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# So, You've Got Data Enterprise Wide (SAS®, ACCESS, EXCEL, MySQL, and Others); Well, Let SAS® Enterprise Guide® Software Point-n-Click Your Way to Using It

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## ABSTRACT

This paper will walk a SAS® user through the process of opening and using files from different (not SAS) generated sources and processing the data with SAS® Enterprise Guide®. The focus of this paper will be to get access to the data, since most functions available to SAS Enterprise Guide are drop-down menus and wizards which help teach a new user how to process data. This paper will not show how to get the data into files that are SAS files; it will be assumed that the user's enterprise will guide them through that process.

## INTRODUCTION

Most of this paper is screen shots from SAS® Enterprise Guide that demonstrate how to find the tools that enable a user to access external data and use it within the SAS Enterprise Guide environment. The features described in this paper will help the new users to Enterprise Guide be able to quickly expand their expertise combining data from diverse sources. Some of the features described in this paper also require the use of the ODBC API software to allow the use of additional data sources. This author uses SAS® Learning Edition Version 4.1 which is advertised by SAS as a tool to study for certification exams. SAS® Learning Edition Version 4.1 uses a nearly complete version of SAS® Enterprise Guide. The SAS ® Enterprise Guide Explorer is missing, the software is limited to 1500 input observations, and the EULA limits the use to non-commercial uses. But this software is a powerful teaching tool.

## GETTING STARTED

After showing how to access SAS files the rest of the paper will focus on external files and databases. When starting a new SAS® Enterprise Guide project, the first screen shown to the user is the project designer screen. (A note from the author – The images are best when viewed electronically, they look much better expanded.)
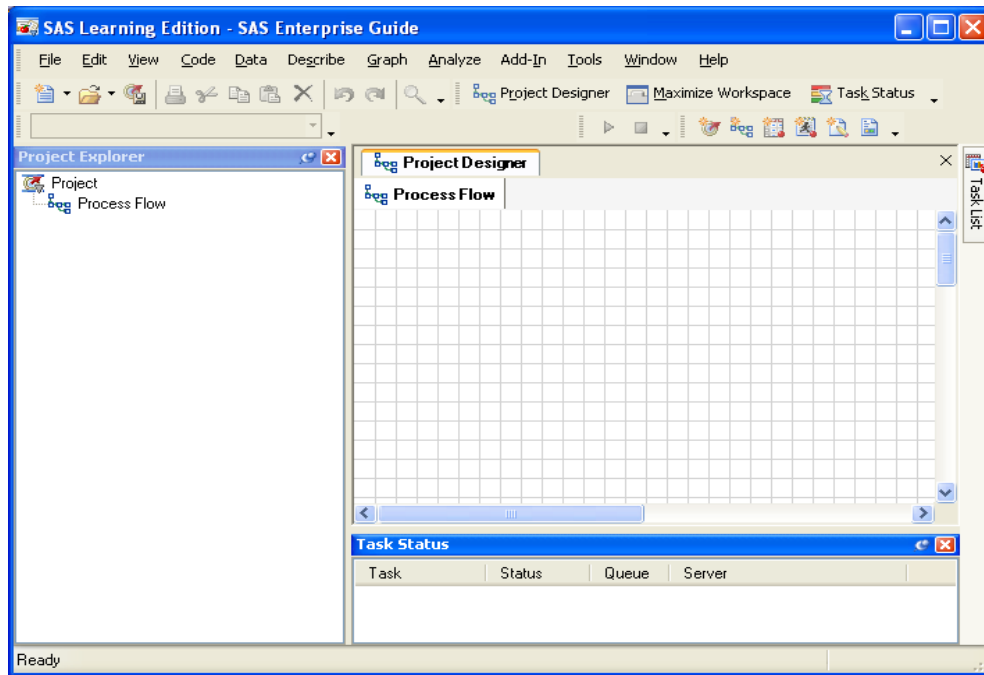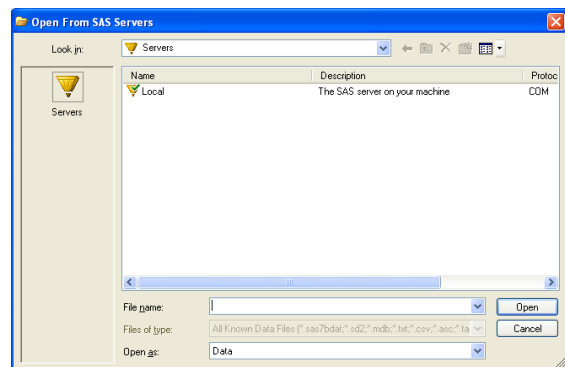


1) View of SAS Enterprise Guide Project Designer screen.

