R数据可视化—gplot2包 第3周

2013.2.8

法律声明

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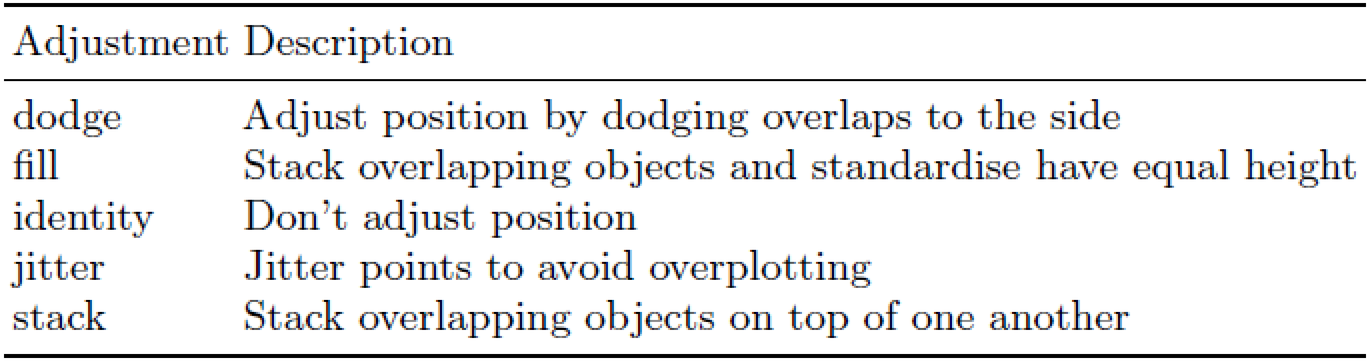
http://edu.dataguru.cn

Position adjustments



Adjustment	Description
dodge	Adjust position by dodging overlaps to the side
fill	Stack overlapping objects and standardise have equal height
identity	Don't adjust position
jitter	Jitter points to avoid overplotting
stack	Stack overlapping objects on top of one another

例图

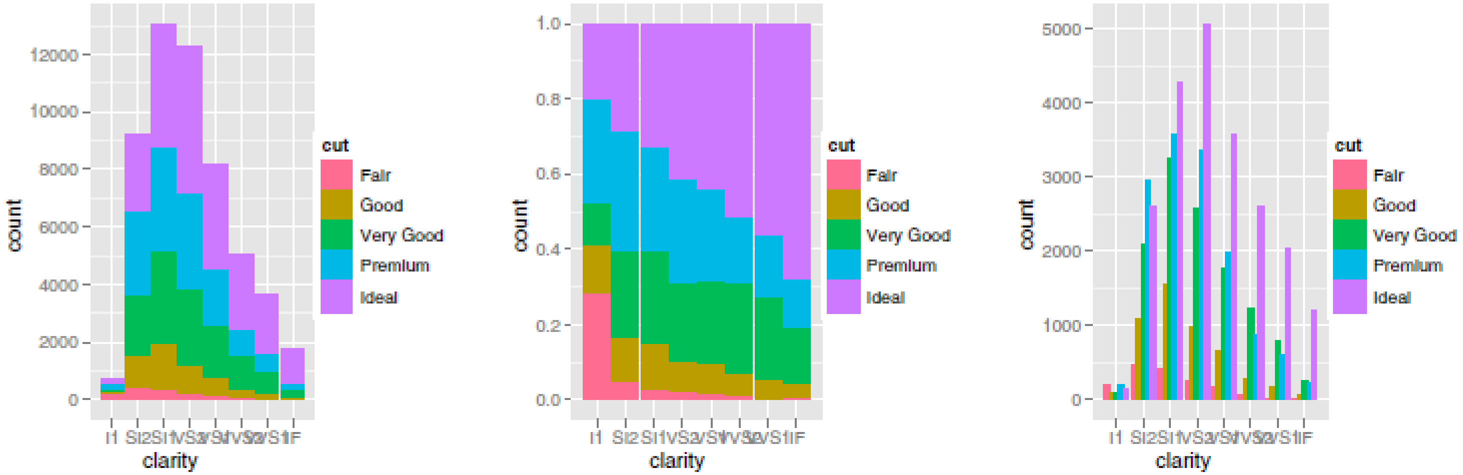
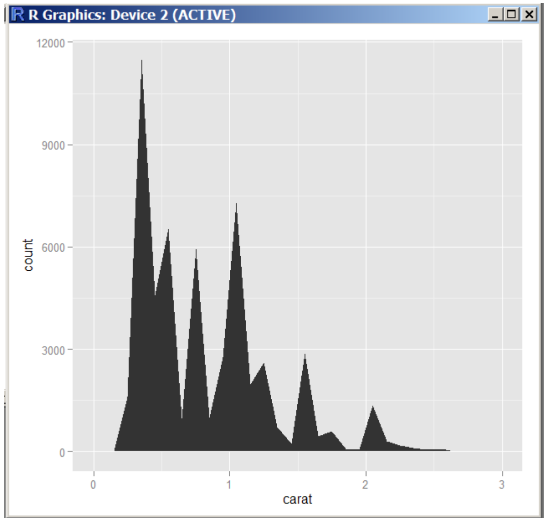


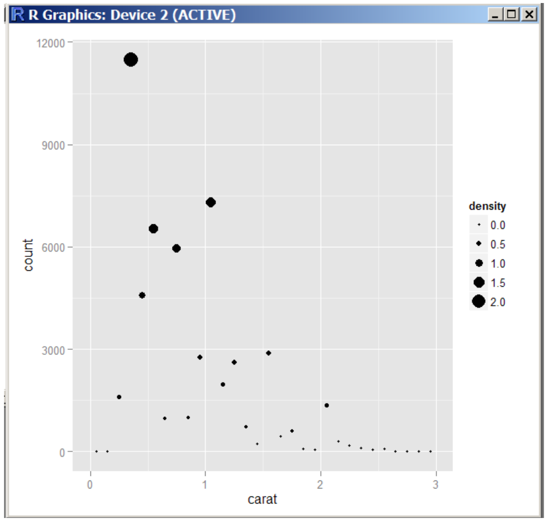
Fig. 4.8: Three position adjustments applied to a bar chart. From left to right, stacking, filling and dodging.

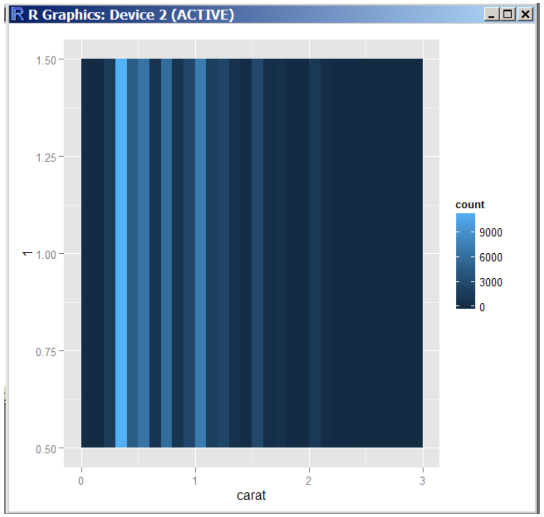
组合geoms和stats

```
d <- ggplot(diamonds, aes(carat)) + xlim(0, 3)
d + stat_bin(aes(ymax = ..count..), binwidth = 0.1, geom = "area")
d + stat_bin(
aes(size = ..density..), binwidth = 0.1,
geom = "point", position="identity"
)
d + stat_bin(
aes(y = 1, fill = ..count..), binwidth = 0.1,
geom = "tile", position="identity"
)
```

例图


R Graphics: Device 2 (ACTIVE)
12000
9000
6000
3000
0
count
0
1
2
3
carat


R Graphics: Device 2 (ACTIVE)
12000
9000
6000
3000
0
count
0
1
2
3
carat
density
0.0
0.5
1.0
1.5
2.0

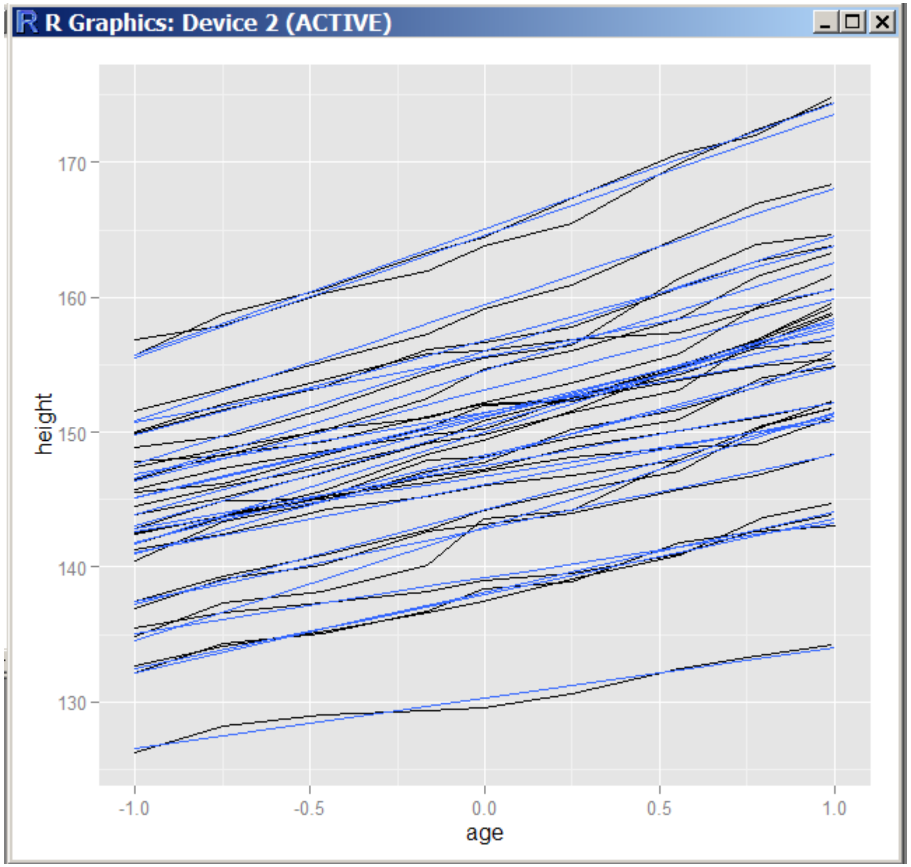

R Graphics: Device 2 (ACTIVE)
1.50
1.25
1.00
0.75
0.50
1
0
1
2
3
carat
count
9000
6000
3000
0

一个复杂例子

```
model <- lme(height ~ age, data = Oxboys, random = ~ 1 + age | Subject)
oplot <- ggplot(Oxboys, aes(age, height, group = Subject)) + geom_line()
age_grid <- seq(-1, 1, length = 10)
subjects <- unique(Oxboys$Subject)
preds <- expand.grid(age = age_grid, Subject = subjects)
preds$height <- predict(model, preds)
```

