Lattice R Graphics Cheat Sheet

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Abstract:

I reproduce some of the plots from Rstudio's ggplot2 cheat sheet using just the lattice R package.

Before we begin, load the lattice package in R:

```
library(lattice)
```

We'll use the `mpg` dataset from ggplot2:

```
library(ggplot2)
data("mpg")
```

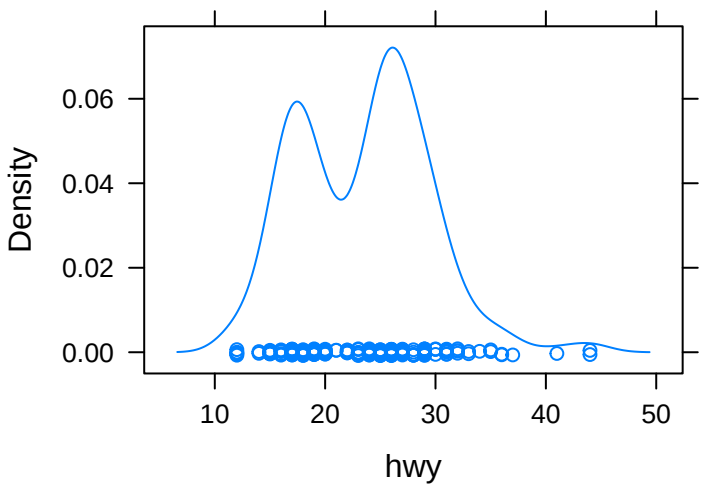
General Considerations

- Look at the help page of `xyplot()`, which contains a lot of details on many of the high-level plotting functions in lattice.
- Most of the high-level plotting functions use a formula as the first input with the variable on the y-axis to the left of the variable on the x-axis, separated by a tilde: `y ~ x`.
- If you want to layer multiple geometric objects (scatterplots, loess smoother, rugplot, etc) onto one plot, you need to use the `panel` argument, where you specify the plotting functions such as `panel.xyplot()` or `panel.loess()` or `panel.rug()`, etc. Examples of this implementation are below.

One Variable

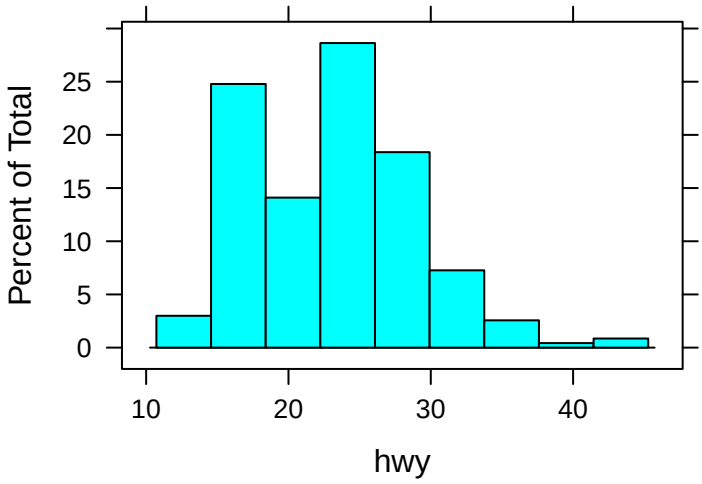
Density Plot

```
densityplot( ~ hwy, data = mpg)
```



