iris_data_set_vm2 (minimal dependency on LaTeX)

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Introduction

See the Introduction pdf for the various examples and the relation of this example to the others.

In 'iris_data_set_vm1.rmd', where we did not use Latex, we could not use references to figures and tables. Here we show how this becomes available when we use Latex (but obviously at the cost of introducing differences in the output formats).
The only difference is that we assign labels and captions to the table (the function *def_tab* that is used in *xtable* sets the label and caption) and the figure (with the chunk name as label and the contents of *fig.cap* as caption). With the function *ref_tab* we use these labels. *def_tab* and *ref_tab* are defined in the setup chunk.

Libraries used

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

Load data

We load the iris data set in the workspace.

```
data(iris)
```

List the part of the iris data set

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 2.

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

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

#produced Table 1 on page 2

	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	5.10	3.50	1.40	0.20	setosa
2	4.90	3.00	1.40	0.20	setosa
3	4.70	3.20	1.30	0.20	setosa
4	4.60	3.10	1.50	0.20	setosa
5	5.00	3.60	1.40	0.20	setosa
6	5.40	3.90	1.70	0.40	setosa
7	4.60	3.40	1.40	0.30	setosa
8	5.00	3.40	1.50	0.20	setosa
9	4.40	2.90	1.40	0.20	setosa
10	4.90	3.10	1.50	0.10	setosa

Table 1: first 10 observations of iris data set

Create a plot of the iris data set

Make a *ggplot2* plot object *p* of two variables in the iris data set and use it to create a plot in Figure 1 on page 3.

```r
p <- ggplot(iris, aes(Sepal.Length, Sepal.Width, colour = Species)) +
  geom_point()
p + labs(title = 'default theme')
cat(paste(' #produced',ref_tab('r1a','F',prefix='')))
```

#produced Figure 1 on page 3

Session Info

```r
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  xtable_1.8-0   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
```
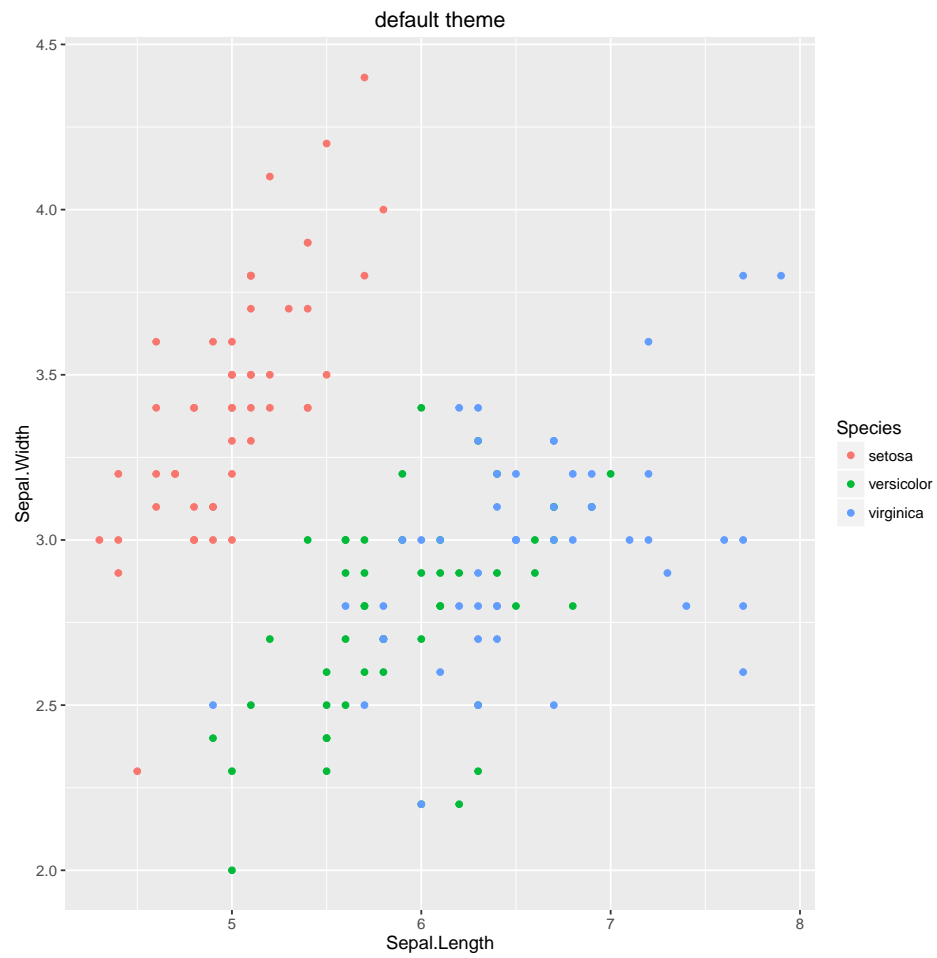
Figure 1: default theme