续

```
oplot + geom_line(data = preds, colour = "#3366FF", size= 0.4)
```



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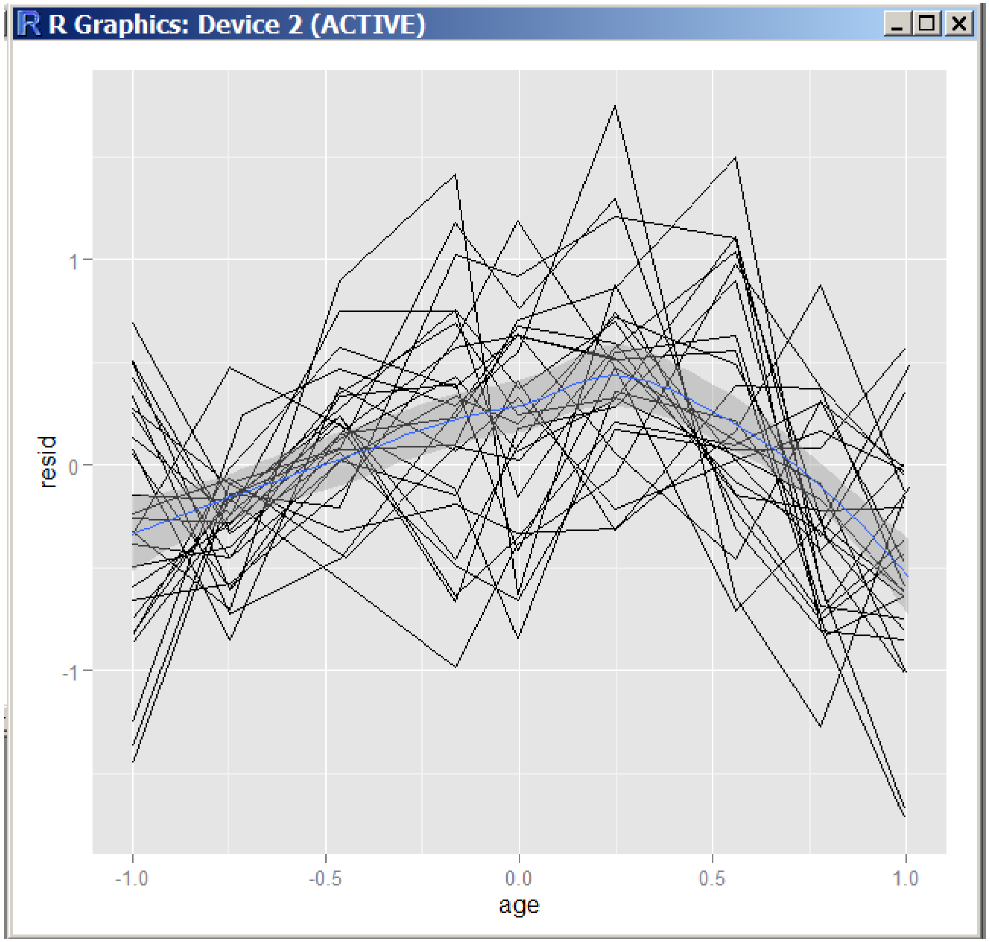
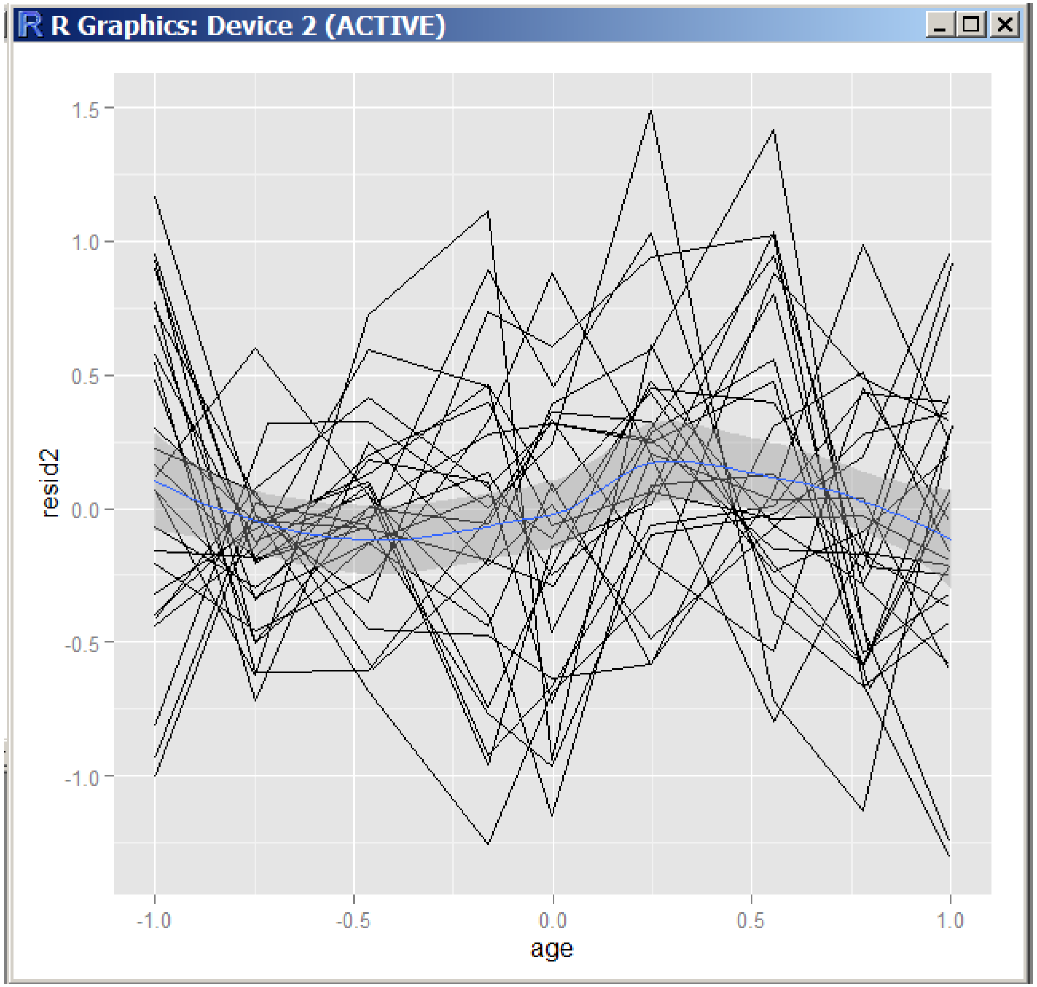
续

```
Oxboys$fitted <-
    predict(model)
Oxboys$resid <-
    with(Oxboys, fitted
    - height)
oplot %+% Oxboys +
    aes(y = resid) +
    geom_smooth(aes(
    group=1))
```



续

```
model2 <- update(model,
    height ~ age + I(age ^ 2))
Oxboys$fitted2 <-
    predict(model2)
Oxboys$resid2 <-
    with(Oxboys, fitted2 -
    height)
oplot %+% Oxboys + aes(y =
    resid2) +
    geom_smooth(aes(group=
    1))
```

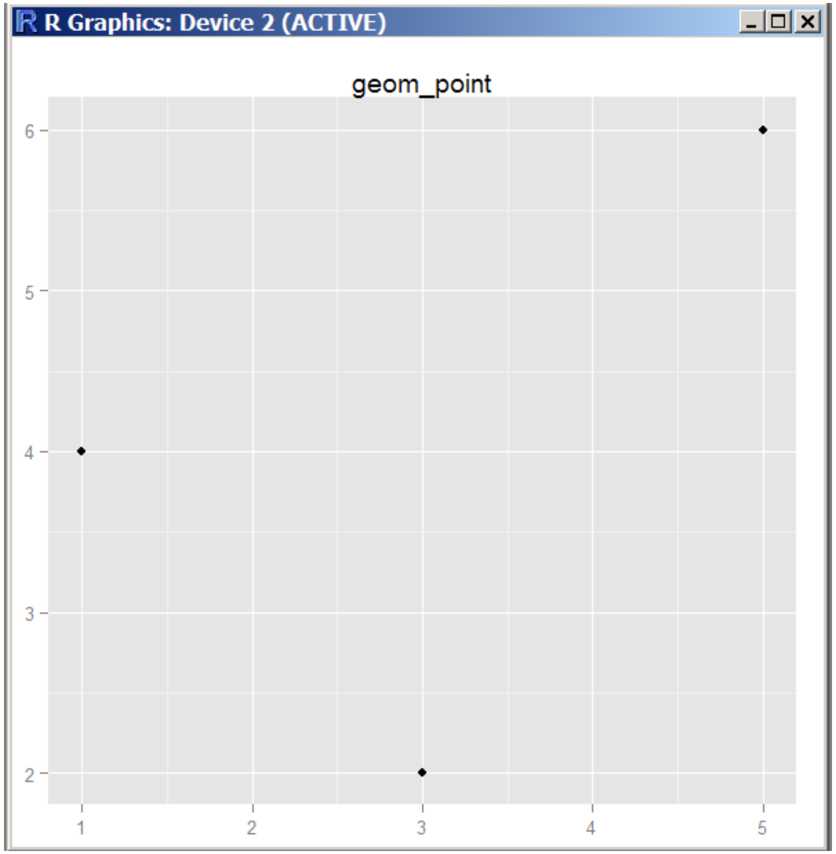


基本作图类型

```
df <- data.frame(
x = c(3, 1, 5),
y = c(2, 4, 6),
label = c("a","b","c")
)
p <- ggplot(df, aes(x, y, label = label)) +
xlab(NULL) + ylab(NULL)
```

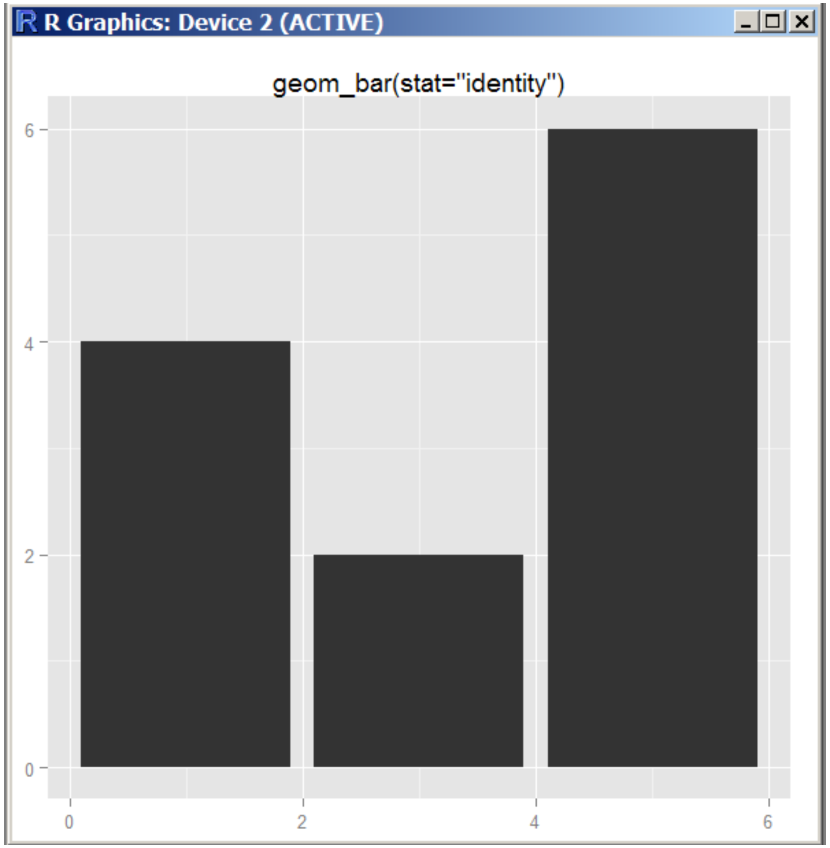
散点图

p + geom_point() + ggtitle("geom_point")



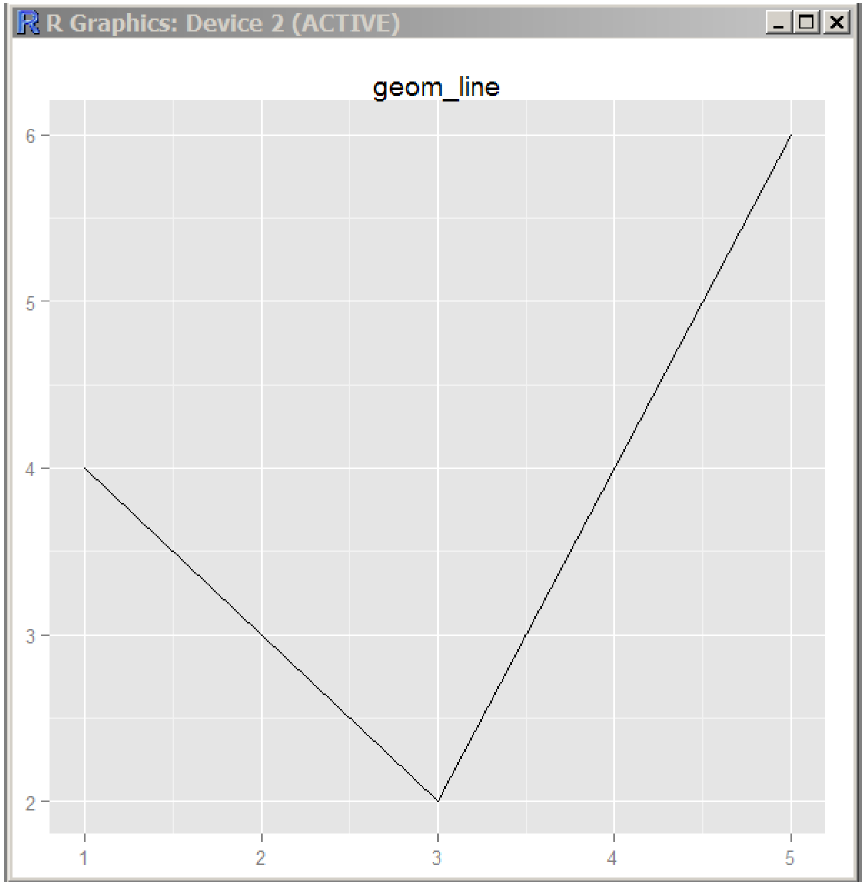
柱形图

```
p + geom_bar(stat="identity") +ggtitle( "geom_bar(stat=\"identity\")")
```



线图

p + geom_line() + ggtitle("geom_line")



