

# formatR: Format R Code Automatically

Yihui Xie\*

May 19, 2011

The package **formatR** (Xie, 2011) was designed to help users tidy (reformat) their source code. Features include:

1. automatically add spaces and indent where appropriate;
2. preserve comments while tidying the code;
3. can use a GUI to format the code too;

## 1 The command line: *tidy.source()*

The main function is *tidy.source()*, which can take a file as input, parse it and write the formatted code to the console or a file.

```
> library(formatR)
> args(tidy.source)

function (source = "clipboard", keep.comment, keep.blank.line,
  keep.space, replace.assign, output = TRUE, text = NULL, width.cutoff = 0.75 *
  getOption("width"), ...)
NULL
```

There are four options which can affect the final output: `keep.comment`, `keep.blank.line`, `keep.space` and `replace.assign`. They are explained in the help page; see `?tidy.source`. For example, if we do not want to keep the blank lines in the code, we can first specify a global option like this:

```
> options(keep.blank.line = FALSE)
```

The option `width` will affect the width of the output, e.g. we can specify a narrow width:

```
> options(width = 85)
```

Here are some examples taken from the help page:

```
> library(formatR)
> ## use the 'text' argument
> src = c("    # a single line of comments is preserved", "1+1", "if(TRUE){",
+   "x=1 # inline comments", "}"else{"x=2;print('Oh no... ask the right bracket to",
+   "go away!')}"},
+   "1*3 # one space before this comment will become two!", "2+2+2    # 'short comments'",
+   "    ", "lm(y-x1+x2) ### only 'single quotes' are allowed in comments",
```

---

\*Department of Statistics, Iowa State University. Email: xie@yihui.name





```
"a character string with \t in it"
1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 +
  1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1
```

## 2 The GUI: *formatR()*

We can either use the command line version (*tidy.source()*) or the GUI version to format the code: *formatR()* is a function which depends the **gWidgets** package to create a graphical interface (see Figure 1).

## 3 Applications

This package has been used in a few other R packages. For example, **Rd2roxygen** (Wickham and Xie, 2011) uses **formatR** to reformat the code in the usage and examples sections in Rd files, since the code generated by **roxygen** is not well-formatted; **pgfSweave** (Bracken and Sharpsteen, 2011) can tidy the Sweave code chunks when the Sweave option `tidy` is `TRUE` (just like the code in this vignette).

## 4 Further notes

The tricks used in this packages are very dirty. There might be dangers in using the functions in **formatR**. Please read the documentation carefully to know exactly what kinds of comments could be preserved.

A known issue is that when we write comments in a string (i.e. the comments are not real comments but a part of the string) which is broken into several lines, **formatR** might not work correctly. For example, the code below will make **formatR** fail:

```
mod = "1+1
## comments here can bring troubles
2+2"
```

We need to write like this:

```
mod = paste("1+1", "## comments here can bring troubles", "2+2",
  sep = "\n")
```

## About this vignette

You might be curious about how this vignette was generated, because it looks different from other Sweave-based vignettes. The answer is **pgfSweave** (Bracken and Sharpsteen, 2011). The real vignette is in `LyX`, which can be found here:

```
system.file("doc", "formatR.lyx", package = "formatR")
```

Read this blog entry for details and how to reproduce the vignette: <http://yihui.name/en/?p=602>.



## References

- Bracken C, Sharpsteen C (2011). *pgfSweave: Quality speedy graphics compilation with Sweave*. R package version 1.2.1, URL <http://CRAN.R-project.org/package=pgfSweave>.
- Wickham H, Xie Y (2011). *Rd2roxygen: Convert Rd to roxygen documentation*. R package version 0.1-8, URL <https://github.com/yihui/Rd2roxygen>.
- Xie Y (2011). *formatR: Format R Code Automatically*. R package version 0.2-2, URL <http://CRAN.R-project.org/package=formatR>.