DATAGURU 炼数成金

R数据可视化—ggplot2包 第4周

2013.2.8

法律声明

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课程详情访问炼数成金培训网站

http://edu.dataguru.cn

主要内容

- Scales
- Themes

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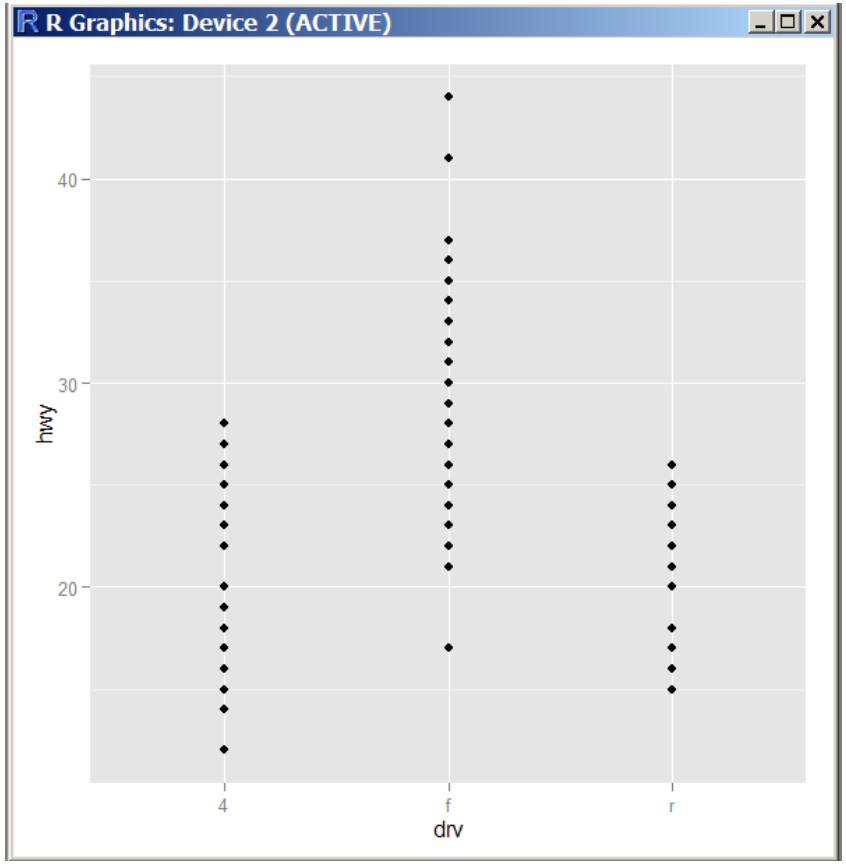
Scales工作原理

- 从domain（数据空间）到range（装饰属性空间）的一个函数
- Domain可以是一组数据（离散情形）或实数轴上的区间（连续情形）
- Range同样可以是离散或连续的
- Transformation（只对连续情形）
- Training
- mapping

scale_x_discrete()

- 书里的例子其实已经过时

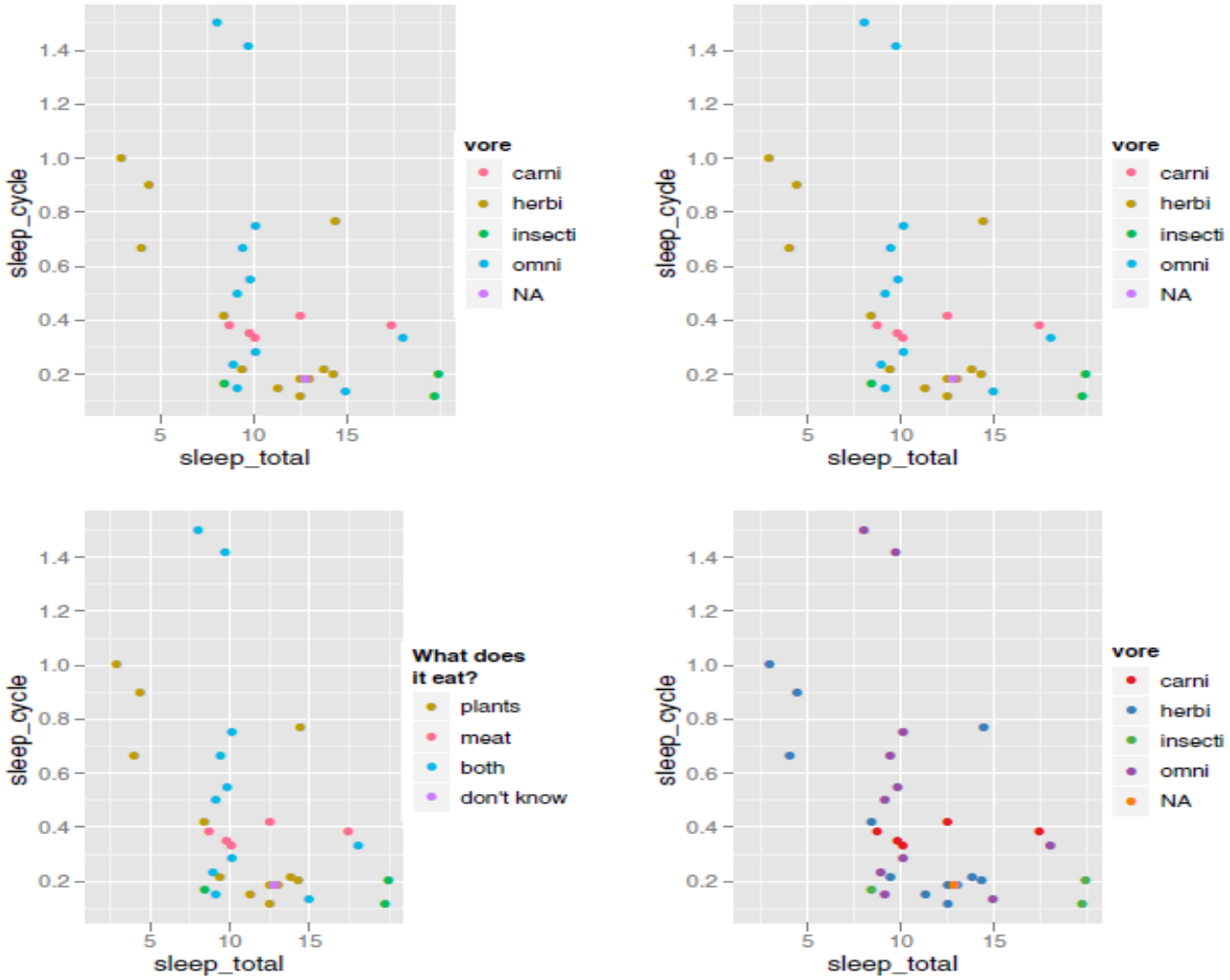
```
plot <- qplot(cty, hwy, data = mpg)
plot

# This doesn't work because there is a mismatch between the
# variable type and the default scale
plot + aes(x = drv)

# Correcting the default manually resolves the problem.
plot + aes(x = drv) + scale_x_discrete()
```



scale_colour_hue()和scale_colour_brewer()

```
p <- qplot(sleep_total, sleep_cycle, data = msleep, colour = vore)
p
# Explicitly add the default scale
p + scale_colour_hue()
# Adjust parameters of the default, here changing the appearance
# of the legend
p + scale_colour_hue("What does\nit eat?",
breaks = c("herbi", "carni", "omni", NA),
labels = c("plants", "meat", "both", "don’ t know"))
# Use a different scale
p + scale_colour_brewer(pal = "Set1")
```