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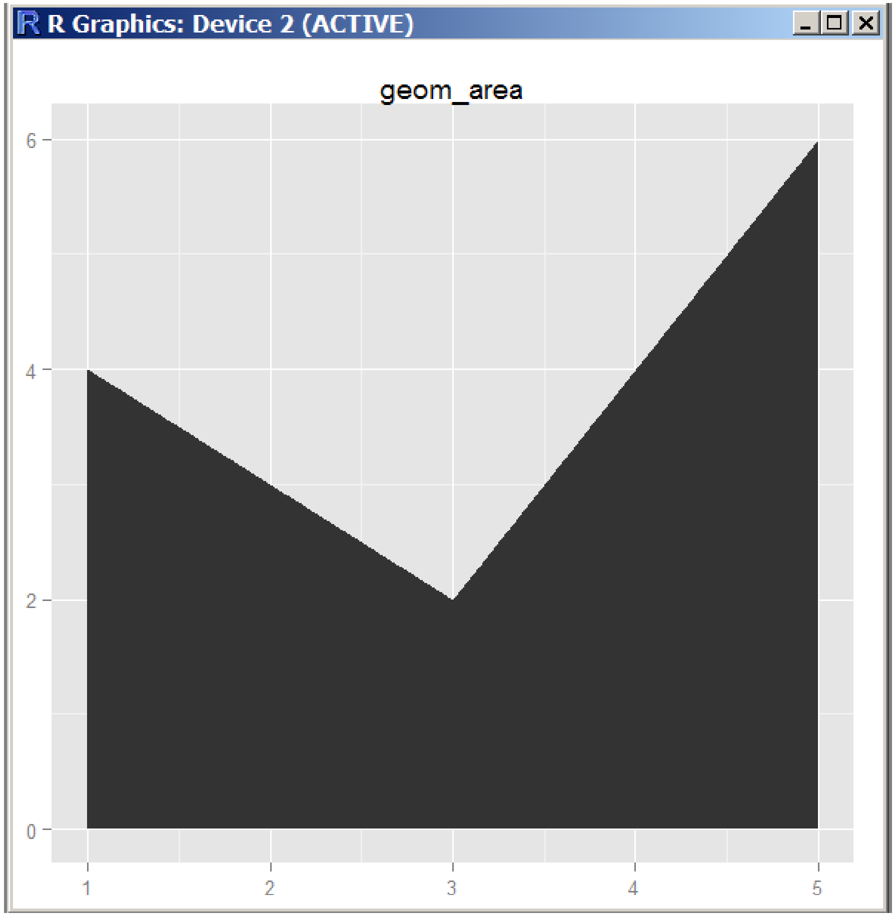
填充图

```
p + geom_area() + ggtitle("geom_area")
```



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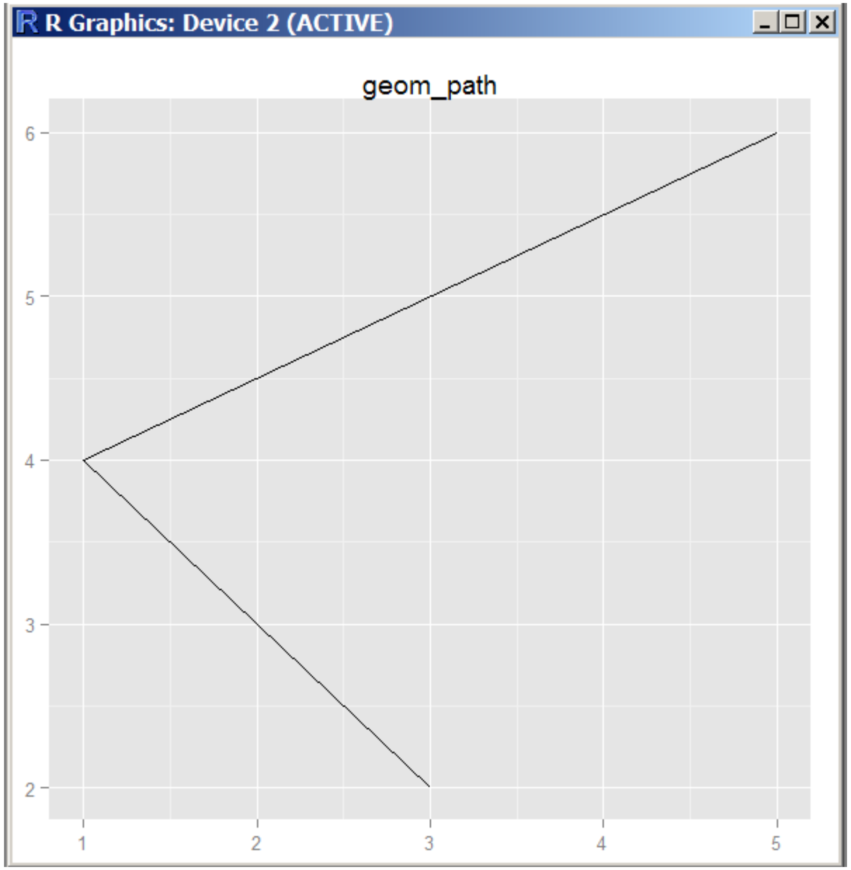
路径图

p + geom_path() + ggtitle("geom_path")



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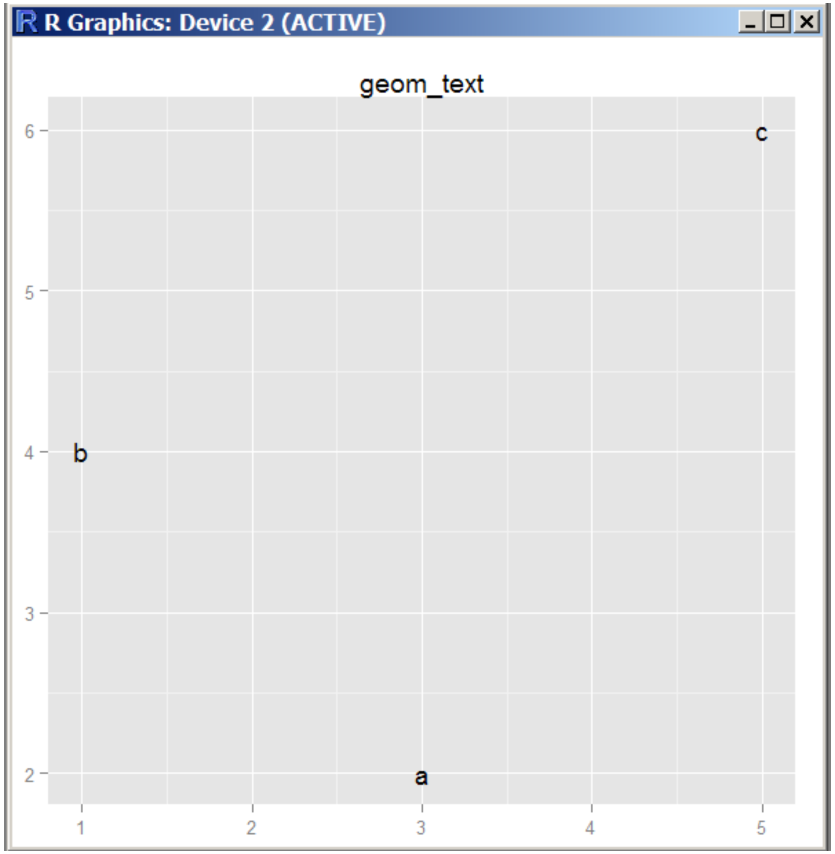
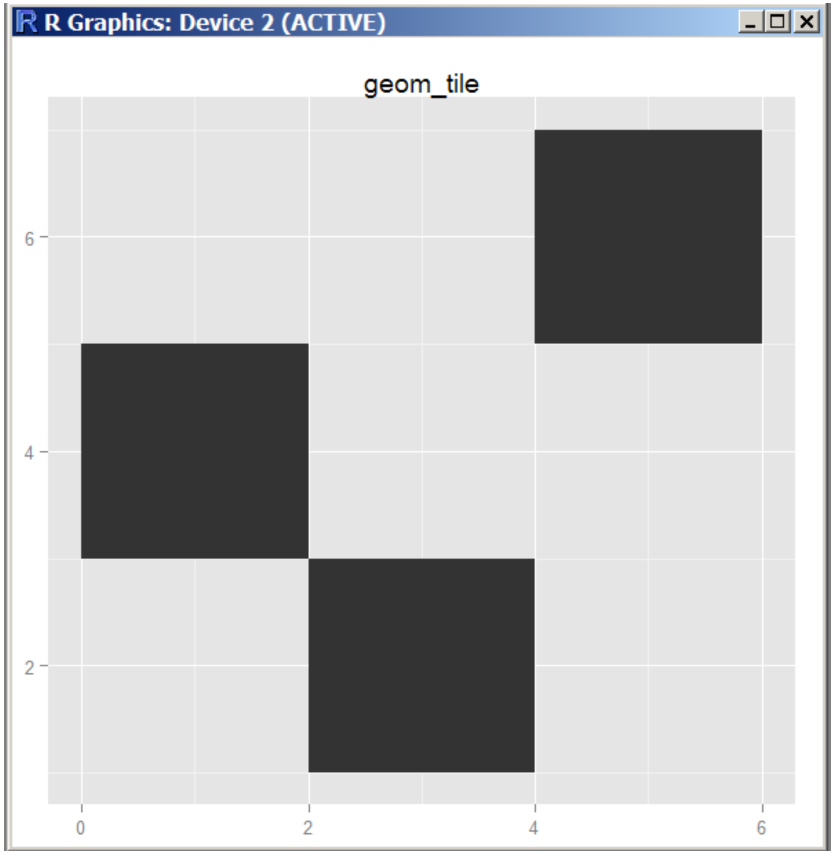
文字标识

```
p + geom_text() + ggtitle("geom_text")
```



Tile plot

p + geom_tile() + ggtitle("geom_tile")



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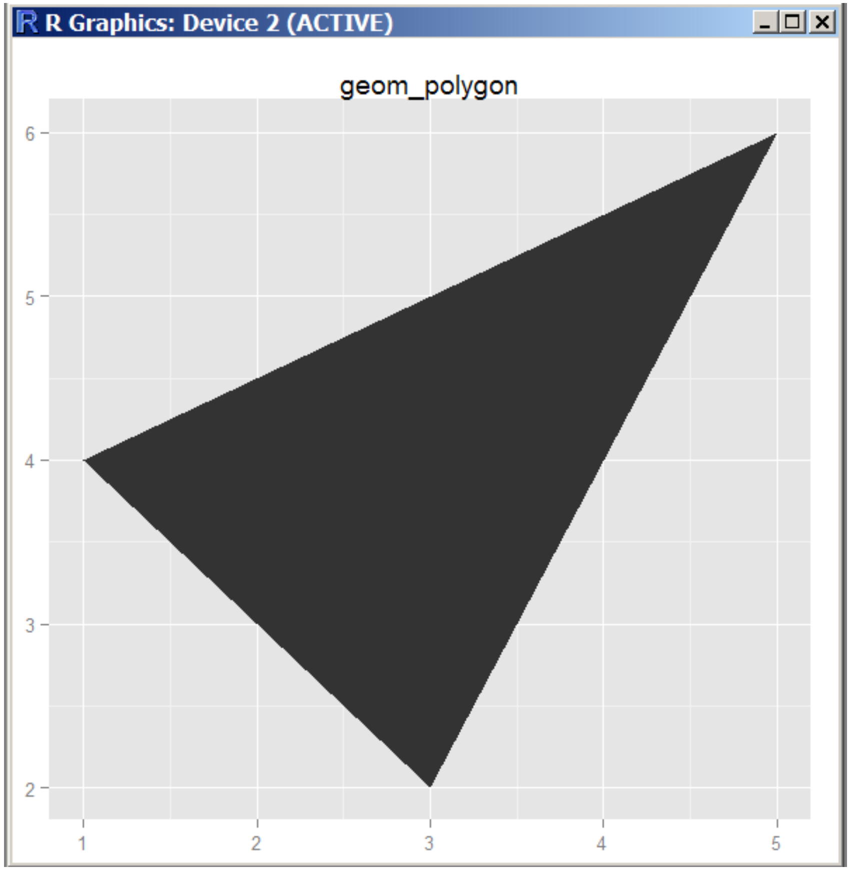
Polygon plot

```
p + geom_polygon() + ggtitle("geom_polygon")
```