Histogram

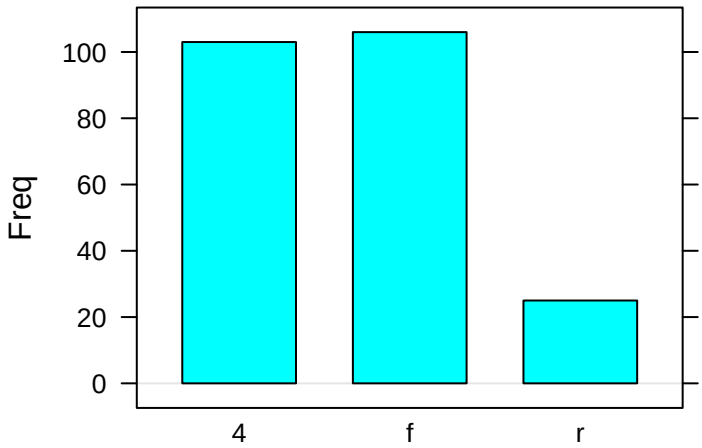
```
histogram( ~ hwy, data = mpg)
```



Discrete

Barplot

```
barchart(mpg$drv, horizontal = FALSE)
```

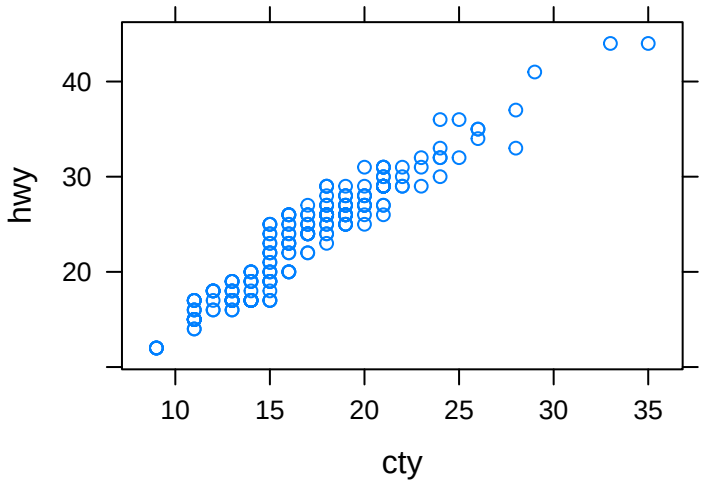


Two Variables

Continuous X, Continuous Y

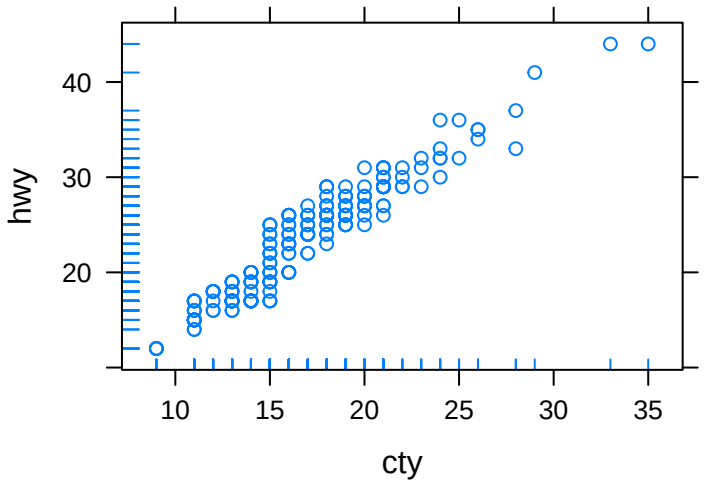
Scatterplot

```
xyplot(hwy ~ cty, data = mpg)
```



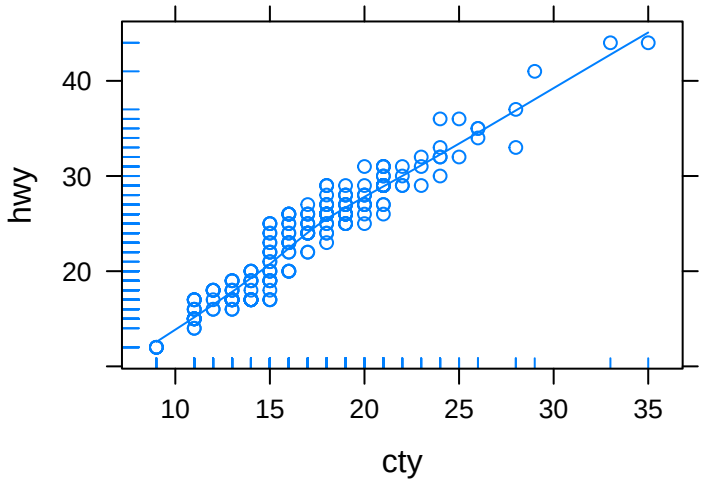
Add a rug plot

```
xyplot(hwy ~ cty, data = mpg,
       panel = function(x, y) {
         panel.xyplot(x, y)
         panel.rug(x, y)
       })
```