This paper will use the SAS "SHOES" dataset from the SASHELP library, the file can be located by choosing "FILE">
"OPEN"> "DATA" and a screen similar to the "Open Data Form" will appear.
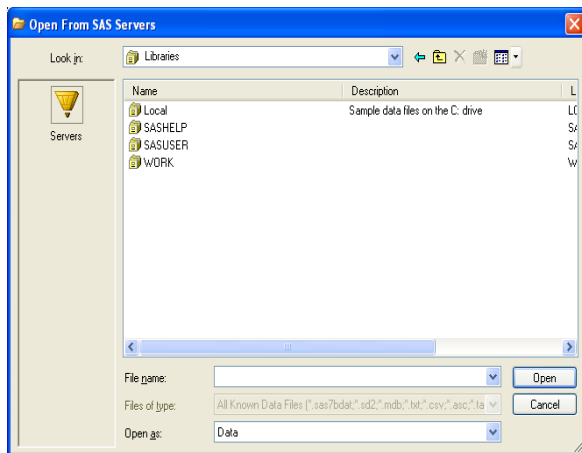
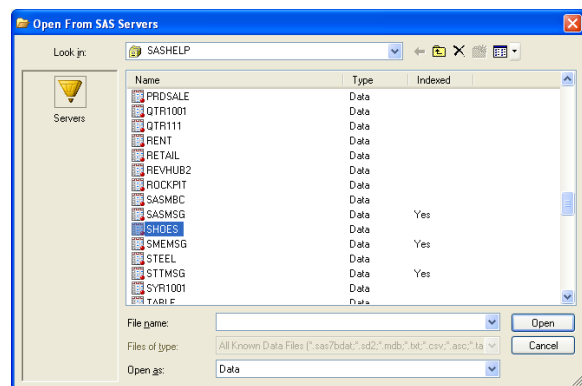2) Next select the SAS Servers icon, and
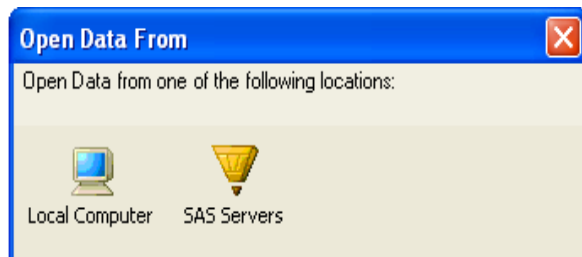


3) Then choose the local server:



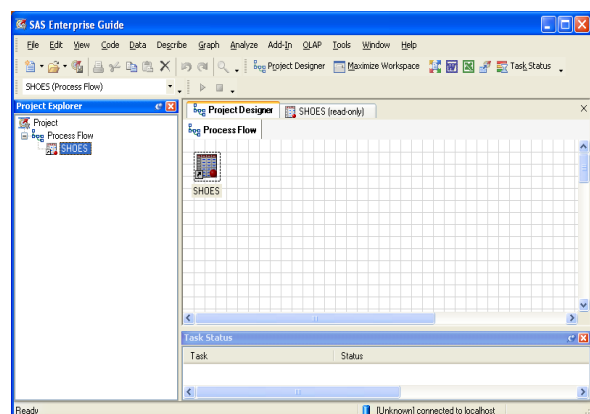4) And finally access to the SASHELP libname is available.



5) Then the file



6) The data



7) The Project Designer window



Now on to the meat of the paper…

To read data stored in permanent SAS Libraries the best way is to assign a libname, To assign a libname for the session use the "Assign Library"  option under the "TOOLS" toolbar menu item. There are six steps to make that

assignment, but it has to be re-executed for every session. Saving the step to the project avoids the need to open the menus every time. But this paper is not really about SAS files, it is about the other files SAS can open.
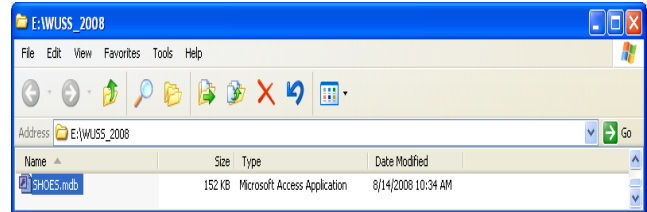
## FROM SAS DATASETS TO MICROSOFT ACCESS DATABASE FILES
The easiest way to move SAS data to a MS/Access database (*.mdb) file is to use the export option of the "FILE" option on the toolbar menu. The data is generally formatted well, and the table works as a stand-alone table available to MS/Access. The same option is available for MS/Excel (*.xls), dBase (*.dbf), Lotus (*.wk[1,3,4]), Paradox (*.db), and HTML files for their respective systems.
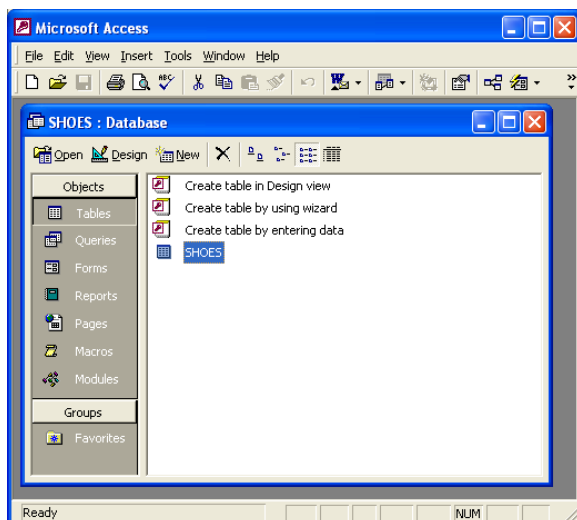
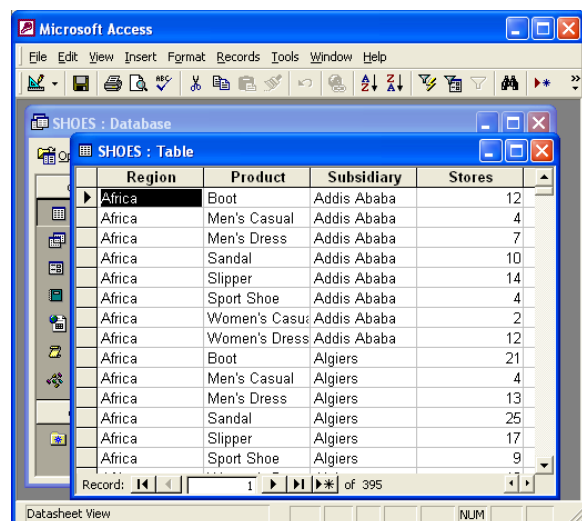8) Highlight the data file icon and use the export option
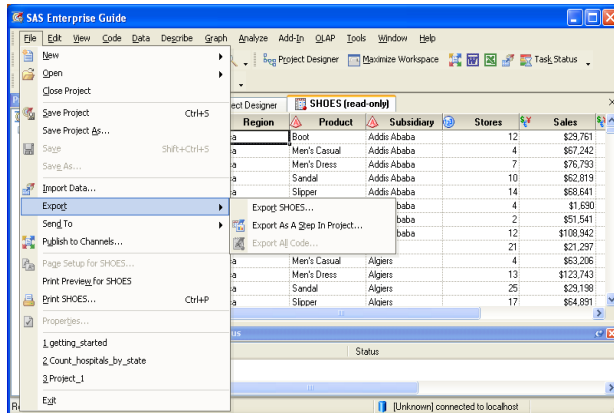
9) Create a Microsoft Access database