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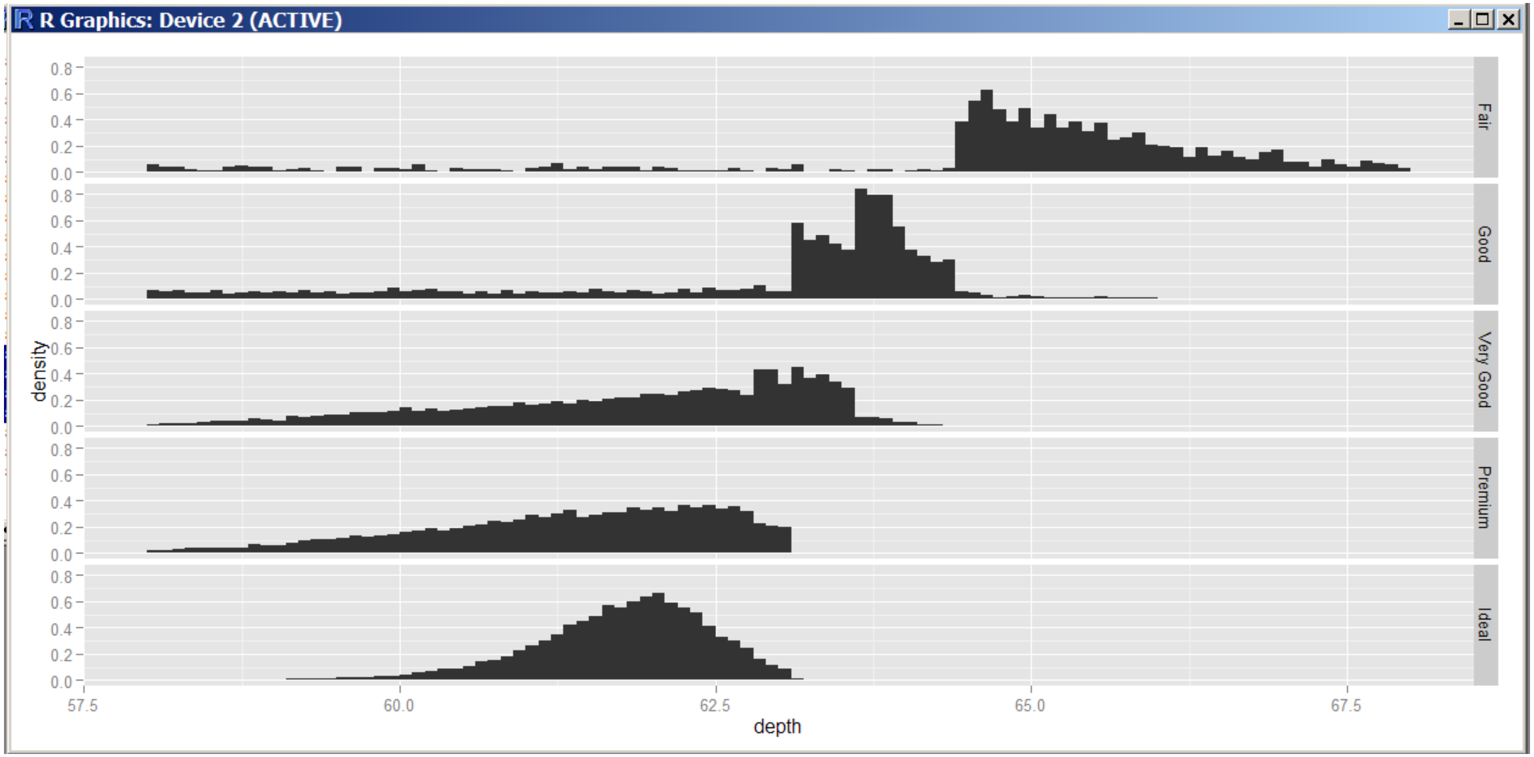
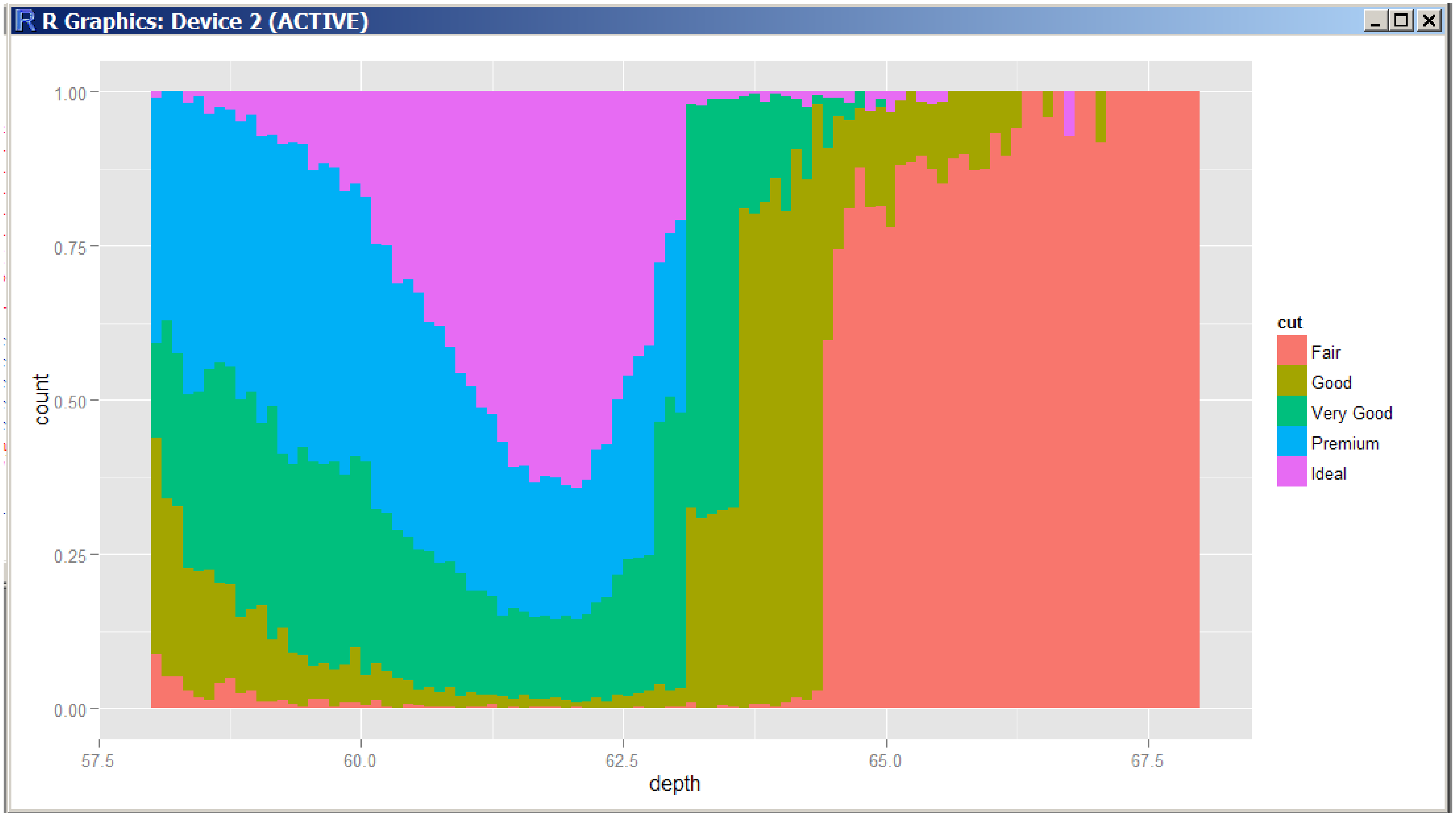
画分布的技巧

```
depth_dist <- ggplot(diamonds, aes(depth)) + xlim(58, 68)
depth_dist +geom_histogram(aes(y = ..density..), binwidth = 0.1) +facet_grid(cut ~ .)
```



分布

depth_dist + geom_histogram(aes(fill = cut), binwidth = 0.1,position = "fill")



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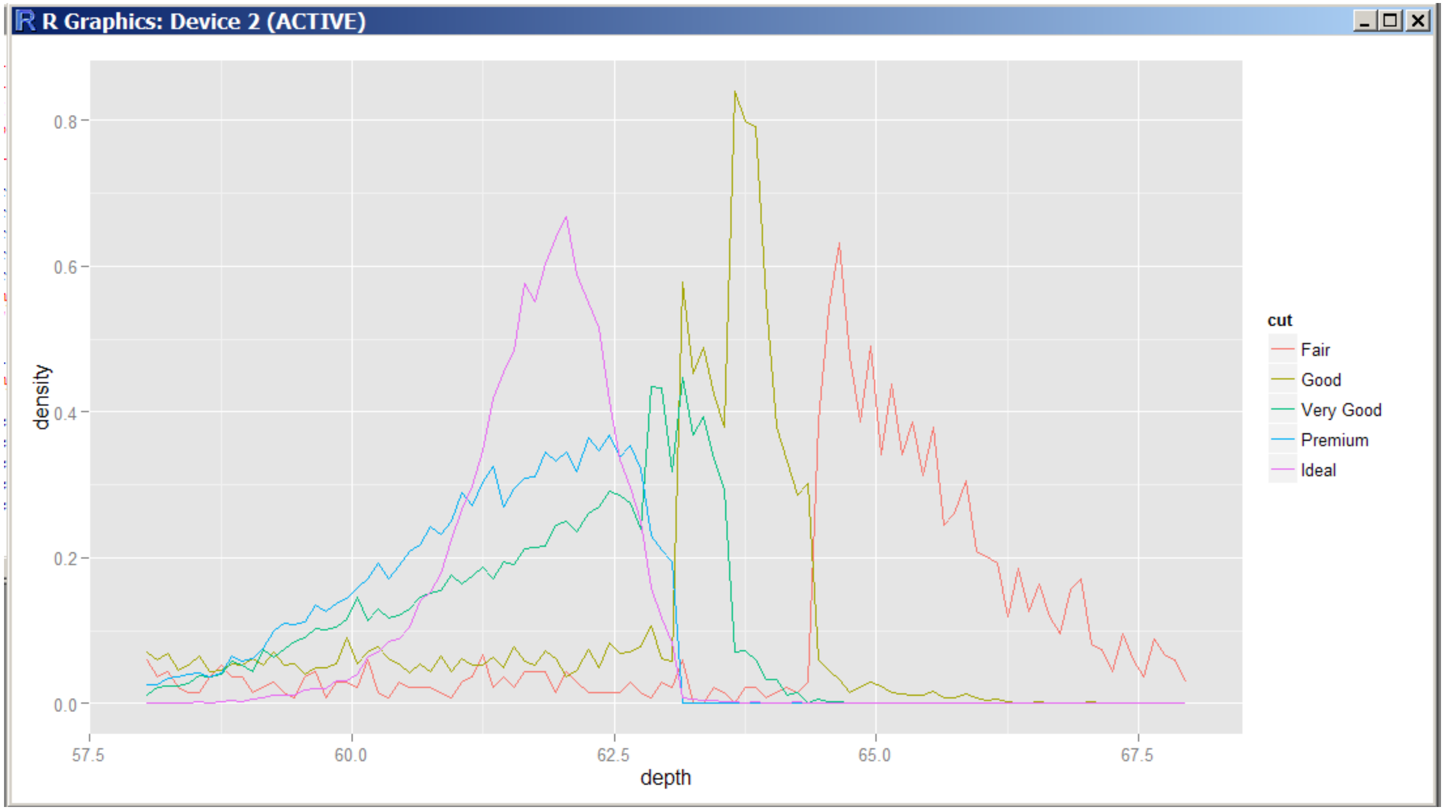
分布

depth_dist + geom_freqpoly(aes(y = ..density.., colour = cut),binwidth = 0.1)



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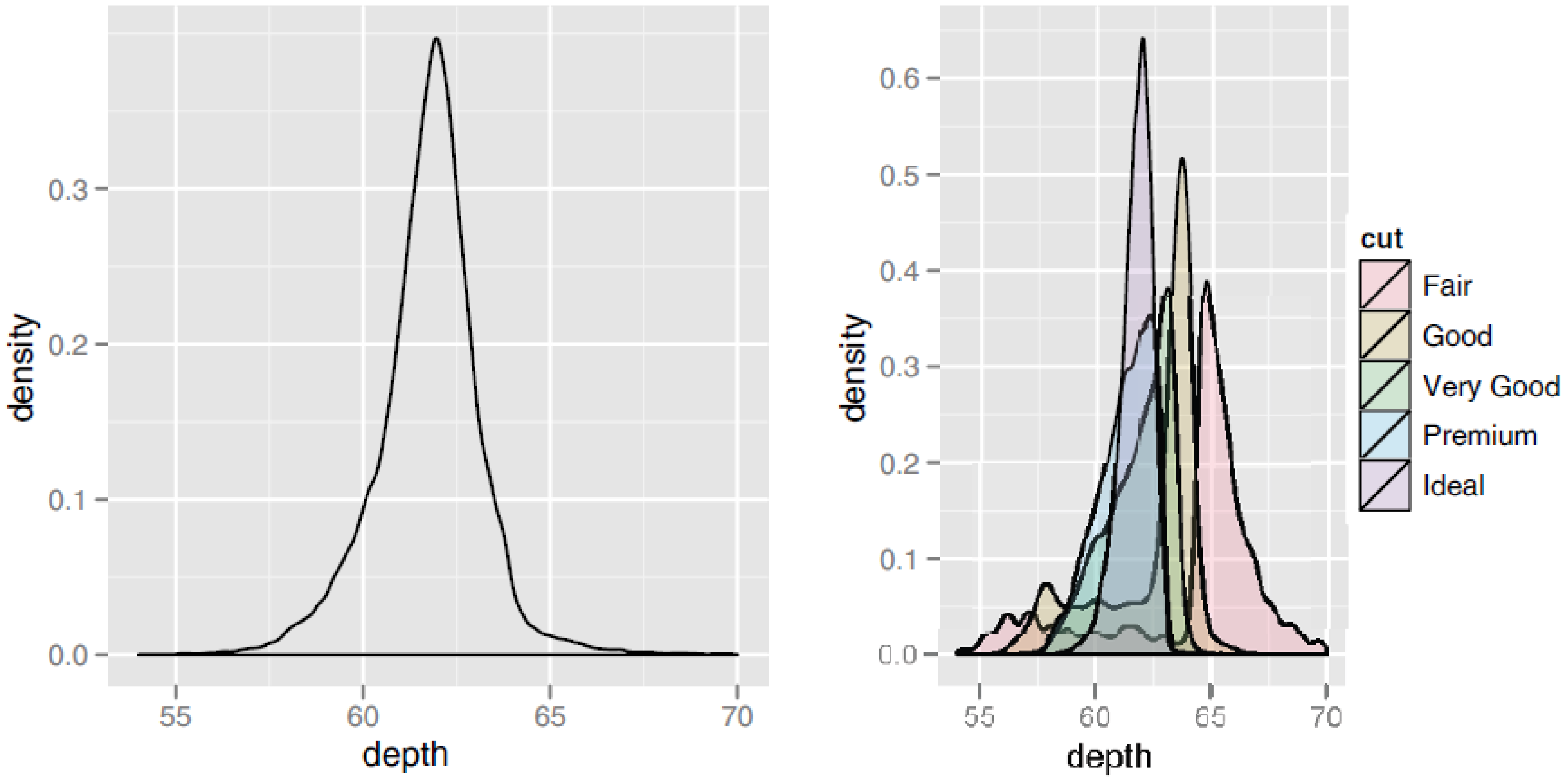
overplotting