结果解释



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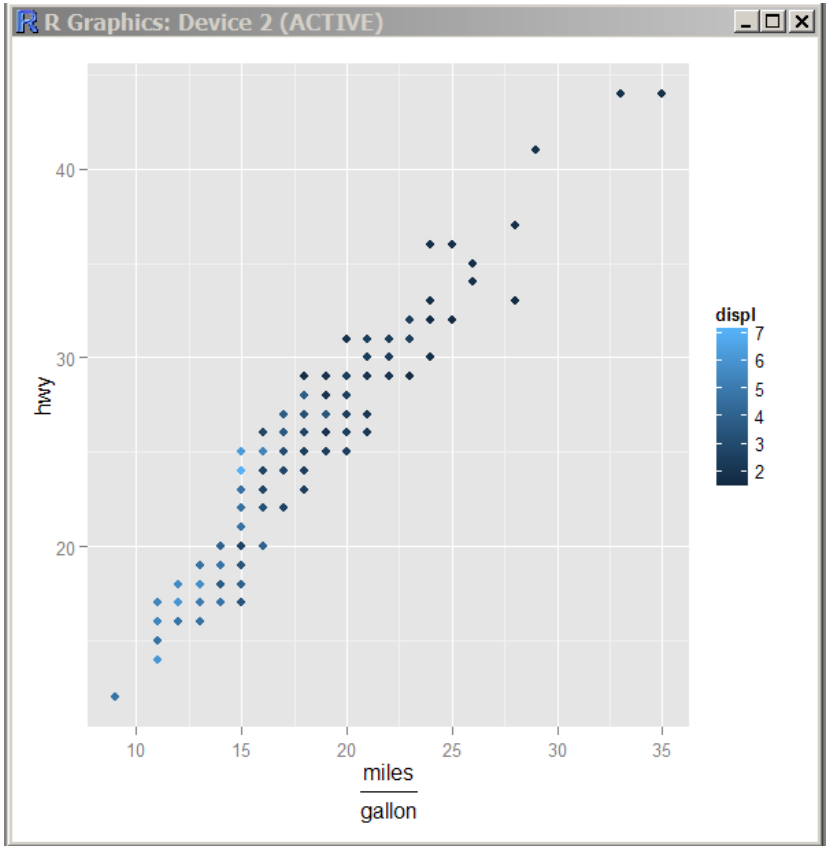
xlab(),ylab() 和 labs()

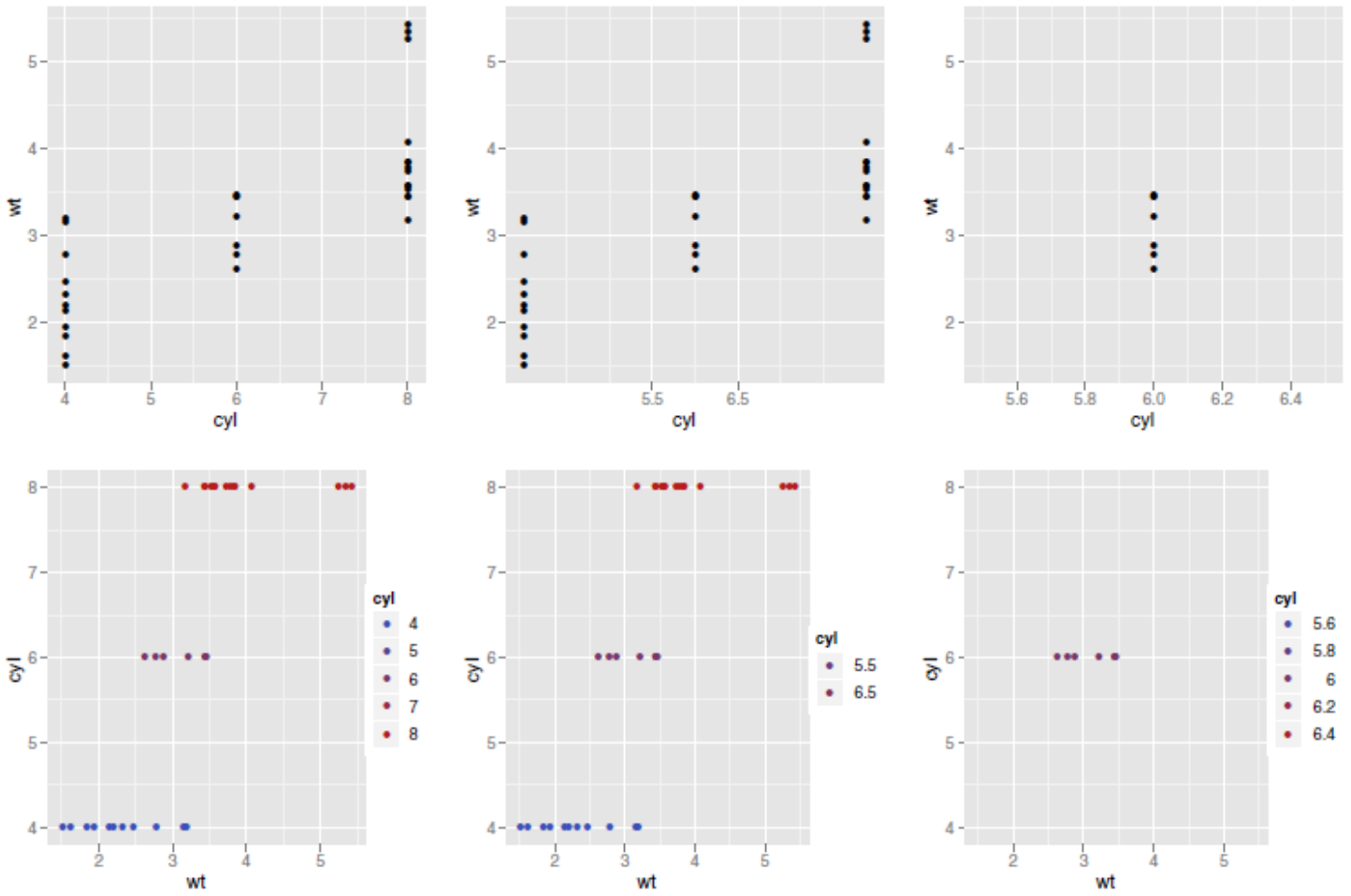
```
p <- qplot(cty, hwy, data = mpg, colour
    = displ)
p
p + scale_x_continuous("City mpg")
p + xlab("City mpg")
p + ylab("Highway mpg")
p + labs(x = "City mpg", y = "Highway",
    colour = "Displacement")
p + xlab(expression(frac(miles, gallon)))
```