10) Open it with access (optional)

11) View the data with Microsoft Access

## FROM MICROSOFT ACCESS DATABASE FILES TO SAS DATASETS
The Conversely, a fast way to get data from those systems is to use the import feature of the "FILE" option on the toolbar menu to read the data into a SAS file. Here there are a few more choices. The first menu you will see is

similar to the first picture in the group above. But, to import data select import not export. Next an image like the following will appear:
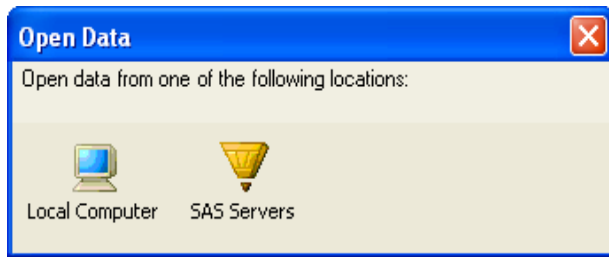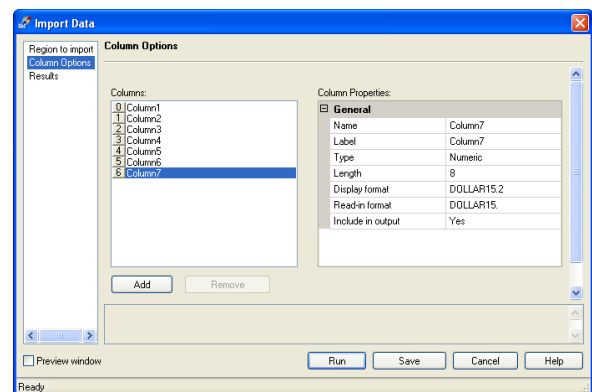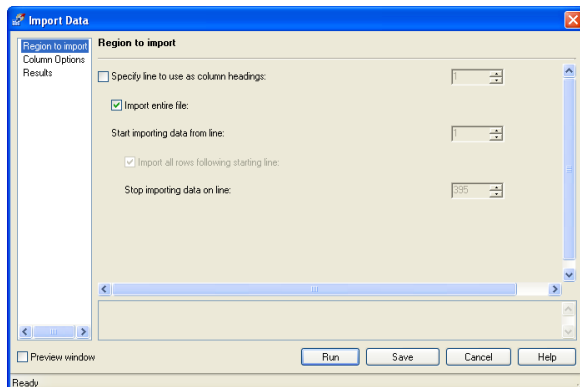




12/13) Select "Local Computer" and navigate to the directory that has the Microsoft Access file you want to import, and select it to read.  ➔
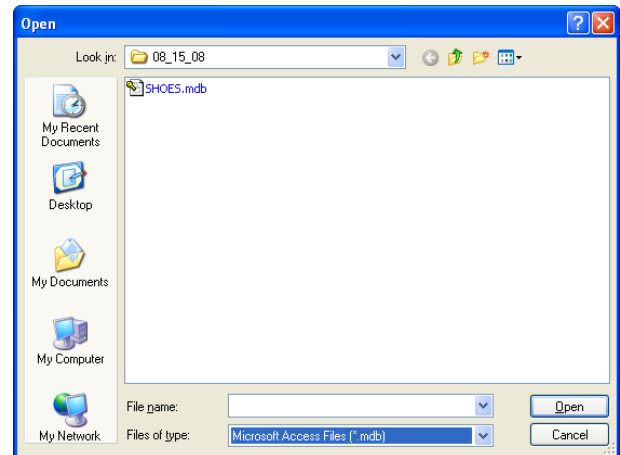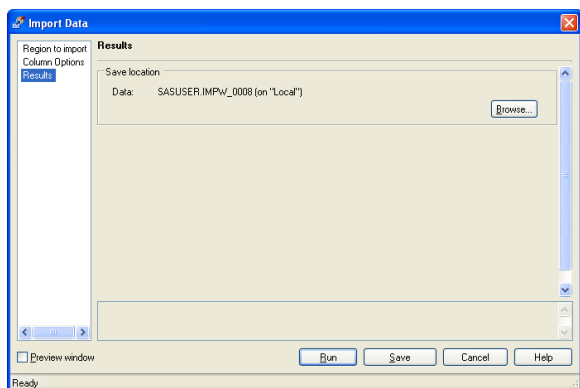
An "Import Data" screen should appear with three options on the left hand side window. These options are "Region to Import", "Column Options", and "Results".