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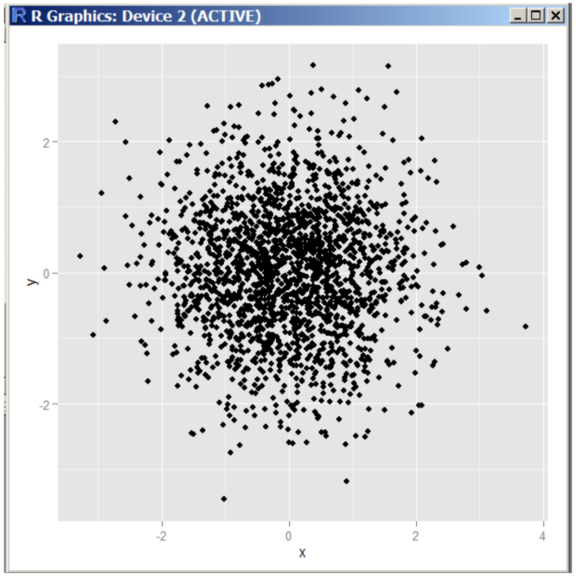
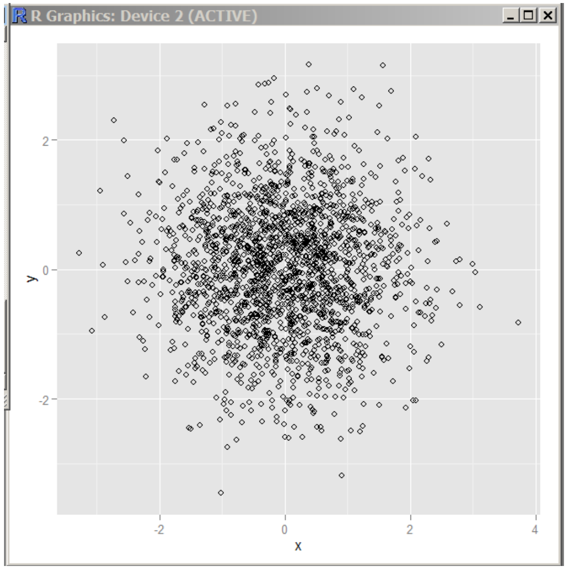
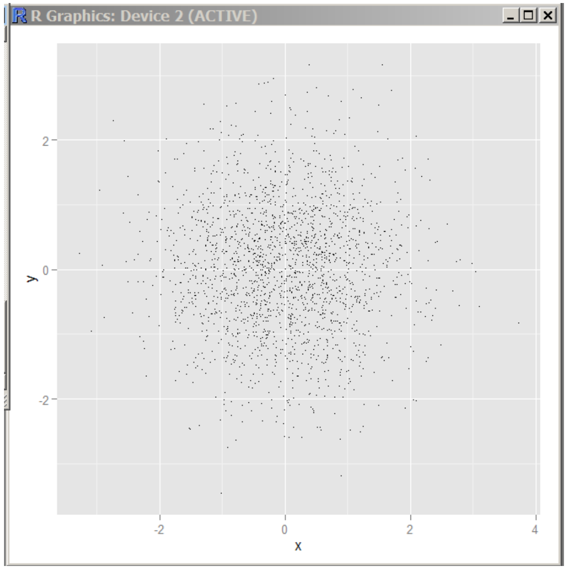
通过散点形状和大小控制重叠

```
df <- data.frame(x = rnorm(2000), y = rnorm(2000))
norm <- ggplot(df, aes(x, y))
norm + geom_point()
norm + geom_point(shape = 1)
norm + geom_point(shape = ".") # Pixel sized
```

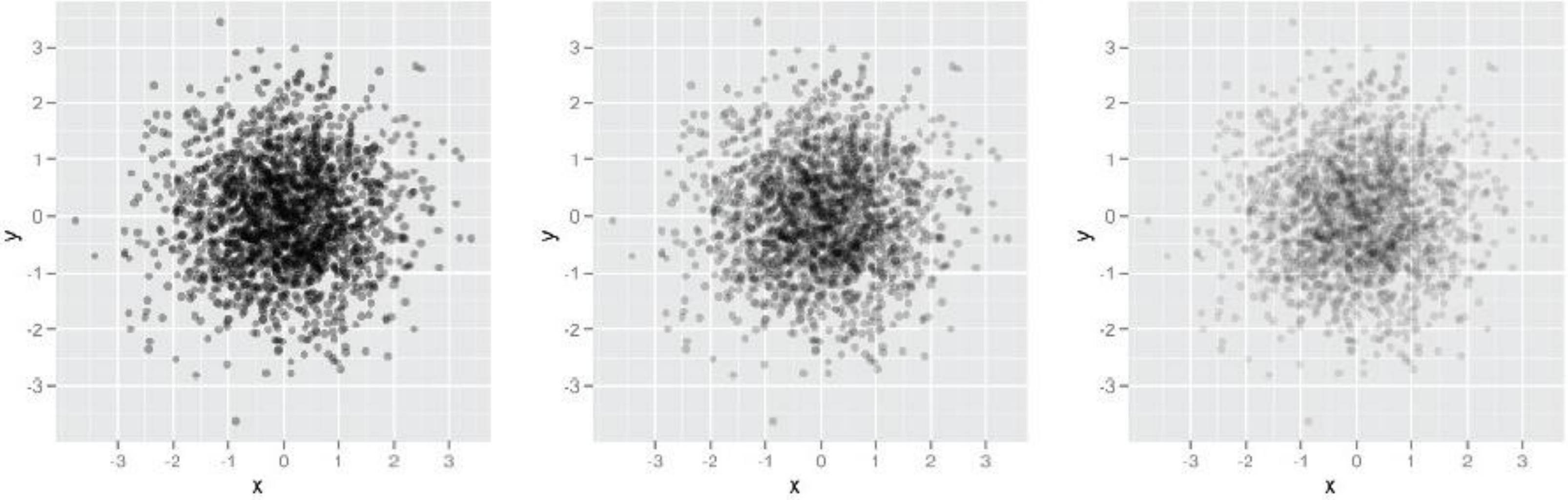






通过透明度控制

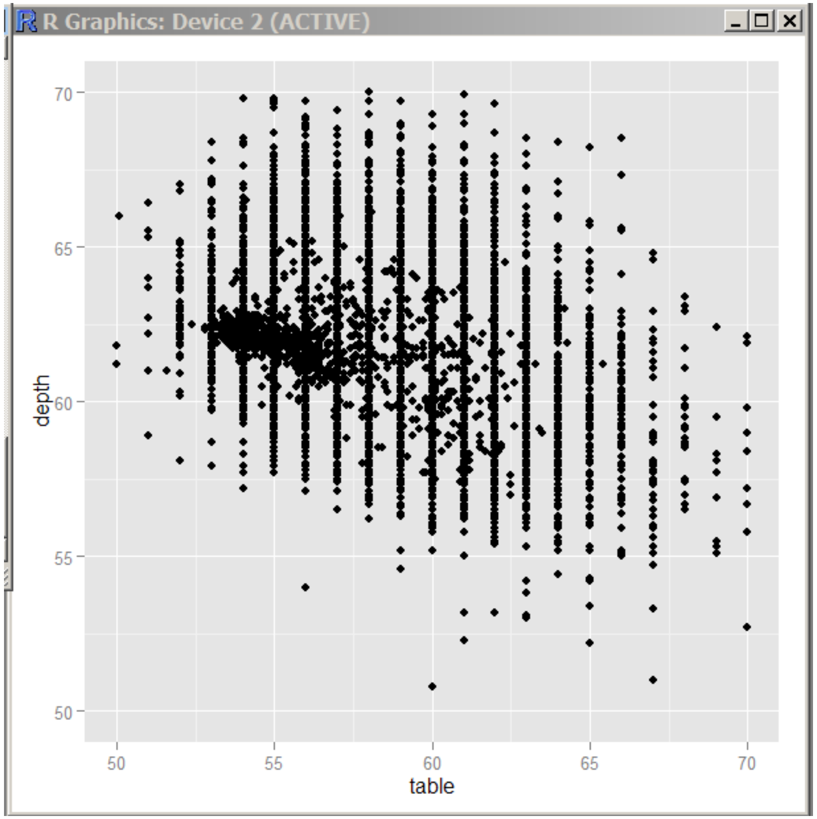
```
norm + geom_point(colour = alpha("black", 1/3))
norm + geom_point(colour = alpha("black", 1/5))
norm + geom_point(colour = alpha("black", 1/10))
```



扰动（jitter）表示法

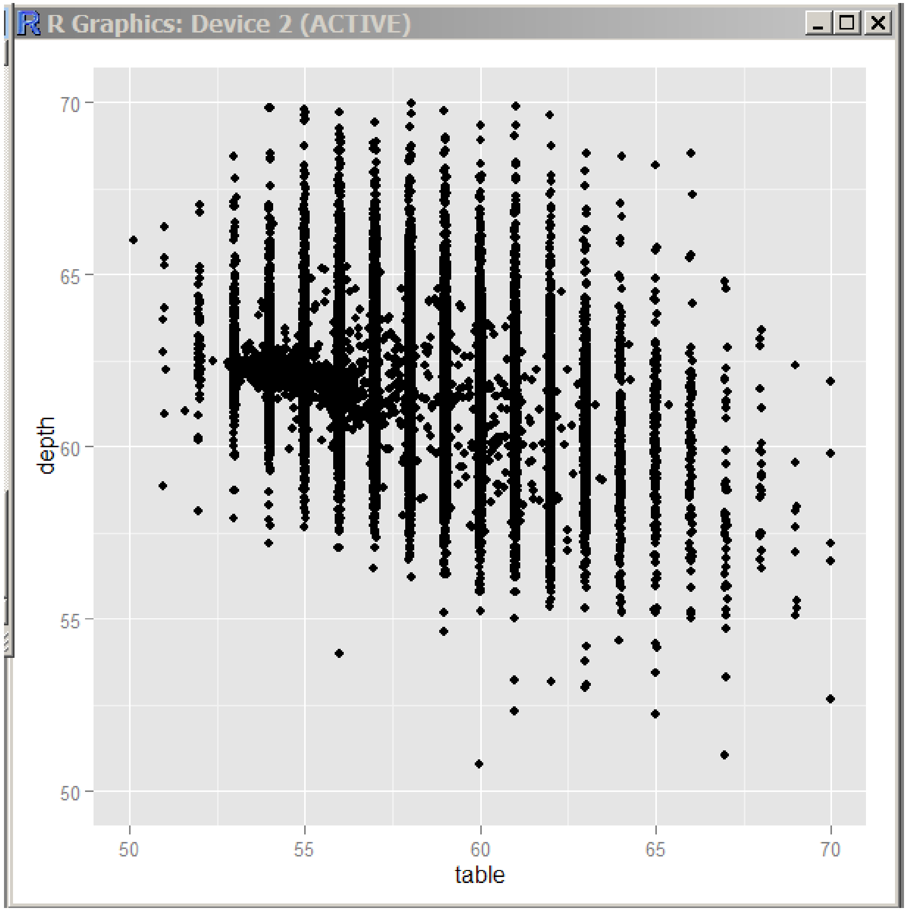
```
td <- ggplot(diamonds, aes(table, depth)) +xlim(50, 70) + ylim(50, 70)

td + geom_point()
```



扰动（jitter）表示法

td + geom_jitter()