Breaks和labels

```
p <- qplot(cyl, wt, data = mtcars)
p
p + scale_x_continuous(breaks = c(5.5, 6.5))
p + scale_x_continuous(limits = c(5.5, 6.5))
p <- qplot(wt, cyl, data = mtcars, colour = cyl)
p
p + scale_colour_gradient(breaks = c(5.5, 6.5))
p + scale_colour_gradient(limits = c(5.5, 6.5))
```

结果解释

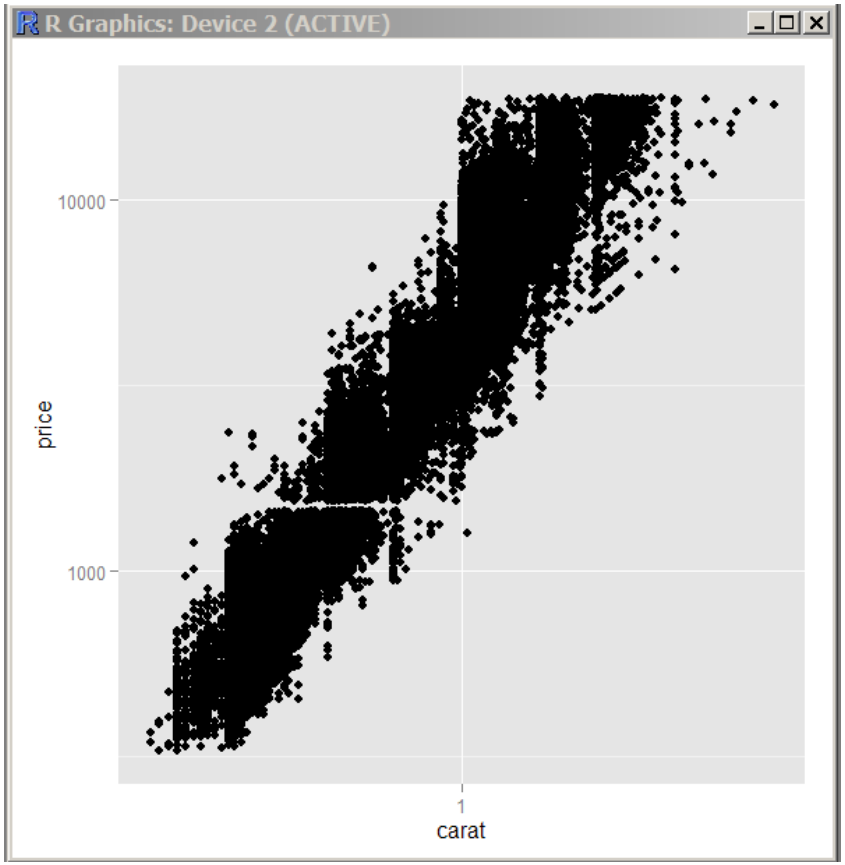


xlim()和ylim()

`xlim(10, 20)`: a continuous scale from 10 to 20
`ylim(20, 10)`: a reversed continuous scale from 20 to 10
`xlim("a", "b", "c")`: a discrete scale
`xlim(as.Date(c("2008-05-01", "2008-08-01")))`: a date scale from May 1 to August 1 2008.

scale_x_log10()

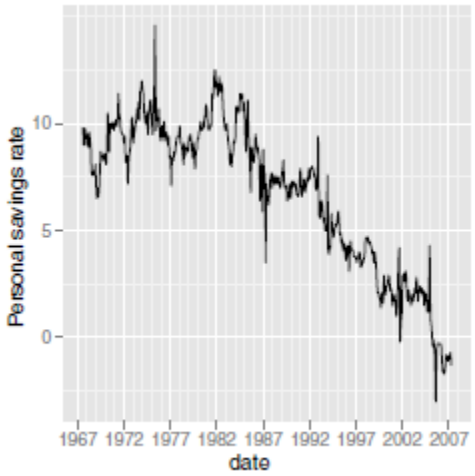
```
qplot(log10(carat), log10(price),
    data = diamonds)
qplot(carat, price, data =
    diamonds) +
scale_x_log10() + scale_y_log10()
```

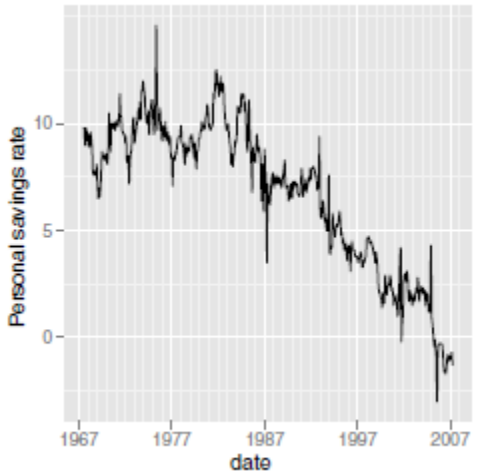


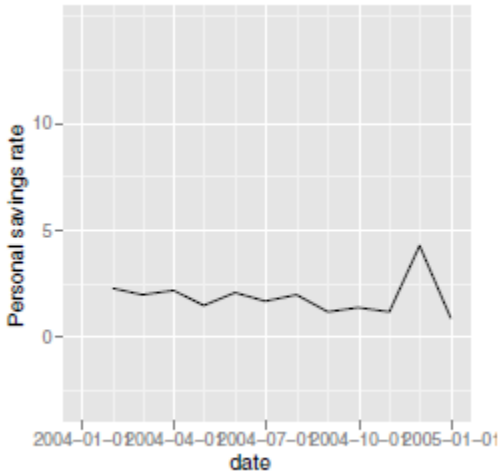
时间的表达

```
plot <- qplot(date, psavert, data = economics, geom = "line") +
ylab("Personal savings rate") +
geom_hline(xintercept = 0, colour = "grey50")
plot
plot + scale_x_date(major = "10 years")
plot + scale_x_date(
limits = as.Date(c("2004-01-01", "2005-01-01")),
format = "%Y-%m-%d"
)
```