14) Region to Import
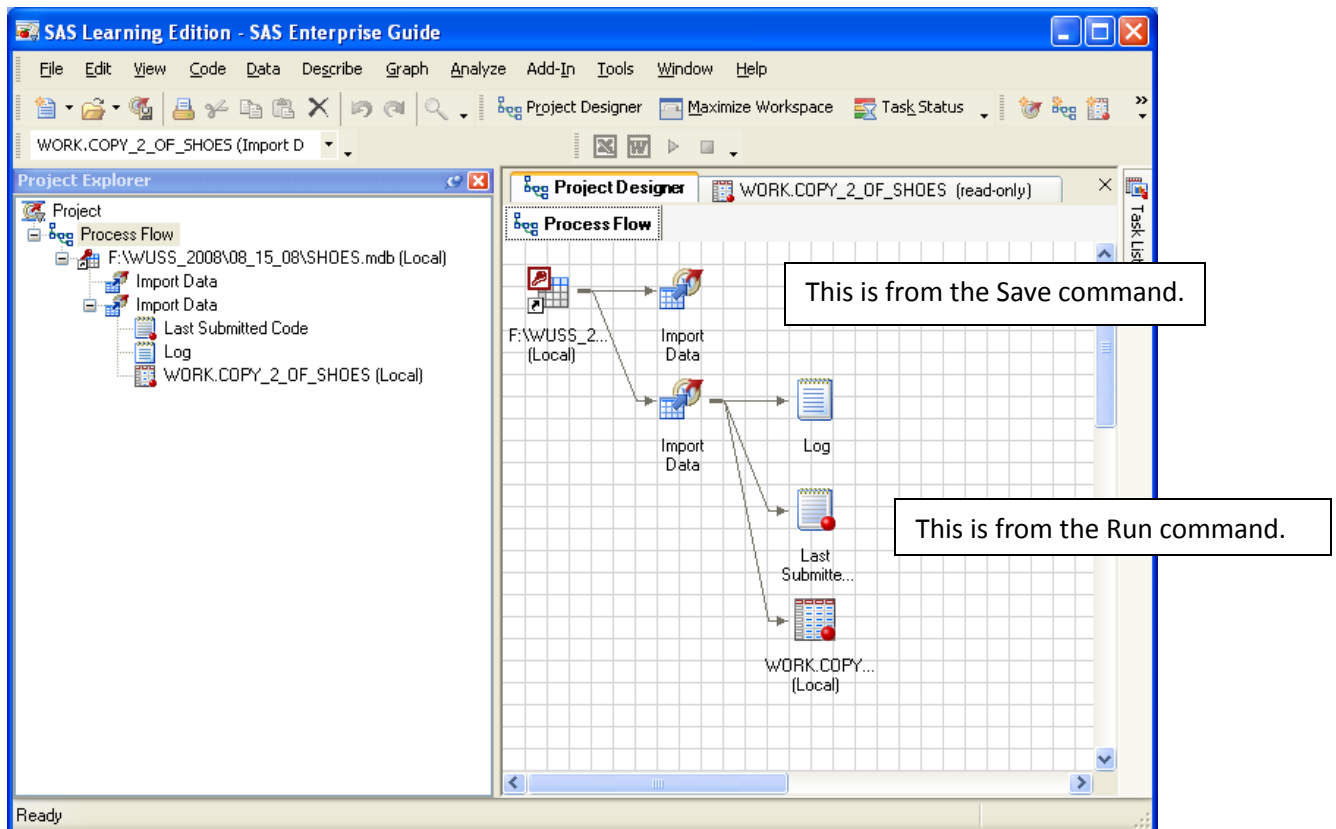




16)  Results



These three screens allow you to select the full file or a subset of rows, all columns or a subset of columns, and choose where to place the file (libname). Note the four options in the bottom right hand corner of the screen, from left to right - "RUN", "SAVE", "CANCEL", and "HELP", the options "RUN" and "SAVE" will either bring in the file to Enterprise Guide, or save the commands to do that for later. The file may be opened as a read only file. The next screen shows the results of selecting both Run and Save.

15) Column Options

Figure labels: "This is from the Save command." and "This is from the Run command."

17) Image of import "Run" and "Save" command results in the Project Designer Window.

**NOW FOR THE GOOD STUFF – GETTING DATA FROM MYSQL**
At this point the author is assuming the following. (1) The user (you) have acquired and installed MySQL software, and have the system running as a Windows service typically identifiable in the task managed as a process with a name similar to mysql-nt.exe. (2) A user account is active and available to the user. (3) A MySQL database and table has been created with data. These files can be loaded into SAS VIA an ODBC action. (4) The ODBC driver from MySQL has also been loaded onto the user machine. (5) MySQL Administrator in installed.

This author believes that the hardest thing about doing something over and over again is figuring out how to do it the first time. The task of figuring something out for yourself the first time, without anyone leading you is challenging, to the point of frustration. Having accomplished this task he presents it to you, to make your goal easier to achieve.