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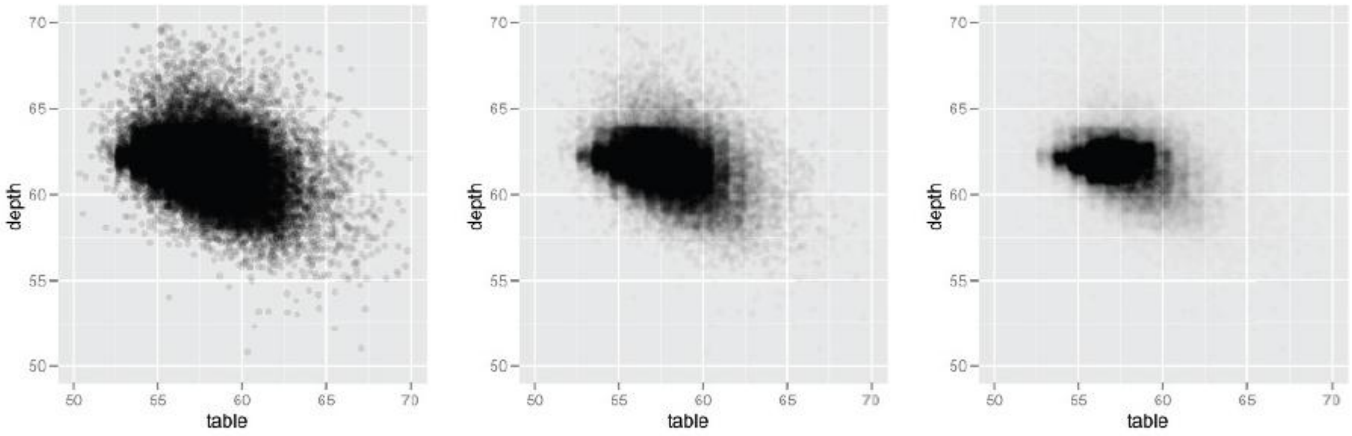
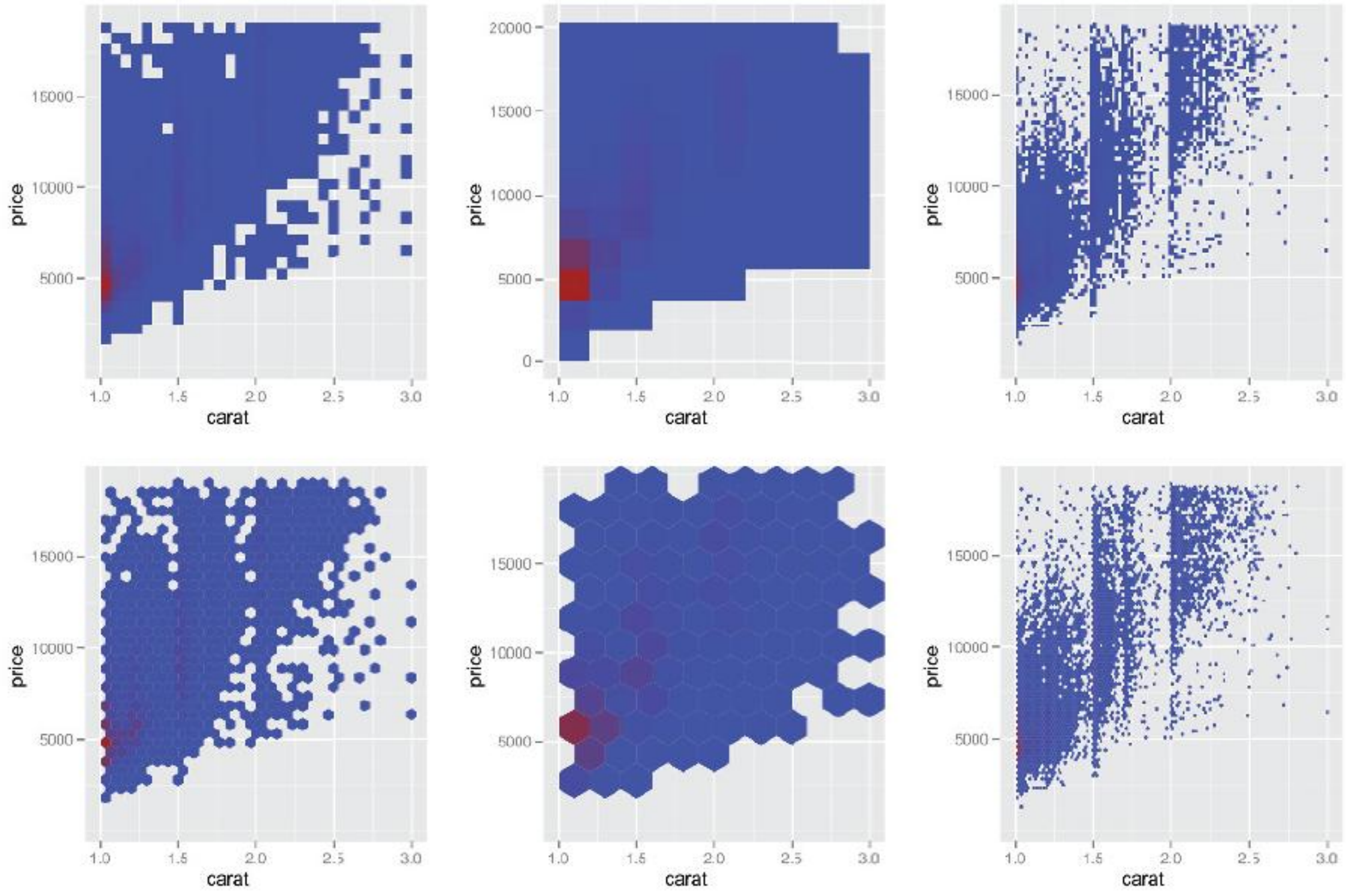
扰动（jitter）表示法

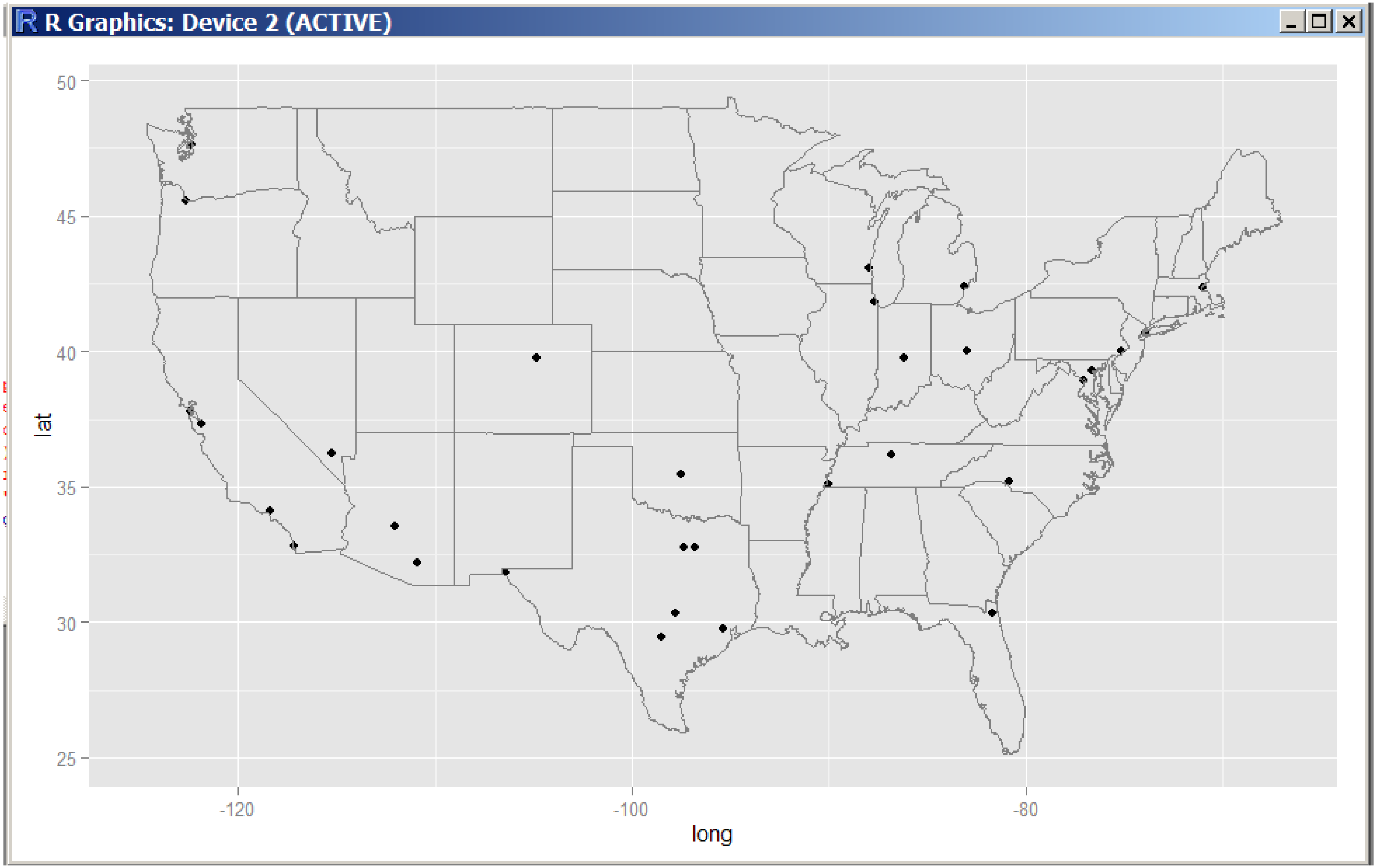
```
jit <- position_jitter(width = 0.5)
td + geom_jitter(position = jit)
td + geom_jitter(position = jit, colour = alpha("black", 1/10))
td + geom_jitter(position = jit, colour = alpha("black", 1/50))
td + geom_jitter(position = jit, colour = alpha("black", 1/200))
```



容器（bin）表示法



地图



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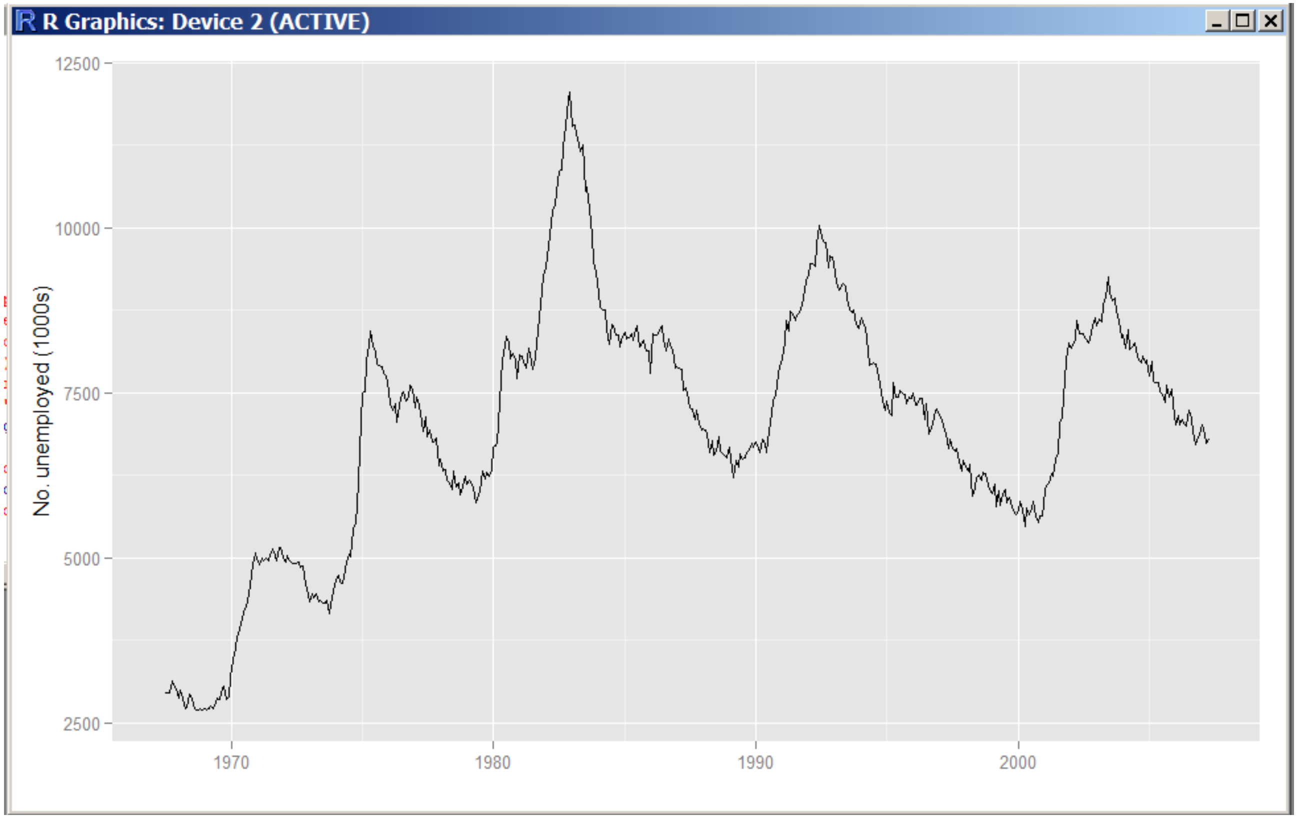
标记

```
(unemp <- qplot(date, unemploy, data=economics, geom="line",xlab = "", ylab =
    "No. unemployed (1000s)"))
```



