

Vignette for dampack package

Fernando Alarid Escudero

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Vignettes are long form documentation commonly included in packages. Because they are part of the distribution of the package, they need to be as compact as possible. The `html_vignette` output type provides a custom style sheet (and tweaks some options) to ensure that the resulting html is as small as possible. The `html_vignette` format:

- Never uses retina figures
- Has a smaller default figure size
- Uses a custom CSS stylesheet instead of the default Twitter Bootstrap style

Estimation of Dirichlet parameters uisng MoM

This function returns the α parameteres of a dirichlet distribution following the method of moments (MoM) proposed by Fielitz and Myers (1975) and Narayanan (1992).

If μ is a vector of means and σ is a vector of standard deviations of the random variable, then the second moment X_2 is defined by $\sigma^2 + \mu^2$. Using the mean and the second moment, the J alpha parameters are computed as follows

$$\alpha_i = \frac{(\mu_1 - X_{2_1})\mu_i}{X_{2_1} - \mu_1^2}$$

for $i = 1, \dots, J - 1$, and

$$\alpha_J = \frac{(\mu_1 - X_{2_1})(1 - \sum_{i=1}^{J-1} \mu_i)}{X_{2_1} - \mu_1^2}$$

Estimation of Log-normal parameters uisng MoM

This function returns the location, μ , and scale, σ , parameteres of a log-normal distribution from the mean and variance of a random variable following the method of moments (MoM).

Given the non-logarithmized mean and variance m and v of the random variable, respectively, the location, μ , and scale, σ , of a log-normal distribution are given by the following equations

$$\mu = \ln \left(\frac{m}{\sqrt{1 + \frac{v}{m^2}}} \right)$$

and

$$\sigma = \sqrt{\ln \left(1 + \frac{v}{m^2} \right)}$$

Vignette Info

Note the various macros within the `vignette` section of the metadata block above. These are required in order to instruct R how to build the vignette. Note that you should change the `title` field and the `\VignetteIndexEntry` to match the title of your vignette.