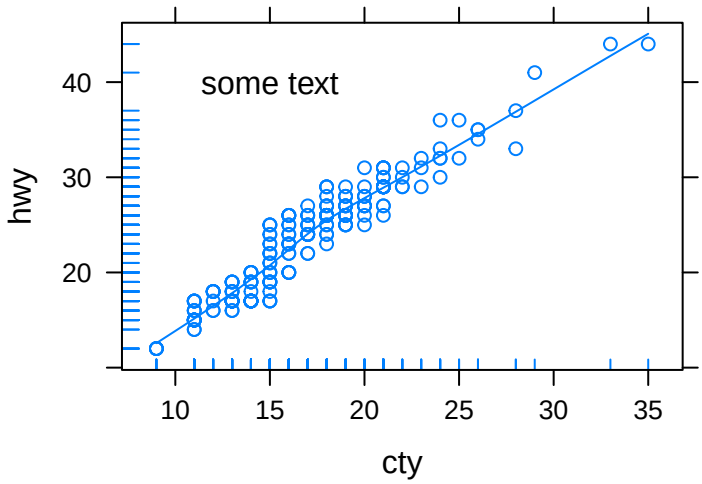
Add a loess smoother plot

```
xyplot(hwy ~ cty, data = mpg,
       panel = function(x, y) {
         panel.xyplot(x, y)
         panel.rug(x, y)
         panel.loess(x, y)
       })
```



Add some text

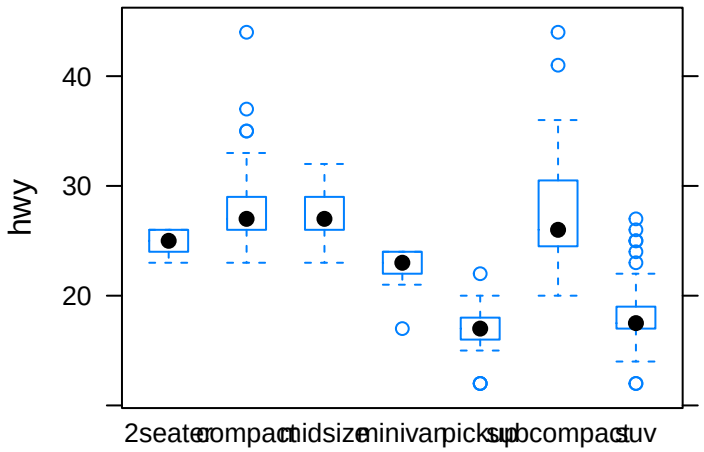
```
xyplot(hwy ~ cty, data = mpg,
       panel = function(x, y) {
         panel.xyplot(x, y)
         panel.rug(x, y)
         panel.loess(x, y)
         panel.text(x = 15, y = 40, label = "some text")
       })
```