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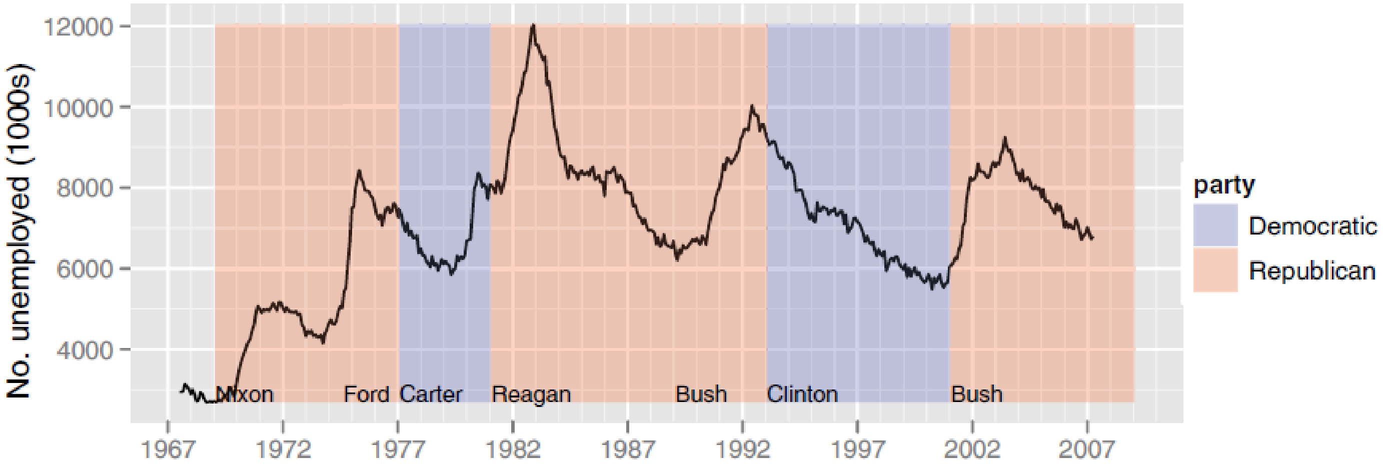
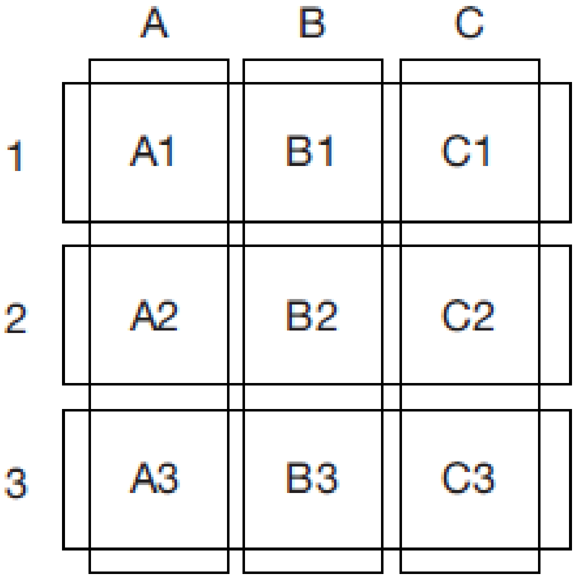
在图上做标记

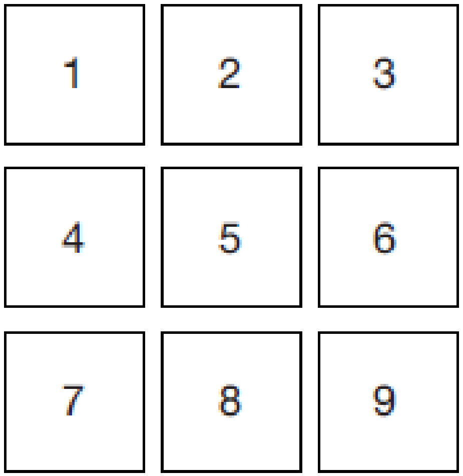
- geom_vline, geom_hline: add vertical or horizontal lines to a plot.
- geom_abline: add lines with arbitrary slope and intercept to a plot.
- geom_rect for highlighting interesting rectangular regions of the plot. geom_rect has aesthetics xmin, xmax, ymin and ymax.
- geom_line, geom_path and geom_segment for adding lines. All these geoms have an arrow parameter, which allows you to place an arrowhead on the line. You create arrowheads with the arrow() function, which has arguments angle, length, ends and type.



分组



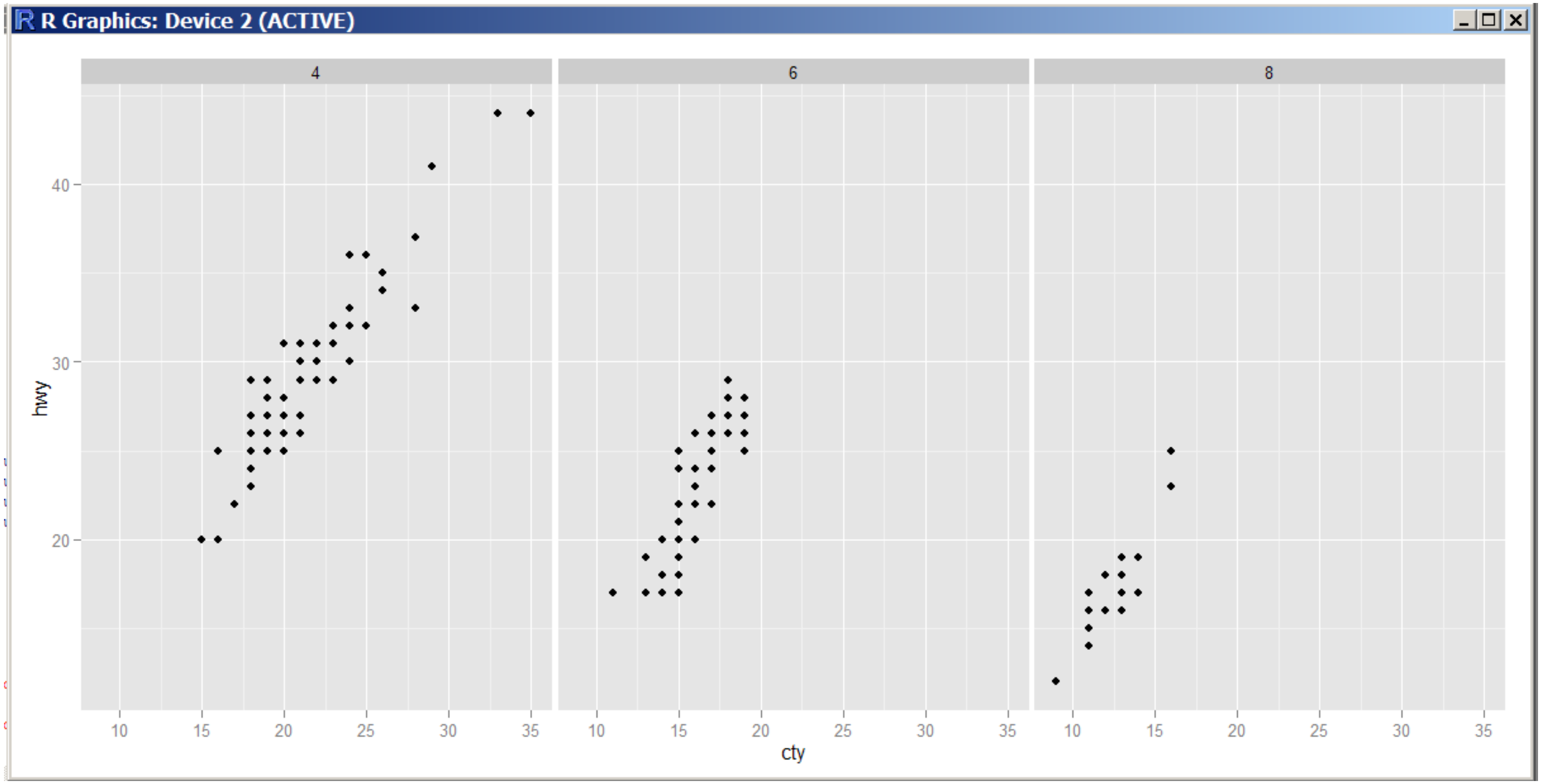
facet_grid



facet_wrap

Facet grid

```
mpg2 <- subset(mpg, cyl != 5 & drv %in% c("4", "f"))
qplot(cty, hwy, data = mpg2) + facet_grid(. ~ cyl)
```



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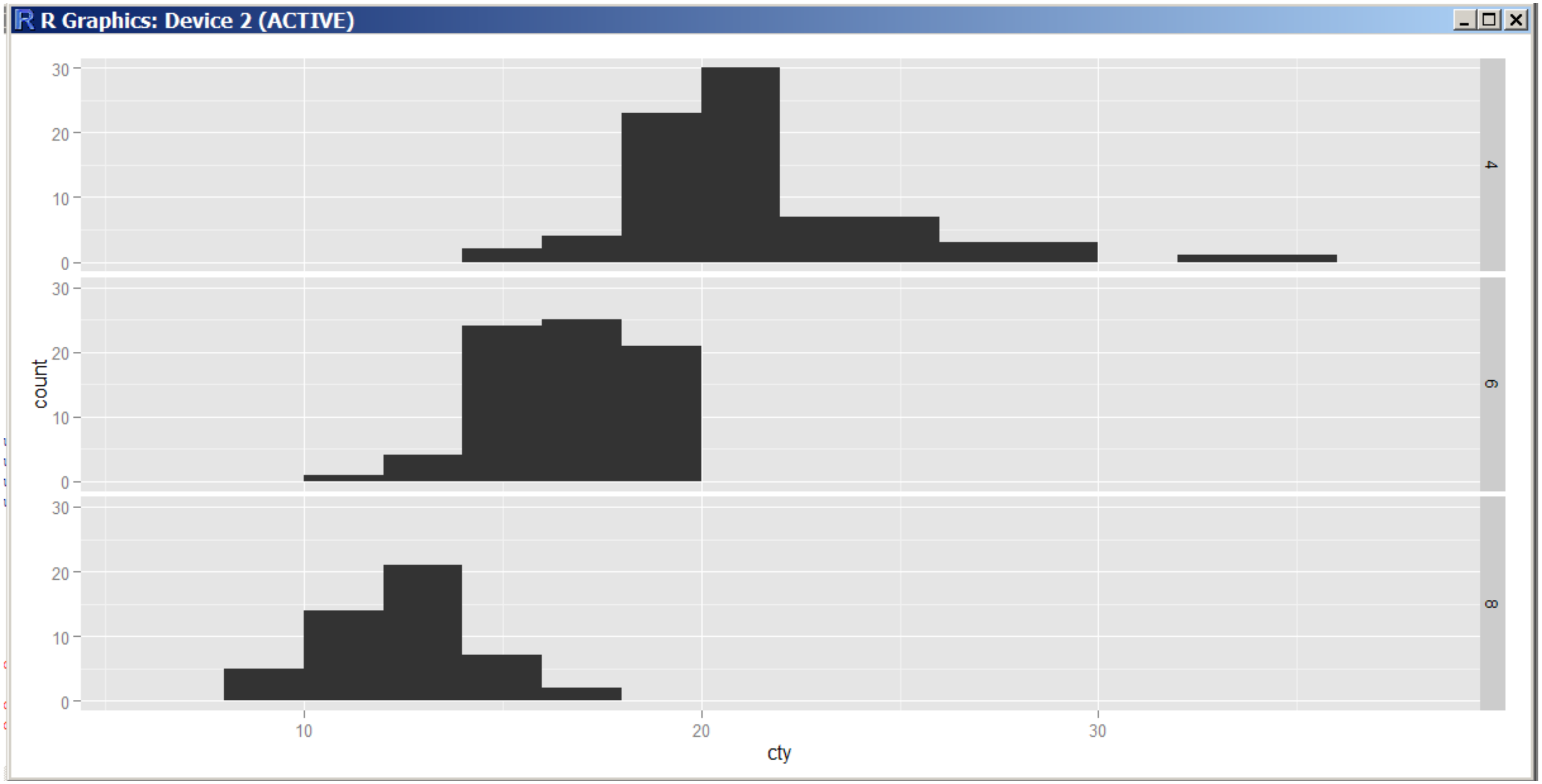
Facet grid

```
qplot(cty, data = mpg2, geom="histogram", binwidth = 2) + facet_grid(cyl ~ .)
```