结果解释







图例与坐标轴

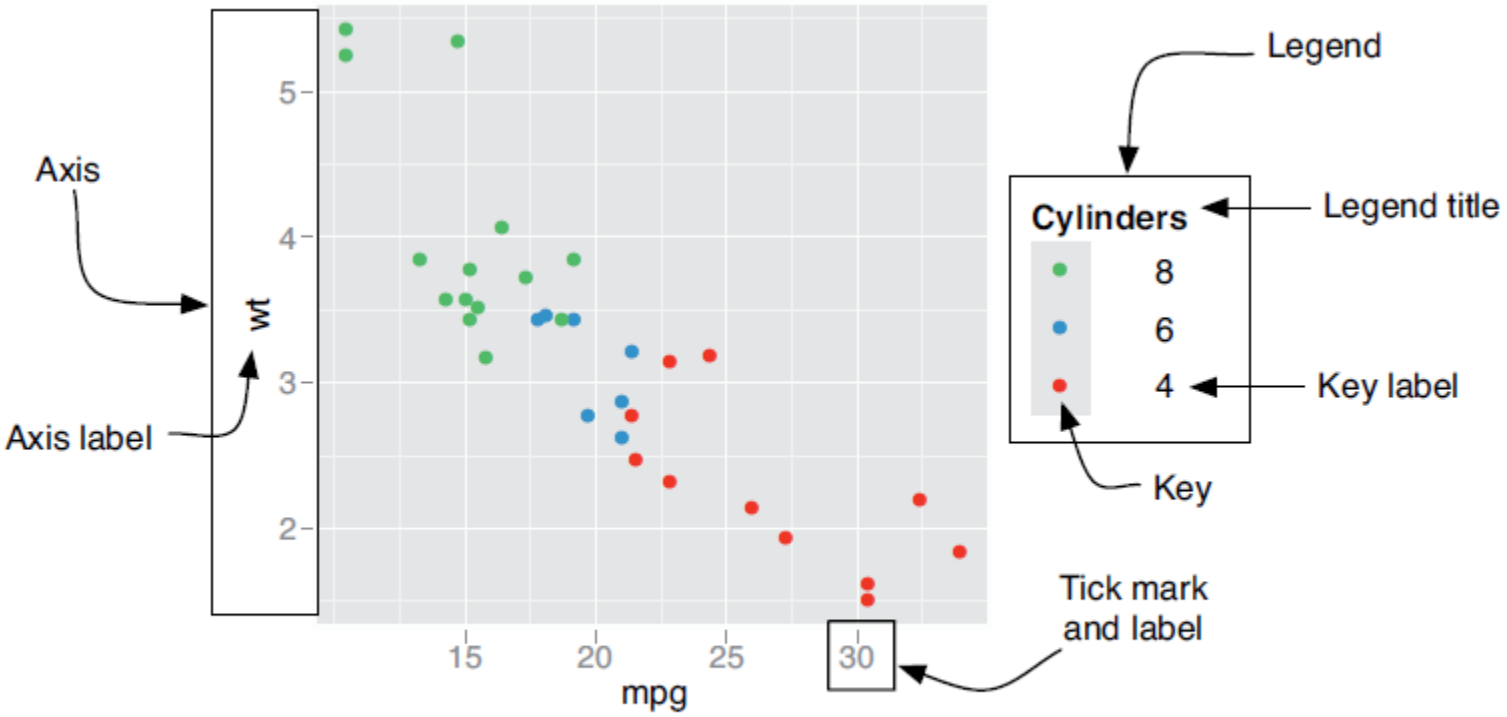


Fig. 6.12: The components of the axes and legend.

由各种geom产生的图例

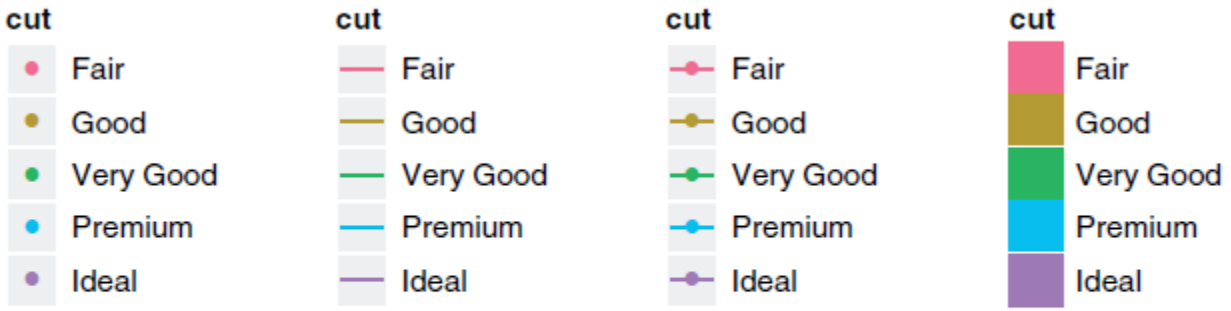
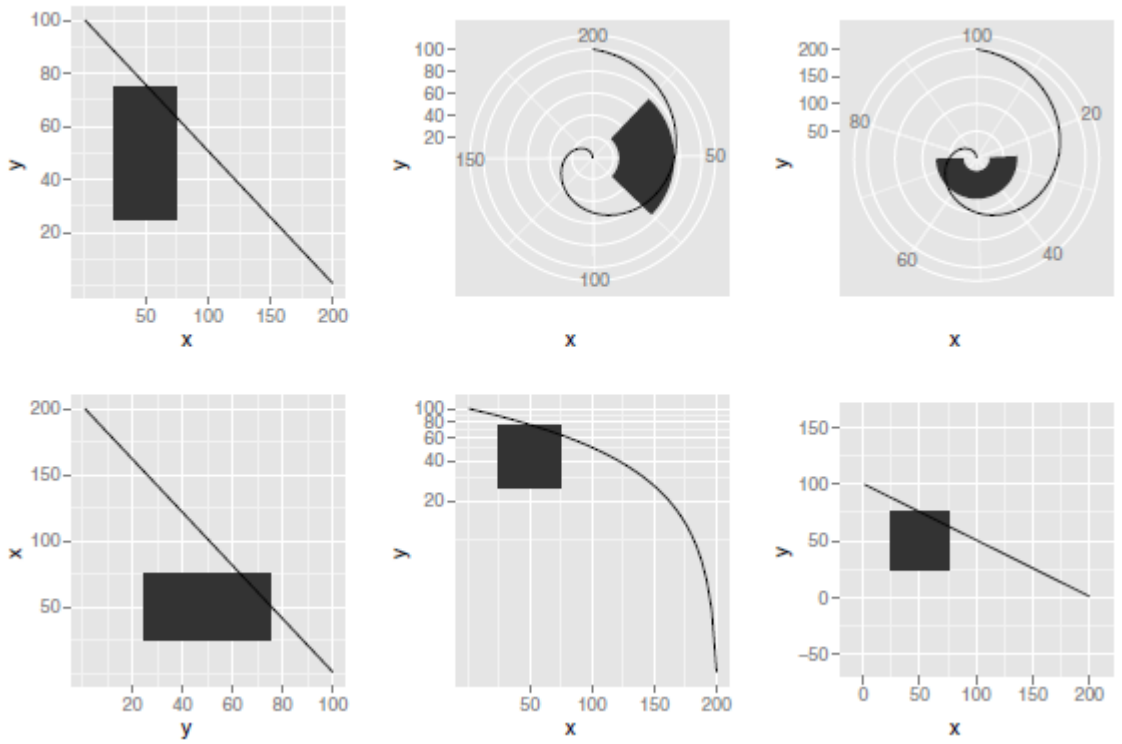


Fig. 6.13: Legends produced by geom: point, line, point and line, and bar.

