iris_data_set_vm3 vx.y

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Contents

Libraries used

```
library(ggplot2)
library(ggthemes)
```

Introduction

In this example we use additional LaTeX packages to

- set the default font to be sans-serif (via include of **header.tex**)
- load the package *subfig* so that in a chunk two figures can be placed side by side (via include of **header.tex**)
- (re) define some text macros (via include of **header.tex**)
- redefine some of the colors that are used for highlighting the R-code and its background (via include of **header.tex**). With one of these settings the background color was made darker so that it would be just visible when the document is printed.
- load and set some attributes of the package *fancyhdr* that enables the use of headers and footers (via include of **extra1.tex**)
- set additional attributes for *fancyhdr* (via the chunk **setheader** in iris_data_set_bib1.rmd)

We have structured these LaTeX commands in three separate groups:

- in the external permanent file **header.tex** the commands that go in the LaTeX preamble part and don't change for each document
- in the internal file **extra1.tex** the commands that go in the LaTeX preamble part and are specific for this document
- in the internal file **extra2.tex** the commands that go in front of the LaTeX body part and are specific for this document. In our examples no contents: a candidate for inclusion would be the \chead command but because the header is not constant (see next paragraph) we need to use an engine_R chunk and not a engine_cat chunk.

Apart from these LaTeX changes we also show what can be done in the yaml-header:

- define your own parameters by using the *params* keyword:
  - we use the *doc_version* parameter to include a version number in the header of each page
  - we use the *altplot* parameter to change the program flow by changing some text and including or omitting a figure. We do this by setting some text variables dependent on the parameter and using the parameter to decide about executing and echoing chunks.
- specify e.g. the page orientation by using the *geometry* keyword
- specify that a table of contents is to be included
- specify the *knit* command that will be executed. Here we use it to explicitly specify the name of the pdf-file and to ensure that the intermediate md-file is not removed after processing. By specifying *keep_tex: yes* the intermediate tex-file will also be kept. This can be useful for debugging when the output is not as expected.

We also show here how to use an internal bibliography. This is a list of references that we include at the end of the document. You can also use (and reuse) a bibliography that is stored in an external file. Handling of that is shown in the next example.

Table 1: first 10 observations of iris data set

Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
5.1	3.5	1.4	0.2	setosa
4.9	3.0	1.4	0.2	setosa
4.7	3.2	1.3	0.2	setosa
4.6	3.1	1.5	0.2	setosa
5.0	3.6	1.4	0.2	setosa
5.4	3.9	1.7	0.4	setosa
4.6	3.4	1.4	0.3	setosa
5.0	3.4	1.5	0.2	setosa
4.4	2.9	1.4	0.2	setosa
4.9	3.1	1.5	0.1	setosa

Load data and create plot object

Before plotting the iris data set (in Figure 1 on page 5) we list the first 10 (because we set variable *numlist* to 10 in a chunck we do not present to the reader) observations in the data set in Table 1 on page 3.
As an example of a reference we use [author1] with another reference in a footnote[1]. NB. we now have to use the LaTeX **\cite** and **\footnote** commands explicitly.

```
data(iris)
kable(iris[1:numlist,],row.names=F, caption=def_tab('lbltab1',tabcap1),
  format='latex', longtable=F)
```

```
cat(paste(' #produced',ref_tab('lbltab1',T)))
```

#produced in Table 1 on page 3

[1] see [author2]

```
p <- ggplot(iris, aes(Sepal.Length, Sepal.Width, colour = Species))+
  geom_point()
```

Plot iris data with alternative themes

We plot the iris data with package *ggplot2* in Figure 1 on page 5.
Because parameter *altplot* was set to TRUE (in a chunck we do not present to the reader) two plots with a different theme are also printed. The themes are the stata color theme (*s2color*) and a theme often used in the magazine *The Economist*. These can be found in Figure 2a and Figure 2b on page 6 .

```
p +
  labs(title = 'default theme')
cat(paste(' #produced',ref_tab('r1a','F')))
```

#produced in Figure 1 on page 5

```
p + theme_stata(scheme = "s2color", base_size = 12, base_family = fam) +
  labs(title = sprintf('theme_stata scheme = "s2color", base_size = 12, base_family = "%s"',fam))
cat(paste(' #produced',ref_tab('r1b1','F')))
```

#produced in Figure 2a on page 6

```
p + theme_economist(base_size = 10, base_family = fam) +
  labs(title = sprintf('theme_economist base_size = 10, base_family = "%s"',fam))
# this is a comment
cat(paste(' #produced',ref_tab('r1b2','F')))
```

#produced in Figure 2b on page 6

External parameters used

The external parameters used can be found in in Table 2 on page 6 .