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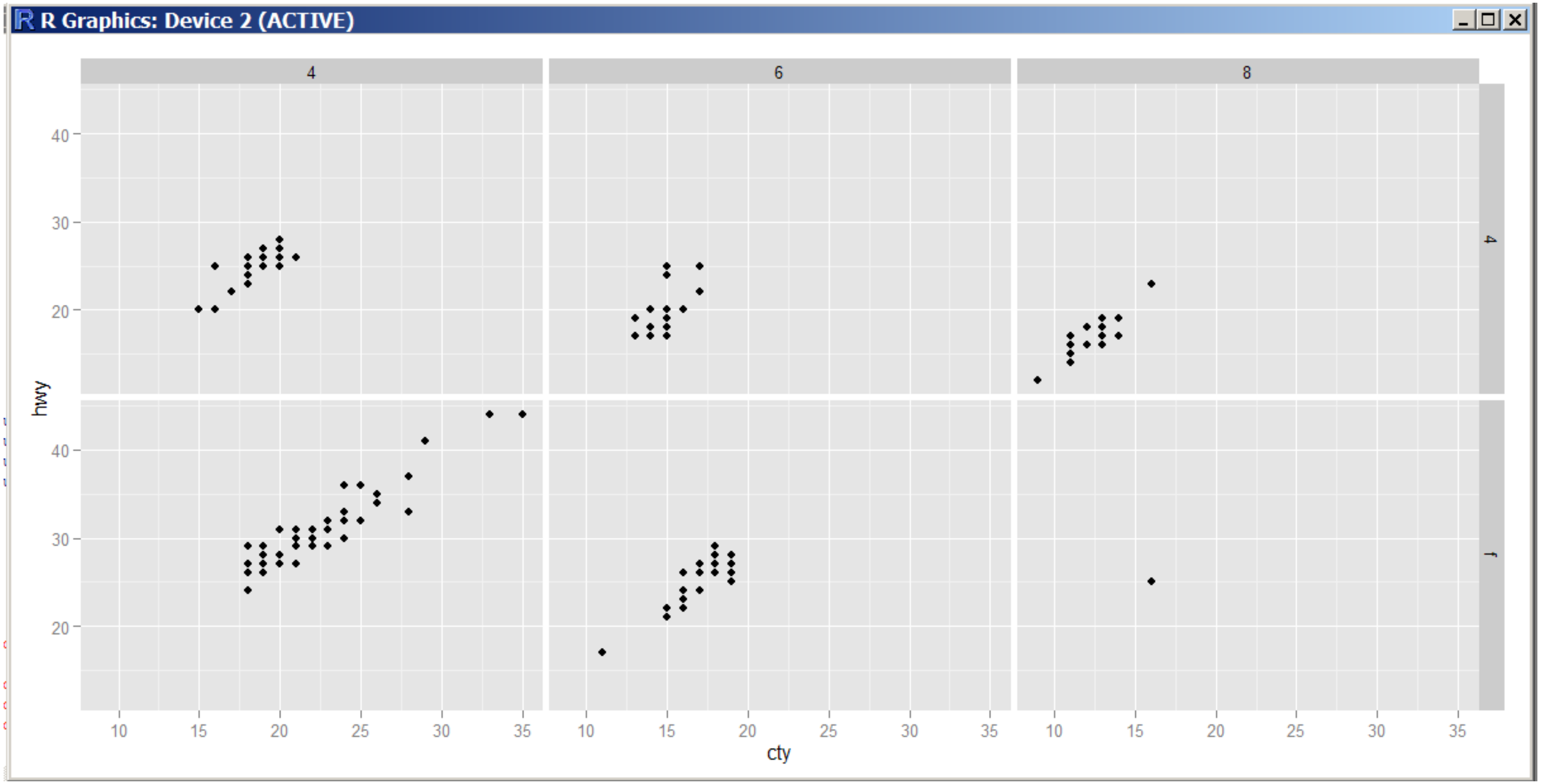
Facet grid

qplot(cty, hwy, data = mpg2) + facet_grid(drv ~ cyl)



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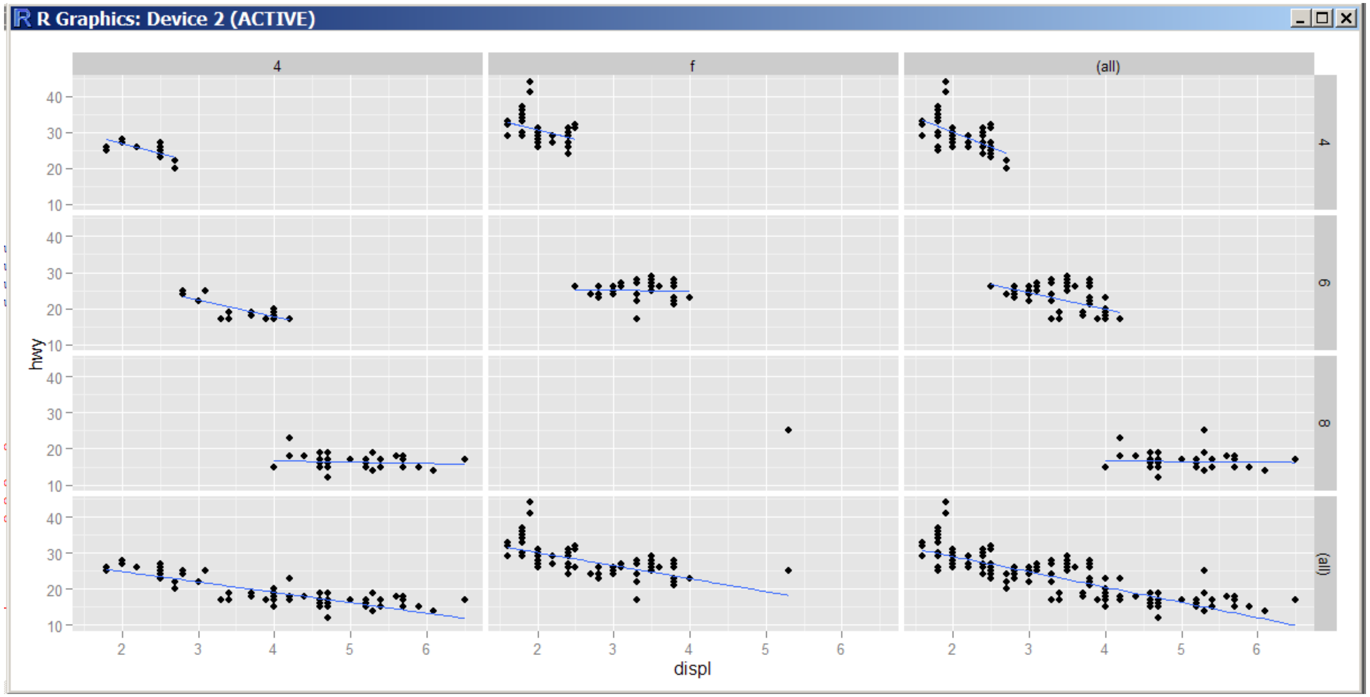
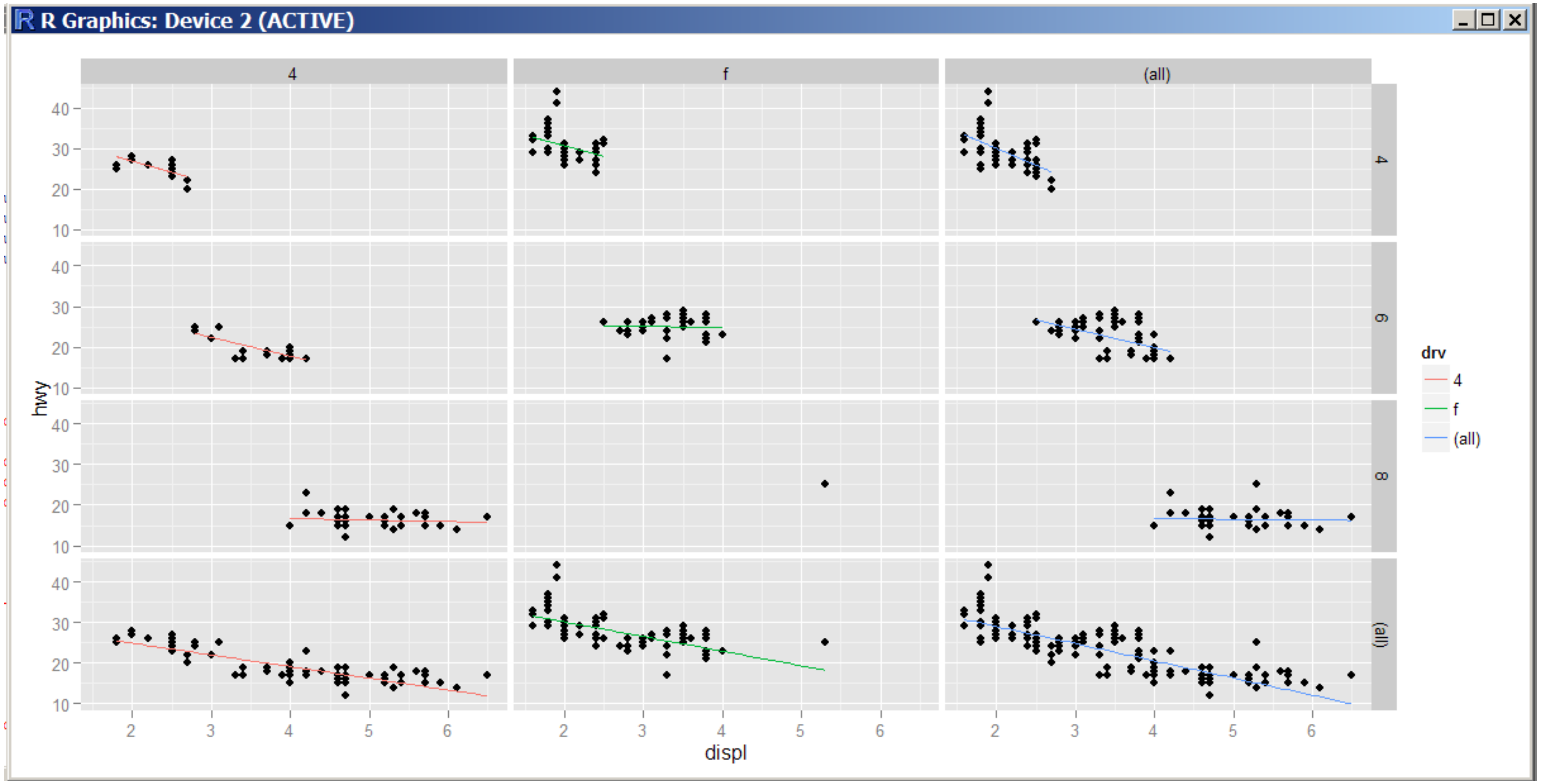
边缘控制

```
p <- qplot(displ, hwy, data = mpg2) +geom_smooth(method = "lm", se = F)
p + facet_grid(cyl ~ drv)
p + facet_grid(cyl ~ drv, margins = T)
```



边缘控制

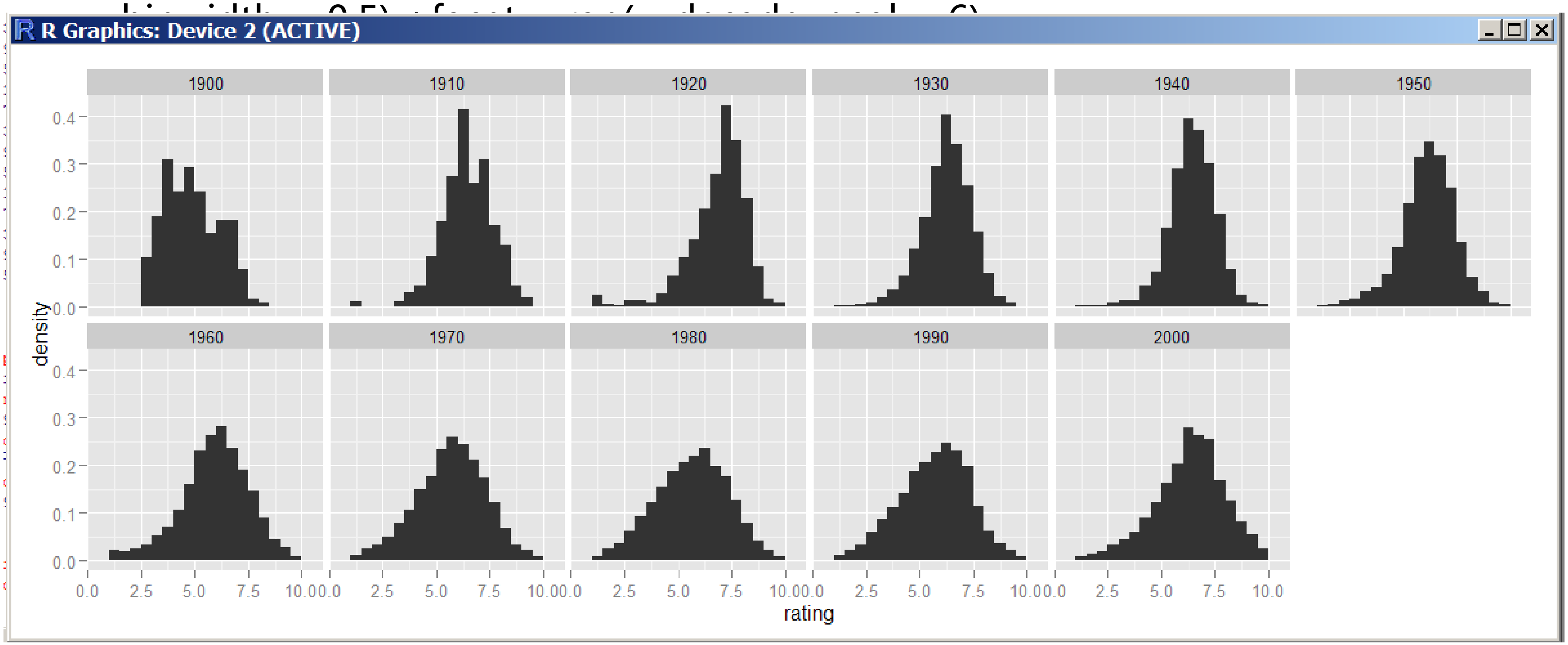
```
qplot(displ, hwy, data = mpg2) + geom_smooth(aes(colour = drv), method = "lm",
    se = F) + facet_grid(cyl ~ drv, margins = T)
```



Facet wrap

```
movies$decade <- floor(movies$year/10)*10

qplot(rating, ..density.., data=subset(movies, decade > 1890),geom="histogram",
    binwidth = 0.5) + facet_wrap(~ decade, ncol = 6)
```



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Thanks

FAQ时间