SASmarkdown: Including Graphics in PDF Documents

Doug Hemken

5/10/2019

Contents

Introduction

SAS produces graphics as a side effect of most analytical PROCs. The method you use to include these graphics in a Markdown document depends upon what kind of document you are trying to produce, an HTML document or something else like a PDF document.

Including graphics along with statistical output is very simple when the final product is an HTML document: use the `sashtml` or `sashtml5` engines, as documented elsewhere.

Including graphics in a PDF document requires you to take two additional steps.

- instruct SAS where to save your graphs
- include links to the graphs in your Markdown

Document Setup

Begin with the usual SASmarkdown setup code block in your document. For a PDF document you will use the ordinary ("listing") SAS engine.

```
```{r setup, include=FALSE}
library(SASmarkdown)
sasexe <- find_sas()
sasopts <- "-nosplash -ls 75"
knitr::opts_chunk$set(comment=NA,
                  engine.path=list(sas=sasexe),
                  engine.opts=list(sas=sasopts))
```
```

Configure SAS ODS Graphics

You need to send a command to SAS to turn on ODS graphics. If you will be including graphics from several code blocks, you can set this up as a separate block and use the `collectcode=TRUE` option.

```
```{sas odsgraphics, collectcode=TRUE, include=FALSE}
ods graphics on;
```
```

Produce the Graph

Run the PROC that produces your graph.

```
proc corr data=sashelp.class plots=matrix;
run;
```

The CORR Procedure

3 Variables: Age   Height   Weight

Simple Statistics

Variable	N	Mean	Std Dev	Sum
Age	19	13.31579	1.49267	253.00000
Height	19	62.33684	5.12708	1184
Weight	19	100.02632	22.77393	1901

Simple Statistics

Variable	Minimum	Maximum
Age	11.00000	16.00000
Height	51.30000	72.00000
Weight	50.50000	150.00000

Pearson Correlation Coefficients, N = 19
Prob > |r| under H0: Rho=0

	Age	Height	Weight
Age	1.00000	0.81143	0.74089
		<.0001	0.0003
Height	0.81143	1.00000	0.87779
	<.0001		<.0001
Weight	0.74089	0.87779	1.00000
	0.0003	<.0001	

Include a Link

Finally, in your Markdown, include a link to the graphics file. You will need to know what SAS is going to name this file!
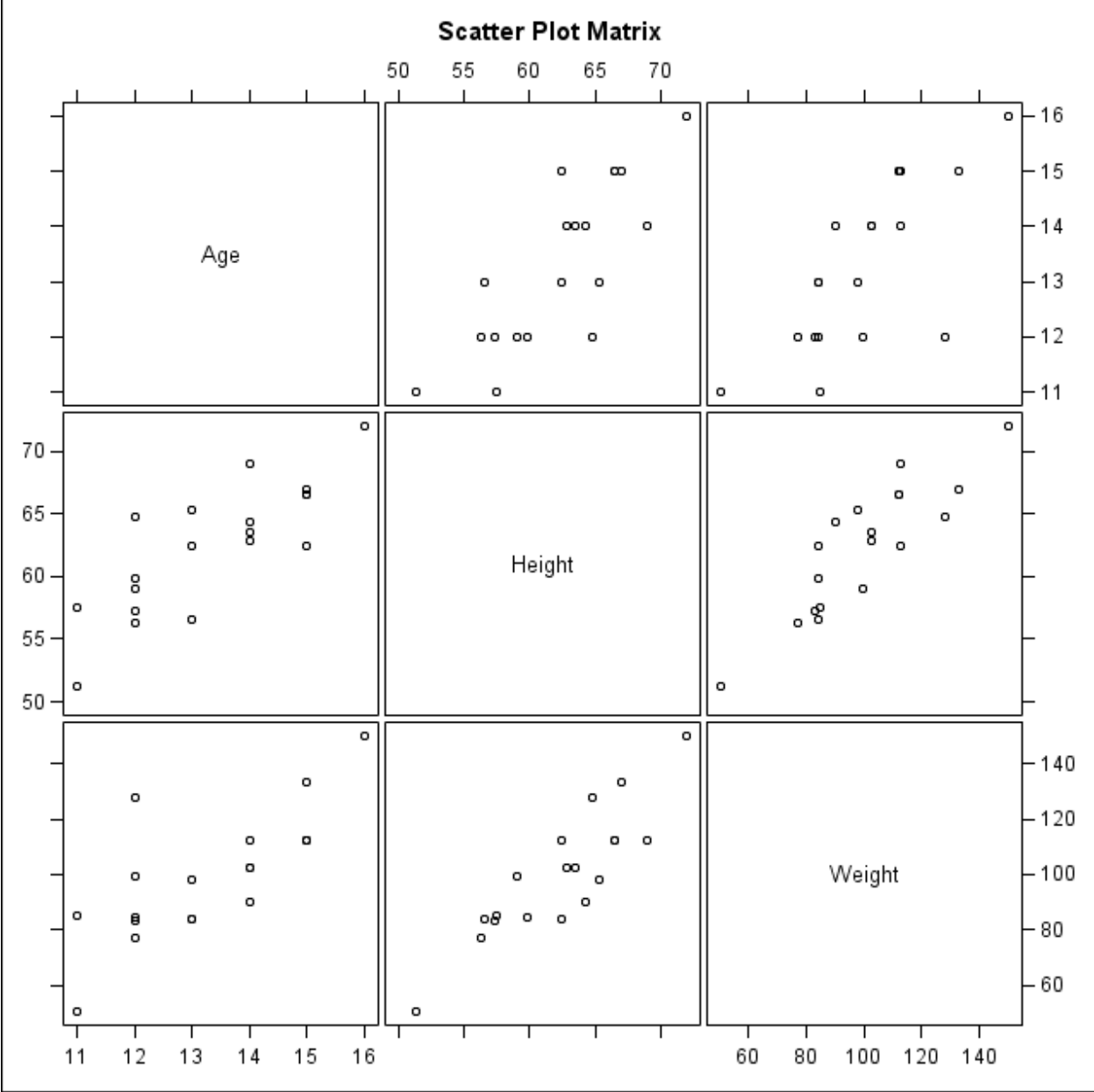
```
![Scatterplot](MatrixPlot.png)
```

Figure 1: Scatterplot