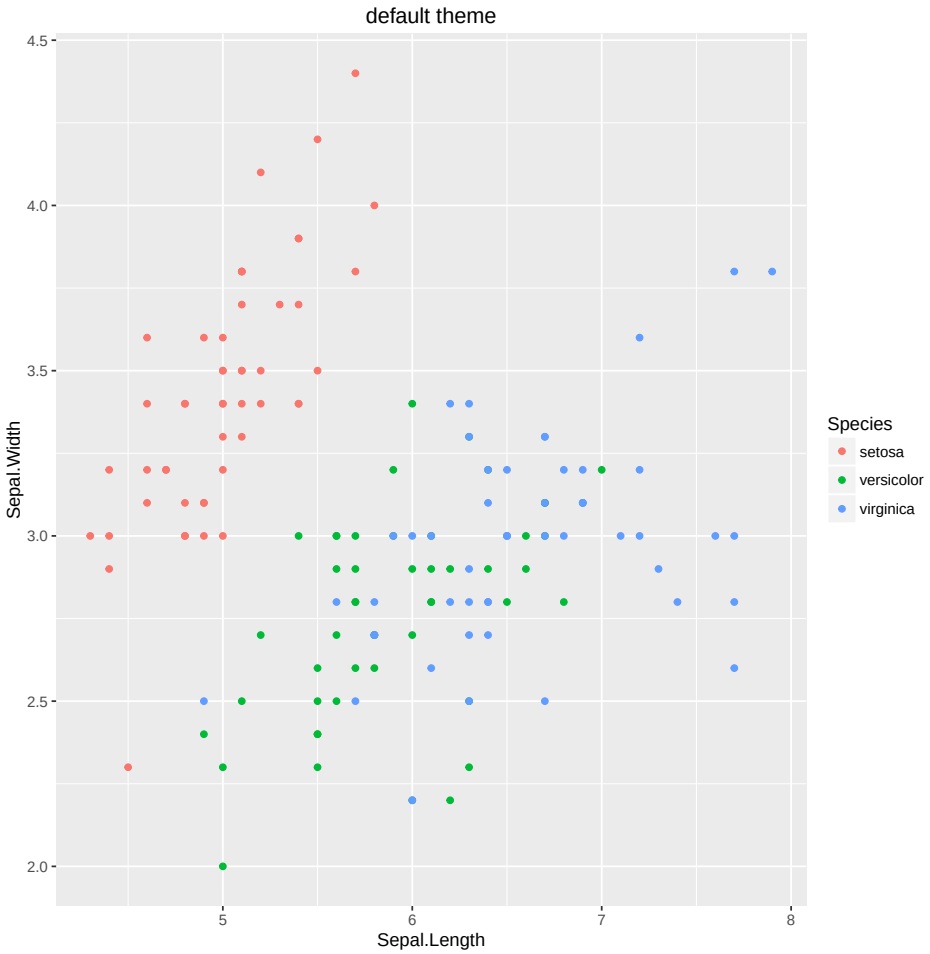
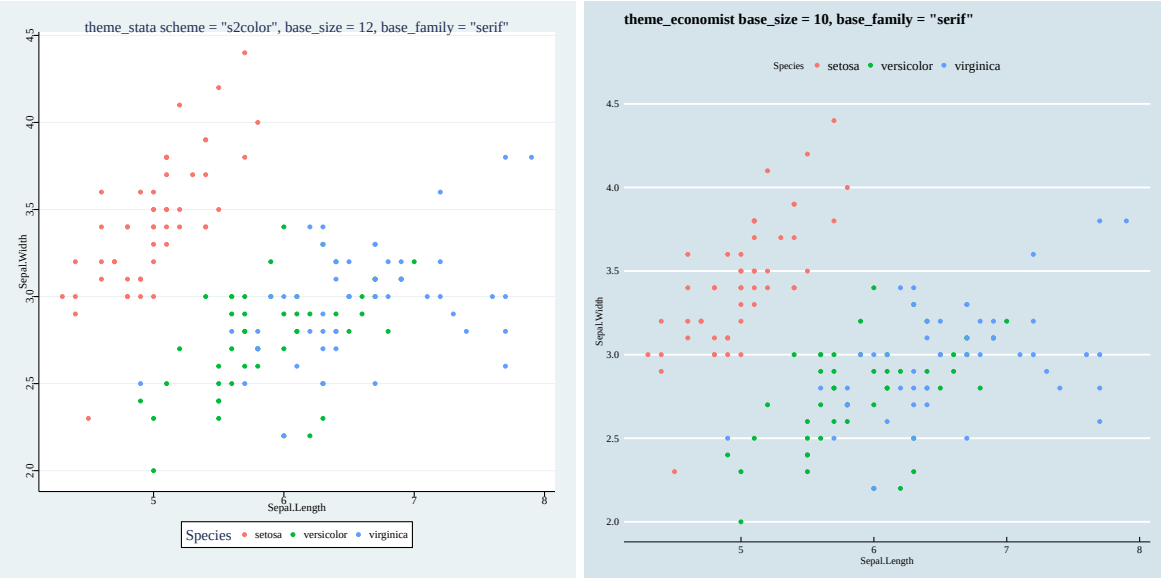


Figure 1: default theme



(a) stata theme: s2color

(b) The Economist theme: theme_economist

Figure 2: examples of non-default themes

Table 2: External parameters used

parameter	value
doc_version	x.y
altplot	TRUE

Session Info

```
sessionInfo()
```

```
## R version 3.2.0 (2015-04-16)
## Platform: x86_64-w64-mingw32/x64 (64-bit)
## Running under: Windows 8 x64 (build 9200)
##
## locale:
## [1] LC_COLLATE=English_United States.1252  LC_CTYPE=English_United States.1252
## [3] LC_MONETARY=English_United States.1252 LC_NUMERIC=C
## [5] LC_TIME=English_United States.1252
##
## attached base packages:
## [1] stats     graphics  grDevices utils     datasets  methods   base
##
## other attached packages:
## [1] ggthemes_3.0.1 ggplot2_2.0.0  knitr_1.12.3
##
## loaded via a namespace (and not attached):
##  [1] Rcpp_0.12.2      assertthat_0.1   digest_0.6.8     plyr_1.8.3       grid_3.2.0
##  [6] gtable_0.1.2     formatR_1.2.1    magrittr_1.5     evaluate_0.8     scales_0.3.0
## [11] stringi_1.0-1    rmarkdown_0.9.2  labeling_0.3     tools_3.2.0      stringr_1.0.0
## [16] munsell_0.4.2    yaml_2.1.13      colorspace_1.2-6 htmltools_0.2.6
```

References

[author1] example of reference for author1

[author2] example of reference for author2