

The BrailleR Package

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This package has been created for the benefit of blind people wishing to get more out of R than it already offers — which is actually quite a lot!

This document exists as the normal help pages that are included in packages do not lend themselves to verbose detailing of the thought processes behind the functions in a package, especially when the target audience is not well understood.

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1 Why does the package exist?

BrailleR is a project to improve the accessibility of graphical information created by standard R commands into a textual form that can be easily interpreted by blind students who cannot access the graphs without printing the image to a tactile embosser.

Various functions are also being developed to make text output (that is visually appealing) more useful for a blind user who is reliant on synthesized speech or braille output to interpret the results.

I felt there was a need for this package having portrayed R as a truly viable alternative for blind students who could not use other statistical software in their university courses. My practical experience at the Summer University workshop in the Czech Republic (July-August, 2011) followed on from a conference paper delivered at the Workshop on E-Inclusion in Mathematics and Science (WEIMS) held in Fukuoka, Japan during December 2009.

The beginnings of this package were first promoted at the Digitisation and E-Inclusion in Mathematics and Sciences (DEIMS) conference held in Tokyo during February 2012. The package was then more formally announced in an R Journal article published in June 2013. . (See the references section for more details.)

2 Getting started

To use the functionality of the BrailleR package you need to have it and R installed. The package has several dependencies so is best installed directly from CRAN. It can also be installed from the zip file archive available from

`http://r-resources.massey.ac.nz/BrailleR/`

. The BrailleR package can be updated using the `update.packages()` command.

Once it is installed, you need to type:

```
require(BrailleR)
```

at the R prompt. The next few sections show examples of the advantages the BrailleR package has to offer the blind user.

3 Method functions

4 Non-method functions

5 Functions created for efficiency or convenience

6 Acknowledgements

Contributions to the BrailleR Project are welcome from anyone who has an interest. I will acknowledge assistance in chronological order of the contributions I have received thus far.

Greg Snow was the first person to assist when he gave me copies of the original R code and help files for the R2txt functions that were part of his TeachingDemos package, available from

`http://CRAN.R-project.org/package=TeachingDemos`

7 References

References

- [1] A. J. R. Godfrey, “Statistical software from a blind person’s perspective: R is the best, but we can make it better,” *The R Journal*, vol. 5, no. 1, pp. 73–80, 2013.
- [2] A. J. R. Godfrey, “The BrailleR project,” in *Proceedings of Digitization and E-Inclusion in Mathematics and Science* (K. Yamaguchi and M. Suzuki, eds.), (Tokyo, Japan), pp. 89–95, 2012.
- [3] A. J. R. Godfrey, “Are statistics courses accessible?,” in *Proceedings of the Workshop on E-Inclusion in Mathematics and Science 2009*, (Fukuoka, Japan), pp. 72–80, 2009.
- [4] G. Snow, *TeachingDemos: Demonstrations for teaching and learning*, 2010. R package version 2.7, available from <http://CRAN.R-project.org/package=TeachingDemos>.