**MYSQL IS A STAND-ALONE DATABASE SYSTEM – HOW CAN I USE IT WITH MY SAS CODE?**
This paper addresses using MySQL as an input source to SAS. It also addresses what can be done not by writing code, but by pointing and clicking the mouse (with some type of names etc..) this first thing to know about using MySQL data as input to SAS is … "Do you have any data?" … If you do we can continue forward… The author has a MySQL data base named test into which he has loaded a copy of SASHELP.SHOES

**C:\Program Files\MySQL\MySQL Server 4.1\bin\mysql.exe**

```
mysql> show tables;
+-----------------+
| Tables_in_test  |
+-----------------+
| shoes           |
+-----------------+
1 row in set (0.11 sec)

mysql>
```
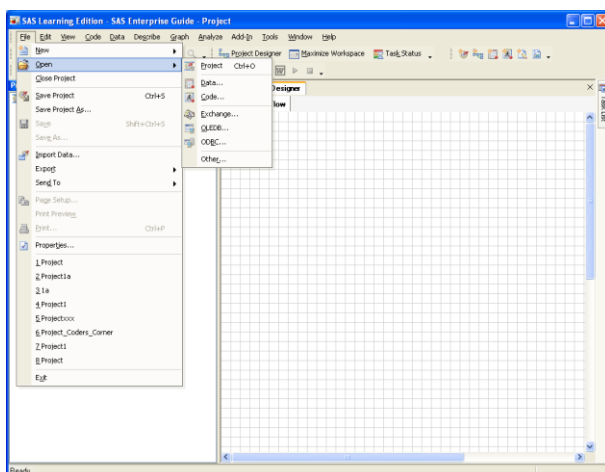
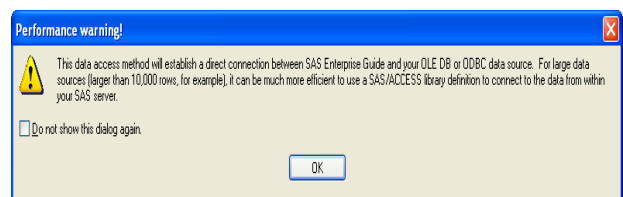18) Listing showing the MySQL database Test and the name of a table called shoes.

**THE FOLLOWING STEPS OPEN AN ODBC DATA PATH**
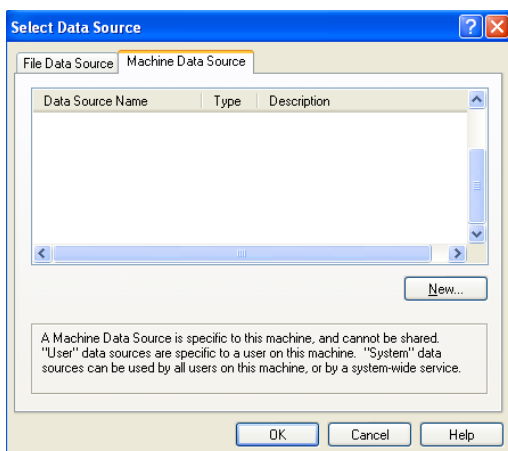Instructions will be interspersed between the images, which will read from felt to right and down.
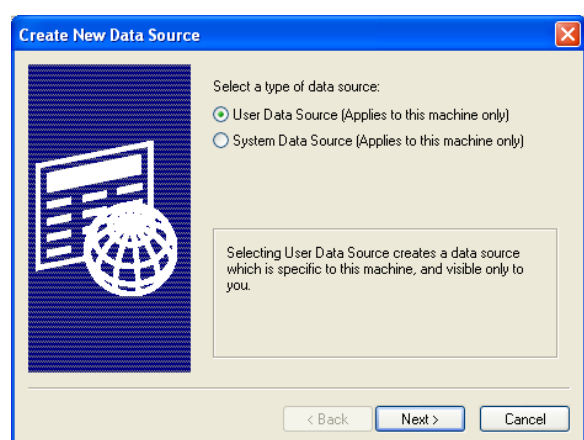
19) Open the ODBC dialogue
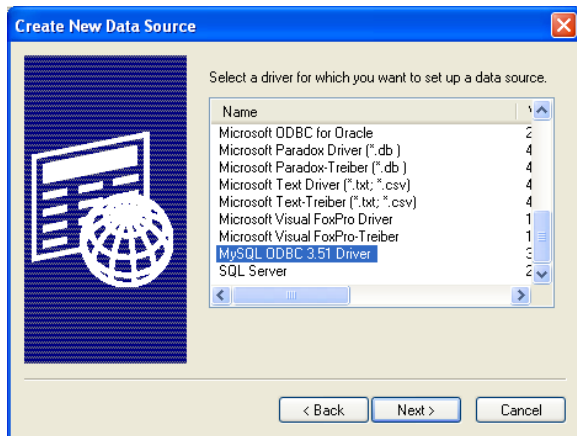


20) Read the warning about big data extracts.



