

# Adding direct labels to plots

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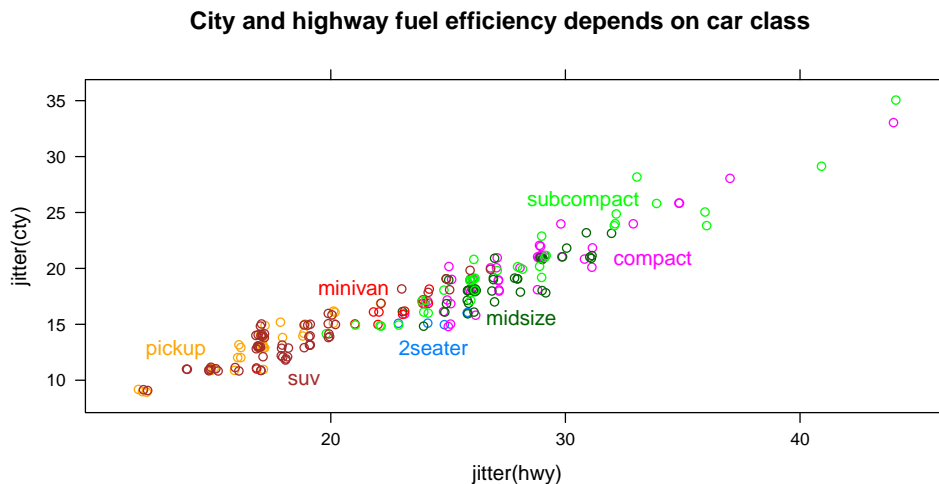
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High-level plotting systems such as **lattice** and **ggplot2** provide automatic legends for decoding color labels in *R* plots (Sarkar, 2008; Wickham, 2009). However, with many colors, legends become difficult to read, and direct labels are a more suitable decoding method:

```
> library(lattice)
> data(mpg, package = "ggplot2")
> p <- xyplot(jitter(cty) ~ jitter(hwy), mpg, groups = class,
+   main = "City and highway fuel efficiency depends on car class")
> library(directlabels)
> print(direct.label(p))
```



Direct labels are inherently more intuitive to decode than legends, since they are placed near the related data. However, direct labels are not widely used because they are often much more difficult to implement than legends, and their implementation varies between plotting systems.

The **directlabels** package solves these problems by providing a simple, unified interface for direct labeling in *R*. Given a **lattice** or **ggplot2** plot saved in the variable **p**, direct labels can be added by calling `direct.label(p, f)` where **f** is a Positioning Method that describes where labels should be placed as a function of the data. The power of this system lies in the fact that you can write your own Positioning Methods, and that any Positioning Method can be used with any plot. So once you have a library of Positioning Methods, direct labeling becomes trivial and so can more easily be used as a visualization technique in everyday statistical practice.

## References

Sarkar, D. (2008). *Lattice: Multivariate Data Visualization with R*. New York: Springer. ISBN 978-0-387-75968-5.

Wickham, H. (2009). *ggplot2: elegant graphics for data analysis*. Springer New York.