其它图例

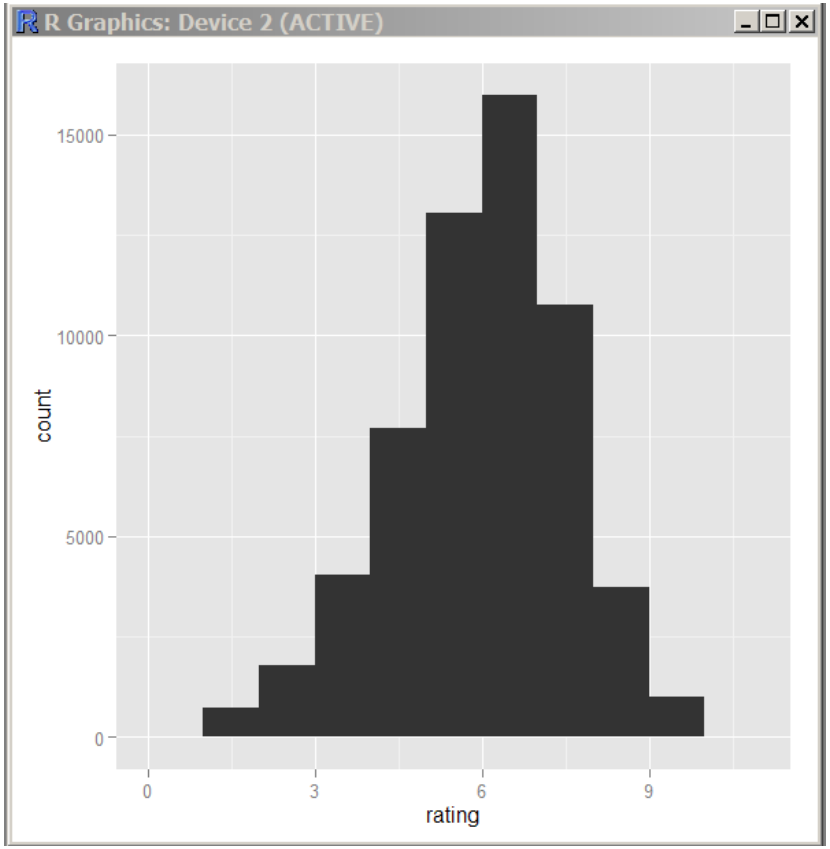
Fig. 6.14: Colour legend, shape legend, colour + shape legend.

极坐标系， coord_xxx()



theme_gray()

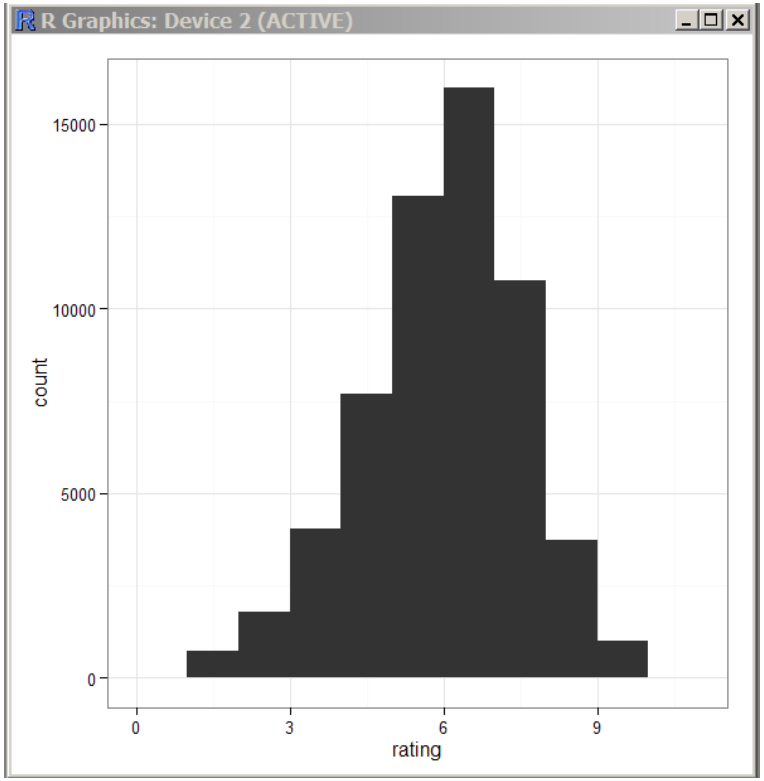
```
hgram <- qplot(rating, data = movies, binwidth = 1)
hgram
```



theme_set()和theme_bw()

previous_theme <- theme_set(theme_bw())