21) Select the "Machine Data Source" tab



22) Then the User Data Source option
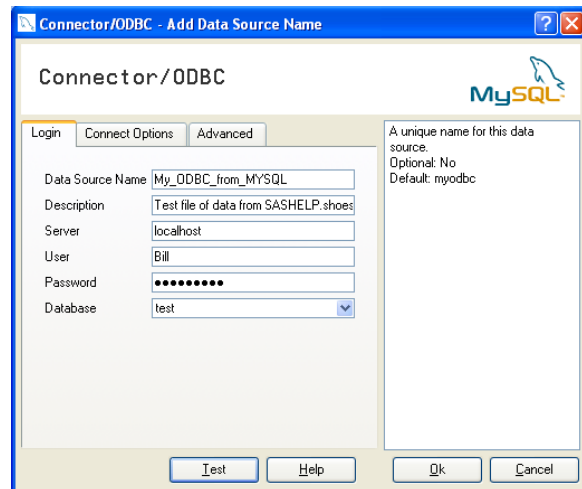
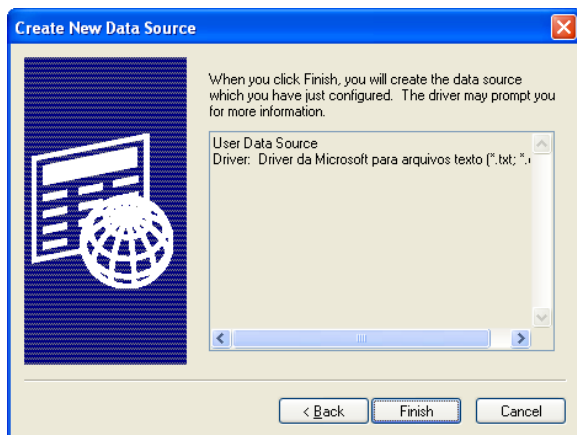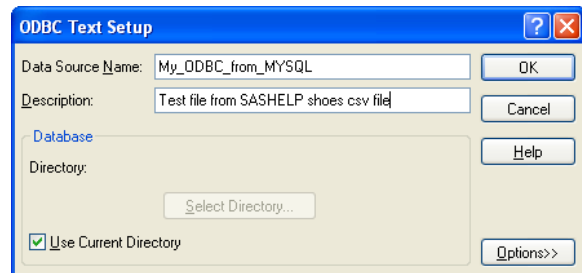23) Select a data source, and click "Next" and "Finish" on the next screen.



25) Click "OK" or "NEXT" until getting back here.



27) When you get back here click "OK" again.



24) Fill in this screen and port numbers in the "Advanced" tab, ensure a good connection by pressing the "TEST" button on the bottom left.
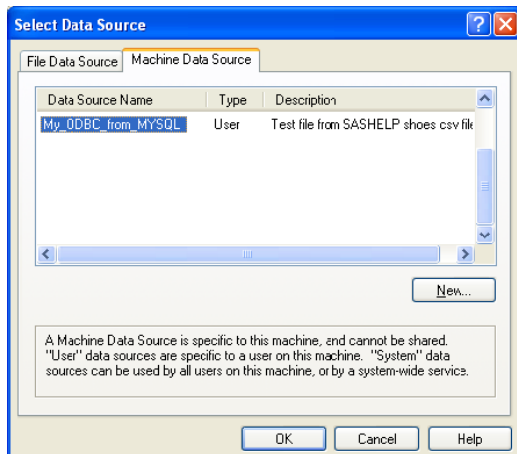


26) Fill in the Data Source name from step 6, click "Ok"
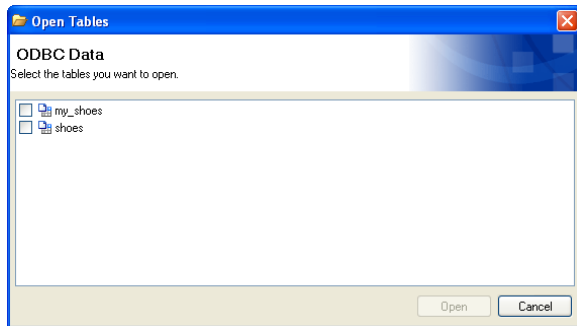


28) The data is now available for use.
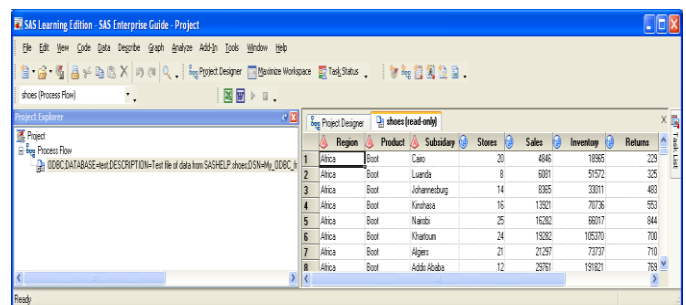


To use this data source again go back to step three, (the name from step 9 should appear there) and select the data source. If there is more than one table in the MySQL file you will see a screen similar to the next screen.
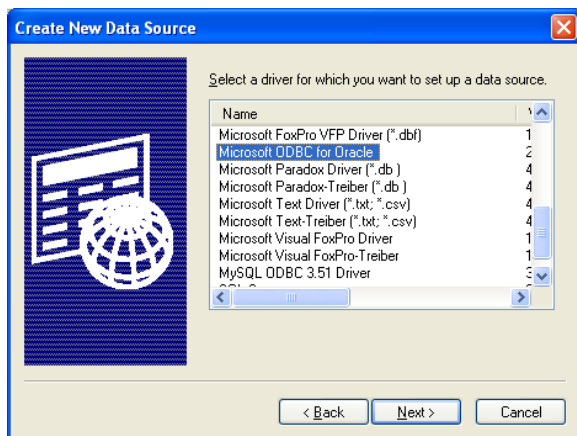
29) selection screen if more that one MySQL table exists in the referenced database.
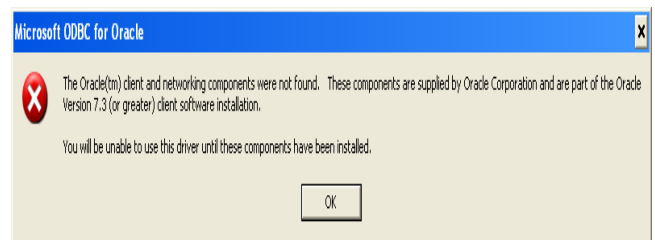