Styles

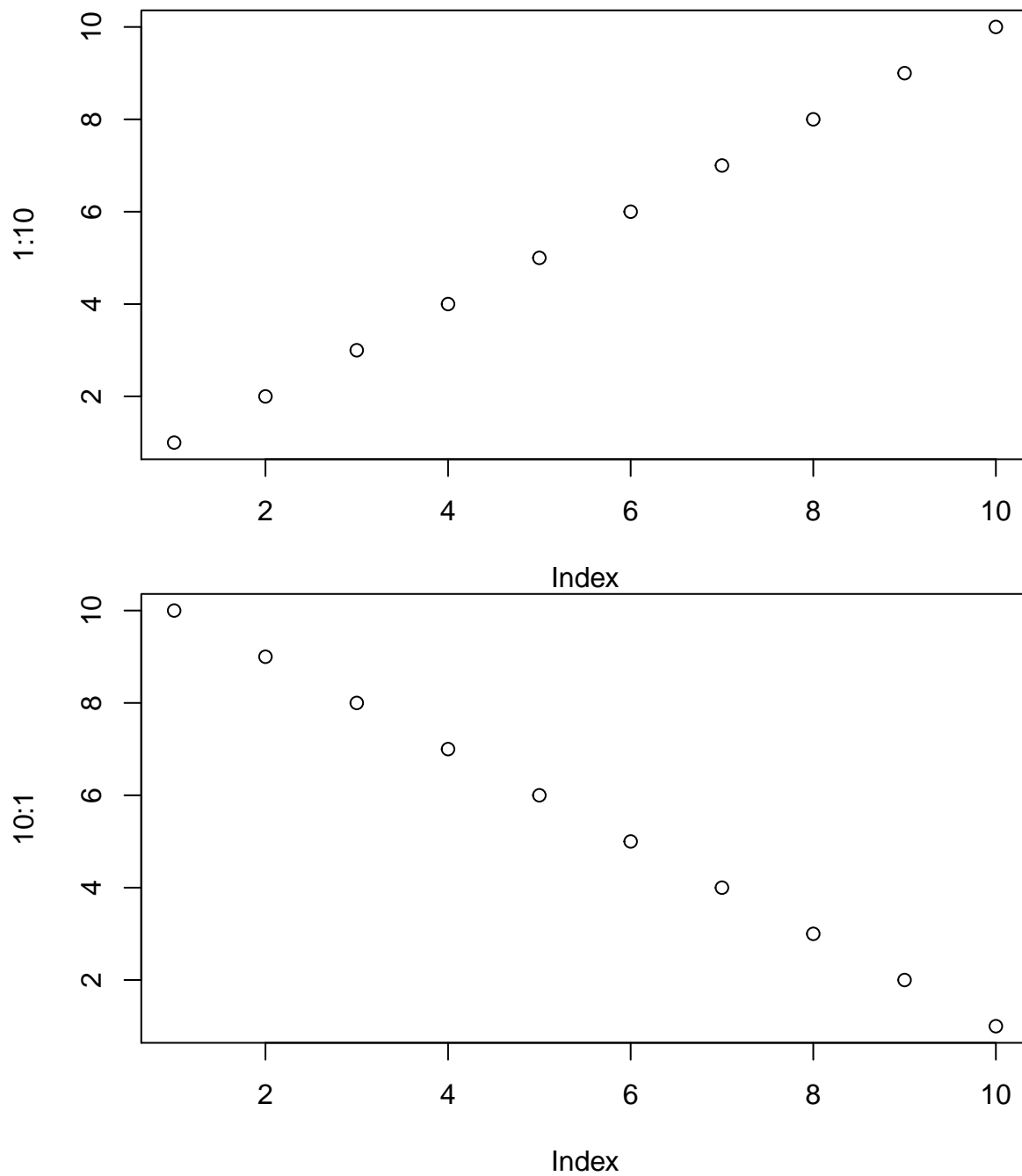
The `html_vignette` template includes a basic CSS theme. To override this theme you can specify your own CSS in the document metadata as follows:

```
output:
  rmarkdown::html_vignette:
    css: mystyles.css
```

Figures

The figure sizes have been customised so that you can easily put two images side-by-side.

```
plot(1:10)
plot(10:1)
```



You can enable figure captions by `fig_caption: yes` in YAML:

output:

`rmarkdown::html_vignette:`

`fig_caption: yes`

Then you can use the chunk option `fig.cap = "Your figure caption."` in **knitr**.

More Examples

You can write math expressions, e.g. $Y = X\beta + \epsilon$, footnotes¹, and tables, e.g. using `knitr::kable()`.

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Mazda RX4	21.0	6	160.0	110	3.90	2.620	16.46	0	1	4	4
Mazda RX4 Wag	21.0	6	160.0	110	3.90	2.875	17.02	0	1	4	4
Datsun 710	22.8	4	108.0	93	3.85	2.320	18.61	1	1	4	1
Hornet 4 Drive	21.4	6	258.0	110	3.08	3.215	19.44	1	0	3	1
Hornet Sportabout	18.7	8	360.0	175	3.15	3.440	17.02	0	0	3	2
Valiant	18.1	6	225.0	105	2.76	3.460	20.22	1	0	3	1
Duster 360	14.3	8	360.0	245	3.21	3.570	15.84	0	0	3	4
Merc 240D	24.4	4	146.7	62	3.69	3.190	20.00	1	0	4	2
Merc 230	22.8	4	140.8	95	3.92	3.150	22.90	1	0	4	2
Merc 280	19.2	6	167.6	123	3.92	3.440	18.30	1	0	4	4

Also a quote using `>`:

“He who gives up [code] safety for [code] speed deserves neither.” (via)

References

- Fielitz, Bruce D., and Buddy L. Myers. 1975. “Estimation of parameters in the beta distribution.” *Decision Sciences* 6 (1): 1–13.
- Narayanan, A. 1992. “A note on parameter estimation in the multivariate beta distribution.” *Computers and Mathematics with Applications* 24 (10): 11–17. doi:10.1016/0898-1221(92)90016-B.

¹A footnote here.