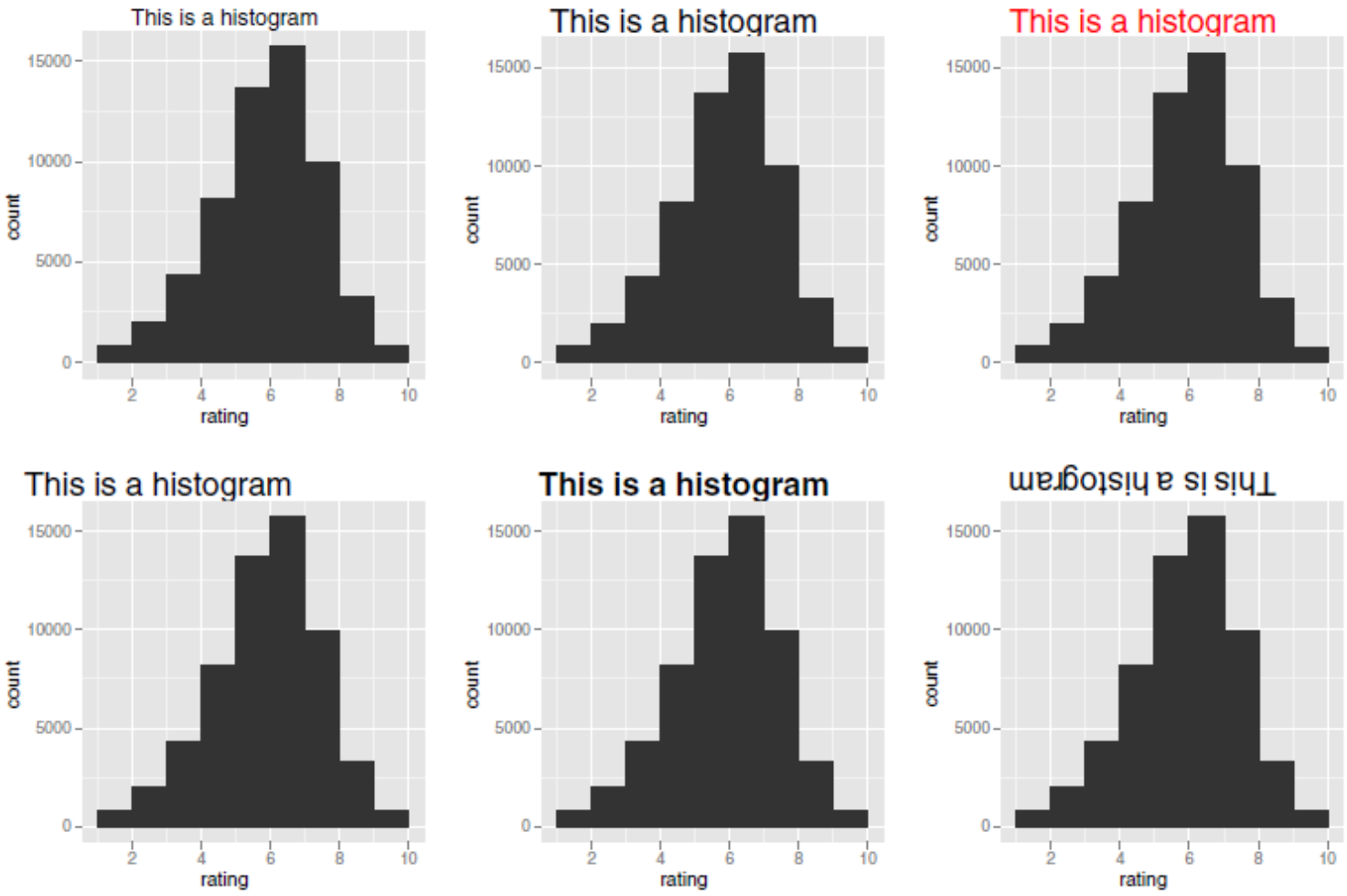
hgram



标题控制


```
hgramt <- hgram +ggtitle("This is a histogram")
hgramt + theme(plot.title = element_text(size = 20))
hgramt + theme(plot.title = element_text(size = 20,color="red"))
hgramt + theme(plot.title = element_text(size = 20,hjust=0))
hgramt + theme(plot.title = element_text(size = 20,face="bold"))
hgramt + theme(plot.title = element_text(size = 20,angle=180))
```

结果



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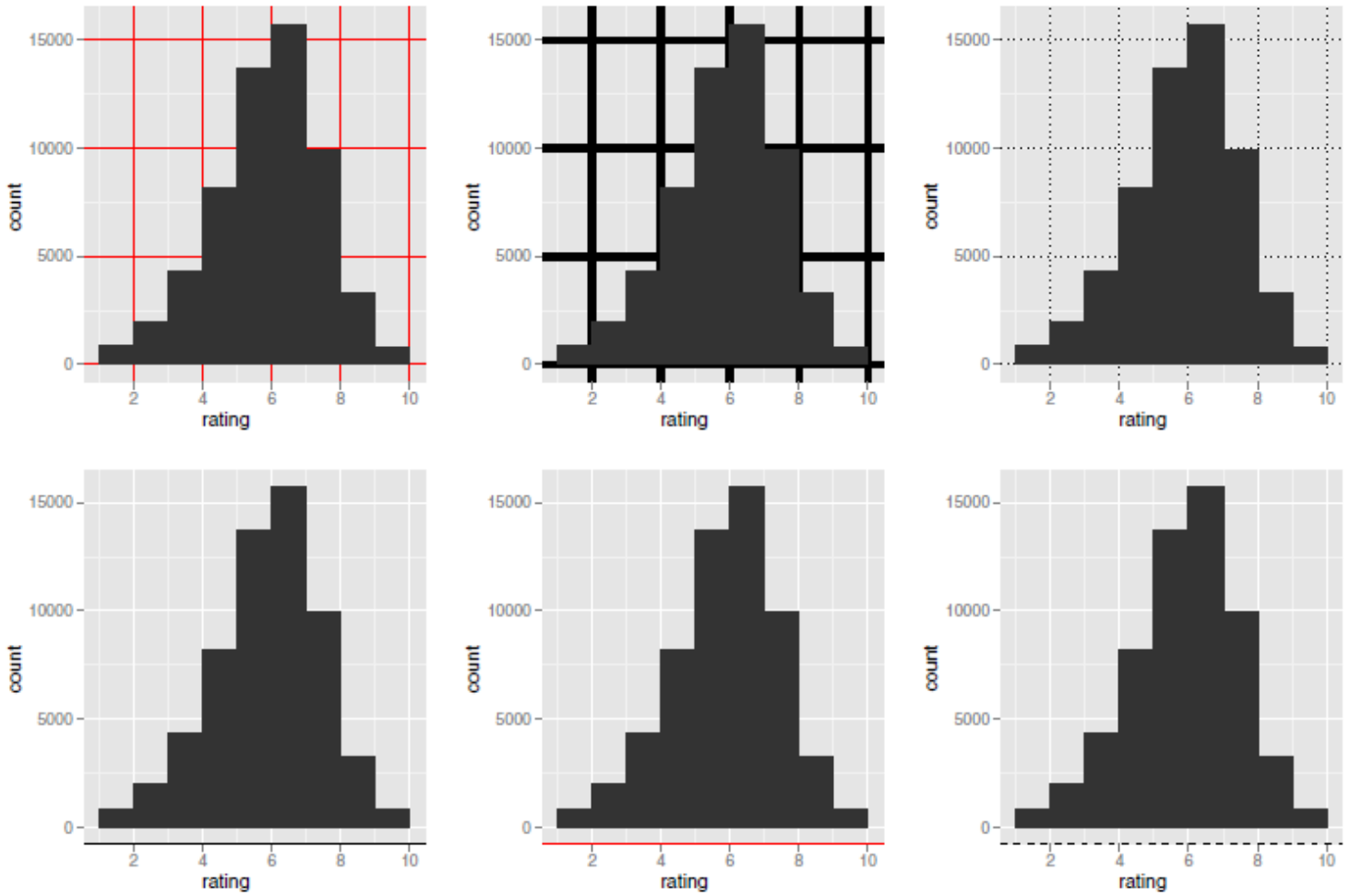
控制坐标线

```
hgram + theme(panel.grid.major = element_line(colour = "red"))
hgram + theme(panel.grid.major = element_line(size = 2))
hgram + theme(panel.grid.major = element_line(linetype = "dotted"))
hgram + theme(axis.line = element_line())
hgram + theme(axis.line = element_line(colour = "red"))
hgram + theme(axis.line = element_line(size = 0.5,linetype = "dashed"))
```