30) The Project Designer screen will show the full source information about the MySQL file.
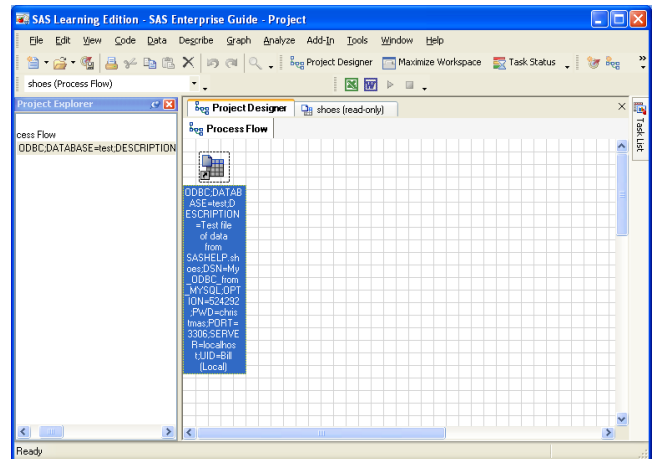


31) This author does not have access to an Oracle Database, but the ODBC "Create New Data Source" window has a driver selection for Oracle.
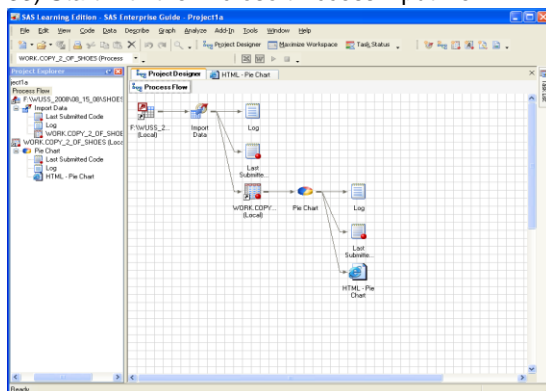


32) This windows indicated some things required for Oracle ODBC access.
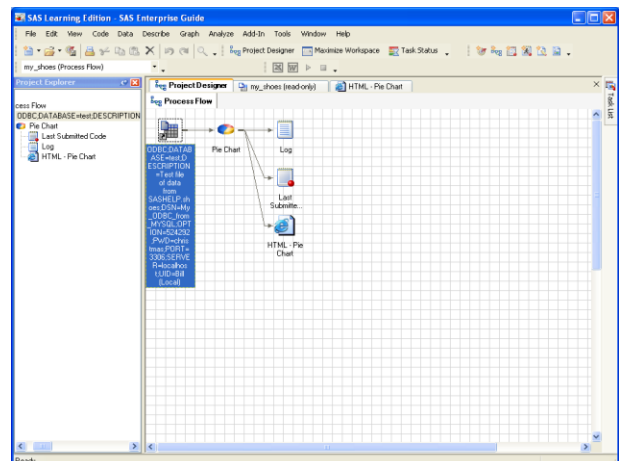


**Now Let's Do Some Cooking – (pie charts)**

The toolbar "Graph" tab is used to select a Pie Chart of the Product variable to process the data.

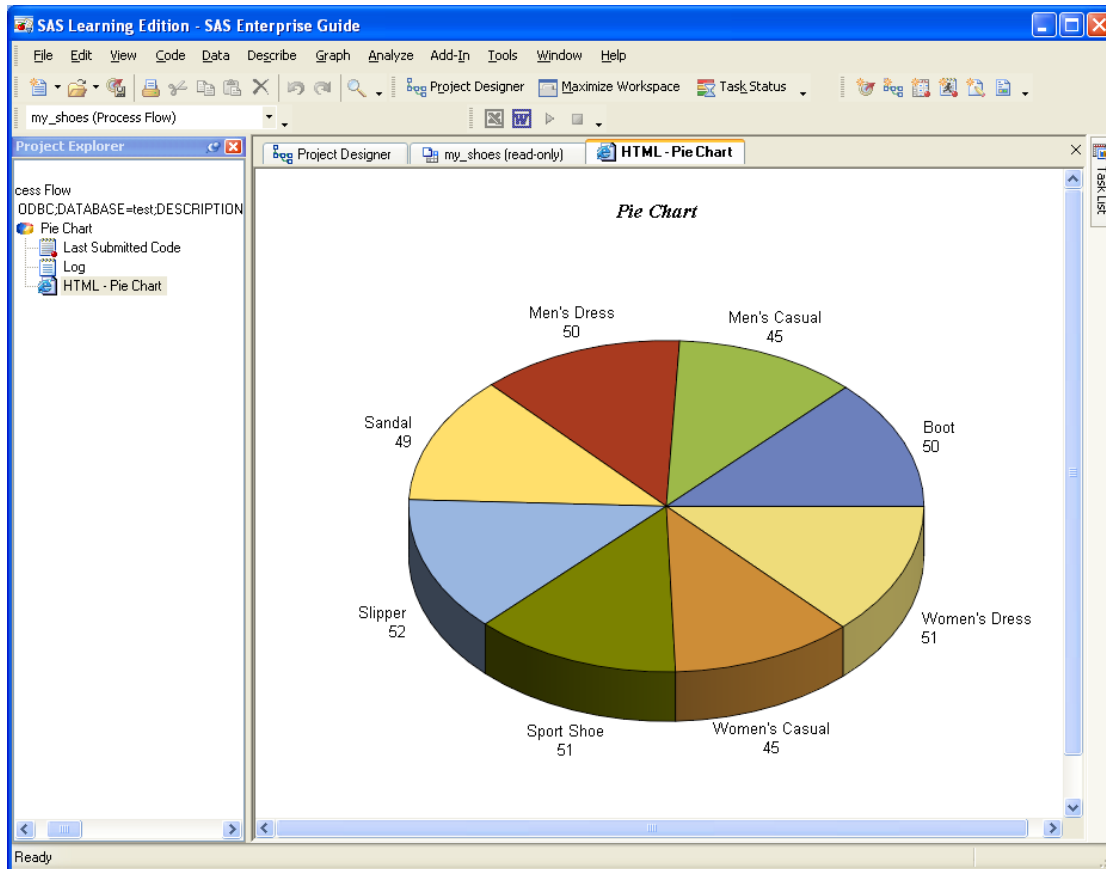33) Start with the Microsoft Access input file



