Include static PDFs and non-Sweave vignettes in an R package

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Abstract

This document describes how to include static PDFs and non-Sweave vignettes in an R package such that they appear via `browseVignettes()`, `help.start()` as well as on CRAN and Bioconductor.

Keywords: R, package, vignette, static PDF

This vignette is distributed as part of the R.rsp package, which is available on CRAN.

Contents

1   Background

When building an R package, Sweave/LaTeX vignettes are recognized by R, compiled into PDFs, which are listed along with their source in the R help system, e.g. via `browseVignettes()` and `help.start()`. These package vignettes are also being listed online on the CRAN and Bioconductor package pages.

Unfortunately, as of R v2.14.0, static PDFs are not recognized and therefore not listed. Same is true for other PDFs that are dynamically generated during build by other means, e.g. RSP-embedded LaTeX documents. Fortunately, there is a framework to include also non-Sweave vignettes, as explained next.

2   Using the default R framework

2.1   Include static PDFs

Assume you have static PDF named *manual.pdf* that you wish to include in your package. Then place it in the *inst/doc/* directory of the package and create a corrsponding *manual.Rnw* stub (in the same directory) that contains:

```
%\VignetteIndexEntry{User manual}
\documentclass{article}
\begin{document}
\end{document}
```

The above is a minimal valid Sweave document that is recognized by the R build system. This small addition will make the vignette appear when calling `browseVignettes()` as well as in the 'Overview of user guides and package vignettes' section of the package HTML help page (via `help.start()`).

3   Using the extended framework of the R.rsp package

In this section, we describe how to dynamically build and include non-Sweave vignettes, such as, but not limited to, RSP-embedded LaTeX vignettes. In order to do this, a customized *Makefile* needs to be added to the package's *inst/doc/* directory. The Makefile is available in the *R.rsp* package in the installed *doc/* directory (see Appendix for its content). You can copy it to the current directory by:

```
pathname <- system.file("doc/Makefile", package="R.rsp")
file.copy(pathname, to=".")
```

This Makefile utilizes a few utility functions that are available in the *R.rsp* package. Note that the Makefile and the utility functions are independent of the RSP markup language[1]. The use of a custom *inst/doc/Makefile* is described in Section 'Writing package vignettes' of 'Writing R Extensions' (via for instance `help.start()`).

3.1   Improved HTML overview of vignettes

By default, the R HTML help system will list links to the PDF and the Sweave source of the vignettes. This means that above approach for including static PDFs in a package will also list the Rnw stub in this listing. As explained in 'Writing R Extensions', it is possible to override this by providing a custom *inst/doc/index.html* file. It can be tedious the manually edit the *index.html* file. For this reason, if the *index.html* file is missing, then the above *Makefile* automatically builds one and populates it with the PDF and source files available according to what the Rnw files specify (see also below).

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[1]In the future, we may move the customized Makefile and its utility functions to the *R.utils* package.

3.2 Include RSP-embedded LaTeX vignettes

Assume you have an RSP-embedded LaTeX vignette named *manual.tex.rsp* that you wish to automatically build and have the PDF and the source being include in your package. Then place it in your package *inst/doc/* directory and create a corrsponding *manual.Rnw* stub containing:

```
%\VignetteIndexEntry{User manual}
%\VignetteSource{manual.tex.rsp}
%\VignetteBuild{R.rsp::rsp("manual.tex.rsp")}
\documentclass{article}
\begin{document}
\end{document}
```

Note that the "commands" \VignetteSource{} and \VignetteBuild{} are custom to our setup (recognized by the above Makefile) and are *not* recognized by the R system. The optional \VignetteSource{} command specifies which source file should be listed in the help.start() vignette overview. If left out or left empty, no source file will be listed. The \VignetteBuild{} command specifies what R command to run for building the vignette. Here we use the rsp() command of the *R.rsp* package to build the *manual.pdf* from the *manual.tex.rsp* file. The build command can be any R expression, which means that it is possible to compile virtually any type of documents using this technique.

Appendix

The customized Makefile

The customized Makefile that builds non-Sweave vignettes and missing */inst/doc/index.html* files is available in *R.rsp* package directory *doc/*. Its content is:

```
# MACRO DEFINITIONS
RM=rm -f
MV=mv -f
CP=cp -p

# TARGET DEFINITIONS
all: rnw index.html

rnw: *.Rnw
R --vanilla -e "R.rsp::buildNonSweaveVignettes()"

index.html:
R --vanilla -e "R.rsp::buildPkgIndexHtml()"

clean:
$(RM) index.html.rsp
$(RM) *.aux *.log *.toc *.tex *.rsp.R
$(RM) -r figures/
$(RM) Makefile
```

The files used for creating this document

This document was created the RSP-embedded LaTeX vignette *NonSweaveVignettes.tex.rsp* located in the */doc/* package directory of *R.rsp*. It can manually be compiled into a PDF as:

```
library("R.rsp");
pathname <- system.file("doc/NonSweaveVignettes.tex.rsp", package="R.rsp");
rsp(pathname);
```

The generated PDF can then be included into the package as a static PDF (as explained in Section 2.1). However, in this package we have choosen to build it dynamically during package build, by adding a *doc/NonSweaveVignettes.Rnw* file (as explained in Section 3.2), which contains:

```
% - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
% This is *not* the source of the vignette.  It is just a place holder
% for R to recognize and list the vignettes of this package.
%
% To view the source of this vignette, instead do:
% 1. help.start()
% 2. Go to the help page of this package, and go to the subpage
%    'Overview of user guides and package vignettes'
% - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
%\VignetteIndexEntry{Include static PDFs and non-Sweave vignettes in an R package}
%\VignetteKeyword{R, package, vignette, static PDF}
%\VignetteSource{NonSweaveVignettes.tex.rsp}
%\VignetteBuild{R.rsp::rsp("NonSweaveVignettes.tex.rsp")}
\documentclass{article}
\begin{document}
\end{document}
```

Session information

- R version 2.14.1 Patched (2012-01-08 r58077), `x86_64-pc-mingw32`

- Locale: `LC_COLLATE=C`, `LC_CTYPE=English_United States.1252`, `LC_MONETARY=English_United States.1252`, `LC_NUMERIC=C`, `LC_TIME=English_United States.1252`

- Base packages: base, datasets, grDevices, graphics, methods, stats, utils

- Other packages: R.methodsS3 1.2.1, R.oo 1.8.3, R.rsp 0.7.1, R.utils 1.9.8

- Loaded via a namespace (and not attached): tools 2.14.1

This report was automatically generated using `rsp()` of the R.rsp package. Total processing time after RSP-to-R translation was 0.02 secs.