效果图



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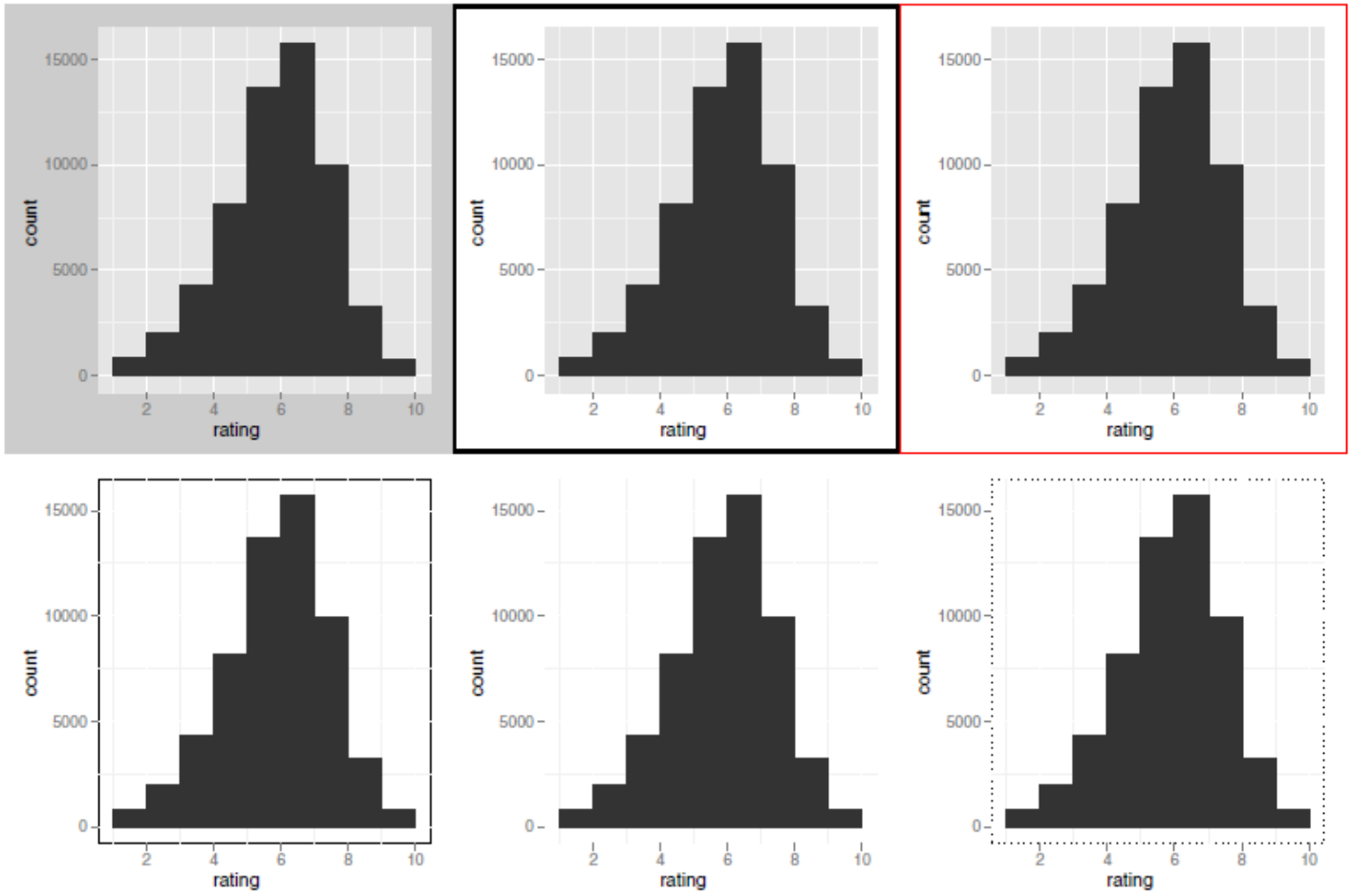
背景控制


```
hgram + theme(plot.background = element_rect(fill = "grey80",colour = NA))
hgram + theme(plot.background = element_rect(size = 2))
hgram + theme(plot.background = element_rect(colour = "red"))
hgram + theme(panel.background = element_rect())
hgram + theme(panel.background = element_rect(colour = NA))
hgram + theme(panel.background =element_rect(linetype = "dotted"))
```

效果图



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element_blank()

hgramt

last_plot() + theme(panel.grid.minor = element_blank())

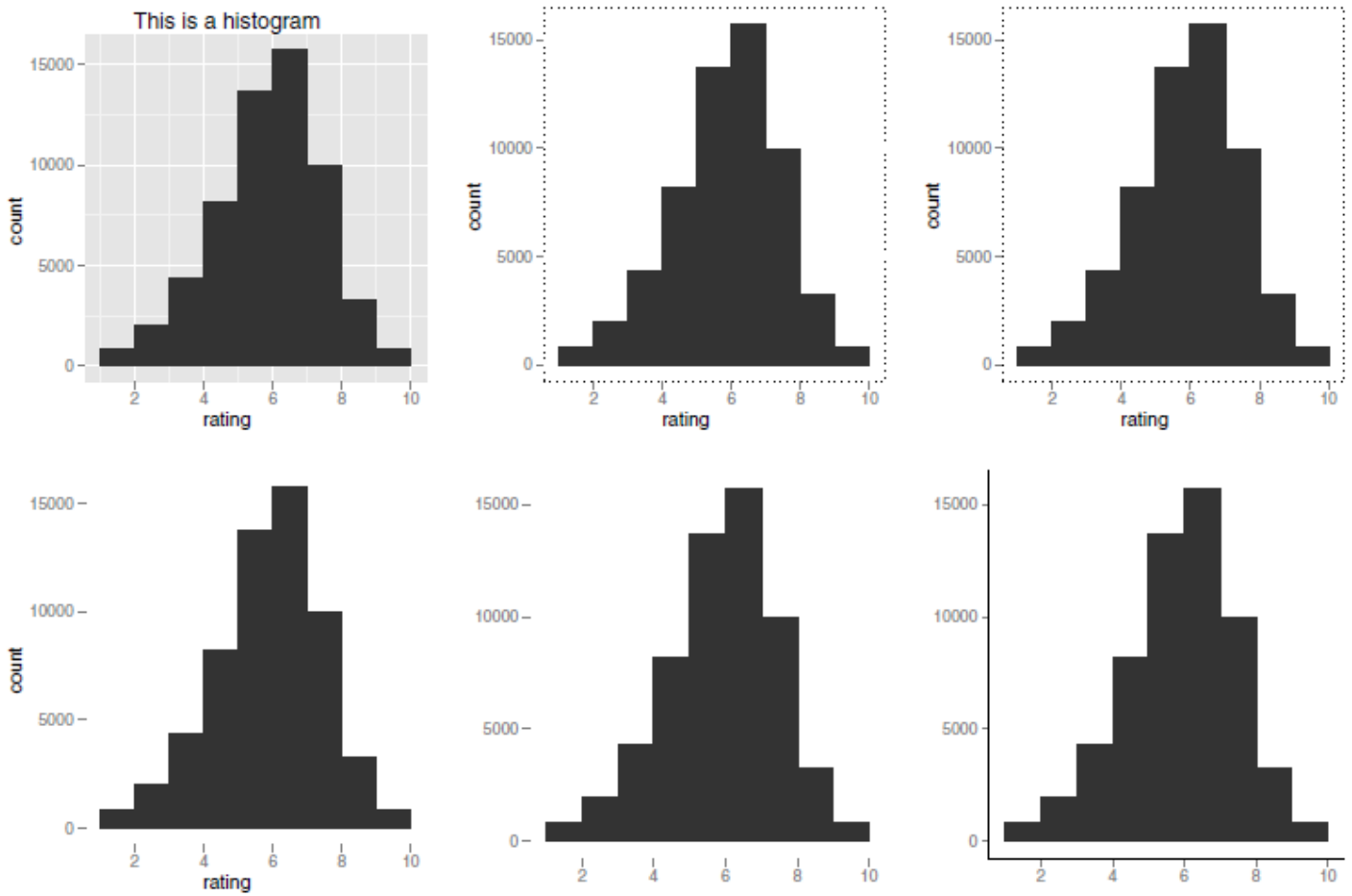
last_plot() + theme(panel.grid.major = element_blank())