34) We can do the same thing with the data from MySQL

35) This picture shows the shows the Pie Chart Graph for the MySQL data input, but both looked the same.



## TOYS ARE FUN – BUT – YOU NEED TOOLS

Of course the object of all of this is to get the data into a SAS file where it can become useful. Earlier in the paper there was a reference to outputting data into Excel.  Tucked away under the "View" toolbar tab on the "Toolbars" submenu is the "Customize" option. Then in the "Commands" window of the "Commands" tab are the familiar icons

and these can be moved to the toolbar where they alternate between grey and colored. When they are not grey, one good click will send data directly to either Excel or Word (your choice of course). A right click on the file icon in the Project Designer window will display a popup menu to allow you choose to "Send To" the output of your choice.
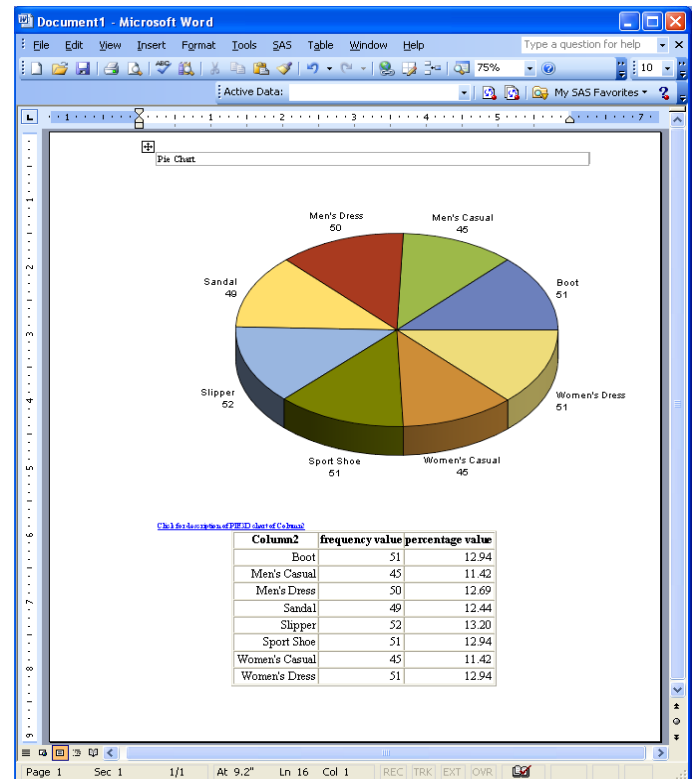
36) Right click on pie chart icon

37) Send it straight to MS/Word.
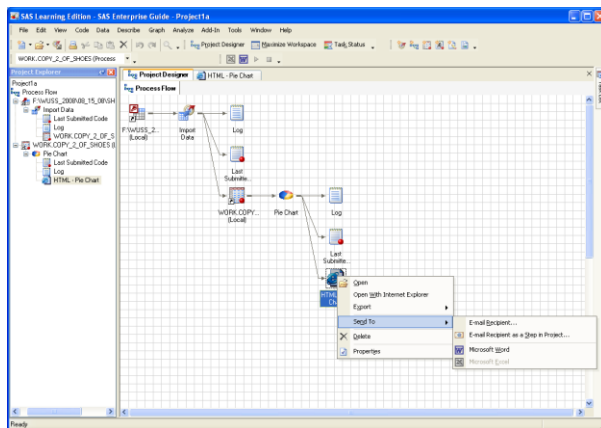




## WHAT YOU DO, IS UP TO YOU

Of course now the options open wide, the paths lead to Excel, Power Point, and since Access 2007 will store **BOTH** intact Word documents and PDF files in an Access Database record it seems endless. But, that sounds like the topic for another paper.

## CONCLUSION

The hours of research involved in looking for this kind of help can be frustrating when there seem to be no good papers or books that deal with these cross system applications. It is easy to find material on SAS, Excel, Word, Access, even on MySQL. Authors love to write about their favorite subject. But rarely do the subjects join two or more applications into the discussion. In fact most of the time great pains are taken to avoid any mention of another product. This author hopes that some of this material will be useful to at least one other person. Discussing this would be fun.

## CONTACT INFORMATION

Your comments and questions are valued and encouraged.  Contact the author at:

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