

Knitr?? What about Sweave?

December 11-12, 2013.

Knitr - the new Sweave

- Sweave original literate programming engine for R (or S) written by XX
- still works perfectly well
- knitr re-implementation of sweave
- minor differences in *.rnw files
- much more flexible
 - ▶ markdown to html
 - ▶
 - ▶ errors seem to be more transparent

Differences between knitr and Sweave

- no *.sty file to register in knitr
- default options
- graphics
- chunk options are variables

Basics

- focus on `rnw` -> `latex` -> `pdf`
- same basic principles apply to other formats and documents types
- realize literate programming by imbedding analysis code directly in source code of document
- code introduced in 'chunks' or using

rnw file format and emacs

- R-Noweb file
- contain both latex and embedded r code
- ESS supports rnw files - major mode changes depending on location point
 - ▶ latex mode outside of chunks
 - ▶ ess[S] mode inside of chunks
- Compiling to pdf
 - ▶ M-r run knitr current buffer (M-s to sweave)
 - ▶ M-P compile tex file pdf
 - ★ (note uppercase P)

Chunk Options

- default option and then example slides and output of most common options

- used to insert values inline (mid-sentence)
- limited to single line expressions
- code blocks
 - ▶ the value of $\pi = \pi$.
- will render as
 - ▶ “The value of $\pi = 3.14$.”

Tables

- number of packages that render R objects as latex tables
 - ▶ xtable
 - ▶ Hmisc
- R-object support differs by package
- admb objects - require custom function to convert to data frame or write latex directly

Figures

- two different approaches:
 - ▶ chunk option `fig=True`
 - ▶ manually create figure environment
- handling figures much improved in knitr
- first approach is probably adequate

Von Bert example

Is it worth it?

- depends on:
 - ▶ number of reports
 - ▶ number of times they need to be recreated or updated
 - ▶ report complexity
- personal choice
- definite long-term savings - but it require short term investment

Recap