**Reports, Publications Tools**

### Reproducible and robust workshop materials

Workshops were authored using R Markdown, and compiled into a book (PDF and ePub) and website using Bookdown R package. Bookdown, in turn, uses the gitbook publishing system ( <https://www.gitbook.com/>) to produce a variety of formats from the same source material. R Markdown files intended to be part of a Bookdown project do not contain the required front matter of a typical stand-alone R Markdown document. To help authors use and test the correct format, we seeded each workshop document with the syllabus that had been submitted by that author, and successfully built the book of the submitted syllabi. Each workshop represented a chapter of a book compiled using the Bookdown software. This approach provided several advantages:

* R markdown syntax is already familiar to any developer of a Bioconductor package, since it is the standard approach to creating the package “vignette” or prose documentation.
* R markdown implements “literate programming” by including formatted text, runnable code, and output of the code
* Bookdown allows collating chapters as a clean, lightweight online book format, and pandoc additionally allows creation of PDF and ePub formats
* These formats can then be self-published with options to order paper copies through companies such as <https://leanpub.com>

This approach allowed automatic installation of required packages by listing them in the DESCRIPTION file required by R packages.

**bookdown: Authoring Books and Technical Documents with R Markdown**

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