Supplemental Analysis

February 8, 2016

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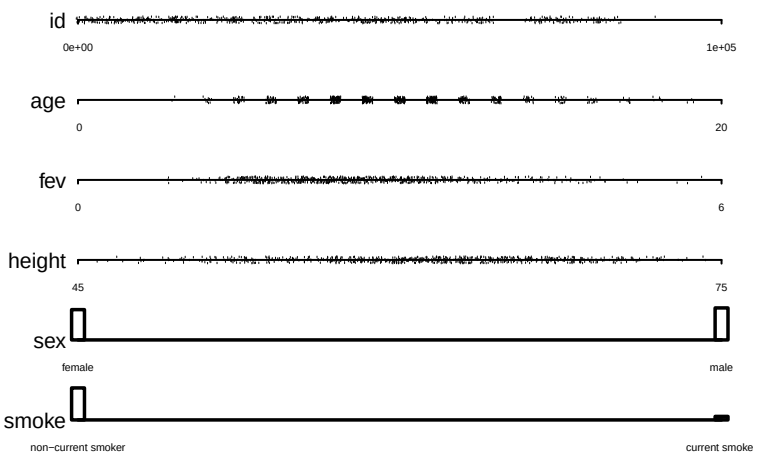
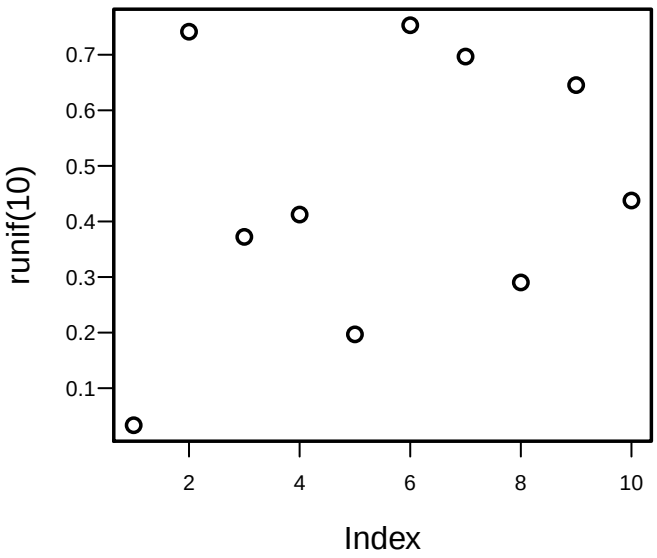
```
datadensity(FEV)
```



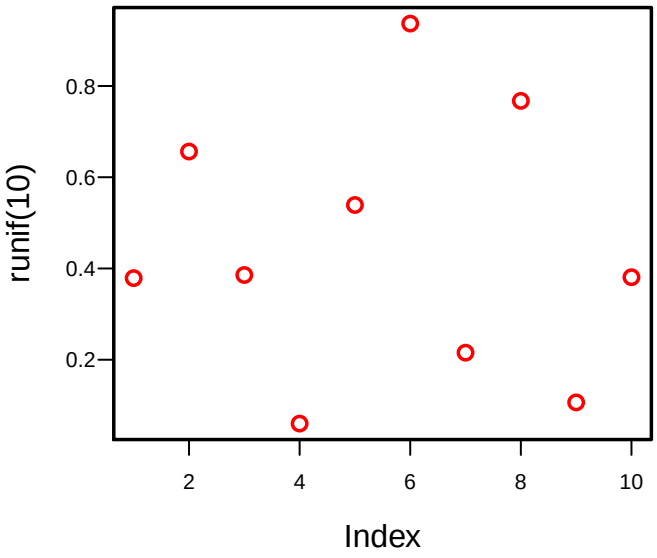

```
plot(runif(10))
```



If you need to run R code in disconnected portions of the document, create new output file names as done here.

```
plot(runif(10), col='red')
2+pi
```

```
[1] 5.141593
```



1 Computing Environment

These analyses were done using the following versions of R[3], the operating system, and add-on packages `Hmisc`[1], `rms`[2], and others: CHECK

- R version 3.2.2 (2015-08-14), `x86_64-pc-linux-gnu`
- Base packages: base, datasets, graphics, grDevices, grid, methods, stats, utils
- Other packages: Formula 1.2-1, ggplot2 1.0.1, Hmisc 3.17-0, knitr 1.11, lattice 0.20-33, rms 4.4-1, SparseM 1.7, survival 2.38-3

- Loaded via a namespace (and not attached): acepack 1.3-3.3, cluster 2.0.3, codetools 0.2-14, colorspace 1.2-6, digest 0.6.8, evaluate 0.8, foreign 0.8-66, formatR 1.2.1, gridExtra 2.0.0, gtable 0.1.2, labeling 0.3, latticeExtra 0.6-26, magrittr 1.5, MASS 7.3-45, Matrix 1.2-2, MatrixModels 0.4-1, multcomp 1.4-1, munsell 0.4.2, mvtnorm 1.0-3, nlme 3.1-122, nnet 7.3-11, plyr 1.8.3, polspline 1.1.12, proto 0.3-10, quantreg 5.19, RColorBrewer 1.1-2, Rcpp 0.12.1, reshape2 1.4.1, rpart 4.1-10, sandwich 2.3-4, scales 0.3.0, splines 3.2.2, stringi 1.0-1, stringr 1.0.0, TH.data 1.0-6, tools 3.2.2, zoo 1.7-12

The reproducible research framework `knitr` [5, 4] was used.

2 All R Code

```
require(rms)
knitrSet(echo=TRUE,cache=TRUE)    # set echo=FALSE to not print code
lan ← function(a, ...) latex(a, file='', table.env=FALSE, ...)
getHdata(FEV)
latex(describe(FEV), file='')
datadensity(FEV)
plot(runif(10))
plot(runif(10), col='red')
2+pi
ggplot(FEV, aes(x=age, y=fev, color=sex)) + geom_point()
toLatex(sessionInfo(), locale=FALSE)
```

References

[1] Frank E. Harrell. `Hmisc`*: A package of miscellaneous* R *functions*. 2015. URL: `http://biostat.mc.vanderbilt.edu/Hmisc`.

[2] Frank E. Harrell. ***rms:*** *R functions for biostatistical/epidemiologic modeling, testing, estimation, validation, graphics, prediction, and typesetting by storing enhanced model design attributes in the fit.* Implements methods in *Regression Modeling Strategies, 2nd edition*. 2015. URL: `http://biostat.mc.vanderbilt.edu/rms`.

[3] R Development Core Team. *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing. Vienna, Austria, 2015. URL: `http://www.R-project.org`.

[4] Yihui Xie. *Dynamic Documents with R and* ***knitr***. second. ISBN 978-1-4987-1696-3. Chapman and Hall, 2015.

[5] Yihui Xie. *knitr: A general-purpose package for dynamic report generation in R*. R package version 1.11. 2015. URL: `http://CRAN.R-project.org/package=knitr`.