 4dr	Sedan	Asia	Front	\$33,195
5	5	Acura	3.5 RL 4dr	Sedan	Asia	Front	\$43,755
6	6	Acura	3.5 RL w/Navigation 4dr	Sedan	Asia	Front	\$46,100
7	7	Acura	NSX coupe 2dr manual S	Sports	Asia	Rear	\$89,765
8	8	Audi	A4 1.8T 4dr	Sedan	Europe	Front	\$25,940
9	9	Audi	A4 1.8T convertible 2dr	Sedan	Europe	Front	\$35,940
10	10	Audi	A4 3.0 4dr	Sedan	Europe	Front	\$31,840
11	11	Audi	A4 3.0 Quattro 4dr manual	Sedan	Europe	All	\$33,430
12	12	Audi	A4 3.0 Quattro 4dr auto	Sedan	Europe	All	\$34,480
13	13	Audi	A6 3.0 4dr	Sedan	Europe	Front	\$36,640
14	14	Audi	A6 3.0 Quattro 4dr	Sedan	Europe	All	\$39,640
15	15	Audi	A4 3.0 convertible 2dr	Sedan	Europe	Front	\$42,490
16	16	Audi	A4 3.0 Quattro convertible 2dr	Sedan	Europe	All	\$44,240
17	17	Audi	A6 2.7 Turbo Quattro 4dr	Sedan	Europe	All	\$42,840
18	18	Audi	A6 4.2 Quattro 4dr	Sedan	Europe	All	\$49,690
19	19	Audi	A8 L Quattro 4dr	Sedan	Europe	All	\$69,190
20	20	Audi	S4 Quattro 4dr	Sedan	Europe	All	\$48,040
21	21	Audi	RS 6 4dr	Sports	Europe	Front	\$84,600
22	22	Audi	TT 1.8 convertible 2dr (coupe)	Sports	Europe	Front	\$35,940
23	23	Audi	TT 1.8 Quattro 2dr (convertible)	Sports	Europe	All	\$37,390

- Exchange between SAS-Excel using File->Open and File->Save As
- Use Excel formatting on SAS content
- Automate using VBA and SAS-provided APIs

BASE SAS ODS TAGSETS.EXCELXP

- Supports multiple sheets
- Supports appearance formatting
- Write-only
- Non-native Excel file



The screenshot shows an Excel spreadsheet with a table of student scores. The table has four columns: School, m, ID, and Score. The data is grouped by School and Homeroom. The scores are displayed as percentages, with some cells highlighted in blue and others in green. The spreadsheet interface includes a ribbon with tabs for 'By Homeroom', 'By School', and 'By School and Homeroom', and a 'Home' tab.

	A	B	C	D	E	F	G
1	Student Scores grouped by						
2							
3	School	m	ID	Score			
4	84351	Kathryn	100289	98.15%			
5			100243	98.15%			
6			100268	96.30%			
7			101102	94.44%			
8			101025	94.44%			
9			100265	94.44%			
10			100312	94.44%			
11			100116	92.59%			
12			100251	92.59%			

BASE SAS DDE – DYNAMIC DATA EXCHANGE

- Works only on Windows
- Not client-server friendly (SAS Enterprise Guide)
- Relies on Windows messaging
- Tricky syntax
- Extremely flexible

```
1  /* The DDE link is established using */
2  /* Microsoft Excel SHEET1, rows 1   */
3  /* through 100 and columns 1 through 3 */
4  filename random dde
5     'excel|sheet1!r1c1:r100c3';
6  data random;
7     file random;
8     do i=1 to 100;
9         x=ranuni(i);
10        y=10+x;
11        z=x-10;
12        put x y z;
13    end;
14  run;
```

BASE SAS CSV + SCRIPT

```
1 filename allcsv 'c:\temp\cars.csv';
2 ods csv file= allcsv;
3
4 proc print data = sashelp.cars noobs;
5 run;
6
7 ods csv close;
8
9 data _null_;
10 file 'C:\temp\openAndSaveExcel.vbs';
11 put 'Set objExcel = CreateObject("Excel.Application)';
12 put 'objExcel.Visible = FALSE';
13 put 'objExcel.DisplayAlerts = FALSE';
14 put 'Set objWorkbook = objExcel.Workbooks.Open("C:\temp\cars.csv)';
15 put 'objExcel.ActiveWorkbook.SaveAs"C:\temp\cars.xlsx",51';
16 put 'objExcel.ActiveWorkbook.Close';
17 put 'objExcel.Quit';
18 run;
19
20 X "C:\temp\openAndSaveExcel.vbs";
```

- Create a CSV file
- Use VB Script or other method to “Save as” by automating Excel

See [The Perfect Marriage: The SAS Output Delivery System \(ODS\) and Microsoft Office](#)
Chevell Parker, SAS Institute

BUT WAIT...

THERE'S MORE

- This is just a partial survey!
- Excel topics are often discussed on discussion forums, SAS-L, and sasCommunity.org
- Start with [support discussion forum](#) for more

THANK YOU



**THE
POWER
TO KNOW.**

Chris Hemedinger

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