Reproducible research #2

R Projects

Organization

- data-raw
- data
- R
- reports

R Projects

GitHub

GIT

GIT

[Downloading git]

GIT

[Setting up git]

GitHub

[Creating GitHub account]

GitHub

[GitHub repositories]

GitHub

[local and GitHub setup]

GitHub

[working with others– collaborating vs. forks]

Syncing RStudio and GitHub

[Setting up key]

Syncing RStudio and GitHub

[Pushing local project to GitHub]

Syncing RStudio and GitHub

[Pulling a GitHub repo to local]

Syncing RStudio and GitHub

[workflow for RStudio and GitHub]

GitHub

[merge conflicts]

R Notebooks

TEMPLATES

TEMPLATES

RMarkdown **templates** can be used to change multiple elements of the style of a rendered document. You can think of these as being the document-level analog to the themes we've used with `ggplot` objects.

To do this, some kind of style file is applied when rendering document. For HTML documents, Cascading Style Sheets (CSS) can be used to change the style of different elements. For pdf files, LaTeX package (style) files are used.

Templates

To open a new R Markdown file that uses a template, in RStudio, go to
"File" -> "New File" -> "R Markdown" -> "From Template".
Different templates come with different R packages. A couple of templates
come with the `rmarkdown` package, which you likely already have.

Templates

Many of these templates will only render to pdf.

To render a pdf from RMarkdown, you need to have a version of TeX installed on your computer. Like R, TeX is open source software. RStudio recommends the following installations by system:

- For Macs: MacTeX
- For PCs: MiKTeX

Links for installing both can be found at
`http://www.latex-project.org/ftp.html`

Current version of TeX: 3.14159265.

Templates

The tufte package has templates for creating handouts typeset like
Edward Tufte's books.

This package includes templates for creating both pdf and HTML
documents in this style.

The package includes special functions like newthought, special chunk
options like fig.fullwidth, and special knitr engines like
marginfigure. Special features available in the tufte template include:

- Margin references
- Margin figures
- Side notes
- Full width figures

Templates

The rticles package has templates for several journals:

- *Journal of Statistical Software*
- *The R Journal*
- *Association for Computing Machinery*
- ACS publications (*Journal of the American Chemical Society*, *Environmental Science & Technology*)
- Elsevier publications

Templates

Some of these templates create a whole directory, with several files besides the .Rmd file. For example, the template for *The R Journal* includes:

- The RMarkdown file in which you write your article
- "RJournal.sty": A LaTeX package (style) file specific to *The R Journal*. This file tells LaTeX how to render all the elements in your article in the style desired by this journal.
- "RJreferences.bib": A BibTeX file, where you can save citation information for all references in your article.
- "Rlogo.png": An example figure (the R logo).

Templates

Once you render the RMarkdown document from this template, you'll end up with some new files in the directory:

- "[your file name].tex": A TeX file with the content from your RMarkdown file. This will be "wrapped" with some additional formatting input to create "RJwrapper.tex".
- "RJwrapper.tex": A TeX file that includes both the content from your RMarkdown file and additional formatting input. Typically, you will submit this file (along with the BibTeX, any figure and image files, and possibly the style file) to the journal.
- "RJwrapper.pdf": The rendered pdf file (what the published article would look like)

Templates

This template files will often require some syntax that looks more like LaTeX than Markdown.

For example, for the template for *The R Journal*, you need to use \citep{} and \citet{} to include citations. These details will depend on the style file of the template.

As a note, you can always use raw LaTeX in RMarkdown documents, not just in documents you're creating with a template. You just need to be careful not to mix the two. For example, if you use a LaTeX environment to begin an itemized list (e.g., with begin{itemize}), you must start each item with item, not -.

Templates

You can create your own template. You create it as part of a custom R package, and then will have access to the template once you've installed the package. This can be useful if you often write documents in a certain style, or if you ever work somewhere with certain formatting requirements for reports.

RStudio has full instructions for creating your own template: `http: //rmarkdown.rstudio.com/developer_document_templates.html`