Discrete X, Continuous Y

Boxplot

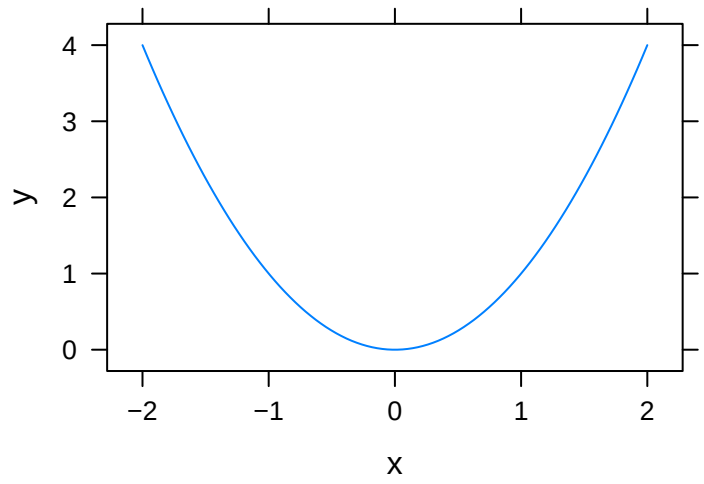
```
bwplot(hwy ~ class, data = mpg)
```



Continuous Function

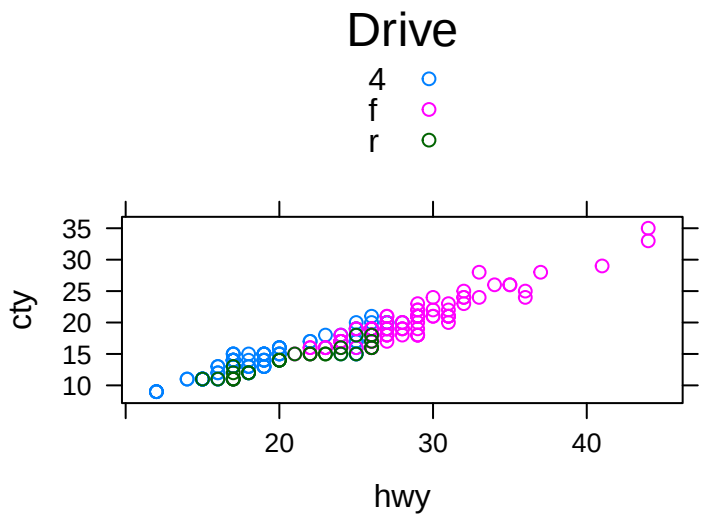
Line Plot

```
x <- seq(-2, 2, length = 100)
y <- x ^ 2
xyplot(y ~ x, data.frame(x, y), type = "l")
```



Color Coding and Legend Title

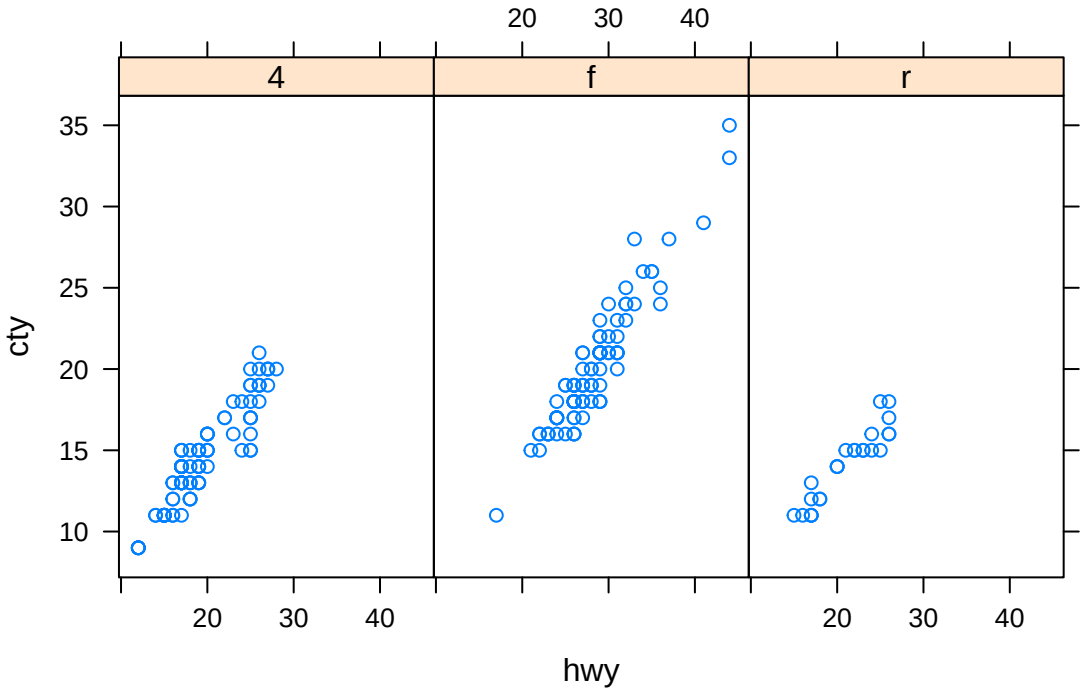
```
xyplot(cty ~ hwy, data = mpg, groups = drv, auto.key = list(title = "Drive"))
```



Faceting

Use the | command in the formula of `xyplot()` or `bwplot()` or `histogram()` or `barchart()` to facet.

```
xyplot(cty ~ hwy | drv, data = mpg)
```



```
xyplot(cty ~ hwy | drv + fl, data = mpg)
```