last_plot() + theme(panel.background = element_blank())

last_plot() + theme(axis.title.x = element_blank(),axis.title.y = element_blank())

last_plot() + theme(axis.line = theme_segment())

效果图



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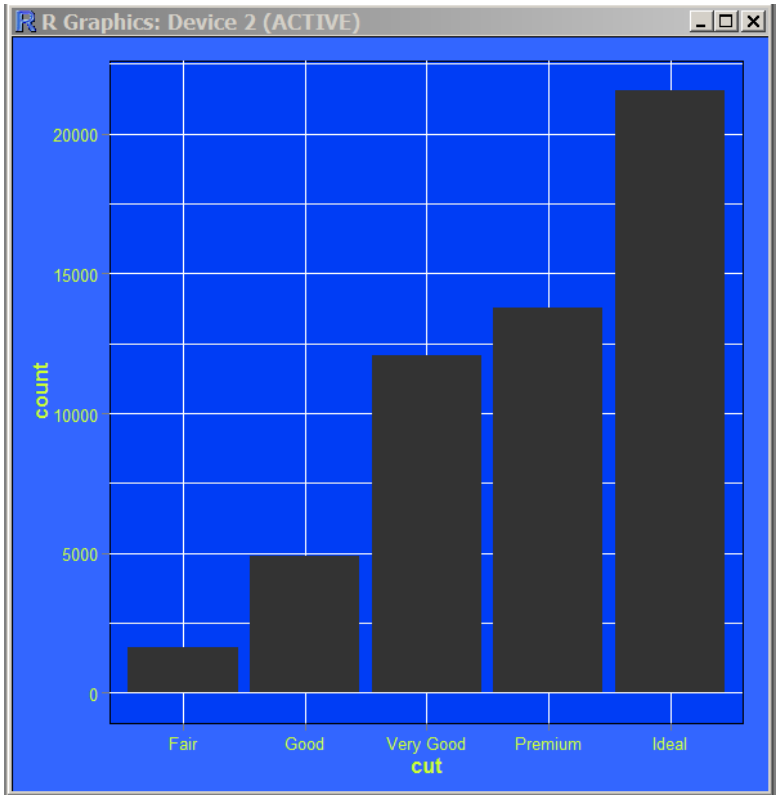
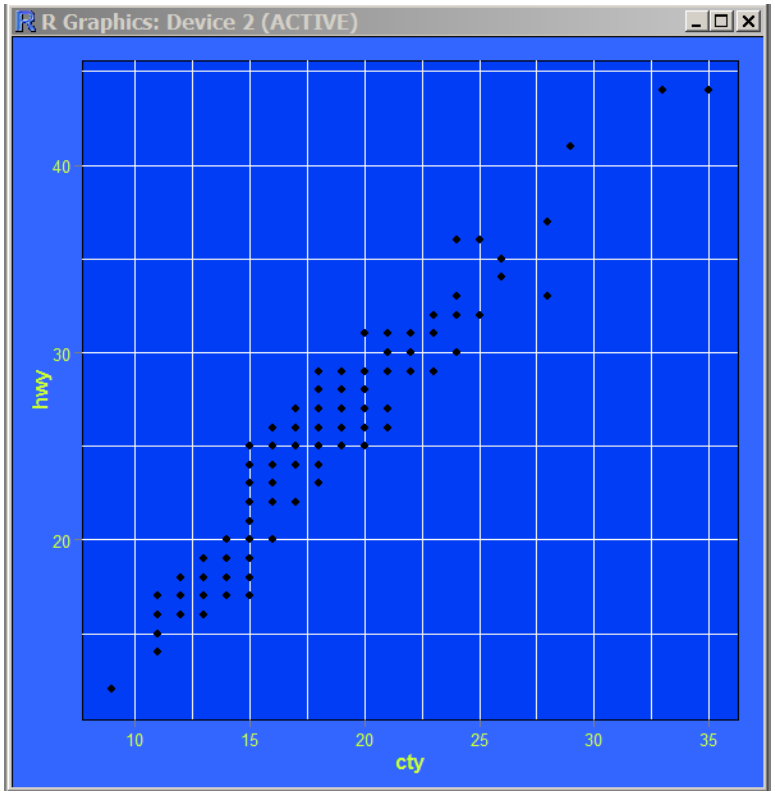
theme_update( )

```
old_theme <- theme_update(
plot.background = element_rect(fill = "#3366FF"),
panel.background = element_rect(fill = "#003DF5"),
axis.text.x = element_text(colour = "#CCFF33"),
axis.text.y = element_text(colour = "#CCFF33", hjust = 1),
axis.title.x = element_text(colour = "#CCFF33", face = "bold"),
axis.title.y = element_text(colour = "#CCFF33", face = "bold",
angle = 90)
)
qplot(cut, data = diamonds, geom="bar")
qplot(cty, hwy, data = mpg)
theme_set(old_theme)
```

结果





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- 关于逆向收费式网络的详情，请看我们的培训网站 http://edu.dataguru.cn

Thanks

FAQ时间