```
1 library(stationery)
2 ## If theme directory does not have required
     images or TeX files
3 ## we need to retrieve them and put them in
     "theme" directory.
4 logos <- c(logo = "logo.pdf",
5              logomini = "logomini.png")
6 texfiles <- c("guidePreambleSweavel.tex",
     "mlm.bib")
7 getFiles(logos, pkg = "stationery")
8 getFiles(texfiles, pkg = "stationery")
```

Skeleton rmd2pdf-slides-sweave

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Outline

Outline

This is a default style we created

- The theme settings are in the preamble. No external dependency on a theme file needed.
- Once we saw how simple a Beamer theme is–just a designation theme types for the outer edges and inner content–we understood that it is quite easy to put that in the preamble.
- Our preferred theme uses the *right* shades of blue along with:

Key elements in our theme

```
1 \useoutertheme{infolines}
2 \useinnertheme{rounded}
3 \setbeamertemplate{blocks}[default]
```

- The outer theme is a conservative use of screen real estate (narrow top boxes)
- The inner theme gives the jazzy 3-D bullets

This is a default style we created ...

- We don't want the rounded alert boxes, however, so we have blocks set to the default box style.
- As the Beamer documentation makes clear, there are just a few of these outer and inner themes that can be "mixed-and-matched" to suit the author's taste.

This is a default style we selected

- This document is formatted to create 16:9 resolution slides.
- To alter that, change document setting options.
- Citations use natbib with apacite (McCullagh & Nelder, 1989)
- A slide with not options is fine, except if you need to include R code chunks or listings objects. In that case, "containsverbatim" will be necessary

Outline

Listings class is used to display code chunks

- R code chunks are displayed with LaTeX listings, a highly customizable class for code displays.
- We use 2 types of listings, one for R code input and one for R output. By default, the output listings use smaller font to fit more output within the page, but that is adjustable, either on a
  - document wide basis
  - per-code chunk basis

Code chunks require "containsverbatim" frame

- Please name all chunks. Here is a chunk named dat10

```
x <- rnorm(100)
mean(x)
```

```
[1] 0.2451972
```

- An example of inline lm(y ~ x, data = dat). That's in an environment "\code{lm(y ~ x, data = dat}"
- By marking text as "\code", a color box will be created that uses the same color scheme as the R input box. This is a visual gimmick, two environments colored to be similar.

Did you notice: no line numbers on code chunk in previous?

- The margins are adjustable, see preamble for example.
- Note the line numbers are NOT obscured if code chunk "nested" inside the item.

```
1 x <- rnorm(100)
2 mean(x)
```

```
1 [1] 0.04523311
```

Code chunk previous slide is so close to edge that numbering is not visible if margins are very small.

- If margins are made any smaller, the numbers indexing code lines are "off the edge"

Slide with "allowframebreaks" can spill onto several slides

Some filler that causes the spill onto another slide. Note confusing equation labels

- onefile

$$1 \times 1 \tag{1}$$

- two

$$2 \times 1$$

- three

$$3 \times 1 \tag{2}$$

- four

$$4 \times 1$$

Slide with "allowframebreaks" can spill onto several slides ...

- five

$$5 \times 1$$

- six

$$6 \times 1$$

- seven

$$7 \times 1$$

Both "allowframebreaks" and "containsverbatim" accomodate large R output

```
example(lm)
```

```
lm require(graphics)

lm ## Annette Dobson (1990) "An Introduction to Generalized Linear
     Models".
lm ## Page 9: Plant Weight Data.
lm ctl <- c(4.17,5.58,5.18,6.11,4.50,4.61,5.17,4.53,5.33,5.14)

lm trt <- c(4.81,4.17,4.41,3.59,5.87,3.83,6.03,4.89,4.32,4.69)

lm group <- gl(2, 10, 20, labels = c("Ctl","Trt"))

lm weight <- c(ctl, trt)

lm lm.D9 <- lm(weight ~ group)

lm lm.D90 <- lm(weight ~ group - 1) # omitting intercept

lm ## No test:
lm ##D anova(lm.D9)
lm ##D summary(lm.D90)
```

Both "allowframebreaks" and "containsverbatim" accomodate large R output ...

```
lm ## End(No test)
lm opar <- par(mfrow = c(2,2), oma = c(0, 0, 1.1, 0))
lm
lm plot(lm.D9, las = 1)      # Residuals, Fitted, ...
lm
lm par(opar)
lm
lm ## Don't show:
lm ## model frame :
lm stopifnot(identical(lm(weight ~ group, method = "model.frame"),
lm                     model.frame(lm.D9)))
lm
lm ## End(Don't show)
lm ### less simple examples in "See Also" above
lm
lm
lm
```

Using "allowframebreaks" and "containsverbatim"

- I usually use both "allowframebreaks" and "containsverbatim" on most slides.
- "allowframebreaks" is now harmless. It has no effect in current configuration unless there are actually 2 or more slides worth of material
- However, containsverbatim is not harmless. It will break use of beamer overlay features, or one-at-a-time revelation of enumerated lists.

2 Columns

- Total width of page is 12cm
- Author can set each column at 6cm

A Block Can be Nested

This is inside the content area of the block

- In LyX, I find it tricky to use the GUI tool for slides (in general)
- Columns often seem difficult, but I still use GUI because I don't want to write out lots of code
- But I do manually write Frames in LyX because I don't enjoy the GUI style these days.

References

McCullagh, P. & Nelder, J. A. (1989). *Generalized Linear Models, Second Edition*. Boca Raton: Chapman and Hall/CRC, 2 edition edition.

Session

```
sessionInfo()
```

```
R version 3.4.3 (2017-11-30)
Platform: x86_64-pc-linux-gnu (64-bit)
Running under: Ubuntu 17.10

Matrix products: default
BLAS: /usr/lib/x86_64-linux-gnu/blas/libblas.so.3.7.1
LAPACK: /usr/lib/x86_64-linux-gnu/lapack/liblapack.so.3.7.1

locale:
 [1] LC_CTYPE=en_US.UTF-8       LC_NUMERIC=C
 [3] LC_TIME=en_US.UTF-8        LC_COLLATE=en_US.UTF-8
 [5] LC_MONETARY=en_US.UTF-8    LC_MESSAGES=en_US.UTF-8
 [7] LC_PAPER=en_US.UTF-8       LC_NAME=C
 [9] LC_ADDRESS=C               LC_TELEPHONE=C
[11] LC_MEASUREMENT=en_US.UTF-8 LC_IDENTIFICATION=C

attached base packages:
[1] stats     graphics  grDevices utils     datasets  base

other attached packages:
[1] stationery_0.62
```

Session ...

```
loaded via a namespace (and not attached):
 [1] Rcpp_0.12.15        quadprog_1.5-5      rprojroot_1.3-2
 [4] digest_0.6.15       plyr_1.8.4          backports_1.1.2
 [7] xtable_1.8-2        magrittr_1.5        stats4_3.4.3
[10] evaluate_0.10.1     stringi_1.1.6       pbivnorm_0.6.0
[13] openxlsx_4.0.17     rmarkdown_1.8       tools_3.4.3
[16] stringr_1.2.0       foreign_0.8-69      kutils_1.34
[19] compiler_3.4.3      mnormt_1.5-5        htmltools_0.3.6
[22] knitr_1.19          lavaan_0.5-23.1097  methods_3.4.3
```