Getting Started with SAS Statistical Software at WPI

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This document contains information on three versions of SAS statistical software. The information on two of these, SAS 9.4 and SAS Studio, is specific to WPI. The other version, SAS University Edition, is available to any student or educator and does not require a WPI user account. Here are some specifics:

SAS 9.4

The full version of SAS 9.4 is available on PCs in the computer labs SH003 and KH202. It is also available on the terminal server *windows.wpi.edu*. In class demonstrations, and in labs, we will be using SAS 9.4.

To run SAS 9.4 for the first time from any of the lab PCs or *windows.wpi.edu*, you should do the following:

- Map the R: drive to `\\storage.wpi.edu\HOME\My_Documents`

- Run the batch file

  `\\storage.wpi.edu\academics\courses\MA\SAS-Data\SASconfig011218.bat`

You should only have to do this once.

A WPI student may obtain permission to put the full 12 gigabit version SAS on a personal Windows laptop (sorry, no Linux or Macs). To run this version of SAS from a personal laptop, a connection to the WPI network on campus or the WPI Virtual Private Network (VPN) (information here) off campus. Full instructions for installing SAS 9.4 are found here and for setting up the SAS environment are found here.

SAS Studio

The full install of SAS 9.4 has a number of components. The main SAS program runs stand-alone in its own set of windows. A subset of SAS 9.4 functionality is provided by SAS Studio, a developmental web application for SAS accessed through a web browser. At WPI, SAS Studio is available on PCs in the computer labs SH003 and KH202 and on the terminal server *windows.wpi.edu*.

SAS University Edition

SAS University Edition is a free version of SAS Studio that runs on most popular operating systems (Windows, Macs, Linux). While it does not require use of WPI's VPN, SAS University Edition does require use of a virtual machine, such as Oracle's Virtual Box (which is also free). For complete instructions on downloading and installing SAS University Edition, visit this site. All of the SAS procedures and code that we will use in this course will run on SAS University Edition, though the interface will be a bit different than that of SAS 9.4.

SAS Data Libraries

Data must be input into a SAS data file before statistical procedures can be used. All SAS data files are stored in a SAS data library, a location (folder or subdirectory) where SAS data files reside. All SAS data files have a two-part name of the form *libname.filename*, where *libname* is the name of the data library where the file resides and *filename* is the name of the file. So, for example, the SAS data file *joe* in the *ma2611* library has the name *ma2611.joe*.

The default data library is called *work*. The *work* library has two unique characteristics:

- The library name can be omitted when working with these files. So, for example, SAS assumes the SAS data file name *joe* stands for *work.joe*.

- All files in the *work* data library are temporary: when the SAS session ends, the files are erased.

There is a default "permanent" SAS data library named *sasuser*, so one option to retain a SAS data file for future access is to save it in that library (e.g., *sasuser.joe*). Another option is to create a SAS data library with a name of your own choosing. The following instructions show you how to create a permanent SAS data library called MA2611 in which to store your SAS data files.

SAS 9.4

You can create a SAS data library using the *libname* command submitted from the editor window. To create a library named MA2611 which references files in the folder *folder*, submit the command *libname MA2611 'folder';*

For example, I have created the folder `R:\SAS\ma2611` to contain my MA2611 library. To assign the MA2611 library to that folder, I submit the command *libname MA2611 'R:\SAS\ma2611';*

To make this assignment automatic on startup, put this libname command in the autoexec.txt file in your `R:\SAS` folder. The autoexec.txt file might then look like this:

```
libname sasdata  '\\storage.wpi.edu\academics\courses\MA\SAS-Data\sasdata8';
libname MA2611 'R:\SAS\ma2611';
%macro putdate;
data _null_;
current=today();
call symput('today',left(put(current,date7.)));
run;
footnote "&sysuserid &today";
%mend putdate;
%putdate;
```

SAS University Edition

1. In the *Server Files and Folders* pane, right click on *My Folders* and select *New→Folder*.

2. In the *Name* box, type a folder name. In our examples, we use the name MA2611. Click *Save*.

3. In the *Libraries* pane, right click on *My Libraries* and select *New Library*.

4. In the *Name* box, type MA2611 and in the *Path* box type */folders/myfolders/MA2611*.

5. Check the *Re-create this library at start-up* box, then click *OK*.

You need only do steps 1-5 once.

SAS Studio

1. In Windows, create a folder to contain the library. If you want your data library to be accessible from any WPI lab machine running SAS and from the terminal servers, I suggest you do the following:

   (a) Map your R: drive to `\\storage.wpi.edu\HOME\My_Documents` (For instructions go here , enter the search term "drive mapping", and select the article corresponding to your version of windows).

   (b) If there is not already one, create the folder SAS in the R: drive.

   (c) Create your folder, MA2611, in the `R:\SAS` folder.

2. In the *Libraries* pane, right click on *My Libraries* and select *New Library*.

3. In the *Name* box, type MA2611 and in the *Path* box type the path to the folder you created in step 1.

4. Check the *Re-create this library at start-up* box, then click *OK*.

You need only do steps 1-4 once.

Documentation

SAS has extensive online documentation, which may be found here or through the help button on the program's main window. Other resources for learning SAS include:

- The UCLA Academic Technology Services site: https://stats.idre.ucla.edu/sas/ .

- Delwiche, L., and Slaughter, S., The Little SAS Book: A Primer, 4th Ed., SAS Institute, Inc.